



# 2021-2022 CNUCOP ASSESSMENT REPORT



College of Pharmacy: Program Assessment Committee  
CALIFORNIA NORTHSTATE UNIVERSITY COLLEGE OF PHARMACY  
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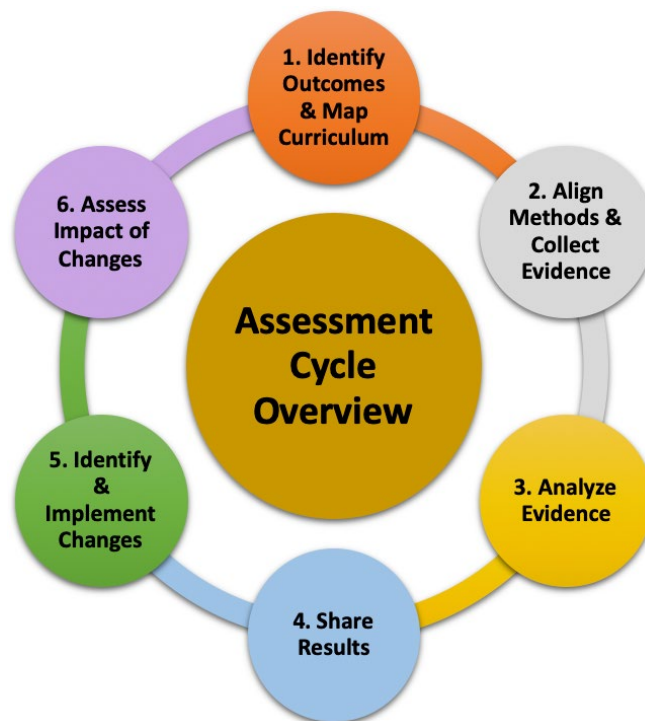
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# I. Description of the college assessment process/processes

## A. Purpose of Assessment Committee

- To develop and apply assessment methods to evaluate curricular and educational outcomes:
  - Exams
  - Competency-based assessments
  - Surveys
  - Peer/student evaluations
  - Other forms of assessment
- Analyze results of assessments and ensure that the results are disseminated to relevant stakeholders that are positioned to enact positive change within the College
- Gauge the effectiveness of the program and develop initiatives to improve the functions/processes of the college through evidence
- Ensure validity of the assessment methods



## **B. COP Assessment Committee General Objectives:**

1. Update the Master Assessment Plan as necessary and work with relevant stakeholders to centralize the assessments and action plans that ensure the College meets ACPE 2016 Standards 24 and 25.
2. Provide action plan templates to relevant stakeholders.
3. Directly oversee the administration of the Milestone Exams, ensure the validity of the assessments, interpret the results of the Milestone Exams, and communicate the analyses to relevant stakeholders.
4. Optimize KPI assessments administered by the College and interpret the results of the KPIs. KPIs include the Milestone Exams, Preceptor Feedback, APPE Student Feedback, NAPLEX, signature assignments, the Internal Student Survey, the AACP Graduating Survey, and the Qualifying Exam series.
5. Oversee the student peer-review process using CATME or another suitable platform.
6. Analyze KPIs unless the responsibility is mandated to be executed by a different stakeholder.
7. Meet with the Curriculum Committee at least twice a year to jointly review the results of KPIs and develop action plans that address the results.
8. Compile an annual report of assessments, action plans, and modifications that were made to the assessment process

## **C. Assessment Plan**

The assessment plan incorporates knowledge-based and performance-based formative and summative assessments throughout the didactic curriculum and the experiential education curriculum. The assessment plan measures student achievement at defined levels of the professional competencies that support attainment of the educational outcomes in aggregate and at the individual student level.

In the didactic pharmacy curriculum, knowledge-based formative assessments are conducted through incorporating active learning strategies, such as team-based learning (TBL) in didactic courses. Through the use of TBL, formative assessments are conducted during each class period to evaluate individual and team competencies. Immediate feedback is provided to both students and instructors on areas needing improvement related to the course material, which can be addressed directly and instantaneously. Mid-term exams and/or students' in-class and homework assignments also serve as an effective formative assessment tool for evaluation of students' competency during each subject course. Knowledge-based objective summative assessments in the form of block exams and final exams facilitated by Examsoft, along with other summative team assignments (final team exams, team projects and/or poster presentations) are also

incorporated for each course. These summative assessments serve to assess both individual and team competencies in achieving the course and program outcomes.. In addition, comprehensive Milestone exams, in addition to other comparative and standardized assessments (discussed below) are administered throughout the pharmacy program and are designed to evaluate the summative retention of individual students' knowledge and to identify areas of strengths and areas for improvement in the curriculum.

Embedded within the didactic curriculum, longitudinal practicum courses, and IPE events, CNUCOP has developed comprehensive signature assignments aimed at evaluating students' ability to practically apply the skills that they have learned and to reflect upon their own strengths, weakness, and general learning experiences. Through these assignments, student readiness to enter APPEs and provide direct patient care is assessed through objective structured clinical examinations, SOAP notes, IPE exercises, patient cases incorporating areas related to calculations, compounding, patient counseling, literature evaluation, and professional and interprofessional communication. The assignments allow for a direct assessment of student performance on program learning outcome as well as Entrustable Professional Activities (*EPA*). Initially within the didactic curriculum these assignments are formative in nature, but they gradually increase in complexity and eventually develop into summative assignments. To evaluate student competency, rubrics are used to align performance in individual exercises to broader program learning outcomes.

Performance-based formative assessments for teamwork are also conducted in the didactic pharmacy curriculum through incorporating Comprehensive Assessment of Team Member Effectiveness (CATME) within the TBL methodology for students to evaluate team member performance in the middle and end of each semester. CATME provides both formative and summative assessment data on the performance of each team member as evaluated by their peers. CATME specifically collects student performance in five general areas: contribution to the team, interaction with teammates, ability to keep the team on track, expectation of quality, and possessing relevant knowledge, skills, and abilities. CATME results are monitored by both the assessment committee members and the director of assessment. These results help to identify students who are facing difficulty in performing their team tasks. Students with poor CATME formative evaluations are directed to the Office of Academic Affairs for further assistance. In the experiential education curriculum; performance-based formative and summative assessments are conducted during the IPPE and APPE rotations through mutual student-preceptor midpoint and final evaluations. These evaluations directly evaluate students' proficiency in achieving the course, program and institutional learning outcomes in addition to the corresponding EPA. Based on these aggregated performance-based assessments, reports are presented to the Experiential Education Department, Assessment Committee, and Curriculum Committee, as well as the Dean's Executive Committee to develop an action plan to improve the effectiveness of the experiential rotations and the curriculum overall.

#### **D. Co-Curricular Assessment**

In addition to curricular assessments, performance-based assessments are also incorporated through Co-Curricular (CoCuLO) activities. The co-curriculum is comprised of “activities that are connected to or mirror the academic curriculum” and provides opportunities for students to apply and further refine skills learned in the classroom by engaging in community service, leadership, and professional development experiences. The Co-Curricular Program also enables students to assess their skills and abilities through self-reflection essays and direct feedback. All co-curricular events will be divided into two different categories: 1). knowledge-based activities or events and 2). experience-based activities or events. Knowledge-based events augment classroom learning and provide students with the opportunity to learn more about a particular topic usually in a classroom environment (e.g. Professional Career Development Seminars). Experience-based events facilitate hands-on advanced learning and allow students to further apply concepts learned in the classroom (e.g. healthcare services provided in the community). To fulfill the Co-Curricular Learning Outcomes (CoCuLOs) of the program, each student is required to complete at least 8 different CoCuLO events and self-reflections corresponding to the six CoCuLOs by February 1st of the P3 year, with a minimum of 4 of these events being experience-based CoCuLO events. One activity or event from each CoCuLO category must be completed, along with two additional “elective” CoCuLO activities corresponding to two different CoCuLOs. Students are encouraged to complete the two additional “elective” CoCuLO activities with an experience-based activity/event that corresponds to a knowledge-based CoCuLO that was previously fulfilled or with an event or activity that the student had difficulty in fulfilling its corresponding CoCuLO based on their skillset and self/faculty evaluation. To remain on track for completing the co-curricular requirements by February 1st of the P3 year, each student should complete three CoCuLO events/activities and corresponding self-reflections each year, with the exception of the P3 year, during which two CoCuLOs is required. No more than three events in a given year will count towards fulfilling the CoCuLO requirements of the program. Each activity or event can only fulfill one co-curricular learning outcome. In order to fulfill a CoCuLO, upon completion of a co-curricular activity, the student must complete a self-reflection form. Each student’s faculty advisor will track and evaluate each advisee’s involvement in co-curricular learning activities and assess their advisees’ achievement of the CoCuLOs using a rubric located on CANVAS to score each self-reflection. If the faculty advisor feels the self-reflection does not appropriately respond to the prompt provided on CANVAS for that particular CoCuLO, then the faculty advisor can request that the student edit and resubmit their self-reflection to appropriately address the prompt. Each student is expected to meet with his or her faculty advisor at least once per semester, which provides an opportunity for students to discuss their participation and self-development in co-curricular activities. Annually the Assessment Office compiles data based on the advisor grading of self-reflection essays and develops a comprehensive report of student completion and performance of CoCuLO requirements.

## **E. Standardized and Comparative Assessment**

Qualifying exam series evaluation exams are administered at the school while questions are primarily developed by third party contracting company (Pass NAPLEX Now). The College assesses the results and uses the students’ proficiency levels to identify areas of knowledge that require

improvement. Pass NAPLEX Now tailors the subsequent course for NAPLEX and CPJE preparation. Student performance of NAPLEX and CPJE exams are monitored and compared to state and national pass rates by the Dean's Executive Committee as well as both the Assessment and Curriculum Committees for overall evaluation of the program effectiveness.

The assessment plan employs several approaches to assessing student proficiency of learning outcomes. The comprehensive Milestone exams are administered in the summer after the academic year for both the first- and second-year pharmacy students and are designed to evaluate the summative retention of individual student's knowledge. The Milestone Examination is meant to deliver a standardized assessment of the key topics taught in the P1 and P2 year. Since there is a two-month gap between the final examinations and the Milestone Exam, retention of what was taught during the academic year is an important aspect of the Milestone, providing students insight on their level of readiness for the P2 and P3 year, respectively. In addition to the value of gaining better awareness of one's strengths and weaknesses, top-10 performers in the class will receive the Milestone Scholar Award. At the same time the mid-summer administration of the exam provides us with sufficient time for students to retake the exam, if needed as a result of failing to pass the Milestone. The P1 Milestone examination consists of two components: a calculations component made up of about 40 questions and a component assessing topics taught in other P1 courses. Courses with more credit hours will have a higher proportion of questions (approximately 2.5-3 questions per credit hour). The P2 Milestone examination consists of three components: an evidence-based medicine component made up of about 40 questions relating to biostatistics and drug information, a calculations component made up of also 40 questions, and a component assessing topics taught in other P2 courses. Courses with more credit hours will have a higher proportion of questions (approximately 2.5-3 questions per credit hour). To help students prepare for the examination Milestone Preparation Canvas page was developed, which contains preparation material for all of the components, including material specific to the didactic courses to be included in the course-related component.

Students that score below the passing threshold for a given Milestone Examination component will have the opportunity to retake the specific component the following week per the Milestone Examination schedule specified earlier in the current document. The Milestone Examination retake will be composed of questions from previous Milestone Examinations. Faculty will be asked to review the previous questions that were written for their course and to select optimal questions for the retake exam. Students that do not score above the passing threshold for a Milestone Examination component on the first or second attempt will be required to remediate the corresponding component. The remediation process should begin as early as possible after the second Milestone Examination attempt to minimize disruptions to the students' Fall Semester. Course coordinators will serve as remediation instructors for the corresponding topic areas in which students scored below 50% on both the first and second attempt. Moreover, the format of the remediation process, the length of study, and the subsequent assessment of student mastery of essential concepts will be at the discretion of the remediation instructors. The Director of Assessment will review the results of the Milestone Examinations and determine which students did not pass each component of the Milestone Examinations. The Director of Assessment will also present a report of the Milestone Examination results to relevant stakeholders, including the

Assessment Committee, Curriculum Committee, and Dean's Executive Council. The Assessment Committee and the Curriculum Committee will jointly develop an action plan for assessment or curriculum changes based on the results of the Milestone Examinations. The Assessment Committee and the Curriculum Committee will jointly review the previous year's action plan to reflect on the implementation of the proposed changes.

The standardized assessments described above, though varied in granularity and strength of association, are correlated to other assessments and students' individual attributes and subsequently used to identify reference points and develop thresholds.

As discussed above signature assignments are essential in assessing students' proficiency in key learning outcomes through performance-based evaluations. Integral to experiential education, students are evaluated by their preceptors during introductory pharmacy practice experiences using assessments designed to measure outcomes related to student readiness to enter advanced pharmacy experiences. An analogous assessment process occurs during the advanced pharmacy practice experiences with the exception that proficiency of outcomes are expected to be achieved at a mastered level indicating professional competency of a highly qualified pharmacist.

Multiple avenues are pursued to ensure that data generated from various forms of assessment are used to modify and improve the curriculum, bolster student learning, and advance the overall program. For example, a comprehensive learning outcome assessment is conducted annually for each course, where the results of the assessment are required to be integrated into an annual action plan that details practical and achievable modifications to the course, which will improve student mastery of relevant topic areas. In addition to objective assessments facilitated by Examsoft, students are asked to take subjective surveys of each course to identify areas where student learning may be enhanced. Course coordinators must address how student feedback will be used to improve their courses in the annual action plans. On a broader level, the Assessment Committee conducts aggregated assessments of student performance in IPPEs, APPEs, and clinical exercises conducted throughout the program to assess mastery of Educational Outcomes. The results of the aggregated assessments are discussed jointly with the Curriculum and Assessment Committees to identify areas of the curriculum that may be improved to optimize student learning and competency in the clinic.

Student performance on NAPLEX and CPJE exams are monitored and compared to State and National pass rates. The Dean's executive committee as well as both the assessment and curriculum committee employ these results for overall evaluation of the program effectiveness. An action plan is subsequently created and implementing based on these results on an annual basis. The implementation and the effectiveness of initiatives detailed within the previous year's action plan are explicitly evaluated in subsequent action plans. A similar process is employed by the curriculum committee in developing, implementing, and following-up on action plans based on the results of the Milestone exams, reports based on student performance of program and learning outcomes assessed during the summative exams and signature assignments. Likewise, the experiential department evaluates reports demonstrating student achievement of learning outcomes within experiential education and creates an action plan based on these reports.



## F. Surveys

On an annual basis the Office of Academic Affairs serves as the liaison ensuring that the AACP Alumni Survey, the AACP Graduating Student Survey, AACP Preceptor Evaluation of Experiential Program Survey, and AACP Faculty Survey are conducted, results are analyzed and subsequently presented to the Dean's Executive Committee. Applicable administrative offices are then charged to develop and implement an action plan addressing the result of the AACP standardized surveys.

The college uses multiple methods to systematically assess and comprehensively understand the overall student experience at the college and subsequently identify and address student concerns. These includes convening regular town hall meetings, focus groups, and administration of external AACP surveys of P4 students as well as internal surveys of all students (P1s through P3s). In order, to improve the value of internal survey through an increase of the response rate and enhancement of the applicability of survey questions the Assessment Committee along with the Office of Assessment at the College of Pharmacy have worked together with the Office of Institutional Effectiveness at the university level to further develop & enhance the students' survey development, implementation & oversight process. The results of the report are analyzed by the Office of Assessment and presented to the Assessment Committee which includes the student members of the committee for further input in terms of additional approaches of assessment and interpretation.

The result of the AACP Graduating Student Survey is analyzed by the Office of Assessment. The analysis includes identifying trends based on the result of the past four years and determining if the data represents a general upward and downward trend based on correlation coefficients. In addition, the results are compared to several different cohorts of peer schools, with an increasing level of similarity to our institution though a smaller sample size. The defining characteristics of these cohorts includes all schools of pharmacy in the nation, all private schools of pharmacy, all schools of pharmacy within the State of California, and all private schools of pharmacy established in within the last 15 years. Questions for which the results of CNU students demonstrate a significantly lower or higher relative to the peer institutions are identified and highlighted in the analysis. The results of other questions deemed especially crucial to understanding the student experience at the college as well as those previously remarked upon by ACPE accreditors are also emphasized when reporting the results. The action plan development process is analogous to that of internal student surveys where by results of the report are presented to the Assessment Committee for further input in terms of additional approaches of assessment and interpretation. Subsequently the resulting analysis and interpretation is directed to predetermined administrative offices overseeing relevant areas of interest within the survey and are requested to produce a pragmatic action plan addressing any issues and concerns identified. The final report along with the action plan is subsequently presented to all of the relevant stakeholders including the Dean's executive Council & the College of Pharmacy Faculty body for final evaluation and review before being communicated to the with the students and subsequently implemented. As with all action plans of assessments included with the Master Assessment Plan, the action plans both the AACP surveys and internal surveys are developed using standardized action plans process, which along with the usual description of how the college is planning to address a specific issue identified

within the survey also requires a brief description of any changes to the process being evaluated, including initiatives described in the action of plan of the previous year, novel initiatives not mentioned in the previous action, and modifications to the assessment process itself. The rationale of this process is to allow for a better understanding of possible causes behind fluctuations in the data, identification of trends, and the effectiveness of implemented changes. In addition, the use of these standardized action plans enhances the follow-up process by ensuring that that the effects of previous years action plans are addressed.

## **G. Assessment of Organizational Effectiveness**

The CNUCOP assessment plan maintains the most relevant assessments to provide insight on the effectiveness of the college processes and initiatives explicitly in the area of admissions, student services, faculty productivity and satisfaction, curriculum including the both didactic and experiential curriculum, and other processes related to academic affairs and standardized testing.

Standardized action plans are used for key assessments and include a brief description of any changes to the process being evaluated, including initiatives described in the Action Plan of the previous year, novel initiatives not mentioned in the previous Action Plan, and modifications to the assessment process itself. These standardized action plans allow for a better understanding of possible causes behind fluctuations in the data, identification of trends, and the effectiveness of implemented changes. In addition, the use of these standardized Action Plans enhances the follow-up process by ensuring that the effects of previous years' Action Plans are addressed.

Annually, pertinent assessments and corresponding action plans are compiled in comprehensive reports and submitted to the Office of Institutional Effectiveness and the President's Executive Committee to provide broader University wide understanding of the functions and effectiveness of the College.

The assessment plan includes a correlation analysis based on a variety of data gathered within the assessment plan to identify predictive variables that can subsequently be incorporated into initiatives that could affect both discrete and more global outcomes.

## **H. Curriculum Assessment and Improvement**

One of the primary responsibilities of the Assessment Committee is to work in conjunction with the Curriculum Committee to ensure that the most constructive assessment data is used to develop action plans to improve the curriculum and its delivery. One of the approaches by which this is accomplished is through consistent communication between the two committees. This is achieved by designating at least one faculty member to serve as a voting member for both of the committees. This faculty member functions as a liaison and regularly provides updates on the issues being addressed in each of the committees and communicates any inquiries the committees may have with each other.

In addition, twice per year, a joint meeting of the Curriculum Committee and the Assessment Committee is held.. During this meeting, the joint committees review various reports compiled by the Assessment Committee to evaluate the curriculum of the college and develop action plans based on these results leading to positive changes to the curriculum and modifications to the assessments themselves in order to improve their validity and utility. The reports presented during the joint meeting include PLO/ILO reports based on student performance of signature assignments administered during the didactic curriculum as well as reports based on summative preceptor evaluations of students completing APPE rotations.

In addition, other reports evaluated to assess the effectiveness of the overall program include the results of the two Milestone exams, Qualifying exam reports, and pass rates for NAPLEX and CPJE exams.

## I. Master Assessment Plan

Assessment	Instrument Used/ Administrator/Deadline	Action Plan Responsibility	Action Plan Reporting and Implementation Deadline
<b>College</b>			
<b>Evaluation of Mission, Vision, and Goals</b>	Rubric utilized to assess and evidence collected by Office of Assessment during faculty retreat or workshop in June/July	Carried out by the Dean	January
<b>College Strategic Plan</b>	Strategic Plan with rubrics headed by Center of Excellence for Teaching and Learning	Not Applicable: Strategic Plan Updated Annually in the Summer During Faculty Retreat	Not Applicable
<b>Student Affairs: Admissions</b>			
<b>Interview Survey (Interview Day Experience)</b>	Results from the survey reported by Office of Admissions by end of August, annually, for Admissions Cycle just ended.	Admissions Office and Admissions Committee. Admission office plan report and presents 10 min in the Sep faculty meeting	Completed by December and implemented by August
<b>Analysis of Applicant Pool</b>	Information from PharmCAS to be retrieved by Office of Student Affairs and Admissions by end of October, annually.	Admissions Office to use for recruitment	Completed by December and implemented by August
<b>Demographics of Entering Class</b>	Information from PharmCAS to be retrieved by Office of Student Affairs and Admissions by end of October, annually.	Admissions Office to use for recruitment	Completed by December and implemented by August
<b>Enrollment Decision Survey (Post Candidate Interview Survey)</b>	Results from the survey reported by Office of Admissions by beginning of September, annually, for Admissions Cycle just ended.	Admissions Office to use for recruitment	Completed by December and implemented by August
<b>Student Affairs: Students Services</b>			
<b>Success of Tutoring on Student Achievement</b>	Report based on an internal survey and other data reported by Office of Student Affairs in conjunction with office of Academic Affairs by end of July, annually.	Office of Student Affairs (in collaboration with Academic Affairs Office)	Completed by May and implemented by September
<b>AACP Alumni Survey</b>	Results from AACP survey reported by the COP by Office of Student Affairs and Admissions, in July annually	Office of Student Affairs (in collaboration with Academic Affairs Office)	Completed by May and implemented by September
<b>AACP Student Survey – Graduating Student Survey</b>	Results from AACP survey reported by the COP by Office of Student Affairs and Admissions, in July annually.	Office of Student Affairs and Office of Academic Affairs identify useful data to be communicated to Curriculum Committee and other Departments	Completed by May and implemented by September
<b>COP Graduating Exit Survey</b>	Results from an internal survey reported by the COP the end of June, annually.	Office of Student Affairs and Office of Academic Affairs identify useful data to be communicated to Curriculum Committee and other Departments	Completed by May and implemented by September
<b>Co-curricular Learning Outcomes</b>	CANVAS results retrieved by Office of Student Affairs in July, annually	Office of Student Affairs identifies useful data to be communicated to Curriculum Committee and other departments	Completed by July and implemented by August

<b>Post-graduate Employment</b>	Post-Graduate employment survey administered by Office of Student Affairs in June, annually	Office of Student Affairs	Completed by July and implemented by August
<b>Faculty and Staff Development</b>			
<b>Student Evaluation of Course &amp; Instructor</b>	Survey completed using Survey Monkey, Administered by Department Administrative Assistant near the completion of every semester	Not Applicable: Student evaluation of instructor to be addressed by faculty's department chair during annual review and student evaluation of course is to be addressed unique action plans for every course developed by each individual course coordinators	Action plans for individual courses due in October and March submitted along with corresponding syllabi
<b>Faculty Development Trainings and Seminars</b>	List and description of trainings and seminars offered by the Center of Teaching Excellence, Office of Research, and CNU Faculty Development Office completed at the end of the academic years	Chair of the Faculty Development Committee	Not Applicable
<b>Faculty Development Activity Log</b>	The activity log submitted by each faculty to the Department chair at the end of the year evaluation	Not Applicable	Not Applicable
<b>Faculty Development Survey</b>	Survey monkey survey developed by Faculty Development Committee and administered to all CNUCOP faculty by the Director of Assessment in December annually	Faculty Development Committee	Completed in March to be implemented in May
<b>AACP Faculty Survey</b>	Results from survey submitted by the COP through the office of Academic Affairs by July, annually.	Dean Executive Committee	Completed in December to be implemented in January
<b>Research</b>	Results from Office of Research on Grants/Contracts, Publications, Presentations, Seed Grants, Summer Fellowships	Assistant Dean Of Research	Completed in July to be implemented in August
<b>Academic Affairs: Didactic Curriculum</b>			
<b>Inter-professional Education</b>	End of the year IPE report by Director of IPE in June	IPE Director	Completed in July to be implemented in August
<b>Course Learning Outcomes Report</b>	Results from ExamSoft Reports by Office of Assessments every December and June	Not Applicable: Unique action plans for every course to be developed by each individual course coordinators	October and March submitted along with corresponding syllabi
<b>Program/Institutional Learning Outcome Based on Signature Assignments</b>	Results from ExamSoft Reports by Assessment Committee annually every May	Curriculum Committee	Completed by July and implemented by December
<b>Learning Outcomes Norming Session Report</b>	Results from ExamSoft based on the norming by Assessment Committee annually every March	Director of Assessment	Completed by July and implemented by December
<b>CATME</b>	CATME evaluations of teammates completed by all students in the P1-P3 year and administered by Chair of Assessment Committee at the midpoint and end of each semester	Not Applicable	Not Applicable
<b>Academic Affairs: Experiential Curriculum</b>			

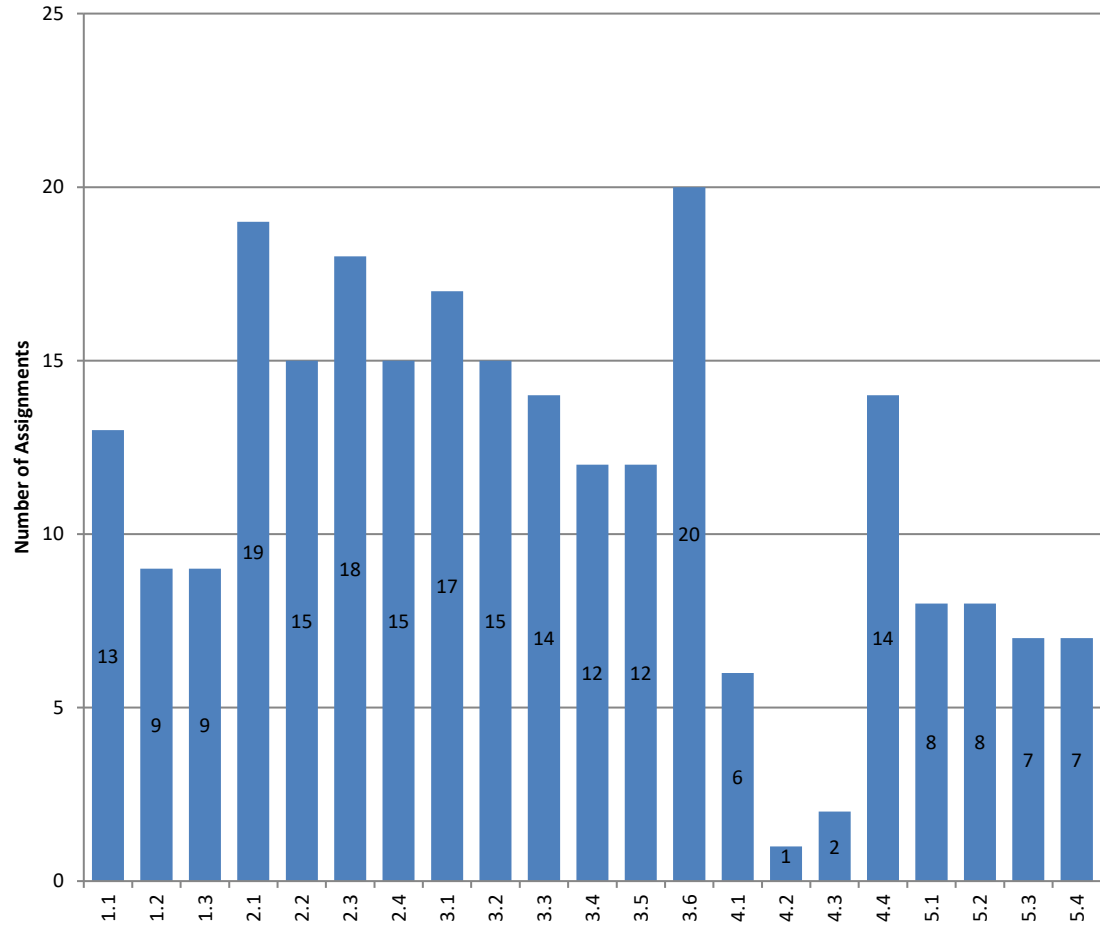
<b>Student Evaluation of the Sites</b>	Anonymous evaluation of the practice site administered the experiential department after every 6-week rotation OR Mutual student-preceptor midpoint and final evaluation	APPE/IPPE Director	Action plan to be implemented June through May (P4 year)
<b>Learning Outcome Summative Report</b>	Data of student performance of APPE and IPPE derived from E-value/Core exported and evaluated in June, annually	APPE/IPPE Director	Completed by July and implemented by December
<b>AACP Preceptor Survey</b>	Results from an AACP survey submitted by experiential department by July, annually.	Chair of Experiential Department	Completed by July and implemented by December
<b>Academic Affairs: General Student Performance</b>			
<b>Progression Report</b>	Data derived from Office of Academic Affairs, developed annually every June	Dean of Academic Affairs	Completed by July and implemented by August
<b>Correlation Analysis</b>	Data derived from various sources including examsoft, NABP, PharmCAS, E-value/Core, Canvas analyzed annually by December	Curriculum Committee	Completed by June and implemented by August
<b>Grade Distribution Reports</b>	Grades retrieved from CANVAS before and after application of Team Grades	Dean of Academic Affairs	Not Applicable
<b>Academic Affairs: High Stakes Exams</b>			
<b>P1 and P2 Milestone Results</b>	Report based on ExamSoft data produced by the Director of Assessment on a annual basis in June after the completion of the Milestone Exams in May	Curriculum Committee	Completed by July and implemented by December
<b>Qualifying Exam Series</b>	ExamSoft Report	Designated NAPLEX Review coordinator	Completed by July and implemented by December
<b>Pass Rate on NAPLEX &amp; CPJE</b>	Results are provided by NABP and California Board of Pharmacy (including performance in the 2 areas) of NAPLEX and CPJE results respectively	Dean of Academic Affairs	Completed by August and implemented by September

## II. Program Learning Outcomes Assessment

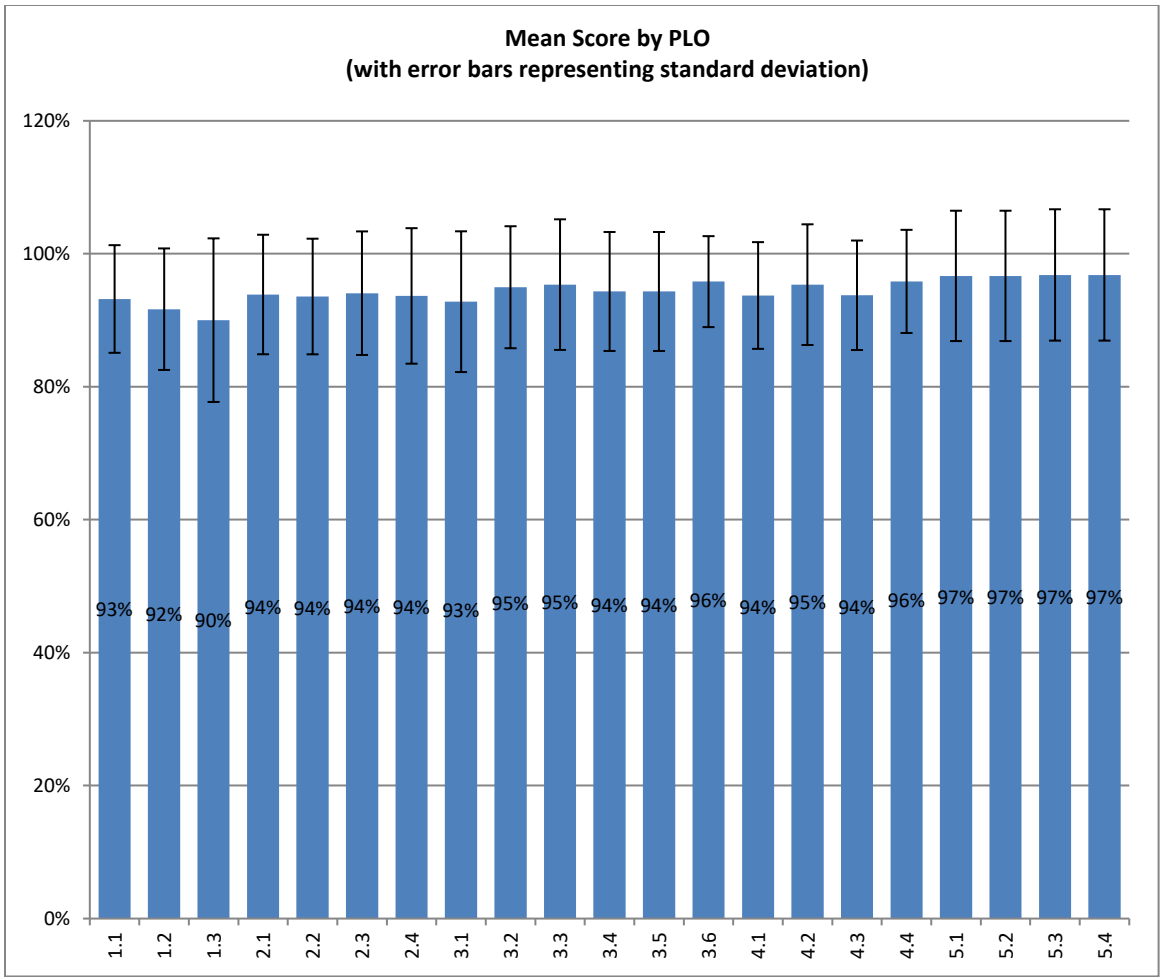
### A. PLO Report based on Signature Assignments

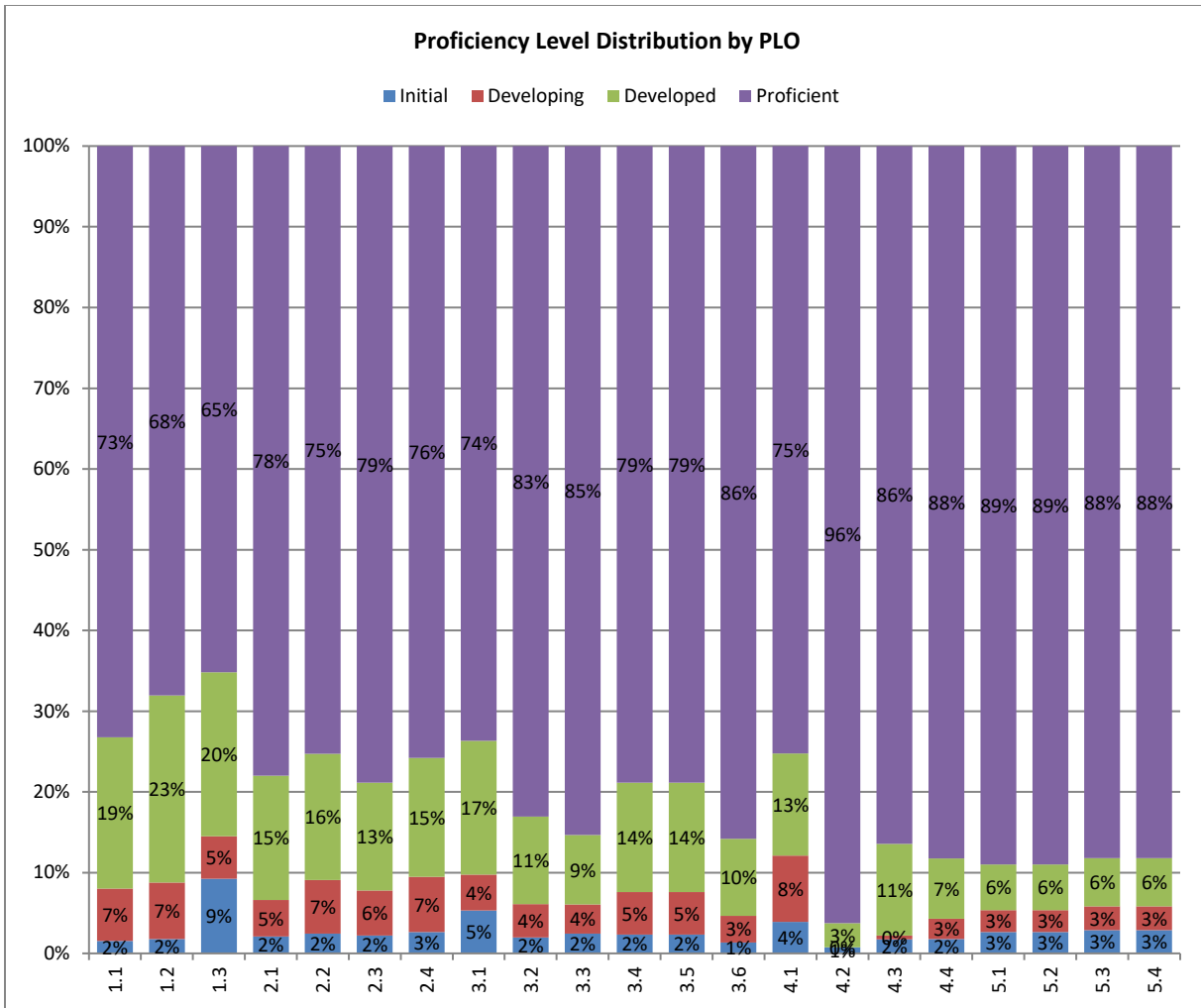
	CAS 606	CAS 702	CAS 702	CAS 702	CAS 702	CAS 702	PRC 709	PRC 709	PRC 710	PRC 710	PRC 710	PRC 710	CAS 801	CAS 804	PRC 809	PRC 809	PRC 809	PRC 809	PRC 809	PRC 810	PRC 810	PRC 810	PRC 810	PRC 810	PRC 810
Name	Individual statistical analysis assignment	Formal Disease State Presentation	Telemedicine Patient Counseling	Patient Voicemail	Provider Voicemail Assignment	Dear Patient Letter	IPE	Patient counseling	Calculation Patient Assignment	Literature Evaluation Assignment	Integrated Soap Note	Patient Counseling	Individual Essay	Final Term Paper	IPE	Integrated Soap Note	Literature Evaluation	Patient Counseling	IV Lab Assessment	Individual Journal Presentation	IPE	Integrated Soap Note	IV Lab Day	Verbal Case Presentation	Patient Counseling
MEAN	93%	98%	95%	96%	96%	100%	96%	93%	91%	98%	79%	93%	93%	93%	85%	73%	97%	94%	96%	96%	98%	81%	90%	88%	91%
Standard Deviation	15%	2%	23%	20%	20%	0%	6%	5%	8%	2%	15%	16%	10%	9%	6%	10%	2%	6%	4%	3%	2%	19%	9%	12%	14%
MEDIAN	99%	97%	100%	100%	100%	100%	100%	94%	95%	98%	79%	97%	95%	95%	86%	75%	98%	96%	97%	96%	99%	85%	92%	89%	94%
MIN	0%	94%	0%	0%	0%	100%	84%	73%	80%	90%	31%	0%	0%	0%	70%	30%	91%	72%	81%	88%	88%	0%	0%	0%	0%
MAX	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	97%	88%	100%	100%	100%	100%	100%	105%	96%	100%	100%
25th Percentile	90%	97%	100%	100%	100%	100%	92%	91%	85%	98%	72%	94%	90%	93%	83%	68%	96%	92%	94%	94%	97%	75%	90%	84%	91%
75th Percentile	100%	100%	100%	100%	100%	100%	100%	96%	100%	100%	90%	99%	100%	95%	89%	80%	98%	99%	98%	97%	100%	90%	93%	95%	98%
Initial: <69%	2	0	4	3	3	0	0	0	0	0	18	2	2	1	0	31	0	0	0	0	0	13	1	1	2
% Initial	3%	0%	5%	4%	4%	0%	0%	0%	0%	0%	24%	3%	1%	1%	0%	29%	0%	0%	0%	0%	0%	12%	1%	1%	2%
Developing or better: at or above 69%	62	71	71	72	72	71	141	78	74	75	56	74	158	120	108	77	107	108	108	107	108	95	106	106	106
% Developing or better	97%	100%	95%	96%	96%	100%	100%	100%	100%	100%	76%	97%	99%	99%	100%	71%	100%	100%	100%	100%	100%	88%	99%	99%	98%
Developing only: 69%-79.999%	3	0	0	0	0	0	0	2	0	0	21	0	5	0	19	44	0	5	0	0	0	19	1	13	6
% Developing	5%	0%	0%	0%	0%	0%	0%	3%	0%	0%	28%	0%	3%	0%	18%	41%	0%	5%	0%	0%	0%	18%	1%	12%	6%
Developed or better: at or above 79%	59	71	71	72	72	71	141	76	74	75	35	74	153	120	89	33	107	103	108	107	108	76	105	93	100
% Developed or better	92%	100%	95%	96%	96%	100%	100%	97%	100%	100%	47%	97%	96%	99%	82%	31%	100%	95%	100%	100%	100%	70%	98%	87%	93%
Developed only: 79%-89.999%	9	0	0	1	0	0	27	15	29	0	16	7	26	7	64	33	0	12	6	4	2	34	26	40	18
% Developed	14%	0%	0%	1%	0%	0%	19%	19%	39%	0%	22%	9%	16%	6%	59%	31%	0%	11%	6%	4%	2%	31%	24%	37%	17%
Proficient: at or above 90%	50	71	71	71	72	71	114	61	45	75	19	67	127	113	25	0	107	91	102	103	106	42	79	53	82
% Proficient	78%	100%	95%	95%	96%	100%	81%	78%	61%	100%	26%	88%	79%	93%	23%	0%	100%	84%	94%	96%	98%	39%	74%	50%	76%
Total number of students	64	71	75	75	75	71	141	78	74	75	74	76	160	121	108	108	107	108	108	107	108	107	107	107	108

Number of Assignments Assessing the Program Learning Outcome









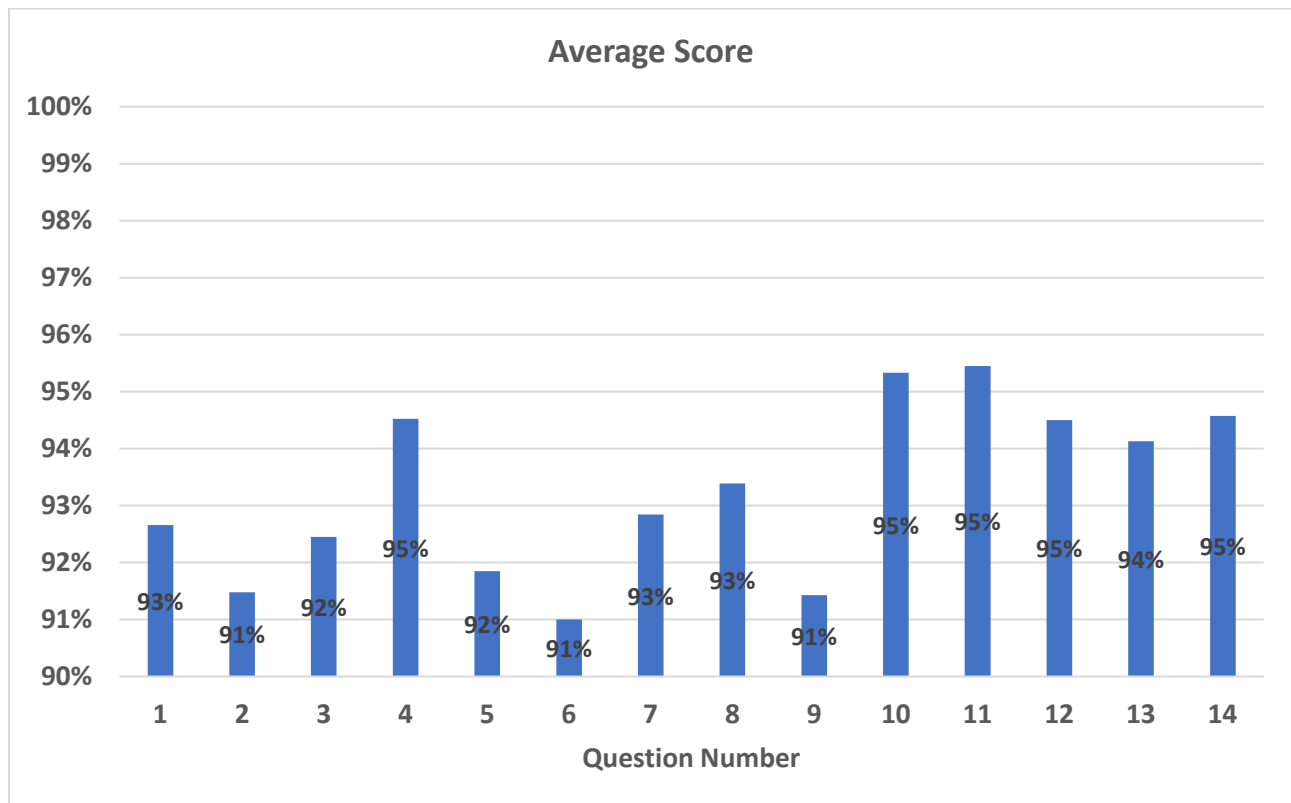
## B. APPE Report

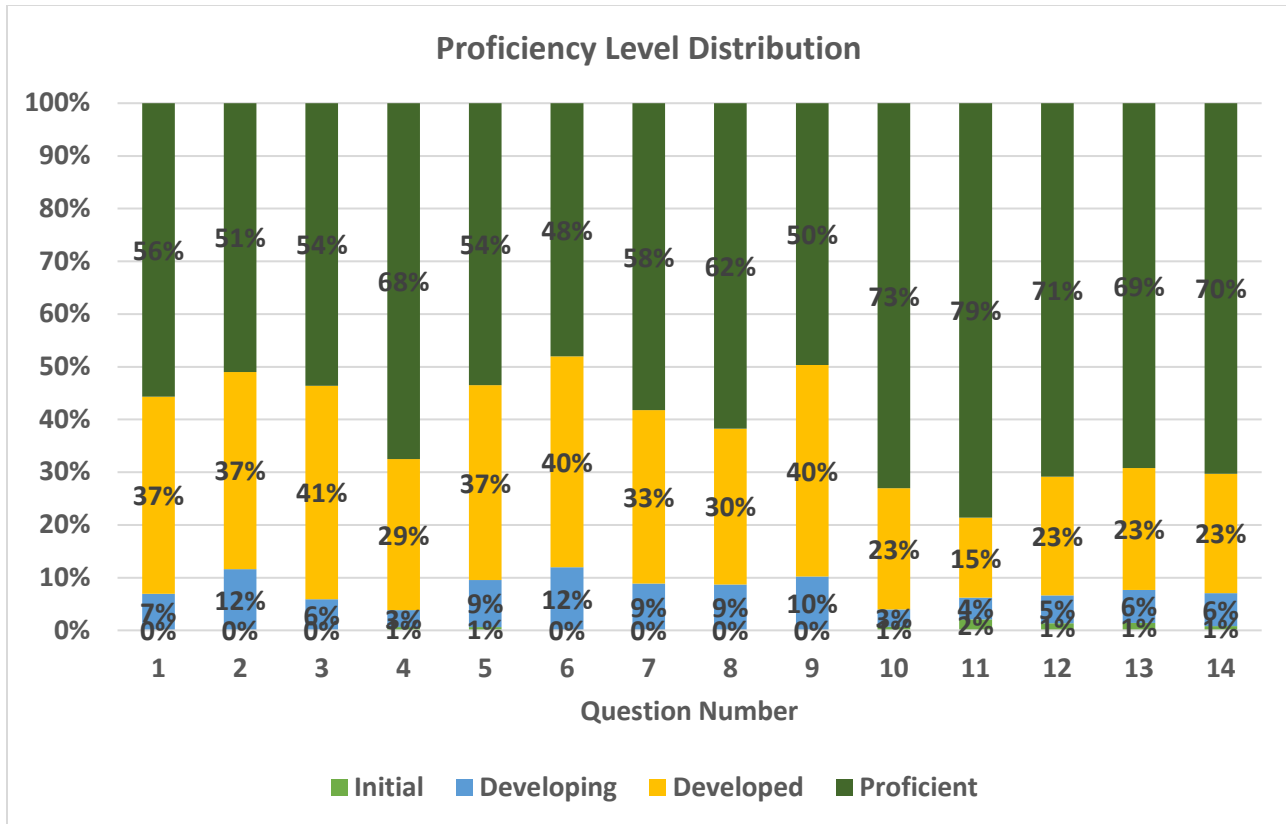
Brief Analysis: In all four rotations students performed well based on all of the criteria preceptors based their evaluations on and the corresponding program learning outcomes based on the said criteria. The only area of slight weakness were questions 2,6, and 9 in the general medicine rotations. Twelve percent of students were deemed developing on question 2 (Demonstrate appropriate depth and breadth of pharmacotherapeutics and disease-related knowledge for common conditions in adult inpatient general medicine patients) . Student is able to apply pharmacotherapeutic knowledge to the disease states commonly encountered in the acute care setting. Twelve percent of students were also deemed developing on Questions 6 (Student is able to efficiently and effectively develop an individualized patient-centered health plan in collaboration with other health care professionals and the patient/caregiver that is evidence-

based and cost-effective.) Ten percent of students were also deemed developing on Questions 9 (Apply evidence-based medicine and information mastery principles in patient care activities. Student recommends patient-specific therapies backed by direct evidence that, on average, lengthens life, decreases symptoms, and/or improves life quality.) These led to 12% of students deemed developing in PLO 5.4 (Teamwork).

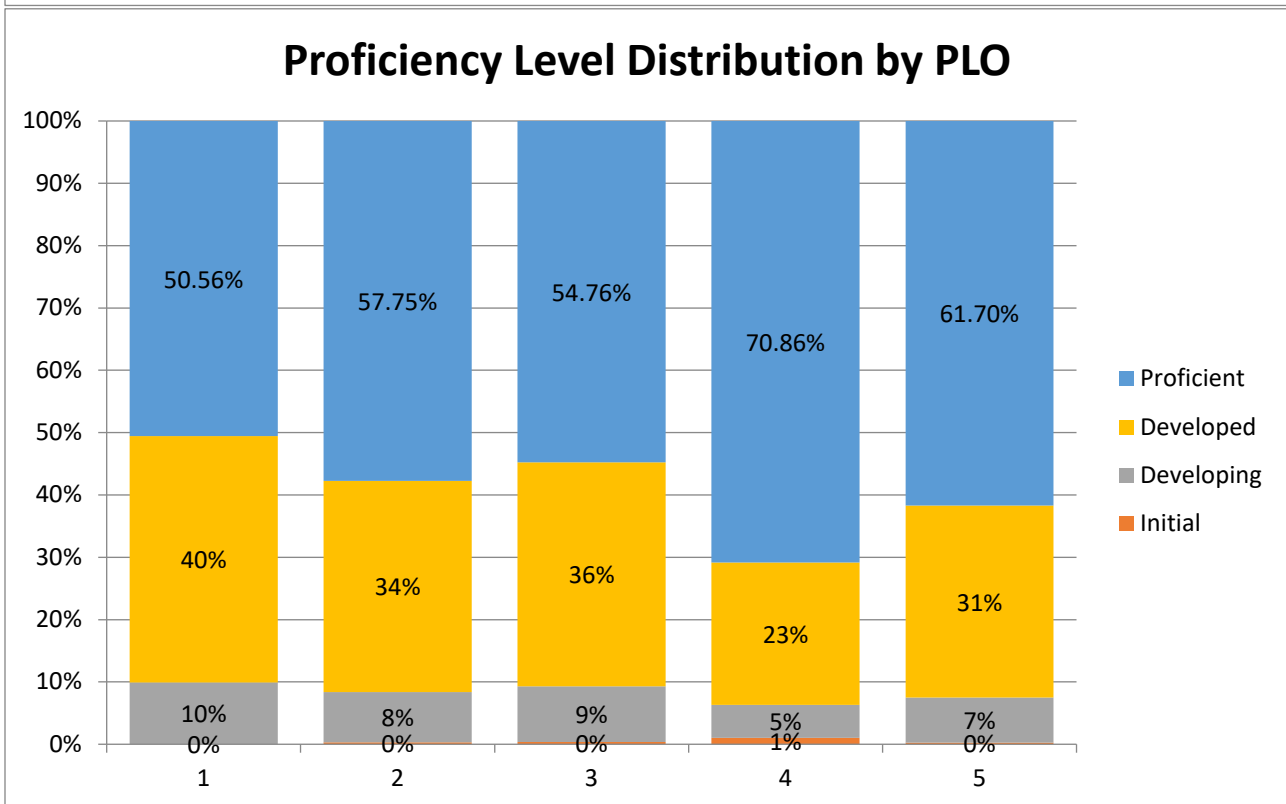
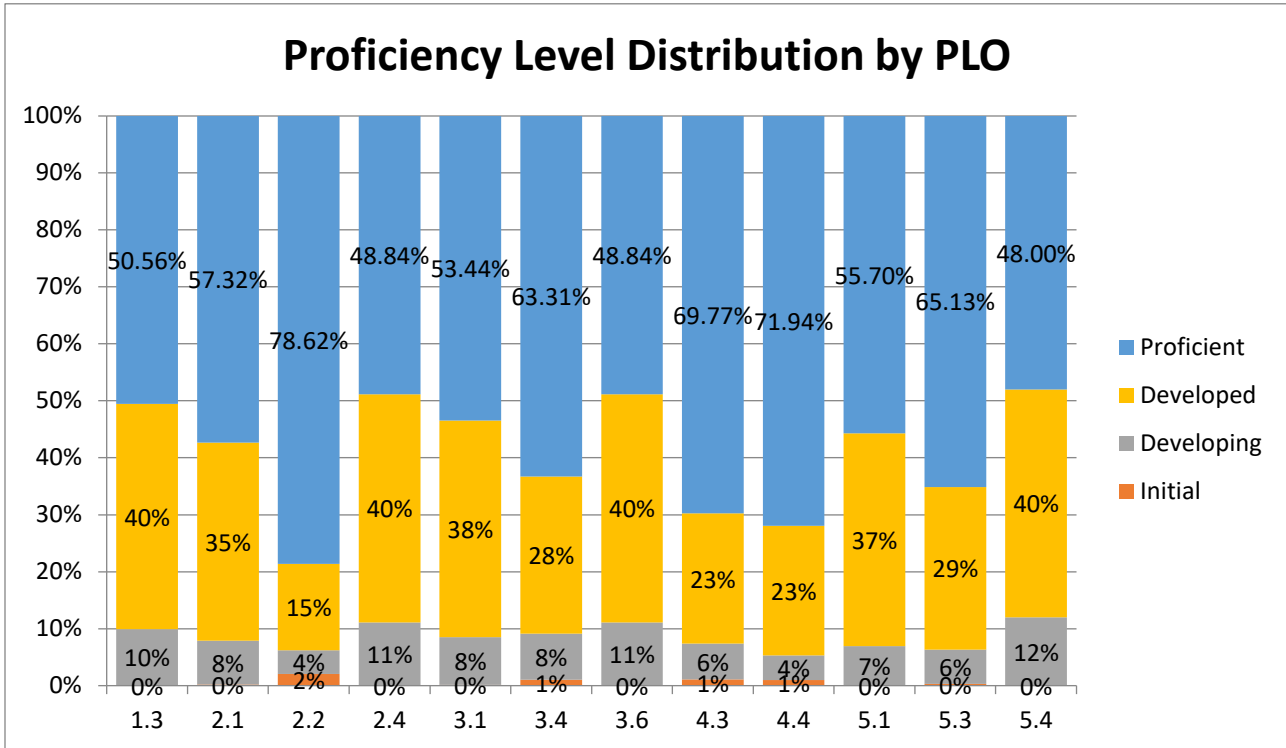
Proficiency Level	Proficiency Values
Proficient	100
Developed	85
Developing	75
Initial	40

## 1. General Medicine





#	Question
1	Student is able to select the proper drug, dose, route and schedule given a patient's medical history, medical condition, culture and personal preferences.
2	Student is able to apply pharmacotherapeutic knowledge to the disease states commonly encountered in the acute care setting.
3	Student able to effectively address adverse drug reactions and drug misadventures when they arise.
4	Student is able to efficiently and effectively collect subjective and objective information including medication history, health data and lifestyle in order to understand the clinical status of the patient.
5	Student is able to efficiently and effectively assess the collected information and analyze the clinical effects of the patient's therapy in contact of the patients' overall health goals.
6	Student is able to efficiently and effectively develop an individualized patient-centered health plan in collaboration with other health care professionals and the patient/caregiver that is evidence-based and cost-effective
7	Student efficiently and effectively implements the care plan in collaboration with other healthcare professionals and patient/caregiver.
8	Student efficiently and effectively monitors and evaluates the effectiveness of the care plan and modifies the plan as necessary in collaboration with other health care professionals and the patient/caregiver.
9	Student recommends patient-specific therapies backed by direct evidence that, on average, lengthens life, decreases symptoms, and/or improves life quality
10	Student uses appropriate grammar and syntax in constructing a clear, concise written record of his/her patient care activities
11	Student follows health system policies, procedures and guidelines for documenting his/her patient care activities, including method of documentation, after receiving authorization and with any required co-signature.
12	Student is timely when submitting project idea, rough draft and completed project.
13	Student's project idea is original and/or the execution is creative.



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- 1.3. Advancement of population health. Develops, integrates, and applies knowledge from the foundational sciences (i.e., biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences) to advance population health and patient-centered care

### **PLO 2: Essentials for Practice and Care. Demonstrates the knowledge, skills, abilities, behaviors, and attitudes necessary to provide patient-centered care, manage medication use systems, promote health and wellness, and describe the influence of population-based care on patient-centered care**

- 2.1. Patient-centered care. Demonstrates ability to provide patient-centered care as the medication expert (collect and interpret evidence, prioritize, formulate assessments and recommendations, implement, monitor and adjust plans, and document activities)
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- 2.3. Health and wellness. Designs prevention, intervention, and educational strategies for individuals and communities to manage chronic disease and improve health and wellness
- 2.4. Population-based care. Demonstrates understanding of how population-based care influences patient-centered care and the development of practice guidelines and evidence-based best practices

### **PLO 3: Approach to Practice and Care. Demonstrates the knowledge, skills, abilities, behaviors, and attitudes necessary to solve problems; educate, advocate, and collaborate, working with a broad range of people; recognize social determinants of health; and effectively communicate verbally and nonverbally**

- 3.1. Problem solving. Identifies problems; explore and prioritize potential strategies; and designs, implements, and evaluates viable solutions
- 3.2. Education. Demonstrates ability to educate all audiences through effectively communicating information and assessing learning
- 3.3. Patient advocacy. Represents the patient's best interests
- 3.4. Collaboration. Engages collaboratively as a healthcare team member by demonstrating mutual respect, understanding, and values to meet patient care needs
- 3.5. Cultural sensitivity. Identifies social determinants of health and acts to diminish disparities and inequities in access to quality care
- 3.6. Communication. Effectively communicates verbally and nonverbally when interacting with individuals, groups, and organizations

### **PLO 4: Personal and Professional Development. Uses the knowledge, skills, abilities, behaviors, and attitudes necessary to demonstrate self-awareness, leadership, innovation, entrepreneurship, and professionalism**

- 4.1. Self-awareness. Examines and reflects on personal knowledge, skills, abilities, beliefs, biases, motivation, and emotions that could enhance or limit personal and professional growth
- 4.2. Leadership. Demonstrates responsibility for creating and achieving shared goals, regardless of position
- 4.3. Innovation and entrepreneurship. Engages in innovative activities by using creative thinking to envision better ways of accomplishing professional goals
- 4.4. Professionalism. Demonstrates behaviors and values that are consistent with the trust given to the profession by patients, other healthcare providers, and society

**PLO 5: Interprofessional Competence. Uses the knowledge, skills, abilities, behaviors, and attitudes necessary to demonstrate appropriate values and ethics, roles and responsibilities, communication, and teamwork for collaborative practice**

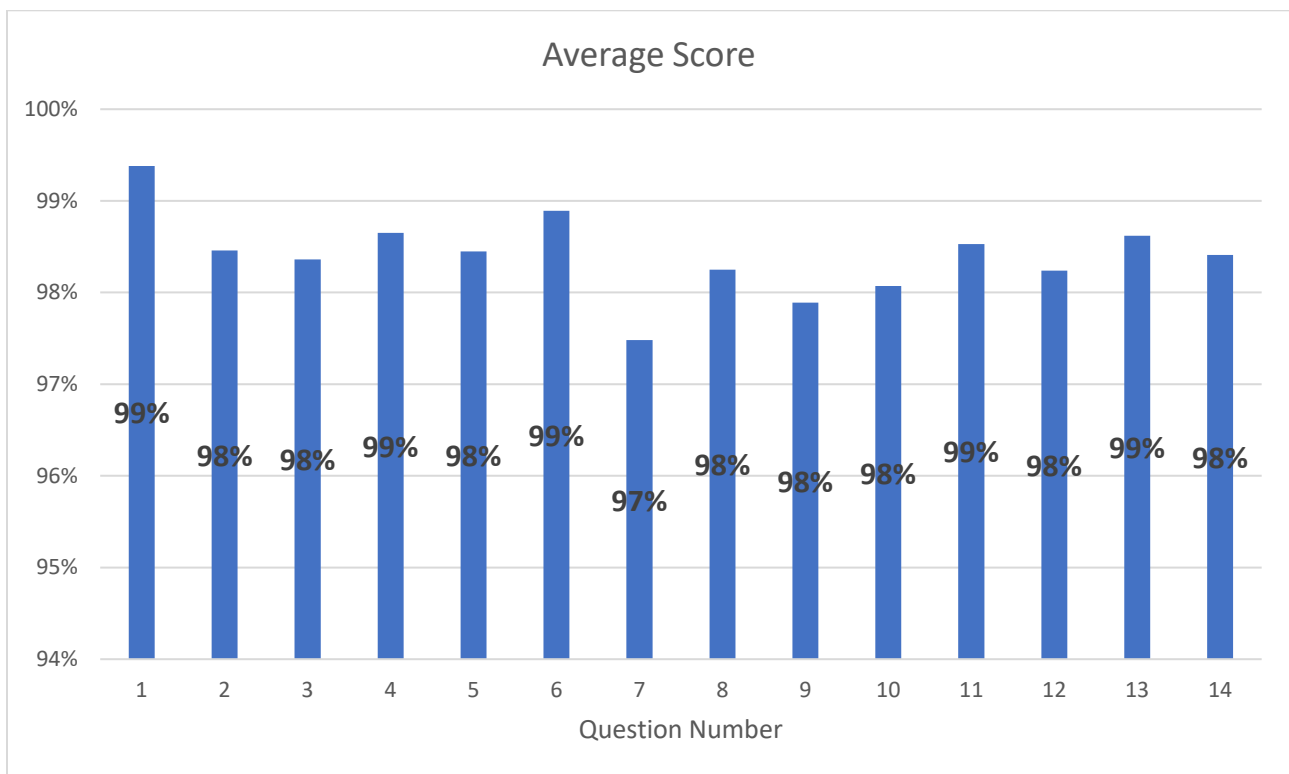
5.1. Values and ethics. Demonstrates ability to work with individuals of other professions to cultivate a climate of mutual respect and shared values

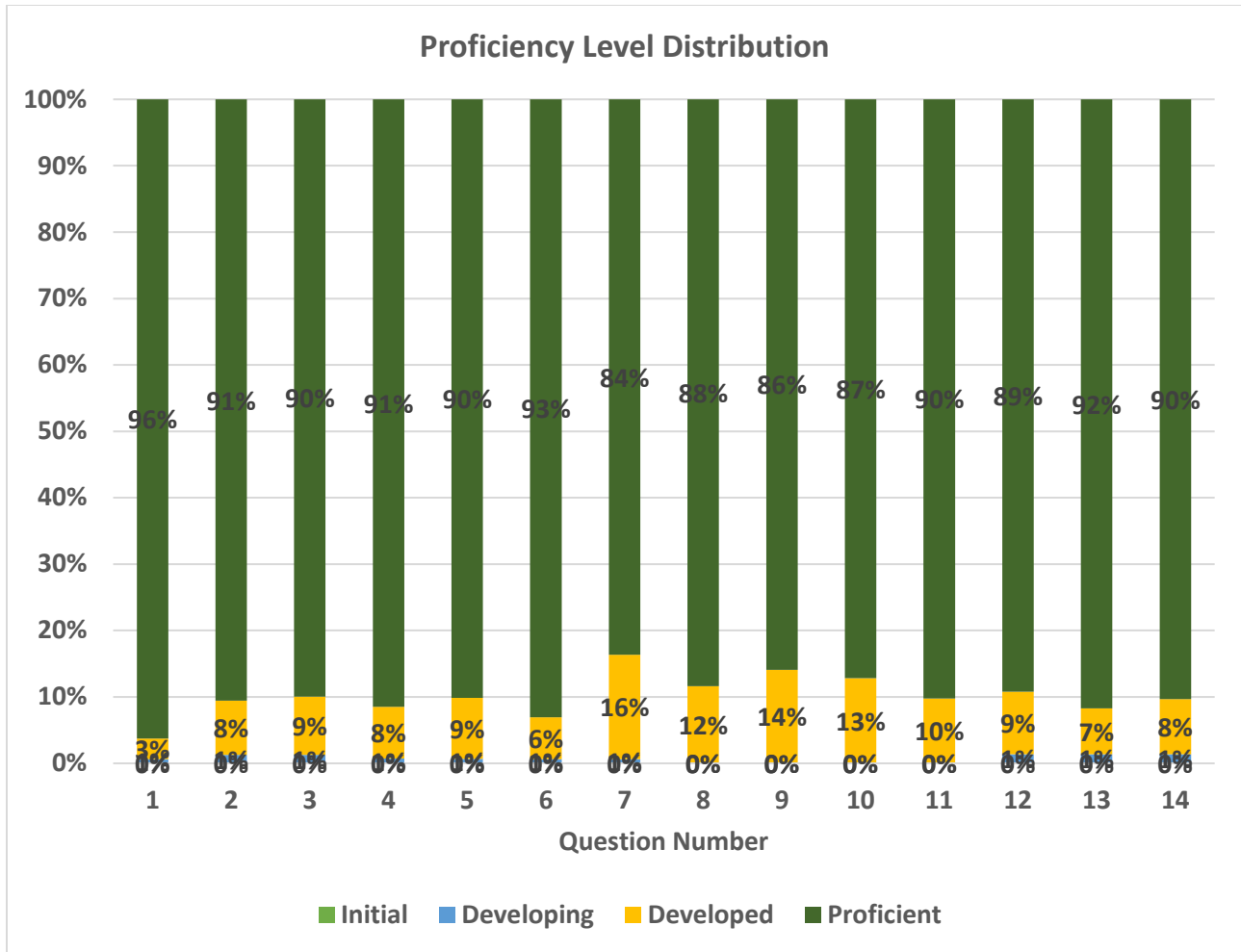
5.2. Roles and responsibilities. Uses the knowledge of one’s own role and those of other professions to assess and address the healthcare needs of the patients and populations served

5.3. Interprofessional communication. Demonstrates ability to communicate with patients, families, communities, and other health professionals

5.4. Teamwork. Apply relationship-building values and the principles of team dynamics to perform effectively in various team roles

## 2. Community Rotation

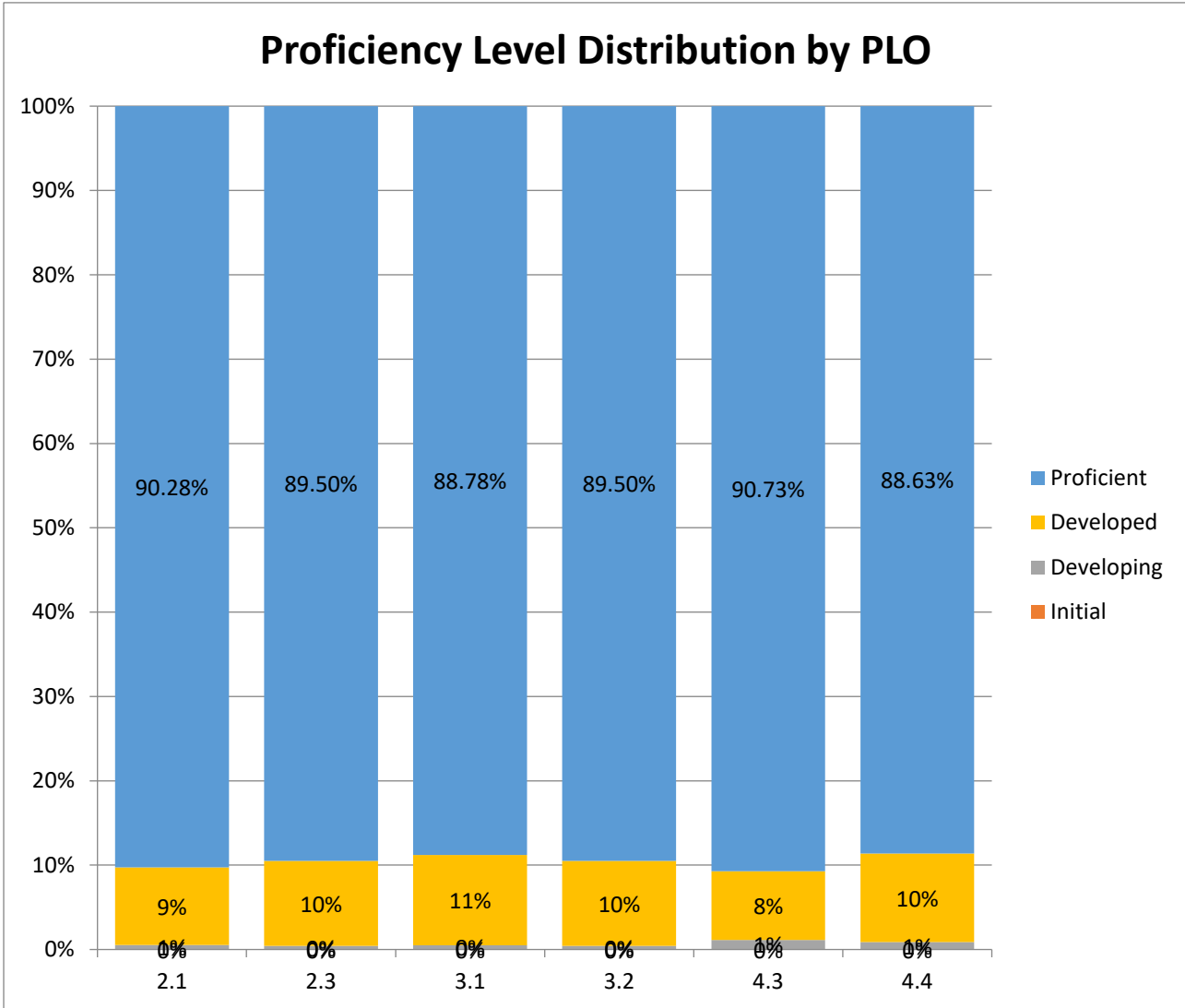


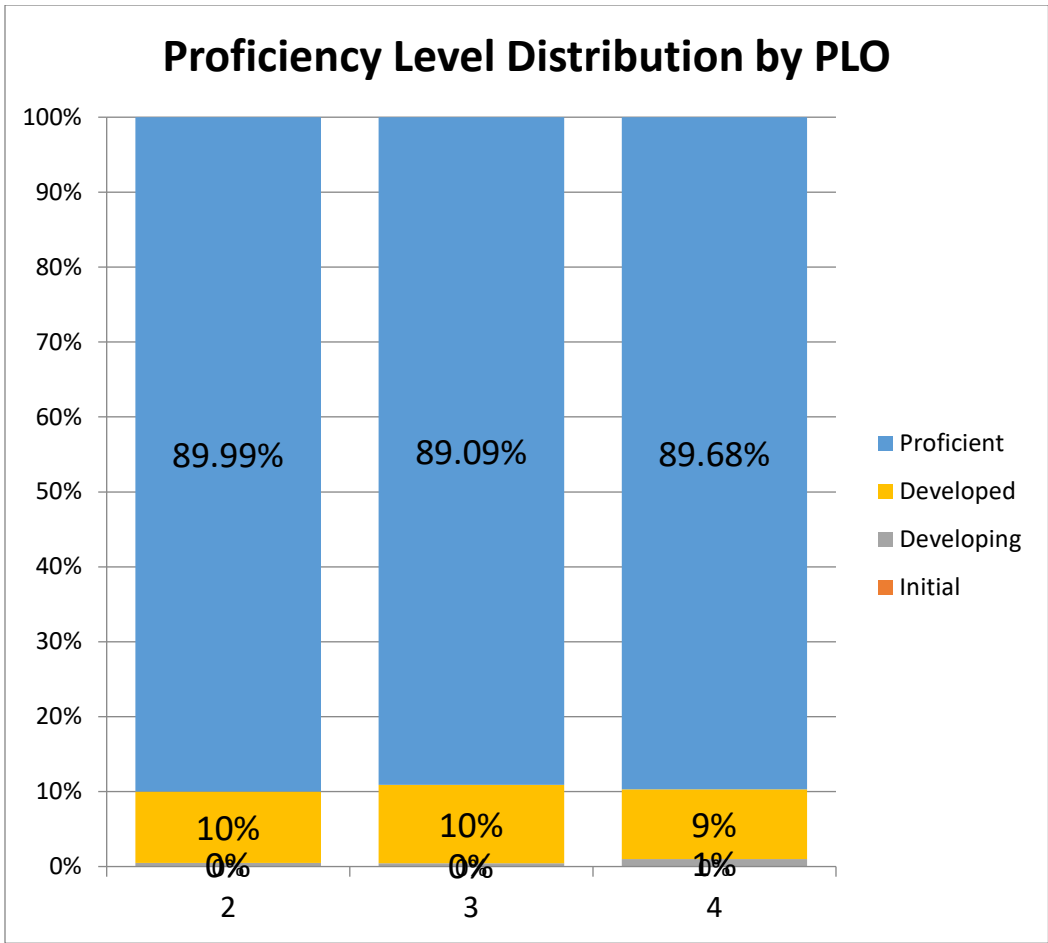


#	Question
1	Student verifies the presence and validity of the following: patient name and date of birth; drug name, strength and quantity; directions for use match the written prescription and are reasonable.
2	Student screens the patient profile to validate the appropriateness of the prescription, including the presence of drug-drug and drug-disease interactions, intolerances, duplications, dose changes and/or controlled substance state databank monitoring.
3	Student proactively assists with patient self-care, including helping patients make appropriate selections of OTC medications and dietary supplements.
4	Student collects, interprets and makes recommendations based on the results of health and wellness screenings and diagnostic tests.
5	Oversee and effectively manage the drug procurement process.
6	Describe the roles and responsibilities of each pharmacy staff member.
7	Lead the operations of a community pharmacy practice site.
8	Student conducts a patient interview and provides education.
9	Student conducts a comprehensive medication review.
10	Student identifies and resolves medication therapy problems, manages drug interactions, and resolves gaps in care.
11	Student facilitates patient self-administration of medications and disease monitoring.
12	Student is timely when submitting project idea, rough draft and completed project.



- 13 Student's project idea is original and/or the execution is creative.
- 14 Student's completed project will lead to improvement in healthcare cost, quality and/or patient satisfaction.





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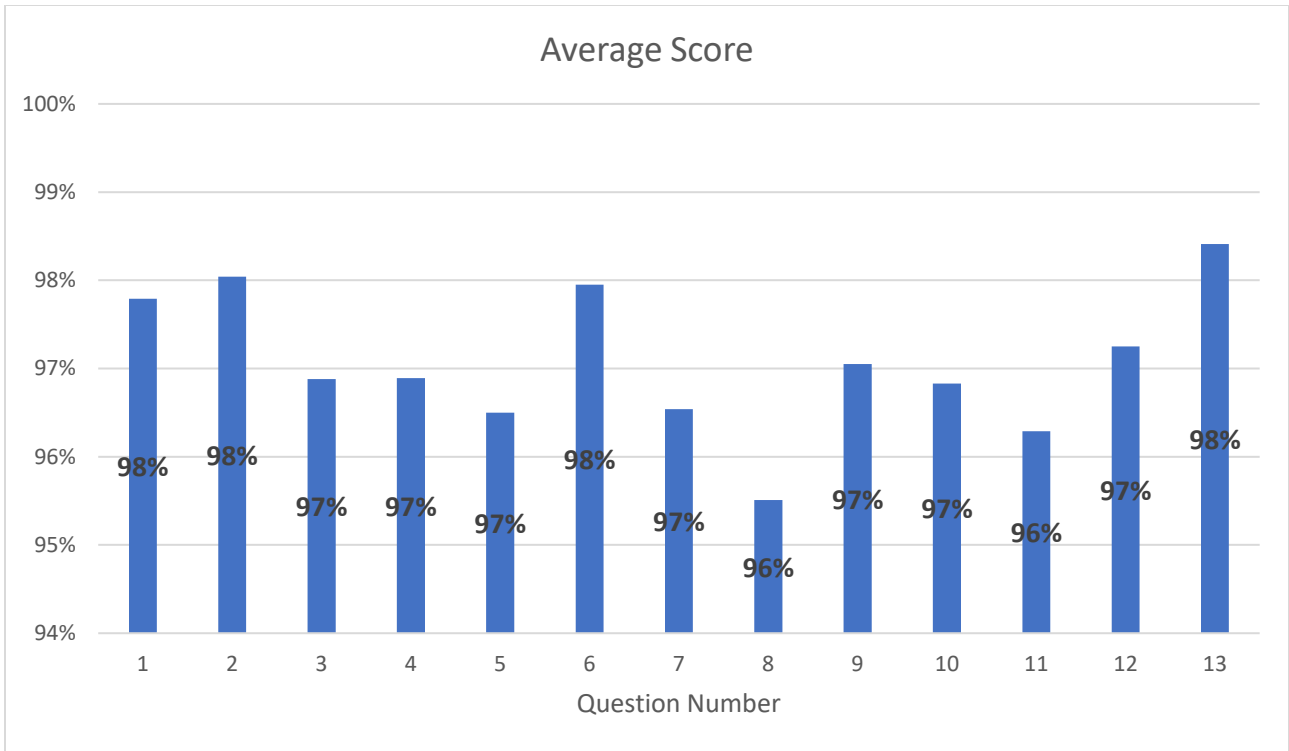
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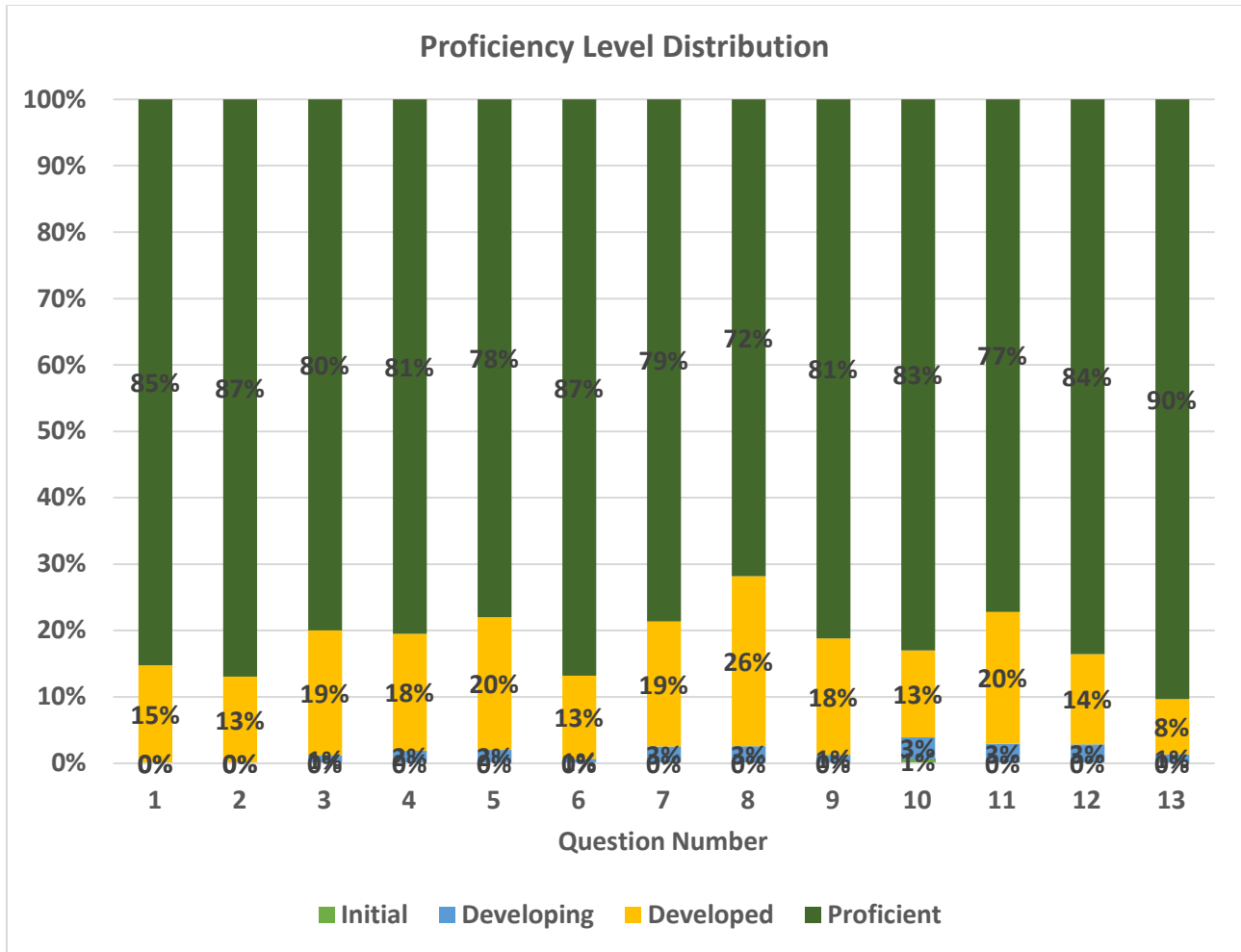
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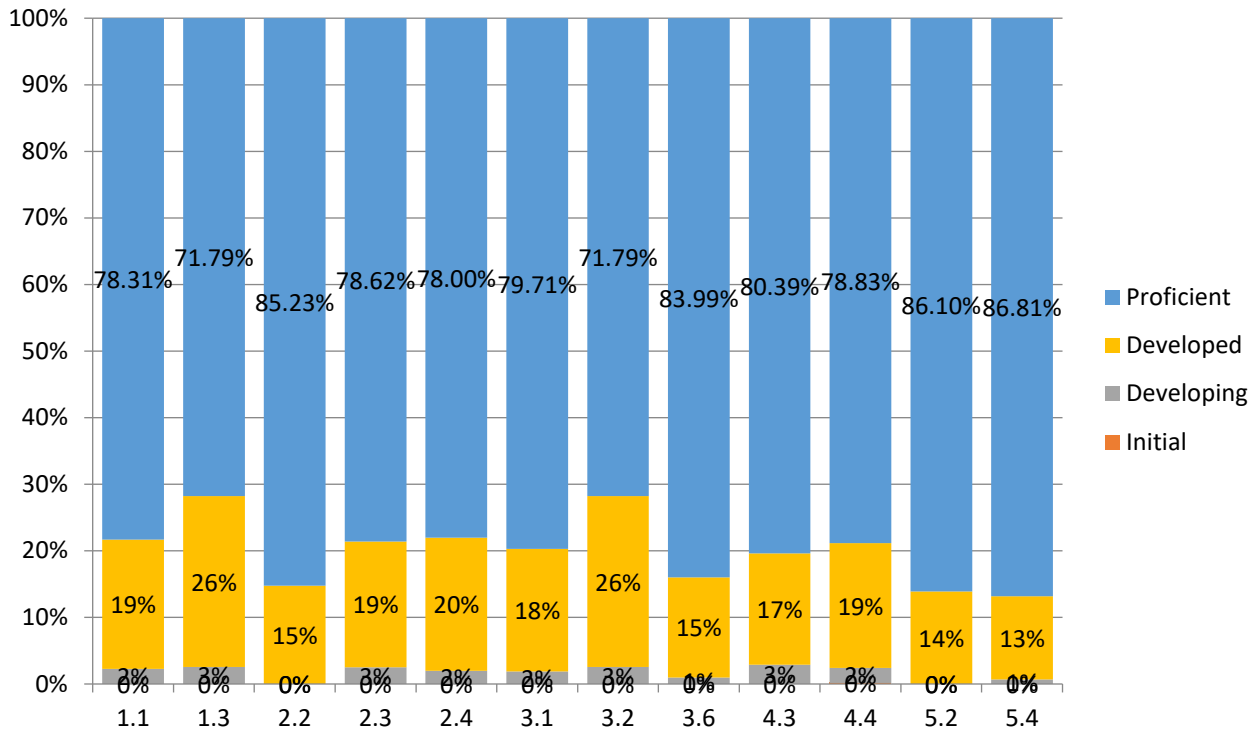
### 3. Hospital Rotation



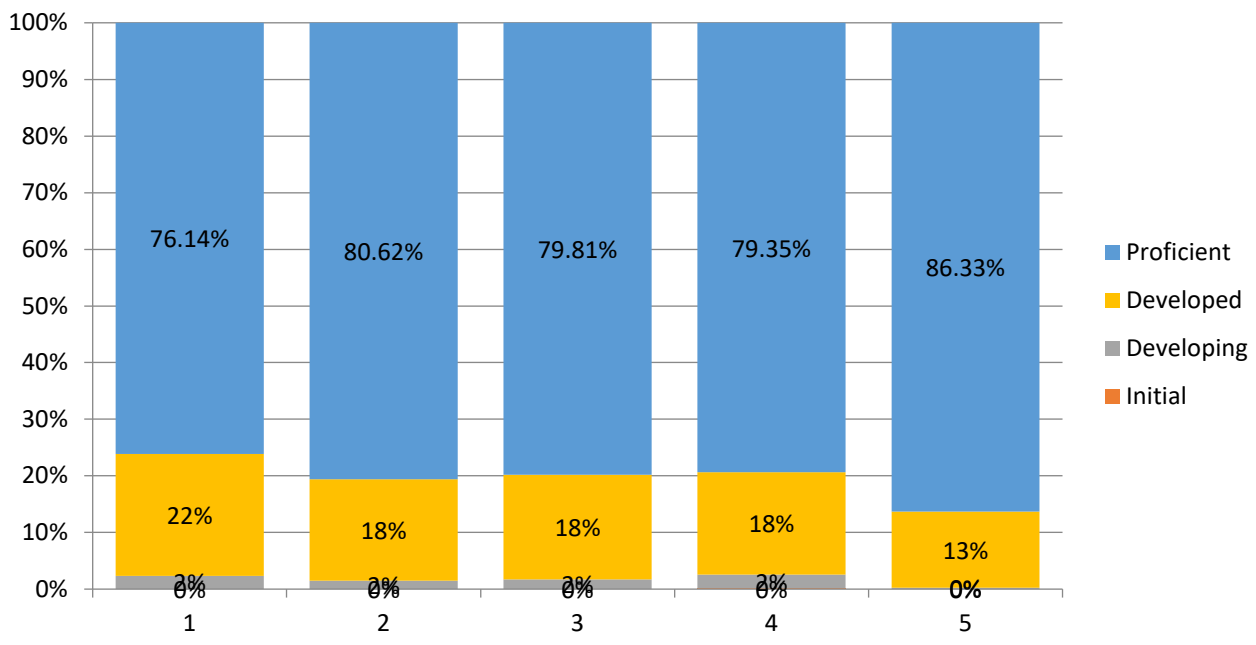


#	Question
1	Student is able to effectively evaluate a received drug order and enter it into the electronic health record (EHR), or review one entered by a pharmacy technician, for safety, accuracy and appropriateness for the patient.
2	Student is able to correctly articulate the roles of pharmacists and technicians in the health system dispensing process, and demonstrate the pharmacist's role.
3	Student is able to recognize competing patient care responsibilities and rank order them in terms of priority.
4	Student is able to respond effectively and promptly to competing priorities in times of high activity and workload.
5	Student is able to summarize the purpose and value of current National Patient Safety Goals (NPSG's).
6	Student is able to articulate specific institutional initiatives and the pharmacist's (and other healthcare providers') role for NPSG's that relate to medication use and pharmaceutical care provision.
7	Student is able to accurately assess the level of resource(s) needed (e.g., primary literature, review articles, textbooks) to respond to a drug information (DI) question.
8	Student is able to respond accurately and credibly to a DI question.
9	Student is able to ascertain when a verbal, written or both verbal and written response is appropriate for a given DI question.
10	Student is timely when submitting project idea, rough draft and completed project.
11	Student's project idea is original and/or the execution is creative.
12	Student's completed project will lead to improvement in healthcare cost, quality and/or patient satisfaction.

### Proficiency Level Distribution by PLO



### Proficiency Level Distribution by PLO



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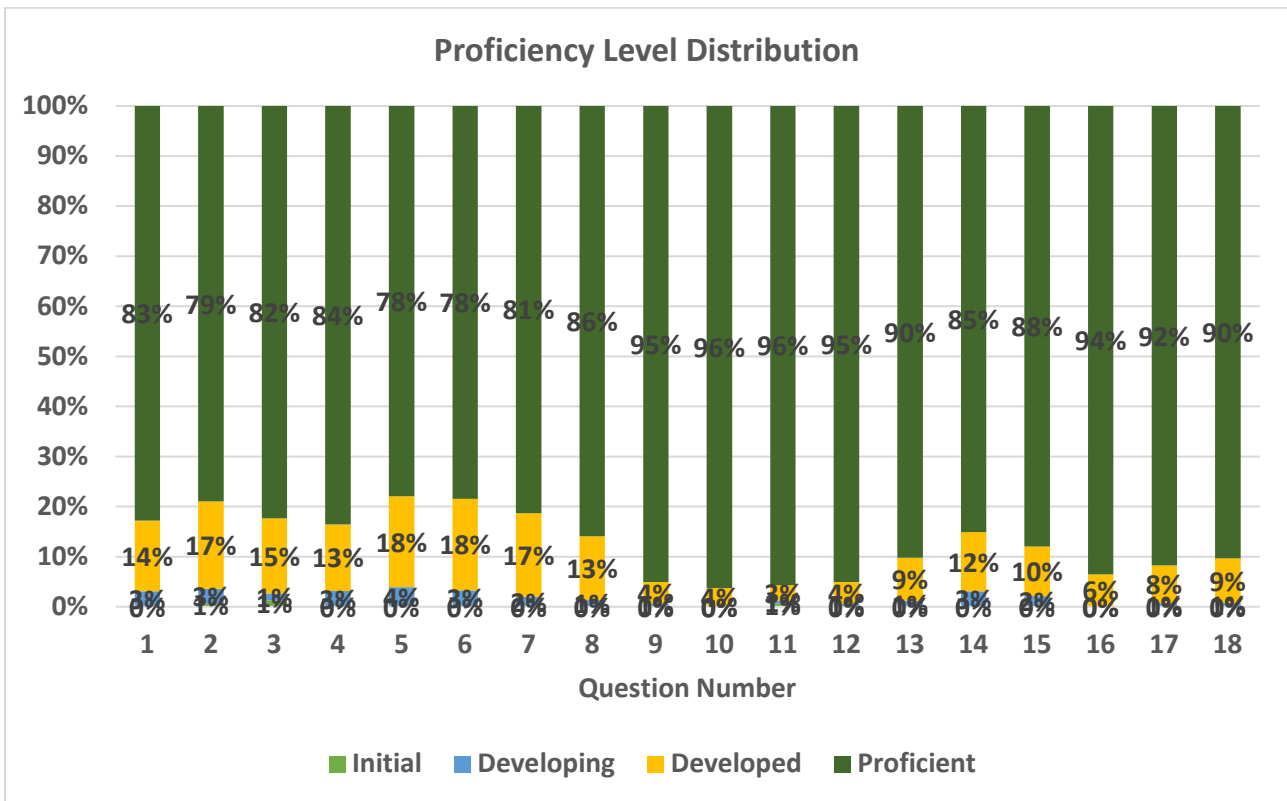
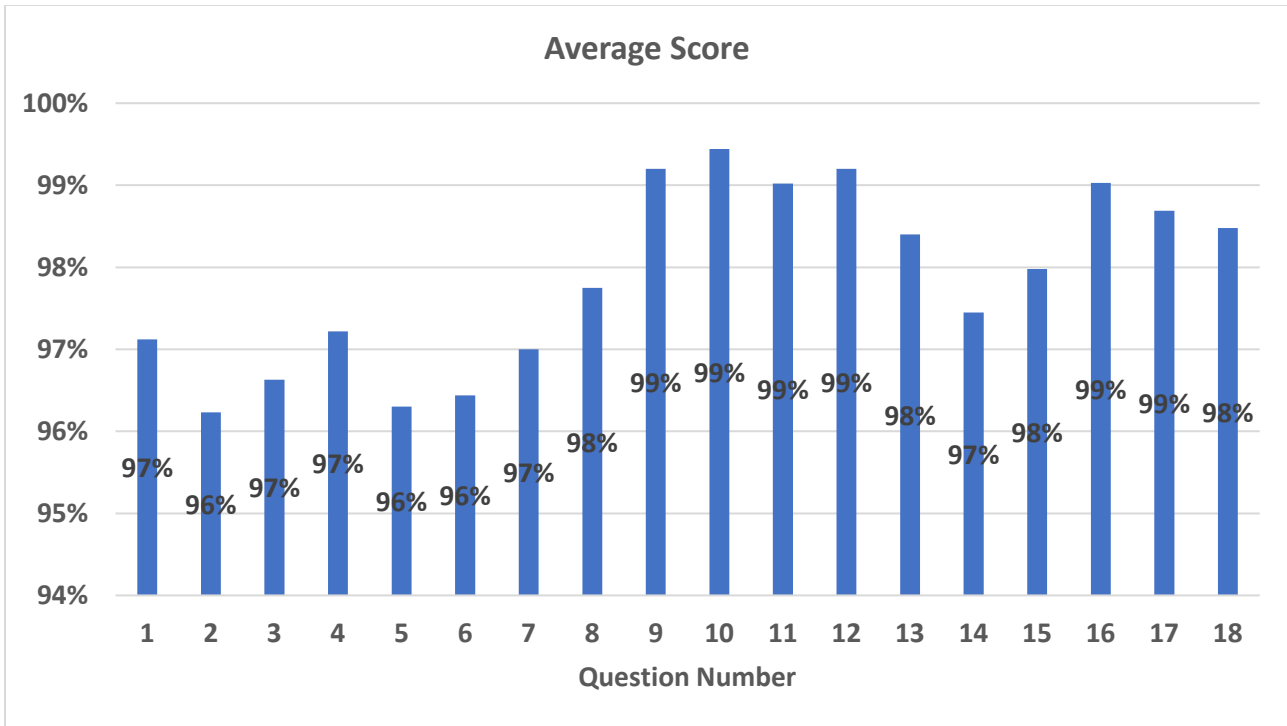
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## 4. Ambulatory Care Rotation

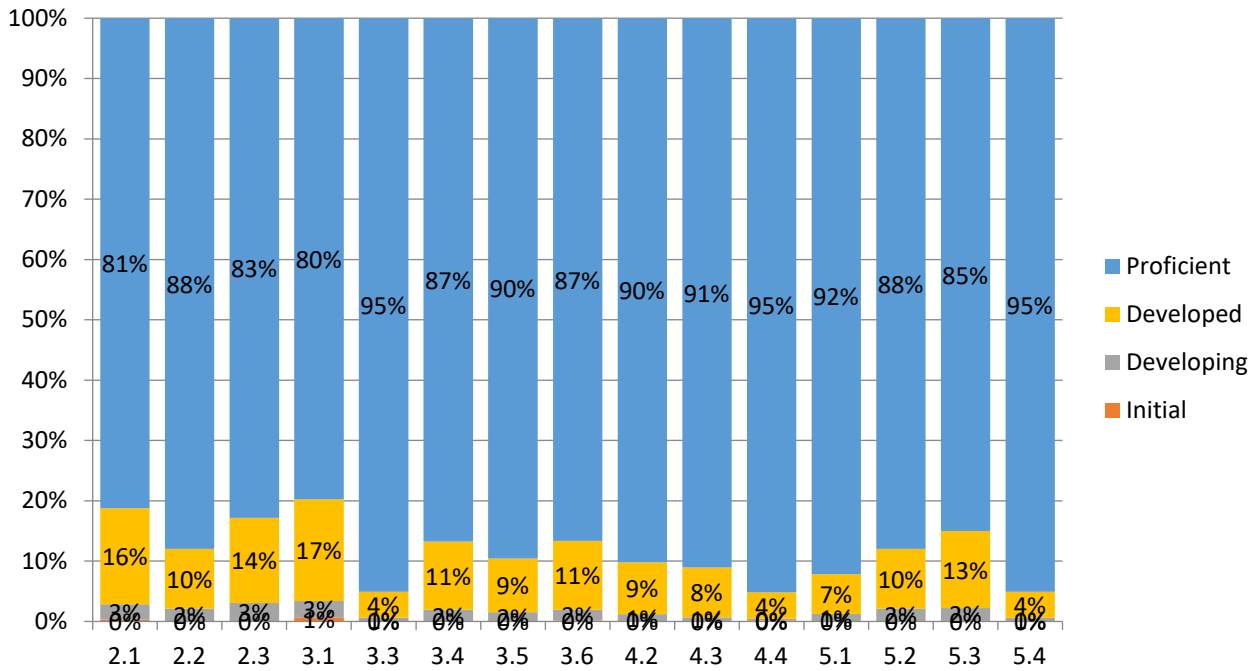


#	Question
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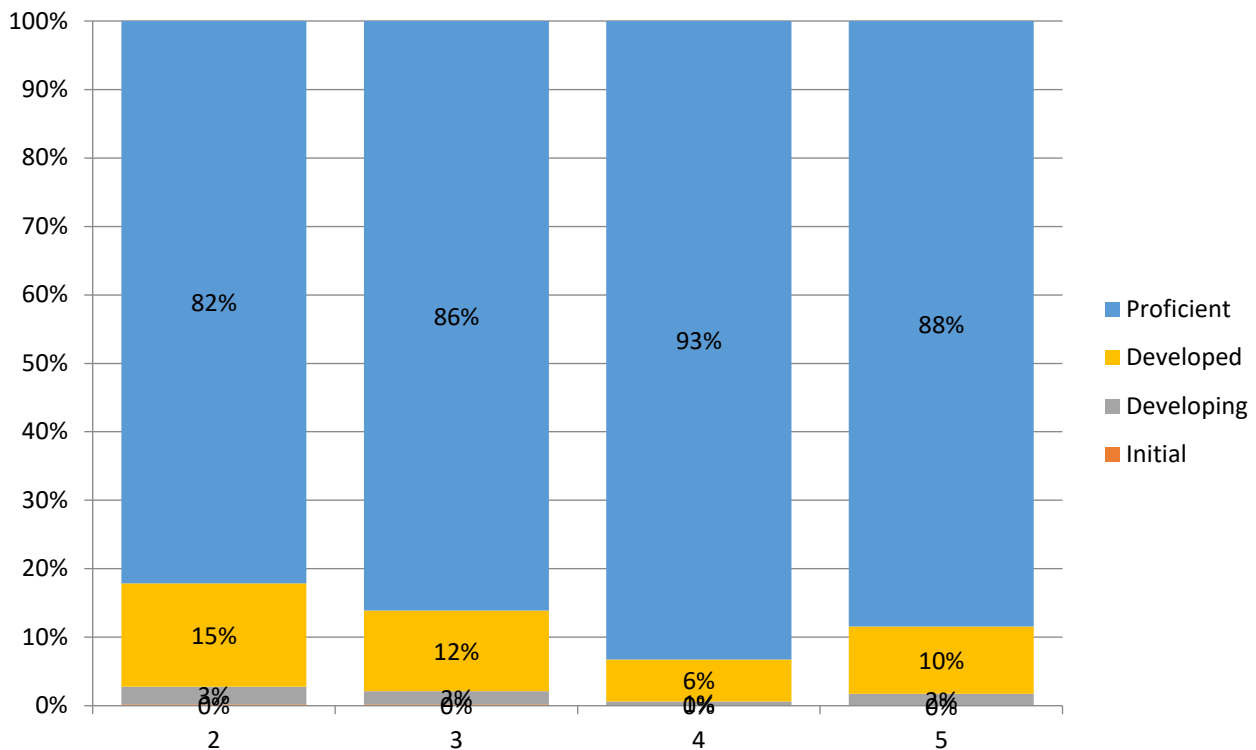


1	Student is able to select the proper drug, dose, route and schedule given a patient's medical history, medical condition, culture and personal preferences
2	Student is able to apply pharmacotherapeutic knowledge to the disease states commonly encountered in the acute care setting
3	Student able to effectively address adverse drug reactions and drug misadventures when they arise.
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7	Student efficiently and effectively implements the care plan in collaboration with other healthcare professionals and patient/caregiver.
8	Student efficiently and effectively monitors and evaluates the effectiveness of the care plan and modifies the plan as necessary in collaboration with other health care professionals and the patient/caregiver.
9	Student displays the following characteristics when interacting with peers, patients and caregivers: active listening, honesty, patience, responsibility, sensitivity, and respect. (Caring)
10	Students' behavior is respectful of others' gender, age, religion, education level, degree of cultural assimilation and socioeconomic status. (Culturally sensitive)
11	Students' behavior when interacting with others is service-oriented, self-aware, fair, honest, trustworthy, and team-oriented. (Professional)
12	Student practice puts the patient's interest first; he/ she strives to promote, advocate for, and strives to protect the health, safety, and rights of the patient. (Ethical)
13	Student demonstrates drive and commitment in his/her work ethic that inspires and motivates others.
14	Student demonstrates interest in staying abreast of emerging business, practice and/or clinical trends.
15	Student accurately assesses the personnel (level of training and number) needed to effectively execute the clinic's service model
16	Student is timely when submitting project idea, rough draft and completed project.
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- 4.1. Self-awareness. Examines and reflects on personal knowledge, skills, abilities, beliefs, biases, motivation, and emotions that could enhance or limit personal and professional growth
- 4.2. Leadership. Demonstrates responsibility for creating and achieving shared goals, regardless of position
- 4.3. Innovation and entrepreneurship. Engages in innovative activities by using creative thinking to envision better ways of accomplishing professional goals
- 4.4. Professionalism. Demonstrates behaviors and values that are consistent with the trust given to the profession by patients, other healthcare providers, and society

**PLO 5: Interprofessional Competence. Uses the knowledge, skills, abilities, behaviors, and attitudes necessary to demonstrate appropriate values and ethics, roles and responsibilities, communication, and teamwork for collaborative practice**

5.1. Values and ethics. Demonstrates ability to work with individuals of other professions to cultivate a climate of mutual respect and shared values

5.2. Roles and responsibilities. Uses the knowledge of one's own role and those of other professions to assess and address the healthcare needs of the patients and populations served

5.3. Interprofessional communication. Demonstrates ability to communicate with patients, families, communities, and other health professionals

5.4. Teamwork. Apply relationship-building values and the principles of team dynamics to perform effectively in various team roles

### III. High stakes exams

#### A. 2022 Qualifying Exam Series

Overview:

Over the last year several exams were developed to help students from the class of 2022 prepare for board examinations by providing experience in taking an examination a setting with questions types analogous to a real board examination and by helping to identify strengths and weakness in student knowledge based on the NAPLEX content areas as well as therapeutic areas thereby optimizing subsequent examination preparation. The first qualifying exam was administered on February 18<sup>th</sup>, 2022 at a point where students have completed most of their APPE rotations, but were unlikely to heavily begin preparing for the board examination. Second examination was administered on April 8<sup>th</sup>, 2022, with nearly all students completing their APPE rotations but prior to PassNAPLEXNow review session. Ten students choose not to take the second examination since they scored above the minimum 70% threshold in the first examination. The final Qualifying Exam was administered on May 13<sup>th</sup> (in person) and May 18<sup>th</sup> (virtually) 2022 after the PassNAPLEXNow review session, with 36 students choosing not to take the exam as a result of scoring above 70% in one of the first two Qualifying exams. Students failing to score above 70% in one of the three Qualifying Exams were required to develop a study plan helping to ensure a successful completion of board examinations.

Brief analysis of Exams:

- The qualifying exams closely resembled the NAPLEX Blueprint based on the content area breakdown
- Although the question bank was robust, and has improved significantly over the last year some blueprint categories nevertheless lacked in the number of questions
- Student performance improved between the 1<sup>st</sup> and 2<sup>nd</sup> exam. Tragic events occurring before the third examination likely led to low motivation for preparation likely leading to worsening performance.

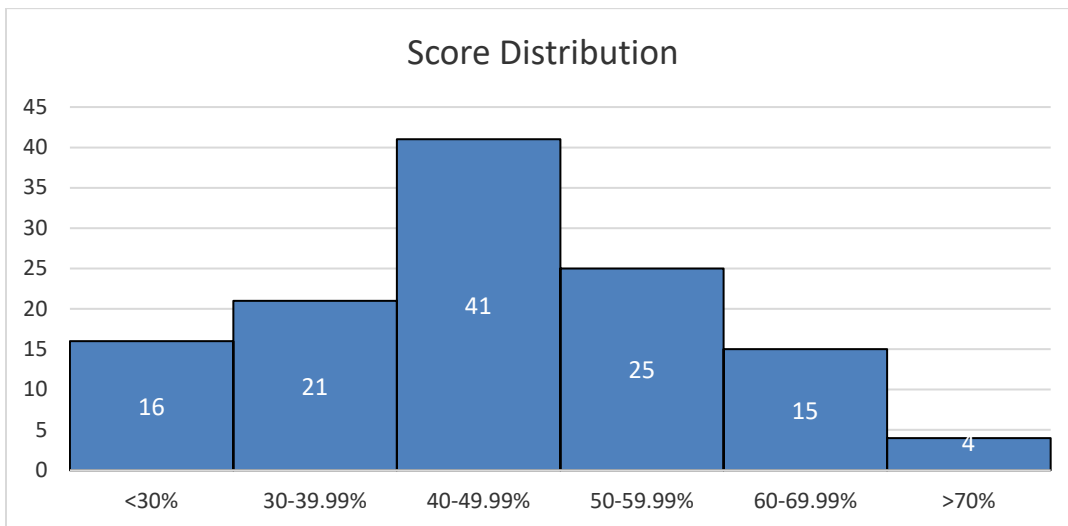
## Exam Results

### Qualifying Exam III Results

# of students taking the exam: 73

Mean  $\pm$  s.d.: 45.6% $\pm$ 12.9%

Median (IQR): 45.8% (35.8-55.0%)

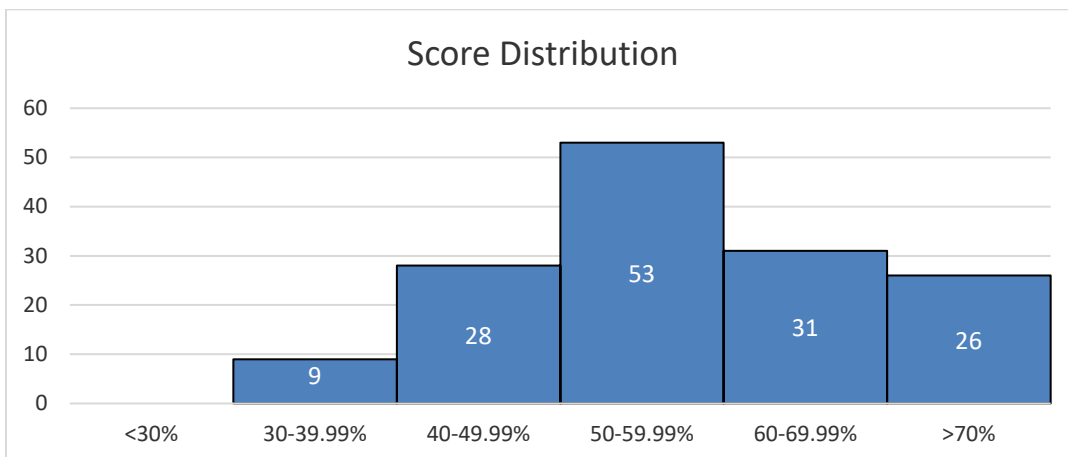


### Qualifying Exam II Results

# of students taking the exam: 148

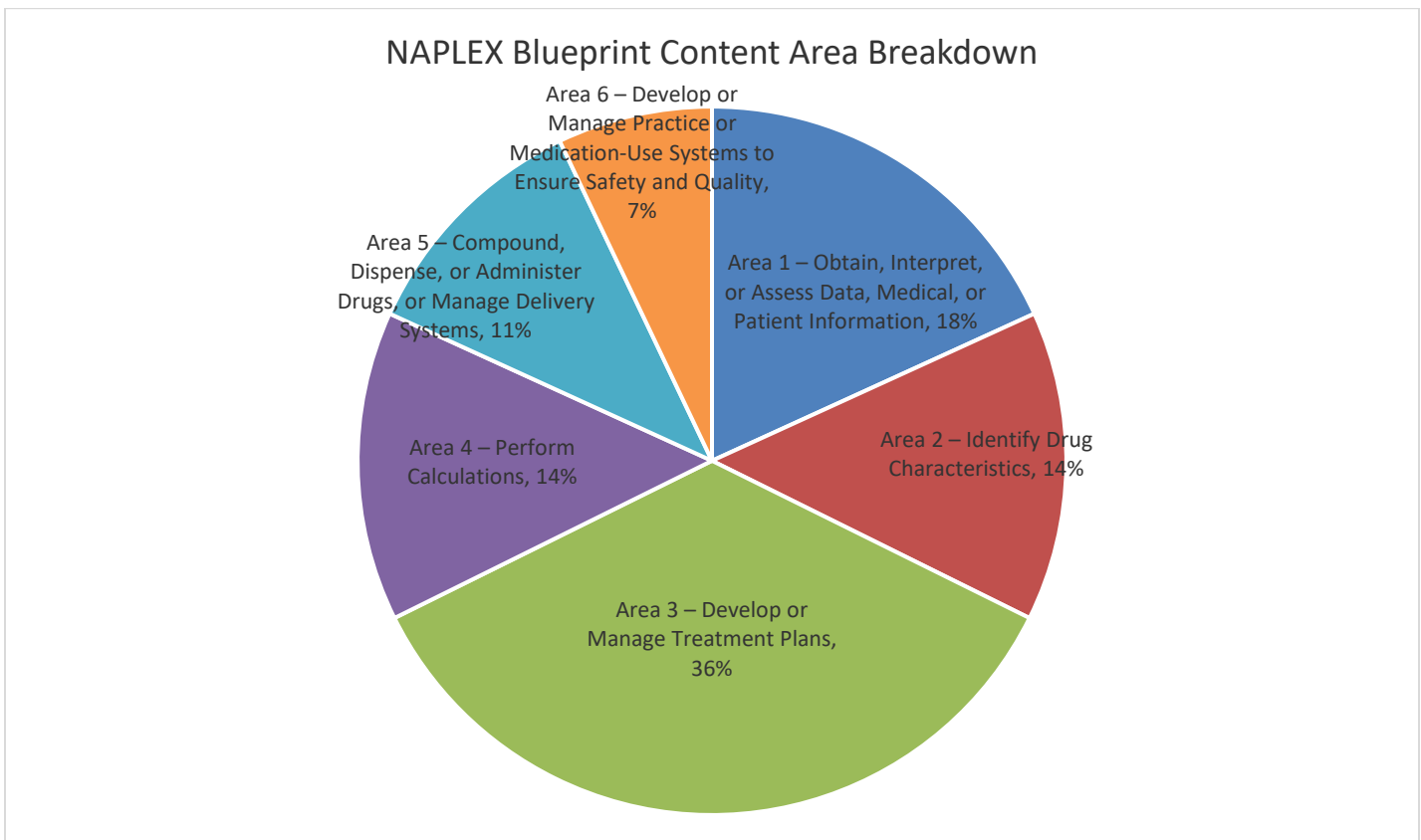
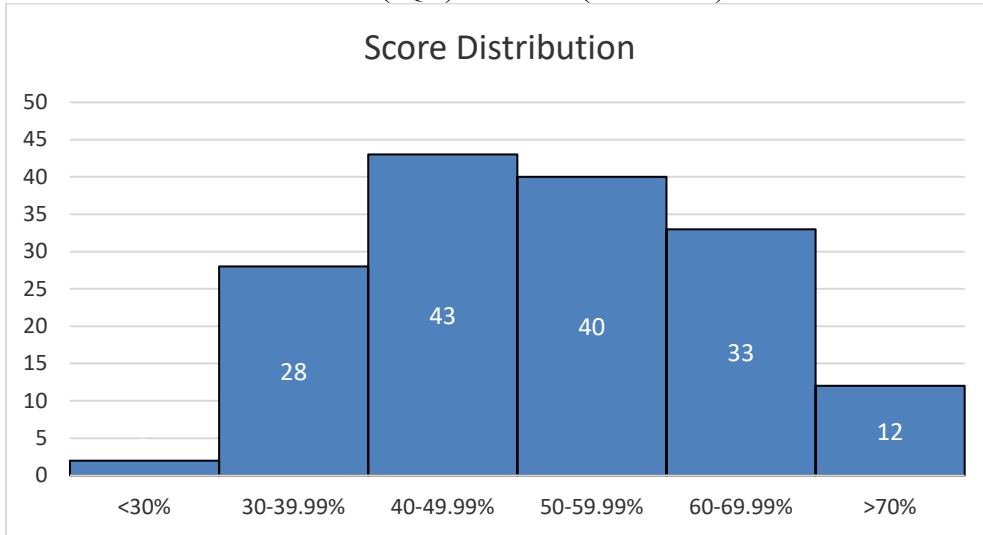
Mean  $\pm$  s.d.: 58.0% $\pm$ 11.7%

Median (IQR): 57.6% (50.0-67.2%)

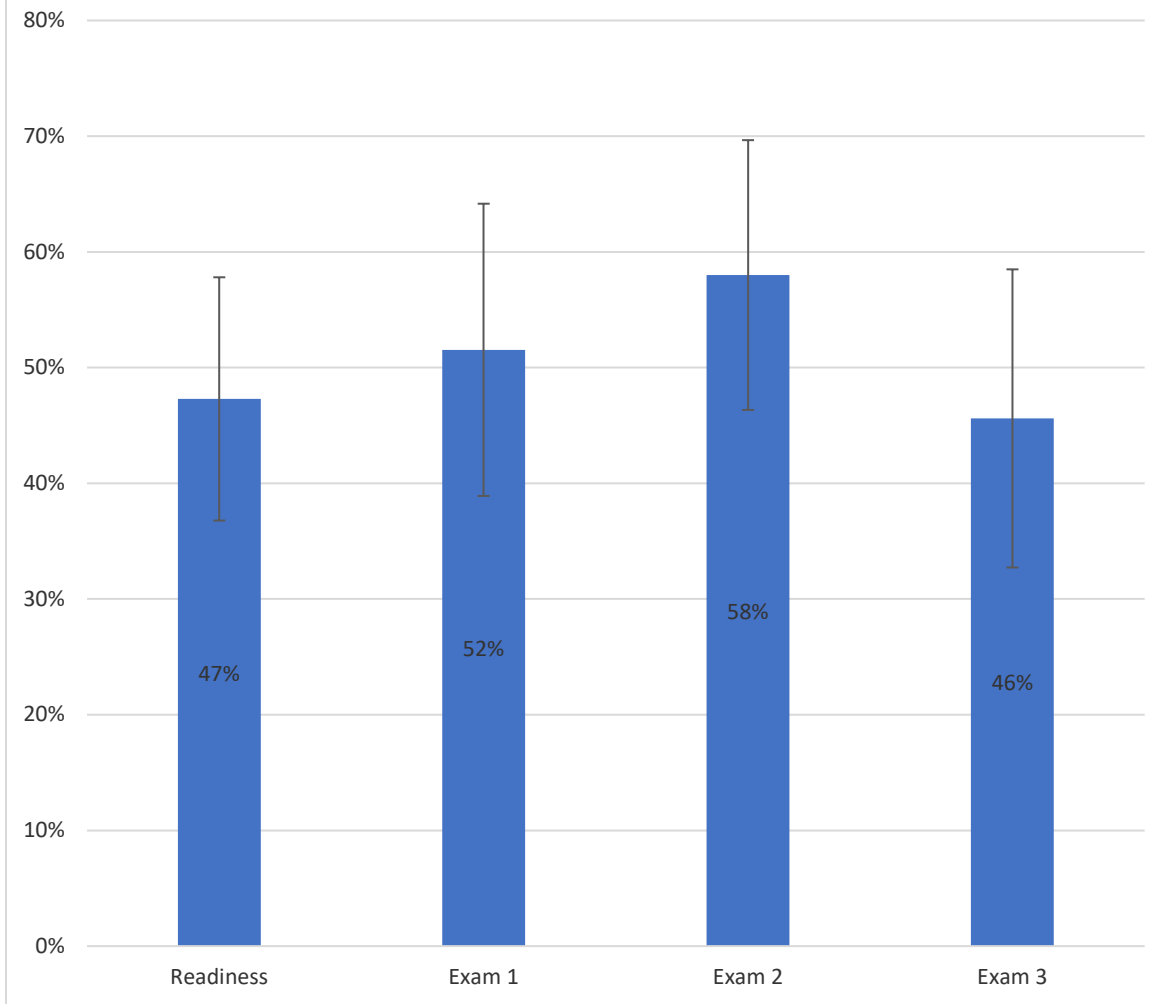


### Qualifying Exam I Results

# of students taking the exam: 158  
 Mean  $\pm$  s.d.: 51.5% $\pm$ 12.6%  
 Median (IQR): 50.08% (42.5-60%)

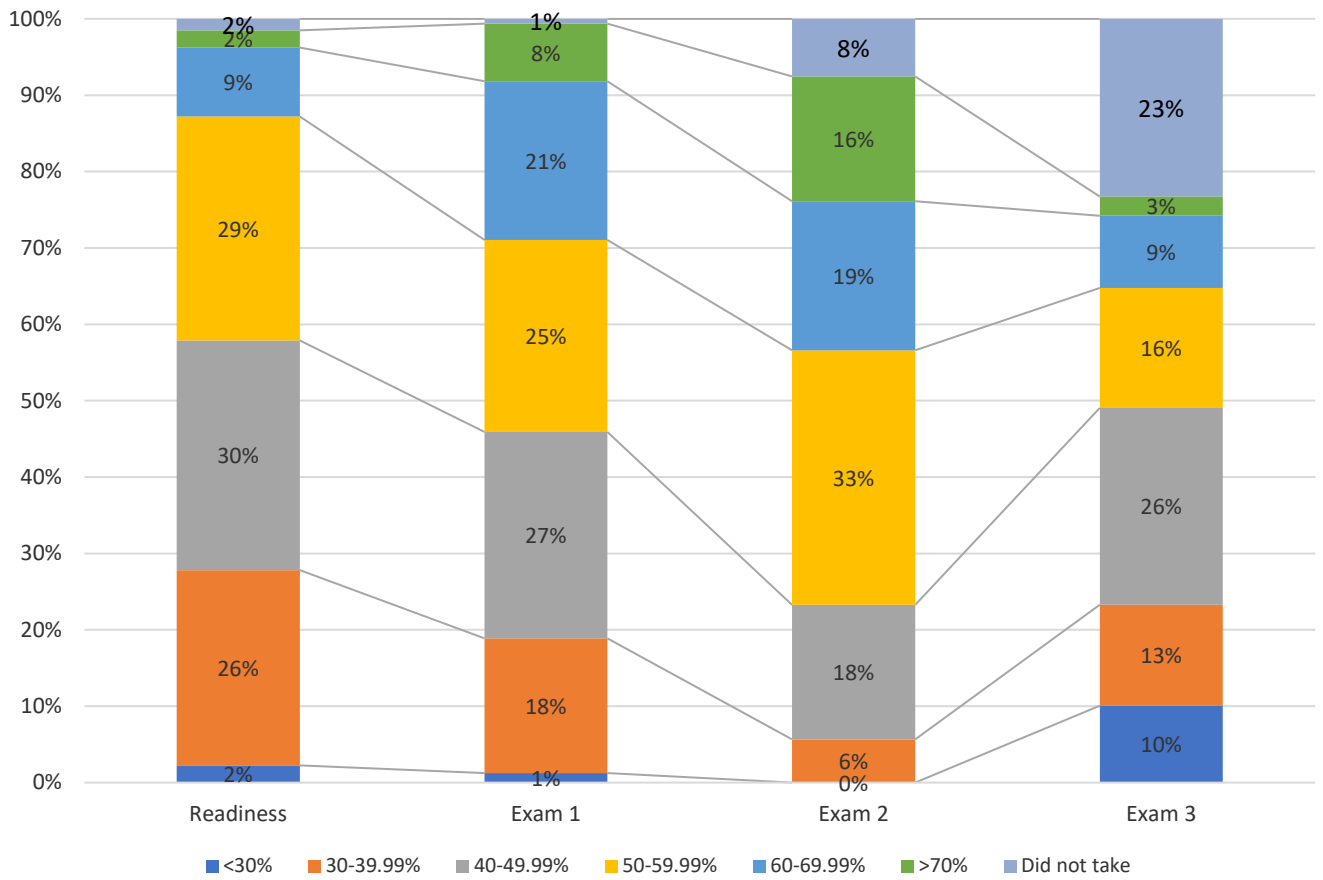


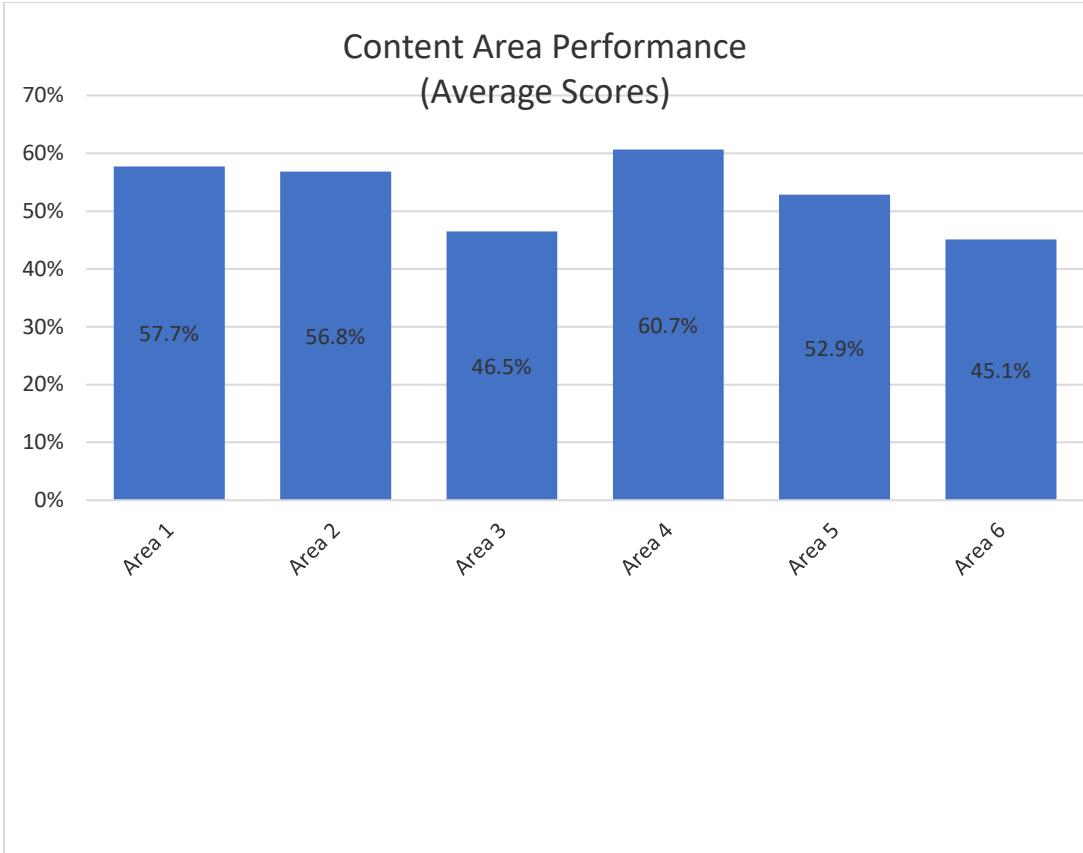
Average Scores  
(error bars represent standard deviation)



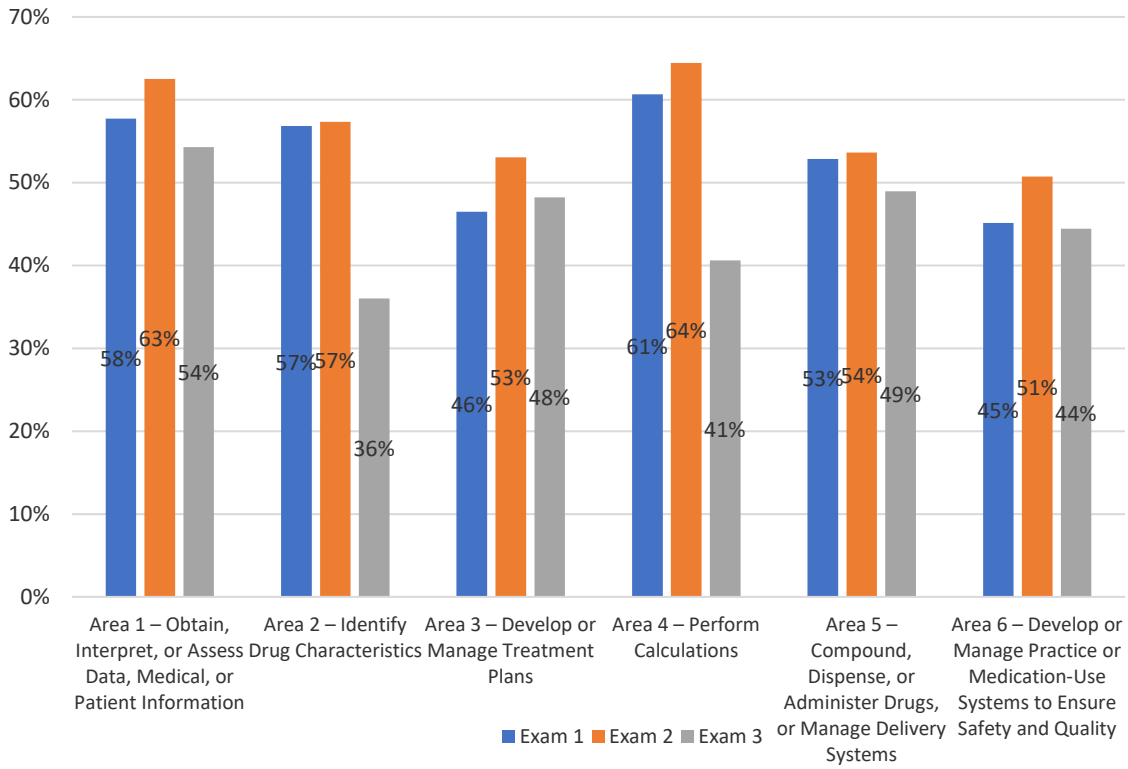


Performance Comparison  
(bar chart version of the histograms)

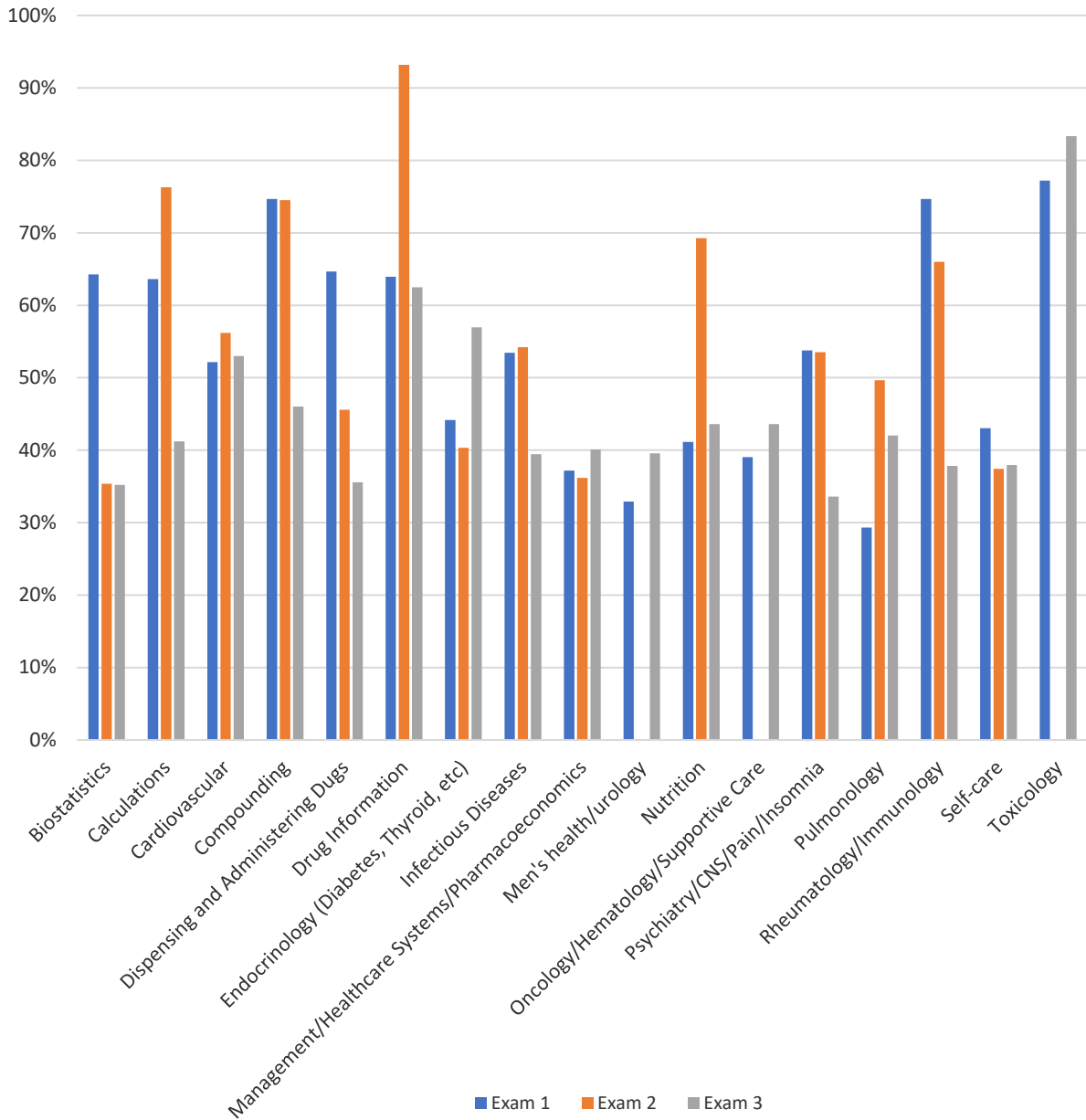




## Content Area Performance Comparison



## Therapeutic Topic Performance Comparison



## Questions Bank Contents

NAPLEX	# of questions
Area 1 – Obtain, Interpret, or Assess Data, Medical, or Patient Information	59
1.1 – From instruments, screening tools, laboratory, genomic or genetic information, or diagnostic findings	25
1.2 – From patients: treatment adherence, or medication-taking behavior; chief complaint, medication history, medical history, family history, social history, lifestyle habits, socioeconomic background	5
1.3 – From practitioners: treatment adherence, or medication-taking behavior; chief complaint, medication history, medical history, family history, social history, lifestyle habits, socioeconomic background	4
1.4 – From medical records: treatment adherence, or medication-taking behavior; chief complaint, medication history, medical history, family history, social history, lifestyle habits, socioeconomic background	5
1.5 – Signs or symptoms of medical conditions, healthy physiology, etiology of diseases, or pathophysiology	9
1.6 – Risk factors or maintenance of health and wellness	12
1.7 – Evidence-based literature or studies using primary, secondary, and tertiary references	9
Area 2 – Identify Drug Characteristics	115
2.1 – Pharmacology, mechanism of action, or therapeutic class	41
2.2 – Commercial availability; prescription or non-prescription status; brand, generic, or biosimilar names; physical descriptions; or how supplied	30
2.3 – Boxed warnings or REMS	15
2.4 – Pregnancy or lactation	25
Area 3 – Develop or Manage Treatment Plans	275
3.1 – Triage or medical referral	9
3.10 – Drug pharmacokinetics or pharmacodynamics	8
3.11 – Evidence-based practice	69
3.12 – Non-drug therapy: lifestyle, self-care, first-aid, complementary and alternative medicine, or medical equipment	19
3.2 – Therapeutic goals or outcomes and clinical endpoints	21
3.3 – Medication reconciliation; indication or therapeutic uses; lack of indication; inappropriate indication; duplication of therapy; omissions	47
3.4 – Drug dosing or dosing adjustments; duration of therapy	41
3.5 – Drug route of administration, dosage forms, or delivery systems	20
3.6 – Drug contraindications, allergies, or precautions	23
3.7 – Adverse drug effects, toxicology, or overdose	51
3.8 – Drug interactions	13
3.9 – Therapeutic monitoring parameters, monitoring techniques, monitoring tools, or monitoring frequency	28
Area 4 – Perform Calculations	112
4.1 – Patient parameters or laboratory measures	21
4.2 – Quantities of drugs to be dispensed or administered	12
4.3 – Rates of administration	14
4.4 – Dose conversions	11
4.5 – Drug concentrations, ratio strengths, osmolarity, osmolality, or extent of ionization	10
4.6 – Quantities of drugs or ingredients to be compounded	9
4.7 – Nutritional needs and the content of nutrient sources	24
4.8 – Biostatistics, epidemiological, or pharmacoeconomic measures	13

4.9 – Pharmacokinetic parameters	20
Area 5 – Compound, Dispense, or Administer Drugs, or Manage Delivery Systems	71
5.1 – Physicochemical properties of drug products affecting compatibility, stability, delivery, absorption, onset, duration, distribution, metabolism, or elimination	20
5.2 – Techniques, procedures, or equipment for hazardous or non-hazardous sterile products	12
5.3 – Techniques, procedures, or equipment for hazardous or non-hazardous non-sterile products	11
5.4 – Equipment or delivery systems	13
5.5 – Instructions or techniques for drug administration	10
5.6 – Packaging, storage, handling, or disposal	20
Area 6 – Develop or Manage Practice or Medication-Use Systems to Ensure Safety and Quality	48
6.1 – Interdisciplinary practice, collaborative practice, or expanded practice responsibilities	3
6.2 – Continuity of care or transitions of care	2
6.3 – Disease prevention or screening programs; or stewardship	8
6.4 – Vulnerable populations, special populations, or risk prevention programs	17
6.5 – Pharmacy informatics	1
Ensure Safe and Effective Pharmacotherapy and Health Outcomes	370
Biostatistics	48
Cardiovascular	227
Dermatology	2
Drug Information	34
Endocrinology (Diabetes, Thyroid, etc)	63
Gastrointestinal/Hepatic Disorders	31
Infectious Diseases	197
Law and Ethics	28
Management/Healthcare Systems/Pharmacoeconomics	22
Men's health/urology	17
Nutrition	40
Oncology/Hematology/Supportive Care	55
Psychiatry/CNS/Pain/Insomnia	174
Pulmonology	78
Renal/Acid-Base	30
Rheumatology/Immunology	30
Self-care	46
Toxicology	13
Vaccinations	16
Women's Health/Osteoporosis	32
LPPK	226
Pre-qualifying Exam	217
Qualifying Exam	338
Safe and Accurate Preparation, Compounding, Dispensing & Administration of Medications	168
Calculations	232
Compounding	35
Dispensing and Administering Dugs	60

## B. 2022 Milestone Exam Report

Changes from previous year:

- Calculations section was added to the P2 assessment
- The P1 and P2 Milestone Examinations were administered virtually and in person in the summer on Thursday, July 7th and Friday, July 8<sup>th</sup>, respectively.
- Retake Milestone Examination attempt will be offered on Saturday, July 16<sup>th</sup> also virtually for students that did not pass both of the Milestone Examination components on their first attempt.
- Questions writing responsibilities continued with course coordinators of applicable topics.
- Department Chairs designated question reviewers within their departments and assigned a specific number of questions to each faculty member
- Assessment Committee recommended that CANVAS is utilized as the portal for housing study resources for the P1 and P2 Milestone Examinations. Assessment committee continued encouraging the material to be presented in a more concise manner
- The passing threshold for the P1 Calculations component of the Milestone Examinations was again 70%, whereas the passing threshold for other components was 50%; however, the passing threshold for the P2 Calculations component of the Milestone Examinations was increased 80%,
- Students that achieve a weighted average of  $\geq 70\%$  on the first attempt of both Milestone Examination components will be awarded 2 percentage points that may be added to the course average of a course in the Fall Semester following the Milestone Examinations.
- The P1 Milestone Examination consisted of calculations questions and questions that corresponded to P1 classes to be administered as two separate assessments on the same date. There were 40 calculations questions, and 2.5 – 3 questions per credit hour of each P1 course.
- The P2 Milestone Examination consisted of questions relating to evidence-based medicine as well as questions that correspond to P2 classes to be administered as three separate assessments on the same date. There were 40 evidence-based medicine and 40 calculations questions, and 2.5 – 3 questions per credit hour of each P2 course.

## Results

### **Analysis:**

- Students performed similarly on the P1 and P2 course related questions components, with only 69% and 68% averages respectively.
- While the average for the P1 and P2 calculations components was 79% and 82%, respectively due to the 70% and 80% threshold only 77% and 73% passed this component in the first attempt.
- No other major findings were identified. PBS 601: Cell and Molecular Biology & Biochemistry (63%), PBS 604: Pharmacokinetics (61%) were relatively weaker for the P1s and PBS 701: Pathophysiology and Pharmacology II: CV, Diabetes Mellitus & Thyroid) (56% and Integrated questions (52%) were relatively weaker for the P2s. This could reflect increased difficulty of the questions or actual weaker understanding of the topics.

### **P1 Course-Related Section (50% passing threshold):**

Mean: 69%

Range: 47-94%

97% pass rate (2 failures)

P1 course-related questions retake: 2/2 passed

### **P1 Calculations (70% passing threshold):**

Mean: 79%

Range: 35-100%

77% pass rate (13 failures)

P1 Calculations retake: all 1/13 passed

### **P2 Course-Related Section (50% passing threshold):**

Mean: 68%

Range: 46-87%

97% pass rate (2 failures)

P2 course-related section: 3/3 passed

### **P2 Calculations (80% passing threshold):**

Mean: 82%

Range: 43-98%

73% pass rate (20 failures)

P2 Calculations section: 12/19 passed before



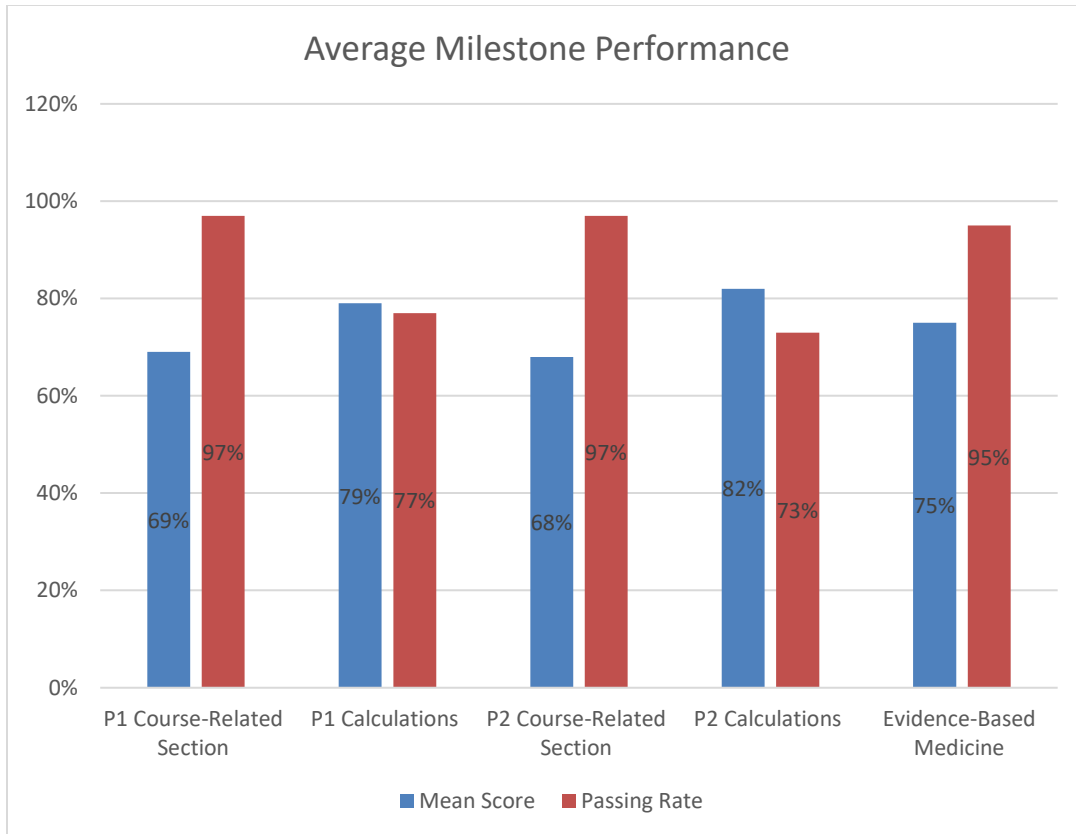
**Evidence-Based Medicine (50% passing threshold):**

Mean: 75%

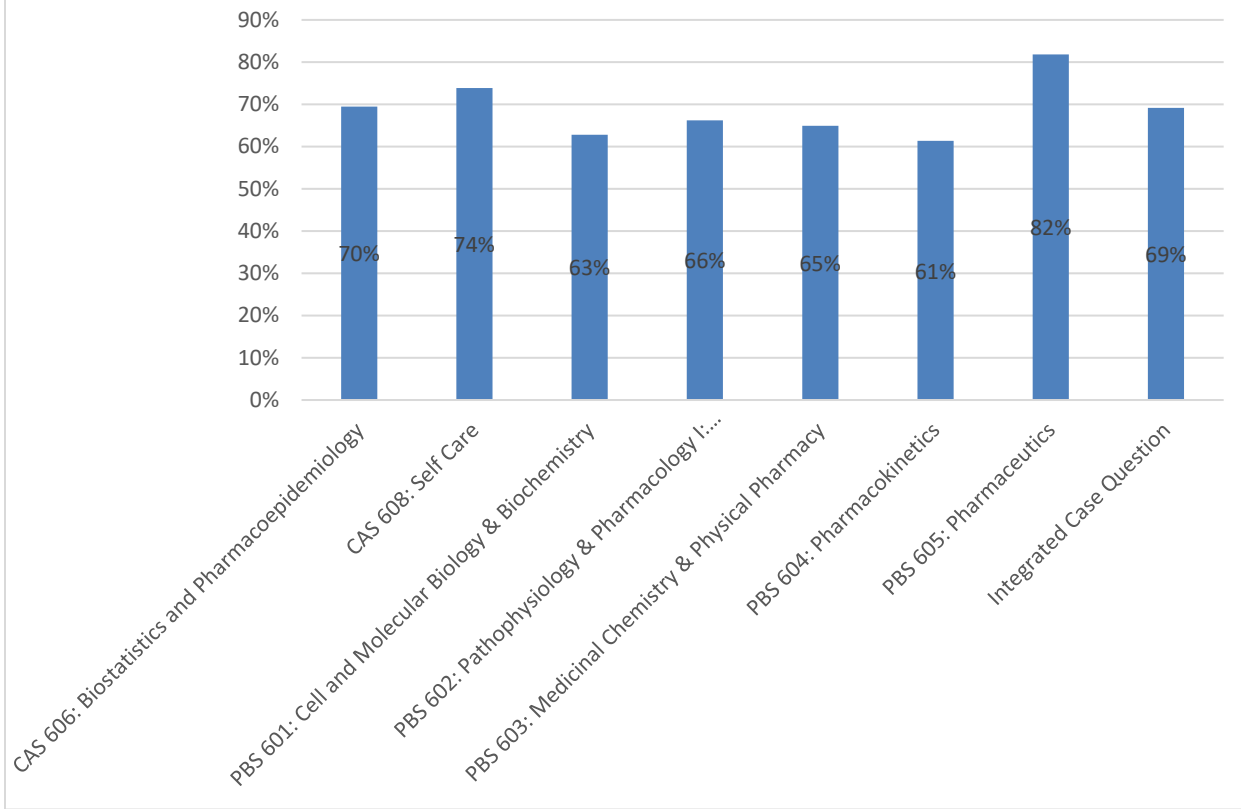
Range: 38-100%

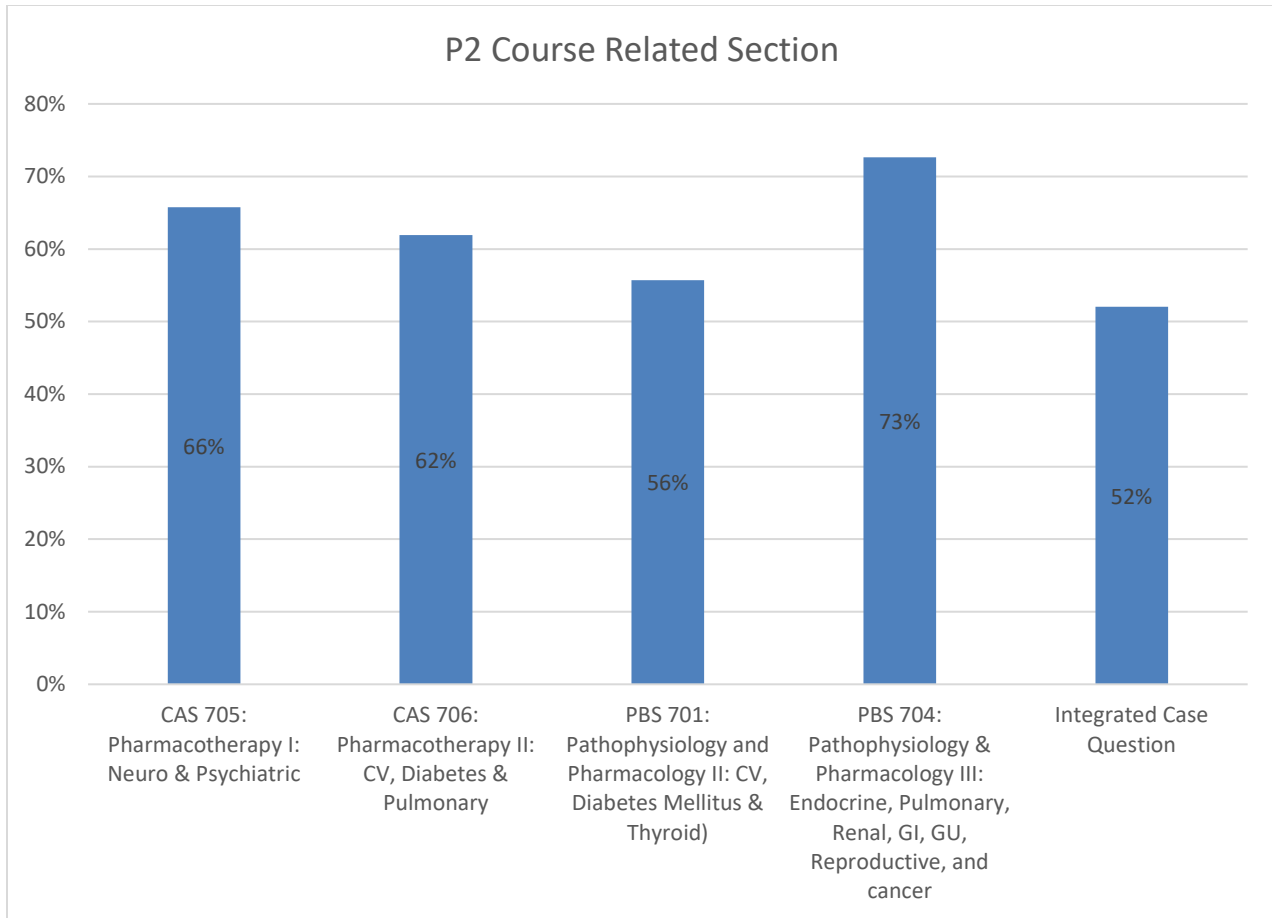
95% pass rate (4 failures)

EBM retake: 4/4 passed



### P1 Course Related Section





**Actions based on the results:**

- All respective course coordinators received a course specific reports of student performance on questions corresponding to their courses.
- These results were addressed in course actions plans submitted to the curriculum committee for approval along with their syllabi in the subsequent academic year.
- In general, the exam ran fairly smoothly.
- Student received a comprehensive report detailing their individualized performance overall and on specific components and topics relative to their classmates.

## IV. Scores from licensure exams

### A. NAPLEX

#### 1) Context

- NAPLEX blueprint with 6 content areas was new, published in late 2021, providing schools a relatively short window to adjust
- COVID-19 (spread in early 2020, vaccines became widely available in early 2021) significantly affected CO2021
- Major P3 disruption, especially with PRC810, which contains many summative performance-based assessments to determine APPE preparedness. Many of these were either cancelled or significantly complexity level diminished
- Some disruption to rotations during the P4 year
- The effectiveness of curricular changes implemented over the last couple of years may not be realized as most did not affect CO2021

#### 2) Recent Curricular Changes Possibly Affecting Board Examination Performance

##### a. PRC 613 Pharmaceutical Calculations

- i. The course Type was changed from a regular didactic to a PRC course (to increase the in-class practice time for students).
- ii. Credit Units Increased from 1 to 1.5 units.
- iii. When? Fall of 2021 (CO2024)

##### b. CAS 812 Applied Clinical PK and Calculations

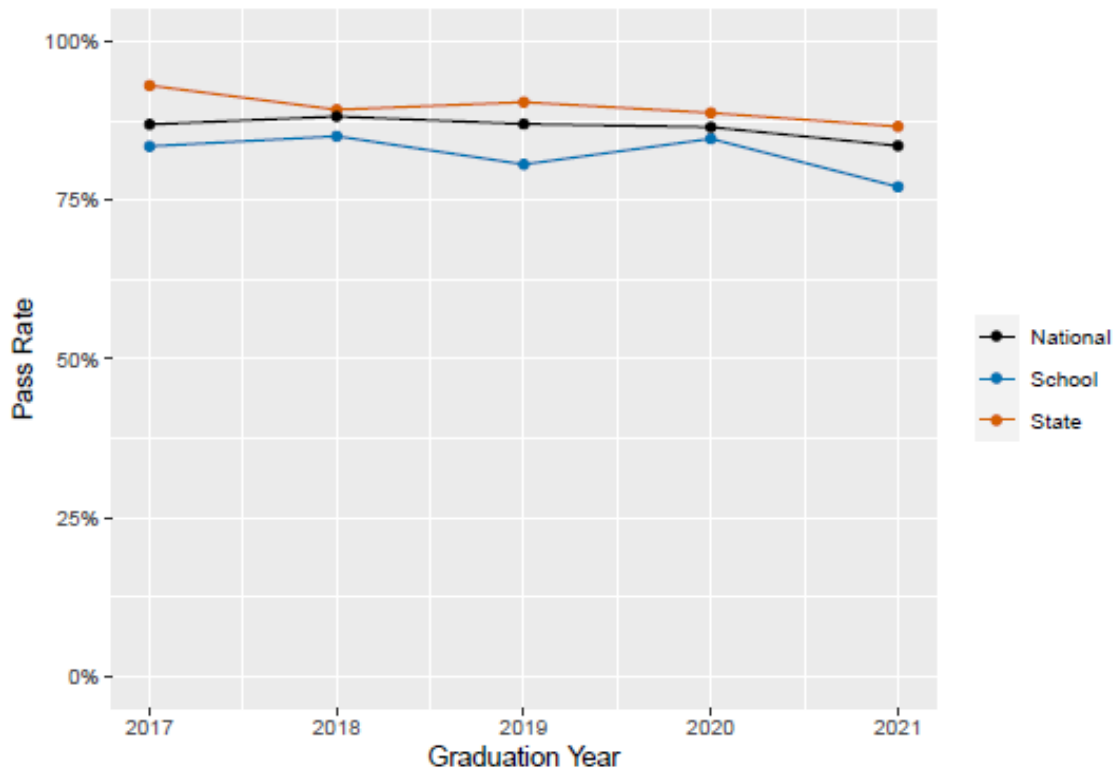
- i. Newly developed 1 unit course. (1 Credit unit has been reduced from PBS 803 and dedicated for creating the new Applied Clinical PK and Calculations course).
- ii. When? Spring of 2021 (CO2022)
- iii. Further increase from 1 units to 2 units starting in spring of 2023 (CO2024)

##### c. APP 910/911 Advanced Pharmacy Practice Experience: Conference I/II

- i. Newly added 0.5-unit courses.
- ii. Seminar courses aligned with APPE rotations which encompasses
  1. conference meetings with Faculty &/or preceptors

- 2. LPPK assignments / exams
- 3. Final board style comprehensive exam in November/December as well as the Qualifying exam series
- iii. When? Fall of 2020/Spring 2021 (CO2021)
- iv. Course modified in for the AY 2021-2022 (CO2022)
- v. Significantly modified for AY 2022-2023
- vi. Increase to 1 units each
- vii. Greater alignment with rotations and small group discussion with faculty members
- viii. LPPK repurposed to IRATs and IBATs
- ix. Addition of longitudinal calculations modules
- x. Addition of student presentations based on their rotations
- xi. Course aligned with PASSNAPLEXNow Material
- d. P1 Milestone:
  - i. Separate calculations section incorporated into the P1 Milestone Examination
  - ii. When? Summer 2020 (applied for the P2 milestone for the class of 2022)
- e. P2 Milestone
  - i. Separate calculations section to be incorporated into the P2 Milestone Examination
  - ii. When? Summer 2022 (CO 2024)
- f. Calculations Certificate
  - i. PRC613 (Pharmaceutical Calculations Course), PRC609 (Longitudinal Practicum I- Rx calculations: applied for nonsterile compounding), PRC610 (Longitudinal Practicum II- IV Sterile Compounding Calculations), PRC709 (Longitudinal Practicum III- CrCl Calculations), CAS812 (Longitudinal Practicum VII- applied clinical PK, applied biostatistics calculations, TPN calculations)
  - ii. When? Spring 2021 (CO2022)
- g. Continuous improvements to the PRC to improve student performance in developing a SOAP note and calculations became a required skill, requiring proficiency via assessment to pass the courses
  - i. When? Spring 2020

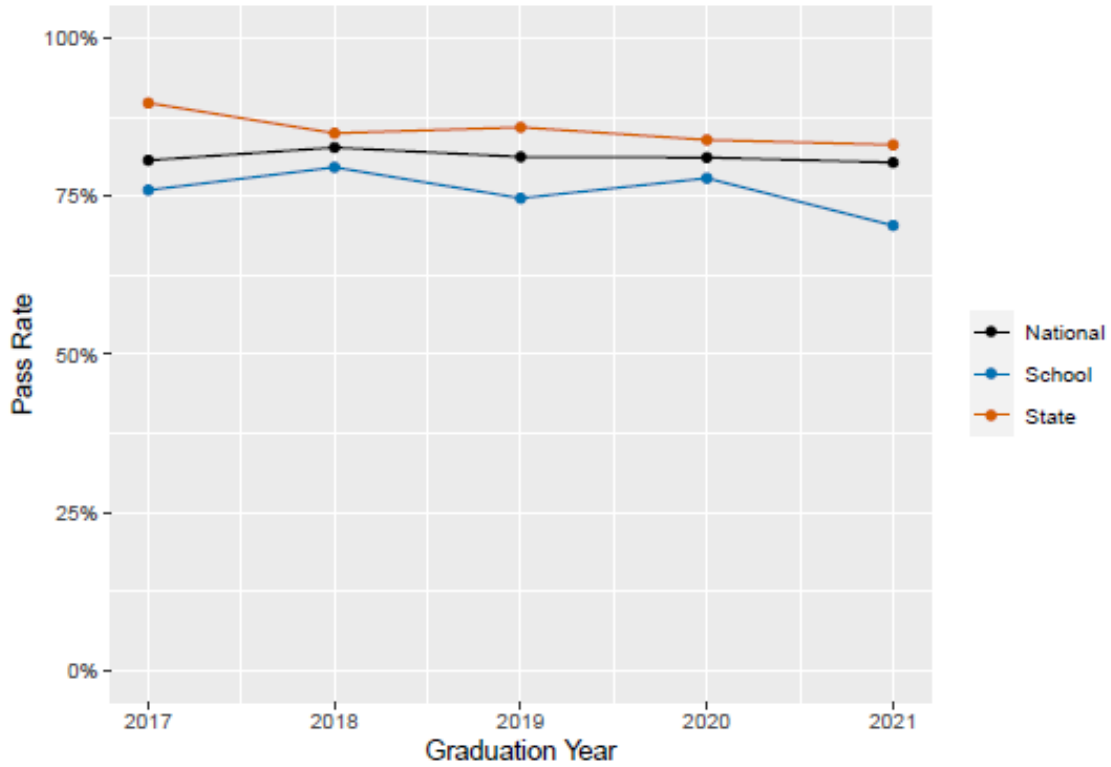
## 1. First Attempt Pass Rates



Aggregation	2017	2018	2019	2020	2021
School	83.5%	85.1%	80.6%	84.7%	77.1%
State	93.1%	89.3%	90.5%	88.8%	86.6%
National	86.9%	88.2%	87.0%	86.5%	83.6%

	2019	2020	2021
<b>vs. State</b>	-9.9%	-4.1%	-9.5%
<b>Vs. Nation</b>	-6.4%	-1.8%	-6.5%

## 2. All Attempts Pass Rates

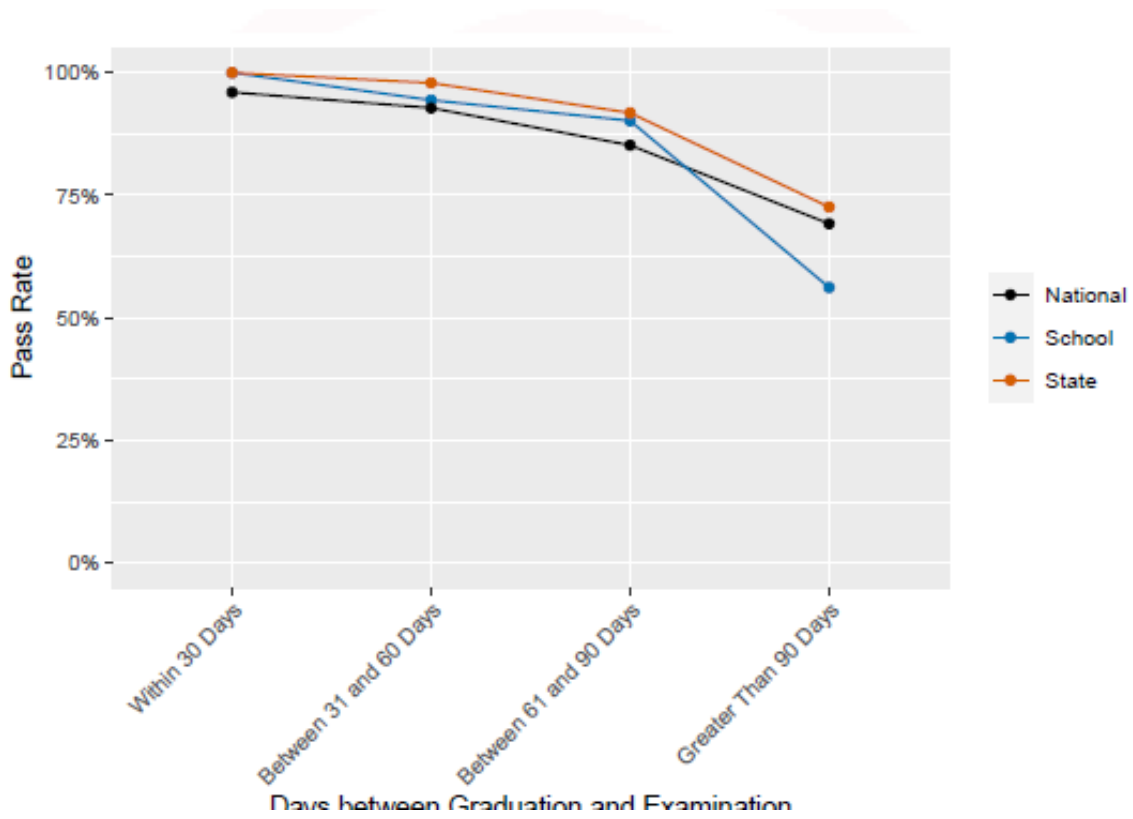


Aggregation	2017	2018	2019	2020	2021
School	76.0%	79.6%	74.7%	77.9%	70.4%
State	89.8%	85.0%	85.9%	83.9%	83.1%
National	80.7%	82.7%	81.2%	81.1%	80.3%

CNUCOP vs.	2019	2020	2021
State	-11.2%	-6%	-12.7%
Nation	-6.5%	-3.2%	-9.9%

All attempts vs. 1 <sup>st</sup> time	2019	2020	2021
School	-5.9%	-6.8%	-6.7%
State	-4.6%	-4.9%	-3.5%

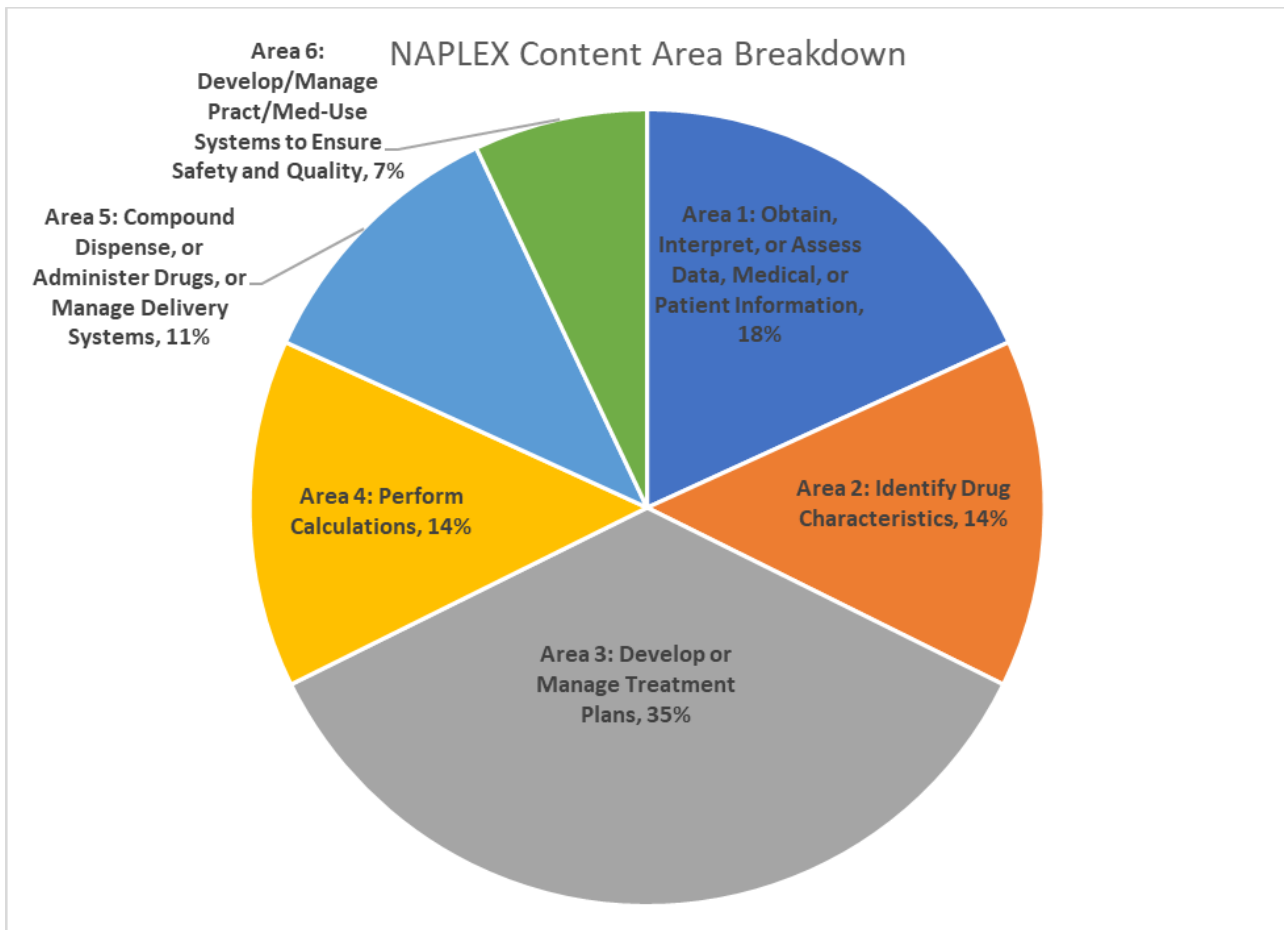
### 3. Pass Rates by Time Between Graduation and Examination



Days to Examination	School N	School Pass Rate	State N	State Pass Rate	National N	National Pass Rate
Within 30 Days	1	100.0%	18	100.0%	646	96.0%
Between 31 and 60 Days	18	94.4%	281	97.9%	4227	92.8%
Between 61 and 90 Days	51	90.2%	538	91.8%	4671	85.2%
Greater Than 90 Days	48	56.2%	431	72.6%	3716	69.2%

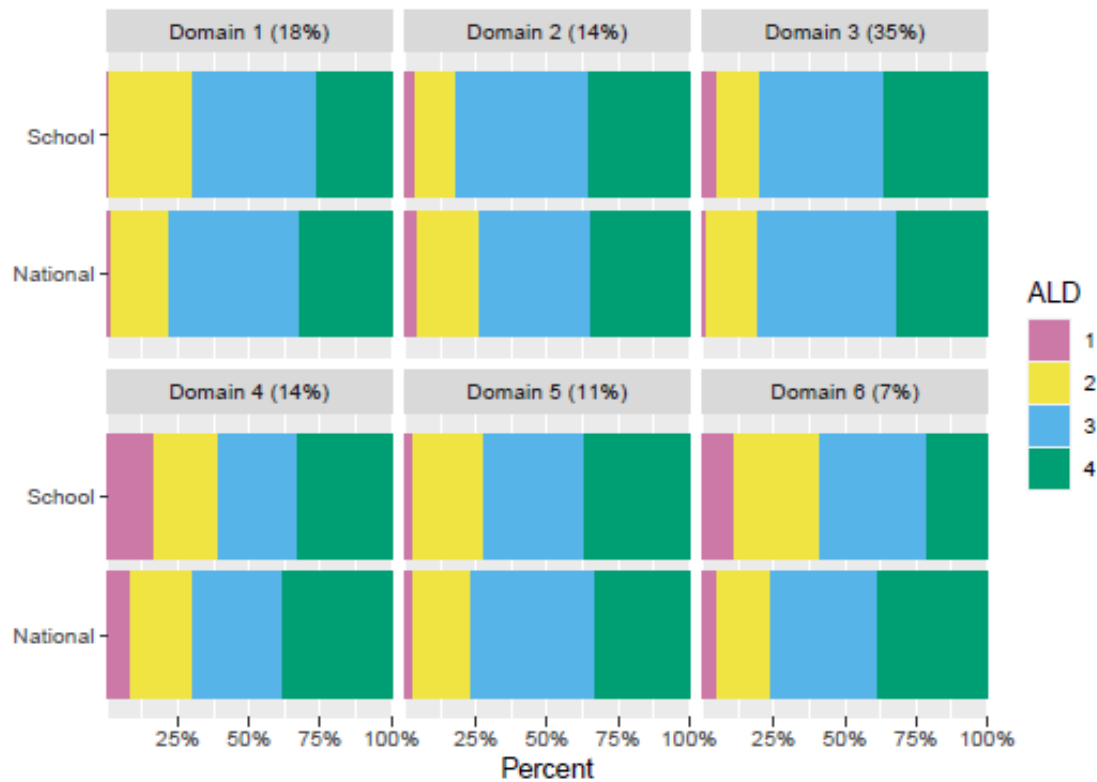
### 4. Content Area Breakdown





5. Comparison of Percentage of School and National Graduates in each Achievement Level by NAPLEX Domains

- Level 1: Performance at this level is far below meeting the minimum performance necessary to demonstrate competency.
- Level 2: Performance at this level does NOT meet the minimum performance necessary to demonstrate competency.
- Level 3: Performance at this level meets the minimum performance necessary to demonstrate competency.
- Level 4: Performance at this level exceeds the minimum performance necessary to demonstrate competency.



Achievement Level Descriptor Category

Domain	Achievement Level Count (Percent)			
	1	2	3	4
1	1 (0.8%)	34 (28.8%)	52 (44.1%)	31 (26.3%)
2	5 (4.2%)	16 (13.6%)	56 (47.5%)	41 (34.7%)
3	6 (5.1%)	18 (15.3%)	52 (44.1%)	42 (35.6%)
4	20 (16.9%)	26 (22.0%)	33 (28.0%)	39 (33.1%)
5	4 (3.4%)	29 (24.6%)	41 (34.7%)	44 (37.3%)
6	13 (11.0%)	35 (29.7%)	45 (38.1%)	25 (21.2%)

Achievement Level Descriptor Category

Domain	Achievement Level Count (Percent)			
	1	2	3	4
1	243 (2.0%)	2395 (19.8%)	6043 (46.1%)	4579 (32.0%)
2	565 (4.5%)	2722 (22.1%)	5142 (39.2%)	4831 (34.2%)
3	151 (1.2%)	2175 (18.0%)	6328 (48.8%)	4606 (32.0%)
4	1050 (8.5%)	2664 (21.5%)	4165 (31.7%)	5381 (38.3%)
5	391 (3.2%)	2513 (20.3%)	5692 (43.4%)	4664 (33.1%)
6	632 (5.0%)	2442 (19.1%)	4881 (37.2%)	5305 (38.8%)

## 6. Assessment

- In general, performance on the NAPLEX was slightly weaker relative to previous years
  - Especially weaker in terms of “All Attempts” as compared to “1<sup>st</sup> time attempts”

- Especially when it comes to students taking the NAPLEX past 90 days after graduation
- Data suggestions that stronger and average CNUCOP students perform just as well as stronger and average students in the state and across the nation; however, the weaker students from CNUCOP appear to perform especially poorly relative to weaker students in the state and across the nation
- Performance on domains 2, 3, and 5 was relatively stronger
- Performance on domains 1, 4 and 6 was relatively weak

**NAPLEX Content Area Subcategories: Area 1 – Obtain, Interpret, or Assess Data, Medical, or Patient Information**

- 1.1 – From instruments, screening tools, laboratory, genomic or genetic information, or diagnostic findings
- 1.2 – From patients: treatment adherence, or medication-taking behavior; chief complaint, medication history, medical history, family history, social history, lifestyle habits, socioeconomic background
- 1.3 – From practitioners: treatment adherence, or medication-taking behavior; chief complaint, medication history, medical history, family history, social history, lifestyle habits, socioeconomic background
- 1.4 – From medical records: treatment adherence, or medication-taking behavior; chief complaint, medication history, medical history, family history, social history, lifestyle habits, socioeconomic background
- 1.5 – Signs or symptoms of medical conditions, healthy physiology, etiology of diseases, or pathophysiology
- 1.6 – Risk factors or maintenance of health and wellness
- 1.7 – Evidence-based literature or studies using primary, secondary, and tertiary references

**NAPLEX Content Area Subcategories: Area 4 – Perform Calculations**

- 4.1 – Patient parameters or laboratory measures
- 4.2 – Quantities of drugs to be dispensed or administered
- 4.3 – Rates of administration
- 4.4 – Dose conversions
- 4.5 – Drug concentrations, ratio strengths, osmolarity, osmolality, or extent of ionization
- 4.6 – Quantities of drugs or ingredients to be compounded
- 4.7 – Nutritional needs and the content of nutrient sources
- 4.8 – Biostatistics, epidemiological, or pharmacoeconomic measures
- 4.9 – Pharmacokinetic parameters

**NAPLEX Content Area Subcategories: Area 6 – Develop or Manage Practice or Medication-Use Systems to Ensure Safety and Quality**

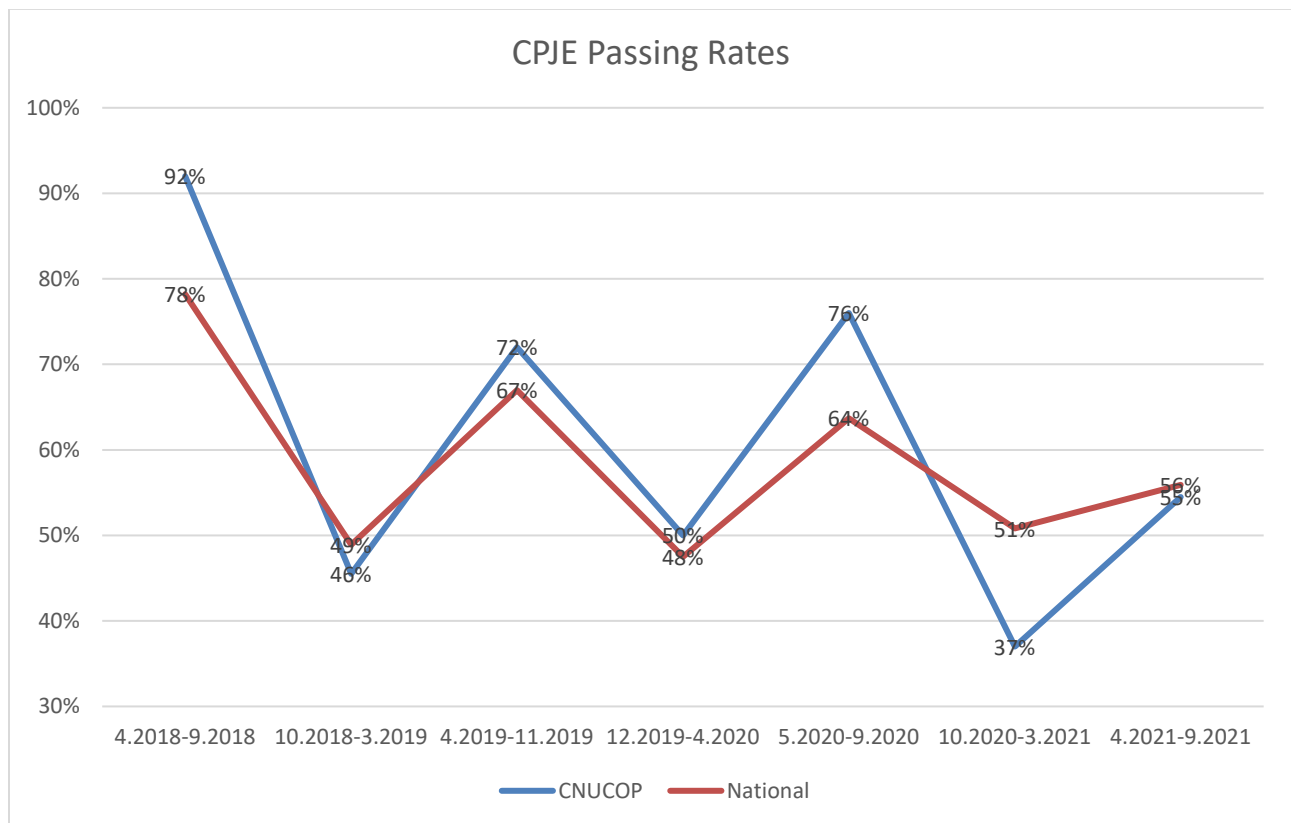
- 6.1 – Interdisciplinary practice, collaborative practice, or expanded practice responsibilities
- 6.2 – Continuity of care or transitions of care
- 6.3 – Disease prevention or screening programs; or stewardship
- 6.4 – Vulnerable populations, special populations, or risk prevention programs
- 6.5 – Pharmacy informatics

## 7. Action Plan

1. Require students that fail to pass the qualifying exam with a score of <40% or <50%, to undergo remediation
2. Develop calculations assessments in the P3 year as standalone assessments (APROVED by ASSESSEMENT COMMITTEE TIMING and PLACEMENT to be DETERMINED)
3. Adjust/increase the weight of Qualifying Exams within APP 911 course. Currently at 15% in Spring of 2022
4. Reconcile the NAPLEX content area mapping with the curriculum to the student performance on the NAPLEX (IN PROGRESS, to be COMPLETED with the 2022 fall syllabi review process)
5. Consider these results while discussing the passing threshold on the calculations assessments within PRC courses (Approved with 70% threshold for P1s, 80% for P2s and P3s)
6. Milestone calculation component thresholds likewise modified based on NAPLEX results (70% threshold for P1 milestone, 80% for P2 milestone)
7. Revisit structure of calculations certificate to ensure that it adds value in terms of APPE rotations and board examinations as well, possibly incorporate assessment within #2
8. Survey recent graduates and ask if they passed the Board Examinations, and if so, how they prepared (COMPLETED)
9. Share results and initiatives implemented to address results with students, including the results of the survey in #8
10. Purchase 100 question practice NAPLEX developed by NABP for \$75 and ascertain if related questions are covered in the Curriculum, confirm legality of this initiative if question are not copied or transmitted in any way

## B. CPJE Results

Analysis: CNUCOP student performance on the CPJE examination has been very close to the national average as well as relative to other schools in California. No major trends over time were identified. Traditionally CNU students have performed generally well on the CPJE; 4-12% better than the national average and generally a few percentage points better than other California Schools, though there have been a few years (2013, 2017, 2019) where it's been a few percentage points worse.



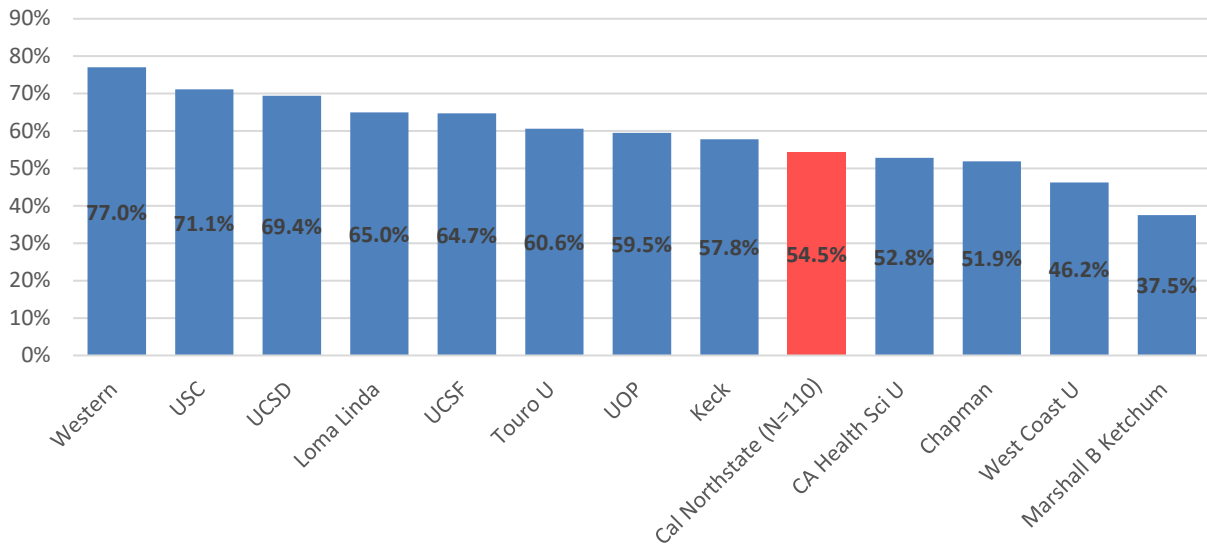
5.2020-3.2021 CPJE	
CA School Ranking	Difference From National Average
University of California, San Diego	25.31%
University of San Francisco	20.49%
University of Southern California	12.90%
Western University	9.86%
University of the Pacific	9.86%
<b>California Northstate University</b>	<b>5.70%</b>
Touro University	2.94%

Keck Graduate Insitute	2.04%
Chapman University	2.04%
Loma Linda	-1.48%
Marshall B. Ketchum	-7.02%
West Coast	-7.58%
California Health Sciences University	-17.90%

4.2019-4.2020 CPJE	
CA School Ranking	Difference From National Average
University of California, San Diego	26.60%
Western University	25.10%
University of Southern California	21%
University of San Francisco	16.91%
Touro University	11%
University of the Pacific	7%
<b>California Northstate University</b>	<b>5%</b>
Chapman University	3%
Loma Linda	1%
West Coast	-2%
Keck Graduate Insitute	-5.74%
California Health Sciences University	-11%

4.2018-3.2019 CPJE	
CA School Ranking	Difference From National Average
University of Southern California	26%
University of California, San Diego	19.60%
West Coast	19%
<b>California Northstate University</b>	<b>19%</b>
Western University	17.60%
Keck Graduate Insitute	17.40%
Touro University	14%
University of the Pacific	9%
Loma Linda	9%
University of San Francisco	7.37%
California Health Sciences University	5%
Chapman University	2%

**CPJE Interim Performances  
from California Board of Pharmacy  
(April to September 2021)**



## Overall Passing Rate

