Summary Report for the

2021 Beyond Entry-Level PA Practice Analysis

12000 Findley Road, #200
Johns Creek, GA 30097
www.nccpa.net
Phone: 678.417.8100

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INTRODUCTION AND BACKGROUND

The National Commission on Certification of Physician Assistants (NCCPA) provides a national board certification program for physician assistants (PAs) and is the only nationally accredited certifying organization for PAs in the United States. After passing the initial certification exam (PANCE), Board Certified PAs must earn and log 100 credits of Continuing Medical Education every two years and pass NCCPA's recertification examination every ten (10) years in order to maintain their certification. A practice analysis of the PA profession is typically conducted every five to seven years as per NCCPA's governing policy and in order to comply with industry best practices and accreditation requirements of the National Commission on Certifying Agencies (NCCA). NCCPA completed a pilot of a longitudinal assessment in 2019-2020 and is developing a new assessment process that PAs may select as an alternative to the traditional test center administered exam (Physician Assistant National Recertifying Exam or PANRE) to maintain certification. The test content outline that is developed based upon this practice analysis will be used for both recertification assessments. The NCCPA recertification assessments are designed to test core PA knowledge at an appropriate level of performance within the profession, regardless of practice area or clinical discipline.

In 2021, NCCPA contracted with a well-respected and qualified vendor in the assessment industry to conduct a practice analysis of beyond entry-level PA practice that will help define the core content and associated performance expectations for their recertification assessments. The purpose of this study was to define and organize the diseases and disorders associated with the systems of the body to provide a foundation for PA recertification examinations.

Test development follows a series of interrelated processes that revolve around the central concept of validity (AERA, APA, & NCME, 2014). In the initial stages of development, or in subsequent years for updating, practitioners engage in a practice analysis (e.g., job analysis, occupational analysis, role delineation) to determine the scope of an examination and expectations for certified practitioners. When reviewing the scope of an examination, two foundational elements of best practice include (1) sampling of the content domain and (2) definition of the content to include in test items (Downing, 2006). These elements are addressed by analyzing the content domain and then developing a content outline based on the results of this analysis. The tasks delineated through this process (categorized as diseases and disorders within the systems of the body), along with the subsumed knowledge, skills, and abilities, indicate the expectations for those who have already obtained their initial certification, and is now preparing to recertify. Because the NCCPA uses an examination as part of its recertification process, conducting this validation study that focused on this purpose was warranted. The collective results from this process provide evidence to support the valid interpretation of test scores that will result from this assessment.

The *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 2014) in Standard 11.3 suggest that:

> The content domain to be covered by a credentialing test should be defined clearly and justified in terms of the importance of the content for credential-worthy performance in an occupation or profession. A rationale and evidence should be provided to support the claim that the knowledge or skills being assessed are required for credential-worthy performance in that occupation and are consistent with the purpose for which the credentialing program was instituted. (p. 178)

The purpose of this report is to describe and document the results of a national survey of Board-Certified PAs and the blueprint development process as evidence directly addressing this standard and the claim that the content to be included in the NCCPA recertification examination is indicative of credential-worthy performance. These results are intended to provide NCCPA evidence upon which to construct the recertification examination based on the input from subject matter experts (SMEs).

A three-phase approach was used to conduct an analysis of the core recertification exam content for PAs: (1) a focus group meeting was held for the SME panel to create a draft list of the diseases and disorders within body systems, (2) a survey of the diseases/disorders list was sent to an effective census of PAs to gather input on the content, and (3) a follow-up workshop with as SME panel of PAs was held to review the results of the survey and recommend weightings for the blueprint. The collective results of these activities were then used to create the recommended specifications for the recertification program and are presented in this report as documentation and validity evidence.

PHASE 1: FOCUS GROUP

In May 2021, NCCPA convened a panel of SMEs to draft a listing of the diseases/disorders with which experienced PAs (beyond entry-level) would be familiar. The panel also reviewed and discussed the performance expectation definitions for the recertification assessment specifications. NCCPA's contracted consultant psychometricians, in collaboration with NCCPA staff, facilitated the meeting. Their task was to ensure the panel had a common understanding of the individuals that would be recertifying and that the resulting specifications were inclusive of the diseases and disorders at the appropriate performance expectation for PAs. This 18-member panel was composed of varying levels of experience, geographic regions, and practice areas.

The meeting began with NCCPA's staff conducting an orientation on topics relevant to the practice analysis process, including the purpose of recertification, test development process/cycle, purpose of the practice analysis, and the practice analysis process and results. The panelists engaged in discussion on the key aspects of the recertification assessment, including the characteristics of the performance expectations and how individuals within the profession are able to move across practice areas. The panelists next split into three groups to review and revise the existing list of diseases/disorders to include those with which the recertifying population is expected to be familiar.

After the panel had the opportunity to complete a first draft of the content outline and diseases/disorders list in their small groups, all notes, comments, and statements were compiled and organized. During the panel's second meeting day, all subgroup information was presented to the full group to make the final decisions on the body systems, diseases/disorders list, and performance expectation definitions.

Using the existing PANRE list of diseases and disorders as a starting point, the SME panelists completed the activity of reviewing and revising the list as appropriate for the updated practice analysis survey. Additionally, the full SME panel provided initial recommendations for the weighting of each body system.

PHASE 2: SURVEY OF PRACTITIONERS

Prior to distribution of the survey, the draft list resulting from the focus group meeting was reviewed by NCCPA staff. Slight revisions were made to retain consistency with NCCPA's approved style and currency within the PA profession (i.e., terminology, inclusion of conditions, etc.).

The list of diseases and disorders was organized by body system and formatted as a questionnaire with a rating scale comprised of the performance expectations for all recertifying PAs, regardless of practice area, to support PAs' mobility in changing practices, if desired. The questionnaire was disseminated as a survey using the Qualtrics® web-based platform to all currently certified PAs for whom NCCPA had an email address. The distribution of the survey used a matrix sampling approach to subdivide the questionnaire into more manageable sections to incentivize a higher response rate. The survey was conducted from July 12 through August 9, 2021.

Respondents were asked to provide input as to what type of PA performance (i.e., history/physical, diagnosis, intervention) would be expected for each of the diseases/disorders, regardless of practice area. The performance expectations posed to the respondents (and the definitions associated with each response) were:

History & Physical = Given a stated/differential condition, the PA knows the associated signs, symptoms, history, and physical examination components, complications, risk factors for and risks caused by the stated/differential condition.

Diagnosis = Given the signs, symptoms, history, risk factors, physical examination findings, and/or appropriate study results/interpretations, the PA is able to determine the most likely diagnosis.

Intervention (Basic) = The PA is able to manage a disease/disorder with a basic/straightforward presentation, including referral to a specialist, and complications of the management intervention.

Intervention (Complex) = The PA is able to manage a disease/disorder made complex by other factors and/or increasing in severity and complications of management or intervention.

Results from the survey were analyzed with the purpose of informing the development of the recertification examination content outline. Recommended weights by body system for each performance expectation were computed from the survey results using the mean ratings.

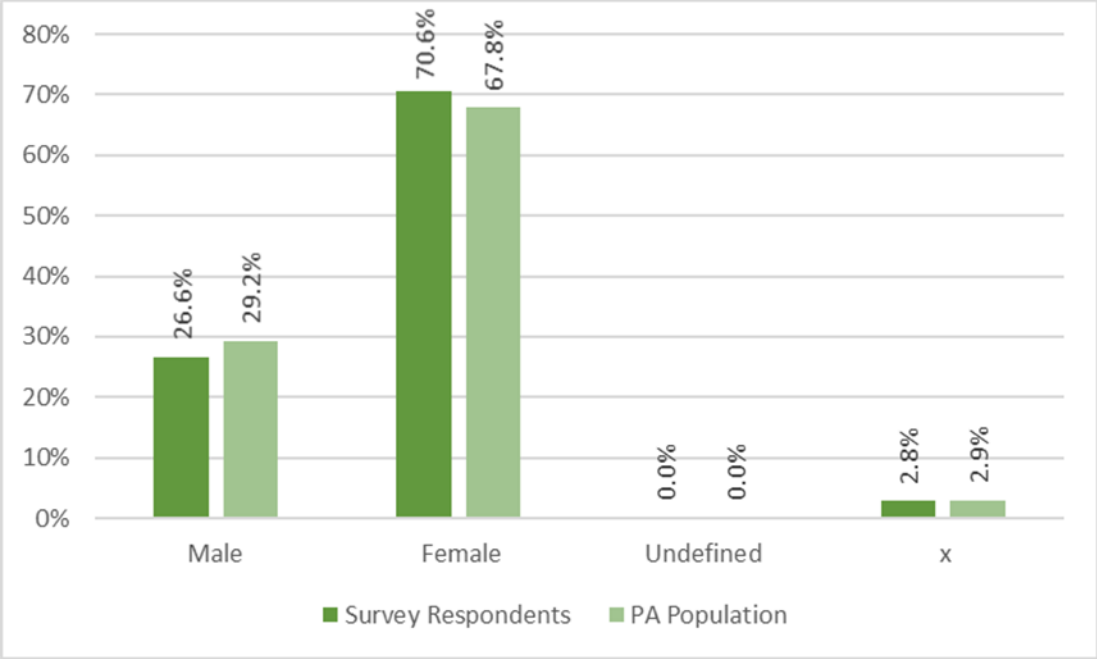
Respondents

The survey invitation was sent to all currently certified PAs for whom NCCPA had an email address. The diseases/disorders list was divided into five representative subsamples due to the length of the survey. A total of 151,715 email invitations were sent to potential survey respondents. Of these, 4,264 emails were either returned as undeliverable or the individuals opted out of receiving survey emails. A total of 19,116 surveys were fully completed, and an additional 6,879 surveys were at least partially completed for a total of 25,995 returned surveys. This data equates to a fully completed response rate of 12.96%, and an overall response rate (including partial responses) of 17.63%, which was sufficient to conduct the analyses.

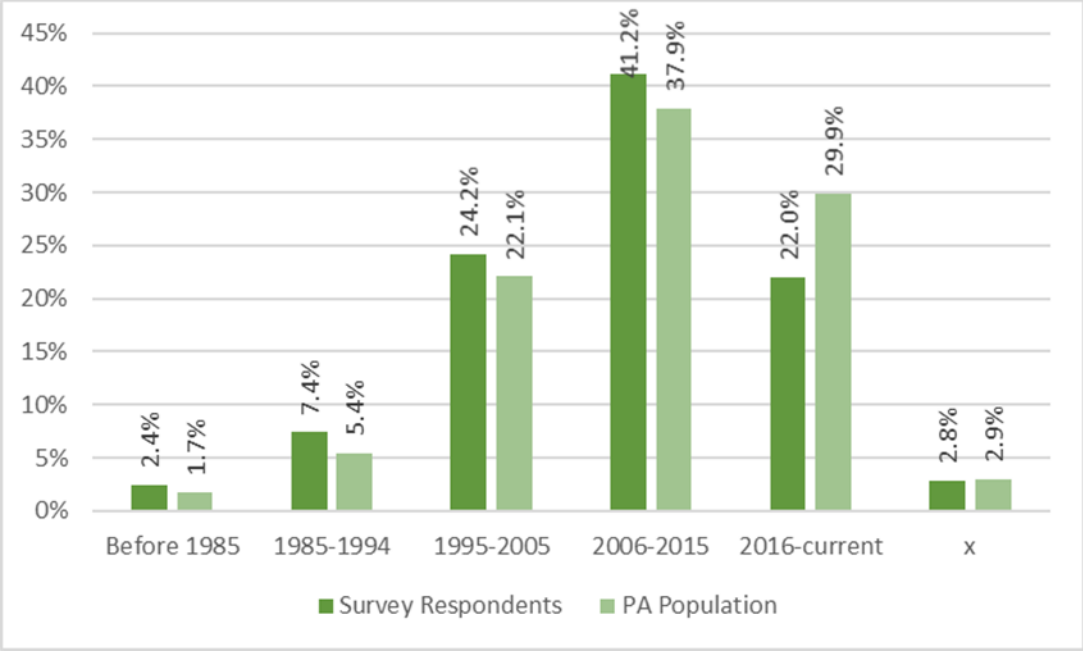
NCCPA had access to demographic data for the respondents prior to emailing the survey, and this information was used to ensure each of the five respondent groups was representative of the overall sample. This data included gender, certification year, practice region, specialty, age, race, and ethnicity.

For the total group of survey respondents, the highest percentage of respondents were female (70.6%), were certified between 2006-2015 (41.2%), practiced in the Southern region (32.7%), were between the ages of 30-39 (36.8%), and identified as White (78.7%) and not of Hispanic/Latino(a) origin (86.1%). Below are several graphs to show the similarity between the survey respondent group and the full currently certified PA population in order to emphasize the representativeness of the respondent group. Categories denoted by an “X” indicates individuals for whom the demographic information was unavailable.

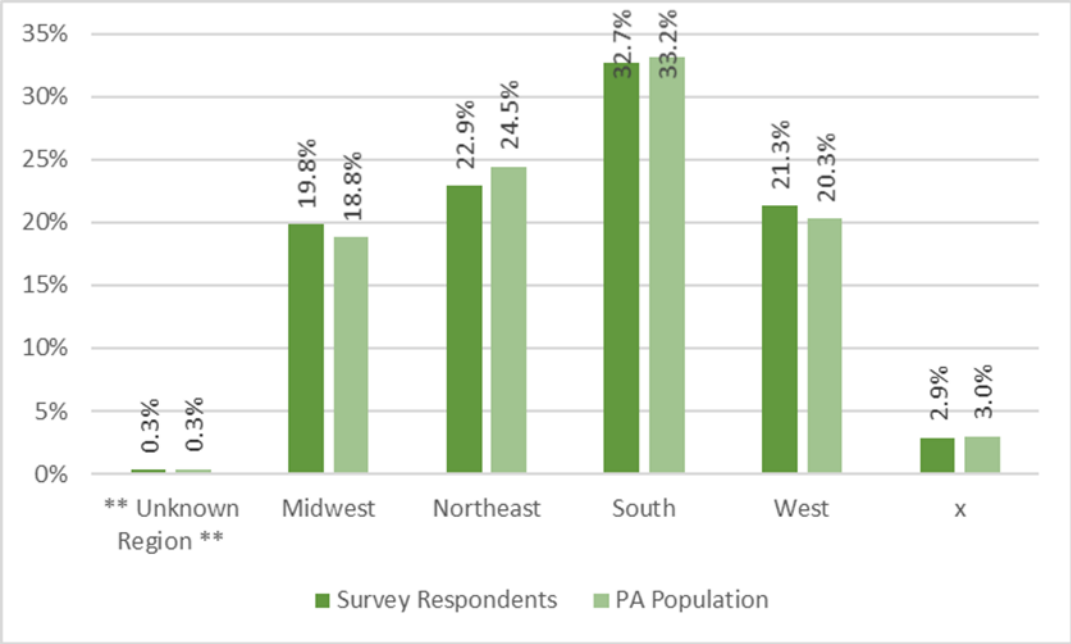
Graph 1. Gender Distribution



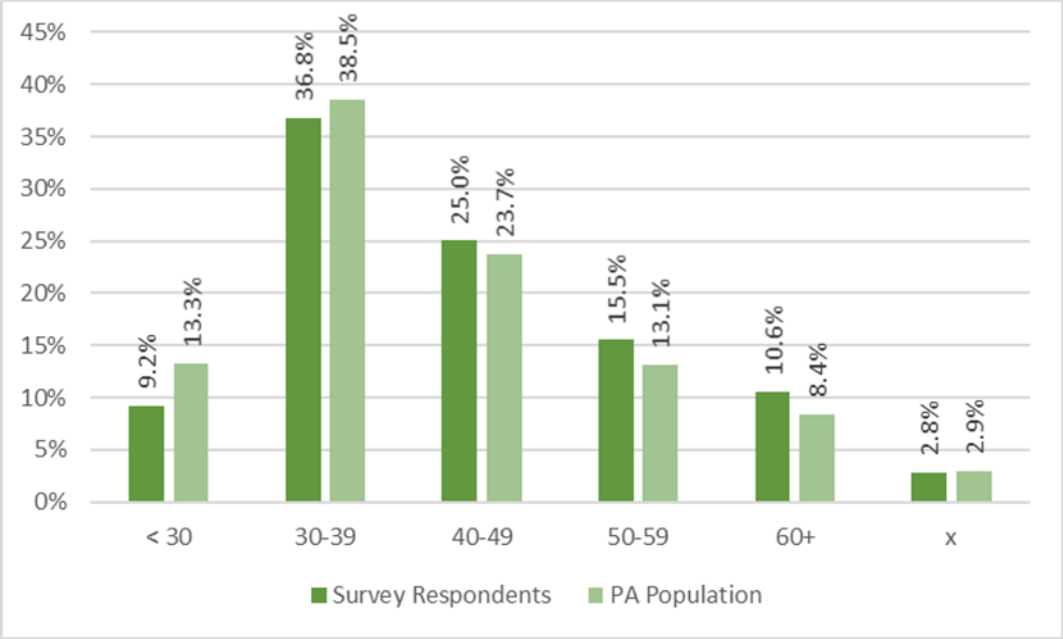
Graph 2. Year Certified Distribution



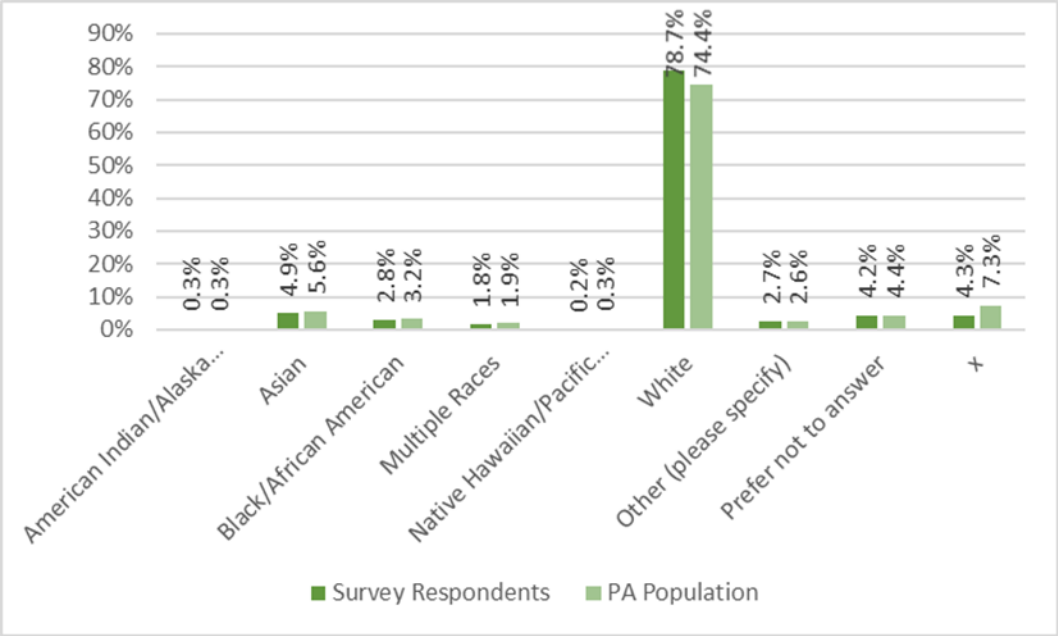
Graph 3. Practice Region Distribution



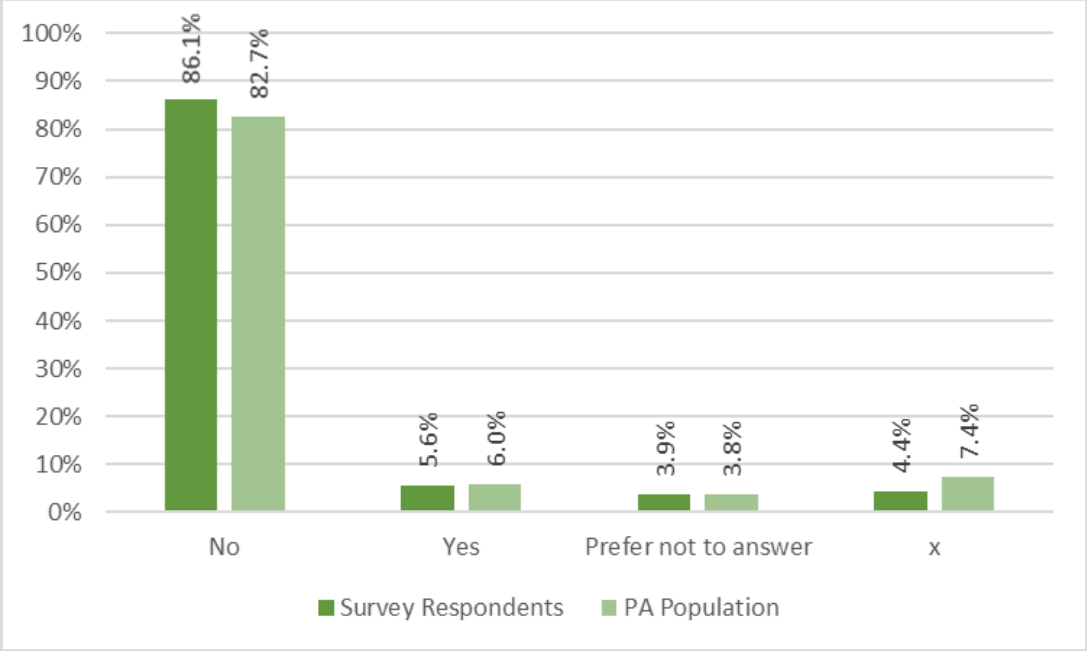
Graph 4. Age Distribution



Graph 5. Race Distribution



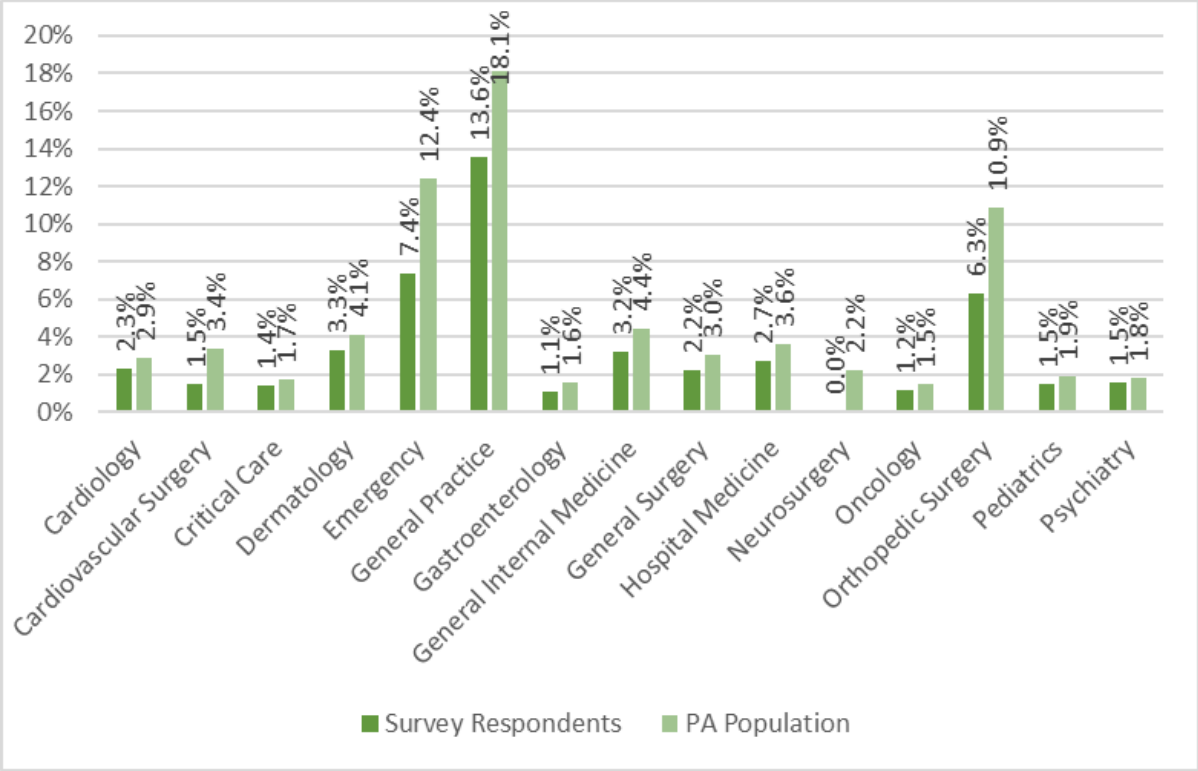
Graph 6. Ethnicity Distribution (Hispanic/Latinix origin)



Two additional demographic questions were included at the beginning of the survey. Respondents were asked to indicate their current level of clinical practice (80.4% indicated full-

time, 13.5% indicated part-time, and 6.1% indicated that they do not work in a clinical position), and their current principal clinical practice discipline. There were 71 clinical practice area groups for the respondents to select from, including an "Other" category. The highest percentages of respondents chose Family Medicine/General Practice (18.5%), Emergency Medicine (10.1%), Surgery: Orthopedic (8.6%), or Other (10.2%). In the Other category, the largest number of respondents indicated Urgent Care. Below is a graph showing a comparison of the most frequent 15 survey respondents' clinical practice disciplines compared to population data collected in 2020 by NCCPA.

Graph 7. Clinical Practice (Specialty) Distribution



Results

In the first stage of the analysis, the average rating for each disease/disorder was calculated (for respondents who recommended inclusion), as was the percentage of respondents at each performance expectation and the percentage who rated the disease/disorder as "Do Not Include". The highest endorsement of performance expectation was then used to recommend the level at which the disease/diagnosis might be tested on an examination. Diseases/disorders that received ratings within 5% of another performance expectation were highlighted for specific review.

In addition to looking at the overall respondent group, NCCPA recommended a review of subgroup responses based on specific demographics, and these recommendations were used to divide the data to observe any disparities among respondent subgroups. Compiled results that were presented to the SME panel for review included: response rate, demographic data, performance expectation data (average and % at each performance expectation), and subgroup data (average and % at each performance expectation by specified subgroup). All of this information was consolidated and used to help inform the SME panelist group decisions.

Table 1 shows the initially recommended percentages for a recertification exam content outline, as well as the number of diseases/disorders (#D/Ds) within each body system and the 'natural' weight (based strictly on the number of diseases/disorders within each body system, without factoring in the respondent ratings). The information shown in Table 1 is based solely on an analysis of survey response data prior to an in-person meeting to solicit input from subject matter experts (SMEs) regarding the empirically derived results. As can be seen from the data below, Performance Expectation 2 (Diagnosis) and 3 (Intervention [Basic]) obtained the highest endorsements from survey respondents across all body systems, while Performance Expectations 1 and 4 were rarely selected. As a reminder, the performance expectations described for survey participants are as follows:

PE 1 = History & Physical = Given a stated/differential condition, the PA knows the associated signs, symptoms, history, and physical examination components, complications, risk factors for and risks caused by the stated/differential condition.

PE 2 = Diagnosis = Given the signs, symptoms, history, risk factors, physical examination findings, and/or appropriate study results/interpretations, the PA is able to determine the most likely diagnosis.

PE 3 = Intervention (Basic) = The PA is able to manage a disease/disorder with a basic/straightforward presentation, including referral to a specialist, and complications of the management intervention.

PE 4 = Intervention (Complex) = The PA is able to manage a disease/disorder made complex by other factors and/or increasing in severity and complications of management or intervention.

Table 1. Initial Suggested Weights by Level Percentages and Body System

Body System (# D/Ds rated on survey)	Natural Weight	PE 1	PE 2	PE 3	PE 4
A. Cardiovascular System (n=46)	13.4%	0.0%	43.5%	56.5%	0.0%
B. Dermatologic System (n=33)	9.6%	0.0%	30.3%	69.7%	0.0%
C. Endocrine System (n=16)	4.7%	0.0%	50.0%	50.0%	0.0%
D. Eyes, Ears, Nose, and Throat (N=48)	14.0%	2.1%	33.3%	64.6%	0.0%
E. Gastrointestinal System/Nutrition (n=43)	12.5%	0.0%	37.2%	62.8%	0.0%
F. Genitourinary System (n=17)	4.9%	0.0%	29.4%	70.6%	0.0%
G. Hematologic System (n=13)	3.8%	0.0%	76.9%	23.1%	0.0%
H. Infectious Diseases (n=21)	6.1%	0.0%	28.6%	71.4%	0.0%
I. Musculoskeletal System (n=23)	6.7%	0.0%	39.1%	60.9%	0.0%
J. Neurologic System (n=17)	4.9%	0.0%	47.1%	52.9%	0.0%
K. Psychiatry/Behavioral Science (n=15)	4.4%	0.0%	46.7%	53.3%	0.0%
L. Pulmonary System (n=18)	5.2%	0.0%	22.2%	77.8%	0.0%
M. Renal System (n=6)	1.7%	0.0%	50.0%	50.0%	0.0%
N. Reproductive System (n=28)	8.1%	3.6%	50.0%	46.4%	0.0%

This initial analysis indicated the percentage of respondents selecting each performance expectation for each disease/disorder for PAs who are beyond entry-level. If the disease/disorder ratings were converted to weights and the weights were summed within a body system, each body system weight would be a direct representation of the sum of its diseases/disorders.

However, it is important to remember that developing a blueprint or content outline is a combination of empirical and judgmental evidence. This means that the data analyzed from the survey also needed to be reviewed by practitioners to help interpret the results and provide guidance regarding the translation of the results of the survey into a blueprint. The data shown in Table 1 are derived from the analysis of the survey; but should not be interpreted as final recommendations for the recertification blueprint. These data were used to inform the discussions of an SME practice analysis review panel that provided input on the results of the survey and recommendations for the final weightings. This process is described in the next section.

PHASE 3: SME PANELIST REVIEW AND CONTENT OUTLINE DEVELOPMENT

NCCPA compiled an SME panel of 12 Board Certified PAs for two days of virtual meetings which occurred on August 27-28, 2021, to review the initial data from the survey and provide input regarding the content recommendations with guidance from NCCPA's consultants, who co-facilitated the workshop. The PAs on the review panel were a combination of SMEs who participated in the first panel and individuals who were new to this study.

The panel worked as a full group to review the list of diseases and disorders based on multiple flags (e.g., Diseases/Disorders with greater than 15% of respondents indicating that it should not be included, meaningful differences between recently credentialed and more experienced PAs, meaningful differences between practice areas). The group first reviewed the collective data and made decisions on the upper boundary of performance expectation that was appropriate to be tested for each disease/disorder (with the assumption that the higher performance expectations were inclusive of the lower expectations). This decision-making activity resulted in the diseases/disorders shown in Table 2 being removed from the list based on both the percent of survey respondents who provided a "Do Not Include" rating and the SME Review panelist consensus.

Table 2. Diseases/Disorders Removed from Content Specifications

Body System Disease/Disorder	% DNI from Survey
A. Cardiovascular System	
Restrictive Cardiomyopathy	17.2%
Prinzmetal variant angina	20.4%
Sick sinus syndrome	21.0%
B. Dermatologic System	
Epithelial inclusion cysts	21.2%
D. Eyes, Ears, Nose, and Throat	
Vitreous detachment/hemorrhage	24.0%
Anterior uveitis	18.5%
Cleft palate	21.2%
Barotrauma	20.2%
E. Gastrointestinal System and/or Nutrition	
Cyclic vomiting syndrome	27.4%
G. Hematologic System	
Neutropenic fever	20.4%
M. Renal System	
Acid-base disorders	20.8%

After making the disease/disorder-level recommendations (remove, keep at specific performance expectation), the SME panelists discussed their recommended weightings for each body system (the percent of items that should be represented on a recertification

examination). The consensus results of these discussions are shown in Table 3. Based on these data, the SME Review panel, with assistance from the meeting facilitators, recommended the percentages (weightings) for each body system.

In addition to the body systems, the SME panelists elected to allow room on the recertification assessment for emergent topics (including legal and ethical issues and scenarios relating specifically to diversity, equity, and inclusion). The items written to the *Emergent Topics* domain are not to be constrained by the performance expectations. This placeholder is to be considered part of the final recommended exam specifications.

Table 3. SME Recommended Weightings

Body System (# D/Ds rated on survey)	# D/Ds retained*	PE 1	PE 2	PE 3	PE 4	Final SME Review Panel Recommended Weight (%)
Cardiovascular System (n=46)	43	0%	35%	47%	19%	**12%**
Dermatologic System (n=33)	32	0%	31%	66%	3%	**5%**
Endocrine System (n=16)	16	0%	50%	25%	25%	**8%**
Eyes, Ears, Nose, & Throat (n=48)	44	2%	34%	55%	9%	**8%**
Gastrointestinal System/Nutrition (n=43)	42	0%	24%	71%	5%	**10%**
Genitourinary System (n=17)	17	0%	35%	59%	6%	**5%**
Hematologic System (n=13)	12	0%	75%	17%	8%	**4%**
Infectious Diseases (n=21)	21	0%	33%	67%	0%	**7%**
Musculoskeletal System (n=23)	23	0%	39%	61%	0%	**8%**
Neurologic System (n=17)	17	6%	41%	47%	6%	**5%**
Psychiatry/ Behavioral Science (n=15)	15	0%	47%	40%	13%	**7%**
Pulmonary System (n=18)	18	0%	17%	61%	22%	**10%**
Renal System (n=6)	5	0%	20%	60%	20%	**4%**
Reproductive System (n=28)	28	0%	36%	61%	3%	**5%**
Emergent Topics (Legal, Ethical, DEI)						**2%**
Totals	**333**	**1%**	**35%**	**55%**	**9%**	**100%**

*****The SME panel used the percentage of 'Level 0' ratings, differences between categories of experience, and analysis from average ratings and distributions of ratings by performance expectation to inform how many of the Disease/Disorders would be removed from the disease/disorder list.

The final task for the SME panel was for each participant to complete an evaluation of their experience with the practice analysis data review process and the facilitation of the consultants. These evaluations asked about the understanding of the goals, the comfort with the decisions and outcomes, and the amount of time allocated to each activity. The SMEs were also encouraged to provide additional comments about the process or outcomes. The meeting evaluation responses again indicated that the SMEs felt the training was appropriate, the

different aspects of the practice analysis were successful, and there was sufficient time allocated to each activity.

In addition to reviewing and deciding on performance expectation levels for each disease/disorder, the SME review panel felt it would be beneficial to recommend percentage ranges at which these levels should be tested overall on the assessment. The committee also received direction from NCCPA that recommending stage of life (pediatric, adult, geriatric) percentages would help provide additional direction during the exam form assembly process. Tables showing these two additional form assembly recommendations are included in the final recommended detailed content outline.

The Appendix contains the final recommended blueprint for the NCCPA recertification examinations. This blueprint includes the list of retained diseases/disorders, along with their recommended upper boundary performance expectation and the body system weighting for the assessment. The weighting recommendation is provided in percentage format so that the NCCPA can apply this to the number of examination items, once that number has been determined.

DISCUSSION AND RECOMMENDATIONS

The process of developing the content specifications or blueprint for a recertification examination has implications for the defensibility of the final test scores. Therefore, this study was conducted to describe and prioritize expectations for the professional practice of PAs as it relates to core medical knowledge and skills content that is appropriate for recertifying PAs to know, regardless of their practice discipline and for practice mobility. The results of the study provide empirical evidence to inform the final blueprint design, including the weighting of body systems on the recertification examination forms.

The study suggested that the final blueprint could be based on the body systems and integrated diseases/disorders developed and reviewed by the PA focus groups. The results of the survey revealed the performance expectation at which PAs felt each disease/disorder was appropriate to test, as well as how much weight should be given to each body system. The study also informed the depth of knowledge expected for the respective system on the overall examination.

Based on the results of the survey and the professional experience of the diverse groups of SMEs (focus group and review group), each body system was assigned a weight based on its relative level of practice for professionals recertifying as PAs. The committee of SMEs reviewed the findings and recommended a final blueprint based on the evidence collected from the survey of practitioners and discussions during the in-person workshop. The next steps in the development process will be to begin review of the current recertification examination content for alignment to the new specifications.

REFERENCES

American Educational Research Association (AERA), American Psychological Association (APA), & National Council on Measurement in Education (NCME) (2014). *Standards for educational and psychological testing*. Washington, DC: American Educational Research Association.

Downing, S. (2006). Twelve steps for effective test development. In S. M. Downing & T. M. Haladyna (Eds.), *Handbook of test development* (pp. 3-26). Mahwah, NJ: Lawrence Erlbaum Associates.

Raymond., M., & Neustal, S. (2006) Determining the content of credentialing exams. In S. M. Downing & T. M. Haladyna (Eds.), *Handbook of test development* (pp. 181-224). Mahwah, NJ: Lawrence Erlbaum Associates.

APPENDIX: RECOMMENDED DETAILED CONTENT OUTLINE

In the table below, the Performance Expectation cells that include bullets indicate where examination items may be written for the specified disease/disorder. The percentage of items to be included on the overall examination is included at the body system level in the "Weight" column.

Performance Expectation Descriptions:

History & Physical = Given a stated/differential condition, the PA knows the associated signs, symptoms, history, and physical examination components, complications, risk factors for and risks caused by the stated/differential condition.

Diagnosis = Given the signs, symptoms, history, risk factors, physical examination findings, and/or appropriate study results/interpretations, the PA is able to determine the most likely diagnosis.

Intervention (Basic) = The PA is able to manage a disease/disorder with a basic/straightforward presentation, including referral to a specialist, and complications of the management intervention.

Intervention (Complex) = The PA is able to manage a disease/disorder made complex by other factors and/or increasing in severity and complications of management or intervention.

		Performance Expectation			
	Weight	History & Physical	Diagnosis	Intervention (Basic)	Intervention (Complex)
Cardiovascular System	**12%**				
1. Abdominal aortic aneurysm		•	•	•	
2. Acute myocardial infarction: non-ST-segment elevation myocardial infarction (NSTEMI)		•	•	•	
3. Acute myocardial infarction: ST-segment elevation myocardial infarction (STEMI)		•	•	•	•
4. Acute myocarditis		•	•		
5. Acute pericarditis		•	•		
6. Angina pectoris (stable and unstable angina)		•	•	•	
7. Aortic dissection		•	•		
8. Arterial embolism/thrombosis		•	•	•	
9. Atrial fibrillation		•	•	•	
10. Atrial flutter		•	•		
11. Atrioventricular block		•	•		
12. Bacterial endocarditis		•	•	•	
13. Bradycardia (stable and unstable)		•	•	•	
14. Bundle branch block		•	•		

		Performance Expectation			
	Weight	History & Physical	Diagnosis	Intervention (Basic)	Intervention (Complex)
15. Cardiac arrest		•	•	•	
16. Cardiac tamponade		•	•		
17. Cardiogenic shock		•	•	•	
18. Congenital heart disease		•	•		
19. Coronary artery disease		•	•	•	•
20. Deep venous thrombosis		•	•	•	•
21. Diastolic heart failure		•	•	•	•
22. Dilated cardiomyopathy		•	•		
23. Dyslipidemia		•	•	•	•
24. Essential hypertension		•	•	•	•
25. Hypertensive emergency		•	•	•	
26. Hypotension		•	•	•	
27. Hypertrophic cardiomyopathy		•	•		
28. Orthostatic hypotension		•	•	•	
29. Paroxysmal supraventricular tachycardia		•	•	•	
30. Pericardial effusion		•	•		
31. Peripheral artery disease		•	•	•	•
32. Phlebitis and thrombophlebitis		•	•	•	
33. Premature atrial/ventricular contractions		•	•		
34. Rheumatic heart disease		•	•		
35. Secondary hypertension		•	•	•	
36. Systolic heart failure		•	•	•	•
37. Thoracic aortic aneurysm		•	•		
38. Torsades de pointes		•	•	•	
39. Valvular disorders (regurgitation, prolapse, stenosis)		•	•		
40. Varicose veins		•	•	•	
41. Venous insufficiency		•	•	•	
42. Ventricular fibrillation		•	•	•	
43. Ventricular tachycardia		•	•	•	
B. Dermatologic System	**5%**	•	•	•	
1. Acne vulgaris		•	•	•	
2. Actinic keratosis		•	•	•	
3. Alopecia		•	•		
4. Atopic dermatitis		•	•	•	
5. Basal cell carcinoma		•	•		
6. Bites (animal, insect, human)		•	•	•	
7. Burns		•	•	•	
8. Cold injuries		•	•		
9. Contact dermatitis		•	•	•	
10. Dermatophyte infections		•	•	•	
11. Drug eruptions		•	•	•	
12. Erythema multiforme		•	•		
13. Hidradenitis suppurativa		•	•	•	

	Weight	Performance Expectation			
		History & Physical	Diagnosis	Intervention (Basic)	Intervention (Complex)
14. Lipomas		•	•		
15. Localized skin infections (cellulitis, erysipelas, abscesses, impetigo, carbuncles, furuncles)		•	•	•	•
16. Melanoma		•	•	•	
17. Molluscum contagiosum		•	•	•	
18. Necrotizing soft-tissue infection		•	•	•	
19. Onychomycosis		•	•	•	
20. Paronychia		•	•	•	
21. Pigmentation disorders (vitiligo, acanthosis, melasma)		•	•		
22. Pilonidal disease		•	•	•	
23. Pityriasis rosea		•	•		
24. Psoriasis		•	•	•	
25. Rosacea		•	•	•	
26. Roseola		•	•		
27. Seborrheic dermatitis		•	•	•	
28. Severe cutaneous adverse reactions (toxic epidermal necrolysis, Stevens-Johnson syndrome, staphylococcal scalded skin syndrome)		•	•		
29. Skin infestations (scabies, lice)		•	•	•	
30. Squamous cell carcinoma		•	•		
31. Ulcers (pressure, diabetic)		•	•	•	
32. Urticaria		•	•	•	
C. Endocrine System	**8%**				
1. Benign thyroid nodules		•	•		
2. Cushing syndrome		•	•		
3. Diabetes insipidus and SIADH		•	•		
4. Hyperparathyroidism		•	•		
5. Hyperthyroidism and thyrotoxicosis		•	•	•	
6. Hypertriglyceridemia		•	•	•	
7. Hypoparathyroidism		•	•		
8. Hypothyroidism		•	•	•	•
9. Metabolic syndrome, obesity		•	•	•	•
10. Osteoporosis		•	•	•	
11. Primary adrenal insufficiency		•	•		
12. Thyroid cancer		•	•		
13. Thyroiditis		•	•		
14. Type 1 diabetes mellitus, diabetic ketoacidosis		•	•	•	•
15. Type 2 diabetes mellitus, hyperosmolar hyperglycemic syndrome		•	•	•	•
16. Vitamin D deficiency		•	•	•	
D. Eyes, Ears, Nose, and Throat	**8%**				

	Weight	Performance Expectation			
		History & Physical	Diagnosis	Intervention (Basic)	Intervention (Complex)
1. Acute epiglottitis		•	•	•	
2. Acute glaucoma		•	•		
3. Acute pharyngitis		•	•	•	•
4. Acute/chronic otitis media		•	•	•	•
5. Acute/chronic sinusitis		•	•	•	•
6. Allergic rhinitis		•	•	•	•
7. Angioedema		•	•	•	
8. Aphthous ulcers		•	•		
9. Blepharitis		•	•	•	
10. Cataract		•	•		
11. Chalazion		•	•	•	
12. Conjunctivitis		•	•	•	
13. Corneal abrasion		•	•	•	
14. Corneal ulcer		•	•	•	
15. Dental pain/abscess		•	•	•	
16. Epistaxis		•	•	•	
17. Eustachian tube dysfunction		•	•	•	
18. Foreign body in ear		•	•	•	
19. Foreign body in eye		•	•	•	
20. Foreign body in nose		•	•	•	
21. Hearing loss		•	•		
22. Hordeolum		•	•	•	
23. Hyphema		•	•		
24. Labyrinthitis		•	•		
25. Laryngitis		•	•	•	
26. Macular degeneration		•			
27. Mastoiditis		•	•	•	
28. Meniere disease		•	•		
29. Nystagmus		•	•		
30. Ocular trauma		•	•	•	
31. Leukoplakia		•	•	•	
32. Orbital cellulitis		•	•	•	
33. Otitis externa (acute, malignant)		•	•	•	
34. Papilledema		•	•		
35. Parotitis		•	•	•	
36. Peritonsillar abscess		•	•	•	
37. Retinal detachment		•	•		
38. Retinal vascular occlusion		•	•		
39. Retinopathy (diabetic, hypertensive)		•	•		
40. Subconjunctival hemorrhage		•	•		
41. Temporomandibular disorders		•	•		
42. Tinnitus		•	•		
43. Tympanic membrane perforation		•	•	•	
44. Vertigo		•	•	•	
E. Gastrointestinal System and/or Nutrition	**10%**				

	Weight	Performance Expectation			
		History & Physical	Diagnosis	Intervention (Basic)	Intervention (Complex)
1. Acute cholecystitis		•	•	•	
2. Acute hepatitis		•	•		
3. Acute liver failure		•	•		
4. Acute pancreatitis		•	•	•	
5. Anal abscess/fistula		•	•	•	
6. Anal fissure		•	•	•	
7. Appendicitis		•	•	•	
8. Celiac disease		•	•	•	
9. Cholangitis		•	•		
10. Cholelithiasis		•	•	•	
11. Chronic hepatitis		•	•	•	
12. Chronic pancreatitis		•	•		
13. Cirrhosis		•	•		
14. Colon cancer		•	•	•	
15. Constipation		•	•	•	•
16. Diverticulitis and diverticulosis		•	•	•	
17. Dysphagia		•	•	•	
18. Esophageal varices		•	•	•	
19. Esophagitis		•	•	•	
20. Fecal incontinence		•	•	•	
21. Food allergies		•	•	•	
22. Food intolerances (gluten, lactose)		•	•	•	
23. Foreign body ingestion		•	•	•	
24. Gastritis		•	•	•	
25. Gastroesophageal reflux disease		•	•	•	•
26. Gastrointestinal bleeding		•	•	•	
27. Hemorrhoids (internal, external)		•	•	•	
28. Hernias		•	•	•	
29. Infectious diarrhea		•	•	•	
30. Inflammatory bowel disease		•	•	•	
31. Intussusception		•	•		
32. Irritable bowel syndrome		•	•	•	
33. Ischemic bowel disease		•	•		
34. Large-bowel obstruction		•	•		
35. Nonalcoholic fatty liver disease		•	•	•	
36. Noninfectious diarrhea		•	•	•	
37. Pancreatic cancer		•	•	•	
38. Peptic ulcer disease		•	•	•	
39. Pyloric stenosis		•	•		
40. Small-bowel obstruction		•	•	•	
41. Toxic ingestion (caustic substances, medications)		•	•	•	
42. Toxic megacolon		•	•		
F. Genitourinary System	**5%**				
1. Acute prostatitis		•	•	•	
2. Bacterial cystitis		•	•	•	•

	Weight	Performance Expectation			
		History & Physical	Diagnosis	Intervention (Basic)	Intervention (Complex)
3. Benign prostatic hyperplasia		•	•	•	
4. Bladder cancer		•	•		
5. Chronic prostatitis		•	•		
6. Epididymitis		•	•	•	
7. Hydrocele and varicocele		•	•		
8. Interstitial cystitis		•	•		
9. Nephrolithiasis and urolithiasis		•	•	•	
10. Orchitis		•	•	•	
11. Overactive bladder		•	•	•	
12. Paraphimosis/phimosis		•	•		
13. Prostate cancer		•	•	•	
14. Testicular cancer		•	•		
15. Testicular torsion		•	•	•	
16. Urethritis		•	•	•	
17. Urinary incontinence		•	•	•	
G. Hematologic System	**4%**				
1. Acute/chronic lymphocytic and myeloid leukemia		•	•		
2. Anemia of chronic disease		•	•		
3. Folate deficiency anemia		•	•	•	
4. Hemolytic anemia		•	•		
5. Hodgkin lymphoma		•	•		
6. Hypercoagulable states (pregnancy-induced, trauma, COVID-19, DVT, Factor V Leiden)		•	•		
7. Hypocoagulable states		•	•		
8. Immune thrombocytopenic purpura		•	•		
9. Iron deficiency anemia		•	•	•	•
10. Non-Hodgkin lymphoma		•	•		
11. Sickle cell anemia		•	•		
12. Vitamin B12 deficiency anemia		•	•	•	
H. Infectious Diseases	**7%**				
1. Candidiasis		•	•	•	
2. Chlamydial infections		•	•	•	
3. Coronavirus infections		•	•	•	
4. Epstein-Barr virus infections		•	•	•	
5. Gonococcal infections		•	•	•	
6. Herpes simplex virus infection		•	•	•	
7. HIV infection		•	•		
8. Human papillomavirus infections		•	•	•	
9. Influenza		•	•	•	
10. Malaria		•	•		
11. Measles		•	•		
12. Mumps		•	•		
13. Rabies		•	•		
14. Respiratory syncytial virus infection		•	•	•	

	Weight	Performance Expectation			
		History & Physical	Diagnosis	Intervention (Basic)	Intervention (Complex)
15. Rubella		•	•		
16. Septic disorders (sepsis, septic shock, systemic inflammatory response syndrome)		•	•	•	
17. Syphilis		•	•	•	
18. Tetanus		•	•		
19. Tick-borne diseases (Lyme disease, Rocky Mountain spotted fever, anaplasmosis)		•	•	•	
20. Tuberculosis		•	•	•	
21. Varicella-zoster virus infections (chickenpox, herpes zoster)		•	•	•	
I. Musculoskeletal System	**8%**				
1. Acute osteomyelitis		•	•	•	
2. Avascular necrosis		•	•		
3. Bursitis		•	•	•	
4. Carpal tunnel syndrome		•	•	•	
5. Compartment syndrome		•	•	•	
6. Fibromyalgia		•	•		
7. Fractures and dislocations (knee/patella, ankle/foot, forearm/wrist/hand, shoulder, hip, spine)		•	•	•	
8. Ganglion		•	•		
9. Gout and psuedogout		•	•	•	
10. Inflammatory arthropathy (rheumatoid arthritis [including juvenile], psoriatic arthritis)		•	•		
11. Lateral/medial epicondylitis		•	•	•	
12. Osgood-Schlatter disease		•	•		
13. Osteoarthritis		•	•	•	
14. Rotator cuff tear		•	•	•	
15. Scoliosis		•	•		
16. Septic arthritis		•	•	•	
17. Slipped capital femoral epiphysis		•	•		
18. Spinal disk herniation		•	•	•	
19. Spinal stenosis		•	•		
20. Sprain and strain injuries (knee, foot/ankle/back)		•	•	•	
21. Systemic lupus erythematosus		•	•		
22. Temporal arteritis (giant cell arteritis)		•	•	•	
23. Tendinitis (infectious, non-infectious)		•	•	•	
J. Neurologic System	**5%**				
1. Bell palsy		•	•	•	
2. Cauda equina syndrome		•	•		

	Weight	Performance Expectation: History & Physical	Diagnosis	Intervention (Basic)	Intervention (Complex)
3. Cerebral aneurysm		•	•		
4. Delirium		•	•		
5. Encephalopathy		•	•		
6. Essential tremor		•	•	•	
7. Headache disorders (cluster headache, migraine, tension headache, pseudotumor cerebri)		•	•	•	
8. Hydrocephalus		•			
9. Major neurocognitive disorder and dementia		•	•		
10. Meningitis and encephalitis		•	•		
11. Neuromuscular disorders (Guillain-Barre syndrome, myasthenia gravis, multiple sclerosis, amyotrophic lateral sclerosis, muscular dystrophy, botulism, Parkinson disease)		•	•		
12. Peripheral neuropathy		•	•	•	
13. Radiculopathy		•	•	•	
14. Seizure disorders		•	•	•	
15. Stroke and transient ischemic attack		•	•	•	•
16. Syncope		•	•	•	
17. Traumatic brain injury (intracranial hemorrhage, concussion, post-concussion syndrome)		•	•	•	
K. Psychiatry/Behavioral Science	**7%**				
1. Abuse and neglect (child abuse, adult abuse, spouse or partner abuse)		•	•	•	
2. Acute stress reaction		•	•	•	
3. Adjustment disorders (bereavement and grief reaction)		•	•	•	
4. Anxiety disorders (generalized anxiety disorder, panic disorder)		•	•	•	•
5. Bipolar disorders		•	•		
6. Depressive disorders (major depressive disorder, major depressive disorder with peripartum onset, major depressive disorder with seasonal pattern, post-partum)		•	•	•	•
7. Disruptive, impulse-control, and conduct disorders (oppositional defiant disorder, conduct disorder)		•	•		
8. Feeding and eating disorders (anorexia nervosa, bulimia nervosa, binge-eating disorder, mixed disorder)		•	•		

	Weight	Performance Expectation			
		History & Physical	Diagnosis	Intervention (Basic)	Intervention (Complex)
9. Neurodevelopmental disorders (autism spectrum disorder, attention-deficit/hyperactivity disorder)		•	•		
10. Non-substance-related addictive disorders		•	•		
11. Obsessive-compulsive disorder		•	•		
12. Post-traumatic stress disorder		•	•	•	
13. Schizophrenia		•	•		
14. Substance use disorders (illicit substances, prescription drugs, alcohol, tobacco)		•	•	•	
15. Suicide/homicide (risk, attempt, ideation)		•	•	•	
L. Pulmonary System	**10%**				
1. Acute bronchiolitis		•	•	•	
2. Acute bronchitis		•	•	•	
3. Acute respiratory distress syndrome		•	•	•	
4. Hypersensitivity reactions (allergies, anaphylaxis)		•	•	•	
5. Asthma		•	•	•	•
6. Chronic obstructive pulmonary disease (chronic bronchitis, emphysema, chronic obstructive asthma)		•	•	•	•
7. Croup		•	•	•	
8. Cystic fibrosis		•	•		
9. Foreign body aspiration		•	•	•	
10. Lung cancer		•	•	•	
11. Pertussis		•	•	•	
12. Pleural effusion		•	•	•	
13. Pneumonia (bacterial, fungal, viral)		•	•	•	•
14. Pneumothorax		•	•	•	
15. Pulmonary embolism		•	•	•	•
16. Pulmonary hypertension		•	•		
17. Pulmonary nodules		•	•		
18. Sleep apnea		•	•	•	
M. Renal System	**4%**				
1. Acute kidney injury (prerenal, postrenal, intrinsic, rhabdomyolysis)		•	•	•	
2. Chronic kidney disease		•	•	•	•
3. Electrolyte abnormalities		•	•	•	
4. Pyelonephritis		•	•	•	
5. Renal cell carcinoma		•	•		
N. Reproductive System	**5%**				
1. Abnormal uterine bleeding		•	•	•	
2. Abruptio placentae		•	•		

	Weight	Performance Expectation: History & Physical	Diagnosis	Intervention (Basic)	Intervention (Complex)
3. Amenorrhea		•	•	•	
4. Breast abscess and mastitis		•	•	•	
5. Breast cancer		•	•	•	
6. Cervical cancer		•	•	•	
7. Dysmenorrhea		•	•	•	
8. Ectopic pregnancy		•	•	•	
9. Endometriosis		•	•		
10. Fertility issues (contraception)		•	•	•	
11. Gestational diabetes		•	•		
12. Hypertension disorders during the perinatal period		•	•	•	
13. Normal pregnancy (medication use during the perinatal period, prenatal diagnosis/care)		•	•	•	
14. Menopause		•	•	•	
15. Ovarian cancer		•	•		
16. Ovarian cysts		•	•		
17. Ovarian torsion		•	•	•	
18. Pelvic inflammatory disease		•	•	•	•
19. Pelvic organ prolapse		•	•		
20. Placenta previa		•	•		
21. Postpartum hemorrhage		•	•	•	
22. Pregnancy loss		•	•		
23. Premature rupture of membranes		•	•		
24. Premenstrual syndrome		•	•	•	
25. Rh incompatibility		•	•	•	
26. Sexual dysfunction		•	•	•	
27. Uterine masses (fibroids, uterine cancers)		•	•		
28. Vaginitis		•	•	•	
O. Emergent Topics (Legal, Ethical, DEI)	**2%**				

The following percentages should also be used when assembling examination forms:

Performance Expectation	% of items
PE 1 – History & Physical	5% - 15%
PE 2 – Diagnosis	30% - 40%
PE 3 – Intervention (Basic)	40% - 50%
PE 4 – Intervention (Complex)	5% - 15%

Stage of Life	% of items
Pediatric	10% - 20%
Adult	50% - 60%
Geriatric	25% - 35%