

## SUPPLEMENTAL MATERIALS

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#### Supplemental Table 1. Survey Domains and Subdomains.

Survey Domains and Subdomains	Number of Questions
<b>Fellow Survey</b>	<b>6</b>
<i>Attitudes Regarding POCUS</i>	<b>2</b>
Importance of POCUS Topics to Nephrology Training	1
Effectiveness of Educational Strategy	1
<i>POCUS Curricular Details</i>	<b>1</b>
Level of Development of POCUS Curriculum in Program	1
<i>Current POCUS Use and Competence</i>	<b>3</b>
Frequency of POCUS Use	1
Perception of Trainee POCUS Competence	1
Perceived Adequacy of Instruction	1

<b>Faculty Survey</b>	<b>8</b>
<i>Attitudes Regarding POCUS</i>	<b>1</b>
Importance of POCUS Topics to Nephrology Training	1
<i>POCUS Curricular Details</i>	<b>6</b>
Level of Development of POCUS Curriculum in Program	1
Topics Covered in POCUS Curriculum	1
Structure of POCUS Curriculum	1
Perceived Barriers to POCUS Curriculum Development	1
Assessment Strategies	1
Training Background of POCUS Instructor	1
<i>Current POCUS Use and Competence</i>	<b>1</b>
Perception of Trainee POCUS competence	1

**Supplemental Table 2. Demographic Characteristics of 631 Fellow Survey Respondents\***

<b>Variable</b>	<b>Value<sup>†</sup></b>
<i>Age in Years (Range)</i>	33.7 (28–59)
<i>Ethnicity of Hispanic, Latino, Spanish Origin</i>	69 (11%)
<i>Race</i>	
American Indian or Alaska Native	1 (0%)
East Asian (e.g., China, Japan, South Korea, Taiwan)	48 (8%)
South Asian (e.g., India, Pakistan, Sri Lanka)	204 (32%)
Southeast Asian (e.g., Philippines, Vietnam, Singapore)	31 (5%)
Pacific Islander	0
Black or African American	28 (4%)
White	216 (34%)
Other	82 (13%)
NA	21 (3%)
<i>Medical School Classification</i>	

United States medical school—Allopathic (MD)	153 (24%)
United States medical school—Osteopathic (DO)	79 (13%)
Canadian medical school—Allopathic (MD)	3 (0%)
Canadian medical school—Osteopathic (DO)	1 (0%)
United States medical school—Off Shore	58 (9%)
International medical school—Europe	28 (4%)
International medical school—Middle East	49 (8%)
International medical school—Asia	172 (27%)
International medical school—Latin America	50 (8%)
International medical school—Africa	18 (3%)
NA	20 (3%)

*Current Gender Identity*

Man	375 (59%)
Woman	232 (37%)
Genderqueer	2 (0%)
Gender non-binary	0
Gender non-conforming	2 (0%)
Prefer not to answer	1 (0%)
NA	19 (0%)

\*NA = not available.

†Excepting respondent age, values are presented as N (%).

**Supplemental Table 3. Stage of POCUS Program Development as reported by Fellows and Training/Associate Program Directors.**

Parameter	Fellows (N=631) <sup>†</sup>	Faculty (N=84) <sup>†</sup>
<i>Presence of POCUS Curriculum in Program</i>	<i>N=631</i>	<i>N=84</i>

POCUS Curriculum is Established	240 (38%)	19 (23%)*
No Presence of POCUS Curriculum in Training Program	382 (61%)	—
No answer	9 (1%)	—
POCUS Curriculum is in Development	—	32 (38%)
No POCUS Curriculum is Established, but there is Interest in Developing One	—	30 (36%)
No POCUS Curriculum is Established, and there is No Interest in Developing One	—	3 (4%)
— = question was not included in cohort survey.		
*p=0.004 comparing fellow to faculty response.		
†Lowercase “n” values indicate the total number of respondents for each question section. Values are presented as number of respondents (% of per-question respondent totals).		

#### Supplement 4. Fellow Survey Instrument.

##### 1. How old are you?

[OPEN TEXT]

##### 2. Are you Hispanic, Latina/o, or of Spanish origin?

- a. Yes
- b. No

##### 3. What is your race?

- a. American Indian or Alaska Native
- b. East Asian (e.g., China, Japan, South Korea, Taiwan)
- c. South Asian (e.g., India, Pakistan, Sri Lanka)
- d. Southeast Asian (e.g., Philippines, Vietnam, Singapore)
- e. Pacific Islander
- f. Black or African American
- g. White
- h. Other

##### 4. How would you classify the medical school from which you graduated?

- a. United States medical school—Allopathic (MD)

- b. United States medical school—Osteopathic (DO)
- c. Canadian medical school—Allopathic (MD)
- d. Canadian medical school—Osteopathic (DO)
- e. United States medical school—Off Shore
- f. International medical school—Europe
- g. International medical school—Middle East
- h. International medical school—Asia
- i. International medical school—Latin America
- j. International medical school—Africa

**5. What is your current gender identity?**

- a. Man
- b. Woman
- c. Genderqueer
- d. Gender non-binary
- e. Gender non-conforming
- f. Prefer not to answer

**6. Point-of-care ultrasound (POCUS) is defined as the use of portable ultrasonography at a patient's bedside for diagnostic and therapeutic purposes. How would you rate the importance of these POCUS topics to nephrology training?**

**1 = Very Important**

**2 = Somewhat Important**

**3 = Neutral**

**4 = Somewhat Unimportant**

**5 = Very Unimportant**

- a. Basic Ultrasound Principles and Knobology
- b. Kidney Ultrasound
- c. Cardiac Imaging
- d. Lung Ultrasound
- e. Diagnostic—AV Access Imaging
- f. Diagnostic—PD Access Imaging
- g. Procedure—Central Venous Access Imaging
- h. Procedure—Ultrasound-Guided AV-Access Cannulation
- i. Procedure—Kidney Biopsy

**7. Is POCUS incorporated in your fellowship program curriculum?**

- a. Yes [**Go to Question 8**]
- b. No [**EXIT SURVEY**]

**8. Please rank the effectiveness of the following educational strategies for POCUS training from 1 to 5, with 1 being very effective.**

**1 = Very Effective**

**2 = Effective**

**3 = Neutral**

**4 = Somewhat Ineffective**

**5 = Very Ineffective**

- a. Lectures
- b. Online Modules
- c. Independent Scanning
- d. Guided Scanning with Instructor
- e. Simulated Patients

**9. How often do you incorporate POCUS in your daily clinical activities?**

- a. Never
- b. <1 time per Month
- c. ≥1 time per Month
- d. ≥1 time per Week
- e. ≥1 time per Day

**10. I received adequate instruction to independently perform POCUS in general nephrology practice.**

- a. Strongly Disagree
- b. Disagree
- c. Neutral
- d. Agree
- e. Strongly Agree

**11. Upon completion of nephrology fellowship I will be competent to independently perform POCUS in general nephrology practice.**

- a. Strongly Disagree
- b. Disagree
- c. Neutral
- d. Agree
- e. Strongly Agree



**Supplement 5. Faculty Survey Instrument.**

**1. Point of care ultrasound (POCUS) is defined as the use of portable ultrasonography at a patient's bedside for diagnostic and therapeutic purposes. How would you rate the importance of these POCUS topics to nephrology training?**

Topic	Very unimportant	Somewhat unimportant	Neutral	Somewhat important	Very Important	I don't know
Basic ultrasound principles and knobology						
Kidney ultrasound						
Cardiac imaging						
Lung ultrasound						
Diagnostic arteriovenous access imaging						
Diagnostic peritoneal dialysis access imaging						
Procedure: central venous access						
Procedure: ultrasound-guided AV-access cannulation						
Procedure: Kidney biopsy						

**2. At our fellowship program:**

- a. POCUS Curriculum is Established **[Go to Question 3]**
- b. POCUS Curriculum is in Development **[Go to Question 3]**
- c. No POCUS Curriculum is Established, But There's Interest in Developing One **[Go to Question 3]**
- d. No POCUS curriculum is Established, And There's No Interest in Developing One **[EXIT SURVEY]**

**3. Which of the following topics does your POCUS curriculum cover? Select all that apply.**

- a. Basic Ultrasound Principles and Knobology
- b. Kidney Ultrasound
- c. Cardiac Imaging
- d. Lung Ultrasound
- e. Diagnostic—AV Access Imaging
- f. Diagnostic—PD Access Imaging
- g. Procedure—Central Venous Access
- h. Procedure—Ultrasound-Guided AV-Access Cannulation
- i. Procedure—Kidney Biopsy
- j. Other: \_\_\_\_\_

**4. How is POCUS training structured in your fellowship program? Select all that apply.**

- a. Intensive block experience
- b. Longitudinal training experience
- c. Other: \_\_\_\_\_

**5. What barrier(s) have you encountered in implementing a POCUS curriculum at your training program? Select all that apply.**

- a. Ultrasound machine access
- b. Fear of missing an important diagnosis
- c. Financial concerns
- d. Inability to bill
- e. No Data Supporting POCUS Expedites Care
- f. No Interest/Support from Division/Department
- g. No Time for Curriculum Development
- h. No trained faculty
- i. Opposition from other ultrasound-trained physicians
- j. Ultrasound studies are immediately available
- k. None
- l. Other: \_\_\_\_\_

**6. What is the background/training of POCUS instructors that teach your fellows? Choose all that apply**

- a. Nephrology
- b. Cardiology
- c. Emergency Medicine
- d. Pulmonary/Critical Care
- e. Ultrasound technologist
- f. Hospital Medicine
- g. Other: \_\_\_\_\_

**7. What/Which methods does your training program use to assess fellow competency in**

**POCUS? Choose all that apply**

- a. Direct Observation
- b. Knowledge test
- c. OSCE (Objective Structured Clinical Examination)
- d. POCUS Portfolio (collected ultrasound video clips for remote review)
- e. Other: \_\_\_\_\_

**8. My graduating fellows are competent to independently perform POCUS in the context of general nephrology practice.**

- a. Strongly disagree
- b. Disagree
- c. Neutral
- d. Agree
- e. Strongly agree

**Supplemental Figure 1. Importance of Nephrology POCUS Topics for Nephrology Training Rated by Fellow (*left panel*) and Training/Associate Program Director (*right panels*) Respondents.**

