

## Supplemental File

### 1 SCANNING TASKS, BLOCK ALLOCATION & STRUCTURES CONSIDERED

#### 1.1 SCANNING TASKS PERFORMED

Scanning tasks were performed as per the table below (the order of scanning with/without ScanNav Anatomy PNB was alternated between participants).

BMI	Block	Task	Side	ScanNav Anatomy PNB	
Subject 1	Block 1	Expert	L	Yes	
			R		
		Expert + Non-expert	L	Yes	
			R		
	Block questionnaire				
	Block 2	Expert	L	Yes	
			R		
		Expert + Non-expert	L	Yes	
			R		
	Block questionnaire				
Subject 2	Block 1	Expert	L	Yes	
			R		
		Expert + Non-expert	L	Yes	
			R		
	Block questionnaire				
	Block 2	Expert	L	Yes	
			R		
		Expert + Non-expert	L	Yes	
			R		
	Block questionnaire				

## 1.2 BLOCK ALLOCATION

ScanNav Anatomy PNB supports anatomical structure identification for nine UGRA blocks. Study participant pairs (expert + non-expert) were assigned two blocks each in a pseudo-random manner, to provide coverage of supported blocks from the upper limb, trunk and lower limb.

Participant ID	Block 1	Block 2
E1/N1	Rectus sheath plane	Popliteal level sciatic nerve
E2/N2	Erector spinae plane	Sub-sartorial femoral triangle / Adductor canal
E3/N3	Superior trunk of brachial plexus	Sub-sartorial femoral triangle / Adductor canal
E4/N4	Rectus sheath plane	Sub-sartorial femoral triangle / Adductor canal
E5/N5	Popliteal level sciatic nerve	Axillary level brachial plexus
E6/N6	Suprainguinal fascia iliaca plane	Popliteal level sciatic nerve
E7/N6	Popliteal level sciatic nerve	Supraclavicular level brachial plexus
E8/N8	Interscalene level brachial plexus	Rectus sheath plane
E9/N9	Erector spinae plane	Axillary level brachial plexus
E10/N10	Popliteal level sciatic nerve	Suprainguinal fascia iliaca plane
E11/N11	Suprainguinal fascia iliaca plane	Sub-sartorial femoral triangle / Adductor canal
E12/N12	Erector spinae plane	Popliteal level sciatic nerve
E13/N13	Suprainguinal fascia iliaca plane	Sub-sartorial femoral triangle / Adductor canal
E14/N14	Interscalene level brachial plexus	Popliteal level sciatic nerve
E15/N15	Superior trunk of brachial plexus	Sub-sartorial femoral triangle / Adductor canal

A summary of ultrasound scans performed (by participant, with/without ScanNav Anatomy PNB, subject BMI and ultrasound machine) us shown below

Number of Ultrasound scans		Low BMI ( $<30\text{kg/m}^2$ )	High BMI ( $\geq 30\text{kg/m}^2$ )	SonoSite PX	SonoSite X-Porte
<b>with</b> ScanNav Anatomy PNB	120	60	60	60	60
captured by experts	60	30	30	30	30
captured by trainees	60	30	30	30	30
<b>without</b> ScanNav Anatomy PNB	120	60	60	60	60
captured by experts	60	30	30	30	30
captured by trainees	60	30	30	30	30
<b>Total</b>	<b>240</b>	<b>120</b>	<b>120</b>	<b>120</b>	<b>120</b>

### 1.3 SAFETY CRITICAL STRUCTURES

Following structures were considered as safety critical structures for each block:

Item	Anatomical Region	Safety critical anatomical structures
1)	Brachial plexus in the neck: -Interscalene -Superior trunk -Supraclavicular	<ul style="list-style-type: none"> <li>• Brachial plexus nerves (roots, trunks, divisions)</li> <li>• Subclavian or carotid artery</li> <li>• Pleura</li> </ul>
2)	Axillary level brachial plexus	<ul style="list-style-type: none"> <li>• Radial, ulnar, median, and musculocutaneous nerves</li> <li>• Axillary artery</li> </ul>
3)	Erector spinae plane	<ul style="list-style-type: none"> <li>• Pleura</li> <li>• Transverse processes</li> </ul>
4)	Rectus sheath plane	<ul style="list-style-type: none"> <li>• Peritoneum</li> <li>• Fascial plane</li> </ul>
5)	Suprainguinal fascia iliaca	<ul style="list-style-type: none"> <li>• Deep circumflex iliac artery</li> <li>• Fascial plane</li> </ul>
6)	Sub-sartorial femoral triangle / Adductor canal	<ul style="list-style-type: none"> <li>• Femoral artery</li> <li>• Saphenous nerve</li> </ul>
7)	Popliteal level sciatic nerve	<ul style="list-style-type: none"> <li>• Sciatic nerve (or peroneal/fibular and tibial nerve components)</li> <li>• Popliteal artery</li> </ul>

## 1.4 'BENEFITS' QUESTIONNAIRE RESULTS - EXPERT FEEDBACK

Expert participants completed the following 'benefits' questionnaire:

Expert ID	
Block	
Model ID	

Please provide an answer that best describes your experience of **this block**:

- Scanning with ScanNav Anatomy PNB compared to without ScanNav Anatomy PNB
- Teaching trainees with ScanNav Anatomy PNB compared to without ScanNav Anatomy PNB.

BP-1 On a scale of 0 to 10 (0 being no confidence, 10 being totally confident) for this block, how would you rate your scanning confidence on this subject **WITHOUT ScanNav Anatomy PNB**:

0	1	2	3	4	5	6	7	8	9	10
Low Confidence					Confident					

BP-2 On a scale of 0 to 10 (0 being no confidence, 10 being totally confident) for this block, how would you rate your scanning confidence on this subject **WITH ScanNav Anatomy PNB**:

0	1	2	3	4	5	6	7	8	9	10
Low Confidence					Confident					

BP-3 When identifying the relevant anatomical structures for this block on ultrasound, ScanNav Anatomy PNB:

- Assisted/helped you
- Made no difference
- Hindered you/made it harder

BP-4 When teaching the scanning for this block, ScanNav Anatomy PNB made it:

- Easier to teach
- No difference
- Harder to teach

BP-5 When supervising the trainee on this block, ScanNav Anatomy PNB:

- Was beneficial to you
- Made no difference
- Was detrimental to/hindered your teaching

BP-6 ScanNav Anatomy PNB reduced the frequency of interventions you needed to supervise the trainee effectively:

- Yes
- No difference
- No

BP-7 On a scale of 0 to 10 (0 being no confidence, 10 being totally confident), how confident were you in the trainee's scanning ability **WITHOUT ScanNav Anatomy PNB**:

0	1	2	3	4	5	6	7	8	9	10
Low Confidence					Confident					

BP-8 On a scale of 0 to 10 (0 being no confidence, 10 being totally confident), how confident were you in the trainee's scanning ability **WITH ScanNav Anatomy PNB** for this block:

0	1	2	3	4	5	6	7	8	9	10
Low Confidence					Confident					



Expert questionnaire results are presented below:

Participant ID	Block	Model ID	BMI	BP-1	BP-2	BP-3	BP-4	BP-5	BP-6	BP-7	BP-8
E1	Pop	2	High	10	10	B	B	B	B	5	3
E1	Pop	3	Low	10	10	B	B	C	C	6	4
E1	RS	2	High	10	10	B	B	B	C	10	4
E1	RS	3	Low	10	10	B	B	B	C	10	10
E2	Add	2	High	10	10	B	C	C	B	2	2
E2	Add	3	Low	10	10	B	B	B	B	2	2
E2	ESP	2	High	10	10	B	A	A	B	2	2
E2	ESP	3	Low	10	10	B	B	B	B	1	1
E3	Add	2	High	10	10	B	B	B	B	10	10
E3	Add	3	Low	10	10	B	B	B	B	10	10
E3	ST	2	High	8	8	A	A	A	B	3	4
E3	ST	3	Low	5	5	B	B	B	B	5	5
E4	Add	2	High	10	10	B	B	B	B	8	8
E4	Add	3	Low	10	10	B	B	B	B	9	9
E4	RS	2	High	10	10	B	B	B	B	8	8
E4	RS	3	Low	10	10	B	B	B	B	9	9
E5	Ax	2	High	10	8	C	B	C	B	8	7
E5	Ax	3	Low	10	10	C	B	C	C	9	8
E5	Pop	2	High	10	8	C	B	B	C	9	8
E5	Pop	3	Low	10	10	A	A	A	C	9	9
E6	Pop	2	High	10	10	B	B	B	C	10	10
E6	Pop	3	Low	9	9	B	B	B	B	8	6
E6	SFIC	2	High	10	10	B	A	A	B	8	8
E6	SFIC	3	Low	7	10	B	B	B	B	4	7
E7	Pop	2	High	10	10	B	A	A	B	8	10
E7	Pop	3	Low	10	10	B	B	B	B	9	10
E7	SC	2	High	10	10	B	A	B	B	10	10
E7	SC	3	Low	10	10	B	A	A	C	8	9
E8	IS	2	High	8	8	B	B	B	C	2	2
E8	IS	3	Low	7	7	B	B	A	B	2	4
E8	RS	2	High	6	6	B	A	B	A	2	4
E8	RS	3	Low	7	8	A	A	A	C	4	4
E9	Ax	3	Low	9	9	B	A	A	A	7	9
E9	Ax	2	High	9	9	B	A	A	B	6	8
E9	ESP	2	High	3	4	B	B	B	B	3	3
E9	ESP	3	Low	9	10	A	A	A	A	8	9
E10	Pop	2	High	9	9	B	B	B	B	9	9
E10	Pop	3	Low	9	9	B	B	A	B	8	8
E10	SFIC	2	High	7	8	A	A	A	B	7	8
E10	SFIC	3	Low	8	9	A	A	B	A	8	9



Participant ID	Block	Model ID	BMI	BP-1	BP-2	BP-3	BP-4	BP-5	BP-6	BP-7	BP-8
E11	Add	2	High	7	8	A	A	B	A	6	8
E11	Add	3	Low	6	8	A	A	B	A	6	8
E11	SFIC	2	High	7	8	A	A	A	B	6	8
E11	SFIC	3	Low	7	8	A	A	A	A	6	8
E13	Add	2	High	10	10	B	A	A	A	7	8
E13	Add	3	Low	10	10	B	B	B	B	7	7
E12	ESP	2	High	6	7	A	A	A	A	5	6
E12	ESP	3	Low	7	9	A	A	A	A	6	8
E12	Pop	2	High	9	10	A	A	A	A	8	9
E12	Pop	3	Low	9	10	A	A	A	A	9	10
E13	SFIC	2	High	8	8	B	A	A	A	8	8
E13	SFIC	3	Low	10	10	B	B	B	B	7	7
E14	IS	2	High	10	10	B	A	A	B	6	8
E14	IS	3	Low	10	10	B	B	A	A	7	8
E14	Pop	2	High	10	10	B	A	A	A	7	8
E14	Pop	3	Low	10	10	B	B	A	A	7	8
E15	Add	2	High	10	10	B	A	A	B	1	4
E15	Add	3	Low	10	10	B	A	B	B	2	4
E15	ST	2	High	10	10	A	A	A	B	1	2
E15	ST	3	Low	10	10	B	A	B	B	1	2

Benefit	Study Questions	Results		
		Positive or Neutral Response	Negative response	
Improving in operator confidence to achieve optimum view	BP-1 On a scale of 0 to 10 for this block, how would you rate your scanning confidence on this subject <b>WITHOUT</b> ScanNav Anatomy PNB  BP-2 On a scale of 0 to 10 for this block, how would you rate your scanning confidence on this subject <b>WITH</b> ScanNav Anatomy PNB	0-10 scale, 0 being no confidence, 10 being totally confident.  Change in confidence is calculated as a difference between two confidence scores with and without device.	In 97% (n=58) cases device either increased or did not change participant confidence levels	In 3% (n=2) cases device decreased participant confidence levels
identification of anatomical structures  obtaining the correct ultrasound view of the anatomy prior to needle insertion	BP-3 When identifying the relevant anatomical structures for this block on ultrasound, ScanNav Anatomy PNB	A. Assisted/helped you B. Made no difference C. Hindered you/made it harder	In 95% (n=57) cases device either assisted or made no difference to user	In 5% (n=3) cases device hindered the user
supervision and training in anatomical structure identification for UGRA scanning	BP-4 When teaching the scanning for this block, ScanNav Anatomy PNB made it	A. Easier to teach B. No difference C. Harder to teach	In 98% (n=59) cases device made it either easier or made no difference in teaching blocks	In 2% (n=1) cases device hindered teaching
supervision and training in anatomical structure identification for UGRA scanning	BP-5 When supervising the trainee on this block, ScanNav Anatomy PNB	A. Was beneficial to you B. Made no difference C. Was detrimental to/hindered your teaching	In 93% (n=56) cases device was beneficial or made no difference when supervising trainee	In 7% (n=4) cases device did not assist when supervising trainee
supervision and training in anatomical structure identification for UGRA scanning	BP-6 ScanNav Anatomy PNB reduced the frequency of interventions you needed to supervise the trainee effectively	A. Yes B. No difference C. No	In 83% (n=50) cases device either reduced or made no difference in frequency of interventions	In 17% (n=10) device did not reduce the frequency of interventions
Improving in operator confidence to achieve optimum view (Trainee scanning)  supervision and training in anatomical structure identification for UGRA scanning	BP-7 On a scale of 0 to 10, how confident were you in the trainee's scanning ability <b>WITHOUT</b> ScanNav Anatomy PNB  BP-8 On a scale of 0 to 10, how confident were you in the trainee's scanning ability <b>WITH</b> ScanNav Anatomy PNB	0-10 scale, 0 being no confidence, 10 being totally confident.  Change in confidence is calculated as a difference between two confidence scores with and without device.	In 88% (n=53) cases device either increased or did not change confidence levels in trainees	In 12% (n=7) cases device decreased confidence levels in trainees



#### 1.4.1 Change in expert confidence (Question BP-1 and BP-2)

Mean confidence in expert scanning without using ScanNav Anatomy PNB was 8.93/10 compared to 9.17/10 when using ScanNav Anatomy PNB.

23% (n=14) of responses to the User Confidence question indicated that block scanning confidence increased when scanning with ScanNav Anatomy PNB. Most participants reported a 1-point improvement, with 1 participant reporting a 3-point improvement (from 7 to 10) when scanning with Anatomy PNB for the SIFIB block. The other 73% (n=44) of responses reported no difference in confidence. In over half of the responses (58%, n=35), participants identified their scanning confidence without device as "10" (the maximum) for the assigned block, making further improvement impossible.

3% (n=2) of responses reported decrease in confidence by 2 points. These responses came from the same participant (E5) for Axillary and Popliteal block, reporting a 2-point decrease in confidence from 10 to 8 points on a high BMI model.

#### 1.4.2 Identification of structures (Question BP-3)

25% (n=15) of responses indicated that the device assisted or helped the participant when identifying the relevant anatomical structures for the block, while 70% (n=42) reported that device made no difference when identifying structures.

5% (n=3) of responses reported that the device hindered or made it harder to identify anatomical structures.

#### 1.4.3 Teaching scanning for UGRA (Question BP-4)

50% (n=30) of responses indicated that the device made it easier to teach scanning for the given block, while 48% (n=29) reported that the device assistance made no difference.

1 participant (E2) reported that they found it harder to teach. This was in high BMI model (adductor block). Participant E2 reported that the device made no difference in teaching for the adductor or ESP blocks in the low BMI model, but that it did assist in teaching for the ESP in the high BMI model.

#### 1.4.4 Supervision of UGRA procedures (Question BP-5)

45% (n=27) of responses indicated that when supervising the trainee, the device was beneficial to the participant, while 48% (n=29) reported that the device assistance made no difference.

7% (n=4) of responses indicated that the device was either detrimental or hindered their supervision of trainee for the given block. One response was obtained from participant E1 on the low BMI model (popliteal block), and participant E2 on the high BMI model (adductor block). The other 2 negative responses were obtained from the same participant E5, on both low and high BMI models (axillary blocks).

#### 1.4.5 Frequency of interventions by supervisor (Question BP-6)

27% (n=16) of responses indicated that device reduced the frequency of interventions when supervising the trainee. 57% (n=34) reported that the device made no difference, and 17% (n=10) reported that ScanNav Anatomy PNB did not reduce the frequency of interventions.

Out of 10 responses that reported the device did not reduce the frequency of interventions, both participants E1 and E5 responded in this manner 3 times each. Remaining responses were from E6, E7 and twice from E8. Four of responses were for each popliteal and rectus blocks.



#### 1.4.6 Change of expert confidence in (when supervising) trainee (Question BP-7 and BP-8)

The mean score of expert confidence in trainee scanning was 6.32/10 without the use of ScanNav Anatomy PNB and 6.82 with.

48% (n=29) of responses indicated that their confidence in the trainee increased when the trainee was scanning with the device. Most of these participants reported a 1 to 2-point improvement in confidence, while 2 of the 29 reported a 3-point improvement (adductor and SFIC blocks). 40% (n=24) of participant responses indicated that device did not affect trainee confidence.

12% (n=7) of responses indicated a decrease in trainee confidence. Participant E1 made 3 observations that their trainee's confidence was decreased (rectus sheath and popliteal blocks). Participant E5 made 3 observations that their trainee's confidence was decreased (axillary and popliteal blocks). Participant E6 made one observation that their trainee's confidence reduced when using the device (popliteal block). In 6 of these instances, the decrease in confidence was 1-2 points. In one instance, participant E1 reported a 6-point reduction in trainee confidence (from 10 to 4) when scanning for the rectus sheath block on the high BMI model.

#### 1.4.7 Analysis of positive responses to questionnaire

A total of 360 expert responses to the Benefit Questionnaire were analysed. 36.4% (131/360) of responses were positive. 92.5% (333/360) of responses were either positive or neutral.

Participant ID	Number of positive responses						Total
	BP-3	BP-4	BP-5	BP-6	Participant confidence	Trainee confidence	
E1	0	0	0	0	0	0	0
E2	0	1	1	0	0	0	2
E3	1	1	1	0	0	1	4
E4	0	0	0	0	0	0	0
E5	1	1	1	0	0	0	3
E6	0	1	1	0	1	1	4
E7	0	3	2	0	0	3	8
E8	1	2	2	1	1	2	9
E9	1	3	3	2	2	3	14
E10	2	2	2	1	2	2	11
E11	4	4	2	3	4	4	21
E12	4	4	4	4	4	4	24
E13	0	2	2	2	0	1	7
E14	0	2	4	3	0	4	13
E15	1	4	2	0	0	4	11
<b>Total</b>	<b>15</b>	<b>30</b>	<b>27</b>	<b>16</b>	<b>14</b>	<b>29</b>	<b>131</b>

#### Experts



The majority of expert participants (13/15) contributed to the positive feedback about the device. Participant E12 provided maximum number of possible positive responses (24/24), while on average each participant providing positive feedback provided approximately 10 responses out of 24 possible opportunities (on average 40%).

### **BMI**

Of the 131 positive responses (out of 360), 48% (63/131) positive responses were related to scans taken on a high BMI model and 52% (68/131) responses were related to scans taken on a low BMI model.

### **Block**

Most positive responses were related to the Axillary and Interscalene blocks (approximately 20% of positive responses each), followed by the Popliteal (16%, 21/131 positive responses) and Adductor blocks (14.5%, 19/131 positive responses).

BLOCK	COUNT OF POSITIVE RESPONSES	PERCENT
INTERSCALENE	28	21.4%
AXILLARY	27	20.6%
POPLITEAL	21	16.0%
ADDUCTOR	19	14.5%
SUPRACLAVICULAR	10	7.6%
RECTUS SHEATH	8	6.1%
ESP	7	5.3%
SFIC	7	5.3%
SUPERIOR TRUNK	4	3.1%
<b>TOTAL</b>	<b>131</b>	

#### 1.4.8 Analysis of negative responses to benefit questionnaire

A total of 360 participant responses to Benefit Questionnaire were analysed. 7.5% (27/360 responses) were negative.

Participant ID	Number of negative responses						Total
	BP-3	BP-4	BP-5	BP-6	Participant confidence	Trainee confidence	
E1	0	0	1	3	0	3	7
E2	0	1	1	0	0	0	2
E3	0	0	0	0	0	0	0
E4	0	0	0	0	0	0	0
E5	3	0	2	3	3	2	13
E6	0	0	0	1	0	1	2
E7	0	0	0	1	0	0	1
E8	0	0	0	2	0	0	2
E9	0	0	0	0	0	0	0
E10	0	0	0	0	0	0	0
E11	0	0	0	0	0	0	0



E12	0	0	0	0	0	0	0
E13	0	0	0	0	0	0	0
E14	0	0	0	0	0	0	0
E15	0	0	0	0	0	0	0
<b>Total</b>	<b>3</b>	<b>1</b>	<b>4</b>	<b>10</b>	<b>3</b>	<b>6</b>	<b>27</b>

### **Experts**

Six experts (6/15) contributed to the negative feedback. Almost half (48%, n=13) of negative responses were provided by single participant E5, while approximately quarter (26%, n=7) of negative responses were provided by participant E1. The remaining quarter (26% n=7) of issues were reported by another 4 different participants.

### **BMI**

16 negative responses were related to scans taken on a High BMI model and 11 responses were related to scan taken on a Low BMI model.

### **Block**

41% (n=11) of negative responses were related to the popliteal block and 30% (n=8) responses were related to the axillary block. The remaining 8 negative responses were related to either rectus sheath, adductor, interscalene or supraclavicular blocks. The popliteal block was assigned to both E1 and E5 participants who contributed to most of the negative feedback collected. All the negative feedback regarding the axillary block was received from participant E5.

<b>BLOCK</b>	<b>COUNT OF NEGATIVE RESPONSES</b>	<b>PERCENT</b>
<b>POPLITEAL</b>	11	40.7
<b>AXILLARY</b>	8	29.6
<b>RECTUS SHEATH</b>	4	14.8
<b>ADDUCTOR</b>	2	7.4
<b>INTERSCALENE</b>	1	3.7
<b>SUPRACLAVICULAR</b>	1	3.7





Participant ID	Block	Model ID	BMI	BP-9	BP-10	BP-11	BP-12	BP-13	BP-14	BP-15	BP-16
T1	Pop	2	High	0	5	5	B	B	B	B	B
T1	Pop	3	Low	10-20	5	5	A	B	B	B	B
T1	RS	2	High	0	1	4	A	A	A	A	B
T1	RS	3	Low	0	5	5	A	B	A	A	B
T2	Add	2	High	10	7	6	A	C	A	B	A
T2	Add	3	Low	10	7	7	A	B	B	A	B
T2	Esp	2	High	0	7	9	A	A	B	A	A
T2	Esp	3	Low	0	6	6	B	A	B	A	B
T3	Add	2	High	2	3	2	C	B	B	B	B
T3	Add	3	Low	2	4	3	C	B	C	B	B
T3	ST	2	High	0	2	2	B	B	B	B	B
T3	ST	3	Low	2	2	2	B	B	B	B	B
T4	Add	2	High	50	10	10	B	B	A	A	B
T4	Add	3	Low	50	10	10	B	B	A	B	B
T4	RS	2	High	<10	10	10	B	B	B	B	B
T4	RS	3	Low	<10	9	10	B	B	A	A	B
T5	AX	2	High	5	6	6	B	B	A	A	B
T5	AX	3	Low	5	6	6	B	B	A	A	B
T5	Pop	2	High	20	7	7	B	B	A	B	B
T5	Pop	3	Low	20	6	8	A	A	A	A	C
T6	Pop	2	High	>30	10	10	B	B	B	B	B
T6	Pop	3	Low	>30	8	8	B	B	B	B	B
T6	SFIC	2	High	0	3	5	A	A	A	A	B
T6	SFIC	3	Low	0	1	2	B	B	B	B	B
T7	Pop	2	High	0	6	7	A	B	A	A	B
T7	Pop	3	Low	1	6	7	A	B	A	A	B
T7	SC	2	High	0	6	7	A	A	A	A	B
T7	SC	3	Low	0	6	7	A	B	A	A	B
T8	IS	2	High	0	3	7	B	A	A	A	B
T8	IS	3	Low	0	4	8	A	A	A	A	A
T8	RS	2	High	0	8	9	B	B	A	A	A
T8	RS	3	Low	0	7	9	A	A	A	A	A
T9	Ax	2	High	5	7	8	A	A	A	A	B
T9	AX	3	Low	5	7	8	A	A	A	A	B
T9	Esp	2	High	0	2	3	A	A	A	A	B
T9	Esp	3	Low	0	5	8	A	A	A	A	B
T10	Pop	2	High	20-30	7	7	B	B	B	B	B
T10	Pop	3	Low	20-30	9	9	A	A	B	B	B
T10	SFIC	2	High	3-4	5	6	A	A	A	A	B
T10	SFIC	3	Low	3-4	7	8	A	A	A	A	B
T11	Add	2	High	50	10	10	B	B	B	A	A



Participant ID	Block	Model ID	BMI	BP-9	BP-10	BP-11	BP-12	BP-13	BP-14	BP-15	BP-16
T11	Add	3	Low	50	10	10	B	B	B	B	B
T11	SFIC	2	High	5	8	9	A	A	A	A	A
T11	SFIC	3	Low	5	10	10	B	B	A	A	A
T12	Esp	2	High	2	6	5	B	B	B	B	B
T12	Esp	3	Low	3	9	9	B	B	B	B	B
T12	Pop	2	High	15	8	8	A	A	B	A	B
T12	Pop	3	Low	15	9	9	B	B	B	B	B
T13	Add	2	High	2	4	6	A	B	A	A	B
T13	Add	3	Low	2	5	6	A	A	A	A	B
T13	SFIC	2	High	0	2	3	B	B	B	B	B
T13	SFIC	3	Low	0	3	4	B	B	B	B	B
T14	IS	2	High	10	5	7	A	B	A	A	B
T14	IS	3	Low	10	7	9	A	A	A	A	B
T14	Pop	2	High	15	8	9	A	B	A	A	B
T14	Pop	3	Low	15	8	9	B	B	A	B	B
T15	Add	2	High	0	5	7	A	A	A	A	B
T15	Add	3	Low	0	8	8	B	B	A	B	B
T15	ST	2	High	0	5	5	A	B	A	A	B
T15	ST	3	Low	0	5	6	A	A	B	A	B

Benefit	Study Questions		Results	
			Positive or Neutral Response	Negative response
Improving in operator confidence to achieve optimum view	BP-10 On a scale of 0 to 10 for this block, how would you rate your scanning confidence on this subject <b>WITHOUT</b> ScanNav Anatomy PNB  BP-11 On a scale of 0 to 10 for this block, how would you rate your scanning confidence on this subject <b>WITH</b> ScanNav Anatomy PNB	0-10 scale, 0 being no confidence, 10 being totally confident.  Change in confidence is calculated as a difference between two confidence scores with and without device.	In 93% (n=56) cases device either increased or did not change trainee confidence levels	In 7% (n=4) cases device decreased trainee confidence levels
Identification of anatomical structures Obtaining the correct ultrasound view of the anatomy prior to needle insertion	BP-12 When identifying the relevant anatomical structures for this block on ultrasound, ScanNav Anatomy PNB:	A. Assisted/helped you B. Made no difference C. Hindered you/made it harder	In 97% (n=58) cases device either assisted or made no difference to trainee	In 3% (n=2) cases device hindered the trainee
Obtaining the correct ultrasound view of the anatomy prior to needle insertion	BP-13 When acquiring the correct ultrasound view for this block, did ScanNav Anatomy PNB:	A. Assisted/helped you B. Made no difference C. Hindered you/made it harder	In 98% (n=59) cases device made it either easier or made no difference in finding the correct view	In 2% (n=1) cases device hindered finding the correct view
Supervision and training in anatomical structure identification for UGRA scanning	BP-14 When learning scanning for this block, ScanNav Anatomy PNB made it:	A. Easier to learn B. No difference C. Harder to learn	In 98% (n=59) cases device was beneficial or made no difference when learning how to scan	In 2% (n=1) cases device made it harder when learning how to scan
Supervision and training in anatomical structure identification for UGRA scanning	BP-15 When scanning for this block, ScanNav Anatomy PNB:	A. Was beneficial for/helped your training B. Made no difference to your training C. Was detrimental to/hindered your training	In 100% (n=60) cases device was either beneficial or made no difference in trainees training to scan	In no cases did the device hindered trainees training
Supervision and training in anatomical structure identification for UGRA scanning	BP-16 While using ScanNav Anatomy PNB for this block I required:	A. Less support from my supervisor B. The same amount of support from my supervisor C. More support from my supervisor	In 98% (n=59) cases device either increased or did not change confidence levels in trainees	In 2% (n=1) cases device decreased confidence levels in trainees

Table 1: Summary of benefit questionnaire results (trainees)



### 1.5.1 Trainee prior experience in scanning blocks (Question BP-9)

38% (n=23) of trainee responses indicated that they have never performed their assigned block before. All other trainees who participated in this study have previously performed the assigned block between 1 and 50 times.

### 1.5.2 Change in trainee confidence (Question BP-10 and BP-11)

Mean confidence in trainees scanning without using ScanNav Anatomy PNB was 6.17/10 compared to 6.92/10 when using ScanNav Anatomy PNB.

52% (n=31) of responses indicated that the trainees self-perceived confidence increased when scanning with the device for the block. Most trainees reported a 1-point improvement, whilst 1 trainee reported a 4-point improvement when scanning for interscalene block with the device (on both low and high BMI models). The remaining responses (42%, n=25) reported no difference in confidence.

7% (n=4) of responses reported a decrease in confidence by 1 point. Two of the responses were from trainee T3 scanning an adductor block on both low and high BMI model. The other two responses were recorded from trainees T2 and T12 who scanned ESP and adductor models on the high BMI model.

### 1.5.3 Identification of structures (Question BP-12)

52% (n=31) of responses indicated that the device assisted or helped the trainee when identifying the relevant anatomical structures for the block, while 45% (n=27) reported that device made no difference.

3% (n=2) responses reported that device hindered or made it harder to identify anatomical structures. All such responses were obtained from trainee T3, while scanning low and high BMI model for the adductor block.

### 1.5.4 Finding correct view (Question BP-13)

37% (n=22) of responses indicated that the device assisted the trainee to find the correct ultrasound view for the assigned block, while 62% (n=37) of responses reported that the device assistance made no difference.

1 trainee (T2) reported that they found the device hindered them when finding the correct view, during an adductor block scan on High BMI model.

### 1.5.5 Learning to scan for the block (Question BP-14)

60% (n=36) of trainee responses indicated that the device made it easier to learn how to scan for the given block, while 38% (n=23) reported that the device assistance made no difference.

2% (n=1) responses indicated that the device made it harder to learn how to scan for the given block. This response was obtained from participant T3 for the Adductor block on the low BMI model.

### 1.5.6 Helped training (Question BP-15)

62% (n=37) of trainee responses indicated that device was beneficial or helped their training, while 38% (n=23) reported that the device made no difference.

No participants reported that device was detrimental or hindered their training.

### 1.5.7 Supervisor support (Question BP-16)

A majority of trainees responses (85%, n=51) indicated that they required the same amount of support from their supervisor while using the device. Some trainees (13%, n=8) indicated that they required less



support and one trainee T5 responded that they required more support from their supervisor when scanning the Popliteal block on low BMI model with the device.

#### 1.5.8 Analysis of positive response to Benefit Questionnaire

A total of 360 participant responses to the Benefit Questionnaire were analysed. 45.8% (165/360) of responses were positive. 97.5% (351/360) of responses were either positive or neutral.

Participant ID	Number of positive responses						Trainee confidence	Total
	BP-12	BP-13	BP-14	BP-15	BP-16			
T1	3	1	2	2	0	1	9	
T2	3	2	1	3	2	1	12	
T3	0	0	0	0	0	0	0	
T4	0	0	3	2	0	1	6	
T5	1	1	4	3	0	1	10	
T6	1	1	1	1	0	2	6	
T7	4	1	4	4	0	4	17	
T8	2	3	4	4	3	4	20	
T9	4	4	4	4	0	4	20	
T10	3	3	2	2	0	2	12	
T11	1	1	2	3	3	1	11	
T12	1	1	0	1	0	0	3	
T13	2	1	2	2	0	4	11	
T14	3	1	4	3	0	4	15	
T15	3	2	3	3	0	2	13	
<b>Total</b>	<b>31</b>	<b>22</b>	<b>36</b>	<b>37</b>	<b>8</b>	<b>31</b>	<b>165</b>	

#### Non-experts

Fourteen (of 15) non-expert participants contributed positive feedback. Participants T8 and T9 provided most positive responses (20/24), while on average each participant who did provide positive feedback provided approximately 12 positive responses out of 24 (on average 50%).

#### BMI

Of the 165 positive responses (out of 360), 53% (87/165) positive responses were related to scans taken on a High BMI model and 47% (78/165) responses were related to scans taken on a Low BMI model.

#### Block

Most positive responses were equally split between SFIC, Popliteal and Adductor blocks (approx. 16% of positive responses each).

BLOCK	COUNT OF POSITIVE RESPONSES	PERCENT
SFIC	27	16.4%
POPLITEAL	26	15.8%
ADDUCTOR	25	15.2%



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<b>RECTUS SHEATH</b>	21	12.7%
<b>INTERSCALENE</b>	19	11.5%
<b>ESP</b>	17	10.3%
<b>AXILLARY</b>	14	8.5%
<b>SUPRACLAVICULAR</b>	9	5.5%
<b>SUPERIOR TRUNK</b>	7	4.2%
<b>TOTAL</b>	<b>165</b>	

#### 1.5.9 Analysis of negative responses to Benefit Questionnaire

A total of 360 trainee responses to the Benefit Questionnaire were analysed. 2.5% (9/360 responses) were negative.



Trainee ID	Number of negative responses					Trainee confidence	Total
	BP-12	BP-13	BP-14	BP-15	BP-16		
T1	0	0	0	0	0	0	0
T2	0	1	0	0	0	1	2
T3	2	0	1	0	0	2	5
T4	0	0	0	0	0	0	0
T5	0	0	0	0	1	0	1
T6	0	0	0	0	0	0	0
T7	0	0	0	0	0	0	0
T8	0	0	0	0	0	0	0
T9	0	0	0	0	0	0	0
T10	0	0	0	0	0	0	0
T11	0	0	0	0	0	0	0
T12	0	0	0	0	0	1	1
T13	0	0	0	0	0	0	0
T14	0	0	0	0	0	0	0
T15	0	0	0	0	0	0	0
<b>Total</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>9</b>

### Non-experts

Four participants (4/15) contributed to the negative feedback. Over half (n=5) negative issues were reported by a single trainee T3, while the remaining issues (n=4) were reported by different 3 trainees.

TRAINEE ID	COUNT	PERCENT
T3	5	56%
T2	2	22%
T12	1	11%
T5	1	11%
<b>TOTAL</b>	<b>9</b>	<b>100%</b>

### BMI

4 negative responses were related to High BMI and 5 responses were related to Low BMI. There does not seem to be an effect or relationship between negative feedback and BMI. The upper bound of BMI from the volunteer models that took part in the study is 40 kg/m<sup>2</sup>.



### **Block**

78.5% (n=7) negative responses were related to the adductor block while the remaining 2 responses related to the ESP and popliteal blocks.

The adductor block was assigned to both T2 and T3 who contributed to most of negative feedback in this questionnaire.

<b>BLOCK</b>	<b>NO. OF NEGATIVE COMMENTS</b>	<b>PERCENT</b>
<b>ADDUCTOR</b>	7	77.8%
<b>AXILLARY</b>	0	0%
<b>ESP</b>	1	11.1%
<b>INTERSCALENE</b>	0	0%
<b>POPLITEAL</b>	1	11.1%
<b>RECTUS SHEATH</b>	0	0%
<b>SFIC</b>	0	0%
<b>SUPRACLAVICULAR</b>	0	0%
<b>SUPERIOR TRUNK</b>	0	0%
<b>TOTAL</b>	<b>9</b>	<b>100%</b>



## 1.6 SAFETY PERFORMANCE EVALUATION BY EXPERTS (REAL-TIME USERS VS REMOTE EXPERTS)

### 1.6.1 Safety

A summary of device effect on safety and effectiveness of block is presented below:

	<i>Answer/ Risk</i>	<i>Yes</i>	<i>No</i>	<i>*N/A</i>	<i>No-consensus</i>
<i>PONS real-time</i>		5	62	36	n/a
<i>PONS remote experts</i>		0	67	36	0
<i>Pneumothorax real-time</i>		0	16	87	n/a
<i>Pneumothorax remote experts</i>		0	16	87	0
<i>LAST real-time</i>		3	68	32	n/a
<i>LAST remote experts</i>		0	71	32	0
<i>Peritoneum violation real-time</i>		0	8	95	n/a
<i>Peritoneum violation remote experts</i>		0	8	95	0
<i>Block failure real-time</i>		4	88	11	n/a
<i>Block failure remote experts</i>		8**	82	11	2

\*Data not on data sheet returned by real-time expert or structure/complication not relevant to block

\*\*In 7/8 cases where remote experts reported increased risk of block failure, they also reported the view acquired was not adequate

#### 1.6.4 Raw data (real-time user)

The experts using ScanNav Anatomy PNB in real time (or supervising a trainee) answered the following questions:

Based on the scan just performed, does the highlighting increase the risk of:

- Nerve injury/post-operative neurological symptoms (PONS)
- Pneumothorax
- Local anaesthetic systemic toxicity
- Peritoneum violation
- Block failure

The raw data in answer to these questions are presented below:

#	Model BMI	Scanner ID	Scanner type	PONS	Pneumothorax	LAST	Peritoneum Violation	Block Failure	Missing
1	High	E1	Expert						Y
2	Low	E1	Expert						Y
3	High	T1	Trainee						Y
4	Low	T1	Trainee						Y
5	High	E1	Expert						Y
6	Low	E1	Expert						Y
7	High	T1	Trainee						Y
8	Low	T1	Trainee						Y
9	High	E2	Expert	N	N/A	N	N/A	N	N
10	Low	E2	Expert	N	N/A	N	N/A	N	N
11	High	T2	Trainee	N	N/A	N	N/A	Y	N
12	Low	T2	Trainee	N	N/A	N	N/A	N	N
13	Low	E2	Expert	N/A	N	N	N/A	N	N
14	High	E2	Expert	N/A	N	N	N/A	N	N
15	Low	T2	Trainee	N/A	N	N	N/A	N	N
16	High	T2	Trainee	N/A	N	N	N/A	N	N
17	High	E3	Expert						Y
18	Low	E3	Expert						Y
19	High	T3	Trainee						Y
20	Low	T3	Trainee						Y
21	High	E3	Expert						Y
22	Low	E3	Expert						Y
23	High	T3	Trainee						Y
24	Low	T3	Trainee						Y



#	Model BMI	Scanner ID	Scanner type	PONS	Pneumothorax	LAST	Peritoneum Violation	Block Failure	Missing
25	High	E4	Expert	Y	N/A	N	N/A	Y	N
26	Low	E4	Expert	N	N/A	N	N/A	N	N
27	Low	T4	Trainee	Y	N/A	N	N/A	Y	N
28	High	T4	Trainee	Y	N/A	N	N/A	Y	N
29	Low	E4	Expert	N/A	N/A	N	N	N	N
30	High	E4	Expert	N/A	N/A	N	N	N	N
31	Low	T4	Trainee	N/A	N/A	N	N	N	N
32	High	T4	Trainee	N/A	N/A	N	N	N	N
33	Low	E5	Expert	N	N/A	N	N/A	N	N
34	High	E5	Expert	Y	N/A	Y	N/A	N/A	N
35	Low	T5	Trainee	N	N/A	Y	N/A	N	N
36	High	T5	Trainee	Y	N/A	Y	N/A	N/A	N
37	Low	E5	Expert	N	N/A	N	N/A	N	N
38	High	E5	Expert	N	N/A	N	N/A	N	N
39	Low	T5	Trainee	N	N/A	N	N/A	N	N
40	High	T5	Trainee	N	N/A	N	N/A	N	N
41	High	E6	Expert	N	N/A	N	N/A	N	N
42	Low	E6	Expert	N	N/A	N	N/A	N	N
43	High	T6	Trainee	N	N/A	N	N/A	N	N
44	Low	T6	Trainee	N	N/A	N	N/A	N	N
45	Low	E6	Expert	N/A	N/A	N	N/A	N	N
46	High	E6	Expert	N/A	N/A	N	N/A	N	N
47	High	T6	Trainee	N/A	N/A	N	N/A	N	N
48	Low	T6	Trainee	N/A	N/A	N	N/A	N	N
49	High	E7	Expert	N	N/A	N	N/A	N	N
50	Low	E7	Expert	N	N/A	N	N/A	N	N
51	High	T7	Trainee	N	N/A	N	N/A	N	N
52	Low	T7	Trainee	N	N/A	N	N/A	N	N
53	High	E7	Expert	N	N	N	N/A	N	N
54	Low	E7	Expert	N	N	N	N/A	N	N
55	Low	T7	Trainee	N	N	N	N/A	N	N
56	High	T7	Trainee	N	N	N	N/A	N	N
57	Low	E8	Expert	N	N/A	N	N/A	N	N
58	High	E8	Expert	N	N/A	N	N/A	N	N
59	Low	T8	Trainee	N	N/A	N	N/A	N	N
60	High	T8	Trainee	N	N/A	N	N/A	N	N
61	High	E8	Expert	N/A	N/A	N	N	N	N
62	Low	E8	Expert	N/A	N/A	N	N	N	N





#	Model BMI	Scanner ID	Scanner type	PONS	Pneumothorax	LAST	Peritoneum Violation	Block Failure	Missing
63	High	T8	Trainee	N/A	N/A	N	N	N	N
64	Low	T8	Trainee	N/A	N/A	N	N	N	N
65	High	E9	Expert	N	N/A	N	N/A	N	N
66	Low	E9	Expert	N	N/A	N	N/A	N	N
67	High	T9	Trainee	N	N/A	N	N/A	N	N
68	Low	T9	Trainee	N	N/A	N	N/A	N	N
69	Low	E9	Expert	N/A	N	N	N/A	N	N
70	High	E9	Expert	N/A	N	N	N/A	N	N
71	Low	T9	Trainee	N/A	N	N	N/A	N	N
72	High	T9	Trainee	N/A	N	N	N/A	N	N
73	High	E10	Expert	N	N/A	N	N/A	N	N
74	Low	E10	Expert						Y
75	Low	T10	Trainee	N	N/A	N	N/A	N	N
76	High	T10	Trainee	N	N/A	N	N/A	N	N
77	High	E10	Expert	N/A	N/A	N	N/A	N	N
78	Low	E10	Expert	N/A	N/A	N	N/A	N	N
79	High	T10	Trainee	N/A	N/A	N	N/A	N	N
80	Low	T10	Trainee	N/A	N/A	N	N/A	N	N
81	Low	E11	Expert	N	N/A	N	N/A	N	N
82	High	E11	Expert	N	N/A	N	N/A	N	N
83	Low	T11	Trainee	N	N/A	N	N/A	N	N
84	High	T11	Trainee	N	N/A	N	N/A	N	N
85	Low	E11	Expert	N/A	N/A	N	N/A	N	N
86	High	E11	Expert	N/A	N/A	N	N/A	N	N
87	Low	T11	Trainee	N/A	N/A	N	N/A	N	N
88	High	T11	Trainee	N/A	N/A	N	N/A	N	N
89	High	E12	Expert	N/A	N	N	N/A	N	N
90	Low	E12	Expert	N/A	N	N	N/A	N	N
91	High	T12	Trainee	N/A	N	N	N/A	N	N
92	Low	T12	Trainee	N/A	N	N	N/A	N	N
93	High	E12	Expert	N	N/A	N	N/A	N	N
94	Low	E12	Expert	N	N/A	N	N/A	N	N
95	High	T12	Trainee	N	N/A	N	N/A	N	N
96	Low	T12	Trainee	N	N/A	N	N/A	N	N
97	Low	E13	Expert	N	N/A	N	N/A	N	N
98	High	E13	Expert	N	N/A	N	N/A	N/A	N
99	High	T13	Trainee	N	N/A	N	N/A	N	N
100	Low	T13	Trainee	N	N/A	N	N/A	N	N



#	Model BMI	Scanner ID	Scanner type	PONS	Pneumothorax	LAST	Peritoneum Violation	Block Failure	Missing
101	Low	E13	Expert	N/A	N/A	N	N/A	N	N
102	High	E13	Expert	N/A	N/A	N	N/A	N	N
103	Low	T13	Trainee	N/A	N/A	N	N/A	N	N
104	High	T13	Trainee	N/A	N/A	N	N/A	N	N
105	Low	E14	Expert	N	N/A	N	N/A	N	N
106	High	E14	Expert	N	N/A	N	N/A	N	N
107	Low	T14	Trainee	N	N/A	N	N/A	N	N
108	High	T14	Trainee	N	N/A	N	N/A	N	N
109	High	E14	Expert	N	N/A	N	N/A	N	N
110	Low	E14	Expert	N	N/A	N	N/A	N	N
111	High	T14	Trainee	N	N/A	N	N/A	N	N
112	Low	T14	Trainee	N	N/A	N	N/A	N	N
113	Low	E15	Expert	N	N/A	N	N/A	N/A	N
114	High	E15	Expert	N	N/A	N	N/A	N/A	N
115	Low	T15	Trainee	N	N/A	N	N/A	N/A	N
116	High	T15	Trainee	N	N/A	N	N/A	N/A	N
117	Low	E15	Expert	N	N/A	N	N/A	N/A	N
118	High	E15	Expert	N	N/A	N	N/A	N/A	N
119	Low	T15	Trainee	N	N/A	N	N/A	N/A	N
120	High	T15	Trainee	N	N/A	N	N/A	N/A	N

### Specific adverse events

#### PONS

An assessment whether highlighting increases a risk of PONS was made for total of 67 scans, over six block regions (adductor, axillary, interscalene, popliteal, supraclavicular and superior trunk):

Risk of PONS	Number of scans	Rate
No	62	0.925
Yes	5	0.0746
<b>Total</b>	<b>67</b>	

Scan ID	Block	BMI	Scanner type	Scanner ID	Risk of PONS
25	Add	High	Expert	E4	Yes
27	Add	Low	Trainee	T4	Yes
28	Add	High	Trainee	T4	Yes
34	Ax	High	Expert	E5	Yes
36	Ax	High	Trainee	T5	Yes

**LAST**

An assessment whether highlighting increases a risk of LAST was made for total of 103 scans, over all 9 supported blocks.

Risk of LAST	Number of scans	Rate
No	68	0.958
Yes	3	0.042
<b>Total</b>	<b>103</b>	

Scan ID	Block	BMI	Scanner type	Scanner ID	Risk of LAST
34	Ax	High	Expert	E5	Yes
35	Ax	Low	Trainee	T5	Yes
36	Ax	High	Trainee	T5	Yes

**BLOCK FAILURE**

An assessment was made for total of 92 scans, over all 9 supported blocks.

Risk of Block Failure	Number of scans	Rate
No	88	0.956
Yes	4	0.043
Not applicable	11	n/a
<b>Total</b>	<b>103</b>	

Scan ID	Block	US machine	BMI	Scanner type	Scanner ID	Nerve	Artery	Risk of Block failure
11	Add	SonoSite PX	High	Trainee	T2	FP	TP	Yes
25	Add	SonoSite PX	High	Expert	E4	FP	TP	Yes
27	Add	SonoSite Xporte	Low	Trainee	T4	FP	TP	Yes
28	Add	SonoSite PX	High	Trainee	T4	FP	TP	Yes



### 1.6.5 Raw Data (Remote Expert)

A panel of 3 independent experts viewed the ultrasound videos remotely (with unmodified and highlighted videos presented one above the other), to score the 103 scans collected with ScanNav Anatomy PNB during this study (for which real-time data was available). The experts scored clips independently and were unaware of each other's answers. The majority view of the experts was established afterwards to arrive to a single majority decision.

The majority views of the experts are presented below. In some instances, it was not possible to arrive to a majority decision, so those instances are marked as "undetermined" and were excluded from analysis. Entries marked as "N/A" represent entries that are not applicable for the assigned block (e.g., accuracy scores for the Peritoneum are marked as "N/A" for the Popliteal block, as there is no possibility of encountering the peritoneum in this location).

Scan ID	block	BMI category	Scanner ID	Scanner type	Majority view				
					PONS	Pneumothorax	LAST	Peritoneum violation	Block failure
1	POP	High	E01	Expert					
2	POP	Low	E01	Expert					
3	POP	High	T01	Trainee					
4	POP	Low	T01	Trainee					
5	RS	High	E01	Expert					
6	RS	Low	E01	Expert					
7	RS	High	T01	Trainee					
8	RS	Low	T01	Trainee					
9	ADD	High	E02	Expert	N	#N/A	N	#N/A	N
10	ADD	Low	E02	Expert	N	#N/A	N	#N/A	N
11	ADD	High	T02	Trainee	N	#N/A	N	#N/A	N
12	ADD	Low	T02	Trainee	N	#N/A	N	#N/A	N
13	ESP	Low	E02	Expert	#N/A	N	N	#N/A	Y
14	ESP	High	E02	Expert	#N/A	N	N	#N/A	N
15	ESP	Low	T02	Trainee	#N/A	N	N	#N/A	undetermined
16	ESP	High	T02	Trainee	#N/A	N	N	#N/A	N
17	ADD	High	E03	Expert					
18	ADD	Low	E03	Expert					
19	ADD	High	T03	Trainee					
20	ADD	Low	T03	Trainee					
21	ST	High	E03	Expert					
22	ST	Low	E03	Expert					
23	ST	High	T03	Trainee					
24	ST	Low	T03	Trainee					



Scan ID	block	BMI category	Scanner ID	Scanner type	Majority view				
					PONS	Pneumothorax	LAST	Peritoneum violation	Block failure
25	ADD	High	E04	Expert	N	#N/A	N	#N/A	N
26	ADD	Low	E04	Expert	N	#N/A	N	#N/A	N
27	ADD	Low	T04	Trainee	N	#N/A	N	#N/A	N
28	ADD	High	T04	Trainee	N	#N/A	N	#N/A	N
29	RS	Low	E04	Expert	N	#N/A	N	N	N
30	RS	High	E04	Expert	N	#N/A	N	N	N
31	RS	Low	T04	Trainee	N	#N/A	N	N	N
32	RS	High	T04	Trainee	N	#N/A	N	N	N
33	AX	Low	E05	Expert	N	#N/A	N	#N/A	N
34	AX	High	E05	Expert	N	#N/A	N	#N/A	N
35	AX	Low	T05	Trainee	N	#N/A	N	#N/A	N
36	AX	High	T05	Trainee	N	#N/A	N	#N/A	N
37	POP	Low	E05	Expert	N	#N/A	N	#N/A	N
38	POP	High	E05	Expert	N	#N/A	N	#N/A	N
39	POP	Low	T05	Trainee	N	#N/A	N	#N/A	Y
40	POP	High	T05	Trainee	N	#N/A	N	#N/A	N
41	POP	High	E06	Expert	N	#N/A	N	#N/A	N
42	POP	Low	E06	Expert	N	#N/A	N	#N/A	N
43	POP	High	T06	Trainee	N	#N/A	N	#N/A	N
44	POP	Low	T06	Trainee	N	#N/A	N	#N/A	N
45	SFIC	Low	E06	Expert	N	#N/A	N	#N/A	undetermined
46	SFIC	High	E06	Expert	N	#N/A	N	#N/A	N
47	SFIC	High	T06	Trainee	N	#N/A	N	#N/A	N
48	SFIC	Low	T06	Trainee	N	#N/A	N	#N/A	Y
49	POP	High	E07	Expert	N	#N/A	N	#N/A	N
50	POP	Low	E07	Expert	N	#N/A	N	#N/A	N
51	POP	High	T07	Trainee	N	#N/A	N	#N/A	N

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					PONS	Pneumothorax	LAST	Peritoneum violation	Block failure
52	POP	Low	T07	Trainee	N	#N/A	N	#N/A	N
53	SC	High	E07	Expert	N	N	N	#N/A	N
54	SC	Low	E07	Expert	N	N	N	#N/A	N
55	SC	Low	T07	Trainee	N	N	N	#N/A	N
56	SC	High	T07	Trainee	N	N	N	#N/A	N
57	IS	Low	E08	Expert	N	N	N	#N/A	N
58	IS	High	E08	Expert	N	N	N	#N/A	N
59	IS	Low	T08	Trainee	N	N	N	#N/A	N
60	IS	High	T08	Trainee	N	N	N	#N/A	N
61	RS	High	E08	Expert	N	#N/A	N	N	N
62	RS	Low	E08	Expert	N	#N/A	N	N	N
63	RS	High	T08	Trainee	N	#N/A	N	N	N
64	RS	Low	T08	Trainee	N	#N/A	N	N	N
65	AX	High	E09	Expert	N	#N/A	N	#N/A	N
66	AX	Low	E09	Expert	N	#N/A	N	#N/A	N
67	AX	High	T09	Trainee	N	#N/A	N	#N/A	N
68	AX	Low	T09	Trainee	N	#N/A	N	#N/A	N
69	ESP	Low	E09	Expert	#N/A	N	N	#N/A	N
70	ESP	High	E09	Expert	#N/A	N	N	#N/A	Y
71	ESP	Low	T09	Trainee	#N/A	N	N	#N/A	N
72	ESP	High	T09	Trainee	#N/A	N	undetermined	#N/A	Y
73	POP	High	E10	Expert	N	#N/A	N	#N/A	N
74	POP	Low	E10	Expert					
75	POP	Low	T10	Trainee	N	#N/A	N	#N/A	N
76	POP	High	T10	Trainee	N	#N/A	N	#N/A	N
77	SFIC	High	E10	Expert	N	#N/A	N	#N/A	N
78	SFIC	Low	E10	Expert	N	#N/A	N	#N/A	N

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					PONS	Pneumothorax	LAST	Peritoneum violation	Block failure
79	SFIC	High	T10	Trainee	N	#N/A	N	#N/A	N
80	SFIC	Low	T10	Trainee	N	#N/A	N	#N/A	N
81	ADD	Low	E11	Expert	N	#N/A	N	#N/A	N
82	ADD	High	E11	Expert	N	#N/A	N	#N/A	N
83	ADD	Low	T11	Trainee	N	#N/A	N	#N/A	N
84	ADD	High	T11	Trainee	N	#N/A	N	#N/A	N
85	SFIC	Low	E11	Expert	N	#N/A	N	#N/A	Y
86	SFIC	High	E11	Expert	N	#N/A	N	#N/A	N
87	SFIC	Low	T11	Trainee	N	#N/A	N	#N/A	N
88	SFIC	High	T11	Trainee	N	#N/A	N	#N/A	N
89	ESP	High	E12	Expert	#N/A	N	N	#N/A	Y
90	ESP	Low	E12	Expert	#N/A	N	N	#N/A	N
91	ESP	High	T12	Trainee	#N/A	N	N	#N/A	Y
92	ESP	Low	T12	Trainee	#N/A	N	N	#N/A	N
93	POP	High	E12	Expert	N	#N/A	N	#N/A	N
94	POP	Low	E12	Expert	N	#N/A	N	#N/A	N
95	POP	High	T12	Trainee	N	#N/A	N	#N/A	N
96	POP	Low	T12	Trainee	N	#N/A	N	#N/A	N
97	ADD	Low	E13	Expert	N	#N/A	N	#N/A	N
98	ADD	High	E13	Expert	N	#N/A	N	#N/A	N
99	ADD	High	T13	Trainee	N	#N/A	N	#N/A	N
100	ADD	Low	T13	Trainee	N	#N/A	N	#N/A	N
101	SFIC	Low	E13	Expert	N	#N/A	N	#N/A	N
102	SFIC	High	E13	Expert	N	#N/A	N	#N/A	N
103	SFIC	Low	T13	Trainee	N	#N/A	N	#N/A	N
104	SFIC	High	T13	Trainee	N	#N/A	N	#N/A	N
105	IS	Low	E14	Expert	N	N	N	#N/A	N

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					PONS	Pneumothorax	LAST	Peritoneum violation	Block failure
106	IS	High	E14	Expert	N	N	N	#N/A	N
107	IS	Low	T14	Trainee	N	N	N	#N/A	N
108	IS	High	T14	Trainee	N	N	N	#N/A	N
109	POP	High	E14	Expert	N	#N/A	N	#N/A	N
110	POP	Low	E14	Expert	N	#N/A	N	#N/A	N
111	POP	High	T14	Trainee	N	#N/A	N	#N/A	N
112	POP	Low	T14	Trainee	N	#N/A	N	#N/A	N
113	ADD	Low	E15	Expert	N	#N/A	N	#N/A	N
114	ADD	High	E15	Expert	N	#N/A	N	#N/A	N
115	ADD	Low	T15	Trainee	N	#N/A	N	#N/A	N
116	ADD	High	T15	Trainee	N	#N/A	N	#N/A	N
117	ST	Low	E15	Expert	N	N	N	#N/A	N
118	ST	High	E15	Expert	N	N	N	#N/A	N
119	ST	Low	T15	Trainee	N	N	N	#N/A	N
120	ST	High	T15	Trainee	N	N	N	#N/A	N

**Specific adverse events****BLOCK FAILURE**

An assessment was made for total of 92 scans (11 of the 103 returned data sets incomplete), over all 9 supported blocks.

Risk of Block Failure	Number of scans	Rate
No	82	0.919
Yes	8	0.087
undetermined	2	0.021
<b>Total</b>	<b>92</b>	

Scan ID	Block	BMI	Scanner type	Scanner ID	Correct view	Risk of Block failure	Nerve	Artery	Pleura
13	ESP	Low	Expert	E02	No, incorrect gain	Y	n/a	n/a	TP
15	ESP	Low	Trainee	T02	No, incorrect structures	undetermined	n/a	n/a	TP
39	POP	Low	Trainee	T05	Y	Y	FP	TP	n/a
45	SFIC	Low	Expert	E06	No, incorrect structures	undetermined	n/a	undetermined	n/a
48	SFIC	Low	Trainee	T06	No, incorrect structures	Y	n/a	undetermined	n/a
70	ESP	High	Expert	E09	undetermined	Y	n/a	n/a	TP
72	ESP	High	Trainee	T09	undetermined	Y	n/a	n/a	TP
85	SFIC	Low	Expert	E11	No, incorrect structures	Y	n/a	TN	n/a
89	ESP	High	Expert	E12	undetermined	Y	n/a	n/a	undetermined
91	ESP	High	Trainee	T12	No, artifact	Y	n/a	n/a	TN