Non-Fellowship regional anesthesia training and assessment: an international Delphi study on a consensus curriculum

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► Additional supplemental material is published online only. To view, please visit the journal online (http://dx.doi.org/10.1136/rapm-2021-102934).

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Received 8 June 2021
Accepted 12 July 2021

To cite: Chuan A, Jeyaratnam B, Fathil S, *et al*. *Reg Anesth Pain Med* Epub ahead of print: [*please include* Day Month Year]. doi:10.1136/rapm-2021-102934

ABSTRACT

Background and objectives While there are several published recommendations and guidelines for trainees undertaking subspecialty Fellowships in regional anesthesia, a similar document describing a core regional anesthesia curriculum for non-fellowship trainees is less well defined. We aimed to produce an international consensus for the training and teaching of regional anesthesia that is applicable for the majority of worldwide anesthesiologists.

Methods This anonymous, electronic Delphi study was conducted over two rounds and distributed to current and immediate past (within 5 years) directors of regional anesthesia training worldwide. The steering committee formulated an initial list of items covering nerve block techniques, learning objectives and skills assessment and volume of practice, relevant to a non-fellowship regional anesthesia curriculum. Participants scored these items in order of importance using a 10-point Likert scale, with free-text feedback. Strong consensus items were defined as highest importance (score ≥8) by ≥70% of all participants.

Results 469 participants/586 invitations (80.0% response) scored in round 1, and 402/469 participants (85.7% response) scored in round 2. Participants represented 66 countries. Strong consensus was reached for 8 core peripheral and neuraxial blocks and 17 items describing learning objectives and skills assessment. Volume of practice for peripheral blocks was uniformly 16–20 blocks per anatomical region, while ≥50 neuraxial blocks were considered minimum.

Conclusions This international consensus study provides specific information for designing a non-fellowship regional anesthesia curriculum. Implementation of a standardized curriculum has benefits for patient care through improving quality of training and quality of nerve blocks.

INTRODUCTION

Regional anesthesia is enjoying a renaissance in use, acceptability, and integration into multimodal patient care pathways and enhanced recovery after surgery protocols.[1] However, the quality of nerve blockade is dependent on the quality of training of anesthesiologists in the fundamentals of regional anesthesia. This training encompasses diverse and complex topics such as pharmacology, ultrasonography, anatomy, professionalism as well as mastering procedural motor skills.

Anesthesiologists who wish to subspecialize in regional anesthesia have the benefit of enrolling in dedicated Fellowships that provide all the necessary advanced training to become experts in this field. These Fellowships are backed by detailed learning objectives, established faculty, and recommendations for minimum levels of teaching resources, supervision, and caseload exposure. The curricula of these structured Fellowships (and similar programs) are published, often with endorsement by national bodies that reinforce their credibility, such as in North America,[2] Australia/New Zealand,[3] India,[4] and the European Diploma.[5]

However, the majority of anesthesiologists will not undertake Fellowship training. In contrast, the curricula for non-fellowship training in regional anesthesia are not well articulated, uncertain in what is necessary to teach the generalist anesthesiologist, and lagging behind current understanding of ultrasound-guided techniques.[6] This contributes to the currently poor access to regional anesthesia experienced by patients worldwide, with the majority of patients who potentially would benefit from a block unfortunately not receiving one for their surgery.[1]

To resolve this ambiguity, we conducted an international, Delphi consensus study to recommend components of a non-fellowship curriculum for residency training. We used electronic questionnaires sent to directors of regional anesthesia training to achieve high consensus on the types of blocks, curriculum training, competency outcomes and assessment, learning objectives, and volume of practice. Potential benefits of selectively teaching a smaller set of greatest value block and a focus on

essential curriculum features include: a reduction in teaching and assessment load; standardizing training; and ultimately improving patient care through greater access to trained clinicians performing higher quality blocks.

METHODS

This was a prospective, international, anonymous, electronically delivered, structured Delphi consensus study performed over two rounds. Ethics approval was obtained from South West Sydney Local Health District, Australia (SWSLHD HREC: 2020/ETH02506). Permission was granted to allow eligible participants to electronically provide informed consent. For brevity, this paper will use the terms 'resident' and 'residency training' leading to graduation as a 'generalist' anesthesiologist, to refer to trainees who are not undertaking subspecialty Fellowship training in regional anesthesia.

Steering committee

An international steering committee was established in October 2020 with two roles: to discuss and finalize an initial list of items to populate the first round Delphi questionnaire and to disseminate an email invitation to eligible anesthesiologists within their geographical area of responsibility. The committee was established after an initial expression of interest sent to all-known major national and international societies of regional anesthesia. The final committee was diverse and included representatives from North and South America, UK and Europe, Australia, Asia-Oceania, India, and Africa. The represented societies included: American Society of Regional Anesthesia, European Society of Regional Anaesthesia & Pain Therapy (ESRA), Regional Anaesthesia-UK (RA-UK), Australian and New Zealand Regional Anaesthesia Special Interest Group, Academy of Regional Anaesthesia of India, Latin American Society of Regional Anaesthesia, African Society of Regional Anaesthesia, Singapore Society of Regional Anaesthesia, South African Society of Regional Anaesthesia, Thailand Society of Regional Anaesthesia, and the Asia-Oceanic Society of Regional Anaesthesia-Pain Medicine.

Study participants

Eligible participants were current or immediate-past (within the previous 5 years) directors of regional anesthesia training. The title of this role varied between countries and institutions (eg, program/rotation director, supervisor, co-ordinator, department lead). There is usually one named individual who leads the teaching faculty responsible for training residents in a generalist regional anesthesia curriculum, covering aspects such as didactic lectures, simulation, and hands-on workshops. In larger departments, codirectors may have been appointed.

Round 1

Initial content for round 1 was derived from a directed literature review from published regional anesthesia curricula,[3 5–14] resulting in identification of 66 items. Items were arranged into four complementary sections: core block techniques, curriculum training, competency and learning outcomes, and volume of practice. Block techniques were assumed to be ultrasound guided, unless otherwise specified. Items for round 1 were written using Evidence, Population, Intervention, Comparison, Outcome, Timestamp (EPICOT) guidelines,[15] then reviewed and modified for clarity by all members of the steering committee.

Steering committee members used their society email databases to forward the study invitation email and participant information sheet to eligible participants. We deleted duplicate invitations (eg, an anesthesiologist may be in both RA-UK and ESRA databases due to dual membership) when this was known. Participants voluntarily followed an internet link in the email to the study website created by REDCap (Research Electronic Data Capture, Vanderbilt University, USA). After confirmation of informed consent, participants were allowed to enter the secure website hosting the round 1 questionnaire. Declining to provide informed consent would terminate the session without ability to score any items.

Participants were instructed to score each item on a 10-point Likert scale. Scores of 1–3 were further categorized as lowest importance, 4–7 as intermediate importance, and 8–10 as highest importance. All items in a section had to be scored before the questionnaire progressed to the next section. Participants could provide free text feedback and comments on the items, which were collated for review by the steering committee.

Based on overall scores recorded from all participants, our predefined thresholds for outcomes were: accept (consensus median score ≥8, item ranked as highest importance), exclude (consensus median score ≤3, item ranked as lowest importance) and intermediate (consensus median scores 4–7). We also applied a predefined threshold of consensus ≥70% by calculating the percentage of all participants who scored ≤3 or ≥8 for each item. Items were, thus, termed 'strong consensus' if the median score was either ≤3 or ≥8 and this was scored by ≥70% of participants in that end of the Likert scale.

The exception to the above scoring system was for the volume of practice items. Participants were asked to select the number of blocks, from a choice of different numerical ranges (≤5, 6–10, 11–15, 16–20, 21–25, >25 blocks), each believed was necessary for a minimum volume of practice. The median number of blocks was chosen as the consensus as this represents the central value of participants' opinions and is more robust against outlier opinions that would distort a value based on the mean. Volume of practice items was organized by anatomical regions: shoulder and upper arm, elbow to hand, hip and upper leg, knee to foot, thoracic fascial plane, abdominal fascial plane, thoracic epidural, spinal/intrathecal and lumbar epidural. It was acknowledged that participants' scores for the spinal and lumbar epidural volume of practice would consider overlapping exposure with obstetric anesthesia.

Accepted and excluded items, and volume of practice items, were removed from round 2. Deidentified comments were analyzed by the steering committee using the following structured method: authors AC and RR collated the raw comments, deleted duplicates and sorted all comments into themes. The thematic as well as raw comments were sent to the entire committee for evaluation. After discussion, specific comments that best reflected each thematic were rewritten in EPICOT style to align with the existing questionnaire format. The wording of these new items was finally verified by the entire committee. Intermediate items from round 1 were also reassessed to determine if clarity could be improved to allow higher consensus in the next round. A revised questionnaire consisting of these new items, and intermediate-importance items, was created for round 2.

Round 2

All participants from round 1 were sent automated email invitations by REDCap to complete round 2. A reminder email was sent a fortnight later. Participants scored the new items, and rescored the intermediate-importance items using the Likert scale as described. We used the same predefined threshold for

accept (consensus median score ≥8), but in round 2, any item scoring 7 or less was excluded. We continued to determine the strength of consensus for each item by calculating the percentage of participants agreeing with 'lowest importance' or 'highest importance' on the Likert scale.

Statistical analysis

The worldwide number of directors of regional anesthesia training is unknown. There are large discrepancies of faculty availability between different countries and even between different institutions in the same country, potentially skewing results. To mitigate this effect, and to capture as broad and comprehensive a consensus as possible, we aimed to recruit >200 participants worldwide. Assuming each department of anesthesia has a sole director of training, a target of 200 participants will capture approximately 100 hospitals (current and immediate-past director) worldwide. We engaged these participants as critical stakeholders in the curriculum, training, and assessment of regional anesthesia skills. Analysis of data was descriptive and performed using Microsoft Excel (V.2016, Microsoft, Redmond, Washington).

RESULTS

A total of 586 invitations were emailed for round 1, with 469 participants answering the questionnaire (80.0% response). These participants represented 66 countries, summarized in table 1. A total of 380 discrete-free text comments were received, which generated seven new items for scoring in round 2. Round 2 was completed by 402 out of the 469 participants from round 1 (85.7% response). Figure 1 illustrates the study flowchart and overall results for the 73 unique items scored over both rounds. A final list of 25 items that reached the threshold for strong consensus is summarized in table 2.

Thirty different nerve blocks were proposed in the block technique section, divided into upper limb, lower limb, trunk/abdominal, neuraxial, and other blocks (online supplemental figure 1). Eight blocks were accepted with strong consensus. In the upper limb: interscalene brachial plexus block (score 9, 84% agreement of highest importance), axillary brachial plexus block (10, 87%); lower limb: femoral nerve block (10, 93%), popliteal sciatic nerve block (10, 91%); landmark-based neuraxial techniques: lumbar spinal (10, 90%), lumbar epidural (10, 93%), combined spinal–epidural (10, 77%), and thoracic epidural (9, 75%).

There were 19 items in the curriculum training section (online supplemental figure 2). Strong consensus was reached for: providing a minimum and standardized informed consent for neuraxial blocks (10, 92%) and peripheral blocks (10, 93%); a minimum and standardized approach to transitional analgesia (10, 89%); ability to assess and manage complications of neuraxial blocks (10, 98%), peripheral blocks (10, 96%), and local anesthesia systemic toxicity (10, 98%). Of the various options for assessment, only the multisource feedback tool achieved strong consensus (8, 71%).

The competency and learning outcomes section contained 15 items (online supplemental figure 3). Strong consensus was reached for trainees to demonstrate the following professional skills: discuss risks and benefits of blocks (9, 89%), operating list management (8, 73%) and individual case management with surgeons (9, 87%), non-technical skills such as teamwork and communication (9, 78%), and patient follow-up (9, 80%). Strong consensus was also reached for technical skills: preclinical knowledge of relevant anatomy (10, 92%), infection control

Table 1 Country of practice of participants in round 1

Country of practice	Number of participants (% total)	Cumulative total number of participants (% total)
UK	95 (20.3)	Top 10 countries=333 (71.0)
France	48 (10.2)	
USA	33 (7.0)	
Brazil	27 (5.8)	
India	27 (5.8)	
Germany	26 (5.5)	
Australia	25 (5.3)	
Belgium	18 (3.8)	
Portugal	18 (3.8)	
Canada	16 (3.4)	
South Africa	12 (2.6)	
Spain	8 (1.7)	
Netherlands	6 (1.3)	
Thailand	6 (1.3)	
Philippines	5 (1.1)	
Chile	Contribution from each country=4 (0.9) Total 20 (4.3)	Top 20 countries=390 (83.2)
Greece		
Ireland		
Italy		
Ukraine		
Austria	Contribution from each country=3 (0.6) Total 33 (7.0)	
Denmark		
Hong Kong		
Japan		
Kenya		
Malaysia		
Norway		
Slovenia		
Sweden		
Switzerland		
Turkey		
Argentina	Contribution from each country=2 (0.4) Total 22 (4.7)	
Colombia		
Croatia		
Finland		
Latvia		
Mexico		
Peru		
Romania		
Saudi Arabia		
Singapore		
Slovakia		
Armenia	Contribution from each country=1 (0.2) Total 24 (5.1)	Total 66 countries=469 (100)
Bahrain		
Bolivia		
Bulgaria		
Cyprus		
Ecuador		
Egypt		

Continued

Table 1 Continued

Country of practice	Number of participants (% total)	Cumulative total number of participants (% total)
Hungary		
Israel		
Jordan		
Kuwait		
Lebanon		
Malta		
Morocco		
Nigeria		
Oman		
Pakistan		
Paraguay		
Poland		
Qatar		
Sudan		
Trinidad & Tobago		
United Arab Emirates		
Zambia		

and sterility (9, 88%), ultrasound basics such as knobology and physics (8, 74%), sedation during blocks (9, 90%), and management of complications (10, 91%).

The volume of practice for different anatomical regions is reported in table 3. The consensus for minimum training exposure was 16–20 blocks in each region, apart from lumbar neuraxial techniques for which the minimum volume of practice was ≥50 blocks (≥25 blocks separately for spinals and for epidurals).

DISCUSSION

With participation from over 400 regional anesthesia educators from 66 countries and a survey response rates of at least 80%, this study provides evidence for an international consensus on a regional anesthesia residency curriculum that describes a core set of nerve blocks, learning objectives, teaching aids, assessment of skills, and volume of practice. Our results show strong consensus on a core set of eight peripheral and neuraxial blocks, and strong consensus on a core set of 17 items describing learning goals and skills assessment. A consensus of 16–20 blocks per anatomical region is the recommended minimum volume of practice for trainees, with the exception of lumbar spinal and epidural blocks where the minimum was more than 50 blocks.

This study addresses the lack of a well-defined regional anesthesia curriculum affecting a large proportion of anesthesiologists worldwide during their training; namely, the majority who will not undertake a subspecialty Fellowship in regional anesthesia. This deficiency had been previously identified as 2 of the top 10 priority research areas in regional anesthesia: 'Which blocks should be considered as a core minimum set for all trainees?' (third ranked) and 'What are the necessary components of a formal structured training program?' (ninth ranked).[6]

In their editorial, Turbitt *et al*[7] advocated a limited list of blocks ('Plan A', consisting of seven basic blocks) that they considered versatile due to their wide applications. Only those undertaking further training would learn and use extra blocks (Plan B, 14 advanced blocks). Their argument rested on a best compromise between patient outcomes and consistency in successful blockade by a generalist anesthesiologist, in order to expand patient access to regional anesthesia. We found support for this premise by the majority of participants in our study.

There was a strong consensus in favor of teaching one block above the clavicle (interscalene brachial plexus) and one below the clavicle (axillary brachial plexus) for the upper limb. In the lower limb, the strong consensus was to teach only the femoral nerve and the popliteal sciatic nerve blocks. For neuraxial techniques, surface landmark-based thoracic and lumbar epidurals, spinals, and combined spinal–epidurals were all strongly supported. This core set is relatively restricted compared with the range of blocks currently taught and commonly discussed in the literature (eg, supraclavicular brachial plexus, adductor canal, erector spinal blocks)[8 9 12]; but would arguably meet requirements for most types of surgery. Interestingly, no thoracic/abdominal block achieved strong consensus, while there was support in teaching the use of ultrasound to assist in delineating structures before neuraxial blocks.

Volume of practice is another curriculum component that inevitably requires compromise. It is a balance between sufficient quantity of blocks to gain exposure and competency-based assessment of skill quality.[16] A national resident curriculum must also settle on a volume of practice that is deliverable by all institutions, particularly by smaller or non-metropolitan hospitals, which may be potentially disadvantaged in their capacity to supervise trainees and/or to sustain a regional anesthesia caseload.

This study's conclusion of 16–20 blocks for each peripheral anatomical region is ambitious. To our knowledge, only two resident programs stipulating a numerical volume of practice have been published: Australia and New Zealand (10 upper limb and 15 lower limb),[14] and USA (total 40 peripheral blocks, not specified to an anatomical location).[17] Indeed, the number suggested in our study is more equivalent to a Fellowship program, which require 20 blocks in each: above clavicle, below clavicle, proximal thigh, and mid-thigh to distal.[2] With evidence from studies suggesting competency in ultrasound-guided needling skills is attained from 28 to over 100 attempts,[18 19] full proficiency will not be achieved by all anesthesiologists by the end of resident training. This suggests that a resident curriculum should emphasize the need for ongoing professional development after graduation to consolidate skills introduced during training. In contrast, this study's result of at least 50 neuraxial blocks for residents is comparable to the findings of Kopacz *et al*[20], who found that 90% successful blockade was achieved after 60 epidurals and after 45 spinal attempts.

All of the learning objectives that attracted strong consensus are present in current resident curricula from USA,[17] Canada,[21] UK,[22] and Australia/New Zealand.[14] Somewhat surprisingly, some items that were touted as best practice in the education literature were accepted but did not reach strong consensus. These included online training,[8] use of validated assessment tools,[23] part-task trainers,[24] training to competency in a preclinical setting,[25 26] and high-fidelity simulation.[27] Search of free-text feedback from participants did highlight difficulties in cost, accessibility to equipment, and small size of teaching faculty as potential barriers to uptake. Further research is necessary to determine if these are specific issues at an individual institution level or more systematic affecting the structure of training across regions.

It is also important to note that results of our study may be implemented differently by countries. There are critical variations between countries with regards to access to resources (personnel and equipment), duration of training, and mix of institutions, to name a few. We outline one possible pragmatic

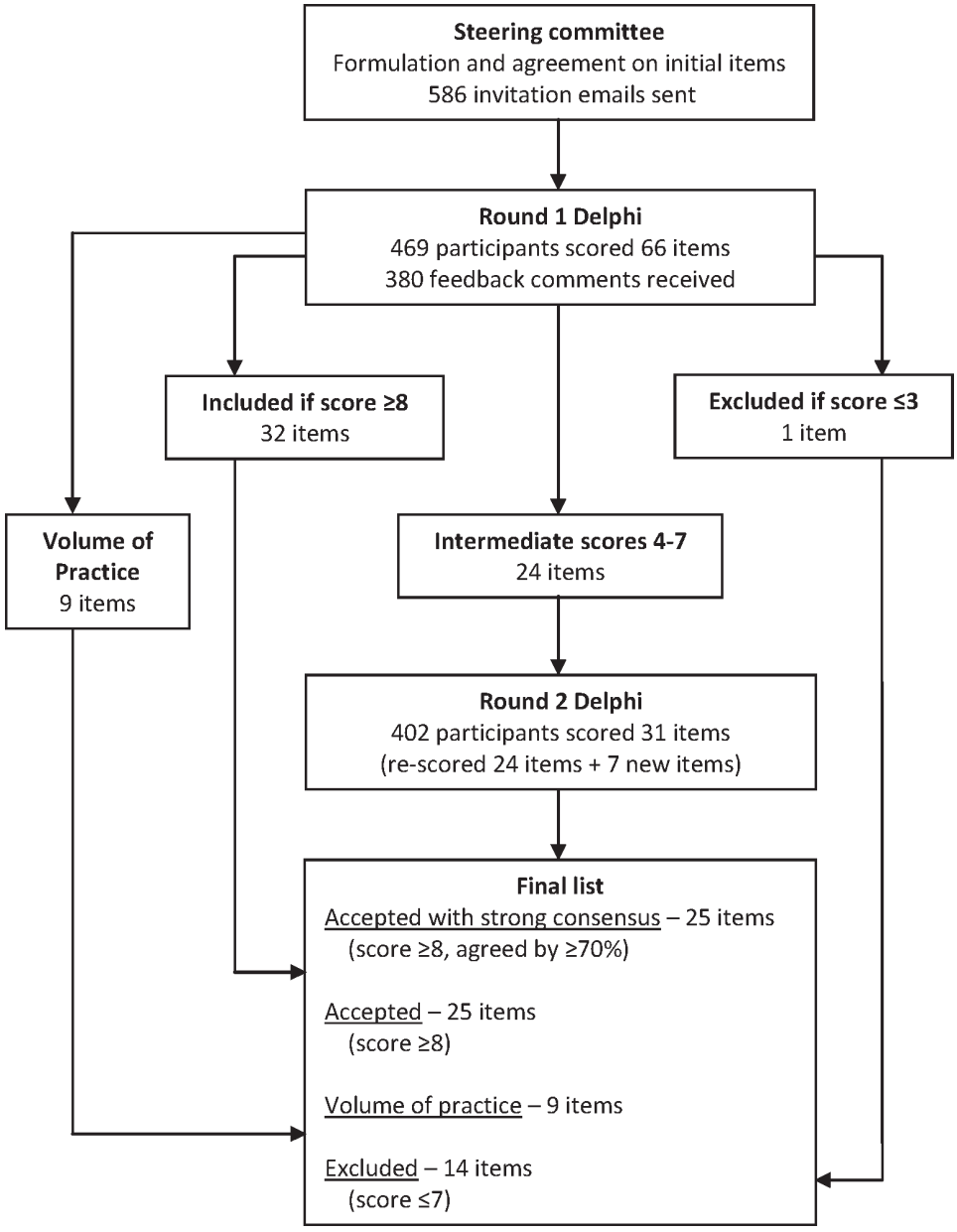

Figure 1 Flowchart of study, with overall results of participant numbers, item consensus and compilation of final list.

solution based on our study results: the residency regional anesthesia curriculum would teach the four peripheral techniques with a target volume of practice of 60–80 blocks in total, and >100 blocks (combined with obstetric anesthesia) for the four neuraxial techniques. These would be taught to competency and incorporate the highest consensus learning objectives. However, these minimums may be comfortably exceeded by countries and specific institutions due to an advantage in resources and teaching faculty, allowing other items such as lower consensus blocks to be taught in an extended curriculum.

Apart from the implementation variability explained above, there are other limitations to this study. Invitations to eligible participants in round 1 were sent by committee members using their society databases. Due to privacy legislation, databases were not shared with other committee members. Consequently, some participants who are in multiple databases received duplicate emails, leading to an overestimation of the round 1 denominator. Conversely, participants may have sent their invitation emails to colleagues not directly reached by the committee, leading to an underestimation of the denominator. When brought to our attention, we adjusted the denominator accordingly (seven known duplicates) and our results report this final number. In round 2, as participants had to register their emails directly into the REDCap server after informed consent, the number of participants is exactly known. With our online international methodology, the very high response rate is satisfactory and is representative of true scoring intentions. Nonetheless, despite receiving responses from 66 countries, other countries with large populations did not participate and the participation rate from each country was highly variable, potentially introducing a selection bias. We had aimed for >200 participants, and our study achieved double that estimate. Delphi studies require a minimum of 15–30 equivalently qualified participants to achieve stable scoring, though no upper limit to sample size has been proposed.[28] To our knowledge, our study represents the second-largest Delphi study in anesthesia.[29] Finally, other stakeholders

Table 2 Final list of items reaching threshold of highest importance (overall median score ≥8) and strong consensus (≥70% of participants scoring ≥8)

Items with highest importance and strong consensus	Median score (percentage of participants scoring ≥8)
Regional anesthesia techniques	
Interscalene brachial plexus block	9 (84)
Axillary brachial plexus block	10 (87)
Femoral nerve block	10 (93)
Popliteal sciatic nerve block	10 (91)
Landmark-guided lumbar spinal block	10 (90)
Landmark-guided lumbar epidural block	10 (93)
Landmark-guided combined spinal-epidural block	10 (77)
Landmark-guided thoracic epidural block	9 (75)
Curriculum training	
Standardized minimum informed consent for epidural/spinal nerve blocks	10 (92)
Standardized minimum informed consent for peripheral nerve blocks	10 (93)
Assessment and managing complications of epidural/spinal regional anesthesia	10 (98)
Assessment and managing complications of peripheral regional anesthesia nerve blocks	10 (96)
Assessment and managing complications of local anesthesia systemic toxicity	10 (98)
Standardized minimum transitional analgesia plan after recession of nerve block	10 (89)
Using multi-source feedback for workplace-based assessment	8 (71)
Competency and learning outcomes	
Able to discuss risks and benefits of regional anesthesia	9 (89)
Able to manage complications of regional anesthesia	10 (91)
Able to discuss and demonstrate relevant anatomy prior to performing a nerve block	10 (92)
Able to demonstrate efficiency and time management of a surgical operating list of patients, for whom regional anesthesia is essential	8 (73)
Able to demonstrate shared decision-making of regional anesthesia with the surgical team	9 (87)
Able to manage sedation and patient comfort during regional anesthesia performance	9 (90)
Formally assess knowledge of ultrasound basics (physics, knobology, ergonomics)	8 (74)
Formally assess non-technical skills (eg, team work, stop-before-block, communication skills)	9 (78)
Formally assess patient follow-up, incorporate into logbooks	9 (80)
Formally assess sterility and infection control practices	9 (88)

in training such as college and board officers, and anesthesiology trainees themselves, were not invited to participate. This was due to reasons of feasibility; broadening the scope would have magnified the above limitations of privacy and proportional representation.

In conclusion, this study provides specific information for designing a resident regional anesthesia curriculum. Worldwide directors of regional anesthesia training gave strong consensus for 25 items that should be included and suggested a high volume of practice. Implementation of a standardized curriculum has important benefits for patient care through improving quality of training, and quality of nerve blocks, performed by generalist anesthesiologists.

Table 3 Volume of practice for blocks performed in discrete anatomical regions

Anatomical region	Number of blocks Median (IQR)
Peripheral blocks for shoulder and upper arm surgery	16–20 (16–≥25)
Peripheral blocks for elbow, forearm, wrist and hand surgery	16–20 (15–25)
Peripheral blocks for hip and upper leg surgery	16–20 (15–25)
Peripheral blocks for knee, lower leg, ankle and foot surgery	16–20 (15–25)
Thoracic fascial plane blocks	16–20 (11–21)
Abdominal fascial plane blocks	16–20 (11–21)
Thoracic epidural blocks	16–20 (15–≥25)
Spinal/intrathecal blocks (overlap exposure with obstetric anesthesia)	≥25 (20–≥25)
Lumbar epidural blocks (overlap exposure with obstetric anesthesia)	≥25 (16–≥25)

The highest number that can be chosen was '≥25'.

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Acknowledgements We wish to thank the Education Special Interest Group of the American Society of Regional Anesthesia for their support in establishing the ERAC collaborative research network.

Contributors AC and RR were involved in conceptualizing the study. All authors contributed to the final study protocol. All authors were involved in inviting participants to commence round 1. BJ was data manager for the REDCap server. AC, RR, and BJ were involved in data synthesis. AC drafted the initial manuscript, and all authors revised and approved the final manuscript.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests Alan Macfarlane: received consultancy fees from Intelligent Ultrasound. Amit Pawa: received honoraria from GE Healthcare, Sintetica UK, Pacira and Butterfly Net Inc. Have also consulted for B Braun Medical Ltd. All other authors declare no conflicts or competing interests.

Patient consent for publication Not required.

Ethics approval Ethics approval was granted to conduct this study.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request

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Supplementary Appendix - Figures.

Figures S1 to S3 graphically chart when items were introduced into the Delphi survey, with participant scoring for each item during Rounds One and Two.

Figure S1. Flowchart of regional anesthesia block techniques. Participants scored each block from 1-3 (lowest importance), 4-7 (intermediate), 8-10 (highest importance). Blocks are divided as accepted with highest importance and strong consensus (median score ≥8, with ≥70% of participants agreeing it is of highest importance), followed by additional block techniques without strong consensus (median score ≥8), and excluded block techniques (median score ≤7).

Figure S2. Flowchart of curriculum training items. Participants scored each item from 1-3 (lowest importance), 4-7 (intermediate), 8-10 (highest importance). Items are divided as accepted with highest importance and strong consensus (median score ≥8, with ≥70% of participants agreeing it is of highest importance), additional items without strong consensus (median score ≥8), and excluded items (median score ≤7).

Figure S3. Flowchart of competency and learning outcome items. Participants scored each item from 1-3 (lowest importance), 4-7 (intermediate), 8-10 (highest importance). Items are divided as accepted with highest importance and strong consensus (median score ≥8, with ≥70% of participants agreeing it is of highest importance), additional items without strong consensus (median score ≥8), and excluded items (median score ≤7).

Figure S1

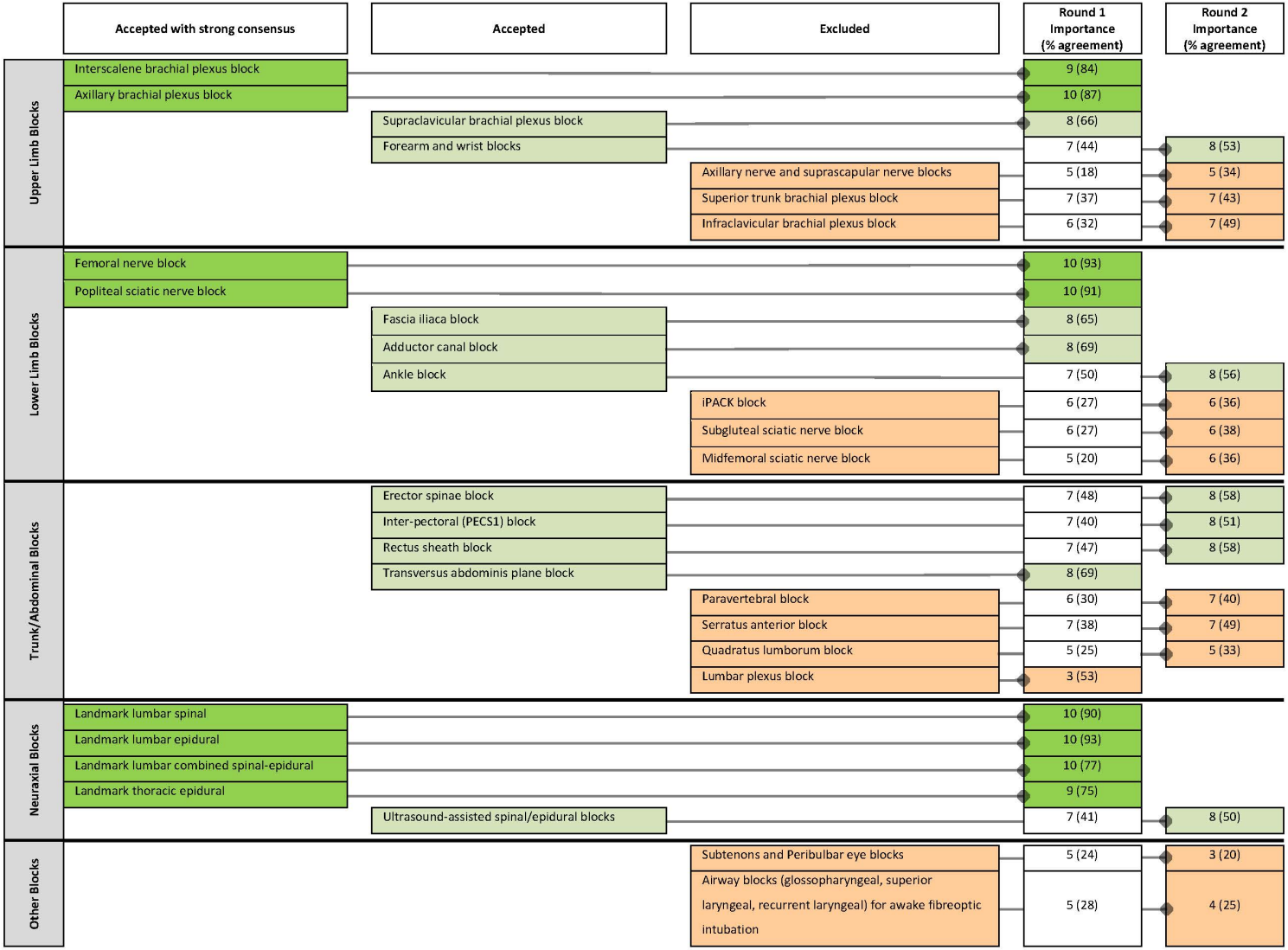

Accepted with strong consensus
Accepted
Excluded
Round 1 Importance (% agreement)
Round 2 Importance (% agreement)
Upper Limb Blocks
Interscalene brachial plexus block
9 (84)
Axillary brachial plexus block
10 (87)
Supraclavicular brachial plexus block
8 (66)
Forearm and wrist blocks
7 (44)
8 (53)
Axillary nerve and suprascapular nerve blocks
5 (18)
5 (34)
Superior trunk brachial plexus block
7 (37)
7 (43)
Infraclavicular brachial plexus block
6 (32)
7 (49)
Lower Limb Blocks
Femoral nerve block
10 (93)
Popliteal sciatic nerve block
10 (91)
Fascia iliaca block
8 (65)
Adductor canal block
8 (69)
Ankle block
7 (50)
8 (56)
iPACK block
6 (27)
6 (36)
Subgluteal sciatic nerve block
6 (27)
6 (38)
Midfemoral sciatic nerve block
5 (20)
6 (36)
Trunk/Abdominal Blocks
Erector spinae block
7 (48)
8 (58)
Inter-pectoral (PECS1) block
7 (40)
8 (51)
Rectus sheath block
7 (47)
8 (58)
Transversus abdominis plane block
8 (69)
Paravertebral block
6 (30)
7 (40)
Serratus anterior block
7 (38)
7 (49)
Quadratus lumborum block
5 (25)
5 (33)
Lumbar plexus block
3 (53)
Neuraxial Blocks
Landmark lumbar spinal
10 (90)
Landmark lumbar epidural
10 (93)
Landmark lumbar combined spinal-epidural
10 (77)
Landmark thoracic epidural
9 (75)
Ultrasound-assisted spinal/epidural blocks
7 (41)
8 (50)
Other Blocks
Subtenons and Peribulbar eye blocks
5 (24)
3 (20)
Airway blocks (glossopharyngeal, superior laryngeal, recurrent laryngeal) for awake fibreoptic intubation
5 (28)
4 (25)

Figure S2

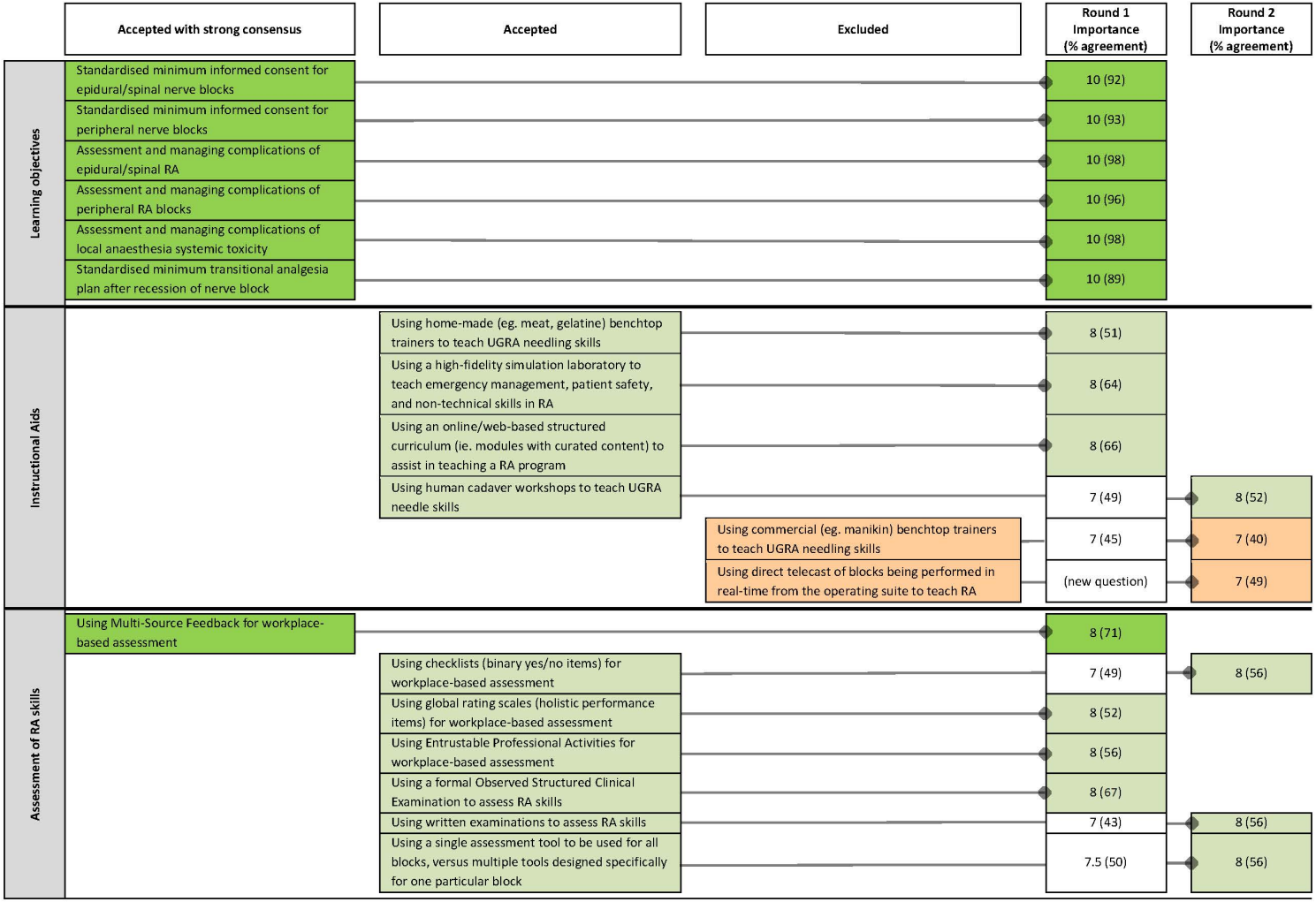
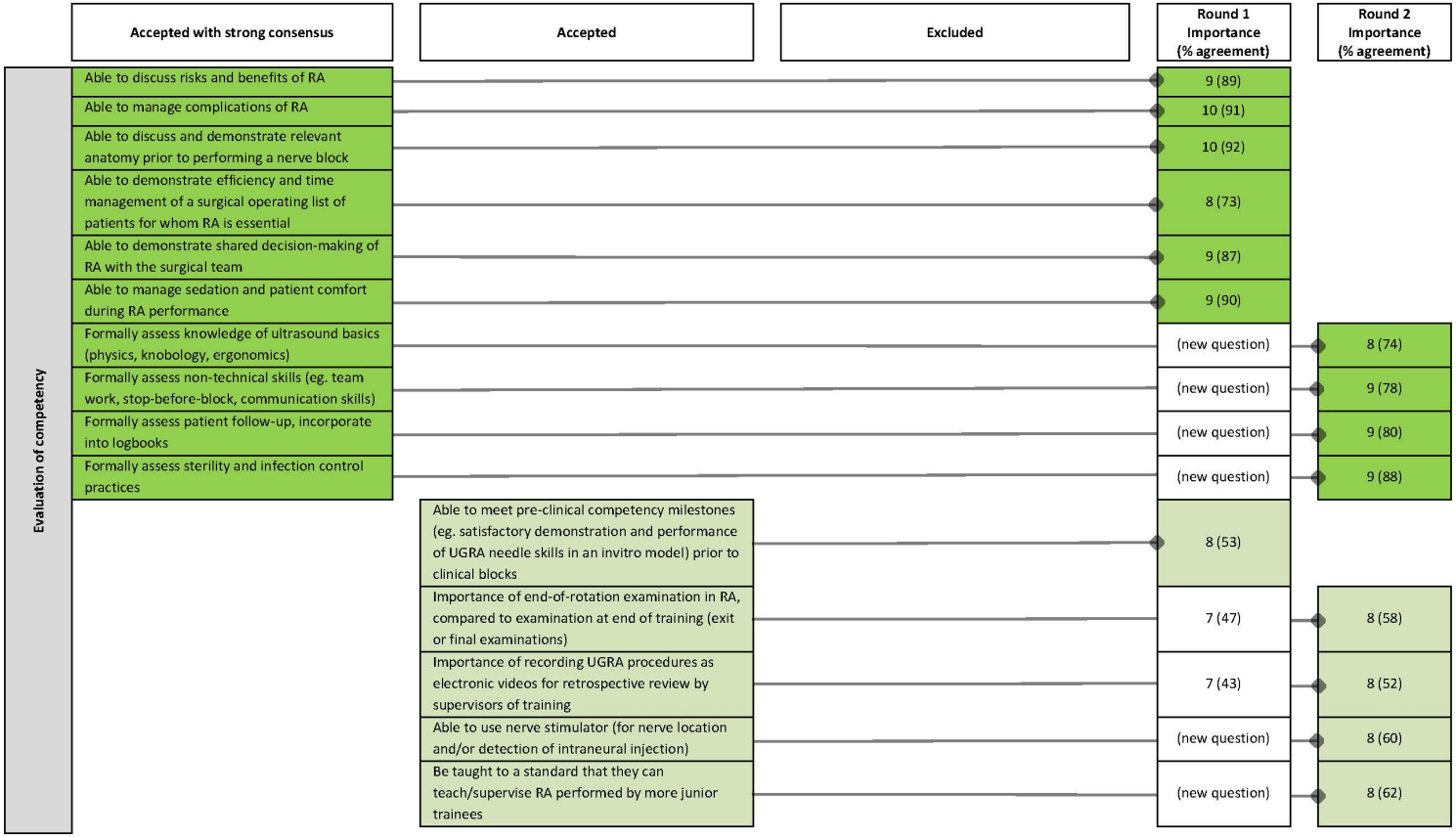

Accepted with strong consensus
Accepted
Excluded
Round 1 Importance (% agreement)
Round 2 Importance (% agreement)
Learning objectives
Standardised minimum informed consent for epidural/spinal nerve blocks
10 (92)
Standardised minimum informed consent for peripheral nerve blocks
10 (93)
Assessment and managing complications of epidural/spinal RA
10 (98)
Assessment and managing complications of peripheral RA blocks
10 (96)
Assessment and managing complications of local anaesthesia systemic toxicity
10 (98)
Standardised minimum transitional analgesia plan after recession of nerve block
10 (89)
Instructional Aids
Using home-made (eg. meat, gelatine) benchtop trainers to teach UGRA needling skills
8 (51)
Using a high-fidelity simulation laboratory to teach emergency management, patient safety, and non-technical skills in RA
8 (64)
Using an online/web-based structured curriculum (ie. modules with curated content) to assist in teaching a RA program
8 (66)
Using human cadaver workshops to teach UGRA needle skills
7 (49)
8 (52)
Using commercial (eg. manikin) benchtop trainers to teach UGRA needling skills
7 (45)
7 (40)
Using direct telecast of blocks being performed in real-time from the operating suite to teach RA
(new question)
7 (49)
Assessment of RA skills
Using Multi-Source Feedback for workplace-based assessment
8 (71)
Using checklists (binary yes/no items) for workplace-based assessment
7 (49)
8 (56)
Using global rating scales (holistic performance items) for workplace-based assessment
8 (52)
Using Entrustable Professional Activities for workplace-based assessment
8 (56)
Using a formal Observed Structured Clinical Examination to assess RA skills
8 (67)
Using written examinations to assess RA skills
7 (43)
8 (56)
Using a single assessment tool to be used for all blocks, versus multiple tools designed specifically for one particular block
7.5 (50)
8 (56)

Figure S3


Accepted with strong consensus
Accepted
Excluded
Round 1 Importance (% agreement)
Round 2 Importance (% agreement)
Evaluation of competency
Able to discuss risks and benefits of RA
9 (89)
Able to manage complications of RA
10 (91)
Able to discuss and demonstrate relevant anatomy prior to performing a nerve block
10 (92)
Able to demonstrate efficiency and time management of a surgical operating list of patients for whom RA is essential
8 (73)
Able to demonstrate shared decision-making of RA with the surgical team
9 (87)
Able to manage sedation and patient comfort during RA performance
9 (90)
Formally assess knowledge of ultrasound basics (physics, knobology, ergonomics)
(new question)
8 (74)
Formally assess non-technical skills (eg. team work, stop-before-block, communication skills)
(new question)
9 (78)
Formally assess patient follow-up, incorporate into logbooks
(new question)
9 (80)
Formally assess sterility and infection control practices
(new question)
9 (88)
Able to meet pre-clinical competency milestones (eg. satisfactory demonstration and performance of UGRA needle skills in an invitro model) prior to clinical blocks
8 (53)
Importance of end-of-rotation examination in RA, compared to examination at end of training (exit or final examinations)
7 (47)
8 (58)
Importance of recording UGRA procedures as electronic videos for retrospective review by supervisors of training
7 (43)
8 (52)
Able to use nerve stimulator (for nerve location and/or detection of intraneural injection)
(new question)
8 (60)
Be taught to a standard that they can teach/supervise RA performed by more junior trainees
(new question)
8 (62)

Supplementary Appendix – Round One Questionnaire

REDCap webpage

Opening Page

You are invited to take part in this research project, which is called "An International Delphi Consensus for a Core Curriculum for Non-Fellowship Regional Anaesthesia Training and Assessment". You have been invited because you have been identified as a stakeholder in what a core curriculum should contain, how trainees should be assessed, and what are the best ways to train future anaesthetists in regional anaesthesia. Your contact details were obtained from the study steering committee, who has identified you as a potential stakeholder in the results of this study.

You have been given a copy of the study Participant Information Sheet, and have had all questions answered satisfactorily. You understand that participation in this study is entirely voluntary.

You are consenting to provide an email address so that researchers can inform you that the questionnaires are ready to be completed. This email address will be kept separate from your answers to the questionnaires. All answers to the questionnaires are anonymous. By completing and submitting the questionnaires you consent to your non-identifiable data to be used as part of this research project.

If you wish to continue, you are confirming your informed consent to participate in this study.

A yes or no response is required.

<If yes, REDCap will allow the participant to continue completing the questionnaire on the next webpage.>

<If no, the questionnaire will terminate>

Second webpage

Thank you for confirming that you have provided informed consent and wish to continue participating in this study.

There are two rounds of questionnaires to be completed. Please enter your best email contact address here. This will allow researchers to contact you when Round 2 is available for completion.

<participant to enter a contact email here>

<confirm email address> and match to first address

<If both are accurate, to continue to third webpage and begin questionnaire>

Core principles for regional anaesthesia education

Instructions for scoring

Score each question using a scale 1 to 10. Chose an appropriate ranking category (scores 1-3, 4-7, 8-10), and then choose a single score within that category:

Scores 1 to 3 = Lowest importance

Scores 4 to 7 = Intermediate importance

Scores 8 to 10 = Highest importance

Lowest importance			Intermediate importance				Highest importance		
1	2	3	4	5	6	7	8	9	10

Question Number	Question content: instructional aids

1	How important are partial-task, "home-made" benchtop trainers (eg. meat or gelatine phantoms) for teaching ultrasound-guided needle skills to non-Fellowship trainees?
2	How important are commercial benchtop trainers (eg. manikins) for teaching ultrasound-guided needle skills to non-Fellowship trainees?
3	How important are cadaver workshops for teaching ultrasound-guided needle skills to non-Fellowship trainees?
4	How important is high-fidelity simulation laboratory training for teaching emergency management, patient safety, and non-technical skills in regional anaesthesia?
5	How important is an online/web-based structured curriculum (modules with curated content) to assist in teaching a non-Fellowship regional anaesthesia program?

Free text responses for instructional aids:

Question Number	Question content: Regional anaesthesia informed consent and complications
6	How important is it that a non-Fellowship curriculum teach a standardised minimum level of informed consent for neuraxial (epidural and spinal) regional anaesthesia?
7	How important is it that a non-Fellowship curriculum teach a standardised minimum level of informed consent for peripheral regional anaesthesia?
8	How important is it that a non-Fellowship curriculum teach assessment and complications from neuraxial blocks (epidural and spinal)?
9	How important is it that a non-Fellowship curriculum teach assessment and complications from peripheral nerve blocks?
10	How important is it that a non-Fellowship curriculum teach assessment and complications of local anaesthesia systemic toxicity?

11	How important is it that a non-Fellowship curriculum teach a standardised transitional analgesia plan after a nerve block has receded?

Free text responses for RA informed consent and complications:

For the below questions, mark on the scale 1 to 10 corresponding to your answer.

Number of blocks for minimum volume of practice									
<5	6 – 10		11 - 15		16 - 20		21 - 25		>25
1	2	3	4	5	6	7	8	9	10

Question Number	Question content: Volume of practice
1	What is the minimum number of peripheral blocks for shoulder and upper arm surgery that should be performed by a trainee in a non-Fellowship regional anaesthesia curriculum?
2	What is the minimum number of peripheral blocks for elbow, forearm, wrist and hand surgery that should be performed by a trainee in a non-Fellowship regional anaesthesia curriculum?
3	What is the minimum number of peripheral blocks for hip and upper leg surgery that should be performed by a trainee in a non-Fellowship regional anaesthesia curriculum?

4	What is the minimum number of peripheral blocks for knee, lower leg, ankle and foot surgery that should be performed by a trainee in a non-Fellowship regional anaesthesia curriculum?
5	What is the minimum number of thoracic fascial plane blocks that should be performed by a trainee in a non-Fellowship regional anaesthesia curriculum?
6	What is the minimum number of abdominal fascial plane blocks that should be performed by a trainee in a non-Fellowship regional anaesthesia curriculum?
7	What is the minimum number of spinal blocks that should be performed by a trainee in a non-Fellowship regional anaesthesia curriculum?
8	What is the minimum number of thoracic epidural blocks that should be performed by a trainee in a non-Fellowship regional anaesthesia curriculum?
9	What is the minimum number of lumbar epidural blocks that should be performed by a trainee in a non-Fellowship regional anaesthesia curriculum?

Free text responses for volume of practice:

Core techniques for regional anaesthesia curriculum

Instructions for scoring

Score each question using a scale 1 to 10. Chose an appropriate ranking category (scores 1-3, 4-7, 8-10), and then choose a single score within that category:

Scores 1 to 3 = Lowest importance

Scores 4 to 7 = Intermediate importance

Scores 8 to 10 = Highest importance

Lowest importance			Intermediate importance				Highest importance		
1	2	3	4	5	6	7	8	9	10

Preamble:

This section is to down-select from a large "menu" of available blocks, to a core number of RA techniques that should be taught to all anaesthesia trainees. All trainees would be expected to perform these core blocks safely, effectively, and independently, by conclusion of training. Therefore, when scoring the below RA techniques, please consider the following factors:

(1) risk-benefit profile

(2) strength of evidence for benefit

(3) ease of teaching by faculty

(4) ease of learning to satisfactory performance by trainees by end of training

(5) versatility (block can be used for multiple indications)

(6) ease of implementation into clinical practice (eg. time taken to perform, theatre resources, applicability for the largest patient population)

Question Number	Question content: scope of core techniques
1	How important should interscalene brachial plexus blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
2	How important should combined axillary nerve and suprascapular nerve blocks for shoulder

	surgery as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
3	How important should superior trunk of the brachial plexus block as a technique for shoulder surgery be taught in a non-Fellowship regional anaesthesia curriculum?
4	How important should axillary brachial plexus blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
5	How important should infraclavicular brachial plexus blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
6	How important should supraclavicular brachial plexus blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
7	How important should forearm and wrist blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
8	How important should femoral nerve blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
9	How important should fascia iliaca blocks as a technique be taught in a non-Fellowship regional

	anaesthesia curriculum?
10	How important should lumbar plexus blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
11	How important should adductor canal blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
12	How important should iPACK blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
13	How important should ankle blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
14	How important should popliteal sciatic blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
15	How important should subgluteal sciatic blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
16	How important should midfemoral sciatic blocks as a technique be taught in a non-Fellowship

	regional anaesthesia curriculum?
17	How important should erector spinae blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
18	How important should paravertebral blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
19	How important should inter-pectoral (or PECS I) nerve blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
20	How important should serratus anterior nerve blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
21	How important should rectus sheath blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
22	How important should Transverse Abdominis Plane blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
23	How important should quadratus lumborum blocks as a technique be taught in a non-Fellowship

	regional anaesthesia curriculum?
24	How important should (non-ultrasound) lumbar spinal blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
25	How important should (non-ultrasound) lumbar epidural blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
26	How important should (non-ultrasound) lumbar combined spinal/epidural (CSE) blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
27	How important should (non-ultrasound) thoracic epidural blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
28	How important should ultrasound-guided epidural and spinal blocks as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
29	How important should eye blocks (subtenons and peribulbar) as a technique be taught in a non-Fellowship regional anaesthesia curriculum?
30	How important should airway blocks for awake fibreoptic intubation (glossopharyngeal or superior

	laryngeal or recurrent laryngeal nerves) as techniques be taught in a non-Fellowship regional anaesthesia curriculum?

Free text responses for core techniques:

Core principles for regional anaesthesia assessment

For the below questions, mark on the scale 1 to 10. Chose an appropriate ranking category (scores 1-3, 4-7, 8-10), and then choose a single score within that category

Lowest importance			Intermediate importance				Highest importance		
1	2	3	4	5	6	7	8	9	10

Question Number	Question content: Assessment tools
1	How important are checklists (scored using binary yes/no items) as a workplace-based assessment tool in assessing regional anaesthesia skills?
2	How important are global rating scales (scored using holistic performance items) as a workplace-based assessment tool in assessing regional anaesthesia skills?
3	How important is an entrustable professional activity tool in assessing regional anaesthesia skills? (example: “Managing patients with common, serious or life-threatening complications of regional

	anaesthesia" – Royal College of Physicians (Canada) Anaesthesiology EPA Guide)
4	How important is a formal observed structured clinical examination in assessing regional anaesthesia skills?
5	How important is multi-source feedback in assessing regional anaesthesia skills?
6	How important is a written examination in assessing regional anaesthesia knowledge?
7	How important is a single assessment tool that can be used for all types of blocks, compared to using multiple assessment tools each of which was designed specifically for one particular block?

Question Number	Question content: Competency outcomes
8	How important is it for the trainee to be evaluated on their discussion of risks and benefits of regional anaesthesia?
9	How important is it for the trainee to be evaluated on their ability to manage complications of regional anaesthesia?

10	How important is it for the trainee to discuss/demonstrate relevant anatomy prior to performing a block?
11	How important is it for the trainee to demonstrate efficiency and time management of a surgical operating list of patients for which regional anaesthesia is essential? (example: elective list of total knee arthroplasty surgery)
12	How important is it for the trainee to demonstrate shared decision-making with the surgical team?
13	How important is it for the trainee to be evaluated on their ability to manage sedation and patient comfort during block performance?
14	How important is it that a trainee have to meet pre-clinical competency milestones (eg. satisfactory demonstration and performance of ultrasound-guided needling skills in an *in vitro* model) prior to allowing a trainee to perform clinical blocks?
15	How important is an end-of-rotation examination in regional anaesthesia, compared to examination at end of training (“finals” or “exit” examinations)?
16	Should trainees record their ultrasound-guided block procedures as electronic videos (by using the record video clip function on the ultrasound machine) for retrospective review by their

	supervisors?

Free text responses for core assessment and competency:

Last page of questionnaire

Thank you for your time, this completes the Round 1 e-Delphi questionnaire.

You will receive the invitation to complete the Round 2 questionnaire once this is ready to be completed.

This invitation will be sent to your email address provided at the start of this questionnaire.

We are also reaching out to as many current and immediate-past (within 5 years)

director/supervisor/department lead for regional anaesthesia training. Please forward the original invitation email to your colleague(s)

who you believe can be potential participants in this study.

Supplementary Appendix – Round Two Questionnaire

REDCap opening webpage

Thank you for opening Round 2 of this research project, "An International Delphi Consensus for a Core Curriculum for Non-Fellowship Regional Anaesthesia Training and Assessment".

In Round 1, you and your colleagues scored questions on training, assessment, competency, and types of nerve blocks considered "core" techniques for every anaesthetist/anaesthesiologist. Questions which reached high consensus were accepted or rejected.

In Round 2, we are asking you to re-score questions which were close to reaching high consensus, but still classified as indeterminate. In response to your comments, several new questions were also added to Round 2.

We are now asking you to make definitive answers to these questions. We have suggested the following decision aid flow chart when choosing your answer:

(1) If possible, consider whether you think this question is of *lowest importance* or *highest importance*

(2) Now choose a number within that category; ie. *1 to 3* if lowest category, or *8 to 10* if highest category. If you remain unsure, you are still able to choose a score between 4 to 7.

We are expecting that this decision aid will help to clearly clarify your opinion on each question. Please click next to begin

Core principles for regional anaesthesia education

Instructions for scoring

Score each question using a scale 1 to 10.

We suggest choosing a ranking category first, then a score within that category

Example: I rank this answer in the lowest category, with a score of 3

Lowest importance			Intermediate importance				Highest importance		
1	2	3	4	5	6	7	8	9	10

Question Number	Question content: instructional aids
1	How important are commercial benchtop trainers (eg. manikins) for teaching ultrasound-guided needle skills to non-Fellowship trainees? Round 1 score: median 7 (IQR 5-8)

2	How important are cadaver workshops for teaching ultrasound-guided needle skills to non-Fellowship trainees? Round 1 score: median 7 (IQR 5-8)
3	How important is it to demonstrate blocks using a direct telecast of the block being performed in real-time from the op suite? New question

Core principles for regional anaesthesia assessment

For the below questions, mark on the scale 1 to 10.

We suggest choosing a ranking category first, then a score within that category

Example: I rank this answer in the lowest category, with a score of 3

Lowest importance			Intermediate importance				Highest importance		
1	2	3	4	5	6	7	8	9	10

Question Number	Question content: Assessment tools
1	How important are checklists (scored using binary yes/no items) as a workplace-based assessment tool in assessing regional anaesthesia skills? Round 1 score: median 7 (IQR 5-9)
2	How important is a written examination in assessing regional anaesthesia knowledge?

	Round 1 score: median 7 (IQR 5-8)
3	How important is a single assessment tool that can be used for all types of blocks, compared to using multiple assessment tools each of which was designed specifically for one particular block? Round 1 score: median 7.5 (IQR 5-9)

Question Number	Question content: Competency outcomes
4	How important is an end-of-rotation examination in regional anaesthesia, compared to examination at end of training ("finals" or "exit" examinations)? Round 1 score: median 7 (IQR 5-9)
5	Should trainees record their ultrasound-guided block procedures as electronic videos (by using the record video clip function on the ultrasound machine) for retrospective review?

	Round 1 score: median 7 (IQR 5-8)
6	How important should ultrasound basics (physics, knobology, ergonomics) be formally assessed? New question
7	Should non-Fellowship trainees learn to incorporate use of the nerve stimulator (for nerve location and/or detect intraneural injection)? New question
8	How important should non-Fellowship RA trainees be taught to a standard that they can teach/supervise RA junior trainees? New question
9	How important should non-technical skills be formally taught and assessed (eg. team work, stop-before-block, communication skills)? New question
10	How important should follow-up of patients be incorporated into block logbooks and formally

	assessed? New question
11	How important is it to assess sterility and infection control practices? New question

Core techniques for regional anaesthesia curriculum

In Round 1, a consensus volume of practice was reached for upper limb, lower limb, and chest/abdominal wall blocks.

Consensus was also reached for high importance blocks regarded as core curriculum techniques that needs to be taught and assessed on every anaesthetist/anaesthesiologist during training.

These blocks are:

CORE upper limb = interscalene, supraclavicular, axillary

CORE lower limb = femoral, fascia iliaca, adductor canal, popliteal sciatic

CORE chest/abdomen = TAP, non-ultrasound guided thoracic epidural

CORE specialty = lumbar epidural, spinal, CSE

These next questions ask what EXTRA blocks should be added to the CORE blocks in each anatomical area.

Remember that all CORE, and any EXTRA blocks, must be taught and assessed within the consensus volume of practice. Therefore, carefully consider whether these EXTRA blocks can be realistically added to the CORE blocks.

For the below questions, mark on the scale 1 to 10.

We suggest choosing a ranking category first, then a score within that category

Example: I rank this answer in the lowest category, with a score of 3

Lowest importance			Intermediate importance				Highest importance		
1	2	3	4	5	6	7	8	9	10

Section 1 - Upper limb

Volume of practice – median 40 upper limb blocks in total (IQR 30-50 blocks)

Core blocks ALREADY decided – interscalene, supraclavicular, axillary

Question Number	Question content: Upper limb blocks
1	Should the axillary nerve and suprascapular nerve block be added to the existing core upper limb block curriculum?
2	Should the superior trunk of the brachial plexus block be added to the existing core upper limb

	block curriculum?
3	Should infraclavicular brachial plexus blocks be added to the existing core upper limb block curriculum?
4	Should forearm and wrist blocks be added to the existing core upper limb block curriculum?

For the below questions, mark on the scale 1 to 10.

We suggest choosing a ranking category first, then a score within that category

Example: I rank this answer in the lowest category, with a score of 3

Lowest importance			Intermediate importance				Highest importance		
1	2	3	4	5	6	7	8	9	10

Section 2 – Lower limb

Volume of practice – median 40 lower limb blocks in total (IQR 30-50 blocks)

Core blocks ALREADY decided – femoral, fascia iliaca, adductor canal, popliteal sciatic

Question Number	Question content: Lower limb blocks
5	Should iPACK blocks be added to the existing core lower limb block curriculum?
6	Should ankle blocks be added to the existing core lower limb block curriculum?
7	Should subgluteal sciatic blocks be added to the existing core lower limb block curriculum?
8	Should midfemoral sciatic blocks be added to the existing core lower limb block curriculum?

For the below questions, mark on the scale 1 to 10.

We suggest choosing a ranking category first, then a score within that category

Example: I rank this answer in the lowest category, with a score of 3

Lowest importance			Intermediate importance				Highest importance		
1	2	3	4	5	6	7	8	9	10

Section 3 – Chest and Abdominal wall

Volume of practice – median 30 chest/abdominal blocks in total (IQR 22-44 blocks)

Core blocks ALREADY decided – transversus abdominis plane, thoracic epidural (non-ultrasound)

Question Number	Question content: Chest wall/Abdominal blocks
9	Should erector spinae blocks be added to the existing core chest/abdominal block curriculum?

10	Should paravertebral blocks be added to the existing core chest/abdominal block curriculum?
11	Should inter-pectoral (or PECS I) nerve blocks be added to the existing core chest/abdominal block curriculum?
12	Should serratus anterior nerve blocks be added to the existing core chest/abdominal block curriculum?
13	Should rectus sheath blocks be added to the existing core chest/abdominal block curriculum?
14	Should quadratus lumborum blocks be added to the existing core chest/abdominal block curriculum?
15	Should ultrasound-guided epidural and spinal blocks be added to the existing core chest/abdominal block curriculum?

For the below questions, mark on the scale 1 to 10.

We suggest choosing a ranking category first, then a score within that category

Example: I rank this answer in the lowest category, with a score of 3

Lowest importance			Intermediate importance				Highest importance		
1	2	3	4	5	6	7	8	9	10

Section 4 – Specialty blocks

Core blocks ALREADY decided – lumbar epidural, spinal, CSE (volume of practice median > 50 blocks, will overlap with obstetric anaesthesia requirements)

Question Number	Question content: Specialist blocks
16	Should eye blocks (subtenons and peribulbar) be added to the existing core block curriculum?
17	Should airway blocks for awake fibreoptic intubation (glossopharyngeal or superior laryngeal or

	recurrent laryngeal nerves) be added to the existing core block curriculum?

Last page of questionnaire

Thank you for your time, you have finished all Round 2 questions, and this also completes this study.

We will endeavour to analyse all of your responses as quickly as possible and publish your exciting results later in 2021.