‘Current training in obstetric anaesthesia – Can it be improved on and how so?’

I vividly remember the feeling before my first labour ward on-call. There was a distinct sense of dread, feeling unprepared for the upcoming 12-hour shift. I attended handover and faced a patient board filled with mysterious acronyms, imagining rooms covered in blood and a series of emergency ‘can’t intubate, can’t ventilate’ scenarios in theatre. I was not alone in this experience, having worked with many colleagues over the years who have described a similar feeling of unease.

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What does current training involve?

Training in obstetric anaesthesia forms part of the Royal College of Anaesthetists (RCoA) 2010 curriculum for the Certificate of Completion of Training (CCT). It is divided into three competency-based modules (basic, intermediate and higher) which are mandatory for progression through training. Trainees are required to complete an initial assessment for competence in obstetric anaesthesia (IACOA) during their core anaesthetic training consisting of twelve work-based assessments, combining knowledge of common obstetric pathologies with practical procedures such as providing anaesthesia for operative delivery. The table below highlights the core clinical learning outcomes for each stage of anaesthetic training.

Training level	Core clinical learning outcomes
Basic	Pass the formal practical IACOA and, having achieved this, be able to provide analgesia and anaesthesia as required for the majority of the women in the delivery suite. Understand the management of common obstetric emergencies and be capable of performing immediate resuscitation and care of acute obstetric emergencies (e.g. eclampsia, pre-eclampsia, haemorrhage), under distant supervision but recognising when additional help is required.
Intermediate	Able to provide emergency and non-emergency obstetric anaesthesia care in the majority of patients including those with co-morbidities and obstetric complications with distant supervision. Perform immediate resuscitation of acute obstetric emergencies.
Higher	To be able to provide the appropriate anaesthetic management for any patient who requires emergency obstetric anaesthesia.

	To be able to provide elective anaesthesia services to the obstetric unit (excepting those patients with unusual problems who would normally be referred to a specialist centre).

The curriculum looks to propose a logical progression of competence in obstetric anaesthesia, starting with the supervised management of straightforward cases, moving to more complicated parturients with distant supervision before adopting more independent practice as a higher trainee. The RCoA recommends a minimum of twenty sessions (equating to ten days) on labour ward for each module and although recommended as a dedicated block, this is not a mandatory requirement.

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Is there a problem?

During a recent obstetric anaesthesia placement, a colleague and I discussed training in obstetric anaesthesia. We reflected on the concerns from core trainees coming through the labour ward regarding future on-calls and our own personal experience as trainees. We conducted a national survey of intermediate and higher anaesthetic trainees across the UK in 2017, asking about the number of days they had spent on labour ward, procedures performed and their confidence prior to first labour ward on-call. Our original plan had been to see if there were regional differences in training, identifying deaneries who were producing a more confident group of trainees after basic core competencies were achieved and looking at what was different in the training that they provided. A poor response rate meant that we were unable to comment on regional variations in practice, however a total of 204 trainee responses from more than 90% of the UK Schools of Anaesthesia provided some very interesting insights into trainee opinions on early training in obstetric anaesthesia. We presented our findings at the Obstetric Anaesthetists' Association (OAA) meeting in Belfast in 2018 in the hope of generating some discussion around a topic which we felt needed to be addressed.

Our primary outcome was 'confidence prior to first labour ward on-call' measured using a visual analogue scale from 0 (not confident) to 100 (very confident). We divided trainees into low, medium and high confidence groups, with one in four trainees falling into the low confidence category. The only groups to achieve truly high confidence were those who had performed more than 30 epidurals for labour or had spent more than 60 sessions on labour ward. I appreciate that one cannot use confidence as a direct marker of competence but there is a relationship between the two, with most people feeling increasingly confident once competent at a particular procedure. Our survey also revealed just how little obstetric anaesthesia some trainees were exposed to before going on the on-call rota, with one in five spending less than 20 days on labour ward during their time as a core trainee. Prior to unsupervised on-calls, 45% of trainees had performed less than 20 labour epidurals, with 18% performing less than 10 in total. When asked about consultant supervision, 49% of trainees reported being supervised for less than five of their labour epidurals. Consultant supervision was higher for theatre cases, although the caseload was still low with 30% of trainees performing less than 20 de-novo neuraxial blocks for operative delivery and 11% performing less than 10 in total. 53% of trainees had seen less than two caesarean sections under general anaesthetic (GA), with 6% never having seen one before going on-call. Perhaps unsurprisingly, we found a correlation between overall confidence and number of days spent on labour ward, number of labour and operative neuraxial blocks, GA caesarean sections performed and attendance at obstetric simulation courses.

Fear of one's first anaesthetic labour ward on-call is not a new phenomenon. In September 2009, a RCoA survey was sent to all CT1-ST3 anaesthetic trainees (with a total response rate of around 25%) and reported some concerning findings.[1] Prior to commencing on-calls, only 31% of trainees had completed more than 10 days on labour ward and around a quarter of trainees had never seen a GA caesarean section. The end result of this was that 28% of trainees felt unready to join the labour ward on-call rota when required to do so. On further questioning, it was the management of specific obstetric emergencies (such as haemorrhage) and obstetric scenarios (such as intra-operative pain)

that were the most common causes of concern. The following year, in response to the 2009 RCoA survey, a joint OAA/RCoA survey was sent to 218 departmental obstetric anaesthesia leads with an improved response rate of 56%[2]. Half of the departmental leads felt that twenty sessions provided insufficient time to gain the appropriate competencies. Interestingly, 16% of anaesthetic departments undertook no formal assessment of obstetric anaesthesia competence prior to on-call commitments. The working party behind this survey recognised that *"completion of the IACOA is not necessarily the same as being ready to cover the labour ward on-call without immediate supervision, which requires a more complex skill set."*

They outlined several recommendations which are shown below.

2010 OAA/RCoA survey recommendations	
1.	Training opportunities need to be maximised and this should include simulation training for all trainees.
2.	The RCoA e-LA obstetric anaesthesia module is a highly recommended source of knowledge to underpin basic anaesthesia learning.
3.	The IACOA should be used in conjunction with a local system of review that satisfies local clinical governance arrangements before a trainee works without immediate supervision.
4.	No trainee, who feels unprepared to start obstetric on-calls, should be expected to join the on-call rota unless directly supervised. Departments should make provisions for this eventuality where rotas are written a long time in advance.
5.	All trainees who have completed their basic obstetric training should have some opportunity to cover the labour ward without immediate supervision so that they are confident to take on this responsibility as soon as they are appointed to an ST3 post.

I would argue that upon completion of basic level training a trainee should feel comfortable in the labour ward environment, understanding obstetric decision making and being able to effectively manage acute obstetric emergencies and specific labour ward scenarios such as a failing labour epidural or a woman complaining of pain during caesarean section. Although current training may produce competent trainees, our survey indicates that a significant proportion still lack confidence going into unsupervised on-calls and that obstetric training has not moved forward in almost a decade since the first RCoA survey.

It is more difficult to comment on the adequacy of obstetric anaesthesia training at intermediate and higher levels. As a higher trainee one is often expected to troubleshoot labour ward issues and

provide assistance to less experienced trainees on the obstetric rota out-of-hours. As an ST3/4 in various obstetric units, I was often left alone on the labour ward during weekday shifts having completed my IACOA and therefore deemed competent to be left unsupervised. It was frustrating to think that my obstetric anaesthesia training had essentially stopped after CT2 and it was only in the higher volume centres with a more complicated population of parturients that I felt that I was being trained by the consultants again. This might just be an isolated experience but is something that could warrant exploration in the future.

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What can be done to improve training?

The final question in our 2017 survey asked trainees what they felt could be done to improve basic level obstetric anaesthesia training. We received many valuable suggestions, with the three most common themes being discussed below.

1. **Spending more time on labour ward (including out-of-hours experience) in a dedicated block.**

This was by far the most common suggestion for how obstetric anaesthesia training could be improved. As a core trainee, the 2010 curriculum mandates intensive care training as a 3-month protected module but anticipates *"that the majority of other units of training will not be delivered in dedicated blocks."* It does state that trainees would benefit from other modules being dedicated (obstetrics being given as one such example) although this is not a mandatory requirement.

I strongly feel that core obstetric anaesthesia training should mirror intensive care training at this level - as a stand-alone 3-month period with on-call commitments shadowing a registrar on the labour ward. Both intensive care and the labour ward environment are uniquely different to general theatres and warrant a similar dedicated block of training. Not only would this allow for more

sessions in which to gain confidence in practical procedures, it would also increase trainee exposure to the acute management of obstetric emergencies and facilitate the development of the more multifaceted skill set required in obstetric anaesthesia.

Simple as it sounds, the answer is that core trainees need to spend more time on labour ward. It is not unreasonable to think that over the course of just ten days a trainee may not see a GA caesarean section or encounter intra-operative pain, a life-threatening postpartum haemorrhage or a failing labour epidural. It is an inadequate amount of time to gain a full understanding of non-acute obstetric scenarios such as the diagnosis and management of post dural puncture headache or the assessment of neurological pathology postnatally. These are all common scenarios encountered by intermediate trainees out-of-hours who can feel out of their depth having not been adequately exposed to these issues before.

I appreciate that changing (potentially over-stretched) departmental rotas to facilitate this may prove challenging but I think it would address many of the concerns that trainees have with the current training programme and help to produce a more confident, and ultimately competent, cohort of intermediate level trainees on the obstetric rota.

2. **RCoA Guidance on the minimum number of procedures to be performed.**

Trainees also felt that some guidance on how many labour epidurals or operative deliveries would be considered sufficient to gain competence in obstetric anaesthesia might prove useful. In the 2010 OAA/RCoA survey, 15% of units stipulated a minimum number of cases that trainees were required to perform before going on-call. The difficulty with suggesting a minimum number of procedures or cases is that some people might feel comfortable after siting twenty labour epidurals and other trainees might need to do two or three times that number before gaining confidence. Studies have shown epidurals to be amongst the most difficult anaesthetic procedures to learn, with trainees on average having to perform at least 50-80 before being deemed competent.[3,4] Taking labour epidurals

as an example, what minimum number should we recommend? This is a difficult question to answer. Our survey found that trainees who had performed more than 30 labour epidurals fell into the high confidence group but the results in the studies above suggest that at least 50 might be needed. When first starting anaesthetic training, there is no guidance on the minimum number of rapid sequence inductions or theatre cases to be completed before being signed off with the Initial Assessment of Competence (IAC), rather it is assumed that three months is a long enough time period to gain competence in managing straightforward cases with distant supervision. Perhaps with a longer, dedicated obstetric block as discussed above there would be less need to provide guidance on the minimum number of expected cases.

The focus for core trainees is often centered on the procedural aspects of obstetric anaesthesia and when I first stepped foot onto labour ward my priority was to perform as many neuraxial procedures as I could, wrongly assuming that the key to being a good obstetric anaesthetist was simply the ability to do the most challenging epidurals or the quickest spinals. Although a vital skill set, being competent in neuraxial techniques alone does not fully equip a trainee for their first labour ward on-calls. It is important to recognise that to feel fully prepared for labour ward on-calls a trainee must have had sufficient experience in managing specific obstetric scenarios, communicating effectively with midwives and obstetricians in time pressured and stressful situations as well as having an understanding of obstetric decision making. Feeling confident in performing spinal anaesthesia for a caesarean section did not help me the first time a woman complained of numb fingers and difficulty breathing intraoperatively at 3 o'clock in the morning.

I would argue that trainees also need to take responsibility for their own development, identifying areas in which they are underconfident and highlighting this to an educational or clinical supervisor so that appropriate measures can be taken to provide additional support, such as the allocation of more sessions. When signing off the IAOAC and basic level obstetric unit-of-training, the logbook can be reviewed, and the adequacy of caseload assessed. If a trainee doesn't feel ready for on-calls

at this stage they should not be signed off although, in reality, many trainees can feel pressured to get modules completed in whatever time is allocated by the hospital in order to progress through their training.

3. Opportunity to attend simulation courses

Another common response to the question of improving obstetric anaesthesia training was the opportunity to attend simulation courses. Only 11% of trainees in the 2009 RCoA survey reported undertaking simulation training or attending a formal obstetric anaesthesia course. We found that this number had increased greatly to 63% in our survey which is certainly encouraging but still demonstrates that there is room for improvement. High fidelity simulation provides an excellent environment for a trainee to be exposed to the management of acute scenarios and as such, is a powerful learning tool within anaesthetic training. Given that trainee concerns are often with these acute obstetric scenarios, implementing more extensive, mandatory simulation training in obstetrics is likely to prove useful. When first starting anaesthetic training, many deaneries provide a 'novice course' for one afternoon a week over the course of a month. Perhaps the same could be done for novice obstetric anaesthesia training? Simulation training could also extend into intermediate and higher training levels, dealing with more complex obstetric scenarios and leadership skills. It can also facilitate human factors training, optimising the relationship between staff and the organisations in which they work in order to improve safety and performance. Parallels are often drawn between anaesthetic training and the airline industry, where extensive simulation training is used. A major airline can employ more than 75 hours of simulator training for pilots, providing experience of routine flights as well as working through unexpected problems as they occur.

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Conclusion

This essay primarily identifies concerns with basic level obstetric anaesthesia training and I would suggest that any initial improvements in training should be focused on this area. Mandating core obstetric anaesthesia training as a 3-month dedicated block could improve trainee readiness for unsupervised on-calls and the implementation of regular simulation training during this time would likely also prove beneficial. Improving the way obstetric anaesthesia training is delivered will have a wide range of benefits, first and foremost producing a more confident and competent cohort of trainees providing care to parturients across the UK. Mental health, fatigue and burnout amongst medical staff are key issues being more openly discussed currently and improving trainee familiarity and experience on labour ward can only help to reduce the potential stress generated by feeling unprepared for clinical duties. It might also have the knock-on effect of improving trainee enjoyment of a very fulfilling and rewarding subspecialty, inspiring more trainees to pursue a career in obstetric anaesthesia.

I received an email recently from my deanery with a survey related to likely changes to the core anaesthetic curriculum in 2020/2021, involving the extension of core training by one year. It mentioned that the reason for this change was to provide more experience in obstetrics prior to registrar training and, if this is the case, then hopefully a positive change is just around the corner.

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References

1. Jigajinni S. **Trainee preparation and worries prior to commencing obstetric on-call. Do we have a problem?** *RCoA Bulletin* 2010;63:18–20

2. OAA Website URL: http://www.oaaanaes.ac.uk/assets/_managed/editor/File/Surveys/online%20survey%20reports/2010_OAA-RCoA_Survey.pdf

3. E. J. Drake J. Coghill J. R. Sneyd. **Defining competence in obstetric epidural anaesthesia for inexperienced trainees.** *BJA: British Journal of Anaesthesia*, Volume 114, Issue 6, 1 June 2015, Pages 951–957

4. Konrad C Schupfer, G Wietlisbach, M Gerber. **Learning manual skills in anesthesiology: Is there a recommended number of cases for anesthetic procedures?** *Anesthesia and Analgesia* 1998; 86: 635–9