How excellent anaesthetists perform in the operating theatre: a qualitative study on non-technical skills †

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Editor’s key points
- Excellent performance requires a mix of technical and non-technical skills (NTS).
- Specialist training programmes pay inadequate attention to NTS.
- In Sweden, highly trained anaesthetic nurses work closely with physician anaesthetists.
- The investigators have identified groups of NTS associated with excellent performance by anaesthetists, based on structured interviews to elicit the views of experienced anaesthetic nurses.

Background. Teaching trainees to become competent professionals who can keep the complex system of anaesthesia safe is important. From a safety point of view, non-technical skills such as smooth cooperation and good communication deserve as much attention as theoretical knowledge and practical skills, which by tradition have dominated training programmes in anaesthesiology. This study aimed to describe the way excellent anaesthetists act in the operating theatre, as seen by experienced anaesthesia nurses.

Methods. The study had a descriptive and qualitative design. Five focus group interviews with three or four experienced Swedish anaesthesia nurses in each group were conducted. Interviews were analysed by using a qualitative method, looking for common themes.

Results. Six themes were found: (A) structured, responsible, and focused way of approaching work tasks; (B) clear and informative, briefing the team about the action plan before induction; (C) humble to the complexity of anaesthesia, admitting own fallibility; (D) patient-centred, having a personal contact with the patient before induction; (D) fluent in practical work without losing overview; and (F) calm and clear in critical situations, being able to change to a strong leading style.

Conclusions. Experienced anaesthesia nurses gave nuanced descriptions of how excellent anaesthetists behave and perform. These aspects of the anaesthetist’s work often attract too little attention in specialist training, notwithstanding their importance for safety and fluency at work. Creating role models based on studies like the present one could be one way of increasing safety in anaesthesia.

Keywords: anaesthesiology; education, professional; focus groups; professional competence; qualitative research

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Safety in anaesthesia has improved much during the last decades,1 partly due to the introduction of technical innovations such as pulse oximetry and capnography. Still, new challenges appear as we operate on older and sicker patients and introduce more complicated techniques in surgery. Therefore, improving patient safety must continue to be a high priority task for anaesthetists. As competent professionals are necessary to keep a complex system like anaesthesia care safe,2 teaching trainees is an important element of safety work.

By tradition, the main focus of anaesthesia training has been on theoretical knowledge and technical skills. In contrast, in the aviation industry—which is highly successful in safety work—non-technical skills (NTS) such as smooth cooperation and good communication have for decades been recognized as equally important. Acknowledging the similarities between aviation and anaesthesiology in safety issues,3 researchers in anaesthesia training have stressed the need to describe the NTS used by proficient anaesthetists. The ANTS scale created by Glavin and colleagues4-5 is a valuable tool here. The scale is based on interviews with consultant anaesthetists. However, as NTS can be assumed to have a tacit dimension,6 the explicit descriptions given by senior doctors may not give us the full picture. According to Polanyi,7 tacit knowledge is expressed in action and therefore, observing how proficient anaesthetists perform in the operating theatre could be a way to get a fuller description of the NTS that constitute part of their expertise.

Observing doctors at work is a resource-demanding procedure and few studies using this technique have been
published. The Swedish system, with anaesthesia nurses doing much of the anaesthesia work, offers a possible solution. Anaesthesia nurses in Sweden are well trained: after becoming licensed registered nurses, they all have completed a 1 yr specialist training programme in anaesthesia. They take part in the continuing medical education at departments of anaesthesia and sometimes they give anaesthetics independently. Most often, they assist anaesthetists during induction and emergence and care for the patient during the operation with an anaesthetist close at hand, the latter being responsible for two or three operating theatres simultaneously. Thus, anaesthesia nurses in Sweden often work in parallel with anaesthetists and can observe how they work. Doctors as a contrast seldom see other doctors at work.

Experienced Swedish anaesthesia nurses constitute a potential rich source of information about anaesthetists at work and could be used as vicarious participant observers. By listening to a selected group of discerning nurses, we can learn about how anaesthetists act, thereby circumventing some of the limitations of operating theatre observation, such as the observer affecting normal behaviour, issues of consent and confidentiality, and last but not least the high cost of using participant observers. The aim of this study was to investigate how excellent anaesthetists act and behave in the operating theatre as seen through the eyes of experienced anaesthesia nurses.

**Methods**

**Ethical considerations**

The participating nurses were informed of the study and gave their consent. They were guaranteed confidentiality, with quotes presented in a way not allowing their source to be identified. The Regional Ethical Review Board was asked for an advisory opinion and according to the reply from the Board, a formal ethical approval was not needed for the study.

**Data collection**

The study had a descriptive and qualitative design. We chose focus group interviews as data collection method, because it is a useful and economical method to get opinions and ideas from a group of people about a well-defined subject. In focus group sessions, the memories of the interviewees can be stimulated by listening to other group members. This ‘group effect’ can create a chain of thought between the participants, evoking memories of earlier experiences. A potential problem with a focus group setting is that it might obstruct the mediation of sensitive experiences. However, the experiences focused on in this study were not judged to be of that kind, and we therefore did not consider it a problem.

A preliminary interview manual was constructed and a pilot focus group interview with three experienced anaesthetists was performed at the first author’s (J.L.) own workplace. The interview manual was adjusted accordingly to make the nurses to focus more on the ways of acting that they had observed than on the personality of the anaesthetists.

Thereafter, the heads of five departments of anaesthesiology in as many Swedish hospitals were contacted by e-mail and asked to select, together with the head anaesthesiologist, a group of three to four of the most experienced, competent, and discerning anaesthesia nurses at the clinic. Two of the departments declined participation because of lack of time, and a sixth hospital with two departments of anaesthesiology (thoracic and general) was contacted and both accepted to participate.

The nurses were informed that they would participate in a group interview with the aim to discuss how proficient anaesthetists act and perform. The concept of NTS, little if at all known among Swedish nurses, was not mentioned. At interview start, the interviewer reminded the participants of the focus of the interview. The interview questions (Table 1) aimed at making the nurses concentrate on what they had observed, giving examples of what the most proficient (in their opinion) anaesthetists do. The interviews started with focus on anaesthesia induction to make it easier for the nurses to recall and report concrete experiences. Thereafter, the discussion was expanded to include anaesthesia work more generally. The last question (about

<table>
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<tr>
<th>Table 1</th>
<th>Interview guide. ‘How excellent anaesthetists act in theatre’, focus group interviews with anaesthesia nurses</th>
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<tr>
<td>(A) Focus on anaesthesia induction</td>
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<tr>
<td>1. Please tell me about an occasion when according to you the anaesthetist did a really good job during induction. What was good about it?</td>
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<td>2. Have you worked with an anaesthetist with whom you felt especially safe and calm at induction? What did he or she do? What was he or she capable of doing, which were his or her special capacities?</td>
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<td>3. What are the most important things about how the anaesthetist performs during induction?</td>
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<tr>
<td>(a) What is it that an excellent anaesthetist does that a less competent one does not do?</td>
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<tr>
<td>(b) What is it that an excellent anaesthetist is capable of that a less competent one is not capable of?</td>
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<td>(B) Anaesthesia work in general</td>
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<tr>
<td>1. Please tell me about an occasion when according to you the anaesthetist did a really good job. What was good about it?</td>
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<td>3. What is most important in how an anaesthetist performs?</td>
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<tr>
<td>(a) What is it that an excellent anaesthetist does that a less competent one does not do?</td>
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<tr>
<td>(b) What is it that an excellent anaesthetist is capable of that a less competent one is not capable of?</td>
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<td>4. Tell me about an occasion when you were discontent with the anaesthetist’s work. What happened?</td>
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<td>(C) An excellent anaesthetist—what kind of a person is he or she?</td>
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<td>What is he or she like?</td>
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the excellent anaesthetist as a special kind of person) was included to confirm that the nurses saw the difference between describing observable performance and personality types.

Thus, altogether five focus group interviews were performed (Table 2). The first author (J.L.) did the interviews, which were tape recorded and later transcribed word-for-word. The analysis was performed by J.L., a consultant anaesthetist with training in qualitative research, together with the second author (J.H.), who has extensive experience of different qualitative research methods in healthcare research but no experience of anaesthesia work.

Text analysis
For the analysis of the interview texts, we chose a technique described by Malterud, a method where the analysis starts without predefined categories. This was considered appropriate because the interviewed nurses supposedly knew little or nothing about the concept of NTS and we wanted to be open to findings outside categories already described in earlier ANTS research.

The analysis started by the first author reading through all interviews. Preliminary themes were created and relevant text units from all interviews were sorted under headings representing these themes. The text units sampled from the interviews were those containing descriptions of and reflections on anaesthetists’ performance and behaviour. For each theme, subthemes were created, further structuring the text units placed under each heading. At this phase, themes and subthemes were discussed between the authors and the themes were restructured and reformulated until consensus was reached. The subthemes were used only as a tool during analysis and were not included in the presentation. Finally, we chose quotes from the interview extracts to illustrate the themes.

The analysis described so far represents a process of increasing decontextualization. At this stage, the first author reread all the interview texts, now with the themes in mind, ‘recontextualization’. The themes were adapted and reformulated and more quotes added. During the whole process, the study was discussed during seminars with a larger group of researchers.

<table>
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<th>Clinic no.</th>
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<th>Years of experience mean (range)</th>
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<td>4</td>
<td>3 (3/0)</td>
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<td>5</td>
<td>3 (3/0)</td>
<td>18 (7–24)</td>
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Results
Six themes characterizing how excellent anaesthetists act and behave in the operating theatre were identified. The themes will be presented below, ‘the anaesthetist’ here referring to ‘the excellent anaesthetist’. Quotes from the interviews are included to illustrate the themes.

Structured, responsible, and focused way of approaching work tasks
The anaesthetist prepares for each anaesthetic in advance whenever possible. He/she is aware, vigilant, and situationally present and never tries to pull away from his/her responsibility even in complicated and critical cases.

The anaesthetist is meticulous, takes on responsibility, and works in a structured way. He/she can see the core of a problem, setting aside less important aspects of it.

You should have a plan B. If you have a suspicion this is going to be a little difficult, you may prepare for these extra gadgets that you may need for plan B. . . No great arrangements but ‘Well, let’s go and get this thing or have it ready for use so as to be prepared. . . put a stylet in the endotracheal tube or go and get a McCoy laryngoscope. . . so that it is there, ready for use’.

One of our doctors always alternates between two different techniques when doing spinal or epidural anaesthetics, to keep both methods going. That is not taking the easy way out. But when he needs to improvise it is not difficult for him because he has kept the different methods going.

The anaesthetist regularly goes into the operating theatres that he/she is responsible for, to check that everything is in order.

He will always come to me regularly to see how things are going—even if I haven’t paged him. Still he will come to ask if everything is okay, or he will call by the phone to ask. Even if it is an ASA 1 patient he will come in to check that everything is okay.

Clear and informative, briefing the team about the action plan before induction
The anaesthetist communicates clearly with the team, always briefing the anaesthesia nurse and other team members about plans for action before induction. He/she is short-spoken, verbalizing only necessary words during critical phases of the anaesthetic. Often the communication is wordless, the anaesthetist having an eye contact with other team members.

And then I think about the communication during induction, especially the eye contact: the one who is standing at the patient’s head, most often the physician anaesthetist, should have this contact with you, to make sure that you’re on terms, when to give this or that and in which order . . .

. . . Using 20 seconds on things like: what is the problem, what are we going to do, how will we handle it? It doesn’t take long. . . just to be sure that you’re on the track both of you.

In straightforward cases, the anaesthetist can get a confirmation from the nurse just by a glance and a nod, whereas in complicated cases, he/she may use up to 5 min to describe

Table 2 Participating nurses in five focus group interviews

- " BJ A"
his/her plan of action, the discussion then preferably taking place outside the operating theatre. This should be a real dialogue where the anaesthetist presents his/her thoughts about expected problems and invites the nurse to give his/her views.

... so, a dialogue before starting. He has made a preop check... well, I prepare some drugs... he says, now we do like this, is that okay to you?

Humble to the complexity of anaesthesia, admitting own fallibility

The anaesthetist shows humility to the complexity of anaesthesia work, admitting his/her own fallibility. He/she is aware that one never knows what will happen during an operation and shows respect for the potent drugs that he/she uses. He/she works unpretentiously and without prestige, treating other team members as peers, and is always ready to ask for help when having problems.

... humility to the task and not having any prestige but doing what’s best and safest for the patient. No matter if you ask a nurse for advice or help... I think that is very important.

... we often handle persons who are very sick; we handle very potent drugs, so for me humility and respect for what we do is vital. Humility both to what you use in your job, potent drugs and so on, and before patients who are going to have major surgery. We don’t know what will happen during the operation.

The anaesthetist values highly nurses’ intuitive knowledge and often asks for their opinion. When running out of ideas about what to do, he/she will ask a colleague for advice.

... somehow it’s not only about milligrams and what is said and written but also these things that cannot be said.

And then of course get help. When discovering that ‘no, now I don’t know... now we must call someone else, for now I don’t know what to do. Do you have any idea? No? Then we make a call!’... Not seeing this as a personal shortcoming.

By saying ‘I am not sure what we should do now’, the anaesthetist opens up for a dialogue, and invites other team members to give their ideas about the situation. As for practical procedures like putting in an arterial line or an epidural catheter, he/she will give up after a few attempts, asking a colleague for help. Continuing with numerous attempts is an example of being governed more by own prestige than by concern for the patient as a person.

Some of them [the anaesthetists] may keep doing innumerable attempts at putting in an epidural catheter or an arterial line and they will continue trying to intubate for hours before asking for help. These doctors I diss right off, for such behaviour means forgetting that it is a human being lying there.

Patient-centred, having a personal contact with the patient before induction

The anaesthetist treats the patient as an individual, handling him or her softly. He/she always has at least a brief personal contact with the patient before induction.

... the good ones [anaesthetists] always chat a little with the patient on entering the operating theatre, instead of just going to the head end of the operation table waiting to have everything served to them, without saying a word to the patient.

When you are about to anaesthetise a patient you should have established contact with him or her, so that the patient feels safe with you...

By talking calmly to the patient, the anaesthetist can create a feeling of trust and make him/her relax, feeling confident that he/she will be cared for safely.

... the encounter, how you meet the patient, I think it’s very important. I have one special person [an anaesthetist] in mind, I can remember occasions with patients being so nervous and she coming in and calm comes over the patient, who gets relaxed right off.

Fluent in practical work without losing overview

The anaesthetist is capable of working with his/her hands and having an overview of the situation simultaneously. He/she smoothly takes on some of the nurse’s work tasks when necessary and has a calm but focused and purposeful way of moving about in the operating theatre.

If a person can both think and use his hands in a way that results in four hands working in parallel, then everything will work out so much better.

... the way he moves about in the operating theatre... approaching things, scanning them... with a confident outlook... checking different things without showing it, controlling things but without a compulsory need to control. But showing ‘this I do for my sake, for it is my responsibility’. Checking things without stepping on anybody’s toes, and doing in a completely natural way.

The anaesthetist has the capacity to work with his/her hands, simultaneously using all his/her other senses. The one who does not have this capacity will do better in another speciality, because multitasking is inherent in anaesthesia work.

... having simultaneous capacity, being able to work with your hands and still make use of all senses... whereas others actually ought to have chosen another job because they haven’t got this capacity. It’s in this job to be able to do it.

Calm and clear in critical situations, being able to change to a strong leading style

The anaesthetist is calm even in critical situations, keeping on talking with a normal, calm voice. When a situation turns critical, he/she can change to a strong leading style, taking on the responsibility for the situation.

And they [the best anaesthetists] say ‘Now we do like this, we start with this, and then we do that, and that...’. I have experienced that a few times. By doing like that the doctor takes on the role as a leader. And everyone around can feel—now we have control, we have a plan for action. We can work after it and we can focus.

The anaesthetist even if stressed shows a calm attitude and never shouts at other team members. Being calm does not
mean to work slowly; instead, it is kind of inner quiet. If the situation changes in an unexpected way, he/she quickly and without much talk changes to a new line of action.

It’s so much about being able to keep calm, not showing any stress. It’s the same thing in the operating theatre in general: those who make the operation progress well don’t show any signs of stress because that will spread to the whole team.

...to be able to change strategy quick if something turns out differently from what you had expected. This ability to... without a lot of words...you work together with someone, things go wrong—and he or she just says ‘Well, we have to do like this instead’.

Excellence and personality

One question during the interview was about the personality of the excellent anaesthetist. In all five groups, the nurses answered by pointing at the importance of social competence. In three groups, the nurses stressed that the personality type of the anaesthetists otherwise does not matter: ‘it is not a matter of a special kind of personality’.

Discussion

Training in anaesthesia has a clear aim: young doctors should be helped to become competent anaesthetists. However, what is meant by competence is not unambiguous. It could mean ‘being good enough’ but could also refer to ‘excellence’, which most trainees of today strive for. Moreover, there are several dimensions of competence, such as theoretical knowledge and understanding of what the work is about. One dimension, topical in civil aviation for a long time, but only recently in anaesthesiology, is about the ways of acting and behaving that contribute best and most to fluency and safety at work. Competence from this perspective was the subject of this study.

When we analysed the interview texts, we found six themes, all of which were present in four or all five focus group interviews (Table 3). Themes C and F stand out the most and provide a picture of the excellent anaesthetist as a person with a humble attitude to work who can take the lead in critical situations without losing his/her calm. Taken together, the six themes tell us about the excellent anaesthetist’s ways of acting and behaving. Whether these are common in anaesthesiology today, we do not know (according to the interviewed anaesthesia nurses, they are not), but some of what is described should not be difficult to bring into clinical practice more generally. One example is informing the team about plans for action before induction (theme B), at best done as a two-way communication, the anaesthetist taking in other team members’ views. Defining the problem at hand then will not be only a cognitive process in his/her mind. By showing from start that he/she is willing to react on cues from other team members, the anaesthetist can contribute to reducing the risk of fixation errors.

Other ways of acting described by the nurses may not be easily adopted by everyone, such as taking on a leading role when a situation turns critical (theme F). However, this could and should be trained, possibly in a simulator setting, important as it is for patient safety. Further, if a trainee is judged to lack the capacity to develop a calm and decisive way of handling crisis situations, the tutor has to consider advising him or her to change speciality. The importance of the anaesthetist being able to take the lead is illustrated in one of the interviews, where a nurse describes a serious situation with a patient starting to bleed profusely during a nephrectomy. She comments on how the experienced anaesthetist on that occasion took the lead, stood steady in the middle, kept control of the situation without doing practical things himself but instead giving clear orders to staff members. ‘He placed himself there, just a little by the side, and he was there all the time, telling us what to do’. She contrasts this to what she has seen all too often: lack of leadership and overview and also too much focus on small details.

In all focus group interviews but one, patient-centredness (theme D) is pointed to as one characteristic feature of the best anaesthetists’ ways of behaving. By patient-centredness, we mean that caregiver and patient strive to find common ground, agreement on treatment, and shared decision-making. The healthcare provider should be sensitive to the patient’s individual needs, knowing how to respond to them. Some may claim that this aspect of the anaesthetist’s behaviour is not linked to patient safety. We believe that it is, as in one of our earlier interview studies on how anaesthetists understand their work we found that some of them aimed at guiding individuals safely through anaesthesia, seeing each patient as a person, whereas others saw work as a technical task and did not at all mention patients as people. Only anaesthetists of the former group mentioned safety as an important part of work. We can hence assume that these anaesthetists are the ones who will remind team members that the patient is not only a physical body but a person and that safety should always come first. A relation between patient-centredness and patient safety has also been demonstrated by Klemola and Norros in a study on the clinical behaviour of anaesthetists. They showed that anaesthetists with a communicative relationship with the patient have a more realistic and proactive way of managing the anaesthetic, compared with those who see the patient as an object. The anaesthetists of the first group also recognized the uncertainty of the anaesthesia process, analogous to theme C (humility before the complex work and its inherent uncertainty).

Working unpretentiously, taking advice also from formally subordinate team members, as is also described in theme C, is an example of behaviour which has received much attention in crew resource management training in civil aviation. This is for obvious reasons: a number of serious accidents in aviation could have been avoided, had the captain listened to other crew members who understood that something was going wrong. Here, it is easy to see the parallel in safety issues between aviation and anaesthesiology.

Theme A is about being responsible and proactive, first and foremost preventing unwanted things from happening...
and secondly, if they happen, being prepared to act quickly. This reduces the risk of omission errors and explains why anaesthetics performed by excellent anaesthetists seldom are dramatic.

Theme E, fluency in practical work, points to the anaesthetist as the one who should see to it that things really work. It can be about doing tasks that are unsophisticated but still important, and doing them just in time, thereby adding to smoothness and safety, especially during critical phases of the anaesthetic where the demands on the anaesthesia team are high.

In the already mentioned ANTS project of the University of Aberdeen, a comprehensive system describing anaesthetists’ NTS was created. The aim of the project was to describe key NTS and give examples of behaviours that indicate the presence or non-presence of these skills. The NTS of the ANTS system were defined as ‘anaesthetists’ attitudes and behaviours in the operating theatre environment not directly related to the use of medical expertise, drugs or equipment’. The ANTS taxonomy contains four categories: task management, team working, situation awareness, and decision-making, each consisting of three to five skill elements.

There is considerable overlapping between the ANTS taxonomy and the themes from the present study, most evident for the ANTS category team working, with the skill elements information exchange (theme B, briefing the team) and assessment of capabilities of team and self (theme C, always ready to ask for help). On the other hand, there are two themes in the present study without any corresponding ANTS category: theme D, patient-centred, and theme E, fluency in practical work.

Some of the ANTS elements, especially those in the category task management, represent basic skills in anaesthesia and therefore do not characterize excellence. Furthermore, one category, decision-making, touches on behaviours more directly related to the use of medical expertise which lie out of the scope of the nurses’ competence. These represent elements of the ANTS taxonomy that do not appear in the interviews of this study.

The present study focuses on what excellent anaesthetists actually do and how they do it. According to modern theories of learning, behind different ways of dealing with a certain thing, there are always different ways of understanding it. Consequently, we can assume that behind excellent anaesthetists’ nuanced and versatile ways of acting and behaving, there are nuanced ways of understanding the work task. In an earlier study, we have described different ways of understanding anaesthesia work, some of which have their correspondence in the themes of this study. For instance, one of these understandings, ‘minimizing the patient’s suffering and making them feel safe’, is expressed in the behaviour described in theme D (patient-centred) and another one ‘leading the operating theatre and team’ corresponds to theme F (calm and clear in critical situations).

Medicine should strive to become, like aviation, a high reliability organization. To achieve that goal, a high level of staff competence, approaching excellence, is necessary. A recent study, where a Delphi technique was used to identify attributes of excellence by asking specialist anaesthetists about their views and experiences, has contributed importantly to our knowledge about what constitutes excellence in anaesthesia. What our study adds is the experience of nurses who were actually there, in the operating theatre, observing anaesthetists at work. As successful training requires role models, there is a need for images of excellent anaesthetists for trainees to strive for in their professional development. Qualitative studies like the present one have the advantage of ‘adding flesh to the quantitative bones’, and they can give us a more holistic and nuanced picture of excellent anaesthetists at work.

**Limitations**

The present study is small-scaled and qualitative, and the findings cannot be generalized in a traditional meaning of the word. However, they are transferable to similar settings, to many other operating theatres where anaesthetists around the world work. One limitation of the study is the gender imbalance, inevitable as most nurses of this generation are female. Another one is the risk that the nurses may put too much emphasis on the anaesthetist’s contribution to a pleasant work atmosphere. To reduce the possible effect of this limitation, the interviewing researcher (J.L.) repeatedly urged the focus group members to concentrate on describing different ways of acting, giving concrete examples. It could also be argued that a good working relation is a prerequisite for the team functioning well, as has been abundantly shown in research on human factors and safety. When staff from different categories (such as anaes-

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**Table 3** Number of text units in each of six themes in five focus group interviews with nurses on anaesthetists’ performance. 0, no unit; X, 1–2 units; XX, ≥3 text units in support of the theme. Total number of text units = 83

<table>
<thead>
<tr>
<th>Clinic no.</th>
<th>A, structured and focused</th>
<th>B, clear and informative</th>
<th>C, humble to the complexity of work</th>
<th>D, patient-centred</th>
<th>E, fluent in practical work</th>
<th>F, calm in critical situations</th>
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How excellent anaesthetists act in theatre

Anaesthetists and anaesthesia nurses) communicate with each other, it is not only a matter of handing over formal information, but also other needs should be fulfilled, such as social/ emotional support and stress relief. A conspicuous finding in the interviews was the similarity of the descriptions in all five focus groups. The interviewed anaesthesia nurses could identify a group of anaesthetists who provide safe anaesthesia and they could give nuanced descriptions of how these excellent anaesthetists behave and perform. Whereas incident reports tell us what happened when things went wrong, these nurses were able to tell us what was going on when things went well.

Fletcher and colleagues have underscored that we must identify the ‘non-technical skills needed to underpin good practice in anaesthesia’. Our study represents one way of approaching this task and the result is a description of excellent anaesthetists’ ways of acting in the operating theatre that may bring us closer to the ideal. If we want trainees to aim at excellence and not only at becoming ‘good enough’, this aspect of the anaesthetist’s work, so important for safety and fluency at work, should receive more attention in specialist training.

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**References**


12 Smith A, Greaves J. Beyond competence: defining and promoting excellence in anaesthesia. *Anaesthesia* 2010; 65: 184–91


17 Larsson J. Anaesthetists and Professional Excellence. Specialist and Trainee Anaesthetists’ Understanding of Their Work as a Basis for Professional Development: A Qualitative Study. Uppsala: Department of Public Health and Caring Sciences, University of Uppsala, 2004


22 Meyrick J. Flesh or bones?: Qualitative and quantitative descriptions of theatre practice. *Australasian Drama Stud* 2011; 58: 22–40


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