# QI Boxset: Non-technical Skills for Safer Care

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RCVS Knowledge:

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Helen Silver-MacMahon:

Hello and welcome to this session on the non-technical skills that are required within veterinary practice for safer care. In this session, we're going to look to comprehend the importance of non-technical skills. We're going to seek to understand the basic non-technical skills that have been identified as important across all safety critical industries. We're going to explore the tools that support the use of non-technical skills and prevent error in clinical practice. My name's Helen Silver-MacMahon and I'm a veterinary nurse with over 25 years of experience, I specialized in surgical veterinary nursing and during that time became really interested in the fit between people and their environment and went on to do a Master's in Patient Safety and Clinical Human Factors at the University of Edinburgh. And I'm now undertaking a PhD, specifically looking at the non-technical skills required by veterinary nurses when they're monitoring and maintaining anaesthesia. I'm passionate about the importance of teaching, not just the technical aspects of veterinary practice, but also the non-technical ones as they are increasingly important in the prevention of error. So what are non-technical skills? Well, non-technical skills are the cognitive, including situational awareness and task management and decision-making, social, which includes leadership, teamwork, and communication, and personal resource skills, including stress and fatigue management that are important for safe and effective task performance.

Failures in non-technical skills have contributed to many dramatic accidents in recent history, such as Piper Alpha and oil platform in the North Sea that suffered a fatal series of explosions in 1988. The Tenerife air disaster where two planes collided resulting in more than 500 fatalities, the Hillsborough football disaster, wrong site surgeries and chemotherapy overdoses. And Chernobyl. Despite having been studied extensively in other high risk industries such as aviation and healthcare researchers have only recently begun to investigate

the non-technical skills important in veterinary science. In 2015, Catherine Oxtoby and her team found that deficiencies in the non-technical skills communication, teamwork and leadership were responsible for causing errors. They found that 51% of errors were primarily caused by cognitive limitations with only 14% of errors due to a lack of technical knowledge or skill. Less than 1% being due to inadequate care. Research into the communication has that it's a leading cause of drug administration errors with 80% of veterinary negligence claims citing communication as a contributory cause. By understanding each of the non-technical skills, we're able to design interventions that prevent the hazards that we experience within everyday veterinary practice being translated into losses or errors. We're able to put these interventions between the metaphorical slices of switch cheese to prevent errors occurring.

Flin, O'Connor and Crichton describe seven basic non-technical skills, which are important for safe and efficient performance in a range of high risk work settings from industry, healthcare, military, and emergency services in their book 'Safety at the Sharp End'. They are situational awareness decision-making, communication, teamwork, leadership, managing stress, and coping with fatigue. Situational awareness is one of the cognitive non-technical skills that is found to be required across many different industries. Situational awareness is defined as knowing what is going on around you, and it's split into three levels. The first is gathering information, finding out what's going on. The second is interpreting that information, understanding what it means to the situation, and the third level is anticipating future states. So being able to predict the next steps that may happen.

Losses in situational awareness can be devastating. And I'd like to take this moment to refer you to 'Just a Routine Operation', which is a short video by Martin Bromiley about the unfortunate death of his wife, Elaine Bromiley, due to in part a loss of situational awareness by anaetheists. When we are looking for clues as to whether we have lost situational awareness, task fixation features heavily. We know that when you become very task fixated, you lose the ability to hear what's going on around you and you lose the ability to recognize the passage of time, and therefore it can be particularly dangerous. We know that failure to maintain critical tasks is also a clue that those have lost situational awareness. A lack of information and confusion may also be indicators of a loss of situational awareness. Ambiguity between information sources and simply something not feeling right can also be clues to losses of situational awareness. It's important that if we don't feel that something is right, we listen to that feeling and we take a step back and we consider what's going on. Behaviours that might indicate poor situational awareness skills might include not responding to changes in patient state, not responding to individual cues without confirmation and not considering the potential problems associated with the case.

So what are the tools that we can use to aid situational awareness to ensure that we all begin the day with the same mental model and continue be able to speak up by creating psychological safety and know when we need to be quiet and listen and use a sterile cockpit? A sterile cockpit is a rule that was introduced by USA Federal Aviation, and it prohibits crew members from performing non-essential duties or other activities during critical stages of flight so that we can reduce distraction and increase situational awareness. I've seen this used in small animal operating theatres where the cue is known that if anybody says '10,000 feet', then we're entering a sterile cockpit because that's anything below 10,000 feet is generally considered to be when they need to employ a sterile cockpit and really reduce any unnecessary distraction and increase situational awareness. So when I've heard this used within small animal theatres, it is generally because somebody is concerned that something is happening that shouldn't be or that the case is not going the right direction or they need to really focus on what they're doing. Ideally to make sure that everybody starts their shift with the same mental model, understanding the goals, the challenges, and the plan for the day, a briefing should be used or a huddle. And whilst it's helpful to use different acronyms to remember all of the things that you need to remember during a briefing, perhaps aspects about the team, the environment, the equipment, the patients, the procedures, all of those things, the most important question that we need to ask is 'what's different about today?' Because it won't be the similarities from day to day that will trip us up and cause errors. It's much more likely that the differences will trip us up. So it might be that we have patients that are very small that we need to consider how are we going to recover them so that they keep warm, or how do we keep them warm during surgery or do we need to preheat them? Have we got a massive patient who we are not going to be able to get on the operating table and how are we going to manage that? Or are there pieces of equipment that are being sent away to be repaired that we're not all aware of? And do we need to make sure that everybody understands that it might not be possible to do as many procedures or as varied procedures as usual because of that? So it's important to encourage our teams to think beyond the day-to-day normalities but to look at what's different about today.

The Clinical Human Factors Group offers us advice on key human factors messages when we're working under pressure and they offer this advice on holding briefings. The first piece of advice they give is that we should brief the whole team, even if it's rapid and short, getting as many people together to make sure that we all share the same understanding and not making any assumptions about shared insight and knowledge. It's important that leaders ask questions first and lead second. We need to be as open and inclusive as possible, inspiring people to contribute to the pool of information because it's unlikely that one person's thoughts or actions will lead to the excellence in care that we would strive to deliver. And we want to make sure

that we encourage each member of the team to feel safe to speak up. We need to make sure that there's a low authority gradient and make it as easy as possible for everybody no matter what their position or the length of time that they've worked with us is that if they see something that they don't think is right, that they feel happy to raise their concerns.

If we're concerned that a member of our team has lost situational awareness, it may be helpful to employ appropriate assertiveness. And appropriate assertiveness is a technique that's used within the healthcare industry to improve communication when challenging unsafe practice. It's a process of structured thinking, communicating, advocating and directing care during stressful or crisis situations. It's a graded approach and it refers to a gradual increase in confidence when challenging unsafe practices using a four tiered framework using the acronym PACE, which stands for probe, alert, challenge, and emergency. Assertiveness frameworks are used to reduce interprofessional conflict because the question is directed in a curious way that gently guides the individual in how to express their concerns. Embedded within a workplace of high psychological safety is the ability to raise safety concerns. So using tools like the PACE model can be increasingly helpful in concerning situations. So how can we use it?

The first thing we need to do is ask a probing question. So this is our way of raising concern or gaining attention, and we use an open question. Then we may want to use an alert, so we might use the person's name. We know that the cocktail party effect works very well when we use somebody's first name, it immediately brings them to us and helps them hear what we're saying. We might want to raise our volume and we might want to state our concerns simply and objectively. If we are still not sure that the person is situationally aware or maybe practicing in a way that we weren't expecting, we may move to the challenge. Again, we want to repeat the name and our concerns with urgency, and we may want to challenge the current actions and suggest solutions. Of course, sometimes this will not be effective or we may feel that this situation is urgent enough to warrant us moving straight to the emergency phase, which uses an increase in urgency and will prompt us to take whatever action is required to avoid serious harm. So this might be that we ask the person who's performing the procedure to move out of the way and we would take over at this point.

The next non-technical skill that I'd like to talk about is decision-making. And within clinical veterinary practices likely to be two types of decision-making either fast or slow. Fast Decision making is known to be automatic and type one decision-making, and it's generally very quick and based on pattern matching from previous experience. Those who are experienced have more patterns to match and therefore can employ automatic pattern matching type one decision making or fast decision making much more regularly. However, sometimes it's

important to think slowly, to move to a more deliberate conscious decision-making technique to really think about the most creative solutions to the problems. People who have less experience have to rely on slow decision-making more regularly, but this doesn't mean that it's less important or less valuable because they may come up with the solution that we perhaps may not have thought about. It's easy when a client calls to pattern match something quickly to hear somebody is saying that they have a patient with a large breed dog with an abdominal distension that's retching ineffectively to immediately assume that that patient has a gastric dilation and volvulus. You may be entirely correct. However, what I've just done is pattern matched. I've taken the clinical symptoms, I've added them to my prior knowledge, and I've made a fast decision. I need to see this patient very, very quickly. Slow decision making is generally used when we have more time and when we have more time, we can take a step back and think about how we can think more methodically. Of course, when we don't have time, we have to rely on our patterns and the simulations and practices that we have gone through. So it might be that in situations where we know that we're not going to have enough time if something doesn't go well that we want to pre-empt this, we want to think about 'what if?' scenarios or perhaps we want to do simulations. And CPR is a perfect example of this. Knowing that we are going to have to react and respond in the moment, we might want to write up a plan, we might want to continue to involve that in our briefing scenario. You may have seen the pictures of different veterinary practices who have kind of used the whiteboard walling that they have to write out the resuscitation drugs that they might need to use if a very complex case is unfortunate enough to crash during surgery, and that's because they know that they're going to have to make a fast decision. They're not going to be able to engage slow decision making, so they need that information right there for them so that they can use it. So for situations where we know we've got to make fast decisions, where we don't have time, we're going to have to rely on things like simulations, planning, pre-briefing, all of those kind of things. However, when we have the luxury of time, and generally as a rule, we have more time than we imagine we do, we can stop, take a step back and employ different methods.

One of the methods that is frequently used is something called TDODAR, and this method seeks that we work through a particular set of ideas to reach a conclusion, and this is likely to be the type of decision-making model that Sully used when considering whether to land on the Hudson. In the story that perhaps you're already familiar with, that they experienced both engines going out after double bird strike and they were forced to make an emergency landing. They knew that the plane was going to go down because they had neither engine. However, they needed to consider what the safest way of doing that in a highly populated area was. And when they relied on fast decision making, the immediate response was to turn the airplane

around and try and make it back to the airport that they'd taken off from. But Sully knew that they had a little bit more time than perhaps the rest of the crew thought they had.

So it's likely that he was able to be more creative in coming up with a solution of landing on the Hudson and using a decision-making model such as TDODAR was likely to be what he did. So the first thing in TDODAR is to consider what time we have. When we need to make this decision, whether it's appropriate to spend this time going through these stages or whether we need to make a fast decision. The next thing is we need to talk about what's the diagnosis, what's the problem, and when we've done that, we can move to the options for solving the problem. We then need to decide which of the options we think is the best and assign these actions to different people. And then we need to go through the process and review it again, making sure that we've made the right decision.

And like I say, as I'm sure you've already heard of the story about the Hudson Landing was incredibly successful. Nobody lost their lives that day. They landed on the water and it was most definitely the right decision to make. When they went back into the aircraft simulator, even pilots who'd been told that their goal was to get back to the airport who made quick decisions to turn around and come back, they found it very difficult to return to the airport and the vast majority of simulated flights that tried to recreate what would've happened meant that the plane crash landed into highly populated areas, killing not only the crew and the passengers, but many civilians on the ground as well. So it's important to remember that we have more time than we think we do. Sometimes when we have an emergency, unless it's a true emergency, something like hitting an arterial bleeder, we do have more time than we think we do. So it's important to take that step back and consider all of the options.

Teamwork is the next non-technical skill that I'd like to talk to you about, and teamwork is defined as the ability to work together with two or more people or organizations to accomplish a task or achieve a goal. And many studies have taken place into what are the key important factors in teamwork between higher and lower performing teams and the success of that team. And one of the studies that's cited most frequently is Project Aristotle, which was a project run by Google over two years to identify the key differentiators of higher or lower performing teams. And what they found was quite interesting. They hypothesized that the performance of the team would be linked to the brains on the team, the level of training, the technical aspects of understanding the job role. However, what they found was that it had nothing to do with that. They found that the number one key differentiator between higher and lower performing teams was psychological safety, which is the ability of teams to speak up. Dependability, structure and clarity, so understanding your role and responsibility. Meaning and purpose, and making a difference. And this is somewhat reassuring to me because I know that within

the veterinary profession, we have lots of meaning and purpose and we know that we're making a difference. So those two should be easy to achieve. So it's really for us when we're looking at how we create high performing teams and how we enhance teamwork, considering how we ensure that our teams feel safe to speak up, they have psychological safety, and they can depend on one another and have trust and they have clarity around their roles and responsibility. So there's no misunderstanding in that way.

Psychological safety is a culture of respect, trust, and openness where it's not risky to raise concerns or ideas, and psychological safety can be built by every member of the team and should be encouraged to be a non-negotiable part of the culture of teams. And we can build psychological safety through curiosity, humility, and framing work as a learning problem, making sure that anybody at any level knows that we care about what they think, their ideas, and we want them to feel that they can speak up, particularly when they think that something's not going as expected. And we can create this feeling that we want to hear from people by being curious, asking questions. So whether it's the work experience, the EMS student or somebody who's worked with you for a long time, being curious and creating those environments where you ask questions, finding out what they know about a case, their experience, maybe it's as simple as asking people questions about what their interests are or what pets they've got at home. Things like that can really break down the barriers to being able to speak up. And for leaders being humble saying 'I might do something wrong, please do stop me. Ask me questions if you think that I'm going to do something wrong. When you're unsure of why I'm doing this, then please feel free to stop me and ask'. All of those things can really help build psychological safety in teams. I've already mentioned the cocktail party effect, that by knowing people's first names, it's easier to speak to them. And when we're creating psychological safety, we need to also consider how we can make people speak up. And by knowing each other's names, it can really help. So Rob Hackett devised the idea of the theatre cap challenge, which is where we place our name and our role on our theatre cap or in other part of our clothing if we're not wearing a theatre cap so that everybody knows our names. And what they found when they did this was that it improved the prevention of adverse outcomes and led to an increase in the propensity of people to speak up from 45 to 85%. So it's a really simple intervention that we can use to reduce the incidents of people not speaking up, and that can really impact the trust we feel in teams and the engagement and aid clinical improvement and prevent any errors that might occur.

The last non-technical skill that I'd like to mention today is communication, and we've already established that communication is hugely important. It's the cause of 60 to 70% of preventable deaths in human healthcare, and therefore we understand its importance. We've also touched upon how patient safety briefings can be used earlier when we talked about situational

awareness, but what are the other tools that we can use to enhance communication within our veterinary practices? By learning from a range of safety critical industries, which include aviation and healthcare, communication structures have been identified that are applicable and practical for veterinary practice. These include patient safety briefings that we've already mentioned, emergency communications such as appropriate assertiveness, closed loop communication, which I'll detail in a moment, the use of checklists and handovers and debriefing. We need to remember that written communication is the least rich way of transferring information. The most rich information transfer occurs during face-to-face communication. We also need to remember though that we are human and we can only remember a maximum of seven things at a time, so we need to sometimes use a mixture of both verbal and written methods.

Using closed loop communication overcomes the biggest problem in communication, which is often the illusion that it's taken place. Closed loop communication is a communication model which originated in the military, and it's based on verbal feedback to ensure proper team understanding of a meaningful message. It's a three-step process. The transmitter communicates a message to the intended receiver using their name where possible. The receiver then accepts a message with acknowledgement of receipt via verbal communication, seeking clarification if required, and then the original transmitter verifies that the message has been received and correctly interpreted. Therefore, closing the loop. Within veterinary teams, this is particularly useful during surgery or emergency resuscitation attempts. An example might be when passing on emergency drugs or when passing on sutures. If you imagine that somebody asked for 3-0 PDS, then that would be the request transmitted. The receiver would then reflect that and say 'so you've asked for 3-0 PDS', and the original transmitter would verify the message and say 'yes, 3-0 PDS please'.

It is important to communicate at all points of an event, and debriefing is no less important than pre-briefing. By talking about adverse events, we can prevent others making the same error again and therefore improve patient care. And by discussing what went wrong and what went right in a case with compassionate colleagues in a safe space, we can shed some of the upsetting feelings that we encounter. The STOP-5 or 'STOP for 5 Minutes' is a hot debrief framework that can be led by any member of the team. And the purpose of this confidential blame-free team debrief is to improve patient care and to deliver timely support to members after an incident. In veterinary practices, we recognize the importance of talking and we recognize the importance of learning from experiences. Experiences may play on our mind, especially if we feel that we've made a mistake. So it's important to use tools like the STOP-5 at the end of a case or the end of the day to enable learning and maintain mental wellbeing. The STOP-5, as I mentioned, is a hot debrief. It's something that takes just five minutes to do.

We simply ask if everybody's okay. Then moving on to summarize the case, talk about things that went well, opportunities to improve, and then point to actions and responsibilities.

I hope you've enjoyed this whistle stop introduction to the non-technical skills that are needed to enhance care within the veterinary profession. We've looked at the importance of non-technical skills and the impact that poor non-technical skills can have on safety. We've spoken a little bit about communication, about situational awareness, decision-making, and teamwork, and we've touched on coping with stress and managing fatigue when we've mentioned debriefing. If you would like any further information, please do reach out to RCVS Knowledge to find out more.

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