



## **QI Boxset: Check, 1, 2. Making a Safer Patient Experience.**

### **Matt McMillan, Principal Clinical Anaesthetists and Critical Care Co-ordinator at Queen's Veterinary School Hospital.**

RCVS Knowledge:

Welcome to the Quality Improvement Boxset by RCVS Knowledge, a series of webinars, podcasts, and video interviews for practices and practitioners.

Matt McMillan:

I've got about half an hour to talk about something that I can probably talk about two and a half, three hours for and have done in the past. So, I'm going to talk quite quickly. So, I want to talk about patient safety. It's a big passion of mine. I'm an anaesthetist. That's kind of why I came into the job. I wanted to improve the welfare of patients that were coming into my practice, and I felt that from an ethical side of things, I was going into the most noble of all specialties. So, what is patient safety? Well, patient safety can be defined as reducing unnecessary harm that occurs during medical care. So if you look at that, the thing that springs out of that to me is unnecessary harm.

Unnecessary, to me means it's preventable, and it's something we can do something about. In essence, patient safety is us trying to reduce the amount of harm we do to our patients, so that kind of iatrogenic harm, that harm that doesn't benefit the patient in any way. Everyone knows that if you do surgery on a patient, you're going to harm the patient. But there is a tangible benefit. It's the complications of surgery or anaesthesia that we're looking at trying to minimise. So why discuss it? Well, first of all, it involves absolutely everyone in the practice. We've spoken about involving everyone in the team. Everyone... All our previous lecturers have said it's a team effort and that's exactly the same with patient safety, and that's incredibly important to recognise. And this includes the patients and the clients all the way down to your professor or your head of practice and your practice manager.

It's something we can and should improve, okay? It's something that we should be striving to improve all the time. And this is kind of the point of the day. Quality Improvement is something that we should all be doing in our day-to-day jobs. It's well-publicised. I did have a slide of hundreds of newspaper articles and clippings about vets that have made mistakes, doctors that have made mistakes, et cetera, but I had to take that out because it took too long. But it's really out there. It's publicised, it's big, big news, and really patient safety for me is the biggest Quality Improvement market that there is. It should be what we're all aiming to do. Just to stick some numbers on this, I've found this article particularly shocking. So this is from the U.S.

So it's private healthcare, so should be a relatively good standard. But they said that preventable harm to patients was estimated at more than 400,000 cases per year. And that was lethal harm. So that's the number of patients that died from medical problems. That's a huge number. And then

they said that serious harm seems to be 10 to 20-fold more than that. So if the medical profession in a relatively good, well, in what should be a relatively good healthcare system, is harming a huge number of their patients, then we properly are too. And just to bring it back down to veterinary medicine, what we swore to was to ensure the health and welfare of animals committed to our care. And therefore, patient safety should be the thing that we're really aiming for the most.

And the nice thing about patient safety is you can improve safety in whatever environment that you're working in. Whether you are working in a spay and neuter clinic out in Southeast Asia, or whether you're working in a highfalutin hospital in the developed world.

Back to the uncomfortable truth. Throughout your career, you're going to make errors. Everyone makes mistakes. We've talked about it previously today. It's something that is inevitable when you're a human. I make errors every single day. I almost got on the wrong tube. I was recently in Berlin and I almost ended up in Poland. It is just something that is going to happen. And a lot goes on in our lives. We have a work life, have our private life, and we are going to make errors. Unfortunately, I didn't end up in Poland, and it didn't cause me any harm, it just gives me a relatively good story to tell when I'm lecturing. However, if you do it with a patient and there's a patient on the table... I'm an anaesthetist, it's all going to be about surgery and anaesthesia, I'm afraid. But you can kind of relate to consultations as well. But it may harm or even kill a patient if you make a wrong diagnosis, if you give an animal a wrong drug dose, et cetera, that can all go on to harm the patient. As I said, I'm interested in anaesthesia. It's very acute. If something goes wrong, something goes wrong quite quickly, so that's where I'm coming from. So, just to reiterate a very important message that errors are made by everyone, however talented, however conscientious, however caring you are, you have the potential to make an error.

It doesn't make you a bad person. It doesn't mean you're not good at your job. As I say, I make errors every single day, I mess up. I'm fortunate enough that I'm relatively good at solving the problem when it occurs, but they still happen, and they still have the potential to harm the patient. When I say everyone makes mistakes and you shouldn't blame yourself, et cetera, you do still have a responsibility, and you should still be accountable for what happened. But instead of being accountable and taking the blame, you should be recognising that an error has occurred, and we should be investigating it. Just as we looked at... If anyone went to the significant incident or event audit session... Something's occurred, you are accountable and you should be the person that instigates some sort of investigation into that. You should correct any problems or attempt to correct any problems, or conditions and you should make attempts to stop those errors from happening again. But that is what you're responsible for. You are not responsible for the error occurring in the first place.

Just to think about our job. We are very well educated, and our job is very complicated. That doesn't matter whether you're an anaesthetist or a surgeon in a hospital or whether you're a receptionist or a general practitioner. You have a lot of different balls to juggle, and it's inevitable that at some point, one of the balls will drop. You've got the health and welfare of the animal, and you've then got the client and their emotions and their finances, and those two things may clash. The animal may be better off being euthanised, but the owner is emotionally attached to the animal or has an autistic son, and that animal is his best friend, these cause stress. You've got your responsibility to your practice, you've got a responsibility to bring in some money, and you've got to look good to the public, and your colleagues, you need to be professional towards them. You need to have good interpersonal relations, and you've got to look at workload... 'Is my colleague taking on too much? Maybe I can take some of their work off them.' And then you've got the wider community. And then

unfortunately right at the bottom, you've got yourself, and that's generally the thing that it ends up being neglected more often than not, unfortunately. And actually, juggling these things is often an impossible task. So our lives are very complicated. Our work is very complicated.

So we've got a lot of pressure. We've got case responsibility. If you're the vet, you've got the direct responsibility for the diagnosis, et cetera, if you're a nurse, you may have responsibility for monitoring the anaesthetic, and that can be significant. You have a patient's life in your hands. You've got decision-making, you may be working independently, or you may not be working in a team that day. You may be working out on your own, and that may be stressful. You've got the expectations of clients looming over your head. You've got expectations of your employer laying over your head as well. You may be working in a new environment. All of these things can affect you, your workload, how tired you are, et cetera, et cetera. They can all happen. And then there are certain self-expectations as well, and they can be significant. And they all have the potential to impair the way you work.

So when you look at these things, the factors that can underlie error, we are looking at things like stress, fatigue, distraction, illness, overwork, time constraints, problems with patients and clients, and understaffing. For me, that's what happens every day in veterinary practice. I remember working in general practice and that happened, and it happens now I work in a referral practice. It's the same thing, just different degrees. And all these things are going on and sometimes they're inevitable and you can't get away from it. We work in a very stressful environment. We are dealing with life-and-death situations. There is no way we're going to pull all the stress away and there's no way we can control our personal lives to that extent either.

So what type of errors am I talking about? So I'm mainly going to be talking about surgical and anaesthetic errors, so the type of errors you may see, like forgetting to check the patient before you anaesthetise or to check the history. We had a case earlier in the significant event audit where the patient's history wasn't checked, and it was relatively clear from the history that a patient had had anaesthetic problems in the past. We may have medication errors; we may be forgetting a vital piece of equipment.

Surgical errors. The biggest one that we have in our hospital is a lack of communication within the team. The surgeon knows exactly what he's going to do and what equipment he wants. And he comes into the theatre and it's not there because he hasn't told anyone, and he just expected them to know. Communication is a massive issue. Not having consent. It's relatively common for an animal to come into a hospital to say, have a workup for vomiting and diarrhoea, and have it consented for a certain number of things. And then, 'Oh, actually, you know what? We need to do a scope on that. We need to do an anaesthetic and we need to do an upper GI endoscopy.' And then you kind of chat to the owners, but people are anaesthetising it. Well, there's no consent to say that 'I've actually consented for anaesthesia specifically and for endoscopy specifically, and that someone's actually described the problems that could be associated with that.'

More often than not, these areas involve people forgetting to perform something relatively simple. Something that you think maybe 'How can that possibly have been forgotten?' Unfortunately, as you've seen, we work in a complex environment, we work in, often, very stressful conditions and those things happen. Again, communicating effectively is one of the big, important things. And I'm going to talk about checklists and where they come in, and communication for me is the key to a checklist. It's not anything else that's involved, it's being able to communicate properly with the

people in your team. The big thing is an overreliance on memory. If you have to rely on your memory all the time in a stressful situation, or when you're pushed for time, that may fail. And that's where checklists come in. So, checklists are safety tools. They're not a shopping list or a recipe for a procedure. They don't outline every single point in the procedure. If you've got one of those and you give it to someone to do, and the first time they do it, they tick every box. The second time they do it, they tick every box. The third time they do it, they don't tick any boxes at all. On the fourth time, they leave it on the side and don't use it at all. A checklist is just the critical steps. It's those ones that are fundamental, that you feel are the things that ensure that your patient will be safe as you move through a procedure.

They are a concept introduced through aviation. So I'm going to do a little bit of history because I like that. I like planes and stuff. So, basically in the Second World War, the Americans wanted a new bomber so they could go over and bomb the Germans. The bombers they had, they didn't carry enough bombs and they couldn't fly far enough. So Boeing came up with this, which doesn't look like it's going to be very effective. They had a big air show basically, where all the military people came out in their uniforms to watch all these planes take off. And Boeing had one with four engines, could take like 10 times as many bombs, and could fly so much further than all the competition. It was a winner. It took off and then it crashed and burst into flames. Now, obviously, that was a bit of a disaster for Boeing, but they looked at it and they thought, 'well, initially it's too much plane. This plane is far too complicated. No single person is able to fly it.' However, what it really was, was that there were just too many tasks. It was too much for that one man to actually remember to do in order during the process. So during the process of taking the plane off, what they came up with were checklists. So they devised the checklist to ensure that the pilot would perform all the little tasks that they do. And that's the original checklist on the left. They introduced this checklist. So it's got before starting the engines, engine run-up before take-off, after take-off, before landing, et cetera, et cetera. And it runs through all the key steps like checking your flaps, et cetera, et cetera.

Once they got this in order and they trained their pilots, everything was fine, and they actually got the military contract, and the plane became the B-17, which is actually one of the most successful bombers in history. So, these checklists have... And where they've taken it, is they've taken into every aspect of aviation, and what they do is just say, 'You know, it is complex. You're not going to remember everything. There are too many tasks, but some of these tasks cannot be forgotten. And it's these tasks that we're going to put on the checklist.' They recognise that it's actually really easy to cut corners. It's really easy to oversimplify something and go, 'you know what, I'll just skip that one thing, this one time', and that could actually cause a problem. Because if you miss an essential step, if it's one of those essential steps that you missed, so you just missed that one thing, but then that one thing would've led you in to do something else, then that could turn disastrous and that may lead to harm.

So this may be flying a plane. For me, it's anaesthetising a patient, it could be preparing... For our nurses, it's preparing a patient for surgery and managing them during surgery. So I think what's really important is you don't look at checklists as this rigid structure that you have to obey. It's not a standard operating procedure, it's not a set of guidelines. It's merely there to help you work through the task. So I'm just going to show you a little clip from the film 'Sully: Miracle on the Hudson' (muffled sounds of the video clip being played).

So what a lot of people worry about when confronted with checklists is that it's going to take away their clinical freedom and it's going to make them pointless, into a robot. What impresses me, I

know it's fake and know it's Tom Hanks and it's not the real Sully, but if there is actually the real video from the cockpit that you can actually look at, what impresses me is that the checklist is there, they're using it. And what it does is it helps the pilot make the decision that he needs to land on the river. It frees him up to solve the actual really big problem with this case. Not remembering whether he has got the flaps up or down or whatever, but just actually, 'you know what? I'm going to have to land in the river.'

And that's what's important here. They're not there to confine you. They're there to help. That's the important message. So what kind of evidence do we have that this might be beneficial because I think that's relatively important that we look at that before we start instigating them in veterinary practice. It all started out with this dude who is Peter Pronovost. He was at John Hopkins hospital in the States, and he was the first guy to kind of embrace checklists in medicine. He recognised that patients were basically dying from complications associated with their jugular and central lines.

So what he did was think, 'well, how can we sort this out? Patients are getting infected.' So they designed five relatively simple interventions. They educated the staff, they created a special catheter insertion cart that had everything on it, it had drapes, gowns, gloves, et cetera, all in one place. They tried to think, does this catheter need to stay in or can I take it out? Because obviously if you don't have a catheter there, it's unlikely to cause an infection. So they regularly check to see whether they needed to pull the catheters. They had a checklist. So the important thing to note here is the checklist is one part of this change. It's one part of this change that they introduced; it is not just the checklist that had the effect. It's the culture around it as well. The other thing, which was the thing I liked the most was that empowered the nurses, they were allowed to body check the surgeons or the medics and physically restrain them if they saw them breaking any of the rules. So that was my favourite thing, that was probably the most effective bit actually. So they came up with a very simple checklist initially. The one on the right was the one that they kind of changed it to. It's got a few extra things in, but they were really, really simple. Wash your hands, sterilise the site, drape the patient, use sterile gloves and mask, properly gown, and surgical attire, maintain the sterile field during the procedure and apply sterile dressing afterward. So they're all relatively simple. So how on earth is that going to work?

Well, if you look at what they observed before they introduced the checklist, you can see why. They observed 26 central line insertions, only 16 of the people placing the lines actually wash their hands specifically for that procedure. So that's pretty, you know, that's pretty appalling. And then there are other things that they... With their guidelines, again, only 16 out of the 26, or 62% actually did all the guidelines. So you can see where the problems come in, it's because people aren't doing what the guidelines... They're there, but they're not really complying with them. Now, the old-fashioned approach would be, well, whoever didn't wash their hands gets fired or gets struck off or whatever. But probably a slightly better approach and the kind of takes into account that actually there may be circumstances that caused this to happen is to come up with a checklist.

So what happened afterward? Infections rates fell. So they measure infection rates in 'catheter days'. So, from 11.3 per a thousand catheter days down to zero per a thousand catheter days. They then went on to estimate what that impact could have. So they believe that the implementation that included a checklist prevented 43 bloodstream infections, eight deaths, and saved \$2 million. That's quite a lot for something that's so simple. And they think they basically could reduce catheter site infections by up to 66%.

Probably the more famous one is the Surgical Checklist. So this came in a little later, a little plug for Atul Gawande's book 'The Checklist Manifesto', it's excellent if anyone wants to read the history of how the WHO Surgical Safety Checklist came into being.

And they basically felt that people were dying unnecessarily from surgical complications, and they devised a list of basic essential objectives. So they basically set up a load of guidelines and they were relatively sensible things like operating on the right patient, doing the right surgery, that type of thing. And then there were other things, secure and accurately identify all surgical specimens and things like that. So it was a whole range of things that they believe that anyone performing surgery in the entire world could actually achieve. So there's nothing special there, there is nothing complicated. There is no real thing that you think, 'well, that's unachievable'. So that's really important. So this is the checklist that they came up with. It's now quite infamous and famous, depending on which way you look at it, it's done a lot of good throughout the world.

I'll just come onto some of the figures with that. Some of the important things to notice are they kind of block it up into three different sections, so it actually uses natural gaps in the workflow. So before induction of anaesthesia, before the first cut, and then before the patient is recovered. They're natural potential breaks where communication can occur. So they've used those. The other thing is they haven't put too much in each of the checklists, in each of the lists. It's generally thought to be about eight to 10 articles per time point is sufficient. The other thing to know if you're looking at introducing a checklist is the one thing that they push in all of their literature and in all of the papers is that the checklist is not intended to be comprehensive.

It needs to be modified and may have additions if you're going to use it in a different environment. They accept that this may not work in every single place. However, what they did was they looked at eight hospitals in varying socioeconomic circumstances, so from developing world countries through to developed world countries, they looked at massive patient populations and they measured mortality and morbidity. So post-op infections and things like that. They had a population of almost 8,000 patients split before and after the intervention, so everyone knew they were being observed and that mortality and morbidity were being assessed to try and reduce the effects of the Hawthorn effect, which we kind of talked about earlier. And all the staff in between the two sessions were trying to use the checklist. The impressive thing is they cut death by half and they cut complications by almost half as well, just by introducing the checklist. And the figures are pretty impressive.

Now, what about veterinary medicine? Is there any veterinary medicine papers available? Well, unfortunately, as in most things, the literature is relatively sparse. There is this one paper that includes a small checklist in it. So they developed a number of simple patient safety interventions in their hospital. They just did an error log, so they had a little diary that people wrote down whenever a problem occurred. And then they looked at those errors and they did this over about a year. So they had 74 incidents and they thought, 'Well when some of the incidents hardly happen at all, let's concentrate on these first three.' So we got medication error, leaving an APL valve closed on an anaesthetic breathing system and oesophageal intubation.

And then the second part, when they did it again, they managed to reduce things by about 50%. Now, what they introduced were three things. When a patient was being administered a drug, they got someone to read it out, exactly what it was, the drug name, the patient's name, and how it was going to be given. They had a few problems with people injecting drugs into the wrong IVs or actually into arterial catheters. So they put a specific turquoise wrap on it, and then they had check

boxes that were added to the anaesthetic record label, a 'technician confirmed intubation' and a 'technician checked operating room.' So relatively simple things managed to reduce the incidence of these things by 50%, but it reduced it by 50%, despite this five times the wrong medication was given.

So there were medication errors, five separate occasions despite this protocol being in place. And then there were two oesophageal intubations, which were caused by the technician being distracted when the checklist was being used. And I think that's relatively important. A checklist isn't fool proof, nothing is going to reduce errors by a hundred percent. So why might they fail? Well, we've talked about compliance. Everyone needs to buy into these things. It is really important that you get your whole practice on board. I'm going to go and show you a couple more videos in a minute that show you why compliance is so important. It's important to recognise it's not just the box-ticking exercise. It's not the ticking of the boxes that's important, it's the tasks that are involved. If you just blindly tick the boxes, it's not going to be any good either. It does take time and practice to implement. No checklist is going to be universal. You can't cover everything. And if you just have checklists for absolutely everything, you kind of lose the power of the checklist. If you're going to introduce it, introduce it into areas that will really be going to make a difference in your clinic. It requires buy-in from all involved, so your attitude and culture in your team need to be addressed. Try and avoid items added to improve efficiency. Just stick to safety. Just stick to the actual point. The problem is if you start to add in 'has the patient been priced', and things like that, it kind of defies the point.

The point of it is a safety checklist. So take all the extraneous things out. Items that are irrelevant at that time point also are something to try and avoid too if it can be checked or done later on and it isn't vital for the process. For me, it's 'has the anaesthetic machine in theatre been checked?' and it's just like, 'well, I've checked this one, I'll go and do it in a minute', it just doesn't quite work. Really what you need is a check...I have an induction room and then I move them into theatre. We've now got a little check that goes, 'okay, just a quick check before we move the patient. Has the machine in theatre been checked?' rather than doing it beforehand, and since we've done that, it works a little bit better.

Oh, nurses are far easier to convince than vets. So my advice is if you want to get checklists in your practice, it's to give the mission to a nurse because you tell a nurse that it's for patient safety then they really take it on board and they really try and bring it in. If you give it to a vet, then they'll kind of put it... They'll be interested, but they'll put it to the back. So if you want a champion and you want a champion on the floor, I would recommend picking your head nurse or someone suitable. From my personal experience, checklists can be incredibly useful. For me, they act as a trigger and scaffold for communication. They give a specific time when everyone can speak up and say something that they need to say.

It's an open forum and most importantly, it's where the veterinary surgeon is not king. So for me, it's the empowerment of the nursing staff and other staff to get involved in the case and to say something...like, 'Actually, you know, there are a lot of swabs on the floor covered in blood, even though you've said there's no blood loss.' They give the opportunity for someone to speak up and say something. A few other things. They will fail if people feel they're being enforced from above and if they are feeling that they are just there to tell them what to do. You need to introduce it as something that will help them perform their day-to-day job, and that may actually make it more efficient. It will fail if it comes too bureaucratic if it becomes 'oh, we've checked that this patient doesn't have a checklist in its file', that isn't going to encourage people to do it.

It needs that ground-level support. It needs those people that are going to be performing the checklist to be on side and most of all, it needs the people in that practice, the heads of that practice, to be on board as well and to be champions of it. And again, it should be safety only, that's all it's about. It's about trying to improve safety. Once you start to introduce other things like efficiency or pricing, et cetera, then I think it defies the point. I am going to finish there and leave you with that quote, which I think was quite a nice one. "If I knew those with power would listen and incorporate the experience of those with first-hand knowledge of the reality of the situation on the ground, the results would transform the ideas of leadership and decision making." Thank you.

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