Clinical Governance in Equine Practice: practical examples of quality improvement

Podcast transcript: Pam Mosedale discusses the use of checklists in veterinary practice

Introduction: Welcome to Clinical Governance in Equine Practice: practical examples of quality improvement. The following session was recorded at Ashbrook Equine Hospital during the RCVS Knowledge Equine Roadshow, kindly sponsored by the Horserace Betting Levy Board and accredited by the British Equine Veterinary Association. Pam Mosedale, Chair of RCVS Knowledge Quality Improvement Advisory Board and acting Lead Assessor and Veterinary Advisor for the Practice Standards Group, discusses how checklists in other industries and human healthcare have been used to reduce errors and how this can be applied in a veterinary setting.

Pam Mosedale (PM): Okay. Hi everyone, right, you might wonder, Tim [Mair] very kindly introduced me in that way, but what most of you here probably know is that I actually started off in mixed practice in my career and finished up in small animal practice. So what the heck am I doing talking to equine vets? Well, I'm already wondering that myself. I've got my major imposter syndrome today, but I think not only is QI [Quality Improvement] something for the whole team, it's something for the whole profession and I think the principles are exactly the same, whatever type of practice that you're in. So I'm going to talk about checklists in other settings and how we can, you can apply them in equine practice settings too and why we need them, and barriers to implementing them.

So we'll start off with errors. So the checklists are a way to reduce errors, notice I don't say checklists or any other system as a way to *prevent* errors, because preventing human errors is impossible. What we'd like to try, what we want to need to try and do in practice is try and reduce errors. So we start off with errors in veterinary practice and we'll start off with one of those 'me too' moments. I made that error. I made various errors during my career. We could probably talk about those for the next hour if we wanted to. But this is the one I probably remember, one of the worst errors I made, when I'm operating in the middle of the night on a German Shepherd with a splenic tumour, which was blood everywhere. Basically I, we had just about every pair of haemostat and forceps in the whole practice out to that nurse and unfortunately one of them didn't go back in the cupboard and remained in the dog.

So that's one of my errors, I remember that distinctly. But we all make errors, don't we? I don't know if anybody here feels they haven't made any errors (and if you haven't, great for you), but I think we all do, and errors can be made up of those human errors, failures of systems. And I'm going to talk a bit more about systems and how important it is to have systems in place, because systems can help to reduce errors. And also lack of communication, communication is key, isn't it, in the veterinary profession. I did get involved for a few years in complaints investigation for RCVS and during that time, I would say personally, based on my own personal experience, not a scientific thing, but I would say that

99.95% of issues that finish up with complaints to the College are to do with communication somewhere along the line.

So communication failures, they happen don't they? And I think they happen more as teams get bigger and bigger, and as there are different team members, and as there may be locums or people not used to working together in different branches. I think that that can cause communication issues also. Having practice culture sometimes where people don't feel they can say things and speak up, and that's very much part of the 'no blame' thing that Lewis [Smith] was talking about; people feeling empowered to be able to speak up, and also having good communication systems within the practice so that people in practice can use closed loop communication.

They do that in the NHS. I don't know if any of you have had any encounters with the NHS recently (I have because my mother was ill for quite a while). And very often when nurses are told to do something, they'll repeat back to the doctor exactly what they told them to do, exactly which medicine and what dose and by what route, etc. And I think that's something we could usefully do in small animal practice or equine practice – actually use that closed loop. You feel a bit silly doing it to start with, but it does mean your communication is accurate.

System failures, not having systems in place. And we'll talk about other systems as well as guidelines, which Tim [Mair] will talk about later on. Protocols and checklists, not having those systems in place. If we do have the systems, not using them, not having enough team members, team members are not used to working together. And then the general thing of, we all have all the time in practice, don't we, of basically, we're in a rush. Time pressure, time pressures is one of the biggest issues.

So those human errors, and mine was, I'm sure, a human error. I missed out a step in a procedure. A very important step of checking that we had all the instruments, and it's easy to miss out steps during complex procedures. It's easy to become distracted during procedure; that wasn't the case in my mistake, I can't blame being distracted. But you could be if you'd just been talking to a client, a client had just been complaining about something on the phone and then you start doing your procedure, that's still in your mind. It gets distracting. Pressure from owners can be distracting, 'Oh, this owner's a nightmare.' We must be careful to do this properly.

And then HALT: have we all heard of the HALT campaign? Basically, if you're hungry, if you're angry or stressed, if you're running late (and aren't we all), and if you're tired, which I certainly was in my-middle-of-the-night episode, mistakes are more likely to happen. So human errors will always happen. We all make mistakes all the time. What we need to do is try and put some systems in place to reduce the incidents and the errors.

So, checklists. Checklists are a system to try and reduce errors. Why do we need checklists? Well this picture should show you that basically we all have a working memory and we have a long-term memory. The working memory is what at the moment I'm thinking, what's the next slide? What else do I have to say? That's my short-term working memory, and then I've got my long-term memory. Hopefully all the obvious stuff is safely tucked away and in normal circumstances you have the input and you know, your working memory and your long-term memory, communicate with each other. You come up with

reasonable rational decisions. Everything's fine. When you're stressed, when input gets too much or too stressful, that communication system between working memory and long-term memory doesn't work properly. Working memory shrinks, then output freezes. You get this inability to make decisions. So checklists are a simple system for trying to keep people on board with all the steps and not get too stressed, in a freezing position where the memory doesn't work. Have you had those things happen to you, where you're stressed and suddenly you can't decide about something? I have anyway.

So checklists are one way to reduce errors. So what can we do to try and reduce errors? Well, we can use checklists and protocols and guidelines. We can report incidents, and I totally agree with Lewis that near misses are absolute gold dust. We definitely should be reporting near misses because we can learn from where something bad didn't happen.

We need to have good communication. We need to have this mythical no-blame culture, which would be great if, if we had it, and we all have to work towards. But also we can learn from other settings. We don't have to make all our own mistakes; we can learn from other settings. We can learn from other industries and from human medicine. So this is one of my little things I like to bang on about: basically we can't prevent human error, but we can improve systems of work, and I don't think it's been a particular priority in the veterinary profession in the past.

I think that practices will spend lots of money sending their members of their team on CPD. They'll also spend lots of money going to BSAVA or London Vet Show or Congress and buying lots of sparkly shiny new kit. But they don't spend money or time on instituting systems of work, and systems of work, I hope I'm going to show you in a minute, can be just as powerful as new bits of kit and CPD and clinical CPD. I think the non-clinical CPD hasn't been valued quite as much in the past. Hopefully that's different now.

So we said we can learn from safety culture in other industries as well, we said about reporting near misses and errors. Well, in the aviation industry it's compulsory to report errors and near misses. They have to do that and they learn from them. And this is a little poster from a colleague of mine whose husband's in the RAF and basically they have this software because it's, this guy's just crashed his plane and the other guy comes up to him, says, ‘Oh, you're unlucky, that same thing happened to me in the same circumstances yesterday, but I didn't crash.’ The first guy says, ‘Well, why didn't you report it then? Maybe I wouldn’t have crashed today.’ So reporting what we do, reporting errors and near misses is absolutely essential, really.

So when you go on your holidays and you're off on your summer trip this summer, when Tim [Mair] went off on his trip to Australia he's just been on, then hopefully the pilot didn't walk around the plane, kick the tyres a bit and jump in and set off. Pilots and planes go through checklists. Aviation checklists are specific to each particular aeroplane and are changed according to things that happen; according to errors and the near misses that happen and they read and do checklists. So one person reads them out and the other person does whatever the action is. And so they’re a very powerful communication tool.

Now, I was talking about this to one of my neighbours who's a paramedic, and he works with lots of different people because he's always changing his shifts. So I said to him, ‘What happens when you start your shift on the ambulances?’ And he said what happens is they have a checklist and first of all, one of

them reads it out to check every item is on the ambulance. So they read it out, have we got this? The other person says, yes, yes, they go through it. Then they swap the checklist and the second person reads out a different part of the checklist, which is, is it working? So they go through all the bits of kit as well and make sure they're working. So at the end of that, not only do they know that they have all the right kit on the ambulance and it's all working, they've become a team. That communication between the two of them, it's not just about the filling and the checklist, it's about becoming a team and having communication. And that's why that's the same principle in aviation too, that they have these read-out checklists.

So what about in human medicine then? Well, the start of checklists was right back in 2001 and Peter Pronovost at John Hopkins University in the States was the father of medical checklists. Basically they had an issue in that hospital with central line infections. So he drew up what, I hope you can all see it from where you're sitting, is a very, very simple checklist. Wash your hands, clean the skin of the patient, use sterile drapes, wear the PPE (the hat, mask, gloves) and then when you finish, put a sterile dressing on. Simple, isn't it? Five extremely simple steps.

Before he introduced this checklist, he sent people around to watch what was happening and he found that 30% of the time, one of those steps wasn't being followed. So then he introduced the checklist and most importantly, not just introduced the checklist, but empowered the nurses that if one of these steps didn't happen, they stopped. So there could have been the head of surgery, but if they didn't wash their hands, no, we can't go any further. Until you've washed your hands, if they didn't wear the right PPE, stop. And that was an important part. It was empowering the nurses and basically the infections at that time fell from 11% down to zero. So that was the power of just a little piece of paper and a very, very simple checklist, wasn't it?

So going on a little bit from that, how many of you have read *The Checklist Manifesto*, the book? Very good. Once you read it, I think you get very passionate about checklists and I would totally recommend it. It's a very easy book to read. It's not a heavy book, you can read it on your holidays. And basically the World Health Organization were really concerned about deaths following surgical complications and they wanted to do something about it, and it was actually aimed initially more at third-world countries. And Atul Gawande, who's a surgeon from Boston in the States, was involved in the group that set up the surgical safety checklist, which was basically a way of teams communicating and thinking about issues that were going to happen.

And this was the original surgical safety checklist from the World Health Organization. So right at the beginning, before the anaesthetic, make sure it's the right patient, always a good idea, make sure you know exactly which site have we got, is the anaesthetic machine all okay? Have we got the monitors, are they fine? Are there any allergies? Are there any particular risks, etc.? Then again, before we actually do the skin incision (this is the bit which veterinary practices don't like), the team members introduce themselves to each other. Now I can see that in big hospitals it's important to do that, really important. And in the NHS, they do that. So they would say, you know, I'm Pam, I'm the surgeon. I'm Tim, I'm the anaesthetist, whatever. But perhaps some practices don't like that part; they feel a bit silly. And so I think if you don't want to vocalise that part, fair enough, but some practices will do that who've got bigger teams.

But again, check the right patient, you can't do that often enough, can you? Check if they're supposed to have had antibiotics. And then the surgeon should be thinking ahead, what are the anticipated things that could go wrong in this procedure, and have we got all the kit or everything we need if that happens? The anaesthetist should be doing the same and the nurses should be checking everything's sterile, etc. And have we got the right things, and have we got any imaging that we might need?

And then again, before the patient leaves the operating theatre, after the procedure, again, we'll go through what is going to happen afterwards. What's the condition, the factors for recovery? Have we labelled any specimens? Because those getting lost can be quite traumatic. Are all the bits of kit still working? That used to drive me mad in my own practice when I'd say, 'Oh, come with a suction'. And they'd go, 'No, it's not working.' 'Oh, what do you mean it's not working?' 'Oh, it didn't work two weeks ago when we used it.' 'Why haven't we fixed it then?' So you know, at the end of the op, anything like that. But most importantly, as I say, what are the concerns for recovery and where do we go from here? So that's the checklist. That's just a piece of paper to go through for one minute for each of those things. Three minutes maximum.

So they did this in 2009 in the pilot study with eight hospitals around the world, mostly in third-world countries. And these were the results they got. Hopefully you can all see the screen. So deaths fell 47%. Complications, 36%. Infections, 48%. 78% of team members thought it had prevented an error but the last one I think is the final evidence. 93% of the team members said if they were having an op, they would like somebody to use a checklist. Now that's pretty powerful stuff, isn't it? Those results – that's from a piece of paper and three minutes of somebody's time and some communication. If you could go to BEVA or London Vet Show and buy a bit of kit that would reduce deaths by 47% or get a new medicine that would reduce infections by 48%, you'd do it, wouldn't you? So a checklist is a simple way of achieving those effects and I think should be thought about by all practices and used wherever possible.

And the strange thing was, after this happened, he went back to his very smart hospital in Boston and decided they should introduce the checklists and his colleagues were like, 'Oh no, we're surgeons. We don't need this.' Well of course he persevered and empowered the nurses, etc. Because again, with that checklist, the same as with the other checklists, the nurses were empowered to stop the procedure if the checklist was not read out. And it made a big difference there as well. And I know from veterinary practices as well, a couple of the ones I know, one practice has a little cover, a sterile cover that goes over the scalpel blade and it's not allowed to be removed until the second part of the checklist has been done. Another, I was talking to some people on Tuesday and the head nurse told me that they don't give the surgeon the blade until the checklist has been done. So, you know, there are ways to stop people ignoring the checklist.

How many of you use checklists already? Great. Lovely. And do you find them useful and do you actually introduce yourselves? Do you do that bit?

Audience Member 1 (AM1): We have a lots of visitors, so we introduce new visitors.

PM: And that's really useful, isn't it? That's a really good point because you might have other people in the theatre. And in an emergency you need to know who are the anaesthetists and the surgeon, and who are students and who are maybe visitors, so you're not going to ask someone to suddenly do something. So I know people have systems, like they have different coloured hats in the small animal theatre, or sometimes names on hats, but also introducing people does that part of it.

Okay. So as we say, three minutes it's done. The important thing I think to take home from it is, although it's a piece of paper, it's not just about ticking boxes. It is, more than anything else, a communication tool. You could actually not fill it in as long as you read it out and listen to the answers to all the questions. But it's all about teamwork and discipline and putting systems in place and implementing. It's important how you do that. WHO produced an implementation tool, when they implemented it.

So if you're going to introduce checklists I think it's always a good idea, if you want to introduce a surgical checklist, audit your complication rate of complications, first of all, and definitely involve the team. Teams hate it, don't they, when something just gets plunked on them from above with 'Do this' or 'Do this'. You've got to let people talk about it and discuss it and see what they think the issues might be before you even start. The leader needs to adopt it. If the senior people in the practice are not doing it, then it's not going to work.

Everybody's got to be doing it consistently and the senior people have got to be doing it. They've got to be, it's good to have checklist champions and it's good to empower those team members to actually be able to stop people if they don't use it. And then you must be open to feedback: have a meeting, or use it for a little bit and find out if you're using it or not. Audit if you're using it or not. And then find out why not: what are the barriers and what do people not like about it, and then modify it. You've got to be able and prepared to modify it according to the feedback.

So an ideal checklist of any sort, whether it's surgical or not, should be short, simple, evidence-based, and (a good one for me) clear, large type, so I don't have to get my glasses and squint at it. Checklists don't work if they're too complex, too long, not introduced properly and particularly if you suddenly go, 'Oh, that's great there's checklists, let's have some checklists' and introduce 10 checklists next week, that's not going to work. Everybody's going to get checklisted out, basically – checklist overload. So they must be introduced properly and their use monitored, otherwise that's not going to really work.

Audit the use of checklists, definitely. You could audit just whether it's used, yes or no. Or you could audit whether every bit of it is filled in. If you're going to keep paper records of your checklists, you could have a laminated wipe-clean checklist, in which case you could audit them by just taking mobile phone photos now and again. I went to a farm practice, the only farm practice I've been to that was using a checklist, they had a laminated checklist which was attached to the lid of the Caesar kit, along with the correct sort of pen, that you could wipe off, attached to it. And the instruction to the vets was that they filled it in and they took a photo of it and then emailed it back to their boss afterwards, so they had a record for each procedure.

And we've talked about this at the previous equine meeting, about individual people using checklists. And there was a vet there who did single-handed procedures and she said it was really useful for her

because there was nobody else to remind her when things went wrong. So a checklist is useful even if you're out in the field by yourself. So, Vets Now in small animal emergency procedures audited the use of their surgical checklist. When they first introduced it in 2017, it was used 30% of the time. By March 2019, it was up to 83% and probably is higher now, I must ask them for an update.

And they're doing it in emergency procedures because when I talk to practices about who used checklists before I did the talk, people were saying, 'Yeah, well we use them for routines, but we don't use them in emergencies' and in emergencies it's actually the time when you really need it, when things are more likely to go wrong. That was an emergency procedure of mine in the middle of the night, and we definitely didn't have checklists then. So nurses generally like them, I think nurses generally like them even more than vets do, to be honest. But lots of people have said how they have saved them from various errors. But the other, the downside is that what can happen is you can get too blasé and just go: Yeah, yeah, yeah, and just tick everything.

So we're going to, if we can, play a video. This is how not to do the surgical safety checklist from the NHS:

[Video plays]

PM: No real patients were harmed in the making of this video. So that's how not to do it. And I think sometimes people have reported to me that in veterinary practice it can get a little bit like that: we haven't got time for this, we're too busy. So in the NHS though, they're quite a way on with this now. Atul Gawande has written some more articles about it. But basically as he said, if you just put these things onto people and say, you must do this without training, without support, without feedback, you don't get the same results as you do if you put it in with all those things.

And it's all about teamwork and leadership, not just about using the checklist. And I think one area that checklists could develop in veterinary practice would be specific checklists for emergency situations. That anaesthesia checklist where, this is what to do if this happens. And I think there's lots of developments that can happen with checklists.

So what are the barriers then? We've talked about the barriers for QI, what are the barriers for implementing checklists? Well, time: people think it wastes time, but as I say, it should only be three minutes. Reluctance to change. People are, you know, just wanting to carry on as they are. Hierarchy, now there's another video which I'm not going to play, because it's very long, called 'Just a routine operation'. But if any of you get a chance to watch this YouTube video, it's from Martin Bromley who's an airline pilot whose wife unfortunately died in a routine procedure and who started the move really, or encouraged the move in human medicine towards looking at human factors and systems rather than just blaming individuals.

But in this op, what happens is, basically they can't intubate the lady at all, they can't get an airway. The experienced surgeons and anaesthetists, they spent about 15 minutes trying to intubate this lady. They can't do it at all. The nurses realise what's going on. One nurse brings through the tracheostomy kit, they ignore her. Another nurse comes in and says, 'I've booked a bed in intensive care', because she can see what the stats are, and they say 'We don't need it'. They decide to abandon the operation. They leave her, she doesn't recover. And I think it was an example of hierarchy, that the nurses felt they couldn't

speak up, but also tunnel vision from the surgeon and the anaesthetist because they were so busy concentrating.

There was a very similar airline incident right back at the beginning of human factors in aviation, where a pilot was so busy concentrating on the fact that they couldn't put the wheels down properly for a landing, they failed to notice they were running out of fuel, and then the plane crashed anyway because it ran out of fuel. So it's a bit like the picture with the checklist: we get this thing where there's too much input, too much stress, and then we freeze and don't necessarily do the actions we should do. But hierarchy can be a barrier to implementing checklists: some people don't want the nurses to be empowered to tell them they can't carry on. And leadership's really important.

So this brings me onto talking about technical and non-technical skills. Now when we're at university and college, we all learn technical skills, don't we? We spent a lot of time learning the basic technical skills, but what we don't really learn, and I think that some medical schools are starting to do this, I'm not sure if any vet schools, are they doing this at Nottingham at all? Doing anything about non-technical skills?

AM2: Yes, we've been doing a lot more about non-technical skills.

PM: Perfect. Good. Well, but non-technical skills are what we didn't learn at university and hopefully some of us picked them up as we've gone along. But it's about things like being aware of situations, situation awareness, which didn't happen in the situation I just described to you about the intubation. Decision-making, communication, teamwork, leadership. And by leadership I don't mean practice management or managers. I mean somebody leading in a clinical sense, and it doesn't have to necessarily be the surgeon. And task management, how we're doing things. So I've put that these skills are not taught, but I'm obviously wrong as we are teaching them now. But they haven't been, I think you'd agree that they haven't been taught in the past, have they?

AM2: Absolutely, it's fairly recent.

PM: Yeah. And I think it's a really important thing of our role and a really important thing for us to think about, because it's not enough to just be good technically. We've got to have those other things happening. We've got to be able to know what to do in a situation. So checklists are really important for that, because if you think about a checklist, situation awareness, it asks you what might happen, what might go wrong here? Have we got the kit if it does? Will there be blood loss? Will there be fluids? Do we need more fluids? It encourages teamwork by people introducing each other. It gets you to communicate. Most definitely, as we said, checklists are all communication tools and it's involved in decision-making and thinking what you're going to do next, what's going to happen when, when the patient leaves the theatre, etc. So I think checklists, as well as being a bit of paper, are a good way of demonstrating those non-technical skills that we all need, and encouraging us to use those non-technical skills. So checklists are an important part of safety culture.

Leadership is an important part of safety culture, like I said, and not management, but leadership. Has anybody here done the RCVS Jenner Academy Leadership course? Do you know about it? Yeah, the

original pilot was free. Apparently now, if you go right through to the third stage, I think it's about £70 for the third stage, but the rest of is all free, 30 hours of free CPD and I found it really good. I've only done two parts, haven't done the third part yet. But basically it's like a bit like 'The Archers', you know what 'The Archers' is? It's like veterinary Archers: there's all these scenarios, a farm practice and an equine practice and a couple of small animal practices. And things happen in the practices and it's this little podcast that you listen to and then the podcast directs you to think about certain things, and then there's reading that goes with it, etc. So I find it really, really useful and it covers a lot of these things. A lot of those non-technical skills I think are covered in that leadership course.

So using checklists should reduce the incidents and never events. The NHS defines things as never events which are preventable safety incidents that should never occur if the preventative measures have been implemented. So my admission, from the beginning, it was a never event that should never have occurred if we had any kind of system of counting instruments in and out. Wrong site surgery is a never event as well: you shouldn't operate on or nerve block the incorrect leg of the horse or whatever. Those are never events. And in the NHS they have to be reported in a certain way. But I think they're things we should think about too, things that we should be able to prevent. Accidents will always happen, but we should be able to have a good go at trying to prevent those incidents.

So communication's part of safety culture. Like I said earlier, the closed loop communication is a really good idea. Again, going back to aviation, I didn't know this til recently: pilots are not allowed to have any non-essential communication below 10,000 feet. So while they're taking off and landing, thank goodness, they're concentrating entirely on the job in hand. After 10,000 feet, if they want to chat about anything, what happened last night or where they are going on their holidays, that's fine. But no non-essential communication below that. And I think there was a study of human anaesthetists, that their brain activity is massively more during induction and recovery, and at a much lower level during the maintenance phase of the anaesthesia. So I think, you know, that communication's really important in practices, and lack of communication, or teams that don't feel they can communicate and have hierarchies and barriers, are not as safe.

Human factors is what I touched on briefly. In medicine they think about the human factors a lot. And it's looking at how people work, and trying to give them working environments that are more suited to how they work and are best designed; you work better if you're working in a good system. The dispensary is a good place for work systems, like having certain medicines only in certain places: having hypertonic saline separate to all the rest so it isn't given by mistake, when you thought you were giving Hartmann's or something. Or keeping it in a separate place or putting a red bandage round it, marking certain medicines, keeping them in different places. All those things are the sorts of things that can be systems.

Has anybody seen one of these automatic dispensaries? I should have put a picture in. CUBEX automatic dispensaries? Yeah, Malcolm's seen one because he's seen one on PSS assessment probably. They're basically, you type in the name of the medicine. There are lots of little doors and lots of lights and the light comes on for the medicine name you've typed in, the door opens, you get that medicine, dispense it, put it back. And they have fingerprint controlled drug sections as well. So, okay, that's a big expensive thing to get, but it's a system. It's a system to help people to make less dispensing errors. Because I think lots of the near misses you'll record will be dispensary errors, that's where a lot of them happen.

So anything like that to help people; how to have a systems approach, that's the thing. It's really almost impossible to modify, well not impossible, but very difficult to modify human behaviour. But we can modify systems, we can try and make systems better. So instead of trying to get rid of errors, we can try and make systems that make errors less likely to happen and this should be done right through the whole organisation. And really it means that we can then say, instead of saying, 'You failed, you're bad', you can say, 'Our system failed, we need a better system'. And there's lots of examples of that.

I was talking to a practice only a couple of weeks ago, and they were telling me that they had issues with two doors from their kennels to the outside world, from the small animal practice, two doors from, in fact it was the university. And they had loads of people coming in and out, including loads of students. So they had tried and tried to, they've got protocols up, they've got things up saying 'Do not open both of these doors at once'. They've done lots of training, protocols, still happened. So then they fitted a klaxon. So if you open both doors at once, the klaxon went off really, really loud. That works. Systems can be really helpful. So there's lots of things I'm sure within your own practices where you could think of systems that would help to try and prevent errors.

Definitely, you know, labelling medicines in certain ways, definitely. So protocols, guidelines and checklists or systems, as are team trainings, doing equipment design, labelling and packaging. I mean some medicines, you know, some drug companies make the packaging almost identical for different sizes and so, it's so easy to grab the wrong size, or for drugs… I mean, you probably know there was some, it's not there now, but all this company's medicines used to start with the same three letters, so there was Norocarp and Noroclav…They've changed it now, which is great, but it was so easy with drop-down computer systems to give the nonsteroidal instead of the antibiotic dispense out.

Right, so getting back to the surgical safety checklist, here's some papers, including an equine one from *EVJ*. None of those papers report different levels of how much checklists help, but none of them say that checklists make things worse. So why wouldn't you try it? That's what I would say if it's not going to make the situation worse.

So in veterinary practice there's also AVA [Association of Veterinary Anaesthetists] anaesthetic safety checklists. I think these are aimed more at small animal, are there equine versions of this, Tim? [inaudible audience response, but the AVA does state that their resources are suitable for horses] Oh, perfect, there you go. Right. Well again, that's just about the anaesthesia rather than about the whole surgical procedure. But again, it can be laminated and filled in and wiped off afterwards or whatever. It's what it's doing that is the important thing, rather than recording it.

And then before this talk, I thought I had better see what equine practices are doing. So this is from Tim's practice: they make notes of swabs in and out, and instruments in and out on a whiteboard and the theatre. This is The Donkey Sanctuary, who kindly shared with me their checklist for pre-op planning, theatre set-up and postop that they are using. Tim also shared with me an equipment checklist for catheter care. Some practices are using a modified version of the World Health Organization's surgical safety checklist.

AM3: Yeah. And everyone's encouraged to speak up and use it each time. I find it very helpful actually, it's sort of just gives you an opportunity to say, actually at this point you might need this bit of equipment.

PM: Good. And do you read it out? Does somebody read it out?

AM3: Yes. So, there's three sections. There's the anaesthetists section. The surgeon section is the third and last section and the anaesthetist actually reads it out for everyone.

PM: And then I think one of the, the future of checklists will be like in human medicine. They have checklists that are all on apps and they could combine them together. So there are three or four different checklists for different things. And if they go over a certain trigger point, it comes up red as a risk for sepsis or something like that. So I think there's a future from our point of view to combine checklists, to combine checklists with dosages. This is from one of our PSS assessors, that if they're treating rabbits in their practice, if you put the weight of the rabbit, it'll give you not only the dose, but also the timing of when you give each medicine.

So I think checklists are also really useful in some other scenarios. I think case handover is another place where a checklist, isn't it, where somebody is tired because they've been on call at night, somebody else has taken over and they've got lots of things to absorb and it's easy to just get bogged down with it. Or have an actual focused checklist of what things you're going to ask and even fill in – that's a really useful thing. So I think there's lots of other places where checklists can be useful. So, thank you very much.

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