

Knowledge Natter: Could we improve our carbon footprint?

Lou Northway and Corinne Ackroyd

RCVS Knowledge:

Welcome to this Knowledge Natter, by RCVS Knowledge. Here, we have friendly and informal discussions with our Knowledge Award champions, and those who are empowered by Quality Improvement in their work. Whether you are a veterinary surgeon, veterinary nurse, receptionist or member of management, Quality Improvement will and can positively impact your everyday life. Listen and be inspired.

Lou Northway:

Hi everyone. Welcome to this RCVS Knowledge Natter. My name is Lou Northway, Quality Improvement Clinical Lead here at RCVS Knowledge. Today, I have the pleasure of speaking to another one of our amazing Quality Improvement Champions. Please meet Corinne Ackroyd.

Corinne Ackroyd:

Hi Lou. Thank you for having me today. It's lovely to speak to you.

Lou Northway:

Thank you so much for giving me some of your time. I know it's precious when you are a busy registered veterinary nurse. Before we get cracking, talking about your project and the amazing achievements that you and your team have had, can we know a little bit about you and your team?

Corinne Ackroyd:

You can. My name is Corinne. I work in a busy first opinion practice in Leeds/Bradford area called Yorkshire Vets. I've got an excellent team. I've got 10 RVNs, two student nurses, several nursing assistants. We're across five branches and a main hospital, so I'm mainly focused at the hospital. We've got a team of around 20 vets or so. I've been at Yorkshire Vets now for 14 years, and I'll be qualified 10 years this September. I'm the clinical supervisor at my practice, which is one of my absolute favourite parts of my job. I love training the student nurses. I love imparting my knowledge onto the next set of nurses. And I love to learn. I've got several further qualifications. I've got the Vets Now cert VNECC, I've got the advanced diploma and I'm also a RECOVER rescuer, so I did the RECOVER training. As well as everything else, I train all of our staff in

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CPR, so clinical governance training and mentoring major part of my job role. And I absolutely love it. I love my team. I love working at Yorkshire Vets.

Lou Northway:

Oh, that's so lovely to hear. And you've been there such a long time and I basically think it's your whole adult life career really, isn't it?

Corinne Ackroyd:

It literally is. I was a fitness instructor first, hated it, found my love of animals and nursing and been in there ever since. Definitely a little family of us at the Vets.

Lou Northway:

And I can just tell by listening to your passion for nursing and your love of teaching, that's actually how this all came about, isn't it?

Corinne Ackroyd:

Completely.

Lou Northway:

Training the students and what is required in their nurse training and Quality Improvement was introduced to them and then that's where it's all spearheaded from, so let's go into that.

Corinne Ackroyd:

Yeah, indeed. Initially clinical governance, I didn't really think it was my job. We had a head vet called Rosie, so she did all the clinical governance basically. I enjoyed reading it, I enjoyed assisting her with it to a degree and she left and there was nobody else to do it, so I took over the role. And then as clinical supervisor, I think it's quite recent, I think in the past maybe four years or so, they introduced clinical governance and audits into the syllabus. I quite enjoy it really. I'm getting my students to really think about what they want to change in practice, so we've had some excellent projects, to be honest over the years. Maybe four or five of my students have had to do a really, really meaty audit for their portfolios. This particular one was actually my current student, Emily McGill.

We were talking about it. We were talking about the environment basically, and how we as veterinary team need to really think about our impact on the environment, so we'd started positive paw print for IVC, and there was a quote that really hit me and it was said that each hour of MAC anaesthesia at one liter

per minute is equivalent to a 12-mile drive in terms of our carbon footprint. And we were talking about it like, "Gosh, our fresh gas flow rate is quite high and so therefore our carbon footprint is very high" and I know that you've all been looking into the actual impact our isoflurane has on the environment, and we really thought, "This is going to be an excellent project. This will be perfect for college." And that's where it all came from basically.

Lou Northway:

It's really inspiring and it's really shocking when you start reading about it. This morning, just before I started speaking to you, I had a reread of your case report and thought, "Gosh, this is such impactful, amazing work." And then I thought, "Oh, I want to have a further read now," so I found some facts online and they said that 95% of exhaled volatile agents go unchanged back into the environment and the atmospheric lifetime of the anesthetic agents we're using one and a half years for sevoflurane, three to six years for isoflurane and 114 years for nitrous. And I was like, "Oh my gosh." Which I just think emphasizes how amazing your project is. How did you go about starting it and getting people on board and then how did you actually do it?

Corinne Ackroyd:

Myself and Emily, we had a really big discussion about it because she hadn't quite got to the stage in her learning yet where she'd done any of the anesthetic flow rate calculations. And basically in our practice maybe 15 years ago, one of the other students had for their project done a cheat sheet for fresh gas flow rates, so everyone had just been blindly following this for years. And we looked into it and were like, "Well, this is set for 20 breaths per minute."

Lou Northway:

Quite fast, isn't it?

Corinne Ackroyd:

Exactly. But for a 40 kilogram dog, the fresh gas flow rate was about 12. I'd been looking at it and thinking, "I need to change this, I need to change this." And I'd made steps towards it. But we had a big discussion and we were like, "I think we can make a big difference here. Obviously, there's further things we can do, but I think as a practice, I think we can change what we're doing."

We had a discussion. We thought, "Let's not talk to people just yet." We went through our anaesthetic sheets and we didn't start doing the full audit just yet. We just thought we'll have a look at what people are doing. And everyone's anaesthetic forms were showing quite high flow rates, so we thought, "Let's calculate what they should be done based on the respiration rate and the

weight." And we were like, "Oh, they've been using twice as much as they should be." Then we got into it, we're like, "Okay, let's do this audit, let's do this properly." Myself and Emily actually did two separate audits of the same project. I love maths. Math was quite complicated, so we made Emily's just a little bit simpler just so it was a bit easier for her to understand how to do an audit, how to start clinical governance into her work life basically.

We looked at the anaesthetic sheets the previous month and we said, "Who's using a capnograph? Who's calculating the fresh gas flow rate? Are we close to what we should be in terms of oxygen rate? Are we quite far away from it?" Emily did percentages, I calculated it, and then we looked at what circuits they're using, so were they using a rebreathing circuit, were they using Mini Lack or a T-piece? And then we recorded all that basically. We had our initial numbers to work from. Then we held a big discussion with our colleagues. What's great, I'm not very confident really. Whereas Emily is incredibly confident. She loves working a crowd. She's very clever and she's very enthusiastic. I think she used to teach before she became a student, which really showed in her.

Lou Northway:

She's lived it. It sounds like a really good combination, you and her. I think you're going to take over the world.

Corinne Ackroyd:

We're actually speaking at Congress together on this subject. I think we'll be a little Ant and Dec personally.

Lou Northway:

That's later this year, Corinne, isn't it, at BBNA Congress?

Corinne Ackroyd:

Yes.

Lou Northway:

Everyone come and listen. October this year, BBNA Congress come along and listen to Corinne's session.

Corinne Ackroyd:

Thank you. We held a discussion and we're like, "Do people know how to do the calculations?" I think people did it in the training but haven't done it since. Do people know that you can actually use a capnograph to titrate your oxygen?

Again, not many people did that. And do we know that the Mini Lack, the circuit factor is one to 1.5. The T-piece is two and a half to three. Are people aware of that? And also rebreathing circuits and our first audit, literally 0% when using the rebreathing circuit. And we obviously discussed we're like, "Why is that? Why are we scared of it? What can we do to help you? Do you understand the major difference we can make with our flow rates with regards to this?" And obviously just put it into people's minds how important it's with regards to the carbon footprint. We all care. We just hadn't realized basically.

Lou Northway:

It's really interesting, isn't it? What you were saying about the amount of oxygen that you use, it's very easy just to turn it on and just wang it on and overestimate. And especially when we do use the circle rebreathing systems. I know in my practice we put them onto three for the first 15 minutes, but how many times do we then actually remember to turn them right down again to use low flow? And that was one of the things that came into my head when I first learned about your project. I thought, "Oh, I really want to have a look at this myself." And I hope that everyone listening right now is having the same thoughts.

Corinne Ackroyd:

Definitely.

Lou Northway:

And you said getting your team engaged and on board, you had to do quite a lot of peer-to-peer support and mentorship, didn't you?

Corinne Ackroyd:

Absolutely. I think the biggest problem with our RVNs was confidence with the rebreathing circuits. As you could tell, I said 0% when using it over the month of October I think it was. And we talked to people and we're like, "Is there a reason you're not using it?" And some people were just, "We just don't think about it. We're going to just start it. We're fine with it." Whereas others were like, "I haven't used it ever." Or, "I've got really bad experiences with it. I've had animals just jump off the table, wake up." Some other people thought that they weren't safe. It was just a bit of peer-to-peer mentorship and people who were confident would sit in with people who were less confident. And the students, again, were very keen to start using it, so they had quite a few sessions, mostly with myself where I'd just sit with them for the entire anesthetic and just be there for moral support basically. Obviously, it's not too difficult, but I think because others have told them their horror stories, they just didn't want to.

Lou Northway:

And it spreads, doesn't it? Everyone gets the same opinion then, and then you're like, "No, it's fine. It's not always like that."

Corinne Ackroyd:

Exactly.

Lou Northway:

And I think with making a change, it's very easy just to want to make the change, but without the groundwork and that peer support, it doesn't happen, does it?

Corinne Ackroyd:

Absolutely not.

Lou Northway:

It's really inspirational to hear that you've managed to have such an impact with your team so broadly with lots of different people, so that's really fantastic. And I wonder along the way, what was the feedback like as things got going and you started feeding back the information on the improvements that were being made?

Corinne Ackroyd:

A few people have come to me and they've said, "I know. I can't believe that what I'm used to do with my anesthetics, I can't believe I just stick them on four. I'm really liking the circle. I'm really liking that it's keeping my patients warm or it's keeping them nice and sleepy and I'm not actually having issues with them waking up like I thought I would." And people have completely stopped using T-pieces now and the thought of using one... People just love the Mini Lack now. We certainly do have some negative feedback I say. Some staff still are completely against the circle, and I think it is just getting them over that barrier but I think some people the fear was too strong.

Lou Northway:

Really ingrained, isn't it?

Corinne Ackroyd:

Exactly.

Lou Northway:

And I think the best way to combat that really deep fear is to do whole team training, so getting in an anaesthetist or an RVN, which has an anaesthesia qualification to deliver some team training to everyone, and then it makes everybody more confident and those that are still feeling a little bit wobbly can be propped up by those that are feeling mega confident.

Corinne Ackroyd:

Absolutely. I think because it's been so busy in practice and we've been quite short staff, to be honest, there's not been that time to sit with people and really get them confident with it. Whereas when we'd started the audit, we did have quite a few more staff, so there was that time. What I'd really love to do is, like you say, get somebody who's very confident in these externally so they're not taking about our time and just sit with these people in theater. And that's definitely something that we are looking at.

Lou Northway:

It's fantastic. And Quality Improvement, it's continuous. You've made amazing progress already, but it's not over yet. It's ongoing, isn't it?

Corinne Ackroyd:

Absolutely. Yeah, we're actually doing every audit prior to the Congress. It is. It's a continuous process like you say. And even from the excellent results, we do know that we can do better because we'd increased our rebreathing circuit use from 0% to 54% in the first month.

Lou Northway:

That's fantastic.

Corinne Ackroyd:

Exactly. But again, we could do better. We could make it for 75% and a capnograph use as well, it was only 35% in October, we increased that to 53%. To me, I won't do an anesthetic without a capnograph ever. It's just again, getting people confident.

Lou Northway:

It's confidence, isn't it? Absolutely.

Corinne Ackroyd:

Yeah.

Lou Northway:

And, like you, I spent many years in practice not using capnography, but now I've learned all about it and I'm obsessed and I love it. And I can scream about its importance from the rooftops, but I totally understand why others still feel a bit scared and apprehensive about its use. But it really is fantastic to see it used and when you can actually utilize it in practice and you titrate down that oxygen and you see that they're still not rebreathing, you realize just how much we overestimate oxygen based on the calculations from 30 years ago.

Corinne Ackroyd:

Absolutely.

Lou Northway:

We didn't have the technology then, did we? But we do now, so we should definitely try and use it as much as we can to make improvements. It's really, really impressive Corinne. Fantastic. Can you give us the facts? The improvement that you've won the award for. Go for it.

Corinne Ackroyd:

I've got some facts. What we did, we monitored our fresh gas flow rate over October. We did 70 hours of anaesthesia. We used 18,670 liters of oxygen. And if we divided that by the hours of anaesthesia, the average was 4.7 liters per minute. We audited that in November. That had dropped to 8,722 liters per minute, liters of O₂, and that was over the same hours of anaesthesia.

Lou Northway:

Wow.

Corinne Ackroyd:

Our average had actually dropped from 4.7 to 2.2 liters. We calculated that again as being about just over a liter less isoflurane. And we used that based on an average of 2%. We didn't go into calculating every single change in isoflurane, so it was around a liter. We changed that into miles based on the 12-mile fact that we said earlier, so we'd saved around 2,023 miles. We suggested that was the same as driving from London to Rome and back.

Lou Northway:

It's just crazy. It's absolutely nuts. I'm sat here now just thinking, "Wow, what a huge impact collectively our profession doing anaesthesia day in, day out must have on the environment and the NHS as well." It's mad, isn't it?

Corinne Ackroyd:

Exactly. Again, we know we can do better. We know that there's an anaesthetic gas capturing devices that are becoming... I think starting to become used in the UK. I was speaking to one of the vets at the RCVS day, and apparently it's very commonplace in other countries. Again, it's definitely something to look at. But again, we all just need to do better, don't we? I'm not saying that my results are showing perfect practice. I know there's so many vets doing better than us, but it's just trying to improve ourselves.

Lou Northway:

It absolutely is. And I think we shouldn't think that perfect doesn't exist, but when you know better, do better. And it's that mindset to try and improve, isn't it? That's important.

Corinne Ackroyd:

Absolutely. When we're doing environment, what does it say? Everyone doing better, but imperfectly is better than a few places doing everything perfectly, so it's about trying, isn't it?

Lou Northway:

Absolutely.

Corinne Ackroyd:

Our Mini Lack use went from 26% to 97%, so we basically just thrown away our T-piece's. Again, capnograph use 35 to 53%. At that point, we didn't have a dental capnograph, so we only had the mainstream, so we purchased a side stream. Again, it'd be interesting to see if that's gone up since rebreathing circuits went from nought percent to 54%. As I say, we're going to say we're going to see what's going on now.

Lou Northway:

It'll be really interesting. And with that increase in circle use, hopefully your oxygen has come down even more between then and now. Really impressive. Well, this project is very inspirational and I hope in the next year's Knowledge Awards, we have others that have tried similar things to improve their environmental footprint.

Corinne Ackroyd:

Absolutely.

Lou Northway:

And Quality Improvement now is something that's really embedded in your

practice, isn't it?

Corinne Ackroyd:

Yeah.

Lou Northway:

And I wondered if you could tell us all about other projects and initiatives that you've got going on at Yorkshire Vets?

Corinne Ackroyd:

I love an audit. I'm not going to lie. I say we're doing quite a few. The big one we're doing is we're doing a CPR audit. We questioned everyone a couple of years ago on their CPR confidence basically. And then we, myself and my colleague Cara, became RECOVER rescuers, so then we've introduced mandatory training to all the staff. We are effectively auditing and now at pre and post confidence in CPR. That's an ongoing project that will hopefully last forever. That's been quite enjoyable. And that's actually why I've started thinking about the RCVS Knowledge Awards, but it just didn't seem to fit at the time as a project. And we are again constantly auditing our antibiotic use, especially the HPCIA's, so our Convenia Marbocyl usage. Again, it's something that our head vet used to do, but it's been passed to me.

Our Convenia use at the start of this was much higher than it should have been, so we've made quite a few changes and then that's seen a consistent drop. And again, so many practices are so much better. And we are trying. Our antibiotic guardian just left, so we just getting a new one basically, and just keep that going. And we always do the NASAN neuter audit.

Lou Northway:

Fantastic.

Corinne Ackroyd:

That's again ongoing. We actually only started that maybe six months ago, noticed that we weren't getting patients back in for post-op checks, so that's gone up, I think 50% since we started.

Lou Northway:

Fantastic. That's really good, isn't it? Because that's the thing, you can't know if somebody's got a post-op complication or not unless you actually have contact with a client, so that's a brilliant audit topic in itself, isn't it? The reasons why they're not coming back.

Corinne Ackroyd:

Exactly. And then it was just we weren't inviting them because we were like, "Oh, they'll ring us if they're fine." But after we do see that there are more complications from bringing them back that we would have just missed. I think we are very proactive in getting the team involved in discussions and doing our M&M meetings and discussing any change that we can make and anything we've found from the audit.

Lou Northway:

As I say, everything that Yorkshire Vets is doing sounds really inspirational, and I just get a really nice vibe that you're very collaborative, nurturing and have a really positive mindset to do better.

Corinne Ackroyd:

I try.

Lou Northway:

Brilliant. Fantastic. Well, Corinne, and thank you so much for your time this morning. I really enjoyed our conversation. I hope everyone listening has enjoyed it just as much. And just a reminder that Corinne will be talking at BVNA Congress in October alongside her colleague and Pam Mosedale all about her project, so please come along and have a listen. We'll go into things in much greater detail, but thank you so much.

Corinne Ackroyd:

Thank you so much, Lou. It's been lovely to chat.

Lou Northway:

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