



Sustainability in healthcare.

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Pam Mosedale:

Hi, my name is Pam Mosedale. I'm Quality Improvement Clinical Lead at RCVS Knowledge, and I'm going to talk to you about the role of Quality Improvement and of improvement science in reducing waste in veterinary healthcare. I'm going to talk to you about, particularly about a system of improvement science called lean. When we talk about quality in veterinary healthcare, what do we mean? Well, we mean care that's safe, primarily, that's effective, that's timely, that's focused on animal welfare. That's focused on what the clients want, client values, and the veterinary team experience, but also healthcare that is efficient.

What do we mean by efficiency in healthcare? Well, it's about avoiding waste and about maximising resources. It's about avoiding waste of medicines and physical things, medicines, and supplies, but it's also about avoiding waste of the team's time and energy, and ideas in carrying out procedures, which are not the best procedure to start with. Maximising resources is about maximising the equipment and the finance that we have, but also the energy of the team, the skills, and ideas. All those things are covered by efficiency in healthcare.

One of the methods used in improvement science is lean. Lean came from the car industry from, originally, I think from Toyota where it was used as a philosophy of continuous improvement, focusing on increasing customer value, eliminating waste, and optimising operations. This has been adapted and adopted in human healthcare, again to minimise waste in every process and procedure, and task by an ongoing system of improvement. There were originally seven areas of lean improvement, but in healthcare, an eighth area was added, and we'll talk about those areas now.

The first area is reducing waiting time or idle time. So thinking about this in a healthcare situation, this may be reducing client waiting times, looking at your appointment systems. It may also be thinking about if you've got expensive high-tech equipment, how often is it used, when is it idle, and could it be used during that time. It's also about team members waiting for other team members to be able to get on with procedures. I think the classic from veterinary practice is veterinary nurses trying to get the vets to get started with the surgical list and the vets are busy with other things. So that's the first area to reduce waste, is to reduce the waste of time.

The next area is to reduce the amount of stock or inventory that is carried. This can be quite obvious with medicines. Stock control is very important to stop medicines going out of date. If the practice has a very large and very varied stock of medicines, it is more likely that some of them will go out of date before they're actually used, which is very wasteful. Also equipment, maybe there are more

pieces of some equipment than is strictly necessary. The same with supplies, you might order large quantities of supplies, which again, may go out of date. So large quantities of masks or gowns or giving sets, et cetera, but it can also be paperwork, forms, things which are printed off and may not need to be printed off and could be used directly on the computer. So looking at minimising the stock of physical items in the practice is the next area.

The third area of waste considered in lean is defects in the process, removing defects in the manufacturing process. In healthcare, this translates to removing errors in care. So this is to think about medication errors. Some of the commonest errors in veterinary practice are medication errors and making sure systems are in place to try and reduce medication errors, systems of double-checking dispensed medicines, et cetera. Surgical errors, and again, it's important to have systems, Quality Improvement tools, such as checklists, which can be used to try and reduce the possibility of errors during surgical procedures and systems failures generally. Errors in clinical notes can be very serious too and can lead to things like allergies not being recognised. So the third area is to try and remove errors to improve quality of care.

The fourth area of lean is about reducing movement. This is movement of patients, movement of supplies, and movement of equipment in order to improve workflow. So it's about always having the correct equipment ready in the correct area where it's going to be used, not having team members having to run halfway across the practice to fetch things that would be needed, particularly in emergencies. Not having people wasting time by moving around the practice to get bits of equipment, having things like, when you use care bundles, having bits of equipment all together, that are going to be used together. But also about the movement of patients so that if patients are coming in if clients are bringing their animals in, and they ring the branch surgery and you know that they're definitely going to need to be anaesthetised and definitely need to go to the main surgery, directing them there straight away rather than having animals moved around more than they need to as well. And this may come into all sorts of out-of-hours considerations, et cetera. So reducing movement and improving workflow is the fourth area.

The fifth area is about reducing motion. So similarly to the fourth area, it's important to keep equipment and medicines where they're needed. If they're not kept where they're needed and people have to move around in order to access them, then it's important that they should be safe and that there shouldn't be injuries due to moving around. So it's about looking at staircases, looking at high shelves where things might be kept and how to access them. Looking at trailing cables, I think an example often is dental scalers in prep rooms where they have to be plugged in sometimes at the edge of the room and the cable has to trail across, which is a really bad trip hazard. So looking at those things, trying to reduce motion and make it safe when it has to happen.

Six is about minimising overproduction, which sounds a bit strange from a healthcare point of view, but it's about repeating tests that have already been done unnecessarily, it's about prescribing medicines which all have the same effect, and duplicating the medicines that you give, it's about animals being kept hospitalised for longer than necessary. That's what would be covered in healthcare by overproduction. Similarly, over processing sounds like something we may not be concerned about in healthcare, but this might be about forms, too many forms to fill in, forms filled in multiple times, which have the same information in, taking the same information two or three times in different ways, recording the history in different ways, on different systems, having to input into more than one computer system. So looking at reducing this overproduction, this repeating things already done, and this overprocessing are two other important ways of reducing waste in healthcare

In healthcare, there is an extra eighth part of lean, which is untapped human potential. That is making sure that team members are not doing unnecessary tasks or duplicated tasks, which stop them doing other things. This is so relevant at the moment in veterinary practice with practices being very understaffed and having lots of extra work from extra clients, et cetera. So looking at whether there are any tasks in the practice that don't need doing, are there any unnecessary tasks? If so, let's cut them out, giving the team some more time for QI activities and there's lots of bite-size QI activities accessible, or for learning other things or more time off, more leisure time. So it's really important to look dispassionately at what's being done and see if there's any unnecessary tasks that could be removed from the team.

In a nutshell, lean is all about looking at all practice areas, all practice activities. And as Henry Ford said, if it doesn't add value, it's waste and we can reduce or remove it.

It's so important to think about sustainability in veterinary practice. How can we reduce the use of medicines, energy, disposables equipment? How can we use less disposables and reuse what we can? And what we can't reduce or reuse, what can we recycle? And QI has a role to play in this. It's an area that practices can audit and use other QI tools to try and improve sustainability. For example, it's really important that practices practice responsible antimicrobial use and responsible parasiticide use. The practice here measured their post-dental surgical extractions' use of antibiotics. In their first measurement in 2018, 87% of dentals had antibiotics. By having some training and CPD around this subject and around how it's not necessary as a routine, and by instituting the use of chlorhexidine rinse after all dentals, a year later, there was an 88% decrease measured in the use of antibiotics. This shows how audits can be really useful in sustainability.

Another example of reducing antimicrobial use is an aural cytology audit carried out by a practice. At the start, 80.8% of cases were given antibiotics without any cytology. And 5% of these have Fluoroquinolones, which of course are a high-priority critically important antibiotic. Only 19% actually had cytology performed. After introducing training, introducing new microscopes because some of the feedback was that microscopes that the practice had were not up to scratch, and training on microscopy for the whole team, particularly for the nursing team, by the next year 41% of cases were having cytology. And because of that, they would either not be having antibiotics or would have more appropriate antibiotics than previously.

Veterinary practices produce large amounts of waste. There is lots of potential for auditing this waste, both auditing for legal compliance, that the regulations are being followed, but also auditing for sustainability. Auditing to make sure that the waste is going into the right stream, that hazardous waste is going to the hazardous waste stream, non-hazardous to the non-hazardous. Not only will it save a lot of money to make sure things are not going to hazardous waste which are not hazardous, but it also means that it reduces the amount of waste going through all the processes. You can also audit compliance for general recycling guidance in the practice and how well the practice team are actually doing the recycling, and of course, recycling where possible and reducing the production of waste. So it can audit the amount of waste actually produced by the practice and all these things will give actual figures, which it's easier to discuss with the team, find out the barriers, and then make changes as appropriate.

Anaesthesia is an area of the practice which generates quite a lot of waste and uses gases which can be damaging to the environment. So there's potential there for waste audits. For instance, quite

simple audits with Propofol, of seeing how much Propofol was drawn up, how much was actually administered to the animal, and how much was wasted, and then trying to reduce that. There are audits of anaesthetic gases, audits of oxygen use, with methods described, protocols and guidelines about using low flow circuits, and there's a paper in your notes about that. So it's an area where there's lots of potential for auditing for sustainability, and obviously in all areas of the practice using reusable equipment and drapes, et cetera, ET tubes, et cetera, has big advantages as far as sustainability is concerned. And making changes and then auditing afterward can give teams confidence that new arrangements are working.

The dispensary is another area where auditing for sustainability is very important. Just looking at what medicines are discarded each month, because they're out of date or damaged can really help with setting stock levels that are more appropriate. Injectable medicines, which may have in their SPC (Summaries of Product Characteristics), that they have to be discarded 28 days after withdrawing the first dose, how much of those is wasted? And is there a possibility to have less bottles open and reduce waste that way? Giving clients product information doesn't always have to consist of printing out the information. It's possible to use links to websites or QR codes to give that information to clients. Controlled drugs, obviously have to be audited anyway all the time for the amount in the controlled drug cabinet against the register, but also other controlled drug audits can be really useful. So there are lots of ways that medicine waste audits can be useful. Also generally in the dispensary, reducing packaging, and looking at pack sizes that are more appropriate, can be another way of reducing waste. In the UK, Vet Sustain produces a Greener Veterinary Practice Checklist, which is a really useful way to look at how your practice can be more responsible and more sustainable. And this checklist has various areas. There's a checklist about responsible resource use, a checklist about using medicines responsibly, a checklist about being sustainable in your operations, and a checklist about empowering the team. Any of these checklists could be audited, and obviously, checklists are a powerful QI tool in themselves. So I'd really strongly recommend you have a look at the Vet Sustain Green Veterinary Practice Checklist.

So why should veterinary practices look at Quality Improvement methods for improvement and specifically look at the lean system of improvement? Well, it gives a good structure to having a look at things in practice and seeing what could improve. Seeing if there are places where the team could save time, where the practice could save money, where you could improve workflow, make things more efficient, reduce tests that aren't really necessary, and reduce duplication and make life better for clients as well as team members. Reduce waste and improve sustainability. Very importantly, reduce errors and all the stress and anxiety and time that they use and just make life more pleasant for your team members. So I hope you'll have a look at this and I hope you've enjoyed the webinar. Thank you.

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