PROPERTY

COMMENTARY PAPER

Dramatic growth in the veterinary market – and what property carriers need to know about it

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Background

According to Grand View Research, the U.S. veterinarians' market size was valued at $11.03 billion in 2021 and has no signs of slowing down. The industry is expected to expand at a compounded annual growth rate (CAGR) of 8.7% from 2022 to 2030. This translates to $23.3 billion by 2030. The growing popularity of animal adoption, wider use of pet insurance and expenditure on pet well-being are key growth drivers.

These astonishing figures show that we live in a pet-loving society, and our appetite to adopt more furry creatures – and pay for their wellbeing – won't be diminishing any time soon.

Similar to other industries, veterinary medicine is on the cusp of a technological revolution. In this commentary, we discuss the technologies currently in use at established vet clinics and hospitals, and those that have the potential to revolutionize pet care in the future. Other key takeaways include equipment risk considerations, disaster scenarios and the best way to approach these types of losses.

Must-have equipment

From scales to X-ray imaging, there are tools and technologies that are considered must-haves for today's modern vet clinics and hospitals. Some examples include: anesthesia carts, monitors, patient telemetry systems, autoclaves and sterilizers, equine equipment, ultrasounds, C-arms (fluoroscopy), computerized tomography (CT) scanners, magnetic resonance imaging (MRI), defibrillators, dental equipment, infusion pumps, medical gases, endoscopy, incubators, microscopes, respiratory ventilators, syringe pumps and centrifuges.

The items noted are part of everyday essentials that can be compared to those found at human medical facilities. Similarly, this equipment does not always operate as it's intended, and isn't always properly utilized or maintained. An interesting fact about veterinary equipment is that the Food and Drug Administration (FDA) does not require submission of a 510(k) – a section of the FDA Act that requires a 90-day advance notice regarding the intent to market medical equipment – pre-market authorization (PMA), or any pre-market approval for devices intended for animal use.

With that said, it's not a complete free-for-all. According to the FDA, "an animal device that is also a radiation emitting electronic product, such as an MRI device intended for animal use, must comply with all requirements for animal devices in addition to applicable requirements for radiation-emitting electronic products in 21 CFR 1000 - 1050. FDA's Center for Devices and Radiological Health (CDRH) is responsible for regulating radiation-emitting electronic products."

Revolutionary technologies

Telemedicine

The advantages of remote diagnosis and treatment over the phone or video chat became increasingly apparent during the COVID-19 pandemic. Veterinarians were equipped to provide care to patients, despite restrictions on travel and face-to-face interactions. Telemedicine continues to allow veterinarians to frequently monitor their patients – ensuring they receive timely care.

Wearable devices

Wearable device manufacturers have witnessed widespread adoption among humans and the technology could benefit the veterinary market. Wearables allow doctors to continuously track an animals' health; this real-time feedback ensures that animals are recovering properly and enables veterinarians to detect potential problems early.

3D printing

The field of additive manufacturing, otherwise known as 3D printing, is making great strides in veterinary medicine. With a variety of applications, this technology can be invaluable when treating difficult or complex conditions. Veterinarians can use 3D printers to fabricate custom prosthetics and orthotics for animals. This can be beneficial for treating conditions like bone cancer, which often require the amputation of a limb. With additive manufacturing, veterinarians can construct custom prosthetics tailored to the individual pet's needs.

Additive manufacturing is also utilized to scan an animal's internal organs and create a 3D model. This is helpful for veterinarians preparing for surgery or determining the best course of treatment.

Artificial intelligence

One of the ways artificial intelligence (AI) is being utilized by veterinarians is in the field of diagnosis. By analyzing large amounts of data, AI programs can identify complex patterns and use the information to generate a diagnoses. This level of data mining and interpretation enables veterinarians to diagnose animals quicker and more accurately.

The FDA's perspective

The majority of hospitals and imaging centers purchase service contracts from at least one original equipment manufacturer (OEM) for post-warranty service of their diagnostic equipment. This includes everything from break-and-fix to uptime guarantees and remote diagnostics. No different than other critical systems, medical equipment malfunctions, and at times, catastrophically.

According to the European Society of Radiology (ESR):

- Radiological equipment has a finite life cycle span – resulting in unavoidable breakdown and decrease or loss of image quality which renders equipment useless after a certain time period.
- Equipment older than 10 years is no longer considered state-of-the-art and replacement may be essential. Operating costs of older equipment will be high when compared to new equipment, and sometimes maintenance will be impossible if spare parts are not readily available.
- Older equipment has a high risk of failure and breakdown – causing delays in diagnosis and treatment as well as safety problems, both for the patient and the medical staff.

According to Arbutus Medical, a medical equipment manufacturer, "Purchasing refurbished equipment is common in the veterinary market. Although there are some risks associated, there are also a number of benefits, especially when it comes to cost." Trust Capital, a company that finances equipment purchases, created a "List of used veterinary equipment you must buy for your clinic". The list includes exam and treatment tables, anesthesia machines, ultrasounds, autoclaves and sterilizers, IV pumps and digital X-ray imaging machines.

The reason for quoting the companies above was not to insinuate that there is something wrong with purchasing used or refurbished items. It is important to recognize however, that – in an industry that is not required to adhere to the FDA pre-market approval process – oversight of equipment quality, functionality and maintenance is often performed on a best-effort basis. This is all important to appreciate when considering the equipment's pre-loss condition.

As a reminder of what helps keep humans safe, consider the FDA Quality and Compliance (medical devices), July 2020 statement: "The FDA is responsible for assuring medical devices available in the United States are safe and effective throughout their total product lifecycle. In meeting this charge, the FDA promotes the development and production of high-quality medical devices. The FDA also recognizes that proper maintenance, repair, and servicing of medical devices is critical to maintaining the safe, effective, and reliable performance of devices used in the health care system.

The FDA has established Quality System Regulations (QSR) addressing device design and validation as well as good manufacturing practices. The FDA's regulations also address complaint investigations and other means of surveilling device performance. The FDA works with manufacturers to help them achieve regulatory compliance and takes enforcement action as appropriate."

Disaster scenarios

MRI explosion

On March 6, 2015, an MRI gantry exploded at Oradell Animal Hospital while three technicians were dismantling the unit. No fire resulted from the explosion, but the fire department discovered a small liquid helium leak from the device. MRIs incorporate magnets thousands of times stronger than the ones on your kitchen fridge that are kept operational by liquid helium cooled to about -452˚F (-270˚C). If that helium escapes its casing, evaporates and mixes with oxygen, pressure from the rapidly escaping gas can cause an explosion. While imaging equipment fires and other hazardous incidents do not happen often, when they do happen, it is usually during installation, removal or servicing of the MRI hardware.

Autoclave malfunction example #1

On March 18, 2014, a faulty autoclave – a piece of equipment that is utilized to sterilize instruments – started a fire. The vet clinic was housed in a single story building built in 1932. The fire rendered the building a total loss.

Autoclave malfunction example #2

On January 28, 2014, firefighters were dispatched to a veterinary office and animal boarding facility. Upon investigation they discovered that an autoclave unit had overheated and caught fire inside a surgical suit. The room was separate from where the animals were staying.

Oxygen tank fire

On June 2, 2022, firefighters responded to a fire that was caused by an oxygen tank. The room of origin sustained severe damage and heavy smoke migrated throughout the facility. Causes of fire and explosions when using oxygen include leaking equipment, use of surrounding materials not compatible with oxygen, use of equipment not designed for oxygen service and improper utilization of equipment.

Gas leak

On April 10, 2021, fire crews responded to a call from a pet hospital regarding a hazmat situation. Investigators determined that there was a gas leak. The gas was used to sterilize surgical equipment. A loss was averted. Ethylene oxide gas (ETO) is colorless but flammable and explosive.

Loss considerations

Post-loss equipment evaluations at veterinary clinics or hospitals are nearly identical to assessments at medical facilities for humans. Depending on the scenario, some equipment may be a candidate for restoration (decontamination followed by testing, repair and recalibration). One difference is what would be considered the equipment's like, kind and quality (LKQ) replacement. At times, the cost to restore could be the same as or higher than replacement, if the comparison is with used equipment.

Regardless of the peril, experienced engineers should be engaged to recommend ways to mitigate business interruption and help the business owner get their equipment restored to a pre-loss condition. It is important to note that before equipment assessments commence, an environmental specialist should clear the facility and a structural engineer should deem the facility safe to enter.

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Get in touch with an expert

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Curtis Anderson has seven years of mechanical engineering experience with a focus on forensics and heavy-duty truck manufacturing. As a registered professional engineer, Curtis has completed water loss investigations following residential/commercial plumbing failures involving appliances and plumbing fixtures in both the field and the lab. Curtis has also investigated residential and vehicle fires caused by failures of fuel-gas systems. For more information, contact **curtis.anderson@efiglobal.com**.

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