Wiser use of antibiotics

INVESTING IN PEOPLE

Improving patient safety
"Together, we have a responsibility to run our operations with regards to their impact on society; on people, animals and the environment."

PETER DAHLBERG, CEO
Shaping the future of veterinary care, TOGETHER

AniCura has rapidly grown to become a leading provider of advanced veterinary care across Europe. With this development comes a great responsibility to run our operations with regards to their impact on society; on people, animals and the environment.

QUALITY AND PATIENT SAFETY
Ensuring high medical quality and patient safety are our most important contributions to society, and key to gain trust from employees, customers and other stakeholders. For decades, quality development has formed a core part of the agenda for the 250 carefully selected veterinary clinics that are part of AniCura today.

From 2015 and onwards, our company-wide quality development program has brought structure and support to our clinics. Over the past four years, the program has generated tangible improvements within areas such as infection prevention and control, competence development, incident handling and use of antibiotics.

"I am especially proud of our work against antibiotic resistance, one of the biggest global threats against human and animal health. Two years in a row, we have reduced unnecessary use of antibiotics at the majority of our clinics, and at some clinics with more than 40%. Behind this development are systematic measurements, improved hygiene routines, educational initiatives and impressive in-clinic efforts to drive behavioural change.

FOCUS ON PEOPLE
In 2018, we engaged with customers and employees to understand their perspective on sustainability and AniCura's impact on society. Quality and antibiotics, preventive care and working conditions for our employees emerged as key areas. In this report, we share not only our work within medical quality, but also how we as one of the largest employers within European veterinary care strive to become the most attractive employer in our industry. Our values and investments in building a strong company culture form the basis for this work.

I hope the report will give you valuable insights into AniCura and provide inspiration on how we, together, can develop a better and more sustainable veterinary care in the future.

PETER DAHLBERG
Chief Executive Officer, CEO
AniCura was born out of the idea that sharing resources creates opportunities for better veterinary care. The company was established in 2011 as the first merger of companion animal hospitals in the Nordic region.

Since November 2018, AniCura is part of Mars Petcare, a family-owned company focused on veterinary care and pet nutrition.

WHAT WE DO
AniCura is a full-service provider of veterinary care from preventive care to advanced diagnostics, surgery, rehabilitation and intensive care with 24/7 service. The company also offers selected pet nutrition and care products.

Meeting the increasing demand across Europe for more advanced care and better quality is at the core of what we do. The clinics that form part of AniCura are carefully selected based on specialist competence and quality.

HOW WE WORK
At AniCura, decisions are taken close to the patient and customer and clinics within AniCura operate medically independently. Through platforms for knowledge and best practice sharing, all clinics draw upon the global veterinary expertise in our network. A clear vision, strong values and a unique medical quality program ensures a joint direction and structured quality development.

THE VALUE WE CREATE IN SOCIETY
Every year, AniCura helps 2.5 million companion animals to a better quality of life and improved health. Investments in improving medical quality and patient safety through education, research, equipment and premises has totalled more than SEK 1 billion since AniCura’s inception. The company also stands for a large part of the round-the-clock emergency care availability in Europe.

Direct and indirect job creation in the veterinary industry and adjacent sectors form an important part of AniCura’s value creation. In 2018, AniCura contributed with social charges, VAT and corporate income taxes of SEK 1 billion.

AniCura is a leading European provider of high-quality veterinary care for companion animals.
TOWARDS sustainable veterinary care

Taking responsibility for the well-being of future generations forms a natural part of AniCura’s vision and strategic agenda.

In 2018, more than 1,000 customers and employees across five countries were invited to give their input on AniCura’s impact on society and which areas that are most important for AniCura to focus on. Based on their input and an analysis of AniCura’s value chain, four areas emerged as key:

- Quality and antibiotics
- People
- Preventive care
- Environment

This report includes a description of our ambitions and efforts, as well as our challenges within these four areas, with special focus on our medical quality program including the work to ensure a wiser use of antibiotics.

“... We all have a responsibility for a sustainable future. The environment needs it, pet owners demand it and employees want to contribute”

ANICURA EMPLOYEE IN 2018 SURVEY

COSTS FOR VETERINARY CARE
In addition to the above four key areas, increasing household spend on veterinary care was raised as an important area to address by both employees and customers.

In Sweden, specifically, total spend on veterinary care has increased over the past twenty years. This development is driven by several factors:

- An increased demand for more advanced care
- More frequent visits to the veterinarian
- An ageing pet population with greater care needs
- Improved quality across the industry
- Increased possibilities to treat illnesses and injuries
- Salary inflation due to labour shortages

With greater opportunities to treat and cure companion animals, pet owners are faced with tough decisions around treatment options and costs. Important areas for AniCura are, therefore, to continue improving customer communication around quality and costs, actively support pet owners around preventive health measures to avoid illness as well as to engage with educational institutions to address labour shortages.

IMPROVED SUPPLIER CONTROL
Based on risk assessment in the sustainability analysis, AniCura has also strengthened supplier control and reviewed the sustainability risks in the retail assortment at clinics in Sweden, Norway and Denmark.

During spring 2018, a new supplier code of conduct was developed regulating human rights, animal welfare and testing, as well as environmental responsibilities for our suppliers. Our aim is to have main suppliers signed up in 2019. To ensure a sustainable retail assortment, an assortment guideline will be distributed to clinics that have a retail assortment.

“Today, we can cure illnesses that only 5-10 years ago were fatal. We have the equipment to make accurate diagnoses and we base our treatments on evidence, not guessing-games. Patient safety in veterinary care is revolutionised”

SANDRA GÖRANSSON, VETERINARIAN ANICURA SWEDEN

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AniCura established its own, proprietary medical quality development program – QualiCura – in 2015. The purpose of the program is to increase patient safety and to improve medical outcome.

98% of AniCura’s employees believe that patients visiting their clinics receive high or very high quality of care.

Dedicated resources:
- **QualiCura visits:** The veterinary medical quality team performs quality-oriented visits to all new clinics joining AniCura. The purpose is to establish a relationship and understand clinic specific quality improvement plans and challenges. The team also re-visits clinics in need of additional support.
- **QualiCura studies:** Data-driven, quarterly surveys enabling unique comparison and knowledge transfer across clinics and countries.
- **Role models:** After each QualiCura study, “role model” clinics are identified to share clinically proven examples of improvements.
- **Quality conference:** In 2018, AniCura hosted its first conference dedicated to medical quality. All clinics were invited to share knowledge with focus on implementation barriers and pragmatic solutions in daily operations.

Focus on implementation:
- Encouraging professional development and specialisation
- Creating and sharing medical best practices
- Improving professional communications skills
- Providing reliable diagnostic medicine
- Ensuring wiser antimicrobial use
- Monitoring surgical site infections
- Securing proper infection prevention and control
- Enabling good incident handling
- Promoting patient medical record quality

The work within each of these nine focus areas during 2018 is covered in this report.
Professional development strengthens patient safety

Patient safety is closely linked to the level of professional competence in every medical situation.

Encouraging professional development and specialisation form an important part of AniCura’s medical quality program. It is equally important for both veterinarians and nurses, as well as other medical staff.

Within AniCura, the ambition is that every employee should have an annual discussion around professional development with his/her manager and a clear individual development plan. Although moving in the right direction, there is still a long way ahead. In 2018, 50% of employees had discussions around their competence development, compared to 45% in 2017.

AniCura Continuing Education

To further support professional development, the educational programme AniCura Continuing Education (ACE) was launched in 2017. In 2018, more than 85 ACE courses were arranged across Europe. The courses covered a wide span of veterinary sciences, from instrument care to urethroscopcy and anaesthesiology.

Specialist competence important

Veterinary specialists are important to secure up-to-date and high standards of medical care. General practice specialisation exists in some countries and is equally important as specialisations in different medical fields.

AniCura encourages employees to specialise and clinics to become accredited teaching institutions for national and international specialisation tracks. More than 250 national and international veterinary specialists including around 100 European and American board-certified specialists (Diplomates) are employed by AniCura.

What did you do to develop professionally?

“My AniCura clinic offered me to participate in the ACE course “Clinical laboratory”. I had previously worked at a human medical laboratory so learning more about feline and canine diseases and diagnostics was important to me. The course provided me with good case discussions and the lecturers shared their experiences and knowledge in an inspiring way.”

― KRISTINA BAU, BIOMEDICAL SCIENTIST AT ANICURA JELØY DYRESYKEHUS, NORWAY

“I needed tutors for my specialisation track. Through AniCura, I got in touch with two experienced surgeons at another clinic, AniCura Djursjukhuset Albano. They now supervise my specialisation and support my research project in surgery. I also spend two working days per month walking next to these surgeons to learn. AniCura really invests in me!”

― JENS STETTER, VETERINARIAN AT ANICURA KALMARSUND, SWEDEN

“I became a Fachtierarzt (specialist in companion animals) in March 2018. It had for long been my plan, as I believe in quality and continuing education. My clinic supported me by allocating supervisors and a network of specialists. My employer also enrolled me in several courses and advanced trainings.”

― KATHARINA MÖHLER, VETERINARIAN AT ANICURA KLEINTIERZENTRUM HEILBRONN, GERMANY

Source: AniCura employee survey 2017 (1,780 participants) and 2018 (2,511 participants)
“Today, we can see tangible improvements across all areas of our quality program”
Creating and sharing medical best practices

**MEDICAL best practices help us improve patient safety**

Sharing best practices between clinics is a key enabler for quality development at AniCura.

Knowledge sharing within AniCura takes place every day in the clinics, at meetings, in national and international forums, working groups as well as through digital platforms and tools. The digital platforms include a knowledge base, literature database with scientific journals, webinars, a company-wide chat and networking platform Yammer and various newsletters.

**MEDICAL INTEREST GROUPS**

AniCura’s Medical Interest Groups are forums open to all AniCura veterinary professionals. The groups are focused on different medical fields and share best practices, provide advice in clinical cases and arrange medical courses. During 2018, the number of users on the networking platform Yammer doubled to around 2,000 veterinary professionals discussing patient cases and sharing medical knowledge.

**Best-practice study: FLUTD**

In 2018, a QualiCura study was performed to understand the compliance to medical best practices in diagnostics and treatment of feline lower urinary tract disease (FLUTD). The diagnostics and treatments of 870 cats with symptoms of either/stranguria, hematuria, pollakiuria, peruria, passive urine loss or symptoms of urinary obstruction were included in the study.

**ANTIBIOTICS NOT ALWAYS NEEDED**

In general, there are many misconceptions regarding FLUTD, for example if it is an infection or not. Bacterial infections are not common and best practice is to treat a patient who has FLUTD complaints with analgesics and stress reducing measures rather than automatically prescribing antibiotics. This procedure was followed for 49% of 870 studied patients with FLUTD.

**LOW COMPLIANCE TO BEST-PRACTICE**

Obstructive FLUTD can be a life-threatening situation. Analysis of blood and bacterial culture of urine, collected through cystocentesis, should always be performed. Before catheterization, the perineal area should be clipped and cleaned to prevent infection. These four best practices were followed in only 16% of the 183 included obstructive FLUTD cases.

A guideline with evidence-based best practice around FLUTD patients was developed by AniCura’s Medical Interest Group in Feline Medicine and distributed to AniCura clinics alongside feedback from the study.

**Creating and sharing medical best practices**

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**Medical Interest Groups in AniCura**

- Antibiotics and resistance
- Cardiology
- Dentistry
- Dermatology
- Diagnostic imaging
- Emergency and critical care
- Feline Medicine
- Gastroenterology
- Infection prevention and control
- Laboratory medicine
- Nutrition
- Neurology
- Oncology
- Ophthalmology
- Physiotherapy and rehab
- Reproductive health
- Small mammals and exotics
- Surgery and orthopaedics
- Wound treatment
- Urology

**How do you share knowledge?**

**CAROLINE HOEKE, NURSE AT ANICURA DE WATERPOORT, NETHERLANDS**

“I think it is important that we all share knowledge with each other. Especially in specialised areas, so that we can advise our customers in the correct way.”

Caroline has a special interest in canine nutrition. When she noticed that knowledge about some products was scarce, she arranged an evening seminar for her colleagues and also posted information about the products on AniCura’s digital forums.

**ALEXANDRA ROSÉ, VETERINARIAN AT ANICURA TIERKLINIK HOLLABRUNN, AUSTRIA**

“I started using Yammer shortly after I was employed at AniCura. It gives me and my colleagues an amazing opportunity to share cases, get each other’s opinions and specialists’ advice. Often outcomes are posted which provide very valuable information for all involved veterinarians.”

Alexandra is a Diplomate of the American College of Veterinary Internal Medicine and the head of the small animal internal medicine department at AniCura Tierklinik Hollabrunn.

**PETRA STOMPS, NURSE AT STERKLINIEK DIERENARTSEN DEVENTER, THE NETHERLANDS**

“I visited another AniCura clinic to get new ideas on how to improve patient safety and did a presentation at our staff meeting. I took photos of things that we needed to improve in our clinic and used them in my presentation. It really kicked off the discussions on how to implement best practice. I also created quizzes to challenge my colleagues.”

Petra is a quality coordinator and responsible for infection control and prevention in her clinic. She visited AniCura Strängnas Djurklinik and Aros Veterinärcentrum in Sweden to discuss and share experiences of implementing quality improvements.
**Insights from a communication trainer**

HELEN ØVREGAARD, VETERINARIAN AT ANICURA ASKØY DØRENLUNGS IN NORWAY, WORKS PART TIME AS A COMMUNICATION TRAINER WITHIN ANICURA

What results have you seen from communication trainings?

The most important effect is the sense of improved control, over both time and information flow, which in turn increases the feeling of competence among employees. Less complaints from customers as complaints often are results of poor communication.

For example, we could see how the customer satisfaction score (NPS) showed a direct increase in clinics where a majority of their staff had attended a communication course.

What part of the trainings are most appreciated?

The role plays are very appreciated! Talking about prices and costs is difficult for many vets and nurses, and the tools to facilitate this communication are highly valued.

Conveying bad news to our clients can also be tough, and this is something our course participants are happy to learn more about, as well as handling complaints in the best possible way.

Can communication trainings improve medical quality?

YES! Using the course skills in daily operations enable us to build trust in a better way which increases the chances that the owner will follow our advice regarding treatment and follow-up.

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**Communication skills impact medical outcome**

Good customer communication is highly important to both medical outcome and customer satisfaction.

Scientific studies in human medicine have shown that trust built through conscious communication has a strong impact on the actual medical outcome of treatments, e.g., through increased compliance to the advice provided by the physician. The challenge within veterinary care is even larger as the patients cannot speak for themselves.

**COMMUNICATION TRAININGS**

Training communication skills is not only beneficial for the interaction with patients and their owners, but also has a positive impact on reducing work-related stress as well as reducing risk of medical incidents which quite often find their root cause in unclear communication.

AniCura offers communication trainings to employees with customer contact. The trainings are based on well documented models. During 2018, 760 AniCura employees received communication training in various forms and AniCura also held discussions with universities about adding communication courses to their veterinary programs.
DEVELOPING companywide best practices

Diagnostic quality is essential to patient safety and relies on proper sampling, handling and interpretation.

Most of the errors in laboratory medicine occur due to human factors, mainly during the period from sampling until analysis. During 2018, AniCura increased focus on reducing the occurrence of preanalytical errors and introduced guidelines for correct sampling and handling.

ROUTINES AND BEST PRACTICE

In the field of laboratory diagnostics, the motivation to secure high medical quality through standardisation is significant. When AniCura clinics were asked the question “What single action would bring about the greatest improvement for better patient safety and better medical outcome in your clinic?”, half of the clinics answered “introducing routines and best practices”. In 2018, additional companywide guidelines and recommended protocols were developed and distributed.

ANIcura Telemedicine

Several scientific studies have highlighted the importance of specialist competence in diagnostic imaging to ensure accurate analysis of medical images from for example x-ray, magnetic resonance (MRI) and computed tomography (CT) examinations. In human medicine, every radiological exam is evaluated by a radiologist, but most veterinary clinics do not have a radiologist available in-house, and it is typically the treating veterinarian that evaluates the images.

In June 2018, AniCura launched AniCura Telemedicine, a digital imaging service open for any veterinary clinic in Europe. Through a web-based system, clinics can send images to be assessed by board-certified specialists, e.g. within imaging or neurology depending on the patient case. Within four to 24 hours depending on urgency, the clinic receives a complete report and analysis.

How did you improve diagnostic medicine?

“Providing reliable diagnostic medicine”

DEVELOPING companywide best practices

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How did you improve diagnostic medicine?

“The newly developed AniCura guidelines within laboratory diagnostics are an important tool to secure the quality of our daily diagnostic work”

At AniCura Gistrup Dyrehospital, a standardised approach to the diagnostic evaluation of ectoparasites was implemented in 2018. Furthermore, the staff worked on systematising the protocols around regular monitoring of chronic patients and pre-anaesthetic blood work.

“We continuously strive to monitor and improve our laboratory quality. Amongst other measures, we monitor daily analytical performance to detect any analytical errors.”

AniCura Jeløy Dyresykehus and Anicura Diagnostisk Laboratorium have recently moved into brand new facilities in Rygge, Norway. The laboratory is 350 m² and staffed with four biomedical laboratory scientists, one molecular biologist in addition to a veterinary clinical pathologist. During 2018, the laboratory personnel have worked on standardising methods and routines as well as selected an external program for quality assurance.

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Claudia Bundgaard Nielsen, Practice Manager and Veterinarian at AniCura Aarhus Dyrehospital, Denmark

Providing reliable diagnostic medicine

Providing reliable diagnostic medicine
FEWER infections after surgery

Many complications after surgery can be avoided through better follow-up of patients and improved preventable measures.

To reduce surgical site infections, it is important to actively follow up surgical patients after discharge from the clinic. The outcome of a surgery should ideally be checked one week as well as one month after surgery through reappointment or other contact with the pet owner.

After systematically reviewing the clinic’s results from several patients, routines can be improved to ensure better surgical outcome and patient safety. A scientific study has shown that one third of all surgical site infections are not discovered when patients are not properly followed up. AniCura’s ambition is that all clinics should have processes for surveillance after surgery.

FEWER INFECTIONS AFTER SURGERY

In 2018, AniCura measured the occurrence of surgical site infections for the third consecutive year. 1,915 dogs that underwent surgery at 102 different clinics participated in the study. The surgery rate increased for the third consecutive year. 1,915 dogs that underwent surgery at 102 different clinics participated in the study. The dogs were checked seven days and thirty days after surgery to allow detection of any infections resulting from the surgeries. Clinics that took part in this survey both 2017 and 2018, showed an average reduction in surgical site infections* from 7.2% to 5.5% of all surgical site infections.

The positive development is a result of better infection control and more active surveillance of surgery patients.

“Many vets are still using too much antibiotics in surgery. I call for a more thoughtful mindset and improved routines for hygiene”

ULRICA GRÖNLUND, GROUP MEDICAL QUALITY MANAGER

THE STUDY IN BRIEF:

- Surgical site infections at AniCura clinics decreased from 7.2% to 5.5%.
- Too many patients undergoing clean surgery received antibiotic prophylaxis (38%).
- 58% of patients received antibiotics at the correct time (60 minutes before incision).
- 70% of the patients had a body temperature above 37°C which is better than in 2017 where 58% of the patients had a body above 37°C. Too low body temperature during surgery increases risk for complications afterwards.
- 33% of clinics use surgery safety checklist, a proven tool to decrease complications. This is a higher proportion compared to last year where 23% of clinics used such a list.
- 83% of clinics use an anaesthetic protocol.

The occurrence of surgical site infections is similar across countries (see figure), the use of antibiotics still differs substantially. In Sweden, antibiotics were prescribed for 21% of the surgeries, while in Germany, antibiotics was used in 82% of the surgeries. However, there was no in-clinic correlation between the rate of surgical site infections and the use of surgical antibiotic prophylaxis.

LARGE VARIATION IN THE USE OF ANTIBIOTICS

Although the occurrence of surgical site infections is similar across countries (see figure), the use of antibiotics still differs substantially. In Sweden, antibiotics were prescribed for 21% of the surgeries, while in Germany, antibiotics was used in 82% of the surgeries. However, there was no in-clinic correlation between the rate of surgical site infections and the use of surgical antibiotic prophylaxis.

How did you prevent surgical site infections?

SARAH LOUISE LUND-PETERSEN, NURSE AND QUALITY COORDINATOR AT ANICURA SYDVEJD DYREHOSPITALER, DENMARK

“Make sure that patients receive antibiotics within 60 min of surgical incision, if the patient at all needs antibiotics”

AniCura Sydvej Dyrehospitaler realised after the survey a need to improve their protocols for surgical antibiotic prophylaxis (SAP) both to become stricter in which patients should get SAP as well as improving timing of when prophylaxis is given. This will be added to their anesthesis protocol.

“Better routines for instrument handling is one reason to our success”

ANICURA SYDVEJD DIEREKLINIEK, THE NETHERLANDS

“Clip the patient’s fur right before the surgery”

AniCura Dierelinenk Karsel has decided to do the following improvement steps:

- More careful use of antimicrobial surgical prophylaxis and use it only in surgeries where an infection would be severe
- Add active surveillance at four weeks and for implants at one year after surgery

Source: QualiCura Q1 study 2018

Results and development

Percentage of surgical site infections per country (%).

<table>
<thead>
<tr>
<th>Country</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>GERMANY, AUSTRIA &amp; SWITZERLAND</td>
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<td>SWEDEN</td>
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</tr>
</tbody>
</table>

*SSI defined according to guidelines from the Centers of Disease Control and Prevention, USA.
Ensuring wiser antimicrobial use

"The majority of our clinics have reduced the use of antibiotics"

AniCura clinics see more than 2.5 million patients every year and together, we have significant impact on the use of antibiotics. With wiser use of antibiotics and compliance to infection control routines and by treating patients with the right substance, unnecessary use can be reduced. Furthermore, by sharing our experiences within AniCura, more employees feel safe when treating fewer patients with antibiotics.

LARGE SPREAD IN USE OF ANTIBIOTICS

For the third year in a row, AniCura measured the use of antibiotics among 2,898 dogs at 107 clinics across Europe. The clinics recorded for one day what antimicrobial substance they used in dogs for systemic treatment or prophylaxis, together with indication for this use.

In total, 336 of the 2,898 dogs received antibiotics during the measured day, which equals 11.7% compared to 13% in 2017.

The incidence of antibiotic use varied among hospitals from 0 dogs treated to 44% of the canine patients. In addition, the mean incidence per country differed from 5 to 20%. The significant country and clinic differences were addressed in the feedback to clinics, and guidelines on how to use antibiotics consciously were distributed for implementation.

Antibiotics are becoming less efficient and we must use them wisely.

"The majority of our clinics have reduced the use of antibiotics"

THE STUDY IN BRIEF:

- More than 55% of clinics reduced use of antibiotics compared to 2017.
- 44% reduced use with more than 30%.
- Surgical prophylaxis was the most common indication for dogs receiving antibiotics (22%) followed by wound infection including abscesses (18%), gastro-intestinal disorders (13%), skin infections (dermatitis, furunculosis etc) (7%) and upper respiratory diseases (5.4%).
- The most commonly used antimicrobial class was beta-lactam antibiotics (70%).
- Most dogs were treated empirically, i.e. without any diagnostic aid like bacteriology and/or cytology results.
- Duration of treatment varied from 1 to 42 days with a median of 7 days.

Percentage of dogs given systemic antibiotics during one day per country (%).

Source: QualiCura Q4 study 2018
The global spread of antibiotic resistant bacteria is one of the biggest threats against human and animal health.

“AniCura’s goal is to reduce antibiotic use by more than half”

The consequences of irresponsible use and overconsumption of antibiotics have resulted in a rapid spread of resistant bacteria across the globe. In Europe only, it is estimated that 33,000 persons die every year from infections caused by resistant bacteria.

**VETERINARY CARE PLAYS AN IMPORTANT ROLE**

In a survey among 1,000 AniCura employees and customers, ensuring a more responsible use of antibiotics was ranked as one of the top three sustainability areas important for AniCura to address. The advancements in veterinary medicine with more complex surgeries, intensive care or cancer therapy also imply that we are dependent upon effective antibiotics.

In 2015, AniCura set out on its mission to actively and significantly reduce unnecessary use of antibiotics. As a group, the goal is to reduce antibiotic use from 11.7% per patient and day in 2018 to 5% in 2030. The work includes systematic follow-up of antibiotic use, educational initiatives, improved infection control guidelines, hand hygiene and additional focus on preventive care for companion animals.

In 2018, AniCura appointed Antibiotic Role Model clinics. The clinics have actively ensured a wiser use of antibiotics, and their methods are shared across AniCura to support others.

**Antibiotic Role Models**

The clinic AniCura Kleintiermedizinisches Zentrum Dr. Nees reduced their use of antibiotics with 15 percentage points. Christian Nees, practice manager and veterinarian and Christine Nees, veterinarian and quality coordinator, tell their story.

How did you decrease the use of antibiotics in your clinic?

We prepared guidelines for antibiotic use and discussed it at veterinary meetings. The guidelines state that no antibiotics should be used for routine surgery under 1.5 hours (tumour surgeries, castrations), and no antibiotics in advance of many other surgeries. We have also set a limitation of antibiotics in everyday clinical practice for treatments like cough, diarrhoea, skin patients etc.

Have you encountered any drawbacks?

We have had a few isolated uncomplicated wound infections (whether coincidence or due to the lack of antibiotics remains unclear).

What is your top advice to other clinics?

Have you actively worked to decrease the use of antibiotics in your clinic?

Yes, we talk about antibiotic use in our veterinary meetings. Furthermore, I am myself very dedicated to prudent use and trying to lead by example. My employees say they feel that I am sitting on their shoulder whispering in their ears how to use antibiotics.

Have you encountered any drawbacks?

The pet owners understand this very well and are positive. We have had some post-surgical wound infections, but no serious ones. They have been treated with drains and cleaned with chlorhexidine.

What are your top tips to other clinics?

All treatments with antibiotics should be in line with the national recommendations.

Have you encountered any drawbacks?

I am sitting on their shoulder whispering in their ears how to use antibiotics.

Infection control and antimicrobial stewardship are the two most effective strategies for control and prevention of the spread of resistant bacteria. Even though in some countries significant progress has been made over the last years, infection control and antimicrobial stewardship are still neglected topics in veterinary medicine at the global level.

It’s time for a change. Simple infection control measures like hand washing have tremendous impact in reducing the risks associated with carriage and spread of resistant bacteria within clinics.
In 2018, we passed important milestones in patient safety and antibiotic use. More than 2,000 employees took part in our conference Togetherness and we improved employee satisfaction.
**IMPROVED hand hygiene**

Clean hands are the single most important tool to minimise spread of microorganisms including antimicrobial resistant bacteria.

AniCura works actively to secure proper hand hygiene routines among all employees. For the third year in a row, a study about hand hygiene was performed at 80 AniCura clinics.

“The purpose of our study is to highlight the importance of good hand hygiene to all veterinary professionals”

The results revealed an average consumption of 8.4 ml hand sanitiser per patient and day, which is higher compared to 7.3 ml per patient and day in 2017. The increased use of hand sanitiser follows the implementation of infection control guidelines across AniCura together with annual measurements of hand hygiene to raise awareness and drive usage of hand disinfection.

**INSTRUMENT HANDLING**

In 2018, AniCura also studied how clinics handle surgical instruments from cleaning to sterilisation including test of instrument cleanliness and quality checks of equipment like autoclaves and washer-disinfectors. 87 clinics participated in the study about instrument handling. 34% of clinics used a washer-disinfector for cleaning and disinfection while almost as many clinics still clean instruments manually, a method with unreliable quality as the results vary between individuals. After manual cleaning, cleaning in household dishwasher or ultrasonic bath, instruments need to be disinfected to reach a sterile result in the autoclave. However, proper disinfection was only performed at half of the clinics in the study. All clinics in the study received feedback including AniCura’s guidelines on infection prevention and control.

**How did you improve hand hygiene?**

BERTHOLD MENZEL, PRACTICE MANAGER AND VETERINARIAN, AND ANDREA CARUS, QUALITY COORDINATOR AND HEAD NURSE AT ANICURA RECKLINGHAUSEN, TIERÄRZTLICHE KLINIK FÜR KLEINTIERE, GERMANY

“We do self-assessment checks around compliance to hand hygiene routines”

In the veterinary group, we looked at the results from last year’s QualiCura survey and discussed how we could improve our use of alcohol-based hand sanitisers and came up with ideas. One was to put up even more dispensers.

JANINKE KROGDAHL, NURSE AT ANICURA DYRESYKEHUS OSLO, NORWAY

“Hygiene is a recurring topic at the hospital meetings”

Inspired by an ACE course in infection prevention and control, we introduced a questionnaire regarding basic hygiene, as for example personal appearance and hand hygiene. The purpose was to increase awareness of hygiene among all employees. At the same time, we made dispensers for alcohol-based hand sanitisers more readily available.

MAJA NYBERG ÖHMAN, HEAD VETERINARIAN AT ANICURA FALU DJURSJUKHUS, SWEDEN

“The purpose of our study is to highlight the importance of good hand hygiene to all veterinary professionals”

The study revealed an average consumption of 8.4 ml hand sanitiser per patient and day, which is higher compared to 7.3 ml per patient and day in 2017. The increased use of hand sanitiser follows the implementation of infection control guidelines across AniCura together with annual measurements of hand hygiene to raise awareness and drive usage of hand disinfection.

**Use of alcohol-based hand sanitiser per country (ml per patient and day).**

<table>
<thead>
<tr>
<th>Country</th>
<th>Use (ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>12.3</td>
</tr>
<tr>
<td>AniCura average</td>
<td>8.4</td>
</tr>
<tr>
<td>Norway</td>
<td>7.7</td>
</tr>
<tr>
<td>Denmark</td>
<td>7.2</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>7.1</td>
</tr>
<tr>
<td>Germany, Austria, &amp; Switzerland</td>
<td>6.3</td>
</tr>
</tbody>
</table>

**THE STUDY IN BRIEF:**

- 75% of the clinics had a designated person to coordinate the local infection control work.
- On average, the clinics had 1.0 dispenser per room for patients.
- 57% of clinics increased their use of alcohol-based hand sanitiser – an important sign of improved hygiene routines.

“Clean hands are the single most important tool to minimise spread of microorganisms including antimicrobial resistant bacteria.”

The purpose of our study is to highlight the importance of good hand hygiene to all veterinary professionals. The study revealed an average consumption of 8.4 ml hand sanitiser per patient and day, which is higher compared to 7.3 ml per patient and day in 2017. The increased use of hand sanitiser follows the implementation of infection control guidelines across AniCura together with annual measurements of hand hygiene to raise awareness and drive usage of hand disinfection.
NEW SYSTEM to learn from mistakes

Learning from mistakes and systematically preventing them from reoccurring improve patient safety.

In general, the veterinary industry has limited experience of documenting and learning from medical incidents in a systematic way. By working many clinics together, there is significant potential to learn from each other’s mistakes and improve patient safety at many locations simultaneously. Against this background, AniCura decided in 2017 to invest in a medical incident handling system and joint processes.

EASY SYSTEM AND OPEN CULTURE

During 2018, the digital AniCura Patient Safety Improvement System (APSIS) was rolled out to most clinics within AniCura. APSIS is a simple to use system where employees quickly can register the most important characteristics of an incident. Significant improvements to patient safety can be achieved when teams analyse the root causes behind incidents. An open culture where incident-related discussions are centred around mutual learning rather than assigning individual blame is key to succeed. With APSIS, important conclusions on prevalence of certain types of incidents can be drawn across the company.

EASIER TO LEARN FROM EACH OTHER

An open culture where mistakes and learning from medical incidents are shared and discussed across the group, there is significant potential to learn from each other’s mistakes and improve patient safety where employees quickly can register the most important characteristics of an incident. Significant improvements to patient safety can be achieved when teams analyse the root causes behind incidents. An open culture where incident-related discussions are centred around mutual learning rather than assigning individual blame is key to succeed. With APSIS, important conclusions on prevalence of certain types of incidents can be drawn across the company.

Learning from AniCura

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Meet Catherine Oxtoby, researcher in patient safety

Catherine Oxtoby is a veterinarian working with the veterinary defense society in the UK. She has a PhD in defense and safety and is one of few veterinarians who does research on incident handling in veterinary care.

What did you see when you started using APSIS?

We have seen more incidents reported as “near miss” than we expected, i.e. things that almost happened but never caused any patient harm. These incidents were unknown to us before we started using the system. Now we have been able to implement actions and set routines preventing also these from re-occurring.

Why is it important to report medical incidents?

By reporting and analysing incidents, we visualise issues. Through the approach we can find root causes and identify improvements to prevent them from occurring again. Another important reason is to reduce risk of second-victim syndrome among our staff, which can be common if the incidents are not handled properly. Second-victims are traumatised by the incident and feel personally responsible for the unexpected patient outcomes and doubt their clinical skills and knowledge.

How can focusing on incidents have other benefits?

When identifying deficiencies in our operations, we traditionally focus on the person who ‘touched it last’ and this can contribute to a sense of blame and shame around clinical mistakes. Human factors and structured investigation using techniques such as root cause analysis, enable us to look past the person and identify the system issues which contributed to their behavior. Also, for every investigation, be sure to identify one thing you can change to make a difference, which in turn can improve workflow and increase efficiency in our clinic.

Learnings from AniCura

Djursjukhuset Albano

What is your most important advice to clinics trying to address incidents more systematically?

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Promoting patient medical record quality

Systematic work to improve medical record writing

High quality medical records are important, not only for patient safety, but also for the pet owner and the referring veterinarian.

In a medical record of high quality, colleagues can easily understand each other’s documentation of the patient’s history and condition, and continue the treatment and diagnostics as planned. A high quality medical record will ensure a better customer service, reduce medical errors and provide valuable information for research purposes. Working with templates or set headlines in the different sections of the medical record are important steps towards ensuring good medical record quality.

Medical Records in the Netherlands

In 2017, AniCura clinics in Sweden, Norway, Germany, Austria and Switzerland participated in a project to improve medical record quality by standardising routines and establishing best practice. In 2018, the project was expanded into the Netherlands.

Around 20 clinics in the Netherlands participated in the project and over 4,000 medical records were evaluated. The clinics received a monthly report based on their data with improvement suggestions for each clinic. These suggestions were discussed in the team meetings at the clinics to raise awareness among employees about the importance of a proper medical record.

What did you learn by reviewing medical record writing?

“Within AniCura’s healthy record project in 2018, we evaluated over 500 medical records and found that some topics had to be discussed within the team and that new guidelines were needed.”

“During the year we checked over 400 patient records and set clear goals for the whole team to improve the quality of the medical record writing. Every month we discuss the results and improvement suggestions.”

“We started this project in May and were really motivated. The first two months we evaluated more than 200 medical records and immediately saw things we could improve in our medical record writing like better recording of patient’s history.”
“We have a responsibility for future generations to ensure a wise use of antibiotics and good working conditions in veterinary care”
As one of the largest employers in the European veterinary care industry, AniCura has significant impact on working conditions and satisfaction among veterinary professionals. The work spans across four areas:

- Building a values-based organisation and strong culture
- Strengthening leadership
- Ensuring sustainable working conditions
- Building structure around competence development

**A STRONG CULTURE DRIVES SATISFACTION**

Building a strong sense of togetherness and investing in the company culture forms a core part of AniCura’s identity as an employer. The company values provide the foundation for this and are intended to serve as guiding principles throughout the organisation.

Managers within AniCura are trained to work according to AniCura’s values and are equipped with tools to actively implement values-based thinking in their teams. Around 60 managers take part in two-days values trainings every year. In total, around 200 AniCura managers have been trained since 2014. Following each training, managers are expected to inform and train employees at their respective clinic.

In addition to values trainings, meetings to build culture, share knowledge and strengthen relationships between all employee groups are arranged in each country several times per year. In February 2016 and in 2018 respectively, all AniCura employees were invited to a two-day conference called Togetherness. In 2018, 2,287 employees from nine countries joined Togetherness in Stockholm.

AniCura’s ambition is to be the most attractive employer within the veterinary care profession.

**HIGH ENERGY AND MOTIVATION**

To address employee satisfaction in a structured way, AniCura introduced an annual employee survey in 2015.

Results from the employee survey in 2018 showed:

- High energy levels and motivation
- An increased share of employees willing to recommend AniCura as employer
- More satisfied employees at clinics that have been part of AniCura for a year or more
- Leadership and team efficiency (planning, performance feedback and conflicts handling) need to be improved

All managers are expected to present and discuss the results in their teams. The employee survey clearly shows that teams that worked with their results, scored a higher employee satisfaction than other teams.

“Togetherness underlines the passion that lives within our group and made me remember how proud I am of being part of the AniCura team”

EMPLOYEE AT TOGETHERNESS 2018
LEADERSHIP IN FOCUS
In 2015, AniCura took a strategic decision to invest significantly into developing clinical leadership, and in 2016, the global leadership program Accelerator was established. To date, 71 managers at AniCura have graduated from the program. The program is comprehensive and focused on further developing leadership skills and insights, as well as strategy implementation and business acumen.

In addition to Accelerator, there are national leadership trainings targeting all levels of leaders.

A new global framework, AniCura Excellent Leader, was developed in 2018 and will be implemented across the organisation over the next years to help all managers work in the same direction and apply similar leadership behaviours.

SUSTAINABLE WORKING CONDITIONS
Ensuring sustainable working conditions is a key priority for AniCura, and in some countries a challenge facing the entire industry.

In 2018, new human resources managers were recruited to several countries to start building structure around human resources and support to clinics. The efforts around working conditions are mainly conducted on a clinic and national level as regulations and collective agreements are country specific. Initiatives during 2018 include new software and routines for better scheduling, stress management prevention programs and standardisation of working contracts.

In Sweden and Norway, a two-day training called AniCura Readiness Camp, help recently recruited veterinarians and nurses get a smooth transition into the daily clinical work at AniCura and for instance tackle topics such as hygiene, work-related stress and customer communication.

Sick-leave and work-related injuries are tracked on clinic level. In Sweden, clinics representing around 660 employees had an average sick-leave of 5.6% in 2018*, similar to statistics from human health care.

In 2018, a new global employee handbook was introduced to set companywide standards around employee development and recruitment but also ethics, whistle-blowing and anti-corruption.

COMPETENCE DEVELOPMENT AND TRAININGS
Competence development and trainings are highly prioritised at AniCura, and also integrated into AniCura’s medical quality development program. Read more about competence development on page 12 and 18.

EMPLOYEE SURVEY RESULTS

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<thead>
<tr>
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<th>2017</th>
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<tr>
<td>eNPS*</td>
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<tr>
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*eNPS = Employee Net Promoter Score, an international KPI based on the question: “Would you recommend this company as an employer.” General benchmark is 9.

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PREVENTIVE CARE

Welfare diseases on the rise

Like in human health, welfare diseases among pets are increasing. Studies on overweight and obesity among companion animals in Europe indicate that between 30 and 60% of all dogs and cats are overweight. Consequently, a number of health issues arise as for example diabetes, certain forms of cancer and orthopaedic problems. Many dogs and cats also suffer from gum diseases and undiagnosed dental problems, causing severe pain or permanent damages.

ENGAGING IN preventive care

Preventive care has significant impact on the quality of life for companion animals.

AniCura has an important responsibility to improve pet health through better compliance to health check-ups, vaccines and parasite prevention but also to increase awareness around the importance of exercise, good dental health and proper nutrition.

NEW PREVENTIVE HEALTH PLAN

To further strengthen focus on preventive health, AniCura launched a preventive health plan called AniPlan in 2016. The purpose is to offer pet owners a simple and cost-efficient way to ensure good preventive care and detect diseases at an early stage. AniPlan was introduced in Denmark in 2016, and following good feedback from Danish pet owners, AniPlan has now been launched in Sweden, Norway and the Netherlands.

Preventive health plan offered to AniCura’s customers as a subscription at a subsidised price

AniPlan includes yearly health checks, dental checks and vaccinations

AniPlan also offers customers discounts on selected products and services, for example pet food

By preventing illnesses and infections, pet owners’ costs for veterinary care over a lifetime can also be reduced.

AniCura offers digital veterinary advice through a searchable database on each country’s website as well as information campaigns focused on preventing overweight and ensuring proper nutrition.

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ANIPLAN:

- Preventive health plan offered to AniCura’s customers as a subscription at a subsidised price
- AniPlan includes for example yearly health checks, dental checks and vaccinations
- AniPlan also offers customers discounts on selected products and services, for example pet food
The development of veterinary medicine with, for example, more advanced and energy consuming equipment and increased use of consumables to improve infection control, highlights the importance to consciously address the environmental footprint of veterinary care.

Many clinics within AniCura address environmental impact locally. Over time, AniCura’s ambition is to become a role model in the industry in taking environmental responsibility. Four areas have been identified as key initially:

- Waste
- Procurement
- Transport
- Energy

Implementation of several initiatives across these areas are planned for 2019 and the results are expected to be expanded in scope over time.

**MANAGING WASTE**
Waste is an area where AniCura alongside other healthcare providers impact the environment, primarily through the daily use of consumables and pharmaceuticals. Laws and regulations set basic standards for waste handling in each country, but more can be achieved through improved waste sorting and recycling.

In 2018, AniCura procured a joint supplier for waste handling in Scandinavia, enabling the company to start measure waste generation with the aim to over time decrease waste and the share of unsorted waste.

**REDUCING TRANSPORTS**
Today, many suppliers receive orders from AniCura clinics several times per day or week. By analysing in-clinic order flows and order frequency, there is potential to reduce the number of transports needed. In 2019, a pilot project with select suppliers and clinics in one country will be conducted to identify best practice around order flows and transportation.

**GREEN ENERGY**
Lighting, heating of facilities, powering of tools and advanced equipment within AniCura such as magnetic resonance imaging (MRI) and computed tomography scans (CT) all drive electricity consumption.

In 2018, renewable energy agreements were arranged for AniCura’s Scandinavian operations. In 2019, renewable energy will be procured for AniCura in the Netherlands and Germany, thus ensuring that the vast majority of clinics within AniCura can use green energy.

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**Greener cleaning**
Cleaning is an important recurring task in the daily clinic operations which typically drives significant use of chemicals. New, modern methods prove that a microfiber cloth and water can be as efficient.

Microfiber is today well known for its ability to efficiently absorb particles and bacteria, and the textile has a long lifetime. Only water should be added for cleaning. In human health care, the cleaning method has been bacteriologically tested with very good results.

In 2018, AniCura signed an agreement with a preferred supplier producing high-quality microfiber mops and cloths. AniCura Västra Djursjukhuset and AniCura’s central quality team tested the cleaning method for surfaces such as floors, tables, cages and surgery theatres, as an alternative to traditional cleaning with detergents.

Repeated bacterial tests were taken after cleaning, all showing satisfying results. Microfiber cleaning also proved to be more reliable than the manual dilution of chemicals often results in too much detergents and sticky surfaces where bacteria easily are stuck.

In 2019, microfiber cleaning will be implemented at clinics in Sweden and over time rolled out across AniCura.

"For both infection control purposes and the environment, using microfiber for cleaning is better than chemicals"

**ULRICKA GRÖNLUND, GROUP MEDICAL QUALITY MANAGER**
AniCura’s community engagement is mainly conducted on a clinic level and based on the needs of companion animals in different regions. Several clinics provide veterinary care to animal shelters at a discount and others collaborate with foundations to help pet owners living under tough financial circumstances.

On country level, AniCura supports various companion animal organisations such as animal shelter organisations, therapy dog associations and organisations working to spread knowledge about the positive effects of companion animals on human health.

Many clinics within AniCura are actively engaged in the community to improve animal health.

FREE VETERINARY CARE FOR HOMELESS
Offering a day with free veterinary care for vulnerable and homeless pet owners has become an annual and appreciated tradition at many AniCura clinics. Ten years ago, AniCura Västra Dyrspjalhuset in Sweden, was one of the very first animal hospitals to organise a day with free veterinary care. Since then, many AniCura clinics have followed their positive example.

The days are organised together with local associations for homeless and clinics typically treat between 40 and 200 patients on each occasion at no cost to the pet owner. Pet owners who are offered free veterinary care are either homeless or live under tough financial circumstances. The clinics involved offer free health-checks, vaccines and dental care and some patients are also invited back for further treatment or surgery.

Many clinics within AniCura are actively engaged in the community to improve animal health.
AniCura has many veterinary professionals that devote part of their time to research. In 2015, AniCura established the AniCura Research Fund with support from its owners. Since then, almost 40 clinical research projects have received funding. In total, AniCura funded research projects of more than SEK 4 million.

AniCura’s Scientific Council independently evaluates all applications to the research fund and allocates money to the projects that assure high scientific standards and have the potential of being published in an international peer-reviewed scientific journal.

During 2018, the following 11 projects were granted funding from the AniCura Research Fund:

"CT assessment of the arthroscopic treatment of canine medial coronoid disease"  
CARINA RENNER - BABENHAUSEN, GERMANY

Medial coronoid disease (MCD) is the most common cause of forelimb lameness in large dogs. Arthroscopy is the gold standard not only for diagnosing but also for treating MCD. The study aims to evaluate the completeness of arthroscopic removal of MCD.

"The role of sex hormones in idiopathic epilepsy in dogs"  
SUSIE VAN MEERVENNE, KALMAR, SWEDEN

Epilepsy is one of the most common neurological disorders in veterinary medicine. In human medicine, the effects of sex hormones on seizures and epilepsy are well documented, but in veterinary medicine the information is scarce. As a part of Sofie’s PhD project, the epidemiology of seizures in dogs will be investigated with focus on sex and neuter status, by analysing sex hormones in salivary and blood.

"Anoerobic bacteria in deep infections in dogs and cats with focus on bacterial species and their susceptibility patterns"  
ULRIKA GRÖNLUND, STOCKHOLM, SWEDEN

In severe infections, it is paramount to immediately start antibiotic treatment with the right antibiotic substance. This study aims at finding out what bacterial species are involved in deep infections in dogs and cats and what substances they are susceptible to. The results will guide veterinarians how to choose the right antibiotic.

"The faecal microbiome signatures of dogs with chronic inflammatory enteropathies"  
BART RUIJTER, AMSTERDAM, THE NETHERLANDS

The faeces of both human and other animals contain numerous organisms, like bacteria, protozoa and viruses. Several studies have shown the importance of this so-called microbiome and its relation to all kinds of diseases. The aim of this study is to investigate the microbiome of healthy dogs and those with chronic vomiting and/or diarrhoea due to causes like food intolerance. This could improve our knowledge on these diseases and aid the clinicians in forming a diagnosis.

"Oxidative erythrocyte damage in dogs after several days of therapy with either meloxicam, carprofen or metamizole"  
JULIA LIESER, AUGSBURG, GERMANY

NSAIDs are frequently used drugs in veterinary medicine, especially after surgical interventions or for pain management in acute and chronic painful conditions. Various side effects of these drugs are already described in humans, as well as in small animals. The goal of this study is to investigate if commonly used NSAIDs negatively impact the red blood cells’ oxygen delivery capability.

"The potential of interference of the novel monoclonal antibodies (mAbs) Lokivetmab used in atopic dermatitis in serum protein electrophoresis and immunofixation protein electrophoresis"  
NEDDA.APOSTOLOPOLOUS, AUGSBURG, GERMANY

Canine atopic dermatitis is a chronic inflammatory skin disease mainly affecting genetically predisposed individuals. This study aims to assess if and how a new treatment with antibodies (Lokivetmab) interferes with other pharmaceuticals commonly used in veterinary medicine.

"The foetal microbiome signatures of dogs with chronic inflammatory enteropathies"  
BART RUIJTER, AMSTERDAM, THE NETHERLANDS

In severe infections, it is paramount to immediately start antibiotic treatment with the right antibiotic substance. This study aims at finding out what bacterial species are involved in deep infections in dogs and cats and what substances they are susceptible to. The results will guide veterinarians how to choose the right antibiotic.

"To assess the efficacy of hyposensitization in cats diagnosed with allergic form of asthma"  
KATARINA VARJONEN, STOCKHOLM, SWEDEN

Feline asthma is a common and debilitating disease affecting up to five out of a hundred cats. Cats can be difficult to medicate, and we are aiming to assess if cats with an allergic form of asthma would respond to immunotherapy and if this treatment would allow less other medications to be used compared to patients receiving only conventional asthma treatment.
“Prevalence of hypersomatotropism in cats with concentric left ventricular hypertrophy”

MARIEKE KNIES, DORDRECHT, THE NETHERLANDS

The aim of this study is to determine if hypersomatotropism is common in cats with hypertrophic cardiomyopathy without concurrent diabetes mellitus, as is the case in humans with hypersomatotropism. Identification of hypersomatotropism is important as concentric left ventricular hypertrophy might be reversible with treatment.

“Dose escalating phase I and II study of doxorubicin and temozolomide for treatment of canine hemangiosarcoma”

IRENE FLICKINGER, HÜNENBERG, SWITZERLAND

Hemangiosarcoma is a rapidly growing, highly invasive cancer that occurs almost exclusively in dogs, typically with poor prognosis. We wish to compare results of hemangiosarcoma treatment with two different drug combinations; doxorubicin or doxorubicin in combination with temozolomide. By following two different patient groups we will be able to measure differences in time to tumour progression as well as overall survival time.

“Evaluating male dog fertility using anti-Müllerian hormone (AMH)”

HELENE ALM, STOCKHOLM, SWEDEN

In this project, we want to study if the fertility of a male dog can be estimated from a blood sample, as semen samples are more difficult to collect and to interpret. In both blood and semen samples, we will study a specific hormone that is produced in the testicles, anti-müllerian hormone (AMH) and investigate the relationship between AMH and fertility.

“Comparison of enterography findings from ultrasonography and computed tomography (CT) with results of endoscopy and full thickness biopsies in 25 canine patients with gastrointestinal disease”

SUSANNE BOROFFKA, UTRECHT, THE NETHERLANDS

Ultrasound is routinely used to evaluate the intestines, but their contents may disturb the image quality, especially in large dogs. CT-enterography is routinely used in humans allowing a global evaluation of all abdominal organs. In veterinary medicine, there have not been many studies describing CT-imaging of the normal and abnormal GI-tract. In this study, we will compare the imaging pathology of both CT and ultrasound and thereby understand GI-tract imaging better for future patients.

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“As part of the AniCura family, we are committed to develop and improve veterinary care”

KONRAD JURINA, PRACTICE MANAGER AND VETERINARIAN AT TIERKLINIK HAAR, GERMANY