



Humanimal Trust
Inaugural One Medicine Day
Virtual Symposium - 6th May 2021

'Stronger Together'
How we can take One Medicine forward



ONE Medicine for humans and animals
Registered charity no.s 1156927 & SC048960

Humanimal Trust Inaugural One Medicine Day Virtual Symposium 'Stronger Together – How we can take One Medicine forward': Summary Report

Executive Summary

On 6th May 2014, Humanimal Trust was founded by Professor Noel Fitzpatrick to create a platform for One Medicine. The objective of the charity is to drive collaboration between the human and veterinary medical professions, the nursing profession and researchers from the allied health and scientific disciplines. By building such bridges, the aim is that all humans and animals will benefit from equal and sustainable medical progress, but which is not at the expense of an animal's life. This is Humanimal Trust's vision of One Medicine.

Opportunities for shared learning between the human and veterinary medical professions, the nursing profession and the allied health/scientific disciplines are currently not routine, but typically occur more by chance than by design. To address this, and to coincide with the seventh anniversary of Humanimal Trust's founding, we created a platform with our inaugural One Medicine Symposium on 6th May 2021.

The Symposium's theme was 'Stronger Together – How we can take One Medicine forward' and consisted of three speaker sessions, a lunchtime session from organisations taking a One Medicine approach and concluded with a discussion between a panel of vets, doctors and researchers. Each covered different aspects of key challenges and opportunities for One Medicine. Our event attracted an international and diverse audience of over 100 highly engaged participants. We heard fascinating and insightful talks from representatives from human and veterinary medicine, nursing and the allied health and scientific disciplines, together with Humanimal Trust Trustees, team members and Humanimal Trust grant recipients.

The Welcome Address was delivered by Humanimal Trust Founder, Professor Noel Fitzpatrick, whose powerful talk focused on the essence of One Medicine, describing it as 'the birth of oneness' and a 'currency for the world'. The Symposium's Keynote Talk was delivered by Helen Ballantyne, Chair of the UK One Health Coordination Group, and a nurse whose experience spans both human and veterinary medicine. The Keynote Talk on 'Nursing – the future of One Medicine' considered how some of the ideas, theories and concepts of One Medicine can be brought into frontline practices and outlined the potential of nurses and nursing as a fantastic vector to start a really solid foundation of collaboration. The subsequent talks in our first session were from several Humanimal Trust Trustees (Professor Roberto La Ragione (Chair of Trustees), Dr Ben Marshall and Mr Mike Uglow, demonstrating the importance of a One Medicine approach to areas such as antimicrobial resistance, respiratory disease and orthopaedics. The session concluded with an overview of the significant research impact Humanimal Trust has delivered in its first seven years.

In the following sessions, several organisations who are taking a One Medicine approach gave presentations, followed by a series of talks from Humanimal Trust grant recipients with each providing an insight into how One Medicine can push forward research progress in areas such as cancer, and ultimately improve the lives of both humans and animals. Our third session considered how we can improve communication between the two medical disciplines by creating and formalising communication pathways, highlighted shared ethical challenges and how a US research institution is aiming to build bridges between human and veterinary medicine. Concluding the Symposium, was a broad and stimulating panel discussion on some of the wider issues currently preventing inter- and multi-disciplinary collaborations from occurring more routinely.

This dynamic and thought-provoking day, it confirmed to us that in order to continue to push One Medicine forward, we must continue our work to navigate some complicated pathways, and overcome some difficult hurdles. As part of our ongoing work in developing a roadmap for how One Medicine can become a default approach, our Symposium resulted in several key themes being identified:

- A requirement for clear and robust ethics and regulatory research frameworks which can better support and encourage a One Medicine research approach,
- A need to improve cross-disciplinary knowledge sharing by vets, doctors, nurses and researchers, for example through research journals publishing high-quality, peer-reviewed One Medicine research.
- Improved awareness of (and access to) One Medicine in medical, veterinary, nursing and scientific higher education programs of study- where vets, doctors, nursing, clinical professionals and researchers of the future are currently in training.

The Symposium also highlighted the significant energy, momentum and drive that exists, to ensure One Medicine is finally brought into the mainstream. A notable willingness and enthusiasm for a One Medicine approach across the human and animal disciplines already exists. The symposium provided shared learning and demonstrated the importance of building bridges, developing stronger links, closer relationships and greater collaborative practices.

Acknowledgements

The Symposium organisers wish to thank all speakers and panellists who participated in the Symposium and to all those who attended. Special thanks also to Dr Jade Passey and Dr Piyali Basu from the One Health European Joint Programme (University of Surrey) for providing technical assistance and to Humanimal Trust volunteers for providing vital support to the Humanimal Trust team.

Introduction

On 6th of May 2014, the charity Humanimal Trust was founded by Professor Noel Fitzpatrick. As a vet, he had personally experienced the divide and traditional boundaries between human and veterinary medicine. Given the lack of opportunities to share what he was learning from his day to day practice, or to benefit from relevant learning from human medicine, he decided to create the platform himself and hence the charity came into being.

Seven years on and in 2021, these traditional boundaries still exist, with limited opportunities for shared learning, closer ties and greater collaborative practices between the two medical professions, the nursing profession and the allied health and scientific disciplines. When they do occur, it is typically via coincidence rather than deliberate opportunities. On the occasion of our seventh anniversary, Humanimal Trust therefore decided to create such a platform with its inaugural One Medicine Day Symposium which was held virtually. Its objective was to bring like-minded individuals together, to create a roadmap as to how human and veterinary medicine can more routinely work together and how to address the challenges that One Medicine faces in being adopted as a default approach.

The Symposium attracted an audience of over 100 delegates from across the globe and, from a variety of backgrounds. Consisting of three main speaker sessions, a lunchtime session and concluding with a panel discussion, the day covered different aspects of not only the key challenges for One Medicine, but also key opportunities that such an approach affords both human and veterinary medicine. By re-connecting and re-converging the two medical disciplines in areas of natural convergence due to genetic and physiological similarities, these resulting bridges, connections and collaborations will make us truly stronger together.

The essence of One Medicine

The birth of 'Oneness' – One Medicine as a currency for the world

Delivered by the Founder of Humanimal Trust, Professor Noel Fitzpatrick, the Symposium opened with the Welcome Address. Powerful and insightful, it outlined the beginnings of the Trust and its vision of One Medicine. A concept which aims to create a paradigm shift in the traditional boundaries and current silos existing between human and veterinary medicine. By harnessing the benefits accrued from research into naturally occurring, spontaneous disease, such knowledge transfer between the two medical professions can result in a fair, two-way exchange between human and animal health with equal and mutual benefit to each. Focussing on delivering reciprocal medical progress, using examples of medical specialism such as oncology, musculoskeletal disease and regenerative medicine, this can lead to the re-convergence of human and veterinary medicine in such areas where they share natural synergy. Therefore, in his take home message, Professor Fitzpatrick emphasised that under a One Medicine approach, such efforts will focus, not on fighting the old divisions, but on building the new bridges.

Nursing – the future of One Medicine

The Symposium's Keynote Talk presented a different view from a programme mostly focused on clinical research and the science behind One Medicine, being from the perspective of the frontline nursing profession. Our Keynote Speaker was Helen Ballantyne, Chair of the UK One Health Coordination Group and a practising nurse whose experience spans both human and veterinary medicine. Her incisive talk outlined how we can get some of ideas, theories and concepts of One Medicine through into frontline practices and the potential that nurses and nursing have in this regard. As doctors and vets often get their nurses to talk first, Helen considered that nurses and nursing could be a fantastic vector to start a really solid foundation of collaboration. Outlining why nurses are perfectly placed to facilitate a One Medicine approach in the clinic, individuals and patients are becoming more aware of their own and their animal's healthcare and subsequently are increasingly asking questions about the differences in medical approaches – presenting a unique window of opportunity to discuss and engage about One Medicine. Helen's talk also considered the key elements of nursing that make it ideal to One Medicine:

- Every day, nurses translate theory into practice to their patients and their families/caregivers
- Nursing is highly relevant to One Medicine in terms of its clinical excellence, research, education and leadership
- How One Medicine can utilise nurses and nursing e.g. seeking out NHS/veterinary specialist nurses, not forgetting the frontline when publishing research papers, that nurses have influence and buying power, that they are able to start the conversation and therefore build a foundation.

Concluding the Keynote Talk, Helen spoke on how we need to move away from 'them and us' and scenarios where veterinary medicine is used in presentations on human medicine as an interesting 'quirk'. Work must be ongoing for One Medicine becoming our default as we all work towards the ongoing health and wellbeing for both people and animals.

Session One: One Community, One Goal, One Medicine

Following on from the Keynote Talk, the subsequent talks in session one were delivered by several of Humanimal Trust's Trustees, who discussed the benefits of a One Medicine approach from their viewpoint of their own specialisms. For example, antimicrobial resistance (AMR) (Professor Roberto La Ragione, Humanimal Trust Chair of Trustees), respiratory diseases (with an emphasis on the response to COVID-19 (Dr Ben Marshall)) and orthopaedics (Mr Mike Uglow). This was followed by an update from the Humanimal Trust team (by Dr Alexandra Dedman), who presented an outline overview which headlined the significant achievements and milestones that the Trust has achieved in its first seven years and the research that it has funded, either solely or working in partnership with others, such as the charity, Action Medical Research.

Concluding this session, delegates were polled as to their knowledge of Humanimal Trust, One Medicine and what they considered to be the main boundaries to a One Medicine approach being more widely adopted.

- 90% of delegates polled were aware of the concept of One Medicine
- 85% of delegates polled were aware of Humanimal Trust
- Results between the reasons as to why One Medicine is not more widely adopted were fairly evenly spread with 33% of delegates polled considering that this was due to the two medical professions being unable to engage. 35% of delegates polled considered that the main boundary was a lack of awareness of what One Medicine is.

One Medicine approaches and session two: One Medicine in action

Commencing the afternoon session were presentations from several organisations who are taking a One Medicine approach to benefit both humans and animals, these being PetMedix (based in the UK, who work on monoclonal antibodies), FidoCure (based in the USA, who work on personalised medicine relating to treatments for canine cancer) and Test and Treat (based in the UK, who have developed equipment for use with urinary tract infections and identifying the most appropriate antibiotic to use).

This was followed by the talks in session two from Humanimal Trust grant recipients (past and present), who each provided an excellent insight into how One Medicine can push forward research progress in the Trust's five flagship areas. Therefore, ultimately improving the lives of both humans and animals. The talks outlined various One Medicine research approaches, mainly in the areas of cancer and antimicrobial resistance, but also emphasised the Symposium's theme of stronger together and the importance of working in collaboration, such as the Trust contributing to the research funded by the children's charity, Action Medical Research.

Commencing session two were Professor Jo Morris and Dr Tomoko Iwata from the University of Glasgow, who presented their work on developing a liquid biopsy for canine bladder cancer using spare blood samples from dogs with various types of cancer. Bladder cancer affects both humans and animals (e.g. dogs), with more precise and less invasive methods of diagnosis and monitoring of such cancer being of benefit to both patient types. By developing a simple blood test which can be used to detect a molecular biomarker (a unique signature for circulating tumour DNA), this could help doctors, vets, and researchers better diagnose and monitor bladder cancer.

This research work optimised the necessary procedures but currently other project areas are being looked at such as identifying the precise mutations that occur in an individual patient's cancer and specifically targeting these pathways and a tumour's micro environment, whereby such collaborations will help inform ongoing human and canine work in this area.

This was followed by a research talk, which has also looked at whether it is possible to identify a 'signature' for a particular type of cancer, in this case, osteosarcoma (a form of bone cancer which occurs in both humans and animals e.g. dogs). In his talk, Professor Matthew Allen from the University of Cambridge, presented the work of his research group on disease progression of osteosarcoma and identifying a signature that could be used to predict how such cancer would progress. The work funded by Humanimal Trust has been in relation to screening naturally occurring osteosarcoma tumours in dogs to identify if these markers are present.

At the end of 2020, Humanimal Trust and One Medicine, reached a pivotal milestone when the recipient of its first fully-funded PhD studentship, Dr Lucy Grist, was awarded her Doctorate from the University of Surrey. Dr Grist presented the work that had been funded by the Trust, in the area of antimicrobial resistance, an issue which has been acknowledged as one of the biggest global threats in recent years. Her work consisted of two work streams: the first examined attitudes towards the use of antibiotics for companion animals by surveying vets and pet owners whilst the second evaluated the potential for phage therapy as an alternative to antibiotics (phages being viruses which attack and kill bacteria). Her results found that work needs to be done on understanding and changing human behaviour towards antibiotics and that phage therapy has potential as an alternative to antibiotics.

Our next speaker was Dr Dan Horton from the University of Surrey, who spoke about his research project investigating oncolytic viruses (viruses which can specifically target and kill cancer cells) and whether these have the potential to treat canine cancers or be used in conjunction with other existing treatments for cancer. Therefore contributing towards our knowledge towards precision medicine. Whilst it was a short project, it has created a lasting legacy in directly contributing towards the training of at least four of the next generation of researchers and connecting human and veterinary medicine practitioners. Facilitating and enabling these small steps, will help to make One Medicine a reality.

Concluding session two, Professor Margaret Hall-Craggs from University College London, whose work is funded by Action Medical Research and co-supported by Humanimal Trust, presented some of her findings investigating magnetic resonance imaging (MRI) of inflammation in juvenile idiopathic arthritis. This is a disease which affects children, adolescents and young people, causing joint inflammation with this inflammation then destroying joints and could contribute to influencing care in animals. Professor Hall-Craggs focused on her research group's work with a means to improving treatment.

Session Three: One Medicine, One Team – how do we get doctors and vets to communicate with each other?

The final speaker session focused on some of the cross-disciplinary communication challenges and shared opportunities in One Medicine.

Commencing this session, Sandra Steele, a vet and researcher from the University of Sydney highlighted the purpose of collaboration and cooperation to improve outcomes. Her talk considered the roles of GPs and vets, the gaps and how they can be addressed. In addition, how to create and formalise referral practices and communication pathways between the two disciplines, at the level of vets and GPs, for example, to encourage cross-discipline communication, and to help ensure it becomes routine.

This was followed by a talk by Dr James Yeates, a veterinary surgeon, attending in an independent capacity, who presented some of his thoughts on the overlap in shared interests and the shared ethical challenges faced by human and veterinary medicine. Among those considered in this presentation were: best interests of the patients/clients, consent and dignified end, for example. His talk initiated some active and highly productive discussion among delegates. The need for a robust One Medicine-related ethics and regulatory research framework emerged as a key priority.

For the final talk of this session, Dr Ashish Ranjan, Director of the Institute for Translational and Emerging Research in Advanced Comparative Therapy (INTERACT) at Oklahoma State University, outlined the work of INTERACT which aims to build bridges between human and veterinary medicine in areas such as cancer.

Panel Discussion: How we can take One Medicine forward in a post-COVID world

The Symposium concluded with a broad and stimulating panel discussion about some of the deeper issues which currently prevent inter- and multi-disciplinary collaborations from happening more often. The panel consisted of doctors, vets and researchers and was Chaired by Dr David Danson (President Elect, Royal Society of Medicine Comparative Medicine Section Council) who started the discussion by outlining three important areas where focused One Medicine collaboration could perhaps make the greatest progress initially :

- At the level of basic scientific research
- At the clinical level: for example in GP surgeries and veterinary practices (i.e. for zoonotic infections, and other conditions which affect humans and companion animals in the same household, such as ringworm)
- At the level of policy: with development and better clarification of an ethical framework for One Medicine research involving animal patients, for example.

Panel members also discussed why a COVID-19 vaccine has been developed so quickly for humans, compared to the years that have been spent developing animal coronavirus vaccines. The sheer size of collective effort, collaboration, open sharing of data towards one single challenge, and the huge amount of funding made available were all identified as important factors. These also provide important points of learning for One Medicine.

Improving One Medicine opportunities by education

The panel also discussed how we can improve collaboration via education in One Medicine and awareness at the level of higher education, with important insights from student and early career panel members and delegates. The next generation of clinicians and researchers are best placed to both understand the importance of One Medicine, and also routinely work with other disciplines as a matter of course. The importance of sharing lectures, and ensuring physical connections exist was highlighted.

A comment from one delegate made the very important point that it is not just the vets and doctors who can drive forward One Medicine, but also the researchers. It is the students of biomedical science and basic science who we also need to reach and empower. This is supported by our own analytics, which suggest that on the Humanimal Hub (the Trust's online platform for medical and research professionals) nearly one-third (30%) of members do not align specifically with an animal or human discipline, but instead work in these more multi-disciplinary sciences.

A roadmap for One Medicine



Figure 1: Infographic roadmap for One Medicine and priority work areas for Humanimal Trust (infographic created in Canva, 2021)

One of the objectives of this Symposium was to create a roadmap for One Medicine. This dynamic and synergistic event confirmed our belief that there are some complex pathways to navigate and barriers to overcome. We therefore set out our roadmap as per Figure 1 above on areas of priority focus for Humanimal Trust as part of its wider activity, based on key themes which emerged from discussions and the Symposium as a whole, as summarised below:

- The need for clear and robust ethics and regulatory research frameworks, which can better support and encourage a One Medicine research approach,
- The need to improve cross-disciplinary knowledge sharing, for example through research journals publishing high-quality, peer-reviewed One Medicine research,
- The great need to improve awareness of (and access to) One Medicine in medical, veterinary, nursing, and scientific higher education programs of study- where vets, doctors, nurses, clinical professionals and researchers of the future are currently in training.

Concluding remarks

Human and veterinary medical clinical practice and research clearly has so much in common, and there is so much opportunity to learn from each other. There is also huge drive on both sides to make this happen.

Whilst there are some complex pathways that need to be navigated and challenges that need to be overcome, there is also an enormous amount of drive and energy to take One Medicine forward.

During the symposium, we heard inspirational examples from several delegates of their own One Medicine initiatives in action. Of doctors, vets, other health professionals and researchers working together on projects and in clinical collaborations. We also heard how One Medicine can be adopted in frontline practices and the vital role of nurses and nursing in this regard as a crucial vector for collaboration and getting the One Medicine conversation started. What we heard during the symposium highlighted just how fulfilling and engaging such a collaborative approach to research can actually be, reinforcing the symposium's theme of us all being stronger together.

These shared experiences serve as a reminder that when considering human and veterinary medicine and human and animal health, we are not warring factions intent on division but have the capacity to make major inroads in medical progress when we come together as 'One'. Whether we are a non-specialist or a medical professional, we are humans, who have a desire to connect, create, and to communicate. Humanimal Trust believes that if the funding opportunities were to be made available and if a One Medicine approach is made more accessible, more and more inter-disciplinary connections and collaborations will naturally progress and develop. The Trust will continue its work in facilitating such connections, to develop and enable platforms to foster such collaborations (such as its [Humanimal Hub](#)) and contributing to continue driving forward this important One Medicine movement for change to benefit both humans and animals. By building these bridges, by re-converging human and veterinary medicine in areas where they share natural synergy, by working more closely and more collaboratively with each other, we will be truly stronger together.