3rd EBVMA Podcast: Developing a Clinical Question with Dr. Daniel Fletcher, Dr. Chap Pratt, and Erik Fausak

Erik Fausak

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Abstract

The process of developing a clinical question is divided into four categories:

1. Patient
2. Intervention
3. Comparison
4. Outcome

The practice of evidence-based veterinary medicine (EBVM) starts with forming a clinical questions. Forming a question that is highly specific, particularly in outcomes is very important in retrieving relevant research.

1 Forming the PICO by Dr. Dan Fletcher

Dr. Fletcher discusses the importance of writing good clinical questions by referencing the trials and tribulations of the RECOVER initiative, an ambitious endeavor published in 2012 to create Cardiopulmonary resuscitation (CPR) guidelines. "it is very easy, we've learned, to write bad questions."

- PICO allows us to make specific question because it is easy to be distracted:

  P – Patient or population for most clinically based questions. You think it would be easy, but it is not. RECOVER we started with dogs and cats with cardiopulmonary arrest seems easy but there are so many factors like what CPA is, how long, did it happen before, etc...

  I – Intervention must be specific, like antibiotics is too vague, but specific antibiotics.

  C- comparative group, thought needs to go to what you want your control group to be, it does not have to be perfectly healthy animals.

  O- Outcome, Dr. Fletcher felt was the area for the most improvement from RECOVER. The outcome needs to be clearly defined which is a big part of focus for RECOVER 2.0, each outcome will have a different evaluation. ROSC, survival to discharge, and survival 30 days after ROSC will each be independently evaluated (or independent PICOs) . You should have a separate PICO for all different outcomes (same PIC and different Os) and re-evaluate.

- Studies are not necessarily poorly designed but may not answer the PICO properly, Every paper needs to be read in the context of the PICO question.

- GRADE. is a very useful tool to help alleviate subjectivity and bias in systematic reviews that will become an important part of RECOVER 2.0.

- Librarians are important tools in developing PICOs and developing effective search strategies to find evidence.

2 Discussion Key Points

2.1 PICO Comparators

Erik mentions a lot of people think comparisons are placebos but that is not necessarily what you want to compare. Dr. Fletcher states that PICOs in the first RECOVER found that many comparators create a more subjective environment. Comparative groups in CPR will never be healthy animals. Unfortunately we pool all of these studies that have unfair comparators and comes to the reality that we have to create multiple questions and address the multiple comparators.

2.2 Reducing Overlap and Better PICO Formation

Dr. Pratt mentions that developing PICOs with overlapping information became a challenge. Dr. Fletcher stated that PICO limitations become more obvious when you start reading the papers, the big "bifs" happened with evidence evaluation after the PICOs were formed. Round 2, they are committed to utilizing a different evaluation process, GRADE. Limitations of PICOs often become apparent in the evaluative process. Highly specific PICOs will result in better return of relevant evidence, whereas vague PICOs will slow the researcher down because of extraneous content.

2.3 Utilizing Human Medicine to Develop Better PICOs

ILCOR is the human equivalent to the RECOVER initiative that has been utilizing evidence to update CPR guidelines since the 1990s. The RECOVER initiative reached out and learned a great deal from ILCOR. ILCOR suggested the utilization of GRADE criteria and utilization of librarians, who are experts in search strategy, to help develop PICOs.

2.4 Be a Splitter, Not a Grouper

It is clear that many specific PICOs are far more valuable than fewer vague ones. Dr. Fletcher points out that whether 100 doctors or one doctor are performing EBVM, the strategy is the same.

2.5 Guest Biographies

- Dan Fletcher, PhD, DVM, DACVECC Associate Professor of Emergency and Critical Care Cornell University College of Veterinary Medicine

Dan Fletcher obtained his BS in Electrical Engineering at Drexel University and PhD in Bioengineering at UC Berkeley/UC San Francisco before completing his DVM at UC Davis, followed by an internship and residency in Emergency and Critical Care at the University of Pennsylvania. He is currently an Associate Professor of Emergency and Critical Care at the Cornell University College of Veterinary Medicine, where he has been on the faculty since 2006. He was co-chair of the Reassessment Campaign on Veterinary Resuscitation (RECOVER) initiative, a collaborative project involving over 100 boarded veterinary specialists that produced the first evidence-based veterinary CPR guidelines. His current research interests include disorders of fibrinolysis and anti-fibrinolytic drug therapies. In addition, he has developed high-fidelity canine and feline robotic simulators for immersive simulation, which have been used for training in the US, Europe, South America and Japan, and opened the Tetlow and Roy Park Veterinary Innovation Lab, an immersive simulation center for veterinary training at Cornell in 2015. He is passionate about teaching and received the 2012 SCAVMA Teaching Award for Clinical Sciences, the 2013 State University of New York Chancellor's Award for Excellence in Teaching, and the 2013 Cornell University College of Veterinary Medicine Department of Clinical Sciences Innovative Teaching Award.

- Chap Pratt, DVM, DACVECC Wheat Ridge Animal Hospital

Dr. Chap Pratt was born in Elko, Nevada and grew up in Reno, Nevada where he earned his Bachelor's degree in Veterinary Science from the University of Nevada. He attended Colorado State University, attaining his Doctor of Veterinary Medicine degree in 2006 after which he completed a one year rotating internship in small animal medicine and surgery at Veterinary Specialty Hospital in San Diego. After four years of practicing emergency medicine at the Animal Emergency Center in Reno, NV, he was accepted into the residency-training program at University of Pennsylvania.

In 2014, Dr. Pratt completed his residency training in Emergency and Critical Care and became board-certified.

Joining us from our San Diego team at Veterinary Specialty Hospital, he was active in developing the Emergency and Critical Care program's advanced training, including residency, specialty internship and continuing education, clinical research, sustainable blood bank while targeting optimal patient care and prioritizing collaborative patient care with the team of specialists and family veterinarians.

Dr. Pratt's clinical and research interests include management of utility of advanced imaging in trauma, trauma, sepsis, and associated multi-organ dysfunction syndrome with a focus on resuscitation, fluid balance, extracorporeal therapies and ventilator management. His experience in emergency medicine has also allowed for development of research interests in toxicology, feline lower urinary tract disease and foreign body ingestions.

- Erik Fausak, MSLIS, CVT, RLAT

Erik has always had an interest in the role of animals and humanity since studying Anthropology at Beloit College, WI. In 1999, Erik attended Bel-Rea Institute of Animal Technology and worked at Alameda East Veterinary Hospital in Denver and Fifth Avenue Veterinary Specialists in New York City. His interest took him to graduate school at City University of New York, Hunter College, where his thesis work focused on langur phylogeny and neonatal coat color. Erik then attended library school at Pratt Institute.

Erik has been an active participant in the EBVMA and EBVM Network while teaching at Bel-Rea Institute of Animal Technology. Since then he has been an active proponent of incorporating evidence-based veterinary medicine in his curriculum and training his students to become research leads in evidence-based veterinary medicine. Currently his journal club has written two articles utilizing EBVM techniques.

Erik enjoys camping, hiking, biking, and boating with his wife, 3 year old son,William, and 2 dogs.