Evidence-Based Veterinary Medicine Learning: an open access tutorial for practitioners and students

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Abstract

EBVM Learning, an open access online tutorial, has been developed to support the teaching of evidence-based veterinary medicine (EBVM). This paper provides the project background and teaching examples. The authors request JEAHIL readers share this resource with colleagues who support evidence-based practices including veterinary medicine.

Key words: *open access; online tutorial; evidence-based veterinary medicine; computer-assisted instruction; access to information.*

Introduction

EBVM Learning (www.ebvmlearning.org) is an open access online tutorial teaching evidence-based veterinary medicine (EBVM). Launched in 2015 and updated in 2021, it is funded by RCVS Knowledge, which is the charity partner of the Royal College of Veterinary Surgeons (RCVS) in the UK. Their mission is to advance the quality of veterinary care for the benefit of animals, the public, and society (*Figure 1*).
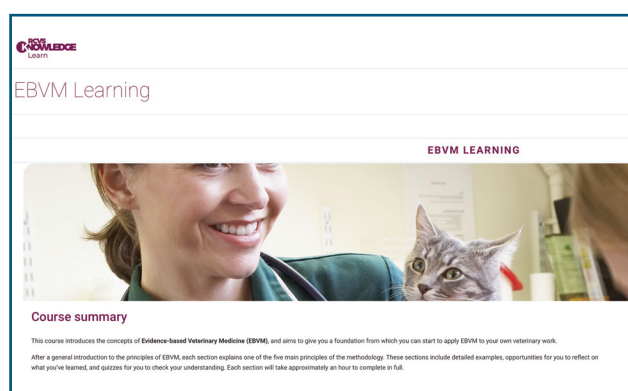

Fig. 1. *Course summary, EBVM Learning (https://ebvm-learning.org).*

Background

EBVM Learning introduces students and practitioners to the key concepts and methodologies of evidence-based veterinary medicine. It was developed by an international project team of academics, clinicians, researchers, veterinary experts and veterinary information specialists (librarians). In 2019, the project team membership was expanded, with more countries represented – there are members from Europe, North America, Africa and India. The project team now also includes veterinary nurses. This expanded team reviewed and updated the tutorial, and the new version was launched in 2021.

EBVM has adapted the methodologies used in evidence-based human medicine to the veterinary world, with some important variations in terms of the key sources of evidence recommended, and the way it is appraised and applied. Just as librarians have played an important role in creating resources such as the *Cochrane Handbook for Systematic Reviews of Interventions,* they also contributed to the creation of this resource. The tutorial has a section on acquiring evidence that was authored by the veterinary librarians on the

team, which covers the main sources of veterinary information to use to search for high level evidence for clinical decision making. It also offers tips and advice on searching bibliographic databases for veterinary evidence and on obtaining journal articles in full-text.

The project has always aimed to increase the awareness of, and skills in, EBVM in students and in veterinary practitioners. The veterinary community have adapted the methodologies developed for evidence-based human medicine to apply to animal medicine, and there is a drive to increase awareness of the benefits of such an approach in the veterinary profession. It requires some distinct approaches, partly because we are dealing with more than one species, but also because the body of published research literature is much smaller for veterinary medicine than human medicine, and so search strategies often need to be broader to increase recall of relevant evidence. There isn't a Cochrane equivalent for veterinary medicine, and in the UK there isn't a veterinary equivalent of the National Health Service (NHS). There are of course several groups working on EBVM, notably RCVS Knowledge, and the Centre for Evidence-based Medicine and there are some recent initiatives, such as the EBVM Manifesto (1).

A key part of increasing awareness in the profession, is increasing awareness in veterinary students of EBVM. The project team believed that teaching veterinary students about EVBM and giving them the skills for this would help the profession as a whole become more evidence-based. The aim is for students to become familiar with the principles and practice of EBVM during their studies, so that they see the value in being evidence-based practitioners when they graduate (2). The tutorial was designed for veterinarians in practice, as well as for students, so they can still use EBVM Learning as a resource when they are working in practice. This is, indeed, one of the ways it is being used (3). Following feedback from practitioners, however, the project team developed a 'slimmed-down' version of the tutorial, aimed specifically at veterinarians in practice. This is called "EBVM for Practitioners", and was launched in March 2022 at EBVMforPractitioners.org. As mentioned, the project team includes veterinary practitioners and veterinary nurses, and they provide regular feedback on this. This new tutorial provides practitioners with practical tips to help them become evidence-based practitioners.

Use in teaching

The tutorial is built around the five steps of EBVM, with each of the steps being a separate section in the tutorial. It draws on the methodology developed by Cochrane and others, and applies it to veterinary medicine. EBVM Learning is a UK funded resource, but its aim is to be one which has international value. Having an international project team helps this, as the team is conscious of things such as differences in terminology, and how best to overcome this. For example, in the UK, we have veterinary nurses, but other parts of the world may have veterinary technicians.

The tutorial was designed to allow veterinary educators to use it how best fits their teaching, their curricula and the needs of their students. The tutorial can be used as a whole, or sections can be embedded into courses and virtual learning environments. We will present brief examples of how it's being used where we, the authors, work. The tutorial is being used in both UK undergraduate and postgraduate teaching, and is being used in US veterinary school (professional school graduate) teaching. We are aware of its use in other countries (4), but are not including these in our examples.

At Bristol University, EBVM Learning is used in undergraduate teaching. EBVM was introduced as a spiral theme throughout the undergraduate veterinary curriculum, using this tutorial as a resource within a programme of lectures and practicals that takes students through the process of EBVM step-by-step. In Year 1 they learn how to construct a clinical question and get basic training in using the Web of Science database to find evidence to help answer a question. In Year 2 they learn how to acquire evidence using more complex searches on the Medline and CAB Abstracts databases, and are given case-studies to search on. In Year 3 they learn how to critically appraise a paper. In Year 4 they have an assignment to produce an evidence summary for their own clinical question using all the skills they have learned. In Year 5 when they are out on clinics treating animals they are asked to appraise the efficacy of interventions, and consider the evidence-base for their clinical decisions, weighing it up with professional knowledge within the team and the preferences of the animal owners.

At the University of Edinburgh, EBVM Learning forms the basis of a compulsory course on Evidence Based Veterinary Medicine in Clinical Practice, part of two MSc programmes. The students work through the

tutorial, spending a week on each section. There is input from the teaching team and weekly discussion board topics. The Academic Support Librarian for Veterinary Medicine is the tutor for the "Acquire" module (*Figure 2*), which covers how to find the evidence to help the students answer their clinical questions. The students use what they're learned to write a knowledge summary on a clinical question of their choice, and this forms part of the assessment for the course. Some of the students have gone on to publish their knowledge summaries, adding to the body of evidence.

At Texas A&M University, EBVM Learning is provided as a resource for the EBVM skills and knowledge that are integrated throughout the professional veterinary curriculum. Most importantly, there are focussed multi-week modules during the first three semesters of the professional programme. These modules were designed and are taught by a veterinary pharmacology professor (Dr. Virginia Fajt) and a librarian professor (Heather Moberly): when one designs and teaches, the other provides support. The pharmacologist introduces the concept of EBVM and appraising literature during the first semester. The librarian teaches the "Acquire" step during the second semester, including two hands-on computer sessions and two graded assignments. In the third semester, the pharmacologist reinforces the skills of "Ask" and "Appraise" and introduces the "Apply" steps.
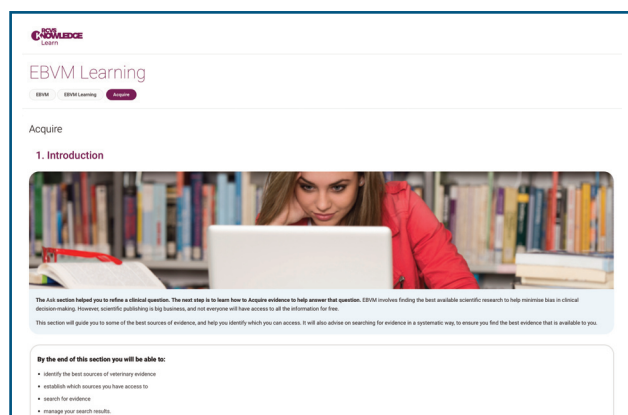

Fig. 2. *"Acquire" module, EBVM Learning (https://learn.rcvsknowledge.org/mod/book/view.php?id=48).*

Usage of EBVM Learning

There has been a steady increase in usage of EBVM Learning over the last few years. In 2019 and 2020 there were over 90,000 page views in each year, and this increased to over 270,000 in 2021. At the end of April 2022, there had been over 130,000 page views so far for this year suggesting that the updated tutorial is popular with users.

Conclusions

EBVM Learning is designed to increase awareness of EBVM in the veterinary profession, and the project team hopes that it would become a routine part of clinical veterinary work. Its use in teaching and the increasing number of users suggest that it is meeting this aim. The project team continue to welcome feedback on EBVM Learning, and use this to develop the resource. The authors would encourage librarians to highlight EBVM Learning to relevant students and educators.

EBVM Learning Project team

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