

# e-Epidemiology an interactive online course to teach the basic epidemiological concepts of diagnostic testing

Lucie Collineau<sup>1</sup>, Isabel Lechner<sup>2</sup>, Marcus Doherr<sup>2</sup>, Petra Muellner<sup>3</sup>, Uli Muellner<sup>3</sup>, Katharina Stärk<sup>1</sup>

<sup>1</sup>SAFOSO AG, Bern, Switzerland [luce.collineau@safoso.ch](mailto:luce.collineau@safoso.ch); <sup>2</sup>Veterinary Public Health Institute, Liebefeld, Switzerland; <sup>3</sup>Epi-interactive, Wellington, New Zealand

## Background

Several topics in [basic epidemiology courses](#) require an understanding of the concepts, calculations and interpretation of diagnostic testing.

Until now, the students of the Vetsuisse Faculty of Bern, Switzerland, were taught this in lectures and through applied exercises using pocket calculators, spreadsheet-based applications or WinEpiscope.

To also offer students a [self-guided learning experience](#) which allows time for reflection, the Vetsuisse Teaching Committee proposed to develop an e-learning tool; this was called e-Epidemiology.

## Method

As a first step a story board was developed [translating face-to-face teaching material](#) currently used by the Vetsuisse Faculty into an online learning environment.

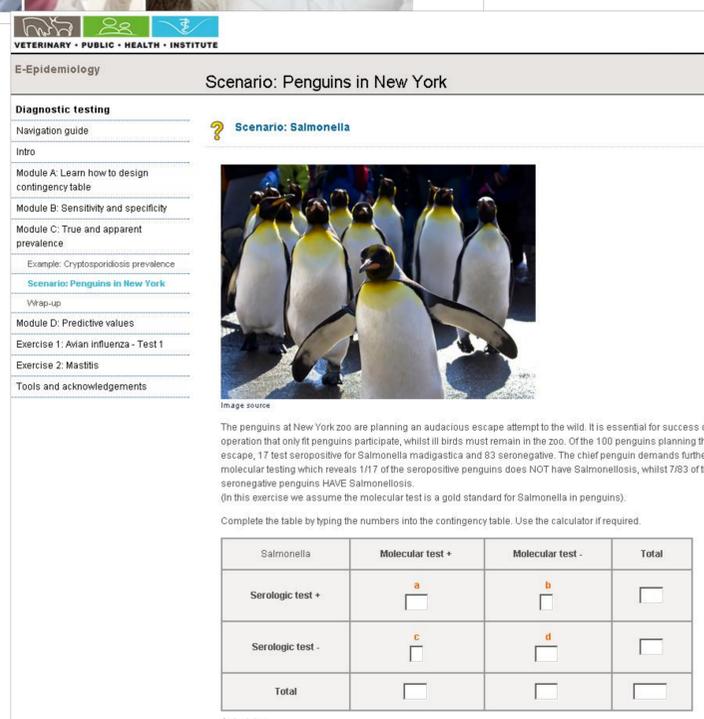
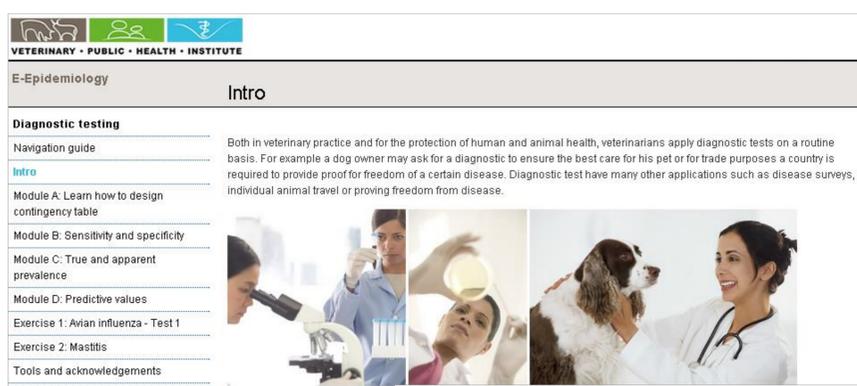
The story board was then programmed using the open source authoring tool called eXe (<http://exelearning.org/>). Initially an English version was developed, but the content was later [translated](#) into German and French.

The tool was [evaluated](#) both internally and during a PhD level course organised by the University of Bern, Switzerland.

## Content

e-Epidemiology is organized in four modules covering the following [learning objectives](#):

- to design and fill in a [contingency table](#),
- to define and calculate [sensitivity and specificity](#) of a diagnostic test,
- to define and calculate the [predictive values](#) of a diagnostic test,
- to understand the difference between [apparent and true prevalence](#) and be able to calculate both from a 2x2 table,
- to [interpret diagnostic test results](#) in an applied context.

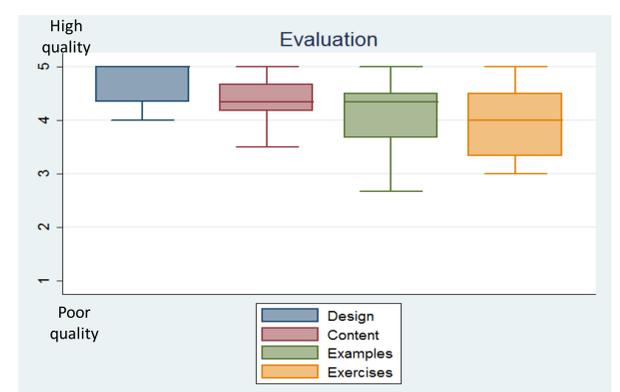


## Main strengths

- ✓ User friendly
- ✓ Available in English, French and German
- ✓ Online free access
- ✓ Completed in 45 minutes

URL:

## Evaluation



Evaluation of the e-Epidemiology tool during the PhD course (n=12 students)

The e-Epidemiology project is a collaborative effort by several ECVPH diplomates and residents to provide an improved and free learning environment for students to acquire knowledge on key epidemiological concepts. We strongly encourage its wide use by ECVPH residents and diplomats.