

RANEMA: a distance learning tool for basic epidemiology

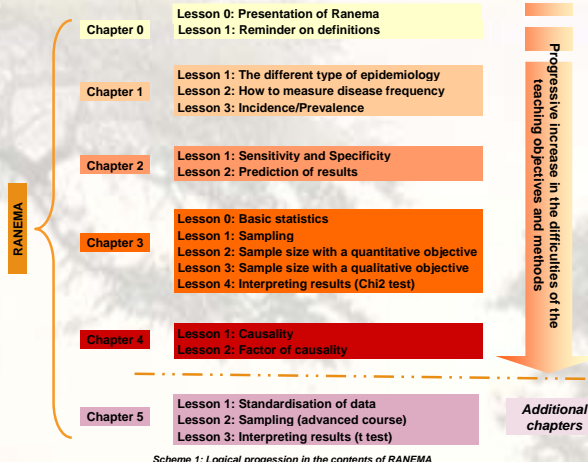
Goutard F. ¹, Thonnat J. ², Toma B. ³, Dufour B. ³, Queste J. ⁴, Roger F. ¹

¹CIRAD, EMTV Department, Epidemiology Unit, France; ²EISMV, Dakar, Senegal; ³ENVA, France; ⁴CIRAD, DIC, France.



Introduction

Since 2004, CIRAD (Centre de coopération internationale en recherche agronomique pour le développement) has worked in partnership with the Ecole Nationale Vétérinaire de Maisons-Alfort (ENVA) to develop a computer assisted learning (CAL) course in basic epidemiology for animal diseases (namely RANEMA). This CAL tool refers to drill-and-practice, tutorial, or simulation activities designed to stimulate and motivate students from developing countries, and offered either alone or as supplements to traditional, teacher-directed instruction. The current method is based largely on a veterinary epidemiology handbook (Toma B. et al. Applied Veterinary Epidemiology and the Control of Disease in Population. Maisons-Alfort, AEEMA. 1999), which was adapted to suit the CAL sessions.



Results

In 2005 and 2006, during several training workshops in AI epidemicsurveillance organised by the FAO for Southeast, East and South Asia, Africa, East Europe and Middle East, RANEMA was used as a supplement to increase the impact of the training. This was a new interactive and recreational way to acquire bases in epidemiology. During the course of the workshops, training needs to improve skills and capabilities of the field or laboratory staff in epidemiology and surveillance were clearly expressed and many participants asked to use the tutorial to organise training in epidemiology once back in their country.



Figure 3: Complete set of training material are available in a CD-Rom for trainers to be able to organise training in epidemiology

Conclusion

New modules are under development – e.g. RANEMA-Flu for applying specific recommendations on AI surveillance and control, basic statistics, risk analysis, use of software for epidemiologists, etc. – and some of them could be used during the new sessions planned in Indonesia or South Asia. Evaluation of the efficacy and impact of this trainers' training should be undertaken one year after this first session by means of surveys in involved countries and/or by a regional meeting.



Materials and Methods

The CAL sessions were programmed in E-learning Maker 2.5.0 (produced by E-doceo) a development application for creating interactive software. The interface was originally designed in consultation with a graphic designer and epidemiologist.

The story board of RANEMA is based on three important pedagogical rules:

- If you want acquisition of knowledge, the contents of the training tool must be in adequacy with the needs and the personal background of the trainees (objective, volume, level, work activities...)
- If you want the trainees to take the tool in its full meaning, it must captivate him, exploit his affects, be held as a movie of which he is the hero.
- The trainee has to establish interaction between problems asked and his own knowledge, and then exploit acquired competences. It is why each activities should answer specific training objectives.

The contents of RANEMA are structured around this scenario: the trainee is a veterinarian working for the Veterinary Service of a virtual country named RANEMA. To carry out his professional duties, he must refresh his knowledge in epidemiology through a given set of activities. The course is divided into chapters that follow the logical framework of the book (Scheme 1). Several activities based on real life situations are proposed to the trainees:

- drag and drop exercises (in which the student drags the correct answer into the correct box or into a gap in the text)
- calculations that must be performed with the answer entered at the appropriate place (example 1);

RANEMA can be used as a CAL tool to reduce traditional lecture time and leave time to focus on tutorials concerning problem areas and more in-depth discussions of specific topics or as a distance-learning training support in basic epidemiology.

Training proposed at the CIRAD-Emvt:

CIRAD contributes to development through research and trials, training, dissemination of information, innovation and appraisals. Its expertise spans the life sciences, human sciences and engineering sciences and their application to agriculture and food, natural resource management and society. Within Cirad the Emvt department (Animal Production and Veterinary Medicine) offers a large set of training sessions aimed at animal production professionals in tropical countries:

- Short course in epidemiosurveillance, SIG, database management, wildlife and development, etc.
- Post-graduated courses in tropical diseases
- Master in Animal Production in the tropics, Master in Epidemiosurveillance



Pictures 1 and 2: Training of trainers in Bangkok in July 2006 for 8 countries of South East Asia organised by the OIE

Although RANEMA is a stand-alone tool, the use of the complete set of training material (CD + book + complementary exercises + pedagogic guidelines) has been maximised by the organisation of a specific training of trainers. Such training was organised by the OIE Regional Representative for Asia and the Pacific in July 2006 for eight countries of Southeast Asia. Participants with sufficient knowledge in epidemiology were identified and targeted to be trainers in their country after having received a specific training of 5 days on how to use this pedagogic teaching-case and how to conduct a clearly determined training sequence.



Figure 4: Localisation where training using RANEMA have been already implemented in 2005 and 2006



References

Benet JJ, Dufour B, Thonnat J, Weber L, Roger F, Toma B. 2005. Surveys concerning the needs for and evaluation of distance learning in veterinary epidemiology. *J Vet Med Educ*.32(1):68-71

Bruce J.C., Bond T.S., Jones M.E. 2002. Teaching Epidemiology and Statistics by distance learning. *Statist. Med.* 21: 1009-1020

