



Animal Health Matters.
For Safe Food Solutions.



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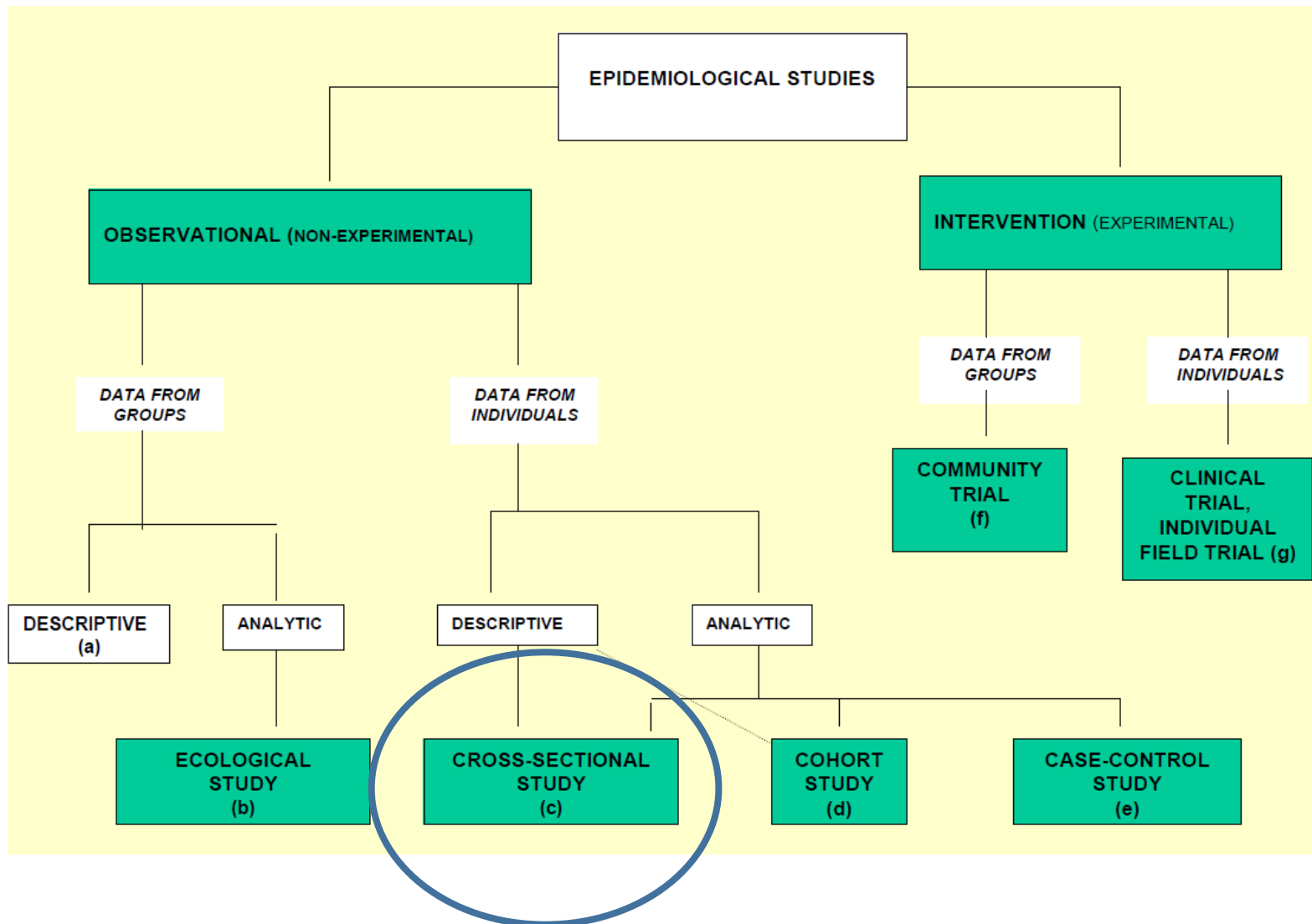
Federal Department of Economic Affairs,
Education and Research EAER

State Secretariat for Economic Affairs SECO

Introduction to cross sectional study



Marco De Nardi



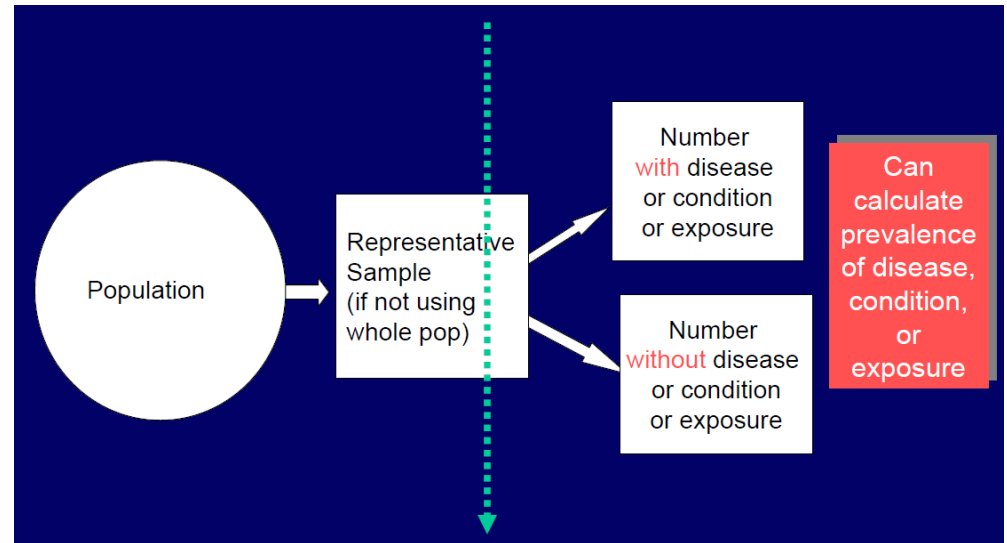
Adapted from: LSHTM, UK. Epidemiology MSc

Cross sectional study

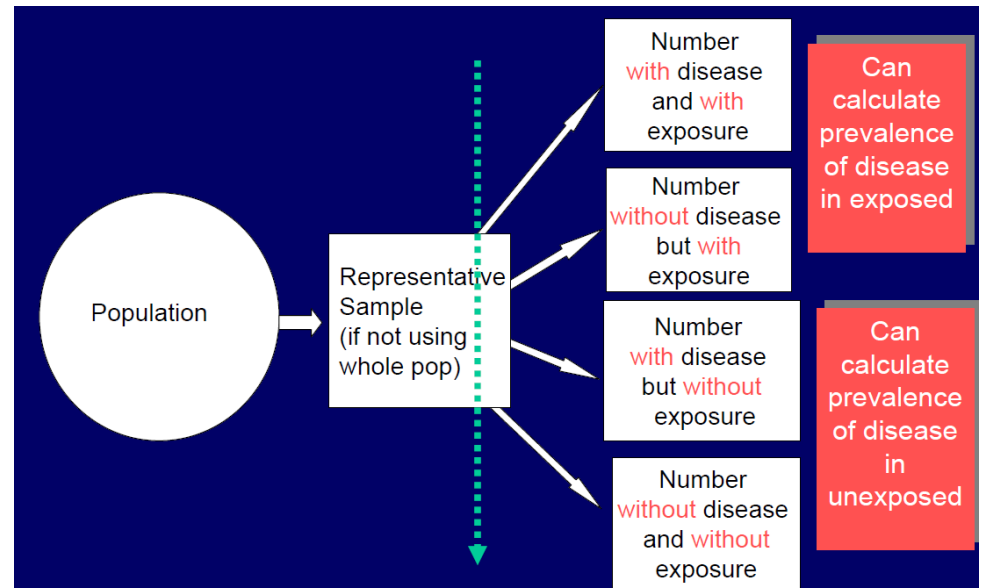
- One of the most frequently chosen study designs in veterinary epidemiology
- Design is straightforward: a **sample** of individuals is selected from a previously defined (study) population and investigated (sampled) at a **particular point in time** to obtain simultaneously information on both the exposure(s) and outcome(s) of interest.
- The outcome frequency measure is the **Prevalence**



Cross sectional study descriptive



Cross sectional study analytic



Adapted from: LSHTM, UK. Epidemiology MSc

Cross sectional study-analytical


Ghebremariam *et al.* *BMC Veterinary Research* (2016) 12:80
DOI 10.1186/s12917-016-0705-9

BMC Veterinary Research

RESEARCH ARTICLE Open Access

Prevalence and risk factors of bovine tuberculosis in dairy cattle in Eritrea

Michael K. Ghebremariam^{1,2*}, V. P. M. G Rutten^{1,3}, J. C. M. Vernooij⁴, K. Uqbazghi⁵, T. Tesfaalem⁶, T. Butsuamlak⁷, A. M. Idris⁸, M. Nielen⁴ and A. L. Michel³

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Results:

The BTB prevalences at animal and herd levels were: 21.5 % and 40.9 % in Maekel, 7.3 % and 10 % in Debub, and 0.2 % and 1.6 % in the Anseba region, respectively.

In adult dairy cattle the probability of positive reactivity in the SICTT test was highest in pregnant animals as compared to the other categories.

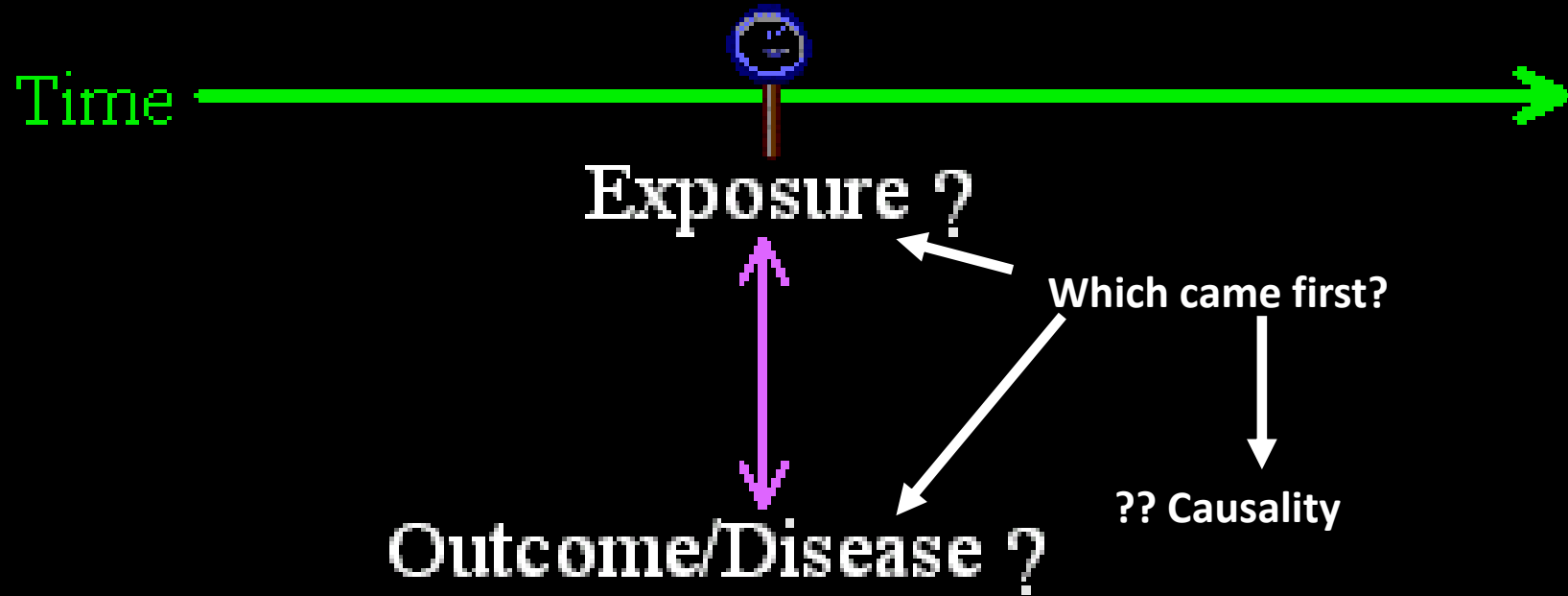


Cross sectional study-analytical - limitation

- Measurement of exposure of interest and outcome of interest is carried out at the same time (e.g. herd structure and FMD)
- There is **no in-built directionality** as both exposure and outcome are present in the study subject for quite some time



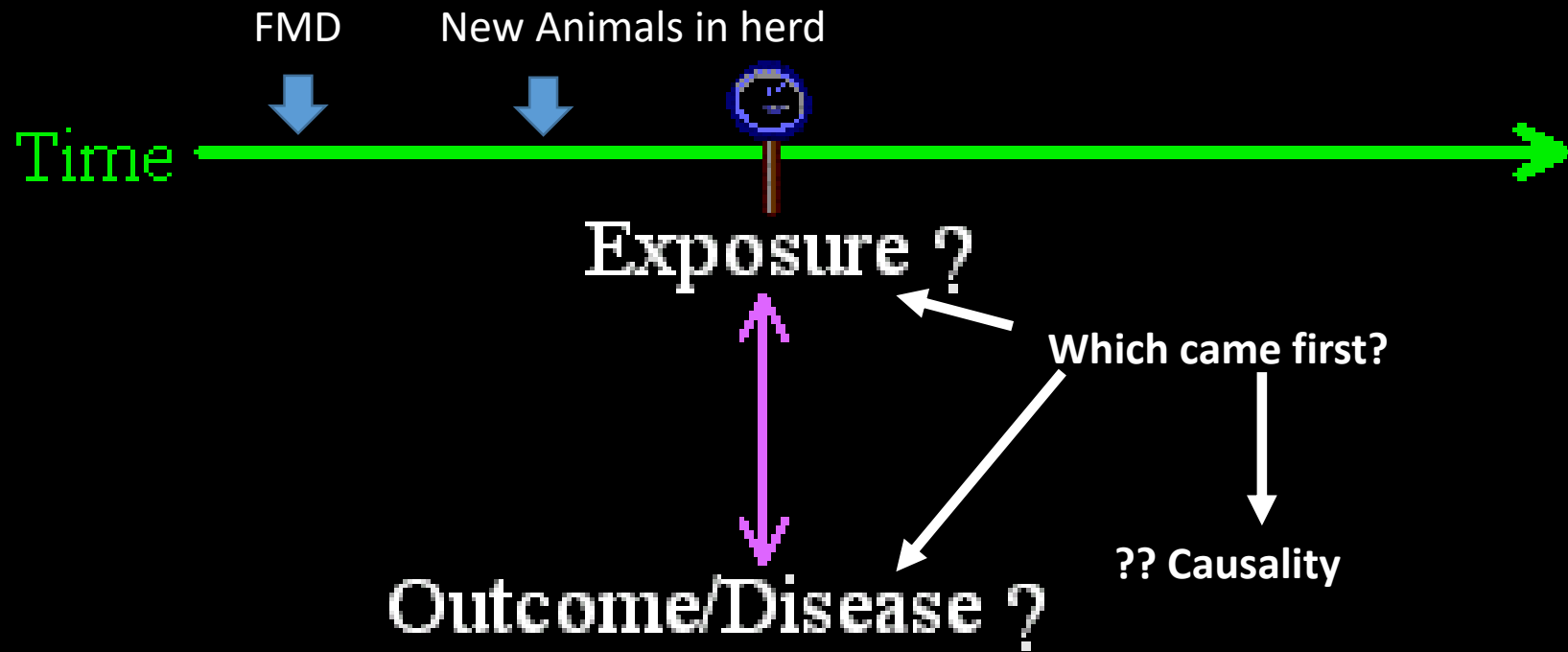
Non- Directionality



Cross-sectional studies



Non- Directionality



Cross-sectional studies



How to implement a cross sectional Study?

Questions to ask

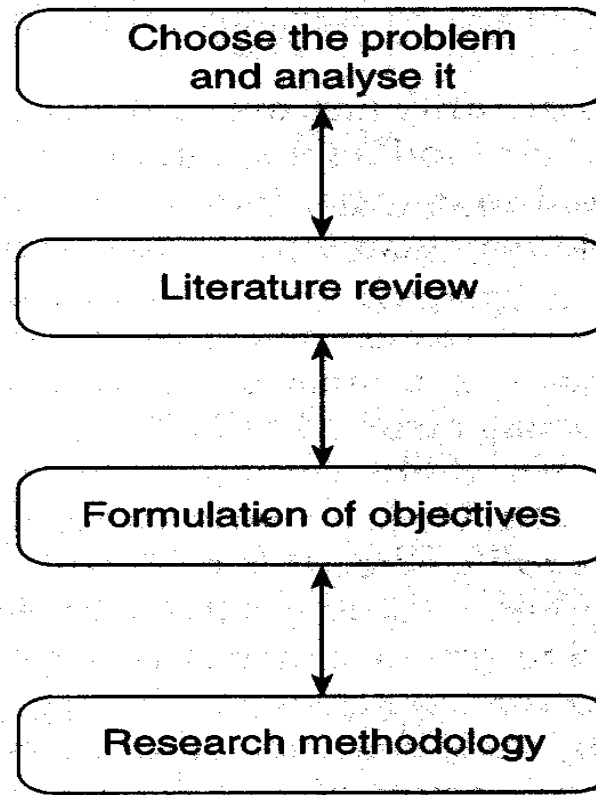
What is the problem and why should it be studied?

What information is already available?

What do we hope to achieve?

What data do we need to meet our objectives?
How will this be collected?

Steps to take



Important elements/step

- Problem identification
- Prioritizing problem
- Problem analysis

- Literature and other available information

- General and specific objectives
- Hypothesis

- Sampling
- Variables
- Data collection techniques
- Plan for data collection, processing, and analysis
- Ethics, pilot study

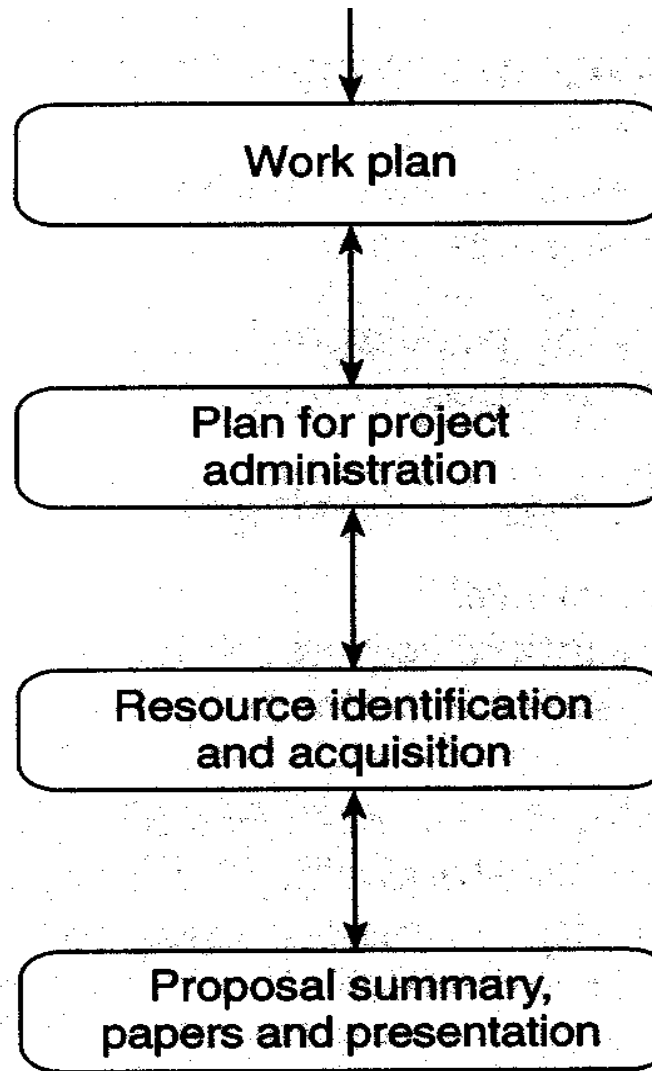


Who will do what and when?

How will the study be administered?

What resources do we need?

How will we use the results?



- Personnel-training
- Timetable

- Administration and monitoring

- Money
- Personnel
- Materials, equipment

Fig. 13.5 Steps in the design of a cross-sectional study. (Modified from Varkevisser *et al.*²³)



To determine sample size

- Utilize sample size calculator:
 - <http://www.openepi.com/SampleSize/SSPropor.htm>
 - <http://epitools.ausvet.com.au/content.php?page=SampleSize>





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Thanks