

Summary:

Cross – Sectional Study Scenario

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NEW ZEALAND
FOREIGN AFFAIRS & TRADE
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Schedule

Workshop Contents

- **W1**: Cross-sectional
- **W2**: Questionnaire design
- **W3**: Case-control
- **W4**: Scenario 1: case-control
- **W5**: Scenario 2: X-sectional

Facilitators

- Cord Heuer, Arata Hidano
- Naomi Cogger
- Cord Heuer, Ashish Sutar
- Cord Heuer, Art Subharat
- **Cord Heuer, Art Subharat**

Date

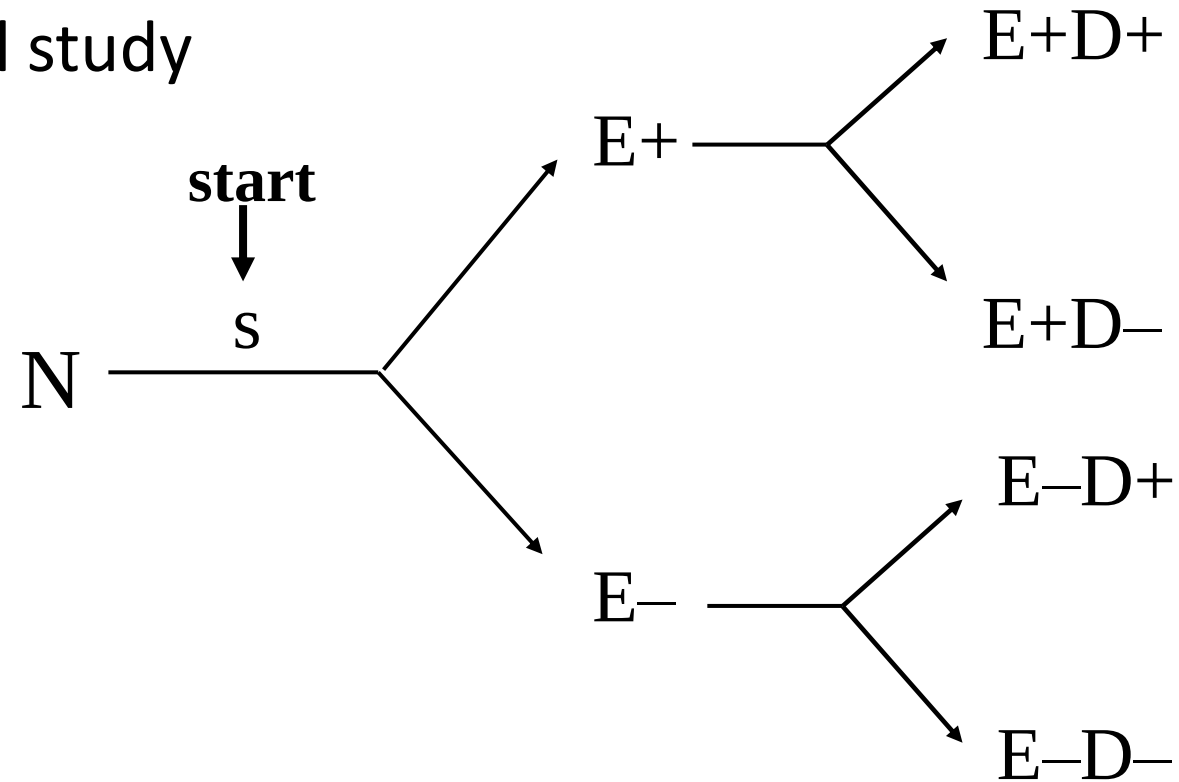
- 11 Nov'21
- 18 Nov'21
- **25 Nov'21**
- 19 Sep'21
- 03 Dec'21

Objectives and Expected Outcomes

- Objective
 - Enable participants to design and conduct cross-sectional studies
- Expected outcomes
 - Participants understand the merits and principle of the cs-design
 - Participants are aware of target populations and sampling frames
 - Participants understand single- and multi-level selection of participants
 - Participants are aware of common types of bias (selection, classification)
 - Participants are able to estimate the study size

Cross-sectional design ('survey')

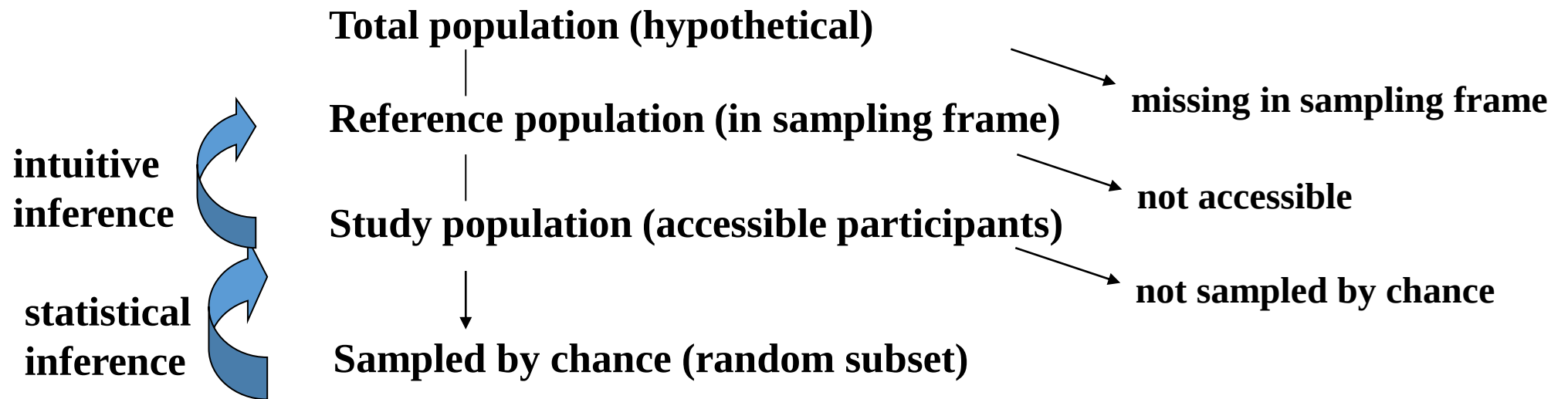
- Cross-sectional study



Q: What is the status?

Selection of study participants

- Random selection of sampling units from a **sampling frame**.
 - sampling independent of exposure and disease
 - sample $\approx$ population



Key features of cross-sectional studies

- To quantify the occurrence of 'disease' in the population
 - When 'disease' leaves a lasting response (e.g. antibody) and
 - When this response is reasonably frequent (e.g. >5%)
- To quantify the frequency of exposure in a population
- To evaluate associations between exposure and 'disease'
- Often: multi-level selection of subjects: villages → farms → animals
- *Not an efficient design for rare or short disease*
- *Not suitable to evaluate causal hypotheses*

Scenario 2: X-sectional

African Swine fever (ASF)

- Design a cross-sectional investigation to
 - quantify the extent of ASF
 - quantify and evaluate potential exposure factors
 - explore likely consequences in affected farming households and animals
- Use a questionnaire and (optionally) serology.



A. Pigs are visibly weak with fever and huddle to stay warm.

B-E. Bloody diarrhoea and distinct hyperaemic (red) areas on skin of neck, chest and extremities.

F. Cyanosis (bluing) at the tips of ears.

G-I. Necrotic lesions on skin of the abdomen, neck and ears.

Scenario

- 800,000 pigs in backyard (90%) and commercial pig farms (10%)
- Population of wild pigs
- Few cases in last 3 years, but 10 outbreaks reported over the past 3 months
- Concerns:
 - Many more unreported outbreaks may have occurred
 - Want to know the extent of the outbreak and driving factors
 - Like to know how it was/is entering the country
 - Want to understand the economic impact
 - Can use serology but ASF causes high mortality

Task: plan a cross-sectional study

- Define the target population(s);
- Develop a case-definition at animal and at household level;
- Describe the study plan:
 - what type of pig holdings and animals should be sampled and where?
 - How are pig households and/or piggeries accessed?
 - Which risk factors should be investigated (design a short questionnaire?)
 - How do you evaluate the production loss?