



FORTE EpiDem Network Meeting, Ystad Saltsjöbad, Skåne, 23 - 24 October 2019

Methodological issues in register-based research

Theme: Natural experiments and other quasi-experimental designs

Organizers: Jonas Björk, Anita Berglund, Anders Ahlbom, Kirk Scott

Wednesday 23 October 2019

12:00 Lunch

13:00 Introduction to the FORTE network. Outcome of previous years and continuation.

Aim of the meeting. Procedures. Expected outcomes. Presentation of participants.

13:15 Natural experiments and other quasi-experimental designs – an introduction to the theme
(Jonas Björk)

When water contamination is good for us: The case of Kallinge (Kirk Scott)

**Testing an epigenetic hypothesis using harvest variation as exposure: A replication study
(Denny Vågerö)**

14:45 Coffee break

15:15 Difference-in-differences method in evaluation of breast cancer screening (Elsebeth Lynge)
**Semi-natural experiments on health effects of radiofrequency exposure from base stations
(Maria Feychting)**

**Exploiting variation in settlement policy: The all-of-Sweden strategy as an empirical tool
(Siddartha Aradhya)**

16:45 Break

17:00 Group discussions - Introduction (Anita Berglund)

17:30 Relaxation

19:30 Dinner

Thursday 24 October 2019

- 09:00** Group discussions (continued)
- 10:00** Coffee break
- 11:00** Presentations and conclusions. Future network activities.
- 12:30** Lunch
- 13:30** - 15:00. Concluding visit to the spa (optional)

FORTE EpiDem Network Meeting – General information

Aim

The overall aim of the FORTE EpiDem Network (<https://www.lupop.lu.se/epidem>) is to strengthening the position of Swedish register-based research, partly through increased knowledge and shared experiences regarding adequate scientific approaches and partly by forming new long-term partnerships between significant research groups in Epidemiology and Demography, both at junior and senior levels.

Format

This is by no means a traditional conference where you passively listen to lectures and presentations. Instead, the format will be informal introductions followed by lively discussions, both in plenum and in smaller groups. Although only a few have been asked to prepare presentations, active preparation and participation is expected from everyone and is crucial for a successful and rewarding meeting.

Expected outcome

FORTE requires that results of the network meetings are reported. New insights, methodological ideas, clarification of concepts etc. across the disciplines that merit further work, grant applications and publications as short communications or original papers are encouraged.

Participation

The network funding will cover accommodation but not travelling costs (except for externally invited speakers). Please notify Anna E Larsson (anna_e.larsson@med.lu.se) about your participation by e-mail no later than 23 August 2019. Inform Anna about any special dietary requests that you might have. Please also answer the web survey regarding your participation already now at www.lupop.lu.se/epidem_query

Travelling to Ystad Saltsjöbad

Please see <http://www.yzb.se/om-oss/vagbeskrivning/> or <http://www.yzb.se/om-oss/vagbeskrivning/?lang=en> for information on how to get to the meeting.

Theme: Natural experiments and other quasi-experimental designs

This year, the FORTE EpiDem Network devotes its meeting to natural experiments and other quasi-experimental study designs. We will discuss their usefulness and critically assess their added value in comparison to more traditional study designs. A key question is whether we can be more clever in identifying natural experiments and other quasi-experimental situations as they occur in the population. Another key question will be to scrutinize the assumptions that may jeopardize the validity of quasi-experimental studies if they are not met.

Most studies conducted within Demography and Epidemiology are observational. While such study designs may sometimes provide useful and policy relevant results, they often suffer from weaknesses that render causal inference problematic. *Quasi-experimental* is a commonly used term for as a category of study designs in between experimental and observational studies. It first appeared in the literature in the 1990s but the underlying concept has a much longer history and use in science. The definition of a quasi-experimental study varies across disciplines but what is commonly implied is a study that resemble a randomized control trial or field trial but lacks the researcher control or random assignment characteristic of a true experiment. A key concept is exogenous variation in the exposure assignment, meaning that there is a transparent source of variation in exposure outside the system of causal relationships under investigation.

There is no definite list over quasi-experimental study designs, but they all make claim of causal effect estimation despite lack of researcher control over the process assigning the exposure. Natural experiments is a class of quasi-experimental study designs where the exposure varies through some naturally occurring event claimed to be exogenous to the outcome of interest. A classic example is John Snow's seminal studies on the cholera outbreaks in London in the 1850s, where exposure to polluted drinking water was distributed in a seemingly random manner in some parts of the city. More recent examples of natural experiments include studies of the radioactive downfall in northern Sweden after the Chernobyl accident, studies on the policy in Sweden during 1985–1994 that settled incoming refugees in a seemingly random fashion in neighborhoods throughout the country, and studies on the accidental contamination of drinking water with perflourinated compounds that went on for decades in Kallinge in the municipality of Ronneby in southeast of Sweden.