

PART 1 – NORWAY

Day 1 –Monday September 10th

	Title	Scientific content	Lecturer(s)
10.15-12	Welcome and introduction to register-based research	10.15-10.30 Introduction to course (Tone) 10.30-10.40 Introduction to the Nordic register system (Lau) 10.40-11.00 Birth registry (Øystein) 11.00-11.20 Cause of death registry (Øystein) 11.20-11.40 Hospitalization/patient registry (Tone) 11.40-12.00 Socioeconomic/demographic/census/populationregistries (Tone/SSB) Strengths and limitations What is in common between countries? What is different between countries?	Lau, Tone, Øystein
12.00-12.45	Lunch		
12.45-13.45	Introduction to register-based research continues	12.45-13.05 Prescription registry (Lau) 13.05-13.25 Cancer registry (Lau) 13.25-13.45 Round up and practical considerations when applying for data (Tone)	Lau, Tone, Øystein
13.45-17.00	Group exercises and discussion	Get problem and try to solve it using registries	Lau, Tone, Øystein

Day 2–Tuesday September 11th

	Title	Scientific content	Lecturer(s)
9.15-10.15	Study design I	Cross-sectional, cohort, case-cohort, randomized trials where outcome is collected from registers.	Haakon Meyer
10.15-12.00	Group exercises and discussion	Discuss study designs to answer research question from day 1	Lau, Tone, Øystein
12.00-12.45	Lunch		
12.45-13.30	Study design I	Calculation of person time at risk, prevalence, and simple rates (mortality rates, birth rates) on register data	Jannicke Igland
13.45-15.00	Individual exercises	Exercise - calculation of person time, standardized rates	Lau, Tone, Øystein
15.15-17.00	Preparation for tomorrow	Read selected papers: - Brøndum-Jacobsen (2013): Skin cancer as a marker of sun exposure associates with myocardial infarction, hip fracture and death from any cause - Marder (2013): Relationship of Mediterranean Diet and Caloric Intake to Phenocconversion in Huntington Disease - Andersen (2016): Association Between Tracheal Intubation During Pediatric In-Hospital Cardiac Arrest and Survival	

Day 3–Wednesday September 12th

	Title	Scientific content	Lecturer(s)
9.15-10.00	Study design II	Typical systematic errors that can occur when using register based data (for example left truncation and «immortal time bias»)	Tone
10.15-11.00	Group exercises and discussion	Exercise – discuss paper titled Skin cancer as a marker of sun exposure associates with myocardial infarction, hip fracture and death from any cause	Tone
11.15-12.00	Study design II	Introducing information bias, selection bias, and confounding in register-based studies	Lau
12.00-12.45	Lunch		
12.45-13.30	Study design II continues	Significance vs. relevance. Multiple testing/p-hacking/fishing.	Øystein
13.45-14.30	Individual exercises	Presented with several problems, identify bias based on two papers: Relationship of Mediterranean Diet and Caloric Intake to Phenoconversion in Huntington Disease and Association Between Tracheal Intubation During Pediatric In-Hospital Cardiac Arrest and Survival	Lau, Tone, Øystein
14.45-15.30	Group exercises and discussion	Discuss answers from individual exercises within groups and between groups.	Lau, Tone, Øystein
15.45-17.00	Preparation for tomorrow	Read webpages on data management (https://snd.gu.se/en/data-management/data-management-resources)	

Day 4- Thursday September 13th

	Title	Scientific content	Lecturer(s)
9.15-10.00	Data management I	Working with large data “housekeeping” and documentation.	Siri Håberg
10.15-11.00	Data management I	Defining exposures, outcomes and auxiliary variables in register data (with examples from specific registers).	Siri Håberg
11.15-12.00	Computer exercises and discussion	Exercises in R, STATA and SAS	Lau, Tone, Øystein
12.00-12.45	Lunch		
12.45-13.30	Data management I continues	Error search; Variables of poor quality. Individuals with excess missing data. Variables with contradictory information, duplicates. Missing ID number. Impossible values etc.	Øystein
13.45-15.30	Computer exercises and discussion	Exercises in R, STATA and SAS	Lau, Tone, Øystein
15.45-17.00	Preparation for tomorrow	Read paper for tomorrow: Ludvigsson (2015): Ethical aspects of registry-based research in the Nordic countries	

Day 5 - Friday September 14th

	Title	Scientific content	Lecturer(s)
9.15-10.00	Research integrity in health registry research	The principles forming the basis of the laws that govern health registry research	Heidi Beate Bentzen
10.15-11.00	Laws and regulations	General legal considerations – True for all countries	Trine Anniken Larsen
11.15-12.00	Group exercises with discussion	Exercise on how to access register data in the Nordic countries. Work in groups first. Discuss after.	Lau, Tone, Trine
12.00-12.45	Lunch		
12.45-13.30	Laws and regulations	Country specific considerations	Trine Anniken Larsen
13.45-14.30	Individual exercises	Exercise on how to combine register data from more Nordic countries to answer research questions from day 1	Lau, Tone
14.45-16.00	Group exercises with discussion	Compare projects within groups. Discuss between groups.	Tone