

**Three or more positions for PHD STUDENTS and/or POSTDOCTORAL RESEARCHERS in epidemiology and register-based research at Aarhus University (Denmark)**

Several positions for PhD students and postdoctoral researchers with a background in **epidemiology, biostatistics, public health, data science, medicine, health sciences, demography, or a related quantitative field** will be available in the next few months at the National Centre for Register-based Research (NCR; [www.ncrr.au.dk](http://www.ncrr.au.dk)) at Aarhus University. The expected starting date is flexible between October 2021 and March 2022 (negotiable).

We are seeking talented and highly motivated researchers to work on research related to the epidemiology of mental disorders and novel ways to estimate health measurement. The positions are funded by various external grants and the main themes of each project are described briefly below. However, the topics are flexible and the candidates could develop their own research interests within the described lines of research. The research could be related to methods development or more focused on mental health, or the projects could be focused on specific mental disorders of interest, for example.

The candidates will work in close collaboration with Dr. Oleguer Plana-Ripoll, Prof. John McGrath, Prof. Preben Bo Mortensen, Prof. Merete Nordentoft, Prof. Harvey Whiteford, Dr. Julie W. Dreier and other senior staff from NCR as well as other institutions. Additionally, candidates will have the opportunity for research stays in other institutions in Denmark or abroad. PhD students and postdoctoral researchers in Denmark are remunerated according to the relevant basic salary scale of the collective agreement depending on their seniority level. For reference, the salary for PhD students and postdoctoral researchers with the lowest level of seniority (including a pension contribution of 17.1 per cent) are approximately 32,048 DKK (4,308 EUR) and 40,207 DKK (5,405 EUR) per month, respectively.

We encourage potential candidates to contact Oleguer Plana-Ripoll ([opr@econ.au.dk](mailto:opr@econ.au.dk)) before the positions are officially advertised (expected during the summer of 2021). PhD positions might not be advertised if suitable candidates are found during this informal call.

**THEME 1: Excess comorbidity and mortality in mental disorders: understanding the role of socio-economic status**

*A fully-funded PhD position is available for this project*

The main aim of this project is to use population-based registers from the entire Danish population to quantify the contribution of socio-economic status (SES) on the excessive comorbidity and mortality observed in those who suffer from mental disorders. By using information on SES at different levels (individual, family, and neighbourhood), and epidemiological methods related to spatial analysis, mediation analysis and causal inference, this project aims to provide a comprehensive study of the complex and bidirectional links between mental disorders and SES in regards to excess comorbidity and mortality.

**THEME 2: New methods to examine excess mortality among those with mental disorders**

*A fully-funded PhD or postdoc position is available for this project*

The main aim of this project is to use population-based registers from the entire Danish population to investigate in detail the association between mental disorders and mortality.

Although there is robust evidence demonstrating that those with mental disorders have premature mortality, several topics could be covered. Some examples include (i) to investigate mortality associated with childhood mental disorders; (ii) to describe variation in life expectancy for those with mental disorders (apply epidemiological and demographical tools related to the estimation of life expectancy to describe life-span inequality among those with mental disorders, and risk factors associated with this variation); or (iii) investigate potential biases when using only one underlying cause of death in the estimation of cause-specific mortality. This theme could fit projects with a more methodological perspective as well as projects with more focus on mental health.

### **THEME 3: Linkage of surveys and registers for a better understanding of mental health**

*A fully-funded PhD or postdoc position is available for this project*

The main aim of this project is to use population-representative surveys to enrich the information available through registers from the entire Danish population. Through quantitative bias analysis techniques, this project aims to quantify potential biases in psychiatric register-based epidemiology by including information which is typically not included in national registers (e.g. identification of mild cases of mental disorders and information of lifestyle factors such as smoking, alcohol consumption, diet, etc.). Additionally, surveys include a widely used measure of quality of life – the Short Form 12 (SF12) – that can be used to describe the quality of life in those with different types of mental disorders. This theme could fit projects with a more methodological perspective as well as projects with more focus on mental health

### **THEME 4: Methods related to health metrics to estimate disease burden**

*A fully-funded PhD or postdoc position is available for this project*

Danish registers and surveys provide a remarkable opportunity to estimate and/or improve health metrics related to the burden of disease, e.g. years of life lost (YLL), years lived with disability (YLD), disability-adjusted life years (DALY). The main aim of this project is to provide more accurate health metrics, for example by examining assumptions related to YLDs and disability weights (comorbidity adjustment), the choice of life tables or the re-distribution of causes of death to estimate YLLs.

### **THEME 5: To investigate the association between mental disorders and cancer**

*This project is not funded – we would work with candidates to apply for a PhD/postdoc grant*

Patients with mental disorders are at higher risk of dying of cancer compared to age and sex-matched people in the general population. However, analyses of cancer incidence have revealed contradicting results, with some studies showing no increase in incidence and others a modestly increased incidence in overall cancer. In this project, we aim to investigate in detail the association between specific mental disorders and subsequent incidence of specific cancer types and cancer mortality through population-based registers from the entire Danish population. The overarching aim of this study would be to identify possibilities for better prevention, detection and treatment of cancer for people with mental disorders and thereby reduce morbidity and mortality.