Data Studio

1:30–3:00pm, Wednesday, 15 April 2020
Videoconference: https://stanford.zoom.us/j/231930319

Investigator: **Alexander MacInnis** MS (2017) Epidemiology, Stanford
Investigator: **Lorene Nelson** Associate Professor, Epidemiology and Population Health

Title: **Cohort Case Prevalence Estimation Using Time-to-Event Analysis**

Summary:

Accurate estimates of disease incidence over time are essential for etiology. We can estimate incidence directly from available data, but in some cases, researchers suspect the data may be inaccurate. For example, in the past, we may have undercounted cases. Specifically, in the case of autism, there is a widely published belief that increases in measured prevalence represent improved case identification and broadening diagnostic criteria rather than true prevalence increases. For diseases such as autism with onset in early childhood, birth cohort prevalence serves as incidence.

We developed a novel method, Time-to-Event Prevalence Estimation (TTEPE), that estimates trends in prevalence and the effect of diagnostic factors from incidence diagnosis data by age, based on well-known survival analysis techniques. The hazard function in survival analysis terms is called diagnostic pressure, which results directly from the set of diagnostic factors. We also consider the effect of changes in diagnostic criteria, which may alter the effective prevalence when each change takes effect. Parameter estimation uses established Python SciPy non-linear optimization software.

Questions:

We reviewed an early version of this method during the Data Studio Workshop in March 2018. We have refined the method since that time. The new version states all assumptions and shows validation via simulation models. Furthermore, we will submit a manuscript about this method to a journal for publication.

1. Is the analytical method entirely correct?
2. Are the stated assumptions sufficient and clear?
3. Are there any ways in which the model or estimation process might be incorrect?
4. Did we miss anything?
5. Which journals should we consider?

Zoom Meeting Information

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Topic: Workshop: Data Studio
Time: Apr 15, 2020 13:30 Pacific Time (US and Canada)

Join from PC, Mac, Linux, iOS or Android:

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    International numbers available:
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For more information about Data Studio:

https://med.stanford.edu/dbds/programs/data-studio.html