

Attahiru Sule Alfa, Lothar Breuer

## An EM Algorithm for Platoon Arrival Processes in Discrete Time

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### Kurzfassung

**Aims and subjects:** Burden of disease (BoD) estimates are increasingly used in public health for assessing population health. Disability Adjusted Life Years (DALYs)—a summary measure frequently used in BoD studies—sum up the impact on health due to premature death and non-fatal health outcomes and allow for comprehensive and comparable assessments. To provide first estimates on the burden of disease in North Rhine-Westphalia (NRW), we calculated the burden due to premature death using Standard Expected Years of Life Lost (SEYLL), which is one of the two components of DALYs. **Materials and methods:** Methods provided by the World Health Organisation (WHO) and developed for the Global BoD (GBoD) study were used to estimate SEYLL in NRW in 2005. We used administrative death and cause of death statistics provided by local authorities. **Results:** In 2005, the total burden of disease due to premature death was 1,774,926 SEYLLs. According to the GBoD disease categories, non-communicable (group II) diseases accounted for 89.1% of the burden. Communicable, maternal, perinatal and nutritional (group I) conditions contributed to 5.6% and injuries (group III conditions) to 5.3% of the total burden. The three leading single causes of the burden of disease due to premature death were ischaemic heart diseases, lung cancers and cerebrovascular diseases, together accounting for 558,785 SEYLLs (32%). **Conclusion:** First estimates of the burden of disease were feasible for NRW by use of WHO tools and administrative data. The findings of our study are consistent with WHO GBoD estimates and studies performed for other high-income countries. Our SEYLL results usefully complement the available health statistics highlighting diseases and injuries leading to death at an early age of life. However, our estimates are restricted to the impact of premature death and do not provide information on non-fatal health outcomes. Thus, future work should target estimates of the Years of Life Lost due to Disability (YLD) to provide a comprehensive assessment of the burden of disease in NRW.