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Forecasting the prevalence of status Epilepticus and its subtypes in the United States, 2015-2024

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Objectives: To estimate the prevalence of Status Epilepticus (SE), Refractory Status Epilepticus (RSE) and Super-Refractory Status Epilepticus (SRSE) in the United States using an incidence-survival model.

Methods: Yearly survival data for each SE etiology (acute symptomatic, progressive symptomatic, remote symptomatic and idiopathic/cryptogenic) were extracted from published research. Incident cases were calculated for each year using published rates. Applying the survival proportions and incidence estimates to the model for each etiology, we calculated an overall estimate of the prevalence of SE. RSE and SRSE prevalent cases were assessed as proportions of the total number of prevalent SE cases using published values.

Results: The prevalence of SE was 17.6 cases per 10,000 population in the United States resulting in 566,241 cases in 2015 and increasing to 606,004 in 2024. The prevalence of RSE was 4.3 per 10,000 resulting in 139,295 cases in 2015, increasing to 149,077 in 2024. SRSE prevalence was 1.8 per 10,000 resulting in 56,624 cases in 2015, increasing to 60,600 in 2024.

Conclusions: To our knowledge, this is the first attempt to calculate the prevalence of SE and its subtypes for all ages in the United States. Estimating the prevalence of SE, RSE and SRSE using population-based epidemiological methods is challenging because of the unpredictable nature of associated mortality. Our incidence-survival model provides an alternative and effective method to assess the prevalent population. Considering the high costs associated with treatment and hospitalization, prevalence estimates are necessary to quantify the burden of SE and its subtypes in the United States.

Biography

Mark Stuntz has joined Deerfield Institute in 2015 as an Epidemiology Senior Research Associate, responsible for evaluating and modeling epidemiological aspects of various diseases. Prior to joining Deerfield, he was as an Epidemiologist at Global Data where he developed ten year country-specific forecast models and reports for multiple indications including prostate cancer, methicillin-resistant *Staphylococcus aureus* (MRSA) and gram-negative bacterial urinary tract infections. He holds a Master of Public Health degree from the Yale School of Public Health with a concentration in Epidemiology of Microbial Diseases.

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