Abstract
Currently, there exists no scalable method to compare various human diseases in terms of their short-term discomfort for suffering patients. One method for making such multi-disease comparisons would be to gather and analyze data from direct patient interviews, finding a large number of subjects who had experienced subsets of the conditions being compared; however, this approach is not robust enough to handle the whole spectrum of diseases. For example, suppose the study was comparing childhood diseases with diseases of old age, or male-specific diseases with female-specific ones. In the first instance, there simply would not be a patient with recent experience of both diseases. In the second, there would be no patients at all who experienced both disease types. We use massive insurance claim records, describing over one-third of the US population, to estimate statistically the instantaneous suffering values over the whole spectrum of diseases. Using computation-intensive probabilistic modeling, we provide first-ever estimates of population-mean instantaneous suffering for all major diseases and compare the suffering experienced by opposite sexes, children, adults, and the elderly, and also by residents of distant US counties within the same demographic group and the same illness.