Community incidence of pathogen-specific gastroenteritis: reconstructing the surveillance pyramid for seven pathogens in seven European Union member states

By building reconstruction models for a case of gastroenteritis in the general population moving through different steps of the surveillance pyramid we estimated that millions of illnesses occur annually in the European population, leading to thousands of hospitalizations. We used data on the healthcare system in seven European Union member states in relation to pathogen characteristics that influence healthcare seeking. Data on healthcare usage were obtained by harmonized cross-sectional surveys. The degree of under-diagnosis and underreporting varied by pathogen and country. Overall, underreporting and under-diagnosis were estimated to be lowest for Germany and Sweden, followed by Denmark, The Netherlands, UK, Italy and Poland. Across all countries, the incidence rate was highest for Campylobacter spp. and Salmonella spp. Incidence estimates resulting from the pyramid reconstruction approach are adjusted for biases due to different surveillance systems and are therefore a better basis for international comparisons than reported data.