To have an overview of the situation regarding human antimicrobial use, a common methodology is needed. Yet, differences in study design hamper meaningful comparisons and interpretations of the extent of (in)appropriate antimicrobial use.

With respect to the hospital sector, different approaches for antimicrobial data collection, analysis and reporting have been employed and/or suggested. A standardised approach is lacking. The two main methods of presenting antimicrobial volumes of use encompass proportional use (%) and number of Defined Daily Doses (DDD). This implies the adoption of several existing numerators (e.g. packages, prescriptions, days of therapy) and denominators (e.g. inpatients, prescriptions, number of full courses) depending on the data available. The cross-sectional designs (Point Prevalence Surveys) of the European Surveillance of Antimicrobial Consumption (ESAC) and the Antibiotic Resistance and Prescribing in European Children (ARPEC) projects respond to the critical need to assess similarities between groups, in terms of current health status and exposure to antimicrobials in hospitals.

Next, the ESAC project (since 2011 transferred to the European Centre for Disease Prevention and Control [ECDC] as ESAC-Net) consistently collected whole sales and/or reimbursement antimicrobial consumption data (ambulatory and hospital settings) in accordance with the Anatomical Therapeutic Chemical (ATC) classification system (N=33 countries) of the World Health Organization (WHO). Antimicrobial rates were expressed in number of DDD and packages per 1,000 inhabitants per day. This method is currently used by WHO/Europe to obtain a picture of total antimicrobial consumption in non-European Union countries of the WHO European region. ESAC stands unique; the Organisation for Economic Co-operation and Development (OECD) only reports similar comparable antimicrobial consumption data for Australia and Korea.

The ESAC standardised and validated methods provide a tool for target setting and for assessing public health strategies aiming to optimise antimicrobial prescribing. The data contribute to collaborative research at national and international level.