Primary data collected in health facilities has been limited by its availability and quality. Therefore robust methods are needed to clean and supplement the data collated from records at health facilities in order to use it to assess costs and efficiencies of health care delivery. This data exists at multiple levels of administration – from the facility-level to the district and implementing partner-level. To address this, multiple sources of data must be assembled in order to effectively describe health facility expenditure and service provision. We have developed methods to catch data entry errors and outliers, supplement data using secondary data sources and impute missing data for health facility data collected in Sub-Saharan African countries as part of the Access, Bottlenecks, Costs and Equity (ABCE) project. In this session, we explore the inclusion of supplementary data at multiple administrative levels and imputation techniques to address the problem of sparse data in the process of collecting and preparing panel data for analysis using the ABCE data collected in Kenya as an example.