impacts on data analysis/results along with cost impact. As estimated by the Data Warehouse using institute, the costs of low quality data exceeds $600 billion annually. Data cleaning process includes querying for errors, typos, outliers, out-of-range responses, missing data, deviations, etc. Paper: query data for erroneous/out-of-range values; these values need to be cross-checked with original paper form to identify entry error or missing data entry or data entry staff. If associated with patient entry, it may need to be set as missing. When original paper is lost, values may need to be set as missing as accuracy cannot be confirmed. Time/dates may be out-of-range or missing, which require cross-checking with original paper. If time/date cannot be confirmed, the entire entry may need to be set as missing. Missing values in data need to be identified and cross-checked with original paper to confirm if value was skipped by patient or by data entry staff. ePRO can be implemented to prevent entry of out-of-range values, includes time/dates, patient direct data entry eliminates error by data entry staff; can be programmed to not allow skipped responses to prevent missing data responses. End-of-study time is precious to the pharmaceutical needs to be reliable. Missing data cannot be confirmed, reducing time needed for data cleaning.

PRM153
RETHINKING COST-EFFECTIVENESS IN THE ERA OF ZERO HEALTHCARE SPENDING GROWTH
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OBJECTIVES: The global economic crisis imposes severe restrictions on healthcare budgets, limiting the coverage of new interventions, even when they are cost-effective. This study attempts to develop a tool that can compare the impact of medical intervention alternatives on the entire target population, under a pre-specified budget constraint. METHODS: We illustrated the tool by using a target population of 1,000 patients, and a budget constraint of $1,00,000. We compared two intervention alternatives: the current practice that costs $1,000 and adds 0.5 quality-adjusted-life-years (QALYs) per patient and a new technology that costs $100, but produces 20% more QALYs. We developed a formula (defining the maximum premium price for a higher-cost/higher-effectiveness intervention that can justify its adoption under a constrained budget. RESULTS: Using the new therapy will result in a loss of 300 QALYs, compared to the lower-cost, lower-effective intervention, despite a favorable incremental cost-effectiveness ratio (ICER) of $10,000. The maximum price for the higher-therapy efficacy that will preserve the target population outcomes is 20% higher than the lower-cost therapy. CONCLUSIONS: Although an intervention associated with higher costs and higher efficacy may have an acceptable ICER, it could provide inferior outcomes in the target population under budget constraints, depending on the relative effectiveness and costs of the interventions. The cost premium that can be justified for a higher-cost/higher-effectiveness intervention is directly related to the specific dimensions and levels. An alternative approach, which has never been explored, is to directly ask people to construct their own personal utility functions. Instead of asking people to value a selection of EQ-5D health states, and then using their responses to infer the relative importance to them of the specific dimensions and levels. By asking people to directly construct their utility functions, we can assess the relative importance to them of dimensions, levels and interactions between them. In this presentation, we will describe the development of an innovative set of questions that can be used to identify personal utility functions. We will also discuss the results of a feasibility study which tested the acceptability of the questions, and will show how the results can be used to generate EQ-5D values. We will also discuss the challenges and possible solutions to operationalise the method.

PRM154
THE ELECTRONIC AGE: INTEGRATING ePRO/eCOA TO REDUCE PATIENT, SITE, AND STUDY TEAM BURDEN
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While some have fully embraced and incorporated ePROs/eCOAs into protocol design and continue to use paper PROs/COAs, conceptual papers on paper PROs/COAs continued use, focusing on how PROs can be integrated into the electronic trial solution to reduce the burden to patients/participants, sites, and clinical teams in setting up, maintaining, and closing out a clinical trial. Assessing how the risks and benefits of electronic solutions will be identified and integrating transitioning to ePRO/eCOA collection modes. Strategies recommended for successful transition to integrated electronic PROs/COA solutions will be discussed. Integration of ePRO/eCOA provides several benefits over paper, including improved compliance and higher data quality. Comparing the advantages of electronically captured PRO/COA data vs. paper, the benefits of ePRO/eCOA far outweigh those of paper. Combine this with the support and advocacy of ePRO/eCOA in clinical trials by regulatory authorities and a shift of the general population towards electronic devices; it raises the question why all clinical trials are not using ePRO/eCOA to optimize the integrity of data and trial results. Common obstacles in the selection of a PRO/COA electronic data collection module include: paper instruments designed for a paper world, inability to determine true risks, unknown total cost of electronic vs. paper administration, instrument author has sometimes costly requirements for migration, unclear translation expectations, and fear of the unknown. An assessment of methods to facilitate the transition to electronic data capture will be performed. Examples include use of items/instruments that are appropriate for electronic platforms and easily migrated and site and patient training plans. In this age of technological advancements, including an integration plan in clinical trials is important to mitigate potential risks and minimize the burden to clinical trial staff and participants. Detailing this up front can help to alleviate many of the obstacles in the transition from paper to electronic PRO/COA.

PRM155
ADOPTING SOFTWARE ENGINEERING BEST PRACTICES IN THE FIELD OF PHARMACOECONOMICS TO INCREASE TRANSPARENCY OF AND CONFIDENCE IN OUR HEALTH ECONOMIC MODELS
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The spreadsheet dominated the pharmacoeconomics field as the software platform of choice for programming pharmacoeconomic models that are submitted to reimbursement agencies worldwide. Arguably, the spreadsheet represents a poor choice for model development and implementation as standard software development tools to manage spreadsheet quality are non-existent. This paper will demonstrate how the concept and principles of software engineering and adopting their best practices in model development can increase model transparency and our confidence that our models perform as expected. We will also compare the advantages and disadvantages of using spreadsheets versus other programming languages. Briefly, the primary advantage of the spreadsheet is that it’s universally available and portable to all. It’s universal in that a spreadsheet is available on most computers. It’s accessible in that everyone can open the model, inspect, it, and use it. Beyond these advantages, the structure of the spreadsheet challenges our model practices in increasing model transparency and our confidence that our models perform as expected.