differences in negative values could be the result of cultural differences or due to small differences in the operationalization of TTO.

CONCLUSION: The differences in the value of health between the European countries seem to be small. This opens the door for a European tariff for the EQ-5D, which might facilitate QALY-analysis in international trials considerably.

TO TRANSLATE OR TO ADAPT — WHAT DO THE QUESTIONS MEAN?
Doward LC, McKenna SP, Whalley D
Galen Research, Manchester, UK

OBJECTIVES: It is commonly assumed that the gold standard method for producing new language versions of patient-completed outcome measures is to translate using back-translation. This paper will demonstrate that translation alone is insufficient and that back-translation is an inherently flawed methodology.

METHODS: Literature review.

RESULTS: Back-translation fails to take account of the complexity of nuances and meanings inherent in language. While we might get back to where we started, it does not imply that we have traveled by the appropriate route. Back-translation can only succeed where straightforward semantic and conceptual equivalents exist in the target language. In such a case, the method is likely to have been an unnecessary expense. A further problem is the reliance on bilinguals. Their social and health status are likely to be higher than average, making them unrepresentative of the patient population. Thus, their use should be restricted to producing a first draft translation. This translation then needs to be assessed by people more typical of the average patient, working in their own language. The acceptability of this final version also needs to be tested with relevant patients to confirm comprehension and acceptability. However, adaptation involves both the translation and psychometric testing of an instrument for a new culture. It remains necessary to test the psychometric properties of the translation formally before it is used in a trial. The new version should be shown to have acceptable reproducibility and construct validity. Item response theory should also be applied to ensure that cultural response bias does not exist.

CONCLUSIONS: Back-translation by bilinguals cannot guarantee that a translated questionnaire will be acceptable to the target audience. Translation alone is not sufficient to ensure that the new language version is suitable for use in a clinical trial.

COST ANALYSIS FOR END-OF-LIFE CARE
Hanlon JT, Smith D, Fendrick AM
University of Michigan, Ann Arbor, MI, USA

Determining the best method for cost analysis of end-of-life care regimens requires a systematic approach for connecting the research question being addressed with the data requirements and analyses. There are several guiding principles to direct this research, specifically in the areas of sensitivity analysis, uncertainty, generalizability, and measurement of efficiency such as cost-benefit or cost-utility. There exists a body of literature in which disease-specific or system-wide costing of health care is described, but few apply to end-of-life care.

OBJECTIVE: To investigate, evaluate and present cost-analysis methods through a synthesis of recently published literature, and the implications of applying these methods to ongoing clinical studies.

METHODS: Cost analyses include those acquired from articles published in professional journals in the area of cost, cost analysis and end-of-life care and applied to a set of on-going clinical studies.

RESULTS: Based on a sample of nearly 30,000 cost studies in which few consider end-of-life care, at least eight methods for examining costs of care are defined. On one end of the spectrum is the micro-costing method in which all personnel time, supplies, cost of facilities, pharmaceuticals, lab expenses and all other patient services conducted are tracked and costed using a variety of codes. On the other end is the attributable costing method that uses aggregate and average costs for inpatient and outpatient care as well as for procedures and drugs associated with the corresponding diagnosis and treatment. Only newly initiated studies can feasibly employ micro costing. On-going studies require abstracting from other methods.

CONCLUSIONS: In light of the national concern over costs associated with end-of-life care, efforts are needed to amalgamate guidelines and methodologies in this area in order to provide a useful and accessible resource to conduct meaningful cost-analysis research.

VALUATION OF INFORMAL CARE
van den Berg B
Erasmus University Rotterdam, Rotterdam, Netherlands

OBJECTIVES: The aim of our research has been the valuation of informal care. Informal care plays a substantial role in the total care provided to patients with chronic diseases. However, at this moment informal care is hardly incorporated in economic evaluations of health care. Especially the combination of the costs (time invested and household expenditures) and effects (health-related quality of life of informal care giving) is innovative.

METHODS: The data were collected by mailed questionnaires to primary informal caregivers in an evaluation of Dutch integrated stroke service experiments, at two moments in time. The sample size is 217 informal caregivers (two months after stroke) and 158 caregivers (six months after stroke). We used a questionnaire including a range of items on different informal care tasks. Health related quality of life was measured with the EuroQol (EQ5D; 5).
RESULTS: Two months after stroke informal caregivers spent 22.7 hours a week (mean) on a range of different care tasks. Six months after stroke they spent 25.1 hours a week (mean) on the same tasks. Their mean EQ-5 score is 0.836 (n = 195) after two months and 0.816 (n = 138) after six months. After two months 40 percent reports pain and other complaints and 25 percent reports anxiety. Six months after stroke this is respective 45 percent and 25 percent. Health related quality of life results and time invested will be compared to the general population by sex and age.

MODELING ANTIBIOTIC EFFICACY BY INFECTIOUS AGENT AND PROBABILITY OF RESISTANCE
Dombeck M, Earnshaw S, Candrilli S, Xuan J, Bakst A, Kirsch JM
1RTI Health Solutions, Research Triangle Park, NC, USA; 2GlaxoSmithKline, Collegeville, PA, USA; 3GlaxoSmithKline, Harlow, United Kingdom

Current cost-effectiveness models of antibiotic efficacy typically do not consider the variability in relative incidence of infectious agents or the probability of species-specific antibiotic resistance. A model that incorporates this variability in incidence and resistance will more accurately represent epidemiological variances and associated differences in treatment costs across patient populations.

OBJECTIVES: To create a model of antibiotic efficacy that generates population-specific cost-effectiveness ratios by including incidence and resistance rates of infectious agents and can be adjusted to reflect epidemiological data specific to different geographic regions.

METHODS: We constructed a decision tree model that represents a user-defined infection (i.e. acute exacerbation of chronic bronchitis). This model considers the relative incidence of infectious agents (bacterial and non-bacterial/viral), the incidence of resistance among the bacteria agents, and antibiotic efficacy against each infectious agent and level of resistance. The model can represent “all-or-none” resistance such as that associated with beta-lactamase production, or varying degrees of susceptibility associated with other methods of resistance. The model can represent clinical or in vitro efficacy, depending on the source of the data. In the event of insufficient data to populate the resistance branch, this branch can be collapsed out of the tree. The model will then represent antibiotic efficacy for all infectious agents included.

RESULTS: The model generates cost-effectiveness ratios identifying conditions where the antibiotic of interest is cost effective or cost saving versus other antibiotics. Ratios for individual infectious agents and levels of resistance also identify specific populations where the antibiotic of interest has an advantage.

CONCLUSIONS: This model can incorporate geographic diversity of and resistance in bacterial populations to generate cost-effectiveness ratios specific to different epidemiological and geographic populations.

COST-EFFECTIVENESS OF TUBERCULOSIS PREVENTIVE THERAPY IN HIV-INFECTED PATIENTS: STUDY OF MISSING VARIABLES
Chakrabarti A
Sikkim Manipal Institute of Medical Sciences, Gangtok, India