

Utility and Work Productivity Data for Economic Evaluation of Breast Cancer Therapies in the Netherlands and Sweden

Gerardus W.J. Frederix, MSc¹; Nuz Quadri, MSc²; Anke M. Hövels, PhD³; Fleur T. van de Wetering, MSc⁴; Hans Tamminga, PhD⁵; Jan H.M. Schellens, PhD^{1,3}; and Andrew J. Lloyd, DPhil²

¹The Netherlands Cancer Institute, Division of Experimental Therapy, Amsterdam, The Netherlands;

²Oxford Outcomes, an ICON plc Company, Oxford, United Kingdom; ³Utrecht Institute for Pharmaceutical Sciences, Division of Pharmacoepidemiology & Clinical Pharmacology, Utrecht University, Utrecht, The Netherlands; ⁴Erasmus University, Rotterdam, The Netherlands; and ⁵GlaxoSmithKline B.V., Zeist, The Netherlands

ABSTRACT

Objective: This study aimed to estimate utility values in laypeople and productivity loss for women with breast cancer in Sweden and the Netherlands.

Methods: To capture utilities, validated health state vignettes were used, which were translated into Dutch and Swedish. They described progressive disease, stable disease, and 7 grade 3/4 adverse events. One hundred members of the general public in each country rated the states using the visual analog scale and time trade-off method. To assess productivity, women who had recently completed or were currently receiving treatment for early or advanced breast cancer (the Netherlands, n = 161; Sweden, n = 52) completed the Work Productivity and Activity Impairment–General Health (WPAI-GH) questionnaire. Data were analyzed using means (SD).

Results: The utility study showed that the Swedish sample rated progressive and stable disease (mean, 0.61 [0.07] and 0.81 [0.05], respectively) higher than did the Dutch sample (0.49 [0.06] and 0.69 [0.05]). The health states incorporating the toxicities in both countries produced similar mean scores. Results of the WPAI-GH showed that those currently receiving treatment reported productivity reductions of 69% (the Netherlands) and 72% (Sweden); those who had recently completed therapy reported reductions of 41% (the Netherlands) and 40% (Sweden).

Conclusions: The differences in the utility scores between the 2 countries underline the importance of capturing country-specific values. The significant impact of adverse events on health-related quality of life was also highlighted. The WPAI-GH results demonstrated how the negative impact of breast cancer on produc-

tivity persists after women have completed their treatment. (*Clin Ther.* 2013;35:e1–e7) © 2013 Elsevier HS Journals, Inc. All rights reserved.

Key words: absenteeism, breast neoplasms, health-related quality of life, human epidermal growth factor receptor 2 positive, time trade-off.

INTRODUCTION

Health care expenditures are growing faster than incomes of most developed countries, thereby jeopardizing the stability of health care systems in individual countries and globally. To increase value of health care services, evidence from comparative effectiveness research (CER) is needed to inform health care decision makers.

A large number of health policy decision bodies over the world have incorporated the use of economic evaluations as part of CER in their reimbursement decision process, aiming to assess value for money. In economic evaluations, survival and health-related quality of life (HRQL) are often the main measure of treatment benefit, measured as utilities which range from 0 (dead) to 1 (full health).¹ In a majority of countries, these data are collected using a societal perspective, which means that preferences of the general public are taken into account, as well as all costs directly or indirectly related to the disease and treatment, including productivity losses.

Accepted for publication February 11, 2013.

<http://dx.doi.org/10.1016/j.clinthera.2013.03.009>
0149-2918/\$ - see front matter

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The need for robust data for valid decision making in health care is evident, especially when it comes to costly targeted therapies in severe diseases. However, there are no reports of utility values in some severe diseases, such as in human epidermal growth factor receptor 2–positive (HER2+) advanced breast cancer, despite the established need for these data.^{2,3} In addition, there has been very little research published on productivity losses due to metastatic breast cancer in general.⁴ Some research in the United States has examined the national impact of cancer mortality and productivity loss.^{5,6} However, much less is known regarding the effects of breast cancer on individual level productivity loss.⁷

To overcome the lack of utility and productivity data in certain countries, “foreign” data from other countries has been used to apply to another jurisdiction, examples of which are present in the literature, such as the use of Swedish utility data for a Dutch cost-effectiveness analysis of trastuzumab.⁸ However, doubts have been expressed regarding the transferability of utility data from one jurisdiction to another,⁹ indicating that national decision makers should avoid accepting “foreign” data without demonstrating pertinence for their own country. Although the results of clinical studies of pharmaceuticals can be generalized from one jurisdiction to another, the results of economic evaluations have been reported to be location dependent, due to factors such as demography and the epidemiology of disease, differences in clinical practice patterns, and differences in relative prices.¹⁰

Differences in national guidelines regarding utility measurements may further limit the transferability of preference weights from one country to another,⁹ as reimbursement agencies in different countries may have specific criteria in terms of the demographics of the “societal perspective.” An example of this is in the Netherlands and Sweden, as both countries have different formal requirements for cost-effectiveness analyses from a societal perspective; thus, the transferability of data between these countries could be questioned. The Dutch reimbursement agency advocates preferences to be representative of the general public.¹¹ In contrast, the Swedish reimbursement agency prefers to see utilities derived from members of the public with the same demography as people with the disease.¹² In the case of breast cancer, this would be the inclusion of only older female participants. With such differences outlined in how data

should be collected, it could be beneficial for economic analyses to be performed in both countries to adequately collect robust and valid data, rather than transfer data between these countries.

This study had 2 aims: (1) to elicit utilities for HER2+ advanced breast cancer health states in Sweden and the Netherlands in order to assess whether it is beneficial to capture country specific utility data and (2) to understand the impact of early and advanced breast cancer on work productivity in both countries.

METHODS

Health State Description Development

Health state descriptions of stages of HER2+ advanced breast cancer were developed and validated based on in-depth qualitative interviews with women with advanced breast cancer and oncology experts. The health states included progression-free survival (stable disease), disease progression, and 7 grade 3/4 adverse events of treatment of HER2+ advanced breast cancer: diarrhea, fatigue, anemia, leukopenia, anorexia, decreases in left ventricular ejection fraction (LVEF), and skin rash. These health states were used in an evaluation exercise to elicit utility values.

Health State Evaluation

During the study procedures, participants completed a background questionnaire and the EQ-5D, a generic HRQL measure,¹³ followed by a warm-up task in which they were asked to rate the health states from 0 to 100 using a visual analog scale (VAS). The anchors for the VAS were 0 = *dead* to 100 = *full health*. Participants proceeded onto completing the time trade-off (TTO) exercise.¹⁴ For the TTO exercise, the health states were presented in a random order and participants were asked to choose between remaining in the health state for 10 years or in full health for 10 – x years. The time in full health was then varied until the participant became indifferent between the 2 prospects. A “Ping-Pong” method that contrasted longer and shorter durations of time was used. The method did not assess states worse than dead.

Measurement of Productivity Loss

The WPAI-GH¹⁵ was used to estimate the degree of productivity loss experienced by women with advanced breast cancer in the 2 countries. The WPAI-GH produced summary scores for *absenteeism* (work time missed), *presenteeism* (impairment at work/reduced

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