BACKGROUND
Breast cancer is the most common malignancy among women in Finland. The incidence of breast cancer was 4,079 and prevalence 47,977 in 2006.(1)

Around 15% of patients with newly diagnosed breast cancer have metastatic breast cancer (MBC) and a further 40-50% diagnosed with early breast cancer will go on to develop metastatic disease. Overexpression of HER2 protein is found with 25-30% of patients with breast cancer(2). HER2+ predicts a worse prognosis and higher metastatic risk.(3) Trastuzumab is the only HER2 targeted therapy currently used in Finland and is widely used beyond disease progression.

Lapatinib (Tyverb®; GlaxoSmithKline) is an oral dual targeted inhibitor that specifically targets EGFR and HER2 receptors.

OBJECTIVE
To evaluate the cost-effectiveness of lapatinib plus capecitabine (L+C) vs. currently used regimens in Finland for women with HER2+ metastatic or advanced breast cancer which has progressed following trastuzumab treatment.

METHODS
The analysis is based on data drawn from a phase III randomized open label multi-centre trial EGF100151 comparing L+C with C alone in women with progressive, HER2-positive, advanced or metastatic breast cancer who had received prior treatment with an anthracycline, a taxane, and trastuzumab (T). In this study L+C significantly improved the time to progression compared with C alone.(4,5)

Effectiveness of Trastuzumab-containing regimens was based on a pooled analysis of data from published studies. The analysis was performed from a societal perspective. Costs and outcomes were discounted at 5%, consistent with Finnish guidelines.

Outcome measures
• Incremental cost per quality adjusted life year (QALY)• Incremental cost per life year gained.

Comparator
The cost effectiveness has been assessed against a ‘blended’ comparator base representing the profile of key treatments currently used in this setting. According to market research it was assumed that half of patients continue trastuzumab-containing regimens beyond progression (TBP) (Figure 1).

RESULTS
Results are presented in Table 3 with 50% assumption of TBP as a base case.

Table 1. Costs and outcomes with 50% discount rate.

A budget impact analysis indicated that switching to L+C from currently used treatments in women with progressive, HER2-positive, advanced or metastatic breast cancer would increase overall costs from a societal perspective by around 1200 per year.

Sensitivity analysis
One-way and probabilistic sensitivity analysis was carried out both for cost and outcome variables to test the uncertainty of the results. Also, cost-effectiveness acceptability analysis was examined (Figure 4).

CONCLUSIONS
For patients with HER2+ MBC who have progressed on trastuzumab, treatment with L+C meets a high unmet clinical need and is cost-effective in this setting.

The cost-effectiveness result is highly driven by the proportion of patients with extended trastuzumab use in advanced setting.

Lapatinib, in combination with capecitabine, is the only treatment option specifically targeting the HER2 receptor, which is licensed for use in MBC patients that have progressed on trastuzumab.

REFERENCES
6. Delia et al. 2007 ECCO. Abstract P-2355.

COST-EFFECTIVENESS OF LAPATINIB PLUS CAPECITABINE FOR WOMEN WITH HER2+ METASTATIC BREAST CANCER PREVIOUSLY TREATED WITH TRASTUZUMAB IN FINLAND

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• The Utility values

Table 3. Utility values

• QALY’s were calculated using utilities derived from the EGF100151 study and an international publication(6).

• The utility value is driven by the presence of disease progression.

• The compactor was compared to the blended comparator which represents the profile of key treatments currently used in this setting.

Figure 1. Currently used regimens in MBC in Finland

Figure 2. The annual cost of drug care.

Figure 3. Structure of the model.

Figure 4. One-way sensitivity analysis for TBP

Figure 5. One-way sensitivity analysis for TBP

• Lapatinib, in combination with capecitabine, is the only treatment option specifically targeting the HER2 receptor, which is licensed for use in MBC patients that have progressed on trastuzumab.