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Key publications

Bredenhoff E, Van Lent WAM, Van Harten WH. *Exploring types of focused factories in hospital care: a multiple case study*. *BMC Health Services Research*. 2010;10:154

Klopper AHJ, Siesling S, Meerdink N, Wilderom CPM, Van Harten WH. *Quantifying culture gaps between physicians and managers in Dutch Hospitals: a survey*. *BMC Health Services Research*, 2010;10:86

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Retèl VP, Joore MA, Knauer M, Linn SC, Hauptmann M, Van Harten WH. *Cost-effectiveness of the 70-gene signature versus St. Gallen guidelines and Adjuvant Online for early breast cancer*. *Eur J Cancer* 2010;46:1382-1391

Van Berkel PT, Boucherie RJ, Hans EW, Hurink JL, Van Lent WAM, Van Harten WH. *An exact approach for relating recovering surgical patient workload to the master surgical schedule* *Journal of the Operational Research Society*, 2010

Van Harten WH, Van Bokhorst L, Van Luenen HGAM. *Benchmarking biology research organizations using a new, dedicated tool*. *Mol Oncol* 2010;12-8

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EARLY STAGE TECHNOLOGY ASSESSMENT, OPERATIONS RESEARCH AND CANCER REHABILITATION

Early stage technology assessment From 2003 through 2006, a technology assessment study was conducted on the introduction of a 70-gene micro array test as a prognostic tool in the treatment of node negative breast cancer (the RASTER-study). This study is being continued as a side study of the European MINDACT-study. As the diffusion of this technology is in an early stage and the course of development is not easy to predict, an evaluation approach has been chosen that takes the technology dynamics into account, constructive technology assessment (CTA). The overall CTA has been completed, an internal guideline on patients' rights concerning banked tissue has been finalised and published, and a scenario session has been conducted together with the international breast group (BIG). The results of these scenarios are being used for a cost-effectiveness analysis, the preliminary results of which were submitted to the Dutch Health Insurance Board in early 2009. In 2010, the CEA modelling has been completed, including real life scenarios. A comparison between cost-effectiveness of two genomic breast cancer prognosis tests, involving compliance of prescribers, was conducted and a paper on the trade off between investments in research versus further investments in development is being completed. Additionally, in cooperation with the University of Twente, we have initiated an early stage technology assessment of TIL-transfer technology in advanced melanoma. A workpackage on this topic in a EU grant proposal was drafted. In 2011 a PhD student will start to work on early stage technology assessment in the application of diagnostic/prognostic markers in neoadjuvant breast cancer treatment.

Operations improvement in oncology Translating operations management and research (OM/OR) principles into oncologic care is likely to improve both quality and efficiency of hospital processes. A series of international benchmarking projects has been performed comparing performance of 3 Comprehensive Cancer Centers, 3 ambulatory chemotherapy treatment centres (ACT), 6 fundamental research organisations and 4 radiotherapy departments. Using the experience of earlier OR simulation techniques (such as a verification of the efficiency of the operation room planning and scheduling) we conducted a study on the use of simulation to attain a high degree of open access in the radiology department, to reduce the length of the diagnostic track, including CT, from three weeks to one week, and to reduce the number of hospital visits. This investigation has resulted in several implementation proposals and papers. In cooperation with the University of Twente, a PhD student (Peter van Berkel) is working on a mathematical analysis and scheduling of care pathways within the oncologic hospital setting, and the effect of increased focus on efficient capacity use. A study on contingency of OM interventions in hospitals was performed in 2010. Another study is ongoing, comparing characteristics of colorectal surgery pathways using structured efficiency measures and the national colorectal quality registry. Together with the University of Twente and the Integraal Kanker Centrum Noord-Oost, a PhD student was employed on a project to evaluate the added value of accrediting oncology departments in General Hospitals. In 2011 together with the OECI and as part of the Eurocan Platform project, a PhD will be employed on the development and evaluation of a system of Accreditation & Designation of (Excellent) European Cancer Centers.

Rehabilitation, physical activity and cancer Survivorship care and rehabilitation are important elements of a cancer center's program. In 2009, we have continued to strengthen and expand the infrastructure in which studies in this area can be conducted. A multidisciplinary rehabilitation program was started for breast cancer survivors receiving adjuvant treatment. In addition, a rehabilitation program for head-and-neck cancer patients has been approved by health insurers and is expected will be rolled out end of 2010. Finally, a major Alpe d'Huzes KWF grant was awarded, focusing on patient empowerment, return to work, tele-monitoring and implementation of relevant findings and programs related to physical exercise and supported by innovative IT. This program totalling up to 2,8 million Euro, will start early 2011.