(cost difference of about 11%). The cost component 'day case' days contributes most to the total treatment costs of 5-FU + LV, and the cost component 'drugs and preparation' contributes most to the total treatment costs of Tomudex®.
Discussion: This research was based on the finding of equal efficacy of the two chemotherapy treatments. To determine the optimal treatment for society, Quality of Life must be invoked in economic evaluation. Because of a convenient dosing schedule, Tomudex® patients spend less time at the 'day case' department, travel less often to the hospital and thus are less time away from normal activities than 5-FU + LV patients. 5-FU + LV patients are more likely to suffer from severe mucositis and leucopenia than Tomudex® patients. This may influence patient's Quality of Life and thus warrants for further research, preferably a cost-utility analysis.

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OP12. Results of an economic evaluation of a RCT of routine follow-up after primary treatment for breast cancer: A comparison of primary care vs specialist care

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Background: It is standard practice in most countries to provide long-term routine follow-up after primary treatment for breast cancer in specialist oncology or surgical clinics. We hypothesised that routine follow-up under primary care would be equivalent but less costly than follow-up under specialist care. We conducted an RCT with concurrent economic evaluation to assess the effect of transferring primary responsibility for routine follow-up of women with early stage breast cancer from specialist care to primary care.
Methods: Patients were 296 prevalent cases with early stage breast cancer. They were randomised to continued follow-up in specialist clinics (control arm) or follow-up by their own general practitioner (GP arm). Patients in the GP arm were referred back to specialist care if diagnosed with recurrence or new primary cancer. The outcome measures were delay in diagnosing recurrence' and health-related quality of life (HRQOL). A detailed cost analysis was conducted alongside the RCT. The perspective of the economic evaluation considered costs to the health service (particularly the costs of visits and diagnostic tests) and costs to the patient (direct costs, indirect costs and time taken for a follow-up visit).
Results: Most recurrences (18/26, 69%) presented between routine visits and almost half (7/16, 44%) of the recurrences in the control arm presented first to the primary care physician. There were no differences between groups in clinical or HRQOL outcome measures. Hence, a cost minimisation analysis was conducted. The cost analysis showed clear evidence that primary care based follow-up services were substantially less costly than specialist based follow-up services ($p<0.001$). Patients in the specialist group reported longer travel times, longer waiting times and less time with the doctor ($p<0,001$). Detailed results of the economic evaluation will be presented.
Discussion: Primary care follow-up of the women studied led to lower costs without any increase in time to diagnosis of recurrence or deterioration in health-related quality of life. If these results are replicated in other settings (a trial is currently taking place in Ontario), they suggest women with breast cancer should be offered a choice between specialist and primary care follow-up.

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OP13. Economics of the MRC Colorectal Working Party CR06 Trial

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Background: CR06 is a large nation-wide multi-centre trial being undertaken to compare three alternative chemotherapy treatments for patients with advanced colorectal cancer (de Gramont bolus and infusion, Lokich continuous infusion 5FU, and Tomudex) and to assess the optimum duration of treatment (stop versus continue treatment of patients whose disease has not progressed during the first 12 weeks of chemotherapy). There is, however, a growing awareness that health care resources are scarce and therefore in addition to determining comparative effectiveness in terms of clinical outcomes it is also important to consider at what cost these outcomes are achieved. In line with the main investigation, the health economics component of the trial will also address two issues; the comparative cost-effectiveness of continuing versus stopping chemotherapy after an initial 12 weeks of treatment. This will require data on resource use in addition to all other data being collected for CR06.
Method: The health economic data is being collected from a sub sample of centres taking part in the main trial. We have recruited 5 centres for this part of the study, spread geographically across the UK. Each centre provides all three chemotherapy regimes. Each of the alternative forms of chemotherapy delivery is provided in at least one centre. A total sub sample of approximately 150 patients will be obtained. Detailed data on the NHS costs of treatment are being collected from the five participating centres. This includes measurement and valuation of staff costs (medical, nursing, pharmacy), and costs of drugs and consumables for all regimes. A shorter questionnaire has been sent to all participating centres in the main trial to determine current methods of providing chemotherapy and obtain crude data on associated costs which will allow extrapolation of the detailed data across the whole trial. A research nurse in each of the five centres is monitoring via patient notes the investigations undertaken as well as any additional treatment. Patient borne costs are being collected by means of a weekly patient diary, completed by the patient or a relative. The diary monitors all costs incurred by patients or their families, including the opportunity cost of time taken off work both by the patient and by others to care for the patient. Differential use of general practitioner, district nurse or other health or social service resources between the groups is also being monitored in the diaries. Outcome data will be provided from the whole trial population on survival and quality of life measured on the EORTC QLQ-C30.
Results: From the data collected so far, it appears that the five centres chosen are representative of the sample as a whole, allowing extrapolation of the data.
Discussion: The extent to which detailed costing data can be collected from a sub sample of participating centres and extrapolated across the whole trial population is an interesting issue that requires further exploration.

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OP14. Diagnostic Imaging in Cancer. The Economics of PET

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Background: Positron Emission Tomography (PET) is a diagnostic imaging modality that differs from traditional technologies such as Magnetic Resonance Imaging (MRI) and Computed Axial Tomography (CAT) by evaluating function and biochemical process within the body rather than structural and anatomical indicators of disease. This gives PET the advantage of detecting cancer at an earlier stage and, by not restricting diagnosis to a specific anatomical region, the extent of the cancer throughout the body.

PET is an expensive technology, and its benefits in terms of detection and lives saved, over other imaging modalities must be compared against its additional costs.
Methods: We conducted a decision analysis in four areas of oncology: breast, cervical, lung and colonic. The care pathways and subsequent projected outcomes in each were evaluated for PET versus alternative diagnostic strategies. The costs and benefits were evaluated at each of four stages: presence of abnormality; determination of malignant or benign tumour, accurately staging the disease and early detection of recurrence. In each case based upon the best and worst sensitivities and specificities for PET and its alternatives.
Results: Considering results with regard to the number of cases detected per 1000 patients presenting with symptoms for each of the four cancer groups, PET was the dominant technology in the diagnosis (and subsequent treatment management) of lung cancer and breast cancer. In the diagnosis of colon and cervical cancer PET did not dominate over the alternative technologies (e.g. CT, MRI, biopsy, endoscopy, ultrasonography in combinations). For lung cancer, PET led to an increase of between 80 and 612 life years over the next best technology. The cost per life year saved of using PET was between £1,079 and £2,659 versus that of the next best alternative, in each case, of between £1,810 and £3,081. This translates into a cost advantage, for PET, of between £101 and £422 per life year saved. For breast cancer, PET led to an increase of between 278 and 1388 life years over the next best technology combination. The cost per life year saved of using PET was between £1,430 and £1,453 versus that of the next best alternative, which was between £1,019 and £1,502. This translates into a cost difference for PET, of between £72 less per life year saved over the next best alternative, to £434 more per life year saved.
Discussion: PET will not be the technology of choice at all four stages of the diagnostic process for each of the four cancers. While PET will frequently be a more accurate diagnostic technique compared to its alternatives, the marginal gain in accuracy will not be sufficient to justify the large increase in costs. The project identified the stages in each of the four oncological areas where PET contributed most in terms of cost effectiveness and should be the technology of first choice in the detection of cancer.

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OP15. Use of the EuroQoL among patients receiving radiochemotherapy for pancreatic cancer: Psychometrical tests and quality adjusted survival analysis

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Background: Cost-utility analysis of medical technologies applied to seriously ill patients requires health-related quality of life (QoL) measures that a) do not overstress the patient and b) provide reliable, valid and sensitive data from which utility weights for the calculation of QALYs can be obtained. The EuroQoL is a generic index measure that is easy to understand and can be self-completed by the respondent within less than 10 minutes. The reliability and validity of the EuroQoL has been shown in the general population as well as in patient groups with selected diseases. However, the EuroQoL has hardly been tested among seriously ill patients. In this study, the EuroQoL is applied to patients with inoperable pancreatic cancer who participate in a clinical phase II study of radiochemotherapy. The study was started in January 1997 and is still in progress. The purpose of our study is 1) to evaluate the practicability and psychometric characteristics of the EuroQoL among these patients, 2) to compare health-related utility weights of this patient group with those from the general population, 3) to assess the effect of subjective expectations with respect to treatment success and 4) to perform quality-adjusted survival analysis. Cost-measurement and cost-utility analysis are intended in another part of our study.
Methods: All inoperable pancreatic patients who present at the Ulm university hospital and meet the inclusion criteria of the clinical study are consecutively enrolled in this study. QoL assessment is conducted during the entire course of therapy. Patients are interviewed during intra-arterial chemotherapy and complete the EuroQoL questionnaire during each of theirs stays at home between two treatment episodes. Practicability is assessed by rejection rates and patient comments. Test-retest reliability is evaluated by the ICC. Construct validity is shown by correlating QoL data with clinical parameters. Responsiveness of VAS values is judged by Guyatt's responsiveness statistic and ROC curves which are calculated on the basis of the results of a transition question. For each patient QALYs are computed by quality adjusted survival analysis.
Results (study still in progress): Preliminary results indicate that the EuroQoL is well accepted by this group of patients. However, results of a pilot study showed, that the original reliability test over-stressed the patients, and hence had to be abbreviated. The EuroQoL seems to be very responsive and able to well discriminate between stays in hospital and at home. Patients in our study tend to rate their health states on the VAS scale much higher than the general population rates these states.
Discussion: Preliminary results indicate good practicability and responsiveness of the EuroQoL in this group of seriously ill patients.

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OP16. Cost-effectiveness and quality of life evaluation, in the context of current practice, of antiemetics used for the control of chemotherapy induced emesis

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Emesis represents a major obstacle to cancer chemotherapy. To improve the control of emesis, serotonin antagonists, such as ondansetron, have been recently developed. These agents are considered more effective but more expensive than the traditional, metoclopramide based, antiemetic regimens. Objectives : The purpose of this study was to measure, in a context of current practice, the economic and quality of life impact of ondansetron based regimens, compared to metoclopramide based regimens in moderately emetogenic chemotherapy.
Methods: Female patients with breast cancer, naive to chemotherapy, scheduled to receive a cyclophosphamide based chemotherapeutic regimen (FAC, FEC or CNOE) were eligible for this prospective study. They received either an ondansetron or a metoclopramide based antiemetic regimen. The selection of the regimen was left to the physician to represent current practice. Because patients were naive, selection did not rest on predisposition to emesis, but depended upon access to treatment. Incidence of vomiting was recorded daily, in a patient diary, for five days following chemotherapy. Efficacy was measured in terms of complete control (0 vomiting episode) and major control (two or less vomiting episodes) a) during the first day and b) for the 5 day period immediately following chemotherapy. Quality of life was measured with the EORTC QLQ-C30 on three occasions : before the chemotherapy, 24 hours after and 72 hours after the chemotherapy. Costs related to emesis (medications, devices, pharmacy and nursing time), were collected for a 5 day period.
Results: Results for forty-nine patients (22 metoclopramide and 27 ondansetron) have been analyzed. Emesis control was significantly better in the ondansetron group: 74% had complete control the first day and 74% for the 5 day period compared to 32% (p=.004) and 27% (p=.002) respectively for metoclopramide. Major control was also superior with ondansetron at 93% for the first day and 85% for the 5 day period compared to 55% (p=.003) and 50% (p=.012) respectively with metoclopramide. Global quality of life decreased more substantially with metoclopramide than with ondansetron, but the difference did not reach statistical significance. For the 5 day period, average cost with ondansetron was higher than with metoclopramide, $103 vs. $70, but the cost effectiveness ratio for complete control was better with ondansetron,