chance of resection (<10%), followed by local recurrence (30%). Palliative care for pain is managed with paracetamol, progressing to morphine. Physiotherapy for the patient and psychological support for both the patient and relatives are offered. Many terminally ill patients (>75%) spend their final days (last 2 weeks) in hospital rather than at home, despite the extensive 'at home hospitalisation' program to support these patients with daily visits from nurses and GPs.

Discussion: One concern identified during this pilot study is the logistical challenge of following the patient population. Both the patient referral system and the number of centres involved in the care of these patients in France may contribute to the difficulty of measuring resource use in these patients. The data collected in this pilot study will be used in planning a large formal resource utilisation and costing study in patients with Dukes' C colon carcinoma.

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PP26. Comparing the costs and cost-effectiveness of new chemotherapy regimens for treating non-small cell lung cancer (NSCLC).

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Several new chemotherapeutic regimens for NSCLC have become available in the 1990s. These regimens have been reported to have favorable results in initial trials. Randomized studies have been conducted with some of the agents, while only phase II results are available for several regimens. Nonetheless, many regimens are currently in widespread use. The objectives of this analysis are to compare the costs (including drugs, supplies, disposal, overhead, personnel) and cost-effectiveness (in years of life gained compared with either supportive care [BSC] or with the lowest cost regimen in this analysis) of these newer regimens. Survival rates were based on reported randomized and phase II studies, and on the recent meta-analysis (Brit Med J, 31 1, 1995) which evaluated survival in BSC. Costs were based on an average of 4 months of treatment with chemotherapy given on an ambulatory basis (shown in a large randomized study to be comparable to inpatient treatment, Mor et al, J Epid, 1988). Results (with costs in US dollars, K = X 1000) (vs Lowest Cost Reg = vs LCR):

TREATMENT	REPORTED MED	COST (4 Months)		COST/YR LIFE GAINED	
OPTION	SURVIVAL in Months	DRUGS in $K	TOTAL in $K	vs BSC in $K	vs LCR in $K
BSC	3 to 5	---	10.0	---	N/A
Nav+DDP	8 to 11	3.3	4.3	-11.4	---
Gem+DDP	8 to 13	7.7	8.8	-2.3	54.2
Txt+DDP	9 to 10	9.4	10.6	1.2	75.1
Tax+DDP	9 to 10	9.2	10.0	1	68.7
Tax+Carbo	9 to 11	15.2	15.8	11.5	137.4
Tax+Carbo+ G	9 to 11	25.4	25.9	31.8	259.4

Although survival differences among the chemotherapy regimens have not been demonstrated to date, the cost-effectiveness analysis is based on a hypothetical one month survival advantage for the higher cost regimens over the lowest cost combination. We conclude that: 1) substantial differences exist in cost and cost-effectiveness among the newer regimens, although survival results to date are similar; 2) most regimens are cost effective vs BSC, but are not cost-effective when compared with the lowest cost regimen; 3) growth factors markedly increase costs without benefit in survival or cost-effectiveness, especially when regimens that are not associated with a high degree of febrile neutropenia are included in the analysis; and 4) it is appropriate to factor cost-effectiveness into study design when testing for meaningful survival differences in planning randomized trials.

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PP27. Cost minimization analysis of treatment of T1N0 glottic squamous cell carcinomas: Comparison between radiotherapy, laser microsurgery and partial laryngectomy

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Background: Radiotherapy (RT), laser microsurgery (L) and partial laryngectomy (PL) are known as equally effective treatment options for T1NO glottic squamous cell carcinomas. In this framework, parameters other than treatment efficacy may be taken into consideration for the choice between one of these options. A cost minimization analysis of these options was thus carried out.

Methods: For each treatment, the various events associated with the diagnostic procedure, the primary treatment, the complications, the local recurrence and the salvage treatment were individualized. For each of these events, the frequency of occurrence based on the standard management procedure used in our institution and review of the published data, was then determined. The cost was then calculated using the billing codes for the "fee for service" established by the National Health Insurance of Belgium or for some specific events, using average cost estimates from a data base developed by the UCL Center for Interdisciplinary Study in Health Economics.

Results: A total cost of 226,250 and 457 kBEF were calculated for RT, L and PL, respectively. For L, cost included the cost of post-operative RT applied to 30% of patients in case of positive margins. For PL, the cost of the primary treatment accounted for 70% of the total cost whereas it only accounted for 47% and 39% for L and RT, respectively. For RT, L or PL, complications accounted for less than 10% of the total cost. The cost of salvage treatment reached 26%, 18% and 6% of the total cost for RT, L and PL, respectively. A sensitivity analysis was performed by varying the frequency of occurrence of some of the events that impacted the more on the total cost, e.g., duration of hospitalization stay, hospitalization cost, recurrence rate, frequency of post-operative RT after L, percentage of in-patients in the RT group. In most situations, the ranking of the cost between the three options was not affected. Interestingly, the cost of laser microsurgery could be substantially reduced even slightly below the cost of RT by decreasing the need for post-operative RT.

Discussion: RT and L have almost the same expected average cost for the treatment of T1NO glottic SCC, whereas PL is twice as expensive. A better selection of the patients referred for treatment by L could decrease the need of post-operative RT and consequently impact on the total cost. Cost-effectiveness analysis (with voice quality as effectiveness parameter) is in progress.

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PP28. Cost considerations in alternatives to inpatient care in the administration of chemotherapy and supportive care

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Two outpatient approaches (home and ambulatory care) were examined to determine which was less costly. In a previous randomized study with 440 patients, administration of chemotherapy in an outpatient clinic setting provided significant cost savings (33% to 50%, p=0.001) with greater patient and family satisfaction than treatment in the hospital (J Epid 1988). Randomized cost comparisons between home care and either inpatient or ambulatory care have not been conducted. In the current study, major cost elements were: personnel (treating and support staff), drugs and supplies, and overhead (space and utilities). We examined four chemotherapy treatments (of short, medium and long durations) given in three common

malignancies (colon, breast and lung cancer) and three supportive care measures. Total cost results are given below:

TREATMENT	HOME CARE	AMBULATORY CARE
5-FU+Leucovorin (5 days)	$799	$151
Cyclophosphamide+Doxorubicin	$797	$249
Cisplatin+Etoposide	$2196	$1096
Cisplatin, Mitomycin+Vinblastine	$2063	$1107
Hydration	$308	$151
Transfusion	$435	$359
Amphotericin	$277	$181

In each treatment type, home care was more expensive when compared with an ambulatory setting in which economies of scale could be realized (mean: 109% more expensive, range 21% to 429%, $p<0.05$). To control for lower drug costs found in the ambulatory setting, costs were also examined independent of pharmaceuticals; home care remained more expensive (mean 140%, $p<0.05$). Patients receiving ambulatory chemotherapy and supportive care measures were surveyed to determine satisfaction and related parameters. Patients were highly satisfied with ambulatory care (median rating 98 on a 100 mm VAS). While both ambulatory and home care are alternatives to inpatient treatment, we conclude that an efficient ambulatory setting is associated with greater cost savings and high patient satisfaction.

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PP29. Economic evaluation of the use of prophylactic Clodronate to treat multiple myeloma

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Background: The aim of this study was to establish the economic implications of using prophylactic clodronate therapy in patients with multiple myeloma, using the results of the MRC VI myelomatosis trial as the clinical basis of the study. The trial examined the effect of oral clodronate on the incidence of skeletal morbidity in a double-blind placebo controlled trial. A total of 612 patients were randomised at the time of diagnosis to receive either clodronate (1 600 mg daily) or an identical placebo in addition to chemotherapy and radiotherapy. Treatment was continued indefinitely or until the patient showed evidence of progressive osteolytic lesions or developed hypercalcaemia that was unresponsive to a high fluid intake and cytotoxic chemotherapy. Patients were followed up for four years.
Methods: This was a retrospective cost and consequences analysis based on clinical data from the MRC VI myelomatosis trial. A model of National Health Service (NHS) resource use and costs was constructed using the clinical data and information obtained from interviews with trialists (n=10) who treated 30% of the trial patients. The model compartmentalised the standard management of multiple myeloma into eight discrete stages: diagnosis; diagnosis to first plateau; diagnosis to death; first plateau to first relapse; first relapse to second plateau; first relapse to death; second plateau to second relapse; and second plateau to death. Information on patient management including NHS resource use, length of time in each stage and transition probabilities was obtained from each trialist. Additionally, patient management and NHS resource use for managing severe hypercalcaemia, vertebral fractures and non-vertebral fractures was collected. The average cost of managing the cohort of patients with multiple myeloma with and without clodronate during the MRC VI trial was calculated by combining the clinical and resource use data.
Results: The study will show the average cost of managing a patient in each disease state and the average cost of managing an episode of severe hypercalcaemia; a vertebral fracture and a non-vertebral fracture. The average cost for standard management of multiple myeloma together with the average cost of managing adverse events will be provided for the whole cohort of patients in the trial. The analysis will put the cost of clodronate into context by comparing the average cost of managing patients in the trial with and without clodronate. The additional cost of clodronate over four years will be compared with the cost of managing adverse events over this period for those patients who received clodronate compared to those who received placebo.

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PP30. Economic assessment of Clodronate in the preventive treatment of bone resorption in patients with metastatic breast cancer

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Osteolytic bone metastases are frequent in patients with breast cancer and cause a severe morbidity, due to tumour-induced bone resorption, such as bone pain, pathological fractures, and hypercalcemia. This leads to an important medical care consumption, particularly in hospitalisation and antalgic radiotherapy. The aim of this study was to assess and compare, over a 1-year period, the different medical resources consumptions between patients with metastatic breast cancer treated by clodronate and those followed up by a watchful waiting strategy but not preventively treated by clodronate.
We carried out a retrospective study based on the medical files of 57 patients included in a randomised clinical trial comparing clodronate (n = 29) to a placebo (n = 28). All these patients were surviving at 1 year. We assumed that the placebo strategy was close to the "watchful waiting" strategy. We used a standardised questionnaire form to collect the different medical resources used : outpatient consultations (reason, number), drugs prescribed (brand names, posology, length of treatment), laboratory tests, X-rays and CT scans, bone scintigraphies, echographies, hospitalisations (nature of ward, reason, length of stay) and radiotherapy on bones for pain relief. These items were collected during the 12-month period following the inclusion of the patient in the trial, and if they were related to bone resorption consequences or to a side-effect of clodronate. Treatment for the primary malignancy was not considered.
Patients treated by clodronate were less often hospitalised (24,1 % versus 42,9 %;p: 0,13), and their average length of stay was shorter (2,6 days (d.) versus 9,1 d; p: 0,11), than patients not treated. They had also less antalgic radiotherapy on bones (17 % versus 39 %; p: 0,06). Consumption of the other medical resources was comparable in the two groups. These differences resulted in a cost reduction of 12,107 FF for hospitalisation (5635 FF versus 17742 FF) and 1659 FF for radiotherapy (895 FF versus 2554 FF). Overall, the total cost per patient was higher for those treated with clodronate (48,036 FF versus 40,060 FF), but it must be compared to the incremental gain in efficacy: the clinical results showed that clodronate significantly delayed the occurrence of bone events (244 d. versus 180 d.) and increased the percentage of patients without bone event one year after the treatment (30 % versus 21 %). Cost-effectiveness ratios were in favour of the preventive treatment by clodronate.
This study was the first one which provided information on the 1-year cost of care for bone resorption in patients with metastatic breast cancer. Its results suggest that the preventive treatment by clodronate should be considered for these patients as it reduces hospitalisation and antalgic radiotherapy.

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PP31. The relative economics of screening for colorectal cancer, breast cancer and cervical cancer

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Background: This paper presents previous works by the author on the economics of colorectal cancer screening, breast cancer screening and cervical cancer screening. The technologies analysed are the unhydrated