

were validated by an individual interview, the use of the material and facilities was valued according to management data, and time was valued according to the local salaries for each profession.

**Results:** A good compliance was obtained (98 answers out of 99 questionnaires sent). Education is performed by 67 % of physicians, 86% of nurses, 14 % of other professionals, and 2% of administrative managers in the institution. In time spent, student training came first with 95 092 hours per year, then secretarial preparation with 7 936 hours, professional teaching and conferences took 3 508 hours and teaching for University degrees 3060 hours per year.

In terms of cost, the major activity was also student training (7 855 256 French Francs -FF-), then professional education (1 643 689 FF), University degrees (1 509 304 FF), and secretarial work (1 166 592 FF).

A total of 133 different educational activities were identified, for a total cost to the institution of 13 682 996 FF, about 4% of its budget. Transportation costs amount to 2.9% and the use of the center's facilities to 10.7% of this total cost.

**In conclusion:** Education in a Cancer Center is a major activity which is often underestimated in time spent as well as in cost. This study provides important information that can help make strategic decisions and find adequate means.

Bercez C, Centre Oscar Lambret, 3 rue F. Combemale, 59000 Lille, France

#### PP7. Economic evaluation of patients (pts) with lymphomas enrolled into phase II-III clinical trials (ct) in an oncology centre

Bordonaro R, Serraino D, Miele M, Ritossa D, Morassut S., De Paoli P, De Marco L., Cimitan M., Pinto A., Carbone A., Zagonel V  
Centro di Riferimento Oncologico, INRCCS, Aviano, Italy

**Background:** This abstract shows the preliminary results of an ongoing study aimed at: a) compare the bestowal of sources to PTS with neoplastic diseases and enrolled into phase N-M CT vs. homogeneous PTS not enrolled into CT, who underwent standard therapies; b) comparing the global resources absorbed by both groups with respect to the Diagnoses Related Groups (DRG) tariffs.

**Methods:** The study started on June 1996 and enrolled all new PTS affected by non-Hodgkin's Lymphomas (NHL) and Hodgkin's Disease (HD) hospitalized at the Division of Medical Oncology of the CRO - Aviano. Information was gathered on: a) sociodemographic conditions, b) diseases' characteristics as diagnosis, histology, stage according to Ann Arbor and histology according to Working Formulation, c) assessment of resources taken up by each patient, (i.e. radiological and radioisotopic test, laboratory test, length of stay in hospital, antitubercular treatment, and all other medical therapies administered during hospitalization), d) DRG tariffs. At the end of February 1997, 82 PTS who satisfied the eligible study criteria were enrolled: 61 (74%) with NHL and 21 (26%) with HD. Among them, 53 (65%) PTS were enrolled into CT and 29 (35%) were treated with standard strategies. This 29 PTS have not been enrolled into CT due the subsequent causes: a) early stage disease (in the lack of an active study protocol for stage I NHL) and relapsed diseases (62%) b) aging > 70 years and poor performance status (15%), c) logistic problems (19%).

**Results:** The table shows the differences between the two groups PTS regarding the four parameters evaluated:

Direct cost (US\$) of:	PTS enrolled into CT mean	PTS not enrolled into CT mean
Antitubercular drugs	848.4	260.5
Radiological tests	358.4	304.4
Radioisotopic tests	138.8	110.6
Hospitalization	3119.5	2752.6

**Preliminary results:** We estimated that the costs of the management of PTS enrolled into phase II-III CT exceeded of 10-40% the reimbursement indicated by DRGs.

This study was supported by a grant from the Italian Ministry of Health (Ricerca Finalizzata F.S.N. 1994).

Bordonaro R, Division of Medical Oncology, Centro di Riferimento Oncologico, INRCCS, Via Pedemontana Occidentale 12, 33081 Aviano, Italy

#### PP8. The impact of changing the reimbursement system for radiotherapy in Catalonia

Borràs JM<sup>1</sup>, Espinàs JA<sup>1</sup>, Peris M<sup>2</sup>, Constante C<sup>2</sup>

<sup>1</sup>Catalan Institute of Oncology, Barcelona, Spain. <sup>2</sup>Catalan Health Service, Barcelona, Spain

**Background:** The increasing role of radiotherapy in radical and palliative treatment of cancer was not accompanied by parallel and adequate increases in resources to provide radiotherapy treatments in Catalonia. Furthermore, the existing reimbursement system was based on a low fee per fraction of treatment and could induce a medically unnecessary increase in the number of fractions administered. Moreover, it did not take into account the diverse complexity and cost of radiotherapy treatments.

**Methods:** A new reimbursement system was designed, tested, and implemented in 1990. The unit of payment of this new system was the whole treatment instead of the fraction and it distinguished 3 levels of complexity each at a different fee. An information system was established to monitor the impact of the new reimbursement system.

**Results:** Implementing this new reimbursement system has made an impact in the following aspects:

- it has made it possible to learn the number of patients treated per centre and, thus to have a measure of productivity of centre adjusted according to the complexity of treatments
- it has established a basis for discussing the costs of treatments in an ambulatory setting that were analysed to establish new fees per treatment.
- it has made it possible to establish a prospective, activity-based budget for radiotherapy separate to the global budget of the hospital which facilitates converting health care administration priority for radiotherapy into practice at hospital level
- it acknowledges the low payment per case and has led to a progressive increase of the payment per case treated (mean increase, 152 %, 1990-97); the fee for each level has progressively come close to real cost.

In parallel, the health care administration has made continuous investments in radiotherapy, either acquiring new or replacing old equipment. These measures have had the effect of increasing the number of patients treated by 58%.

**Discussion:** The reimbursement system can have a substantial impact, positive or negative, on the way health care is delivered. Health care policy makers can and should use the reimbursement system as one of the mechanisms to promote an efficient delivery of high quality services in conjunction with new investments should it be necessary.

Borràs JM, Catalan Institute of Oncology, Av. Gran Via s/n Km 2,7, 08907 L'Hospitalet, Spain

#### PP9. Cost-quality of life study in inflammatory breast cancer (IBC) out patients receiving high dose intensity chemotherapy with RH-GCSF and stem cell support (PEGASE 2)

Viens P<sup>1</sup>, Bouscary ML<sup>2</sup>, Palangjié T<sup>3</sup>, Roché H<sup>4</sup>, Fabbro M<sup>5</sup>, Janvier M<sup>6</sup>, Delozier T<sup>7</sup>, Macquart-Moulin G<sup>2</sup>, Moatti JP<sup>2</sup>, and the "Economic/Quality of Life/Intensive Therapy" Group of the National French Federation of Anti Cancer Centers (FNCLCC)<sup>8</sup>

<sup>1</sup>Paoli-Calmette Institute, Marseille, France; <sup>2</sup>INSERM Unit 379, Marseille, France; <sup>3</sup>Curie Institute, Paris, France; <sup>4</sup>C. Régaud Center, Toulouse, France; <sup>5</sup>P. Lamarque Center, Montpellier, France; <sup>6</sup>R. Huguenin Center, Saint-Cloud, France; <sup>7</sup>F. Baclesse Center, Caen, France; <sup>8</sup>FNCLCC, Paris, France

**Background:** The aim of this study was to evaluate chemotherapy side-effects, quality of life (QL) and monetary costs of a French national protocol (cycle 1: Cyclophosphamide (C) 6gr/m<sup>2</sup>, Doxorubicin (D) 75mg/m<sup>2</sup>; cycle 2: C 3gr/m<sup>2</sup>, D 75mg/m<sup>2</sup>; cycle 3: cycle 2 + 5FU 2500mg/m<sup>2</sup>; cycle 4 cycle 3; mastectomy; radiotherapy) proposed to IBC