A review of admissions to cancer services at University Hospital Galway (UHG) was undertaken to assess the appropriateness of hospital usage. All cancer specialty patients admitted from 26-28 May 2009 were reviewed (n = 82). Chi square tests, Exact tests, and One-way ANOVA were utilised to analyse key issues emerging from the data. Fifty (61%) were classified as emergencies. Twenty three (67%) occupied a designated cancer bed with 24 (30%) in outlying non-oncology wards. The mean length of stay was 29.3 days. Possible alternatives to admission were identified for 15 (19%) patients. There was no evidence of discharge planning for 50 (60%) admissions. There is considerable potential to make more appropriate utilisation of UHG for cancer patients, particularly in terms of reducing bed days and length of stay and the proportion of emergency cancer admissions, and further developing integrated systems of discharge planning.

## Results

### Profile

An equal proportion of males and females were reviewed with 44 admissions (53%) over 65 years of age (mean = 63.9 years). There were no significant differences in mean age by gender (independent T test, t = 0.932, df = 0.354). The greatest proportion of admissions were cared for by Medical Oncology (n = 38, 46%), followed by Haematology (n = 26, 32%) and Radiation Oncology (n = 18, 46%). Seventy four cancer patients (89%) were already diagnosed with cancer at the time of admission. Sixty cancer patients (76%) were at the procedure stage of their cancer, with 8 (10%) at the stage of initial diagnosis, and 10 (13%) at the terminal stage.

### Severity of Illness

Fifty nine cancer patients (75%) presented with symptoms with the most common being fatigue and general debility (n = 24, 30%), severe pain (n = 21, 27%), and blood dyscrasias (n = 14, 18%). The majority of patients with these symptoms were admitted via the Accident and Emergency Department (n = 17 (70%), n = 17 (80%), and n = 13 (93%) respectively).

### Clinical Service Requirements

All cancer patients required medical services with the main requirements being for monitoring of renal function (n = 39, 49%), IV medications (n = 32, 40%), and vital signs monitoring (n = 31, 39%).

### Bed Usage

On the days of the study, 53 cancer patients (67%) occupied a cancer bed and 24 (30%) were in outlying wards. Significantly more elective/booked admissions occupied cancer beds than emergency admissions (29 (91%) compared to 24 (51%); t2 = 2.415, df = 1, p = 0.198).

### Length of Stay

The length of stay for 52 patients (65%) was over 14 days with 29 (37%) staying 30 days or more (Table 2). Emergency patients accounted for 1532 bed days (67%), with elective patients accounting for 753 (33%) of bed days. The mean length of stay was 29.3 days (median = 21.0). Emergency admissions had a mean length of stay of 23.5 days (median= 16.5) compared to 33.3 days (median = 24.0) for elective admissions, although these differences were not statistically significant (One way Anova, p = 0.084).

### Alternatives to Admission

Alternatives to admission were identified for 15 patients (19%) who could have attended alternate services if they were available. For the 10 emergency admissions, the main requirement was for access to urgent diagnostics and assessment (n = 7, 70%), while four of the five elective patients could have been dealt with on the day ward if it had been available to them.

### Evidence of Discharge Planning

A total of 32 (40%) admissions (16 (34%) emergency admissions and 16 (50%) booked/elective admissions) had evidence of discharge planning.

### Discussion

Improving the quality of inpatient care for cancer patients is about averting unnecessary hospital admissions for both elective and emergency admissions, and streamlining the care for those who need to be admitted. Whilst the study is...
limited in that it only investigated patients admitted over a two day period, it nevertheless provides a significant snapshot of cancer admissions at UHG, with implications in terms of the future delivery of services.

The unpredictable nature of emergency admissions can place strains on hospital systems and can also be stressful for patients. It is therefore a significant cause for concern that 61% of cancer patients are admitted as emergencies. The optimum level of care was not provided for these patients with almost half of emergency admissions not being accommodated in designated cancer wards. In addition, almost three quarters of emergency admissions were admitted from the Accident and Emergency Department, which in many cases was an inappropriate use of this facility due to the complexity of cancer and its treatment. The Accident and Emergency Department is not staffed with specialists in cancer care. This means that patients are transferred to inpatient services for full assessment. A new referral pathway is required to reduce the inappropriate use of the Accident and Emergency Department. Currently patients have to be admitted before they are assessed. Emergency admissions for cancer patients could be significantly reduced if they were assessed prior to admission and if alternative facilities were in place (e.g. urgent diagnostics). The need for assessment prior to admission is also highlighted by patients who need palliative care at admission (13%). Access to Palliative Care assessment occurs only after admission to an acute bed. Palliative Care beds are located off site of the acute hospital. It is possible that some admissions could have been avoided had Palliative Care been an option at the point of assessment.

With the increasing number of cancer cases, it is important that patients do not stay in hospital more often or longer than necessary. The average length of stay for cancer patients in the current study was 29.3 days. In a study of St Lukes Hospital, Dublin, the average length of stay in 2009 was 19 days. In the US, the average length of stay in 2007 was 5.9 days for those aged 18-44 years and 6.2 days for those aged 45-64 years. Although comparisons are difficult due to differences in coding, they do suggest that the length of stay in the current study is excessive. Reducing length of stay will help ensure cancer services can meet demand. Length of stay could be reduced by earlier clinical assessment. It has been recommended that every cancer patient should be assessed within 24 hours. In the current study, 23% of emergency admissions were not seen by a senior cancer clinician within this timeframe. Early assessment means that an agreed plan of investigation and care can start sooner. Reductions in length of stay can also be achieved with the development of integrated systems of discharge planning. The study only found evidence of discharge planning for 40% of patients. The HSE has developed a Code of Practice for Integrated Discharge Planning which needs to be applied to all patients admitted to hospital.

A number of treatments for cancer can be managed by ambulatory care services without the need to be admitted as an inpatient (e.g. chemotherapy, rehydration, and diagnostics). In the future, the proportion of patients requiring inpatient admission could be further reduced with advances in drug therapies. The study suggests that at UHG, ambulatory care services may not always be in a position to meet demand, leading to an inappropriate use of inpatient facilities. Ambulatory care capacity should be reviewed and new models of care developed. In the US, the management of more patients in ambulatory care, combined with the development of Acute Oncology Assessment Units has led to a reduction in cancer bed utilisation rates. This model of care is also being developed in Australia considered for the future development of Irish Cancer Services. With the likely future increase in demands on cancer services, it is vital that they are utilised in an appropriate and efficient way. This study provides a valuable insight into admissions and discharges. The pathway of care is characterised by inappropriate use of facilities, particularly the Accident and Emergency Department. In addition, the need for admission would have been significantly reduced if alternative facilities were in place, both in the hospital itself (such as the provision of an Acute Assessment Unit) and in the community. The quality of life of cancer patients (many of whom are terminally ill) would be significantly enhanced if they did not have to stay as long in hospital. There is a need to develop and strengthen services to help ensure that UHG continues to be a centre of excellence for Cancer Care in Ireland.

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