Title: Patterns of hospital admissions and length of stay during 1996 to 2011 among children compared with teenagers and young adults after completing treatment following diagnosis with cancer in Yorkshire

Introduction:

Few UK studies have evaluated the health care burden among children and young people aged 0-29 years. Describing the pattern of hospital activity will help plan service delivery for survivors and assess equity of access to specialist care.

The aim was to examine and compare hospital usage among children and teenagers and young adults (TYA) using admission rates and length of stay, taking into account clinical and demographic characteristics.

Methods:

Cases diagnosed between 1990-2009 aged under 30 years were extracted from the Yorkshire Specialist Register of Cancer in Children and Young People and linked to inpatient hospital episode statistics data between 1996-2011 using NHS number, gender, date of birth and postcode.

The median number of admissions (NA) and length of stay (LOS) was calculated and compared according to age at diagnosis and gender. Admission rates were analysed according to follow-up period since date of diagnosis (<3, 3-4, 5-7 and ≥8 years).

Results:

4,490 cases were diagnosed during 1990-2009, 91% of which successfully linked to at least one admission. The linkage rate did not vary by diagnostic group.

The median NA for 0-14s and 15-29s was 24 and 10 episodes. Leukaemia and bone tumours exhibited the highest median number of planned admissions (42 and 35 among children, 21 and 20 among TYA respectively). The median NA per follow-up period (>3, 3-4, 5-7 and ≥8) was 14, 26, 16, and 8 episodes respectively. Longest median LOS was for bone tumours and leukaemia with 5 days per spell on average.

Conclusion:

Individuals with leukaemia and bone tumours appeared to have higher admission rates and stay longer in hospital compared to other diagnostic groups. Higher admission rates were observed 3-4 years after diagnosis.

Future analyses will estimate hospitalisation rate ratios in comparison to the age-sex matched general population, and assess post-treatment admission patterns.