

# Influence of co-morbidity on outcomes for children with leukaemia using linked Hospital Episode Statistics (HES) data

Progress report

NCIN CTYA Cancer Leads workshop  
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# Project details

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# Aim

To identify and evaluate the influence of co-morbid factors on outcomes for children with leukaemia

# Objective 1

To identify co-morbid factors in children with leukaemia as documented in HES and in the National Registry of Childhood Tumours (NRCT)

# Objective 2

For children with leukaemia, to evaluate the influence of co-morbidity on:

- clinical trial recruitment
- survival
- quality of life

# Objective 3

To compare use of hospital services among children with leukaemia who are or who are not affected by co-morbidity

# Background -1

- Infants and those not recruited to trials have lower survival than other children
- Co-morbidity may explain these differences
- Co-morbid factors in childhood are largely unknown
- Co-morbid factors may be identified within HES and NRCT data

# Background -2

- Low birth weight babies (<2,500 grams) have greater mortality than normal weight babies.

Is this true for children with leukaemia?

- Survival from lymphoid leukaemia for children with Down syndrome is poorer than for other children.

Is this true for children with other congenital malformations?



# Materials

Cancer registrations for children diagnosed with leukaemia in Great Britain during 1980-2007 have been linked to:

- Birth records (birth weight data)
- Children's Cancer and Leukaemia Group records (congenital malformations data)
- Hospital Episode Statistics (co-morbid factors)
- MRC Clinical Trials data

# Methods

- Univariate survival to identify co-morbid factors in children
- Multivariable modelling of survival to assess the influence of all co-morbid factors
- Evaluation of quality of life by co-morbidity
- Multivariable logistic modelling to compare hospital services between children with and without co-morbidity

## *Preliminary results*

Presence of co-morbidity in children diagnosed with leukaemia in NRCT, Great Britain 1980-2007

<b>Disease</b>	<b>Number</b>	<b>%</b>
Congenital anomalies	811	6
Chronic Obstructive Pulmonary Disorder	240	2
Skin and tissue conditions	88	1
Blood diseases	84	1
CNS diseases	62	<1

# *Preliminary results*

*for England and Wales 1980 – 2006*

(new data including 2007 soon to be analysed)

11,342 children were diagnosed with leukaemia

9,067 lymphoid leukaemia

1,681 acute myeloid leukaemia (AML)

594 other types of leukaemia

# Initial findings

- Congenital anomalies were the most common co-morbid factor within NRCT
- Birth weight had little impact on survival
- Presence of a congenital malformation was associated with poorer outcome

# Next steps -1

- To complete the creation of the 1980-2007 dataset by linking in new clinical trials data
- To identify co-morbid factors within HES
- To evaluate the influence of co-morbid factors on:
  - clinical trial recruitment
  - survival
  - quality of life
- To compare use of hospital services by co-morbidity status

# Next steps -2

Future analyses and publications will be completed separately for each of:

- Lymphoid leukaemia
- AML