

Time trends in childhood leukaemia incidence



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Children with Leukaemia conference

London, 6 September 2004

Malignant disease in children

England and Wales, 1981-1990

Type	No.	%
Leukaemia	3,705	32.6
Brain, spinal cord	2,549	22.5
Lymphoma	1,134	10.0
Neuroblastoma	797	7.0
Soft tissue	776	6.8
Other (kidney, ...)	2,391	21.1
Total	11,352	100.0

International Incidence of Childhood Cancer, vol 2, 1999

Types of leukaemia in children

England and Wales, 1981-1990

Type	No.	%
Acute lymphoid	2,959	80
Acute myeloid	596	16
Chronic myeloid	88	2
Other	62	2
Total	3,705	100

International Incidence of Childhood Cancer, vol 2, 1999

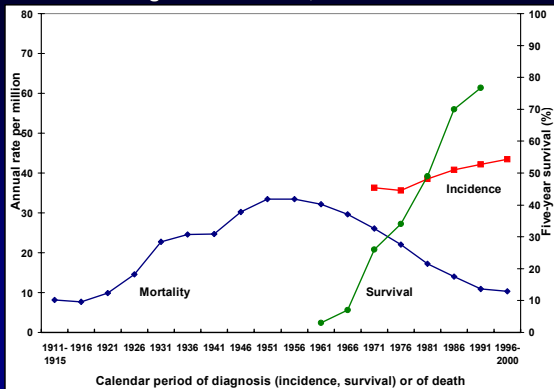
Leukaemia categories 1901-2000

International Classification of Diseases

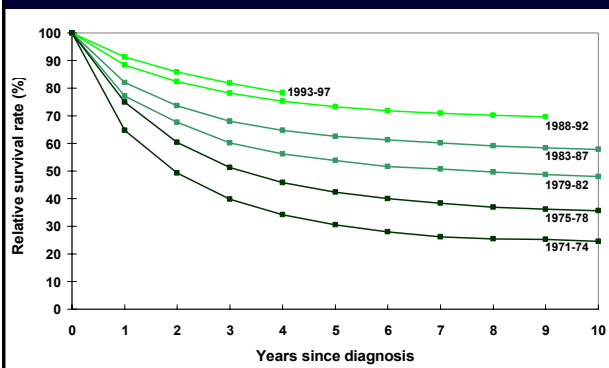
From	ICD rev.	Content	Categories
1901-	1	Not defined	—
1911-	2-3	Leukaemia	1
1931-	4-5	Leukaemia, aleukaemia	2
1950-	6-7	Lymphatic, myeloid, monocytic	5
1968-	8	Acute, chronic	13
1979-2000	9	Subacute	25

WHO, International Classification of Diseases

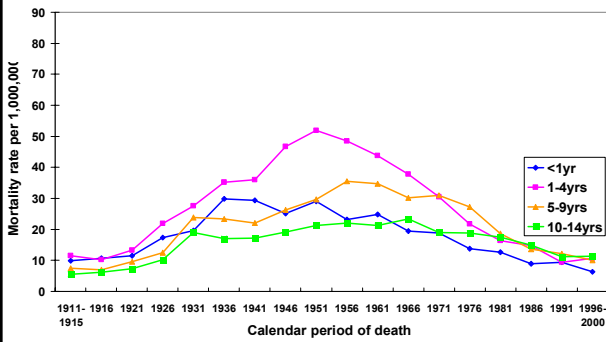
Leukaemia incidence, mortality and survival trends England and Wales, 1911 to 2000



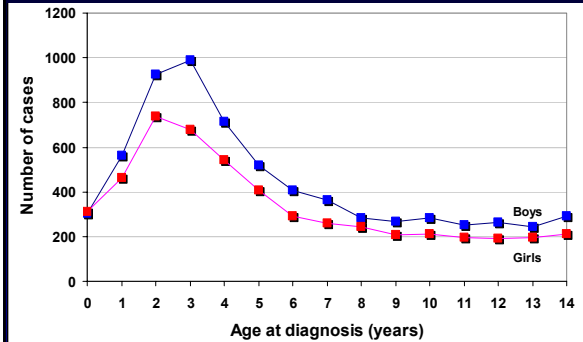
Childhood leukaemia survival by period of diagnosis Great Britain, 1971 to 1997



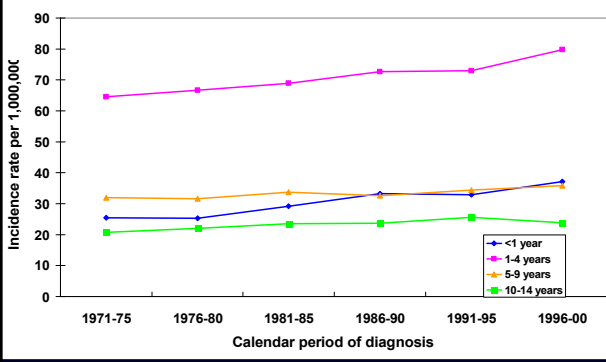
Leukaemia mortality trends England and Wales, 1911 to 2000 – by age



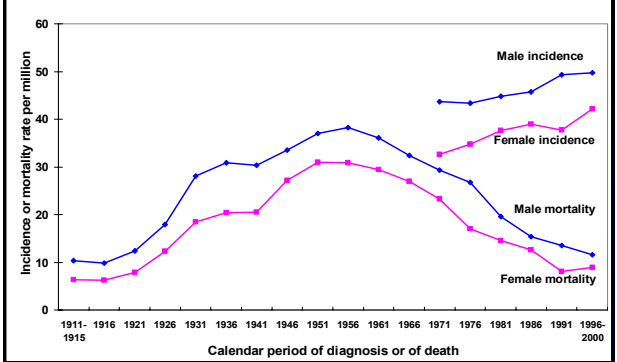
Childhood leukaemia – new cases by age and sex Great Britain, 1971 to 1997



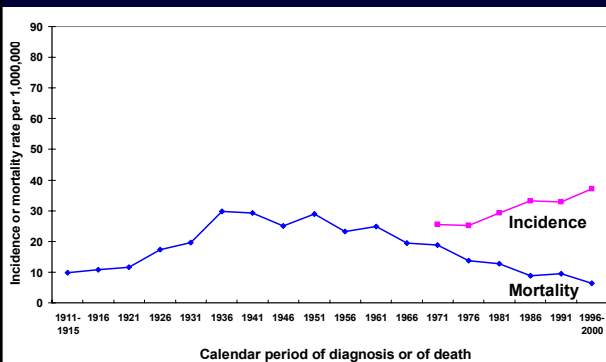
Leukaemia incidence trends England and Wales, 1971 to 2000 – by age



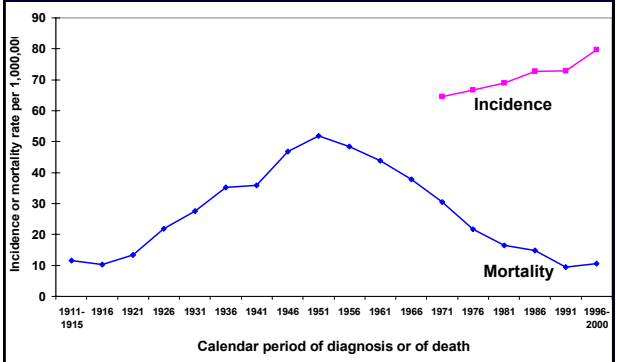
Leukaemia incidence and mortality trends England and Wales, 1911 to 2000 – by sex



Leukaemia incidence and mortality trends England and Wales, 1911 to 2000: under 1 year

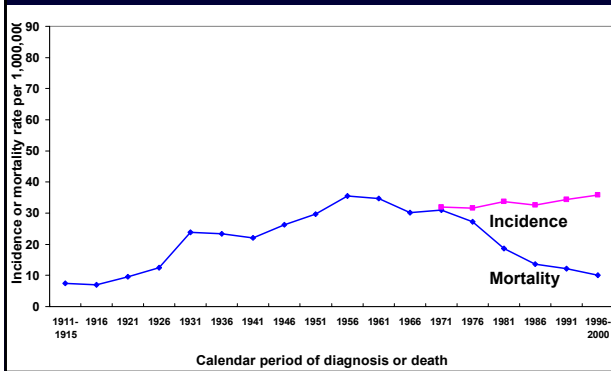


Leukaemia incidence and mortality trends England and Wales, 1911 to 2000: 1-4 years



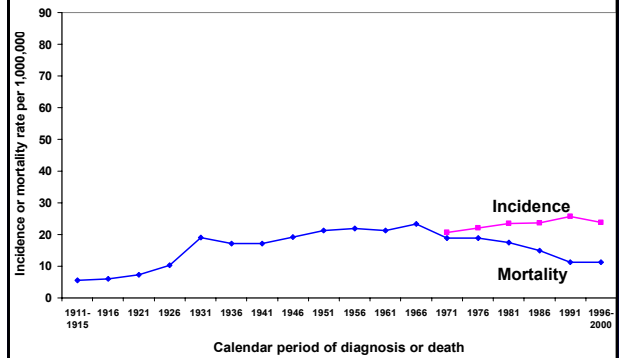
Leukaemia incidence and mortality trends

England and Wales, 1911 to 2000: 5-9 years

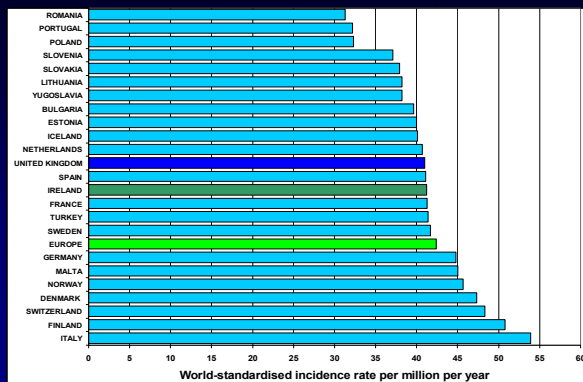


Leukaemia incidence and mortality trends

England and Wales, 1911 to 2000: 10-14 years



Childhood leukaemia incidence, Europe, late 1990s



ACCIS <http://www-dep.iarc.fr/accis/data.htm>, accessed 6 July 2004

Possible causes of childhood leukaemia

- Ionising radiation
- Genetic predisposition (Down's, other syndromes)
- Abnormal exposure/response to (viral) infections
 - Delayed infection
 - Impaired herd immunity
- Environmental chemical exposures (benzene, ...)
- Chloramphenicol
- Maternal smoking, paternal occupation
- Extremely low frequency magnetic or electric fields
- Radon inhalation
- Melatonin dysrhythmia (light at night)

Reducing the burden of childhood leukaemia

- Discovering new causes
- Understanding causal mechanisms
- Understanding the biology of leukaemia
- Developing preventive (or early diagnostic) strategies
- Developing improved treatments
- Reducing the toxicity and/or long-term unwanted effects of treatment
- Surveillance of incidence, survival and mortality