

Child mortality in the UK. Is access a problem?

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Child Mortality

- High in UK
- Low in Sweden
- Free health care
- Similar economically

U5MR

- Mortality rate for children under the age of 5 years
- Figure given in relation to 1000 live births
- Considered by UNICEF as **the single, most important indicator of the state of a nation's children**

Methods

- U5M data were obtained from the Office of National Statistics for each of the individual countries within the UK for three years (2006–2008)
- Data for Sweden for the same period were obtained from the National Board of Health and Welfare
- Causes of death were compared statistically using χ^2 test

Methods

- From the ICD classification a more clinically useful underlying cause of death was therefore allocated.
- Symptoms, signs, abnormal clinical and laboratory findings not elsewhere classified (R0-99) were evaluated and re-assigned to the most appropriate clinical cause of death

Results

- 14,104 and 1,036 deaths under 5 years of age in UK and Sweden
- Total numbers of live births were 2,295,964 and 315,884 respectively.
- Overall mortality rate in the UK was 614 per 100,000 children which was significantly higher than in Sweden (328) ($P < 0.001$)

U5 mortality rates per 100,000

Disease	UK	Sweden	Rate ratio	p Value
Prematurity	138.5	10.1	13.7	<0.001
Paediatric respiratory disorders	5.9	0.9	6.6	<0.001
Haematological and immunological disorders	3.3	0.6	5.5	0.01
Neonatal respiratory disorders	34.2	8.9	3.8	<0.001
Cardiovascular disorders	28.1	9.2	3.1	<0.001

U5 mortality rates per 100,000

Disease	UK	Sweden	Rate ratio	p Value
Gastrointestinal disorders	7.6	3.2	2.4	0.005
Infections	63.9	34.8	1.8	<0.001
Non-infectious CNS disorders	19.7	12.0	1.6	0.003
Overall mortality	614.3	328.0	1.9	<0.001

Results

- Mortality rates for most conditions significantly higher in UK

Results

- Prematurity major cause of mortality in UK

Neonatal mortality rates to infections

Neonatal infections (0 - 27 days)	UK	Sweden	Rate ratio	p Value
Neonatal sepsis	18.9	7.9	2.4	<0.001
Congenital pneumonia	4.5	0.6	7.5	0.001
All neonatal infections	27.9	12.3	2.3	<0.001

U5 mortality rates to infections

Paediatric infections (28 days – 4 years)	UK	Sweden	Rate ratio	p Value
Respiratory infections	11.2	6.0	1.9	<0.01
Septicaemia	10.5	6.6	1.6	<0.05
Meningitis	4.9	2.5	2.0	<0.001
All paediatric infections	36.0	22.5	1.6	<0.001

Results

- **Treatable infections**, such as pneumonia, meningitis and septicaemia, in both neonates and young children had **significantly higher mortality** rates in the UK than in Sweden ($p < 0.001$)

Why do young children die in the UK? A comparison with Sweden

Tambe P, et al. Arch Dis Child 2015; 100: 928-931

Child mortality of children aged 5-15 years in the UK and Sweden: a comparison

Tambe P, et al. Arch Dis Child 2016; 101: 409-410

Methods

- As for children less than five years
- Mortality rates per one million children
- Mean mortality rates for the 3 years were used for comparison

Results

- 2,342 and 207 deaths in children 5-15 years in the UK and Sweden
- Mean population was 7,403,933 and 1,146,061 respectively
- Mean mortality rates significantly higher in the UK (105.6 and 78.5 respectively, $p < 0.001$)

Mortality rates of children 5-15 years (per 1,000,000) ICD classification

Disease	UK	Sweden	Rate ratio	p Value
Respiratory	8.5	0.6	14.2	<0.001
Infectious and parasitic	3.6	1.5	2.4	0.04
Nervous system	15.1	10.2	1.5	0.03
Neoplasms	26.2	19.4	1.3	0.02
Overall mortality	105.6	78.5	1.3	<0.001

Mortality rates due to respiratory and infectious disorders (per 1,000,000)

Disease	UK	Sweden	Rate ratio	p Value
Asthma and status asthmaticus	3.4	0.3	11.3	0.01
Respiratory infections	2.4	0.3	8.0	0.01
Septicaemia	1.9	0.3	6.3	0.03
Other respiratory and infectious conditions	1.7	0.3	5.7	0.05
Viral infections	2.4	2.0	1.2	0.7

Conclusions

- The **mortality rates for infections** in children were significantly higher in the UK than Sweden
- The majority of these infections are **treatable**

Conclusions

- Mortality rates for a wide variety of conditions were significantly higher in the UK. These conditions were **all treatable**

Conclusions

- Access to healthcare and appropriate treatment is a problem for children in the UK

Conclusions

- Research should focus on **service delivery and access** rather than new medicines
- Need to reduce preterm birth rate in UK

Why do children with
treatable conditions in UK
not receive adequate
treatment?