Survival and mortality for leukaemia in children

Leukaemia is the most common childhood cancer and accounts for over 30% of all cancers diagnosed in children aged below 15 years old in the world (IARC, 2012). Causes of leukaemia are not well known, but some known risk factors include inherited factors such as Down syndrome and a family history of leukaemia and non-inherited factors including exposure to inonising radiation. There are different types of leukaemia but about three-quarters of cases among children are acute lymphoblastic leukaemia (ALL). The second most frequent type is acute myeloid leukaemia. Prognosis of leukaemia is different depending on various factors including age, initial white blood cell count, gender, initial reaction to induction treatment and type of leukaemia. Children with acute leukaemia who are free of the disease for 5 years are considered to have been cured as remission after 5 years is rare.

On average across OECD countries, there were 4.7 new cases of leukaemia per 100 000 children aged between 0 and 14 in 2012. Cross-country variations are large and incidence rates in Germany and Finland are high at around 7 per 100 000 children while they are as low as around 3 in Iceland and Greece. South Africa, India and China also have low incidence rates, below 3.0 per 100 000 children (Figure 6.39).

Five-year net survival of acute lymphoblastic leukaemia among children is on average 86.7% during the period of 2010-2014 across OECD countries. Although prognosis of ALL is considered better among girls than among boys, the difference in net survival is not statistically significant for most countries with the exception of Estonia where survival for girls is slightly better.

Over time, five-year net survival for children with ALL has improved across OECD countries (Allemani et al., 2015). This improvement is mainly due to progress in chemotherapy and stem cell transplantation technology. However, countries have not benefited equally from progress in medical technologies. Survival estimates are high in Finland (95.2%) and Denmark (94.0%) but they are low in Mexico (52.7%) and Chile (63.9%). Net survival is low also in China (57.7%), Brazil (66.0%) and Colombia (68.9%) (Figure 6.40). In these countries, survival prospect of children with ALL may improve through better access to effective treatment, by expanding health care coverage and providing high quality care by accredited professionals at specialised centres. Some of these countries are making progress in improving access and quality of care for childhood cancer. For example, Chile included access to care for childhood cancer as part of its guaranteed health care coverage plan and although a shortage of qualified professionals still exist at specialised centres, quality of care has become similar across providers (OECD, 2018).

Across OECD countries, the mortality rate of childhood leukaemia has also improved over time (La Vecchia et al., 2009; Malvezzi et al., 2013) and it was less than 1 per 100 000 children in most OECD countries in 2012 (Figure 6.41). The rate is particularly low at less than 0.3 in Australia, and Austria. However, the mortality rate is high in Turkey at 3.0 per 100 000 children and Mexico at 2.6.

Definition and comparability

Incidence and mortality rates come from the International Agency for Research on Cancer (IARC), GLOBOCAN 2012, available at *www.globocan.iarc.fr*. They refer to crude rates and are not age-standardised. GLOBOCAN estimates for 2012 may differ from national estimates due to differences in methods. For example, the incidence reported by the German Centre for Cancer Registry Data (ZfKD) and German Children's Cancer Registry is about 5 per 100 000. Net survival is defined in indicator "Screening, survival and mortality for breast cancer" in Chapter 6.

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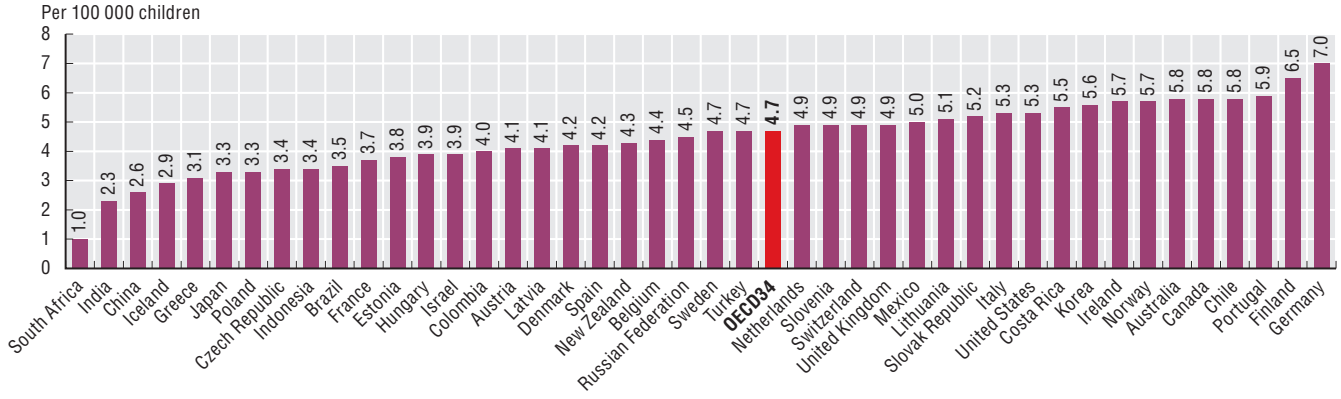
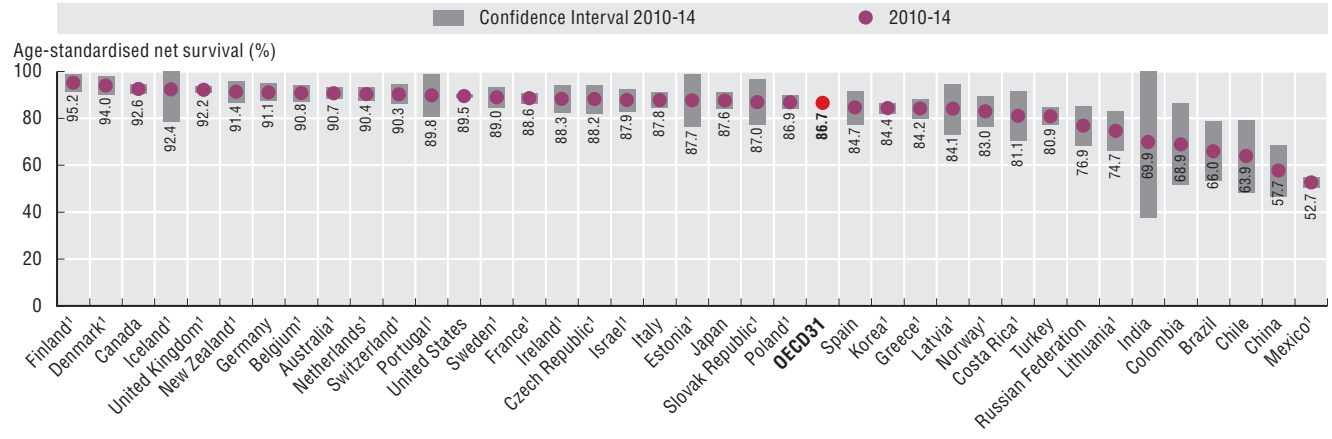
6.39. Leukaemia incidence in children aged 0-14, 2012



Source: International Agency for Research on Cancer (IARC), GLOBOCAN 2012.

StatLink http://dx.doi.org/10.1787/888933604077

6.40. Acute lymphoblastic leukaemia five-year net survival, 2010-14



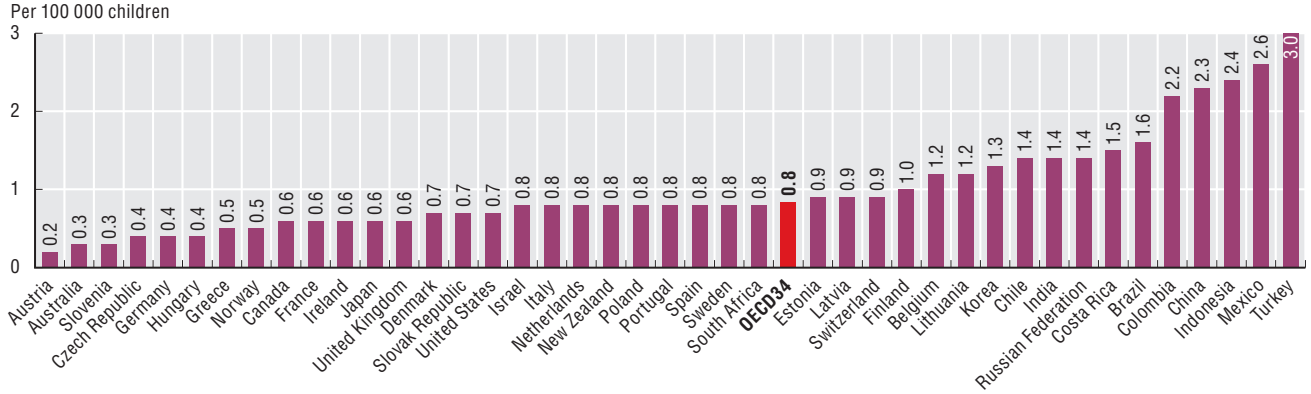
Note: 95% confidence intervals have been calculated for all countries, represented by grey areas. Expected updates in the data may reduce the survival estimate for Costa Rica.

1. Data with 100% coverage of the national population

Source: CONCORD programme, London School of Hygiene and Tropical Medicine.

StatLink http://dx.doi.org/10.1787/888933604096

6.41 Leukaemia mortality in children aged 0-14, 2012



Source: International Agency for Research on Cancer (IARC), GLOBOCAN 2012.

StatLink http://dx.doi.org/10.1787/888933604115

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