Sudden Unexpected Death in Infancy (SUDI)

This factsheet presents information on rates of sudden unexpected death in infancy (SUDI) between 2000 and 2016. New Zealand has historically had markedly higher SUDI rates than other high-income countries.

Key facts

42

In 2016, 42 children aged less than one year old died from SUDI, a rate of 0.7 deaths per 1,000 live births.

Between 2000 and 2016, both the number and rate of SUDI deaths decreased. SUDI accounts for roughly 18% of all infant deaths during this period (Ministry of Health 2019).

In 2012 – 2016, SUDI rates were higher among Māori babies (1.3 per 1,000 live births) and Pacific babies (1.2 per 1,000 live births) than among European/Other babies (0.4 per 1,000 live births) and Asian babies (0.1 per 1,000 live births).

In 2012 – 2016, children whose mothers were aged less than 25 years old had much higher rates of SUDI than children born to mothers aged 25 or older.

The SUDI rate was considerably higher in the most deprived areas (NZDep2013 quintile 5: 1.3 per 1,000 live births) than in the least deprived areas (quintile 1: 0.2 per 1,000 live births) in 2012–2016.

The district health boards (DHBs) with the highest SUDI rates between 2012 –2016 were Tairāwhiti, followed by Whanganui, and Waikato.

Second-hand smoke increases the risk of SUDI

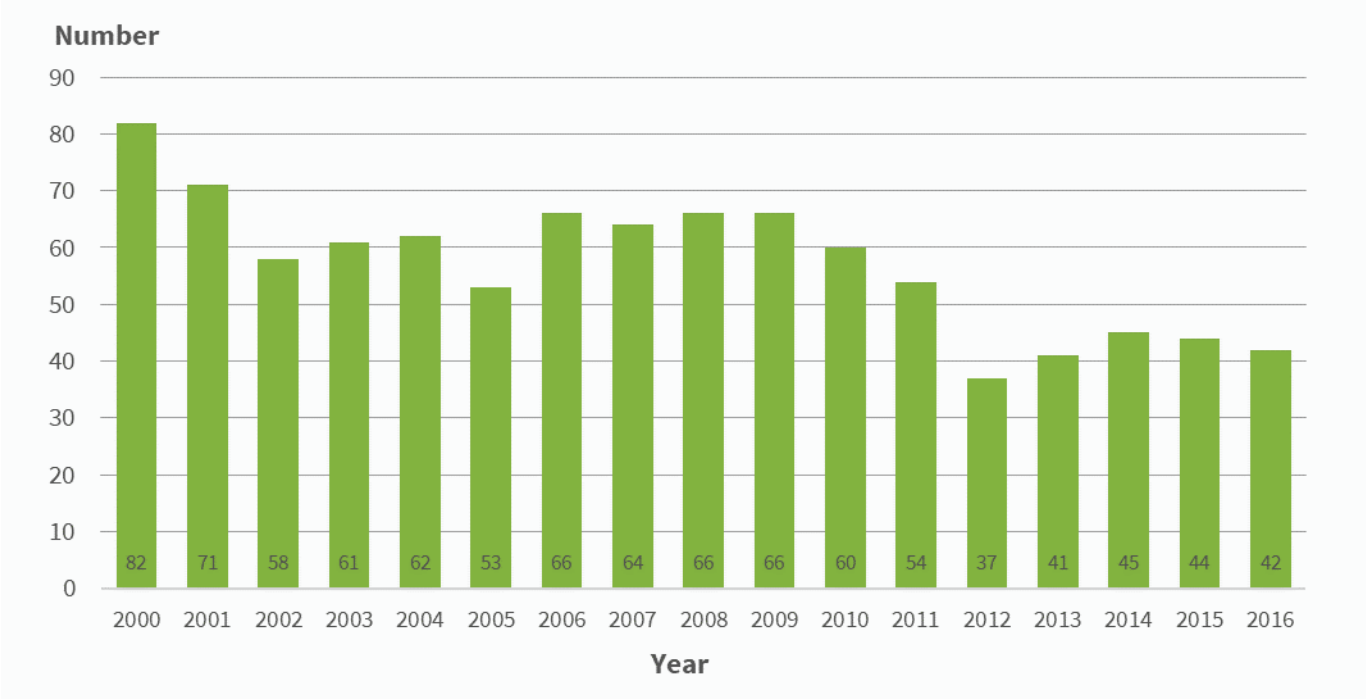
Exposure to second-hand smoke increases the risk of SUDI in children under one year of age (US Department of Health and Human Services 2007). Additionally, evidence shows there is an increased risk for babies whose mother smokes, independent of whether the mother smoked during pregnancy (Anderson and Cook 1997).

In 2016 there were 42 deaths from SUDI

In 2016, 42 children aged less than one year old died from SUDI in New Zealand. This is a rate of 0.7 deaths for every 1,000 live births. Between 2000 and 2016, both the number and rate of SUDI deaths declined substantially (Figures 1 and 2). The SUDI rate decreased from 1.4 deaths per 1,000 live births in 2000, to 0.7 in 2016.

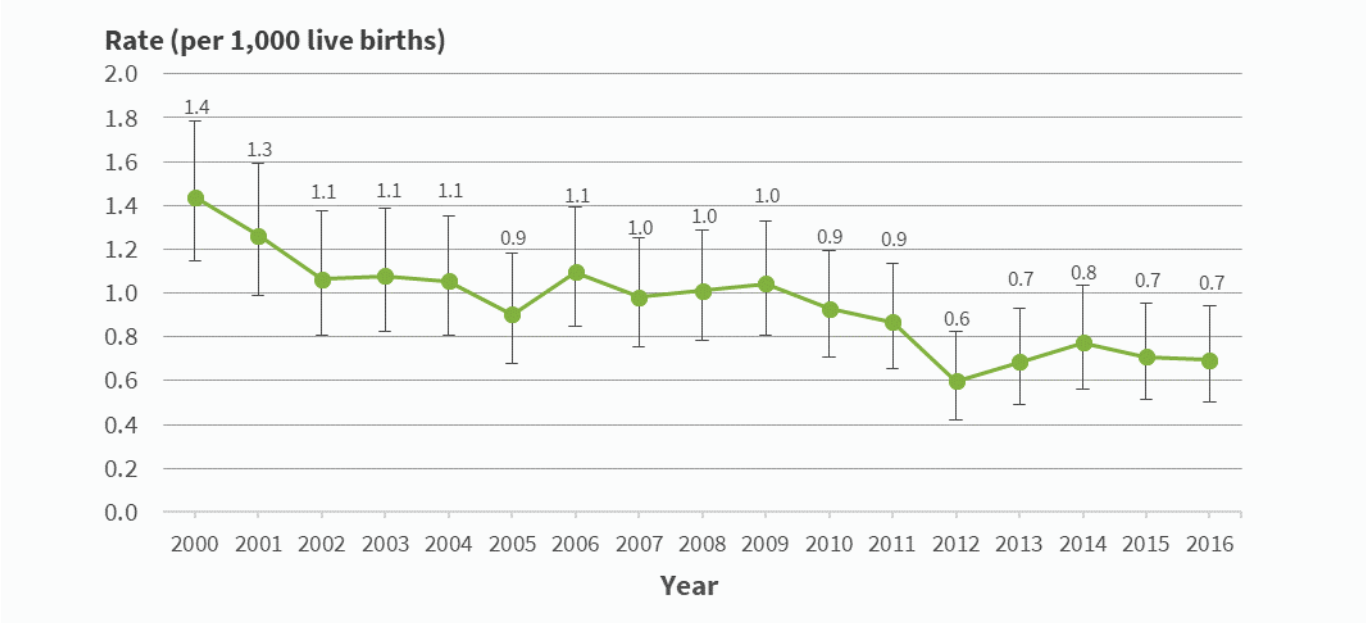
In 2002-2010, New Zealand's SUDI rate was 1.01 deaths per 1,000 live births compared to 0.95 in the United States, 0.60 in Japan, 0.50 in Australia, 0.45 in England and Wales, and 0.19 in the Netherlands (Taylor et al 2015).

Figure 1: Number of SUDI deaths, children aged <1 year, 2000 – 2016



Source: Ministry of Health 2019

Figure 2: SUDI mortality rate, children aged <1 year, 2000 – 2016 (rate per 1,000 live births)

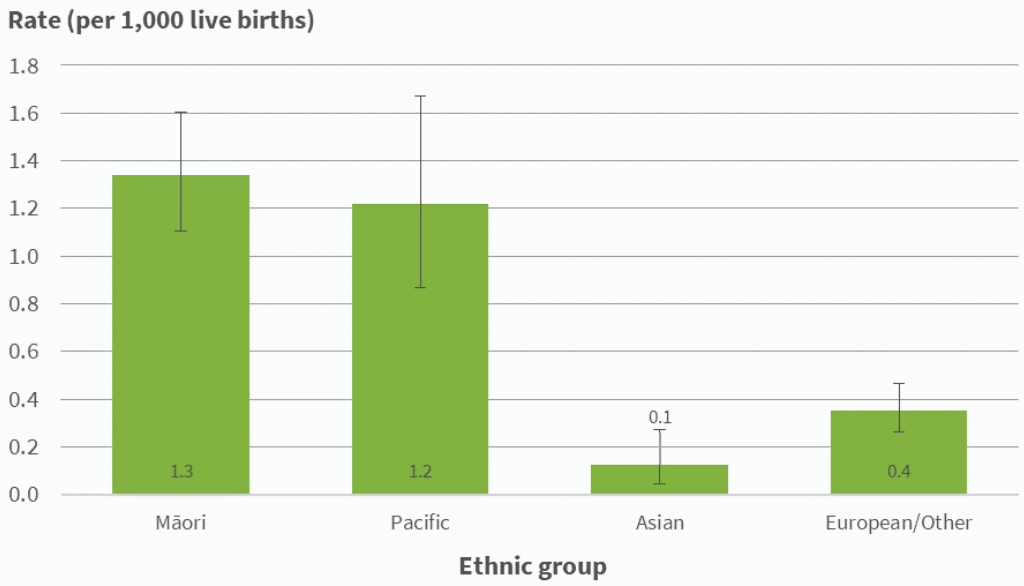


Source: Ministry of Health 2019

Māori and Pacific babies had higher SUDI rates

In 2016, 27 deaths of Māori babies and six deaths of Pacific babies were attributed to SUDI. In the same year, SUDI accounted for the deaths of one Asian baby and six European/Other babies. In 2012-16, Māori and Pacific babies had much higher rates of SUDI than other ethnic groups (Figure 3).

Figure 3: SUDI mortality rate, children aged <1 year, by prioritised ethnic group, 2012 – 2016 (rate per 1,000 live births)

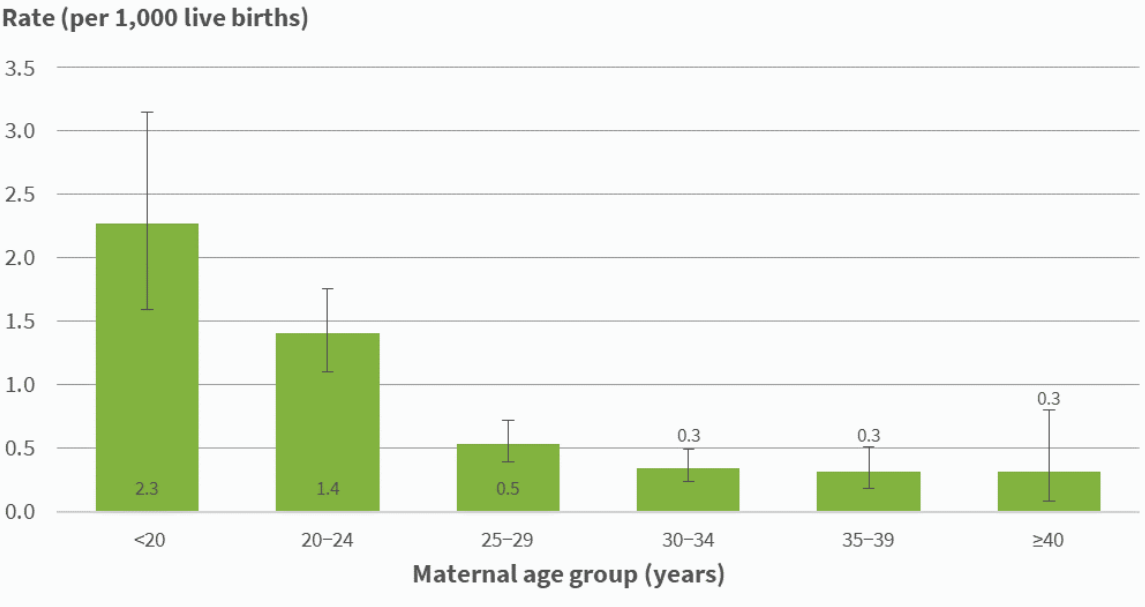


Note: Prioritised ethnic groups have been used.
Source: Ministry of Health 2019

Babies of younger mothers were most at risk of SUDI

In 2012 – 2016, babies whose mothers were less than 25 years old had significantly higher SUDI rates than all other age groups. (Figure 4).

Figure 4: SUDI mortality rate, children <1 year, by maternal age group, 2012 – 2016 (rate per 1,000 live births)

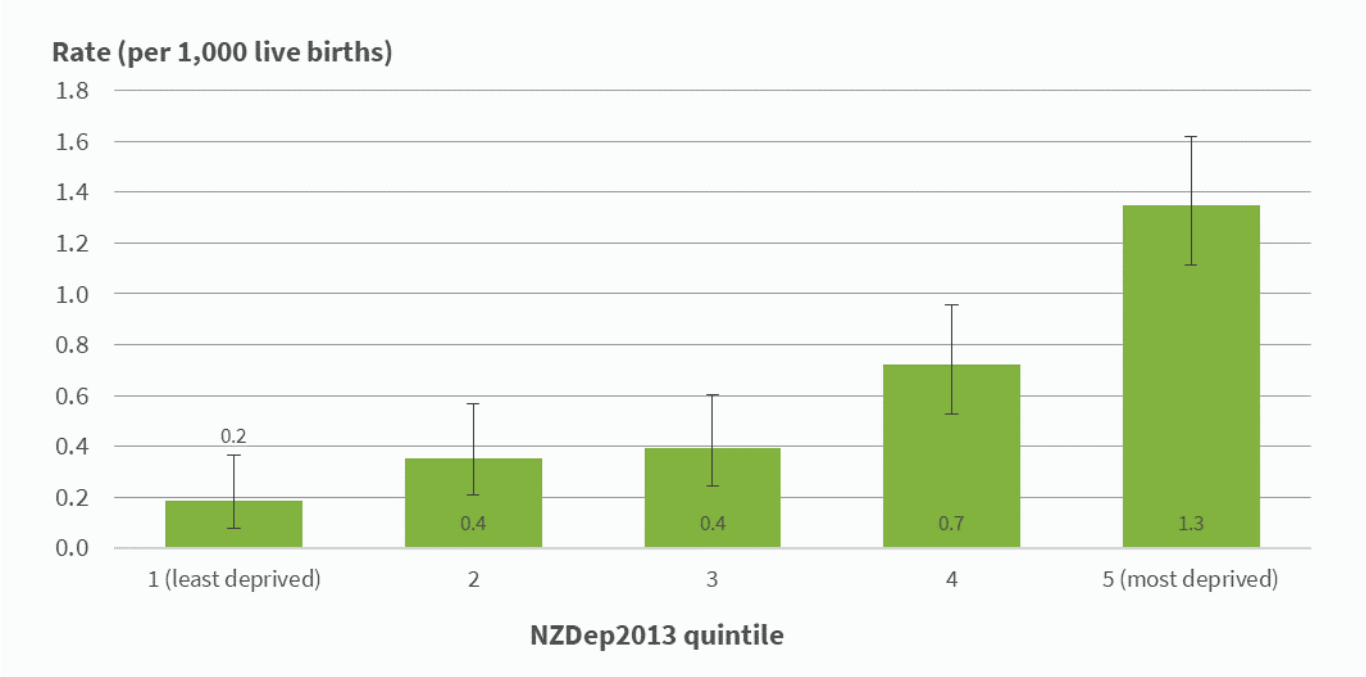


Source: Ministry of Health 2019

The highest SUDI rates occurred in the most deprived areas

In 2012 – 2016, babies living in the most deprived areas (NZDep2013 quintile 5) had a much higher SUDI rate (1.3 deaths per 1,000 live births) than those living in the least deprived (quintile 1) areas (0.2 per 1,000 live births) (Figure 5).

Figure 5: SUDI mortality rate, children aged <1 year, by NZDep2013 quintile, 2012 – 2016 (rate per 1,000 live births)

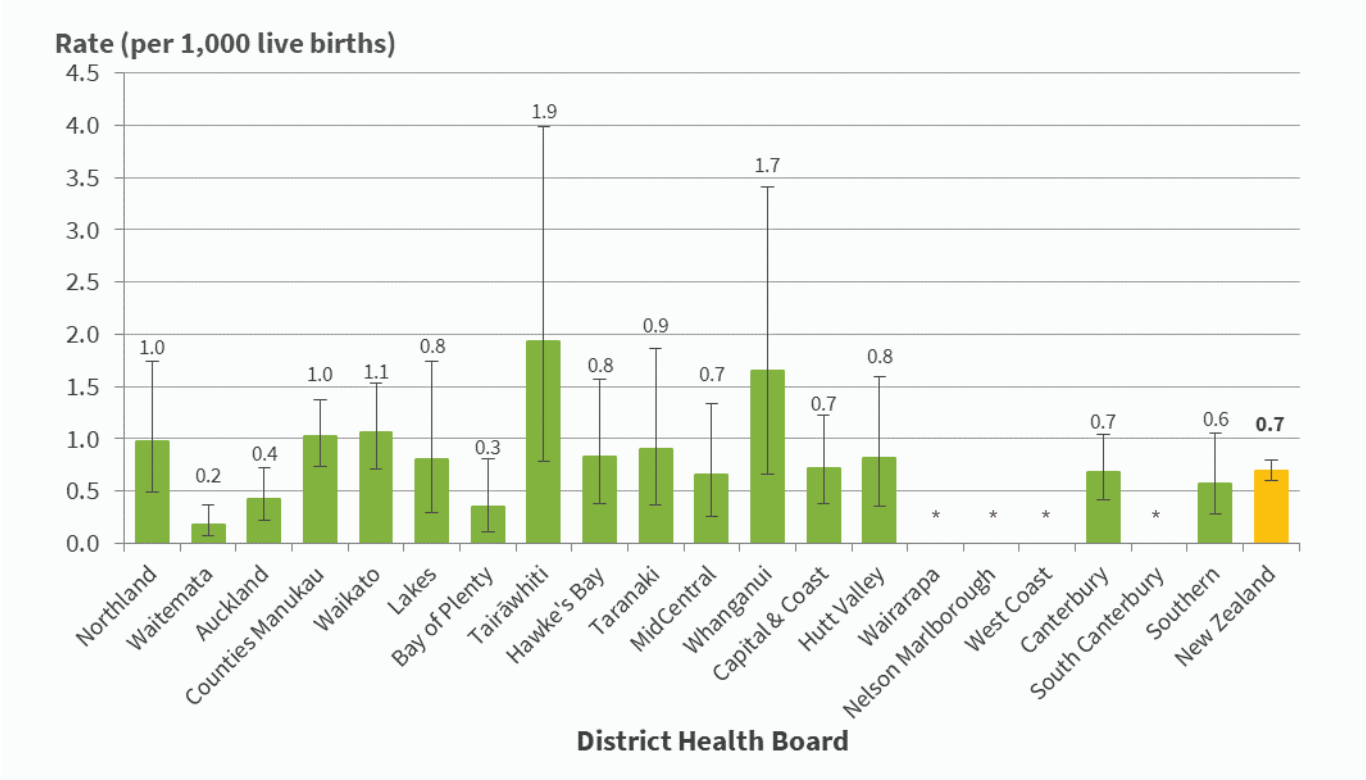


Source: Ministry of Health 2019

Tairāwhiti, Whanganui and Waikato DHBs had the highest SUDI rates in 2012-2016

In 2012 – 2016, the highest SUDI rates were in Tairāwhiti DHB (1.9 deaths per 1,000 live births), Whanganui DHB (1.7 per 1,000 live births) and Waikato DHB (1.1 per 1,000 live births) (Figure 6).

Figure 6: SUDI mortality rate, children aged <1 year, by District Health Board, 2012 – 2016 (rate per 1,000 live births)



Note: (*) Some rates are supressed as there were less than five SUDI deaths in these DHBs between 2012 – 2016. This is too small a count to provide meaningful data.
Source: Ministry of Health 2019

Data for this indicator

Data for this indicator comes from Fetal and Infant Deaths 2016 (Ministry of Health 2019). The indicator presents data related to sudden unexpected death in infancy (SUDI), defined as deaths in children aged less than one year old, with an underlying cause of death assigned one of the following ICD-10 codes:

- R95 – sudden infant death syndrome (SIDS)
- R96 – other sudden death, cause unknown
- R98 – unattended death
- R99 – other ill-defined and unspecified causes
- W75 – accidental suffocation and strangulation in bed
- W78 – inhalation of gastric contents
- W79 – inhalation and ingestion of food causing obstruction of respiratory tract

This definition follows the recommendations of the Child and Youth Mortality Review Committee (2009).

Mortality rates are presented as deaths per 1,000 live births. For additional information, see the metadata link below.

All differences mentioned in the text between two values are statistically significant at the 5% level or less.

References

Anderson HR & Cook D. 1997. Passive smoking and sudden infant death syndrome: review of the epidemiological evidence. *Thorax,* 52, 1003-1009.

Child and Youth Mortality Review Committee, Te Rōpū Arotake Auau Mate o te Hunga Tamariki, Taiohi. 2009 *Fifth Report to the Minister of Health: reporting mortality 2002-2008.* Wellington: Child and Youth Mortality Review Committee.

Ministry of Health. 2019. *Fetal and Infant Deaths 2016.* Wellington: Ministry of Health. URL: **https://www.health.govt.nz/publication/fetal-and-infant-deaths-2016** (accessed 4 March 2020)

Taylor BJ, Garstang J, Engelberts, A et al. 2015. International comparison of sudden unexpected death in infancy rates using a newly proposed set of cause-of-death codes. *Archives of Disease in Childhood.* 100(11): 1018-1023. DOI: 10.1136/archdischild-2015-308239 (accessed 5 March 2020).

U.S. Department of Health and Human Services. 2007. *Children and Secondhand Smoke Exposure. Excerpts from The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General.* Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

Other Indoor Environment topics include:

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Further information

For descriptive information about the data **Metadata Sheet**

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