# Sudden unexpected death in infancy (SUDI)

This report presents information on rates of sudden unexpected death in infancy (SUDI) from 2011 to 2020 (the most recent data available) in New Zealand.

## Key facts

- 40 babies died from SUDI in 2020, down from 47 deaths the previous year. There has been no improvement in SUDI rates since 2012.
- In 2016–20, Māori babies had five times, and Pacific babies four times, the rate of SUDI as European/Other babies.
- Babies of younger mothers (younger than 25 years) had higher SUDI rates than babies born to mothers in older age groups.
- The SUDI rate for babies living in the most socioeconomically deprived areas (NZdep 2013 quintile 5) was more than seven times as high as babies in the least deprived areas (quintile 1).

## Maternal smoking doubles the risk of SUDI

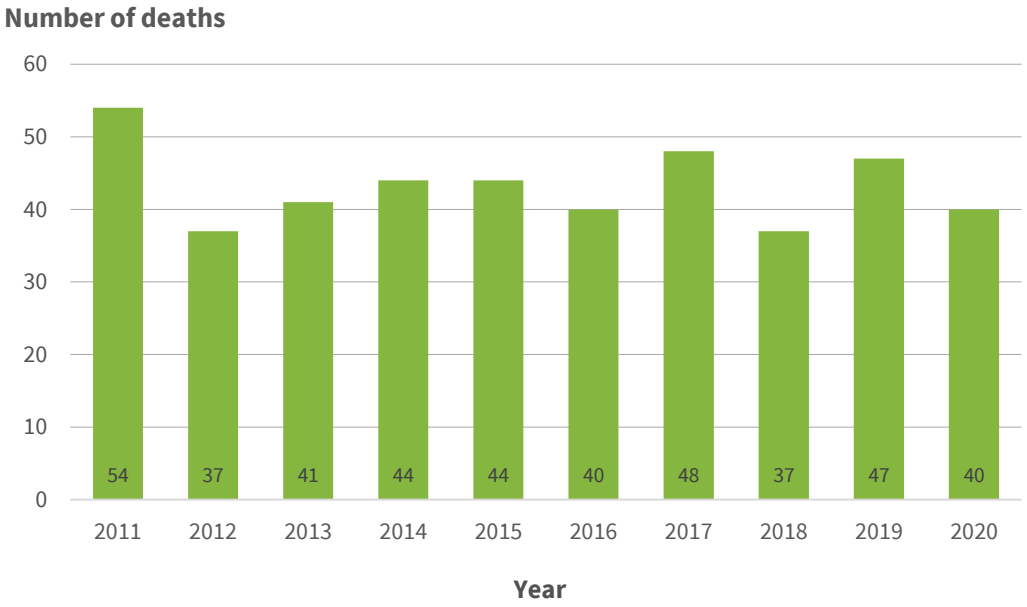
Exposure to second-hand smoke has been shown to increase the risk of SUDI in infants (under one year old) (US Department of Health and Human Services 2007, Anderson and Cook 1997). Having a mother who smokes also doubles their risk of dying from SUDI (Zhang and Wang 2013; Anderson and Cook 1997). The estimated number of SUDI deaths attributable to maternal smoking decreased from 7 in 2010 to 3 in 2020 (based on Mason and Borman (2016) methodology). Similarly, the latest data shows that maternal smoking at two weeks postnatal fell from 13.7% in 2009 to 7.3% in 2021.

In 2002–2010, New Zealand had a high SUDI rate compared with other developed countries (Taylor et al 2015).

## 40 babies died from SUDI in 2020

In 2020, 40 babies less than one year of age (<1 year) (0.7 per 1,000 live births; 95%CI 0.5–0.9) died from SUDI, down from 47 the previous year (Figure 1). In total, 432 babies died from SUDI between 2011 and 2020.

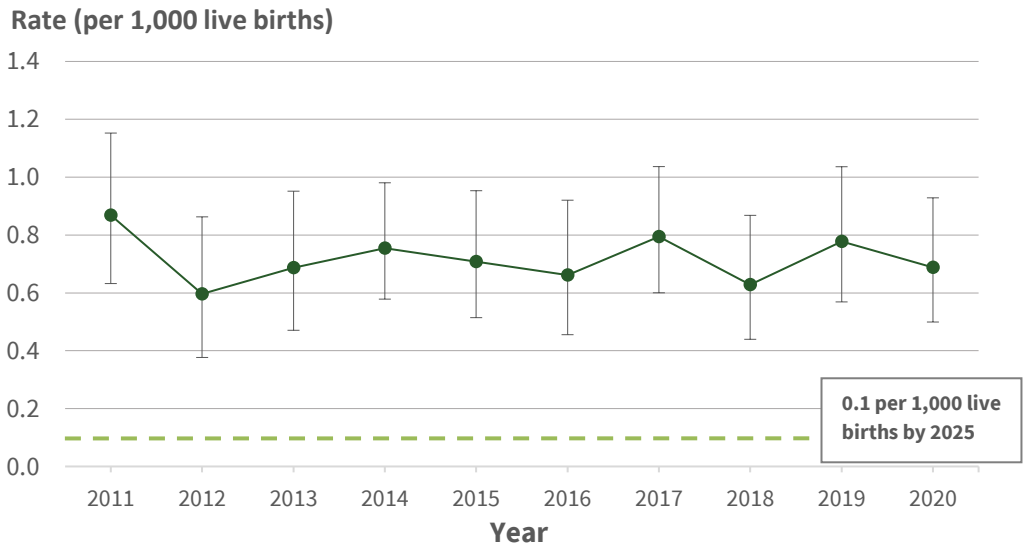
**Figure 1: Number of SUDI deaths in children aged <1 year, 2011–2020**




Source: Health New Zealand – Te Whatu Ora, 2025

The SUDI rate declined from 2011 to 2012, but has fluctuated between 0.6 and 0.8 deaths per 1,000 live births since (Figure 2). In 2017, the New Zealand government launched the National SUDI prevention programme. A target was set to reduce the SUDI rate from 0.7 per 1,000 live births to 0.1 per 1,000 live births by 2025 (Ministry of Health 2017).

**Figure 2: SUDI deaths in children aged <1 year, 2011–2020 (rate per 1,000 live births)**

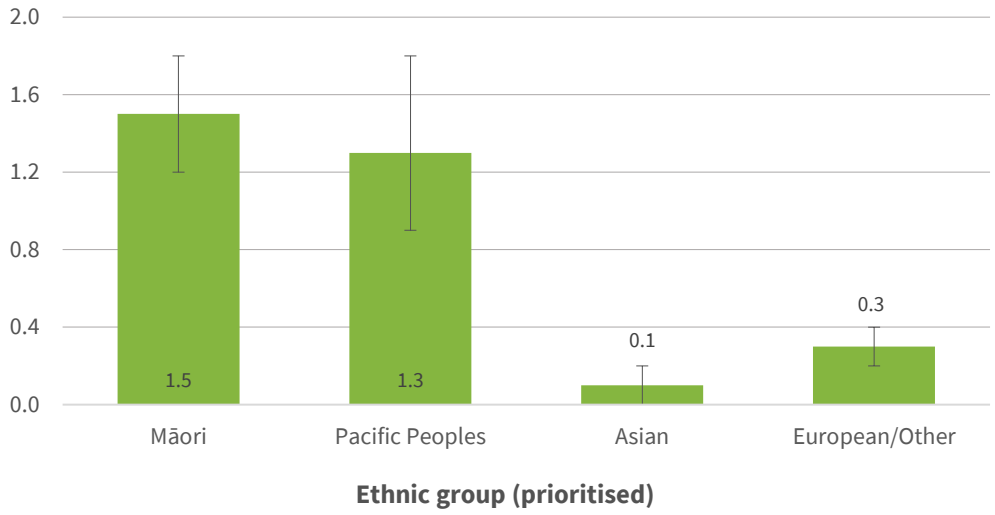



Note: 95% confidence intervals have been presented as vertical bars.
Source: Health New Zealand – Te Whatu Ora, 2025

## Pacific and Māori babies dying at a higher rate

Of the 40 babies that died from SUDI in 2020, 26 were Māori (65%), 6 were Pacific (15%), 7 were European (18%), and 1 was Asian (3%). In 2016–20, the SUDI rates for Māori babies (1.5 per 1,000 live births; 95%CI 1.2–1.8) and Pacific babies (1.3 per 1,000 live births; 95%CI 0.9–1.8) were respectively five and four times that of European/Other babies (0.3 per 1,000 live births; 95%CI 0.2–0.4) (Figure 3).

**Figure 3: SUDI deaths in children aged <1 year, by ethnic group (prioritised), 2016–20 (rate per 1,000 live births)**

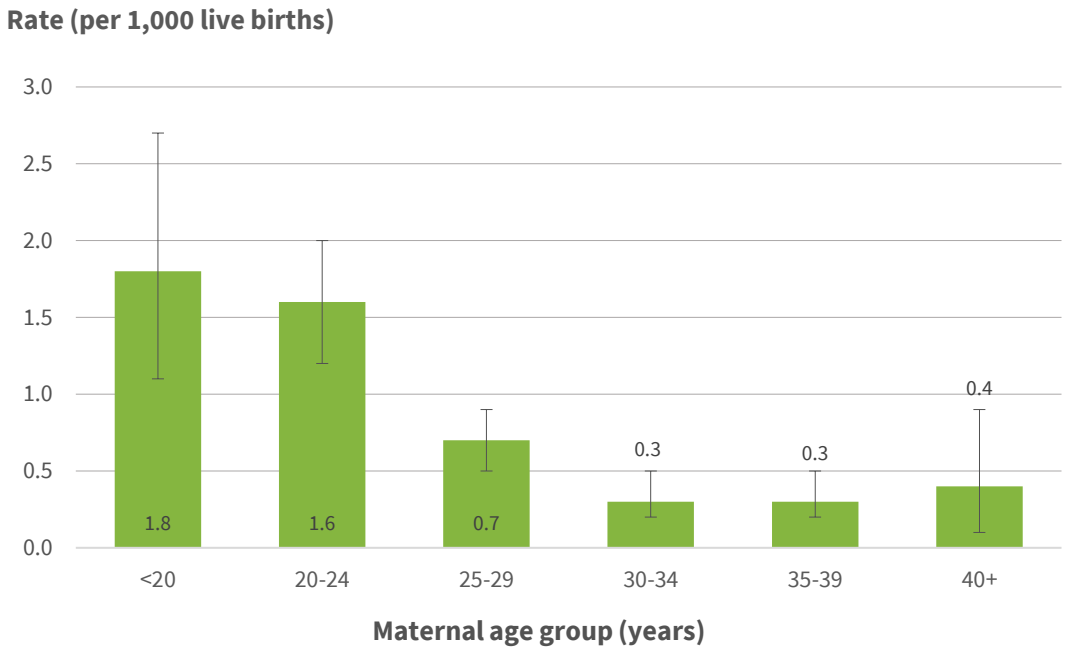



Note: 95% confidence intervals have been presented as vertical bars.
Source: Health New Zealand – Te Whatu Ora, 2025

## Babies of younger mothers have higher rates of SUDI

In 2016–20, SUDI rates were higher for babies whose mothers were younger than 25 years old (Figure 4).

**Figure 4:** **SUDI deaths in children aged <1 year, by maternal age, 2016–20 (rate per 1,000 live births)**

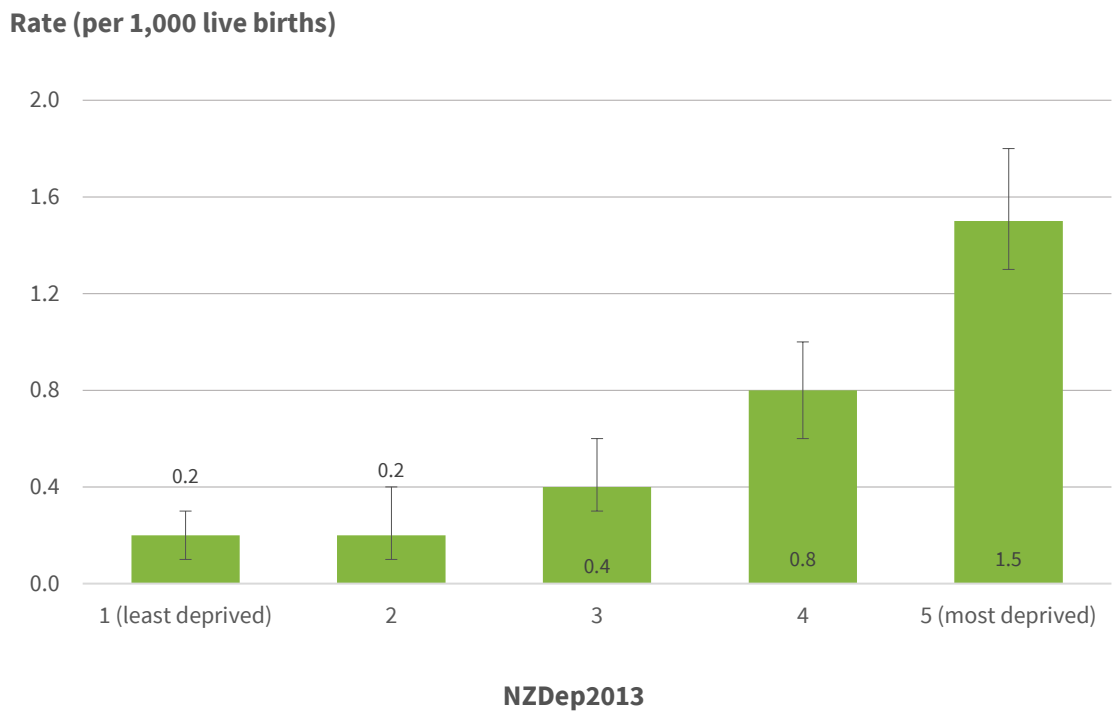



Note: 95% confidence intervals have been presented as vertical bars.
Source: Health New Zealand – Te Whatu Ora, 2025

## Higher SUDI rates in the most socioeconomically deprived areas

In 2016–20, the SUDI rate for babies living in the most deprived areas (NZDep2013 quintile 5) was statistically significantly higher (1.5 per 1,000 live births; 95%CI 1.3–1.8) than those living in other quintiles. Babies living in the most deprived areas had more than seven times the rate of SUDI as babies living in the least deprived areas (quintile 1).

**Figure 5: SUDI deaths in children aged <1 year, by NZDep2013 quintile, 2016–20 (rate per 1,000 live births)**

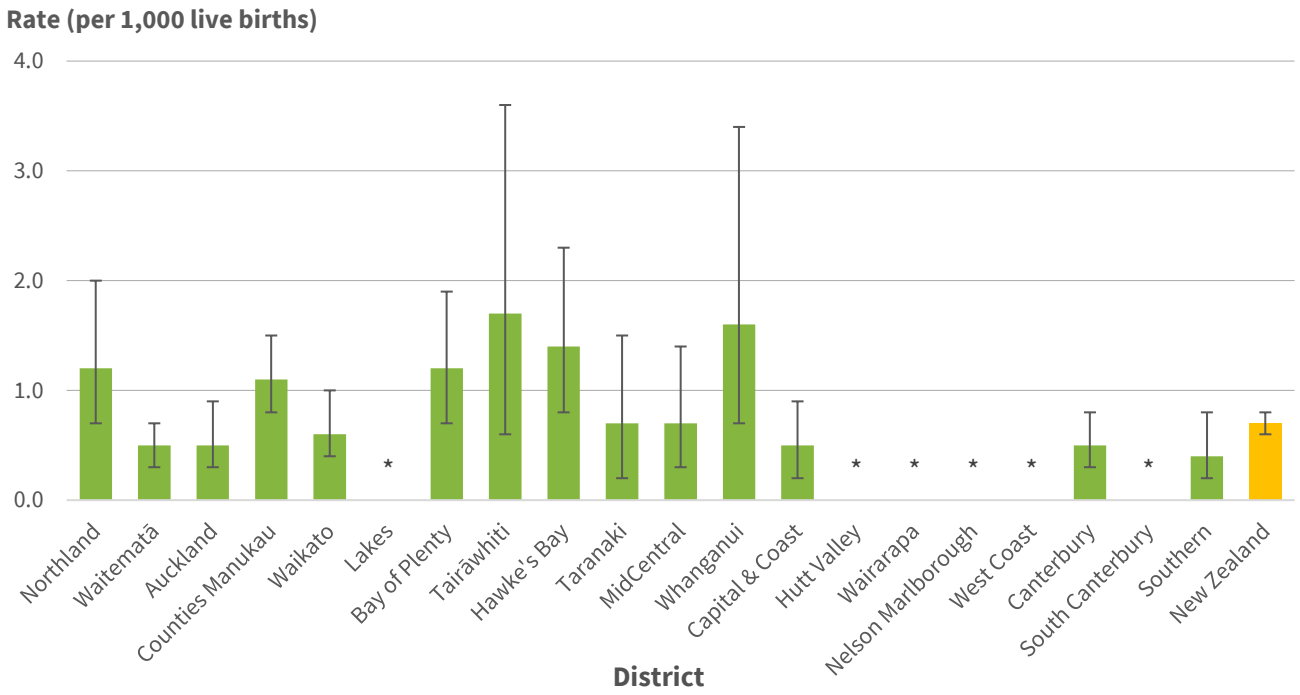



Note: 95% confidence intervals have been presented as vertical bars.
Source: Health New Zealand – Te Whatu Ora, 2025

## Tairāwhiti and Whanganui districts had high SUDI rates in 2016–20

In 2016–20, Tairāwhiti (1.7 per 1,000 live births; 95% CI 0.6–3.6) and Whanganui (1.6 per 1,000 live births; 95% CI 0.7–3.4) districts had high SUDI rates (Figure 6).

**Figure 6: SUDI deaths in children aged <1 year, by district, 2016–20 (rate per 1,000 live births)**




Notes: Districts refer to areas formerly known as District Health Boards (DHBs). 95% confidence intervals have been presented as vertical bars. An asterisk (*) shows that the rate has been suppressed due to low numbers (count <5).
Source: Health New Zealand – Te Whatu Ora, 2025

## Data for this indicator

This indicator includes the most recent data available from the Fetal and Infant Deaths web tool published by Health New Zealand – Te Whatu Ora in January 2025.

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 in the following ICD-10AM 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.

### Calculating the attributable SUDI deaths due to maternal smoking

The estimated number of SUDI deaths linked to maternal smoking is based on the methodology used by Mason and Borman (2016). For this report, we have used more recent SUDI and maternal smoking data, along with an updated relative risk of 1.97 from Zhang and Wang (2013). Mason and Borman's 2016 study, by contrast, used a relative risk of

1.94 from Anderson and Cook (1997). Despite these changes, the differences in the estimates are minimal.

For additional information, see the Metadata sheet.

## References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