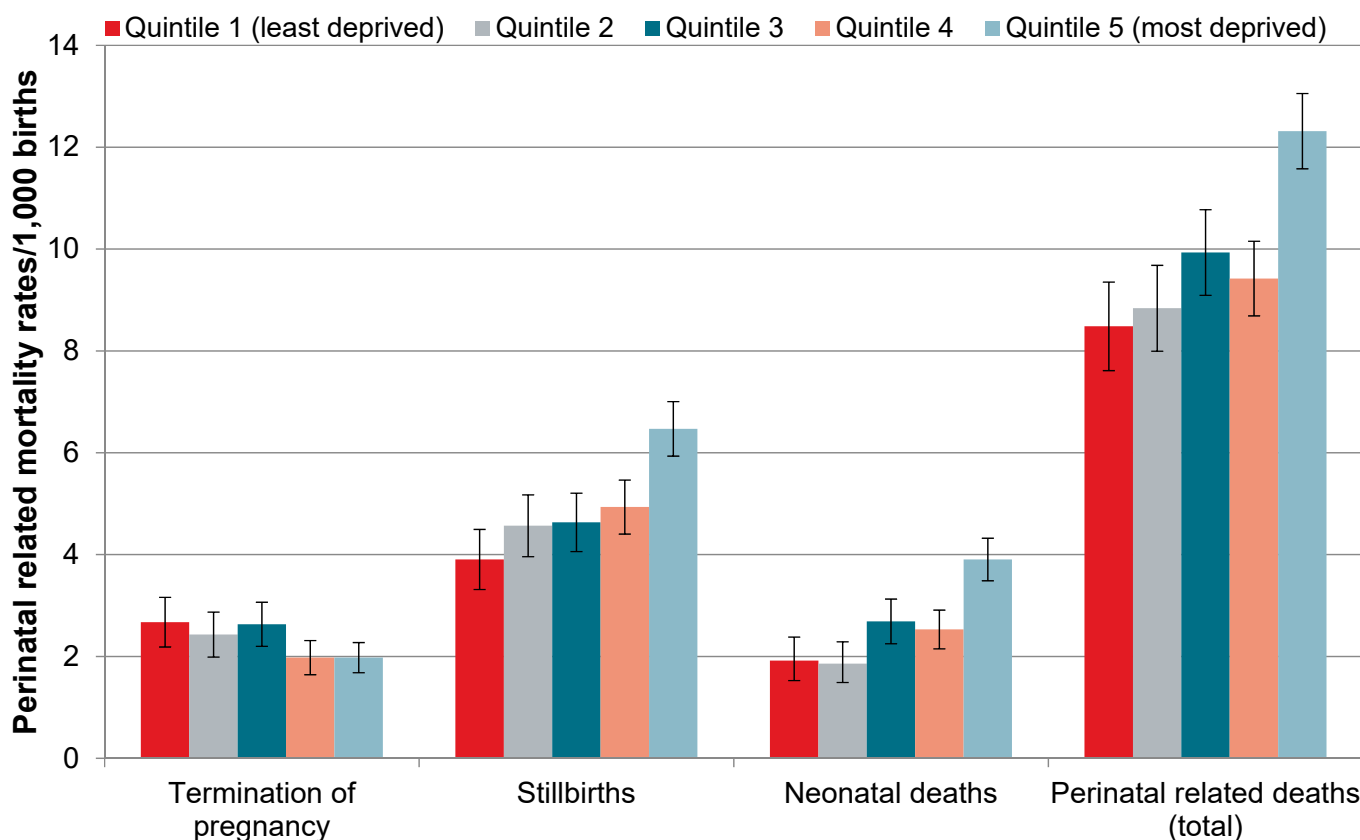


Te mate pēpi | Perinatal mortality

Socioeconomic deprivation

Perinatal related mortality varied significantly by New Zealand Index of Deprivation 2013 (NZDep2013) quintile, with babies of mothers living in quintile 5 (most deprived areas) having statistically significantly higher mortality rates than all others, with the exception of termination of pregnancy (Figure 3.9 and Table 3.17). There was a statistically significantly lower rate of termination of pregnancy in women residing in NZDep2013 quintiles 4 and 5, compared with quintile 1. However, the rate of stillbirth was significantly increased in women residing in NZDep2013 quintiles 4 and 5, compared with quintile 1. The rate of neonatal death was statistically significantly higher in babies of women living in quintiles 3, 4 and 5, compared with quintile 1.

Figure 3.9: Perinatal related mortality rates (per 1,000 births) by NZDep2013 quintile (with 95% CIs) 2013–2017



Sources: Numerator: PMMRC’s perinatal data extract 2013–2017; Denominator: MAT births 2013–2017.

Table 3.17: Perinatal related mortality rates (per 1,000 births) by NZDep2013 quintile 2013–2017

NZDep2013 quintile	Total births		Fetal deaths						Neonatal deaths			Perinatal related deaths (total)		
			Termination of pregnancy			Stillbirths								
	n=301,043		n=679			n=1,535			n=824			n=3,038		
	N	%	n	%	Rate	n	%	Rate	n	%	Rate	n	%	Rate
1 (least deprived)	43,032	14.3	115	16.9	2.67	168	10.9	3.90	82	10.0	1.92	365	12.0	8.48
2	47,755	15.9	116	17.1	2.43	218	14.2	4.56	88	10.7	1.86	422	13.9	8.84
3	53,971	17.9	142	20.9	2.63	250	16.3	4.63	144	17.5	2.69	536	17.6	9.93
4	67,300	22.4	133	19.6	1.98	332	21.6	4.93	169	20.5	2.53	634	20.9	9.42
5 (most deprived)	86,565	28.8	171	25.2	1.98	560	36.5	6.47	335	40.7	3.90	1,066	35.1	12.31
Unknown	2,420	0.8	<3	x	-	7	0.5	-	6	0.7	-	15	0.5	-

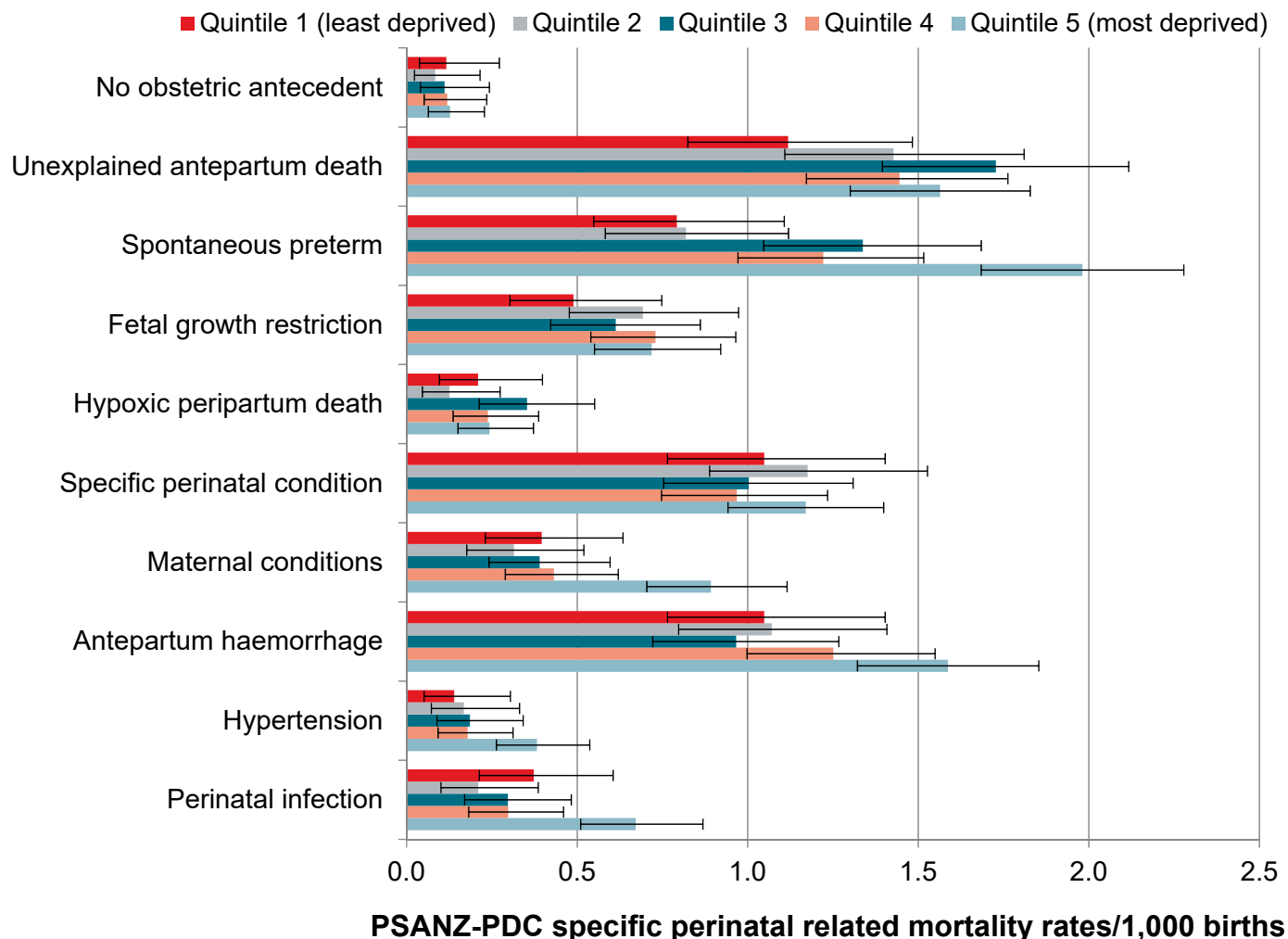
'x' indicates percentage not calculated due to small numbers.

Sources: Numerator: PMMRC’s perinatal data extract 2013–2017; Denominator: MAT births 2013–2017.

Extracted from the full report at: www.hgsc.govt.nz/our-programmes/mrc/pmmrc/publications-and-resources/publication/3832

This variation in mortality rates by deprivation was most marked for deaths due to spontaneous preterm delivery, with mortality rates increasing with increasing deprivation. There was little significant variation by deprivation for other causes of death (Figure 3.10 and Table 3.19). This pattern has been stable over time, with no significant changes in mortality rates by deprivation for the 11-year study period (Table 3.18).

Figure 3.10: Perinatal death classification (PSANZ-PDC) specific perinatal related mortality rates (per 1,000 births) (excluding congenital abnormalities) by NZDep2013 quintile (with 95% CIs) 2013–2017



Sources: Numerator: PMMRC's perinatal data extract (excluding congenital abnormalities) 2013–2017; Denominator: MAT births 2013–2017.

Table 3.18: Perinatal related mortality rates (per 1,000 births) by NZDep2013 quintile and year 2007–2017

NZDep2013 quintile	2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017	
	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N	n	N
1 (least deprived)	72	9,124	98	8,783	76	9,105	80	9,028	103	8,833	80	8,969	59	8,321	93	8,600	74	8,370	69	8,821	70	8,920
2	94	9,571	88	9,553	106	9,540	104	9,773	99	9,549	89	9,540	78	9,384	77	9,331	83	9,479	91	9,800	93	9,761
3	131	11,414	134	12,051	120	12,101	117	12,162	116	11,689	106	11,773	126	10,799	118	10,702	90	10,733	99	10,859	103	10,878
4	171	15,619	142	15,395	178	15,168	155	15,200	152	14,794	141	14,717	114	13,575	138	13,464	138	13,437	126	13,460	118	13,364
5 (most deprived)	210	18,801	236	19,117	249	18,595	251	18,645	195	17,780	253	17,751	220	17,570	229	17,446	189	17,257	223	17,188	205	17,104
Unknown	<3	671	3	724	<3	693	<3	641	<3	597	<3	530	3	484	4	536	4	501	<3	472	<3	427

NZDep2013 quintile	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Chi-squared test for trend (p)
	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	
1 (least deprived)	7.9	11.2	8.3	8.9	11.7	8.9	7.1	10.8	8.8	7.8	7.8	0.24
2	9.8	9.2	11.1	10.6	10.4	9.3	8.3	8.3	8.8	9.3	9.5	0.15
3	11.5	11.1	9.9	9.6	9.9	9.0	11.7	11.0	8.4	9.1	9.5	0.068
4	10.9	9.2	11.7	10.2	10.3	9.6	8.4	10.2	10.3	9.4	8.8	0.061
5 (most deprived)	11.2	12.3	13.4	13.5	11.0	14.3	12.5	13.1	11.0	13.0	12.0	0.96
Unknown	-	-	-	-	-	-	-	-	-	-	-	-

Sources: Numerator: PMMRC's perinatal data extract 2007–2017; Denominator: MAT births 2007–2017.

With regard to specific conditions that show a consistent gradient by deprivation, only deaths due to spontaneous preterm delivery showed a clear increase with increasing deprivation. However, due to the smaller numbers of deaths due to other conditions, any potential gradients will require more years' data to become apparent (Table 3.19).

Table 3.19: Perinatal death classification (PSANZ-PDC) specific perinatal related mortality rates (per 1,000 births) (excluding congenital abnormalities) by NZDep2013 quintile* 2013–2017

Perinatal death classification (PSANZ-PDC)	Quintile 1 (least deprived) n=42,919			Quintile 2 n=47,625			Quintile 3 n=53,822			Quintile 4 n=67,134			Quintile 5 (most deprived) n=86,301		
	n	%	Rate	n	%	Rate	n	%	Rate	n	%	Rate	n	%	Rate
Perinatal infection	11	4.3	0.26	18	5.9	0.38	26	6.4	0.48	20	4.3	0.30	45	6.0	0.52
Hypertension	6	2.4	0.14	8	2.6	0.17	9	2.2	0.17	22	4.8	0.33	24	3.2	0.28
Antepartum haemorrhage	44	17.3	1.03	47	15.5	0.99	62	15.3	1.15	80	17.4	1.19	135	17.9	1.56
Maternal conditions	18	7.1	0.42	16	5.3	0.34	26	6.4	0.48	27	5.9	0.40	72	9.5	0.83
Specific perinatal condition	46	18.1	1.07	57	18.8	1.20	61	15.1	1.13	75	16.3	1.12	82	10.8	0.95
Hypoxic peripartum death	5	2.0	0.12	10	3.3	0.21	12	3.0	0.22	22	4.8	0.33	22	2.9	0.25
Fetal growth restriction	29	11.4	0.68	26	8.6	0.55	48	11.9	0.89	35	7.6	0.52	60	7.9	0.70
Spontaneous preterm	30	11.8	0.70	55	18.2	1.15	61	15.1	1.13	88	19.1	1.31	164	21.7	1.90
Unexplained antepartum death	59	23.2	1.37	64	21.1	1.34	91	22.5	1.69	86	18.7	1.28	140	18.5	1.62
No obstetric antecedent	6	2.4	0.14	<3	x	s	8	2.0	0.15	6	1.3	0.09	12	1.6	0.14

* Excludes 11 babies with unknown NZDep2013 quintile.

'x' indicates percentage suppressed due to small numbers.

's' indicates rate suppressed due to small numbers.

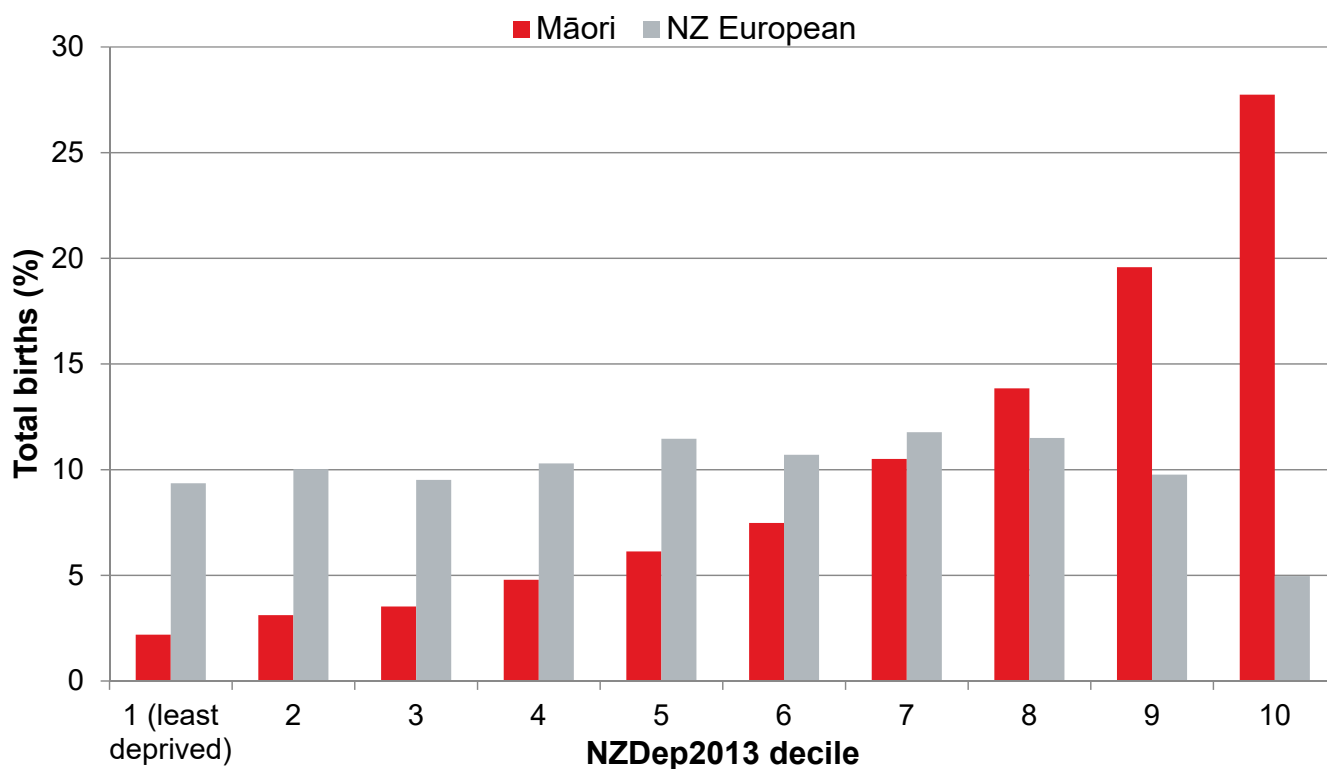
Sources: Numerator: PMMRC's perinatal data extract (excluding congenital abnormalities) 2013–2017; Denominator: MAT births 2013–2017.

When the effect of deprivation is examined for Māori and New Zealand Europeans, it is important to consider the distribution of deprivation in these two groups. Figure 3.11 shows the distribution of all infants under the age of 1 year in Aotearoa/New Zealand by NZDep2013 decile. Deprivation deciles, as the name implies, divide the population of Aotearoa/New Zealand into 10 deciles, with 10% of the population in each one. For babies of New Zealand European mothers, there is approximately 10% of the population in each decile, with the exception of decile 10, in which there is 5%. However, for Māori, there are very few babies born into NZDep2013 deciles 1 to 5, with over half of babies being born into deciles 8 to 10. This shows the unequal distribution of deprivation between babies of Māori and New Zealand European mothers.

Figure 3.12 shows the perinatal related mortality rate by NZDep2013 decile. Overall, mortality rates increase with increasing deprivation for babies of both Māori and New Zealand European mothers, with those in decile 10 having the highest mortality rates.

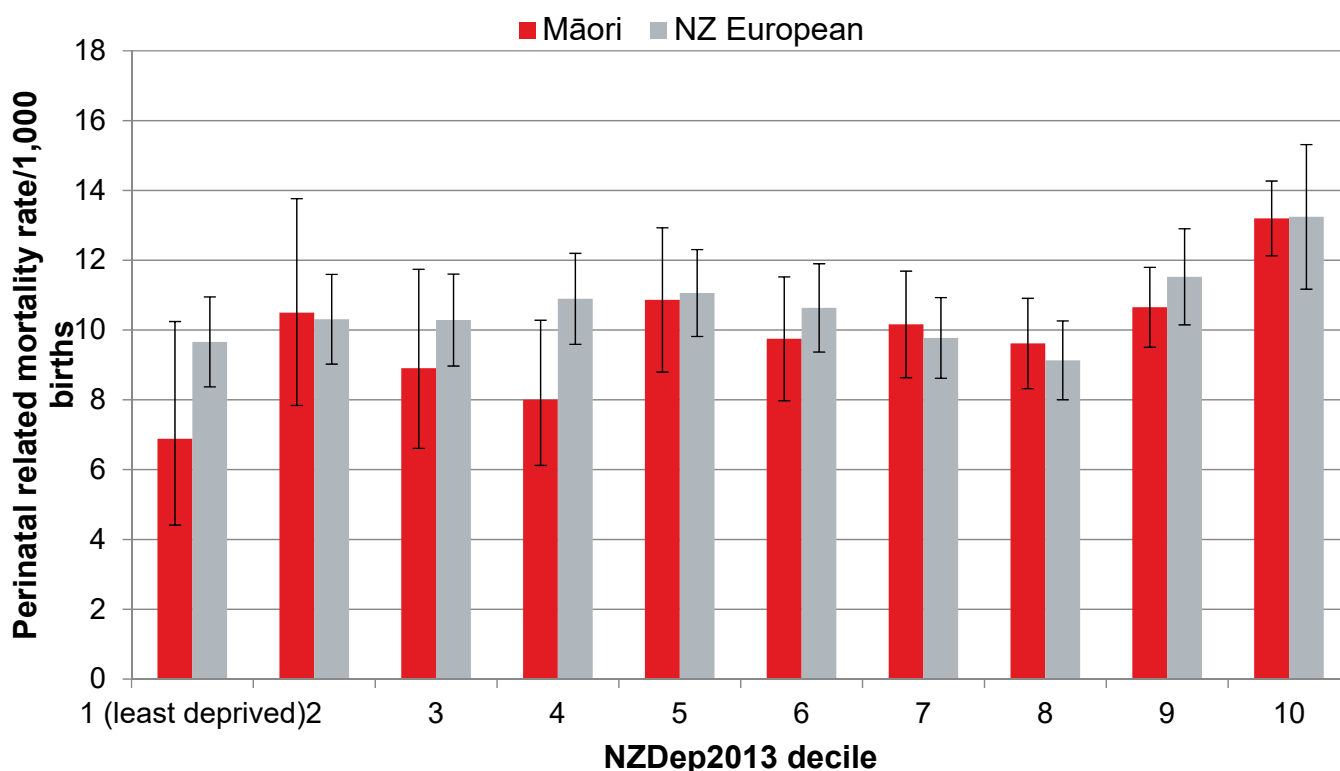
For Māori, because mortality rates are highest in those in decile 10 areas, and there are a larger number of Māori babies born into decile 10 areas, they are disproportionately affected by perinatal related mortality. Figure 3.13 presents the number of deaths by NZDep2013 decile, and shows that the burden of perinatal related mortality is experienced by Māori communities living in decile 10 areas, with nearly twice as many deaths in this group as in any other.

Figure 3.11: All births by NZDep2013 decile, Māori and New Zealand European, 2008–2017



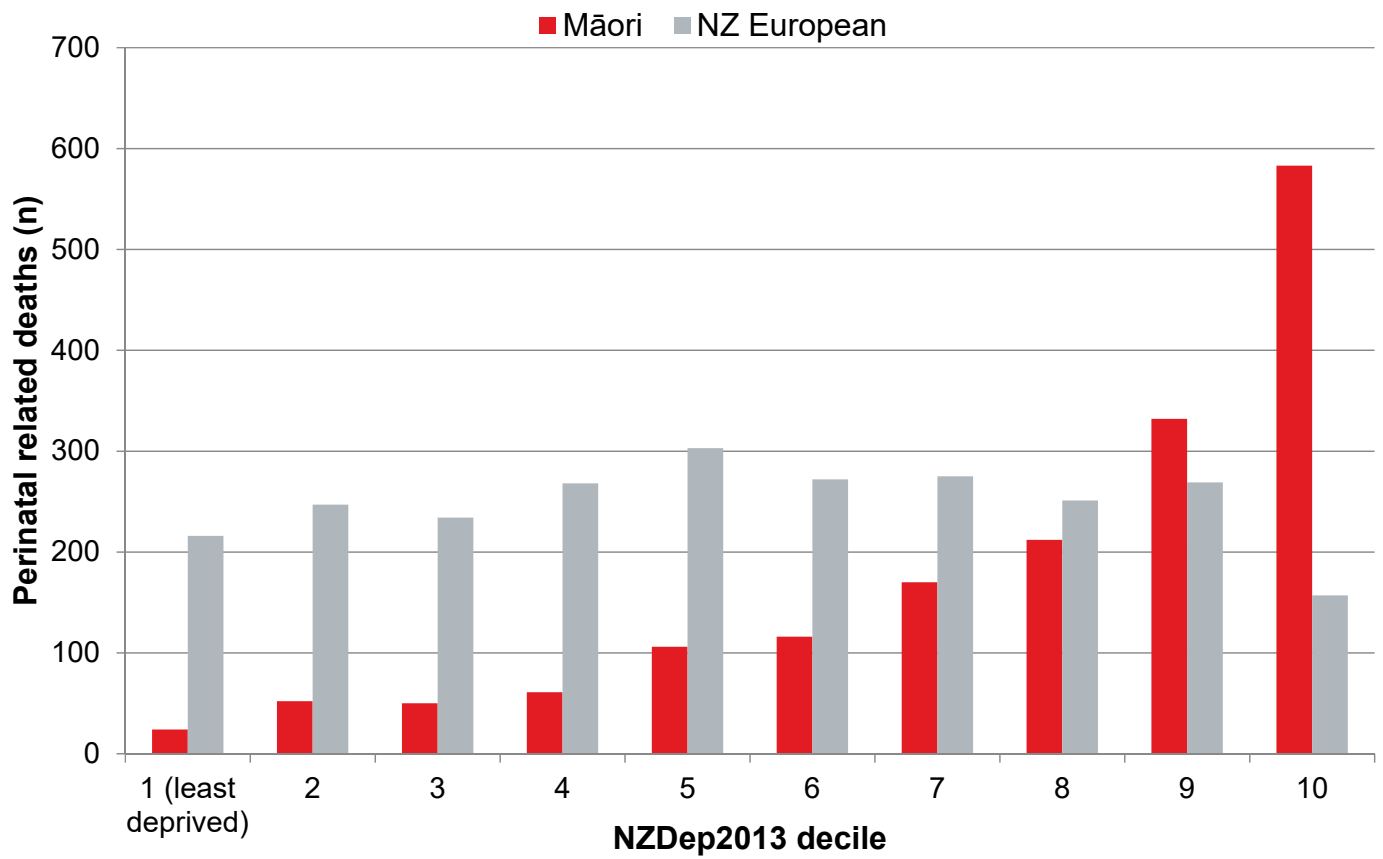
Source: MAT births 2008–2017.

Figure 3.12: Perinatal related mortality rates (per 1,000 births) by NZDep2013 decile, Māori and New Zealand European, 2008–2017



Sources: Numerator: PMMRC's perinatal data extract 2008–2017; Denominator: MAT births 2008–2017.

Figure 3.13: Perinatal related mortality (number of deaths) by NZDep2013 decile, Māori and New Zealand European, 2008–2017



Source: PMMRC's perinatal data extract 2008–2017.