

# THE LANCET

## Global Health

### Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Yu D, Zhao Z, Osuagwu UL, et al. Ethnic differences in mortality and hospital admission rates between Māori, Pacific, and European New Zealanders with type 2 diabetes between 1994 and 2018: a retrospective, population-based, longitudinal cohort study. *Lancet Glob Health* 2020; published online Oct 15. [http://dx.doi.org/10.1016/S2214-109X\(20\)30412-5](http://dx.doi.org/10.1016/S2214-109X(20)30412-5).

## Web extra files

**Table S1 Distribution of difference between each two of three measures (NZDep2001, NZDep2006 and NZDep2013) among patients with type 2 diabetes**

*NZDep2001, NZDep2006 and NZDep2013 range 1 to 10.*

	NZDep2001 - NZDep2006	NZDep2001 - NZDep2013	NZDep2006 - NZDep2013
		ALL	
Minimum	-6	-6	-6
1st Percentile	-2	-2	-2
5th Percentile	-1	-1	-1
10th Percentile	-1	-1	-1
20th Percentile	-1	-1	-1
30th Percentile	0	-1	0
40th Percentile	0	0	0
50th Percentile	0	0	0
60th Percentile	0	0	0
70th Percentile	0	0	0
80th Percentile	0	0	0
90th Percentile	1	1	1
95th Percentile	1	1	1
99 Percentile	2	2	2
Maximum	6	6	6
		European	
Minimum	-6	-6	-6
1st Percentile	-2	-2	-2
5th Percentile	-1	-1	-1
10th Percentile	-1	-1	-1
20th Percentile	-1	-1	-1
30th Percentile	0	-1	-1
40th Percentile	0	0	0
50th Percentile	0	0	0
60th Percentile	0	0	0
70th Percentile	0	0	0
80th Percentile	0	0	0
90th Percentile	1	1	1
95th Percentile	1	1	1
99 Percentile	2	1	2
Maximum	6	6	6
		Māori	
Minimum	-6	-6	-6
1st Percentile	-2	-1	-2
5th Percentile	-1	-1	-1
10th Percentile	-1	-1	-1
20th Percentile	-1	-1	-1
30th Percentile	0	-1	0
40th Percentile	0	0	0
50th Percentile	0	0	0

60th Percentile	0	0	0
70th Percentile	0	0	0
80th Percentile	0	0	0
90th Percentile	1	1	0
95th Percentile	1	1	1
99 Percentile	1	1	1
Maximum	6	5	4
		Pacific	
Minimum	-6	-6	-2
1st Percentile	-1	-2	-1
5th Percentile	-1	-1	-1
10th Percentile	-1	-1	-1
20th Percentile	0	-1	0
30th Percentile	0	0	0
40th Percentile	0	0	0
50th Percentile	0	0	0
60th Percentile	0	0	0
70th Percentile	0	0	0
80th Percentile	0	0	0
90th Percentile	1	1	0
95th Percentile	1	1	1
99 Percentile	1	2	2
Maximum	6	6	6
		Men	
Minimum	-6	-6	-6
1st Percentile	-2	-2	-2
5th Percentile	-1	-2	-1
10th Percentile	-1	-1	-1
20th Percentile	-1	-1	-1
30th Percentile	0	-1	0
40th Percentile	0	0	0
50th Percentile	0	0	0
60th Percentile	0	0	0
70th Percentile	0	0	0
80th Percentile	0	0	0
90th Percentile	1	1	1
95th Percentile	1	1	1
99 Percentile	2	2	2
Maximum	6	6	6
		Women	
Minimum	-6	-6	-6
1st Percentile	-2	-2	-2
5th Percentile	-1	-2	-1
10th Percentile	-1	-1	-1
20th Percentile	-1	-1	-1
30th Percentile	0	-1	0
40th Percentile	0	0	0
50th Percentile	0	0	0

60th Percentile	0	0	0
70th Percentile	0	0	0
80th Percentile	0	0	0
90th Percentile	1	1	0
95th Percentile	1	1	1
99 Percentile	1	2	2
Maximum	6	6	6
		Age<35 years	
Minimum	-6	-6	-6
1st Percentile	-2	-2	-2
5th Percentile	-1	-2	-1
10th Percentile	-1	-1	-1
20th Percentile	-1	-1	-1
30th Percentile	0	-1	0
40th Percentile	0	0	0
50th Percentile	0	0	0
60th Percentile	0	0	0
70th Percentile	0	0	0
80th Percentile	0	0	0
90th Percentile	1	1	1
95th Percentile	1	1	1
99 Percentile	2	2	2
Maximum	5	6	5
		Age: 35-44 years	
Minimum	-6	-6	-6
1st Percentile	-2	-2	-2
5th Percentile	-1	-1	-1
10th Percentile	-1	-1	-1
20th Percentile	-1	0	0
30th Percentile	0	0	0
40th Percentile	0	0	0
50th Percentile	0	0	0
60th Percentile	0	0	0
70th Percentile	0	0	0
80th Percentile	0	0	0
90th Percentile	1	1	1
95th Percentile	1	1	1
99 Percentile	1	2	1
Maximum	6	6	6
		Age: 45-54 years	
Minimum	-6	-6	-6
1st Percentile	-2	-1	-1
5th Percentile	-1	-1	-1
10th Percentile	-1	-1	-1
20th Percentile	-1	-1	-1
30th Percentile	0	0	0
40th Percentile	0	0	0
50th Percentile	0	0	0

60th Percentile	0	0	0
70th Percentile	0	0	0
80th Percentile	0	0	0
90th Percentile	1	0	0
95th Percentile	1	1	1
99 Percentile	1	1	1
Maximum	6	6	6
		Age: 55-64 years	
Minimum	-6	-6	-6
1st Percentile	-2	-1	-1
5th Percentile	-1	-1	-1
10th Percentile	-1	-1	-1
20th Percentile	-1	0	0
30th Percentile	0	0	0
40th Percentile	0	0	0
50th Percentile	0	0	0
60th Percentile	0	0	0
70th Percentile	0	0	0
80th Percentile	0	0	0
90th Percentile	1	1	1
95th Percentile	1	1	1
99 Percentile	2	1	1
Maximum	6	6	6
		Age: 65-74 years	
Minimum	-5	-4	-5
1st Percentile	-2	-1	-2
5th Percentile	-1	-1	-1
10th Percentile	0	0	0
20th Percentile	0	0	0
30th Percentile	0	0	0
40th Percentile	0	0	0
50th Percentile	0	0	0
60th Percentile	0	0	0
70th Percentile	0	0	0
80th Percentile	0	0	0
90th Percentile	1	0	1
95th Percentile	1	1	1
99 Percentile	2	1	2
Maximum	5	5	5
		Age: 75-84 years	
Minimum	-3	-3	-3
1st Percentile	-1	-1	-1
5th Percentile	-1	0	-1
10th Percentile	0	0	0
20th Percentile	0	0	0
30th Percentile	0	0	0
40th Percentile	0	0	0
50th Percentile	0	0	0

60th Percentile	0	0	0
70th Percentile	0	0	0
80th Percentile	0	0	0
90th Percentile	0	0	0
95th Percentile	1	0	1
99 Percentile	1	1	1
Maximum	3	3	3
	Age: 85+ years		
Minimum	-3	-3	-3
1st Percentile	-1	-1	-1
5th Percentile	0	0	0
10th Percentile	0	0	0
20th Percentile	0	0	0
30th Percentile	0	0	0
40th Percentile	0	0	0
50th Percentile	0	0	0
60th Percentile	0	0	0
70th Percentile	0	0	0
80th Percentile	0	0	0
90th Percentile	0	0	0
95th Percentile	0	0	0
99 Percentile	1	1	1
Maximum	3	3	3

**Table-S2 ICD-9 and ICD-10 codes as primary diagnosis for clinical events**

	<b>ICD-9 codes</b>	<b>ICD-10 codes</b>
<b>Cardiovascular diseases</b>	410, 411, 412, 413, 414 ; 430-438	I20-I25, I60-I69, I73
<b>Cancer</b>	140-209, 230-234	C00 –C26, C30-41, C43-C58, C60 –C80, C81-96, D00-09
<b>End stage renal diseases</b>	585·5; 585·6	N18·5; N19

**Table-S3 Incidence rates per 1000 person-years (95% confidence interval) of clinical outcomes by gender, social economic status, age-stratification, ethnicity and time periods**

		Male	Female	Most Deprivation (NZDep2013=1 or 2)	IMD=2 (NZDep2013=3 or 4)	IMD=3 (NZDep2013=5 or 6)	IMD=4 (NZDep2013=7 or 8)	Least Deprivation (NZDep2013=9 or 10)	Age: 35-44 years	Age: 45-54 years	Age: 55-64 years	Age: 65-74 years	Age: 75-84 years
		<b>All-cause Mortality</b>											
All	<1998	13.58 (11.29 to 16.19)	11.67 (9.55 to 14.11)	16.71 (13.61 to 20.30)	15.79 (12.16 to 20.16)	9.22 (5.63 to 14.23)	14.23 (9.38 to 20.71)	10.50 (6.22 to 16.59)	3.43 (1.38 to 7.07)	6.76 (4.46 to 9.84)	11.44 (8.66 to 14.82)	16.75 (13.13 to 21.06)	31.68 (24.51 to 40.31)
	1999-2003	21.47 (19.47 to 23.62)	17.22 (15.44 to 19.14)	21.00 (18.64 to 23.57)	19.11 (16.53 to 21.97)	20.73 (16.85 to 25.24)	18.02 (14.47 to 22.17)	20.95 (16.91 to 25.66)	3.51 (2.01 to 5.70)	7.08 (5.43 to 9.08)	15.91 (13.61 to 18.49)	24.33 (21.26 to 27.71)	62.00 (55.06 to 69.58)
	2004-2008	20.07 (18.54 to 21.69)	14.72 (13.42 to 16.12)	19.05 (17.22 to 21.02)	17.53 (15.61 to 19.63)	16.76 (13.98 to 19.93)	15.71 (13.17 to 18.59)	16.66 (14.06 to 19.60)	3.85 (2.49 to 5.68)	6.18 (4.92 to 7.66)	12.79 (11.18 to 14.56)	24.51 (22.06 to 27.15)	45.64 (41.28 to 50.34)
	2009-2013	18.98 (17.45 to 20.62)	14.73 (13.35 to 16.22)	19.64 (17.83 to 21.60)	21.21 (18.58 to 24.11)	15.71 (12.65 to 19.29)	13.60 (11.16 to 16.42)	10.70 (8.84 to 12.85)	2.47 (1.27 to 4.31)	6.14 (4.79 to 7.74)	10.50 (9.00 to 12.18)	20.31 (18.09 to 22.73)	49.89 (45.20 to 54.94)
	2014-2018	11.12 (9.98 to 12.35)	8.69 (7.70 to 9.77)	12.98 (11.64 to 14.44)	8.81 (7.13 to 10.76)	9.09 (6.92 to 11.72)	7.75 (6.01 to 9.82)	6.20 (4.80 to 7.89)	2.47 (1.35 to 4.14)	3.28 (2.37 to 4.44)	6.52 (5.37 to 7.83)	12.14 (10.50 to 13.95)	27.67 (24.39 to 31.27)
European	<1998	12.94 (9.94 to 16.55)	11.62 (8.59 to 15.36)	14.32 (9.44 to 20.84)	17.72 (12.77 to 23.95)	8.47 (4.38 to 14.79)	11.68 (6.68 to 18.97)	12.50 (7.00 to 20.62)	2.90 (0.35 to 10.48)	3.61 (1.17 to 8.42)	10.01 (6.34 to 15.01)	13.85 (9.85 to 18.94)	27.61 (19.98 to 37.19)
	1999-2003	23.25 (20.33 to 26.46)	17.95 (15.23 to 21.02)	24.33 (19.52 to 29.98)	22.06 (18.21 to 26.47)	19.00 (14.36 to 24.68)	17.40 (13.18 to 22.54)	22.30 (17.32 to 28.27)	2.64 (0.72 to 6.77)	5.32 (2.98 to 8.78)	14.59 (11.31 to 18.53)	19.68 (16.11 to 23.80)	55.81 (48.17 to 64.31)
	2004-2008	22.16 (19.94 to 24.55)	16.11 (14.10 to 18.33)	25.44 (21.43 to 29.99)	20.14 (17.21 to 23.43)	17.30 (13.74 to 21.50)	17.51 (14.23 to 21.31)	16.75 (13.70 to 20.27)	3.42 (1.37 to 7.05)	5.38 (3.45 to 8.00)	9.60 (7.58 to 12.00)	22.09 (19.07 to 25.44)	44.06 (39.17 to 49.39)
	2009-2013	20.17 (17.94 to 22.59)	16.08 (13.96 to 18.44)	24.34 (20.41 to 28.81)	24.32 (20.35 to 28.84)	17.32 (13.37 to 22.08)	16.37 (13.02 to 20.32)	11.71 (9.41 to 14.41)	1.35 (0.16 to 4.89)	4.38 (2.55 to 7.01)	7.58 (5.69 to 9.89)	16.35 (13.74 to 19.30)	48.61 (43.18 to 54.52)
	2014-2018	12.22 (10.48 to 14.16)	10.31 (8.67 to 12.16)	19.02 (15.72 to 22.81)	10.22 (7.56 to 13.51)	10.71 (7.81 to 14.33)	9.79 (7.33 to 12.80)	7.44 (5.59 to 9.71)	2.16 (0.45 to 6.32)	3.27 (1.69 to 5.72)	5.32 (3.74 to 7.33)	10.25 (8.28 to 12.54)	26.66 (22.80 to 30.98)
Māori	<1998	19.73 (13.11 to 28.52)	10.80 (6.17 to 17.54)	20.92 (14.01 to 30.04)	7.56 (2.46 to 17.64)	11.13 (2.30 to 32.53)	31.49 (10.23 to 73.50)	16.11 (1.95 to 58.18)	4.07 (0.49 to 14.72)	14.34 (7.64 to 24.52)	17.26 (9.66 to 28.46)	18.88 (8.15 to 37.20)	68.25 (25.04 to 148.54)
	1999-2003	25.98 (20.50 to 32.47)	24.27 (19.28 to 30.17)	25.40 (20.17 to 31.57)	22.34 (15.81 to 30.66)	34.55 (21.10 to 53.35)	26.38 (13.63 to 46.08)	25.71 (10.34 to 52.98)	5.95 (2.19 to 12.96)	13.02 (8.43 to 19.22)	27.15 (20.22 to 35.70)	54.10 (40.64 to 70.59)	115.28 (71.36 to 176.22)
	2004-2008	25.83 (21.45 to 30.84)	19.64 (16.12 to 23.69)	23.84 (19.80 to 28.46)	22.21 (17.07 to 28.42)	22.86 (14.49 to 34.29)	18.04 (10.10 to 29.75)	19.55 (8.44 to 38.52)	7.11 (3.55 to 12.72)	11.60 (8.03 to 16.20)	22.19 (17.30 to 28.03)	51.16 (41.09 to 62.96)	58.37 (38.13 to 85.53)
	2009-2013	27.78 (23.11 to 33.12)	22.84 (18.82 to 27.46)	27.41 (23.13 to 32.26)	26.12 (19.62 to 34.08)	20.21 (11.78 to 32.36)	17.42 (9.28 to 29.79)	20.20 (8.72 to 39.80)	5.89 (2.37 to 12.13)	13.24 (9.11 to 18.59)	23.04 (17.89 to 29.21)	44.33 (35.26 to 55.02)	82.85 (60.43 to 110.86)
	2014-2018	16.07 (12.60 to 20.21)	10.52 (7.95 to 13.67)	14.83 (11.86 to 18.32)	14.21 (9.36 to 20.67)	10.64 (4.86 to 20.19)	5.19 (1.41 to 13.28)	6.46 (1.33 to 18.88)	4.35 (1.41 to 10.15)	7.56 (4.62 to 11.67)	13.24 (9.41 to 18.09)	18.66 (13.21 to 25.62)	37.14 (24.26 to 54.41)



Pacific	<1998	11.44 (6.78 to 18.07)	10.93 (6.85 to 16.54)	13.87 (9.29 to 19.92)	13.99 (6.40 to 26.56)	5.30 (0.13 to 29.52)	11.68 (0.30 to 65.09)	11.29 (5.63 to 20.20)	6.16 (1.27 to 18.06)	5.75 (2.11 to 12.53)	6.94 (3.00 to 13.55)	28.25 (16.46 to 45.24)	44.09 (16.18 to 95.97)
	1999-2003	16.68 (12.82 to 21.34)	13.06 (10.14 to 16.56)	16.08 (12.87 to 19.86)	10.73 (6.80 to 16.10)	24.81 (13.21 to 42.42)	16.96 (6.22 to 36.91)	14.14 (10.31 to 18.92)	3.39 (0.92 to 8.72)	6.42 (3.67 to 10.42)	12.00 (8.26 to 16.85)	25.47 (18.50 to 34.19)	70.22 (48.63 to 98.12)
	2004-2008	14.51 (11.54 to 18.01)	10.61 (8.41 to 13.20)	13.71 (11.21 to 16.60)	11.51 (8.29 to 15.55)	10.96 (5.01 to 20.80)	8.10 (2.63 to 18.91)	10.79 (8.19 to 13.95)	2.27 (0.62 to 5.34)	4.76 (2.77 to 7.62)	13.21 (9.86 to 17.32)	22.06 (16.67 to 28.65)	38.39 (26.42 to 53.91)
	2009-2013	18.39 (14.88 to 22.48)	11.12 (8.60 to 14.15)	15.47 (12.88 to 18.44)	15.88 (10.46 to 23.10)	9.03 (1.86 to 26.38)	3.70 (0.45 to 13.38)	12.32 (8.63 to 17.06)	0.74 (0.02 to 4.51)	6.11 (3.56 to 9.78)	11.59 (8.28 to 15.78)	22.62 (16.94 to 29.59)	61.80 (45.87 to 81.47)
	2014-2018	9.29 (7.20 to 11.79)	7.21 (5.48 to 9.32)	9.25 (7.55 to 11.22)	6.71 (3.75 to 11.06)	4.23 (0.51 to 15.29)	6.57 (2.13 to 15.33)	5.49 (3.44 to 8.32)	2.92 (1.07 to 6.85)	1.67 (0.67 to 3.44)	5.77 (3.74 to 8.52)	18.20 (13.59 to 23.87)	30.41 (21.06 to 42.49)
		<b>Cardiovascular Mortality</b>											
All	<1998	3.48 (2.38 to 4.91)	3.29 (2.22 to 4.69)	5.09 (2.05 to 10.49)	5.04 (2.51 to 9.01)	4.62 (2.59 to 7.62)	3.86 (2.04 to 5.69)	3.56 (2.30 to 5.26)	1.47 (0.30 to 4.30)	2.50 (1.20 to 4.60)	1.60 (0.69 to 3.15)	3.64 (2.08 to 5.91)	11.82 (7.65 to 17.44)
	1999-2003	6.60 (5.52 to 7.84)	5.13 (4.19 to 6.22)	7.63 (5.07 to 11.02)	7.02 (4.92 to 9.72)	6.49 (5.08 to 7.90)	6.15 (4.23 to 8.64)	6.05 (4.92 to 7.37)	0.88 (0.24 to 2.24)	1.71 (0.96 to 2.81)	3.71 (2.65 to 5.06)	7.33 (5.71 to 9.28)	22.46 (18.40 to 27.13)
	2004-2008	5.26 (4.49 to 6.11)	2.80 (2.25 to 3.44)	4.41 (3.63 to 5.30)	4.38 (3.32 to 5.67)	3.85 (2.65 to 5.41)	3.29 (2.24 to 4.67)	3.52 (2.28 to 5.19)	0.61 (0.17 to 1.57)	1.85 (1.20 to 2.73)	2.68 (1.97 to 3.55)	4.52 (3.51 to 5.72)	12.51 (10.31 to 15.04)
	2009-2013	5.41 (4.61 to 6.31)	2.76 (2.19 to 3.44)	5.33 (4.48 to 6.30)	4.34 (3.07 to 5.96)	3.65 (2.34 to 5.43)	3.12 (2.28 to 3.96)	2.88 (1.85 to 4.29)	0.41 (0.05 to 1.48)	1.03 (0.53 to 1.80)	2.27 (1.61 to 3.11)	4.65 (3.63 to 5.87)	13.70 (11.35 to 16.39)
	2014-2018	2.51 (1.99 to 3.12)	1.50 (1.11 to 1.98)	2.65 (2.10 to 3.29)	2.21 (1.26 to 3.58)	1.82 (1.04 to 2.96)	1.00 (0.48 to 1.83)	0.90 (0.36 to 1.85)	0.88 (0.29 to 2.06)	0.47 (0.17 to 1.02)	1.30 (0.82 to 1.95)	2.04 (1.41 to 2.84)	6.25 (4.78 to 8.03)
European	<1998	3.88 (2.33 to 6.05)	3.78 (2.16 to 6.13)	4.82 (1.57 to 11.25)	5.09 (2.44 to 9.37)	4.91 (1.97 to 10.12)	4.77 (2.87 to 5.09)	4.59 (2.29 to 8.22)	1.45 (0.04 to 8.08)	2.17 (0.45 to 6.33)	1.73 (0.47 to 4.44)	3.52 (1.69 to 6.48)	10.80 (6.29 to 17.29)
	1999-2003	7.86 (6.21 to 9.81)	5.90 (4.39 to 7.75)	8.37 (5.98 to 11.40)	8.99 (6.64 to 11.34)	8.63 (5.92 to 11.34)	8.37 (5.58 to 11.15)	8.22 (5.15 to 12.45)	1.32 (0.16 to 4.76)	0.71 (0.09 to 2.56)	2.81 (1.50 to 4.81)	7.00 (4.95 to 9.60)	21.55 (16.95 to 27.01)
	2004-2008	6.11 (4.98 to 7.41)	3.67 (2.75 to 4.80)	6.87 (5.13 to 9.01)	5.70 (4.19 to 7.22)	5.62 (3.96 to 7.75)	4.53 (2.73 to 7.07)	4.11 (2.57 to 6.22)	0.49 (0.01 to 2.72)	1.56 (0.63 to 3.22)	2.36 (1.42 to 3.68)	4.42 (3.14 to 6.04)	12.97 (10.42 to 15.97)
	2009-2013	5.63 (4.50 to 6.96)	3.47 (2.53 to 4.65)	7.31 (5.49 to 9.53)	6.69 (5.33 to 8.05)	5.03 (3.30 to 7.35)	4.50 (2.75 to 6.95)	3.52 (2.20 to 5.32)	0.00 (0.00 to 0.00)	0.51 (0.06 to 1.85)	0.97 (0.39 to 2.01)	3.80 (2.62 to 5.34)	14.06 (11.27 to 17.32)
	2014-2018	2.52 (1.77 to 3.47)	1.66 (1.05 to 2.49)	3.77 (2.55 to 5.39)	2.40 (1.20 to 4.30)	2.24 (1.03 to 4.26)	1.64 (1.01 to 2.31)	1.07 (0.39 to 2.32)	1.44 (0.17 to 5.20)	0.81 (0.17 to 2.38)	0.43 (0.09 to 1.25)	1.49 (0.82 to 2.50)	5.69 (4.02 to 7.81)
Māori	<1998	4.18 (1.54 to 9.10)	1.34 (0.16 to 4.85)	9.35 (4.83 to 16.33)	8.29 (2.26 to 21.24)	5.89 (2.37 to 12.13)	4.54 (0.94 to 13.26)	3.12 (1.01 to 7.29)	0.00 (0.00 to 0.00)	5.50 (1.79 to 12.85)	1.14 (0.03 to 6.34)	2.32 (0.06 to 12.93)	10.83 (0.27 to 60.34)
	1999-2003	6.98 (4.32 to 10.67)	6.84 (4.34 to 10.26)	7.17 (0.87 to 25.91)	7.04 (3.37 to 12.94)	6.79 (3.47 to 8.49)	6.36 (1.86 to 10.85)	6.60 (4.27 to 9.74)	0.99 (0.03 to 5.51)	5.17 (2.48 to 9.51)	5.79 (2.89 to 10.36)	13.67 (7.47 to 22.94)	42.40 (18.31 to 83.55)
	2004-2008	7.27 (5.06 to 10.11)	3.90 (2.44 to 5.90)	5.95 (4.19 to 8.20)	5.61 (2.80 to 10.04)	6.24 (2.51 to 12.86)	5.28 (2.77 to 7.80)	4.08 (1.86 to 7.74)	1.29 (0.16 to 4.65)	3.71 (1.85 to 6.64)	5.60 (3.32 to 8.86)	10.46 (6.30 to 16.34)	15.23 (6.12 to 31.38)
	2009-2013	8.53 (6.07 to 11.66)	3.56 (2.11 to 5.62)	6.62 (4.77 to 8.95)	5.88 (2.00 to 9.75)	4.11 (2.57 to 6.22)	2.31 (0.28 to 8.35)	2.78 (0.90 to 6.48)	1.67 (0.20 to 6.05)	1.97 (0.64 to 4.61)	5.96 (3.53 to 9.42)	8.89 (5.18 to 14.23)	25.76 (14.42 to 42.49)
	2014-2018	4.30 (2.63 to 6.64)	2.03 (1.01 to 3.63)	3.39 (2.15 to 5.08)	3.16 (0.89 to 5.43)	2.69 (1.51 to 4.44)	1.37 (0.17 to 4.94)	1.59 (0.33 to 4.64)	0.87 (0.02 to 4.84)	1.12 (0.23 to 3.27)	3.32 (1.59 to 6.10)	4.76 (2.28 to 8.75)	9.33 (3.75 to 19.23)

Pacific	<1998	2.47 (0.80 to 5.76)	1.26 (0.15 to 4.56)	4.67 (1.27 to 11.96)	3.17 (0.38 to 11.44)	2.30 (0.84 to 5.01)	1.53 (0.19 to 5.53)	1.35 (0.28 to 3.93)	4.11 (0.50 to 14.83)	1.91 (0.23 to 6.91)	0.86 (0.02 to 4.81)	1.64 (0.04 to 9.16)	6.96 (0.18 to 38.76)
	1999-2003	4.45 (2.59 to 7.12)	3.62 (2.18 to 5.65)	4.21 (2.72 to 6.21)	5.94 (1.23 to 17.37)	4.67 (1.27 to 11.96)	3.12 (1.01 to 7.27)	4.11 (2.05 to 7.36)	0.00 (0.00 to 0.00)	0.00 (0.00 to 0.00)	4.33 (2.24 to 7.56)	7.39 (3.94 to 12.64)	21.70 (10.83 to 38.83)
	2004-2008	2.44 (1.34 to 4.10)	1.18 (0.54 to 2.24)	1.80 (1.03 to 2.93)	1.76 (1.16 to 2.55)	1.74 (1.15 to 2.53)	1.72 (1.09 to 2.58)	1.62 (0.65 to 3.35)	0.00 (0.00 to 0.00)	0.84 (0.17 to 2.44)	1.75 (0.70 to 3.61)	2.71 (1.09 to 5.58)	6.75 (2.48 to 14.69)
	2009-2013	4.75 (3.07 to 7.01)	1.50 (0.68 to 2.84)	3.70 (2.53 to 5.23)	4.18 (2.92 to 5.78)	3.04 (2.11 to 4.25)	1.74 (1.11 to 2.62)	0.79 (0.10 to 2.85)	0.00 (0.00 to 0.00)	1.43 (0.39 to 3.67)	2.58 (1.18 to 4.89)	5.38 (2.86 to 9.20)	9.32 (4.02 to 18.36)
	2014-2018	2.45 (1.45 to 3.88)	1.10 (0.50 to 2.09)	1.93 (1.22 to 2.89)	1.94 (0.78 to 3.99)	1.35 (0.28 to 3.93)	1.18 (0.14 to 4.26)	1.16 (0.32 to 2.98)	0.97 (0.12 to 3.50)	0.00 (0.00 to 0.00)	2.06 (0.94 to 3.91)	3.05 (1.39 to 5.79)	5.86 (2.36 to 12.07)

**Cancer Mortality**

All	<1998	2.50 (1.59 to 3.75)	2.08 (1.25 to 3.25)	3.28 (2.00 to 5.06)	3.68 (1.48 to 7.58)	2.46 (1.18 to 4.52)	1.84 (0.50 to 4.70)	0.58 (0.01 to 3.24)	0.00 (0.00 to 0.00)	1.25 (0.41 to 2.92)	2.39 (1.24 to 4.18)	3.64 (2.08 to 5.92)	4.25 (1.93 to 8.07)
	1999-2003	5.44 (4.46 to 6.57)	5.13 (4.18 to 6.22)	5.14 (3.26 to 7.72)	6.84 (4.71 to 9.61)	5.68 (4.32 to 7.33)	5.42 (3.57 to 7.88)	4.98 (3.87 to 6.30)	0.66 (0.14 to 1.92)	1.59 (0.87 to 2.67)	5.02 (3.77 to 6.54)	7.56 (5.90 to 9.53)	14.19 (11.02 to 17.98)
	2004-2008	6.29 (5.45 to 7.22)	4.54 (3.84 to 5.34)	5.70 (4.73 to 6.82)	6.85 (5.41 to 8.56)	5.40 (4.36 to 6.61)	4.95 (3.58 to 6.67)	5.56 (4.12 to 7.35)	0.77 (0.25 to 1.79)	1.48 (0.90 to 2.29)	4.30 (3.39 to 5.38)	8.08 (6.72 to 9.64)	13.59 (11.29 to 16.21)
	2009-2013	5.55 (4.74 to 6.46)	4.88 (4.10 to 5.76)	5.23 (4.32 to 6.27)	5.44 (3.92 to 7.35)	4.98 (3.56 to 6.78)	4.78 (3.18 to 6.92)	4.15 (3.02 to 5.55)	0.61 (0.13 to 1.80)	1.63 (0.98 to 2.55)	4.13 (3.21 to 5.23)	6.71 (5.47 to 8.14)	13.07 (10.77 to 15.71)
	2014-2018	3.80 (3.15 to 4.54)	3.14 (2.56 to 3.81)	3.71 (3.02 to 4.52)	4.12 (2.71 to 5.99)	3.08 (2.13 to 4.30)	2.81 (1.82 to 4.15)	3.54 (2.51 to 4.86)	0.00 (0.00 to 0.00)	1.17 (0.65 to 1.93)	2.21 (1.57 to 3.02)	5.42 (4.36 to 6.66)	8.04 (6.36 to 10.03)
European	<1998	2.45 (1.27 to 4.28)	1.18 (0.38 to 2.76)	1.05 (0.13 to 3.80)	3.64 (1.18 to 8.50)	2.81 (0.77 to 7.20)	2.11 (0.68 to 4.91)	0.83 (0.02 to 4.62)	0.00 (0.00 to 0.00)	0.72 (0.02 to 4.02)	2.17 (0.70 to 5.06)	2.47 (0.99 to 5.10)	2.54 (0.69 to 6.51)
	1999-2003	6.15 (4.70 to 7.89)	5.89 (4.39 to 7.75)	6.19 (3.73 to 9.66)	7.24 (5.12 to 9.93)	6.30 (4.31 to 8.89)	5.14 (3.00 to 8.24)	5.76 (3.57 to 8.81)	0.00 (0.00 to 0.00)	1.77 (0.57 to 4.13)	6.28 (4.20 to 9.01)	5.90 (4.04 to 8.33)	13.15 (9.63 to 17.54)
	2004-2008	7.67 (6.40 to 9.12)	4.99 (3.90 to 6.28)	8.12 (5.94 to 10.83)	7.77 (5.63 to 10.47)	7.60 (5.85 to 9.70)	5.60 (3.83 to 7.90)	5.52 (3.84 to 7.68)	0.98 (0.12 to 3.53)	1.12 (0.36 to 2.60)	3.35 (2.21 to 4.87)	8.64 (6.81 to 10.82)	13.10 (10.53 to 16.10)
	2009-2013	6.51 (5.29 to 7.94)	5.27 (4.09 to 6.68)	6.70 (4.74 to 9.20)	4.85 (3.08 to 7.28)	4.74 (2.81 to 7.50)	4.70 (2.87 to 7.26)	4.56 (3.17 to 6.34)	0.00 (0.00 to 0.00)	2.05 (0.89 to 4.05)	3.91 (2.60 to 5.65)	5.90 (4.39 to 7.76)	12.70 (10.05 to 15.82)
	2014-2018	5.67 (4.51 to 7.02)	4.21 (3.20 to 5.45)	7.02 (5.10 to 9.42)	5.72 (3.33 to 9.17)	4.11 (2.51 to 6.35)	4.00 (2.51 to 6.06)	4.79 (3.33 to 6.66)	0.00 (0.00 to 0.00)	1.09 (0.30 to 2.78)	3.14 (1.97 to 4.76)	5.92 (4.46 to 7.70)	9.04 (6.90 to 11.64)
Māori	<1998	4.17 (1.53 to 9.08)	3.36 (1.09 to 7.83)	6.41 (2.93 to 12.17)	7.15 (1.48 to 20.90)	4.12 (1.78 to 8.11)	3.01 (0.36 to 10.88)	1.64 (0.20 to 5.91)	0.00 (0.00 to 0.00)	4.39 (1.20 to 11.25)	5.70 (1.85 to 13.31)	2.30 (0.06 to 12.82)	10.94 (0.28 to 60.96)
	1999-2003	6.84 (4.33 to 10.26)	4.65 (2.54 to 7.80)	6.93 (4.29 to 10.59)	6.55 (3.58 to 10.99)	5.93 (4.55 to 7.60)	4.67 (2.02 to 9.20)	4.94 (2.83 to 8.03)	0.00 (0.00 to 0.00)	2.58 (0.84 to 6.03)	6.85 (3.65 to 11.72)	13.66 (7.47 to 22.92)	20.62 (5.62 to 52.80)
	2004-2008	6.44 (4.37 to 9.14)	5.50 (3.74 to 7.81)	7.11 (5.00 to 9.80)	6.54 (1.35 to 19.13)	5.80 (4.09 to 8.00)	4.67 (1.27 to 11.97)	4.84 (3.13 to 7.14)	0.64 (0.02 to 3.59)	2.02 (0.74 to 4.40)	6.25 (3.82 to 9.66)	14.37 (9.38 to 21.05)	19.24 (8.80 to 36.53)
	2009-2013	8.53 (6.17 to 11.49)	6.56 (4.43 to 9.37)	8.71 (6.40 to 11.58)	7.81 (3.37 to 15.40)	7.59 (5.95 to 9.55)	7.48 (1.54 to 21.86)	6.27 (4.10 to 9.19)	0.84 (0.02 to 4.66)	2.36 (0.87 to 5.14)	8.30 (5.37 to 12.26)	14.15 (9.32 to 20.59)	24.46 (13.37 to 41.04)

	2014-2018	4.26 (2.70 to 6.40)	3.43 (1.96 to 5.57)	4.22 (2.73 to 6.23)	3.88 (2.76 to 5.30)	3.76 (1.88 to 6.72)	3.64 (0.09 to 20.30)	3.46 (1.89 to 5.80)	0.00 (0.00 to 0.00)	2.24 (0.82 to 4.88)	4.00 (2.07 to 7.00)	7.13 (3.99 to 11.76)	6.71 (2.18 to 15.65)
Pacific	<1998	2.47 (0.80 to 5.76)	1.89 (0.39 to 5.53)	2.84 (1.04 to 6.19)	2.98 (0.08 to 16.60)	2.44 (1.12 to 4.63)	2.10 (0.05 to 11.69)	2.05 (0.25 to 7.40)	0.00 (0.00 to 0.00)	0.00 (0.00 to 0.00)	0.00 (0.00 to 0.00)	11.59 (4.66 to 23.88)	0.00 (0.00 to 0.00)
	1999-2003	3.92 (2.20 to 6.47)	3.43 (2.03 to 5.42)	4.04 (2.15 to 6.92)	4.83 (1.32 to 12.36)	3.81 (1.89 to 6.82)	3.75 (1.86 to 6.70)	3.70 (2.26 to 5.71)	1.69 (0.21 to 6.11)	0.80 (0.10 to 2.88)	1.44 (0.39 to 3.69)	9.68 (5.64 to 15.50)	6.96 (0.18 to 38.76)
	2004-2008	3.67 (2.27 to 5.61)	3.02 (1.92 to 4.54)	3.87 (2.61 to 5.53)	3.76 (1.88 to 6.72)	2.88 (0.94 to 6.72)	2.32 (0.75 to 5.41)	2.58 (1.41 to 4.33)	0.56 (0.01 to 3.15)	1.95 (0.78 to 4.02)	4.52 (2.68 to 7.15)	5.04 (2.68 to 8.62)	15.79 (6.82 to 31.12)
	2009-2013	4.56 (2.92 to 6.78)	2.50 (1.40 to 4.12)	4.07 (2.10 to 7.11)	5.46 (1.49 to 13.98)	4.11 (2.51 to 6.35)	3.55 (0.72 to 10.38)	3.29 (2.17 to 4.78)	0.74 (0.02 to 4.11)	1.07 (0.22 to 3.14)	3.16 (1.58 to 5.65)	5.39 (2.87 to 9.22)	5.62 (1.82 to 13.11)
	2014-2018	1.60 (0.85 to 2.73)	1.50 (0.75 to 2.68)	1.68 (1.01 to 2.62)	1.77 (0.48 to 4.54)	1.55 (0.04 to 8.64)	1.12 (0.03 to 6.25)	1.24 (0.40 to 2.89)	0.00 (0.00 to 0.00)	0.48 (0.06 to 1.72)	0.23 (0.01 to 1.27)	5.44 (3.11 to 8.84)	12.82 (6.40 to 22.94)

**Cardiovascular Hospitalisation**

All	<1998	25.39 (24.60 to 26.20)	24.48 (23.70 to 25.28)	32.54 (30.06 to 35.16)	27.71 (26.04 to 29.47)	24.16 (22.98 to 25.38)	20.18 (18.81 to 21.63)	25.26 (24.44 to 26.10)	10.60 (9.49 to 11.82)	15.74 (14.83 to 16.70)	21.52 (20.60 to 22.47)	32.80 (31.53 to 34.11)	64.36 (61.24 to 67.60)
	1999-2003	52.62 (51.83 to 53.42)	49.62 (48.84 to 50.40)	55.14 (52.92 to 57.43)	48.66 (47.15 to 50.20)	48.64 (47.14 to 50.17)	48.01 (46.84 to 49.19)	53.71 (52.87 to 54.46)	22.42 (21.17 to 23.73)	33.04 (32.07 to 34.03)	46.86 (45.87 to 47.87)	58.93 (57.80 to 60.08)	107.40 (105.00 to 109.84)
	2004-2008	77.38 (76.47 to 78.30)	76.47 (75.54 to 77.41)	79.57 (77.19 to 82.00)	82.47 (80.58 to 84.38)	81.25 (79.78 to 82.73)	74.57 (72.80 to 76.37)	73.77 (72.83 to 74.72)	42.46 (40.62 to 44.36)	58.17 (56.81 to 59.54)	67.81 (82.86 to 85.42)	84.13 (82.86 to 85.42)	118.34 (116.40 to 120.30)
	2009-2013	133.57 (131.87 to 135.28)	129.56 (127.80 to 131.34)	135.40 (133.68 to 137.14)	133.85 (130.74 to 137.02)	130.16 (126.43 to 133.96)	124.07 (120.75 to 127.46)	120.34 (116.51 to 124.27)	78.41 (74.24 to 82.75)	111.00 (108.13 to 113.94)	120.66 (66.65 to 68.98)	140.49 (138.21 to 142.81)	163.50 (160.57 to 166.47)
	2014-2018	277.92 (273.98 to 281.90)	250.10 (246.14 to 254.12)	283.92 (279.92 to 287.97)	260.59 (252.99 to 268.36)	257.71 (249.25 to 266.39)	246.35 (239.10 to 253.77)	211.79 (203.87 to 219.94)	126.69 (119.06 to 134.68)	182.95 (176.98 to 189.07)	239.02 (233.73 to 244.39)	301.00 (295.55 to 306.53)	356.29 (349.33 to 363.35)
European	<1998	27.13 (25.99 to 28.30)	26.57 (25.42 to 27.77)	34.56 (31.59 to 37.74)	28.40 (26.78 to 30.08)	28.08 (25.94 to 30.35)	22.47 (20.68 to 24.37)	25.59 (24.19 to 27.04)	10.60 (8.44 to 13.14)	12.97 (11.53 to 14.55)	18.80 (17.59 to 20.08)	30.20 (28.75 to 31.70)	60.61 (57.25 to 64.12)
	1999-2003	56.77 (55.58 to 57.97)	53.54 (52.33 to 54.77)	61.16 (59.56 to 62.79)	53.97 (52.30 to 55.68)	50.84 (48.83 to 52.91)	50.47 (48.55 to 52.46)	56.60 (53.96 to 59.32)	29.59 (26.73 to 32.67)	32.78 (30.88 to 34.76)	41.08 (39.66 to 42.55)	53.68 (52.32 to 55.06)	98.92 (96.34 to 101.54)
	2004-2008	84.78 (83.29 to 86.29)	82.40 (81.05 to 83.76)	87.41 (85.54 to 89.30)	89.59 (87.13 to 92.11)	83.62 (81.56 to 85.72)	76.48 (74.13 to 78.88)	74.89 (72.22 to 77.64)	61.53 (56.64 to 66.73)	61.69 (58.72 to 64.77)	60.25 (58.46 to 62.08)	79.47 (77.84 to 81.13)	114.92 (112.78 to 117.10)
	2009-2013	129.69 (127.20 to 132.21)	128.19 (125.50 to 130.92)	143.16 (139.87 to 146.52)	129.05 (124.74 to 133.48)	123.47 (118.77 to 128.31)	116.25 (112.14 to 120.48)	118.84 (114.49 to 123.31)	78.89 (68.92 to 89.91)	103.17 (97.46 to 109.13)	103.10 (99.33 to 106.99)	123.20 (120.16 to 126.29)	158.09 (154.72 to 161.52)
	2014-2018	281.79 (275.65 to 288.03)	249.68 (243.39 to 255.98)	303.17 (294.98 to 311.52)	271.13 (259.71 to 282.92)	268.71 (257.43 to 280.36)	250.64 (241.30 to 260.25)	217.60 (208.17 to 227.34)	126.32 (109.74 to 144.70)	156.52 (145.09 to 168.61)	171.80 (163.71 to 180.18)	277.24 (269.67 to 284.97)	349.26 (340.75 to 357.93)

Māori	<1998	27.18 (25.34 to 29.13)	24.01 (22.30 to 25.81)	30.91 (24.35 to 38.69)	34.70 (29.87 to 40.10)	19.30 (16.75 to 22.14)	17.78 (14.51 to 21.56)	27.23 (25.54 to 28.99)	13.28 (11.19 to 15.64)	21.71 (19.70 to 23.88)	30.57 (28.09 to 33.21)	38.00 (33.84 to 42.54)	93.88 (76.04 to 114.64)
	1999-2003	50.21 (48.50 to 51.97)	49.94 (48.23 to 51.69)	56.36 (54.69 to 58.06)	49.73 (45.77 to 53.93)	42.46 (38.78 to 46.39)	35.12 (32.79 to 37.57)	44.72 (39.16 to 50.85)	22.51 (20.35 to 24.84)	39.60 (37.71 to 41.56)	59.44 (57.05 to 61.91)	74.94 (71.29 to 78.72)	165.33 (150.31 to 181.45)
	2004-2008	78.75 (76.71 to 80.82)	73.60 (71.64 to 75.59)	108.92 (99.96 to 118.47)	85.20 (79.87 to 90.79)	73.65 (70.46 to 76.94)	69.89 (65.72 to 74.25)	75.02 (73.20 to 76.87)	39.29 (36.35 to 42.41)	67.26 (64.74 to 69.84)	80.47 (77.89 to 83.11)	98.61 (95.09 to 102.22)	144.57 (135.13 to 154.49)
	2009-2013	141.37 (137.58 to 145.24)	129.12 (125.50 to 132.81)	145.66 (129.04 to 163.83)	143.91 (133.52 to 154.90)	131.76 (123.05 to 140.93)	128.54 (122.03 to 135.31)	136.10 (132.88 to 139.37)	78.52 (72.26 to 85.18)	117.05 (111.97 to 122.30)	137.06 (132.46 to 141.78)	159.88 (154.09 to 165.83)	190.73 (179.90 to 202.04)
	2014-2018	299.73 (290.28 to 309.41)	281.79 (272.40 to 291.42)	299.42 (291.31 to 307.70)	319.64 (292.29 to 348.87)	278.23 (259.48 to 297.96)	244.89 (224.49 to 266.66)	249.30 (215.11 to 287.38)	163.15 (146.78 to 180.86)	243.98 (230.57 to 257.96)	287.44 (275.32 to 299.96)	332.07 (318.38 to 346.20)	419.59 (396.49 to 443.68)
Pacific	<1998	18.48 (16.86 to 20.22)	20.40 (18.86 to 22.03)	26.05 (11.25 to 51.33)	17.47 (14.86 to 20.41)	12.29 (8.90 to 16.56)	9.86 (5.52 to 16.27)	21.03 (19.67 to 22.45)	5.01 (3.59 to 6.79)	15.00 (13.29 to 16.87)	17.48 (15.66 to 19.46)	49.21 (44.39 to 54.41)	66.13 (50.59 to 84.95)
	1999-2003	43.73 (42.05 to 45.47)	41.16 (39.75 to 42.60)	41.84 (40.55 to 43.17)	53.03 (46.79 to 59.87)	42.58 (38.67 to 46.78)	42.79 (40.29 to 45.40)	32.84 (23.00 to 45.47)	17.12 (15.10 to 19.34)	27.03 (25.43 to 28.71)	43.41 (41.53 to 45.36)	65.35 (62.30 to 68.51)	122.29 (113.28 to 131.82)
	2004-2008	66.39 (64.47 to 68.37)	65.59 (63.87 to 67.34)	68.76 (57.45 to 81.64)	82.04 (78.72 to 85.47)	62.99 (58.28 to 67.98)	56.97 (51.20 to 63.22)	62.47 (60.97 to 63.99)	27.63 (25.09 to 30.36)	49.84 (47.60 to 52.15)	66.58 (64.38 to 68.84)	89.85 (86.61 to 93.18)	127.86 (120.99 to 135.01)
	2009-2013	134.28 (130.50 to 138.15)	129.72 (126.03 to 133.48)	156.91 (131.99 to 185.16)	153.25 (139.06 to 168.50)	134.82 (127.07 to 142.91)	132.19 (119.23 to 146.17)	130.32 (127.36 to 133.32)	73.92 (66.35 to 82.12)	110.77 (105.55 to 116.18)	116.28 (112.00 to 120.68)	163.78 (158.15 to 169.56)	203.54 (192.54 to 215.00)
	2014-2018	275.11 (267.44 to 282.93)	252.18 (244.43 to 260.11)	268.24 (261.99 to 274.60)	272.86 (247.33 to 300.32)	267.36 (251.03 to 284.48)	254.92 (230.00 to 281.81)	144.52 (117.33 to 176.12)	120.56 (108.65 to 133.42)	180.98 (171.42 to 190.92)	285.50 (275.06 to 296.24)	338.29 (326.17 to 350.74)	381.41 (361.14 to 402.52)

**Cancer Hospitalisation**

All	<1998	13.33 (12.13 to 14.62)	13.13 (12.00 to 14.33)	15.03 (11.80 to 18.87)	17.16 (14.55 to 20.10)	14.97 (13.08 to 17.06)	7.88 (6.25 to 9.81)	13.72 (12.44 to 15.09)	5.63 (3.94 to 7.79)	8.59 (7.23 to 10.13)	10.85 (9.56 to 12.26)	17.79 (15.91 to 19.83)	32.94 (28.24 to 38.20)
	1999-2003	41.55 (40.15 to 43.00)	32.42 (31.23 to 33.64)	40.76 (39.27 to 42.30)	37.09 (34.57 to 39.75)	36.22 (34.30 to 38.22)	28.75 (26.62 to 31.01)	35.79 (32.68 to 39.11)	20.82 (18.33 to 23.56)	17.54 (16.16 to 19.02)	33.24 (31.70 to 34.84)	39.86 (38.08 to 41.70)	89.65 (85.20 to 94.28)
	2004-2008	67.37 (65.92 to 68.84)	66.15 (64.63 to 67.69)	66.74 (65.06 to 68.46)	73.12 (70.79 to 75.51)	64.21 (61.46 to 67.06)	61.38 (58.83 to 64.02)	66.61 (63.35 to 70.01)	36.23 (32.90 to 39.82)	35.31 (33.51 to 37.18)	56.72 (54.93 to 58.55)	77.32 (75.27 to 79.40)	111.40 (108.07 to 114.81)
	2009-2013	126.26 (123.62 to 128.95)	114.19 (111.80 to 116.63)	128.98 (126.16 to 131.86)	131.98 (127.40 to 136.67)	117.18 (112.15 to 122.37)	102.56 (98.48 to 106.77)	101.31 (96.77 to 106.02)	64.17 (58.13 to 70.67)	79.23 (75.43 to 83.17)	99.77 (96.77 to 102.83)	125.98 (122.72 to 129.31)	183.99 (179.06 to 189.02)
	2014-2018	210.23 (205.95 to 214.57)	210.20 (205.82 to 214.65)	216.58 (212.02 to 221.21)	221.97 (213.69 to 230.49)	221.16 (211.73 to 230.90)	190.56 (183.20 to 198.13)	197.07 (188.62 to 205.80)	61.16 (54.68 to 68.20)	132.27 (126.40 to 138.36)	168.81 (163.55 to 174.20)	256.75 (250.58 to 263.04)	336.62 (327.53 to 345.90)

European	<1998	13.50 (12.06 to 15.07)	10.00 (8.60 to 11.55)	16.25 (12.57 to 20.67)	14.41 (12.15 to 16.96)	11.66 (9.15 to 14.64)	7.39 (5.60 to 9.57)	12.44 (10.59 to 14.52)	4.32 (2.07 to 7.95)	5.33 (3.75 to 7.35)	7.99 (6.58 to 9.62)	16.01 (13.95 to 18.28)	26.40 (21.79 to 31.68)
	1999-2003	42.01 (40.05 to 44.05)	32.69 (31.16 to 34.28)	48.14 (45.54 to 50.84)	34.69 (32.31 to 37.20)	33.52 (30.65 to 36.59)	26.63 (24.25 to 29.16)	35.19 (31.72 to 38.94)	13.40 (10.20 to 17.29)	17.00 (14.84 to 19.39)	28.32 (26.34 to 30.42)	34.44 (32.49 to 36.48)	84.96 (80.16 to 89.96)
	2004-2008	68.16 (66.33 to 70.02)	66.73 (64.64 to 68.88)	69.92 (67.21 to 72.70)	74.84 (71.85 to 77.93)	64.51 (61.52 to 67.62)	61.21 (57.92 to 64.63)	63.26 (59.74 to 66.93)	39.61 (33.40 to 46.63)	31.56 (28.80 to 34.52)	46.77 (44.51 to 49.12)	69.50 (67.18 to 71.87)	108.70 (105.09 to 112.40)
	2009-2013	123.78 (120.19 to 127.45)	113.21 (110.17 to 116.31)	138.37 (133.66 to 143.20)	123.95 (117.73 to 130.43)	113.70 (108.48 to 119.10)	103.73 (98.92 to 108.72)	102.21 (97.09 to 107.53)	34.12 (25.91 to 44.11)	99.66 (92.61 to 107.12)	86.57 (82.57 to 90.72)	104.05 (100.36 to 107.84)	174.32 (169.07 to 179.68)
	2014-2018	259.19 (252.70 to 265.80)	246.34 (239.38 to 253.45)	295.91 (286.34 to 305.72)	283.83 (271.40 to 296.68)	237.75 (225.65 to 250.33)	226.19 (216.52 to 236.17)	212.44 (202.52 to 222.72)	59.20 (46.15 to 74.80)	151.28 (140.06 to 163.15)	178.93 (170.62 to 187.53)	276.43 (268.11 to 284.94)	348.90 (338.31 to 359.74)
Māori	<1998	21.60 (18.10 to 25.58)	16.32 (13.24 to 19.91)	17.23 (14.26 to 20.63)	16.23 (12.56 to 20.66)	15.00 (13.10 to 17.08)	14.40 (10.24 to 19.69)	15.56 (4.24 to 39.84)	9.30 (5.20 to 15.33)	16.94 (13.32 to 21.23)	22.43 (18.03 to 27.57)	7.06 (3.53 to 12.64)	175.16 (121.30 to 244.77)
	1999-2003	54.81 (50.92 to 58.92)	25.61 (22.98 to 28.46)	35.59 (32.67 to 38.71)	57.75 (44.28 to 74.04)	49.16 (43.54 to 55.30)	46.87 (40.84 to 53.53)	30.78 (21.19 to 43.23)	11.07 (7.57 to 15.62)	15.94 (13.33 to 18.92)	50.69 (46.45 to 55.22)	70.90 (62.84 to 79.71)	143.47 (113.23 to 179.31)
	2004-2008	74.71 (70.76 to 78.83)	66.70 (63.14 to 70.40)	146.15 (125.68 to 168.99)	136.37 (113.56 to 146.20)	106.36 (99.67 to 108.16)	74.34 (68.24 to 80.83)	71.54 (67.96 to 75.26)	31.69 (25.81 to 38.51)	36.82 (33.28 to 40.65)	67.87 (63.56 to 72.40)	125.34 (117.54 to 133.52)	152.64 (133.86 to 173.31)
	2009-2013	156.03 (149.26 to 163.02)	120.03 (113.81 to 126.49)	136.34 (130.58 to 142.29)	201.23 (186.34 to 217.00)	113.73 (100.56 to 128.13)	111.56 (99.31 to 124.91)	83.39 (60.10 to 112.72)	79.40 (66.88 to 93.59)	100.19 (91.66 to 109.29)	114.39 (107.75 to 121.33)	213.26 (201.96 to 225.03)	216.55 (190.59 to 245.07)
	2014-2018	210.15 (199.66 to 221.06)	208.50 (197.58 to 219.87)	213.02 (203.78 to 222.57)	248.53 (221.96 to 277.40)	188.45 (162.27 to 217.64)	182.83 (162.98 to 204.43)	198.66 (150.46 to 257.39)	86.88 (71.06 to 105.18)	166.23 (152.37 to 181.00)	187.96 (174.81 to 201.83)	264.99 (249.01 to 281.72)	405.14 (367.83 to 445.21)
Pacific	<1998	16.29 (13.33 to 19.72)	13.20 (10.21 to 16.79)	14.09 (0.463 to 16.91)	20.62 (10.29 to 36.90)	16.16 (12.85 to 20.17)	9.98 (3.24 to 23.30)	8.00 (2.60 to 18.68)	3.79 (1.52 to 7.81)	7.64 (4.95 to 11.28)	10.92 (7.80 to 14.86)	51.56 (41.41 to 63.45)	31.31 (14.32 to 59.44)
	1999-2003	33.57 (30.42 to 36.96)	32.44 (29.87 to 35.18)	32.09 (0.371 to 34.62)	34.67 (30.02 to 39.83)	22.16 (20.98 to 23.38)	12.56 (9.85 to 15.62)	6.95 (0.84 to 25.09)	37.51 (31.12 to 44.82)	17.37 (14.76 to 20.30)	28.47 (25.34 to 31.88)	48.49 (42.92 to 54.58)	114.99 (95.93 to 136.72)
	2004-2008	58.48 (55.34 to 61.74)	54.32 (50.69 to 58.13)	59.01 (0.902 to 62.11)	52.22 (47.32 to 57.49)	39.85 (31.23 to 50.10)	24.89 (17.78 to 33.89)	13.72 (0.22 to 28.28)	27.17 (21.96 to 33.25)	41.78 (37.95 to 45.89)	63.07 (58.77 to 67.61)	76.86 (70.75 to 83.35)	78.64 (67.99 to 90.49)
	2009-2013	124.59 (117.43 to 132.08)	119.91 (113.65 to 126.41)	118.84 (0.150 to 124.37)	113.26 (109.18 to 117.68)	97.31 (93.67 to 103.62)	81.09 (62.97 to 102.81)	94.78 (0.324 to 133.11)	41.91 (32.96 to 52.53)	57.88 (50.83 to 65.64)	126.11 (118.14 to 134.47)	141.70 (131.66 to 152.31)	309.86 (282.53 to 339.11)
	2014-2018	177.47 (169.18 to 186.06)	125.91 (118.20 to 133.99)	162.85 (0.419 to 169.71)	168.58 (152.92 to 185.42)	131.57 (115.28 to 149.51)	120.26 (101.23 to 141.83)	87.20 (0.740 to 125.24)	57.92 (47.65 to 69.75)	107.20 (97.86 to 117.20)	166.37 (155.85 to 177.41)	241.23 (225.89 to 257.35)	235.08 (206.56 to 266.44)

**End-stage renal disease Hospitalisation**

All	<1998	1·15 (0·72 to 1·74)	1·07 (0·67 to 1·63)	1·25 (0·80 to 1·88)	1·64 (0·85 to 2·86)	0·89 (0·24 to 2·27)	0·86 (0·23 to 2·20)	0·41 (0·01 to 2·28)	0·40 (0·05 to 1·44)	1·31 (0·70 to 2·23)	0·85 (0·41 to 1·57)	1·53 (0·81 to 2·61)	2·13 (0·78 to 4·63)
	1999-2003	17·95 (16·75 to 19·21)	17·72 (16·50 to 19·01)	23·86 (22·40 to 25·37)	13·87 (12·20 to 15·71)	12·68 (10·64 to 15·01)	12·20 (10·25 to 14·42)	11·79 (9·32 to 14·71)	12·25 (10·12 to 14·69)	15·88 (14·20 to 17·69)	18·33 (16·71 to 20·06)	17·22 (15·53 to 19·05)	30·98 (27·38 to 34·93)
	2004-2008	27·91 (26·62 to 29·25)	26·32 (25·03 to 27·67)	30·51 (29·04 to 32·03)	28·52 (25·94 to 31·28)	25·66 (23·72 to 27·73)	22·19 (19·93 to 24·63)	21·50 (18·86 to 24·41)	14·58 (12·37 to 17·07)	25·74 (23·73 to 27·88)	24·02 (22·40 to 25·73)	28·44 (26·60 to 30·37)	43·10 (40·17 to 46·19)
	2009-2013	45·79 (43·87 to 47·78)	38·73 (36·86 to 40·66)	50·33 (48·21 to 52·51)	41·32 (37·96 to 44·90)	36·83 (33·05 to 40·92)	32·76 (29·65 to 36·11)	29·69 (26·48 to 33·19)	22·84 (19·28 to 26·86)	28·62 (25·98 to 31·45)	35·86 (33·51 to 38·32)	46·68 (44·03 to 49·45)	68·29 (64·27 to 72·50)
	2014-2018	83·75 (80·80 to 86·77)	66·80 (64·16 to 69·51)	92·33 (89·18 to 95·56)	66·41 (60·89 to 72·30)	66·16 (61·18 to 71·44)	62·88 (58·28 to 67·75)	44·08 (39·68 to 48·84)	30·65 (26·38 to 35·42)	34·39 (31·34 to 37·66)	60·99 (57·57 to 64·57)	93·68 (89·45 to 98·05)	141·87 (135·23 to 148·76)
European	<1998	0·94 (0·43 to 1·79)	0·79 (0·29 to 1·71)	0·59 (0·12 to 1·74)	2·07 (0·89 to 4·07)	0·71 (0·09 to 2·57)	0·35 (0·01 to 1·97)	0·58 (0·01 to 3·21)	0·93 (0·02 to 5·19)	0·34 (0·01 to 1·92)	0·20 (0·00 to 1·09)	1·27 (0·51 to 2·63)	2·35 (0·76 to 5·49)
	1999-2003	13·81 (12·25 to 15·52)	10·23 (8·75 to 11·89)	19·09 (16·57 to 21·89)	10·60 (8·22 to 13·46)	9·54 (7·57 to 11·88)	8·54 (6·45 to 11·08)	9·44 (6·86 to 12·67)	19·43 (14·17 to 26·00)	5·08 (3·32 to 7·44)	9·94 (8·05 to 12·14)	9·28 (7·66 to 11·13)	25·81 (22·02 to 30·06)
	2004-2008	22·29 (20·64 to 24·05)	21·33 (19·53 to 23·24)	26·84 (24·27 to 29·61)	23·36 (20·31 to 26·74)	20·41 (17·92 to 23·15)	18·61 (16·07 to 21·44)	18·05 (15·28 to 21·19)	16·54 (12·02 to 22·21)	12·62 (9·97 to 15·74)	11·53 (9·77 to 13·52)	19·64 (17·59 to 21·85)	40·38 (37·15 to 43·83)
	2009-2013	39·55 (36·99 to 42·24)	34·72 (32·07 to 37·54)	47·73 (43·89 to 51·80)	39·73 (35·18 to 44·70)	34·45 (29·81 to 39·59)	32·89 (28·98 to 37·17)	27·14 (23·64 to 31·01)	12·85 (8·05 to 19·46)	21·36 (17·38 to 25·98)	22·78 (19·82 to 26·07)	33·54 (30·46 to 36·84)	64·93 (60·31 to 69·81)
	2014-2018	82·04 (77·76 to 86·50)	59·45 (55·63 to 63·46)	97·15 (90·90 to 103·73)	68·55 (61·16 to 76·60)	66·21 (59·26 to 73·76)	64·45 (58·60 to 70·74)	48·73 (43·32 to 54·63)	23·39 (16·20 to 32·69)	22·33 (17·81 to 27·65)	43·03 (38·48 to 47·99)	71·17 (66·19 to 76·43)	128·71 (121·00 to 136·77)
Māori	<1998	1·70 (0·68 to 3·50)	0·97 (0·26 to 2·49)	1·23 (1·41 to 2·68)	2·84 (0·34 to 10·26)	1·96 (0·24 to 7·09)	1·22 (0·15 to 4·39)	0·00 (0·00 to 0·00)	0·00 (0·00 to 0·00)	1·82 (8·64 to 4·24)	2·24 (5·23 to 5·23)	0·99 (8·59 to 5·50)	0·00 (0·00 to 0·00)
	1999-2003	30·92 (27·45 to 34·72)	23·71 (20·76 to 26·96)	30·18 (4·10 to 33·50)	26·89 (19·03 to 36·91)	26·86 (21·83 to 32·70)	18·65 (14·45 to 23·68)	14·30 (6·54 to 27·14)	13·55 (9·68 to 18·45)	19·59 (3·61 to 23·55)	31·59 (4·66 to 36·57)	40·81 (5·23 to 48·90)	74·73 (3·26 to 106·07)
	2004-2008	43·94 (40·32 to 47·80)	35·22 (31·92 to 38·78)	59·28 (5·09 to 79·58)	47·62 (35·34 to 62·78)	46·75 (36·71 to 58·70)	42·84 (37·27 to 49·02)	40·69 (1·40 to 44·13)	18·87 (9·28 to 24·29)	39·22 (4·55 to 44·31)	40·84 (5·52 to 45·68)	47·45 (9·37 to 54·22)	75·87 (3·99 to 93·93)
	2009-2013	66·15 (60·82 to 71·84)	49·57 (44·94 to 54·56)	109·69 (9·89 to 145·44)	90·51 (76·14 to 106·80)	87·13 (75·30 to 100·29)	81·85 (65·47 to 101·08)	60·18 (8·70 to 64·89)	30·04 (8·71 to 38·83)	48·48 (1·61 to 55·88)	55·50 (3·42 to 62·22)	76·38 (8·55 to 85·41)	87·47 (8·31 to 105·79)
	2014-2018	113·38 (104·83 to 122·45)	91·81 (84·45 to 99·64)	109·41 (7·39 to 116·84)	102·13 (96·49 to 108·02)	92·13 (72·82 to 114·98)	88·51 (79·28 to 98·54)	91·13 (8·41 to 130·09)	55·68 (2·42 to 70·12)	45·30 (7·16 to 53·73)	93·71 (8·12 to 104·50)	147·50 (2·97 to 162·27)	254·09 (5·64 to 287·20)
Pacific	<1998	1·39 (0·56 to 2·86)	1·33 (0·49 to 2·89)	1·49 (0·52 to 2·51)	2·93 (0·35 to 10·59)	1·36 (0·72 to 2·32)	0·75 (0·02 to 4·17)	0·00 (0·00 to 0·00)	0·00 (0·00 to 0·00)	2·27 (0·92 to 4·68)	0·33 (0·00 to 1·81)	4·39 (1·44 to 10·24)	0·00 (0·00 to 0·00)
	1999-2003	22·92 (20·07 to 26·06)	19·91 (17·57 to 22·48)	24·79 (0·440 to 27·424)	21·22 (19·39 to 23·18)	17·21 (9·41 to 28·88)	13·99 (10·57 to 18·16)	6·88 (0·83 to 24·86)	9·92 (6·59 to 14·34)	22·89 (19·522 to 26·66)	19·59 (16·519 to 23·04)	27·43 (22·627 to 32·95)	46·79 (33·246 to 63·96)
	2004-2008	29·49 (26·89 to 32·28)	29·13 (26·21 to 32·29)	28·65 (0·731 to 31·73)	31·09 (26·59 to 36·13)	29·61 (27·64 to 31·67)	15·34 (10·19 to 22·17)	14·72 (0·30 to 32·314)	9·27 (6·29 to 13·23)	29·53 (25·729 to 33·73)	32·02 (28·432 to 35·91)	36·39 (31·636 to 41·63)	49·86 (40·05 to 61·28)

2009-2013	57·65 (52·72 to 62·92)	46·12 (41·91 to 50·64)	52·26 (0·387 to 84·35)	63·89 (46·42 to 85·77)	51·58 (48·34 to 54·98)	51·53 (41·84 to 62·80)	52·24 (0·957 to 56·952)	28·71 (21·428 to 37·64)	32·58 (27·13 to 38·79)	49·03 (43·55 to 55·03)	67·72 (60·267 to 75·89)	93·77 (79·59 to 109·80)
2014-2018	85·65 (79·54 to 92·10)	80·21 (74·55 to 86·18)	87·49 (0·363 to 92·39)	82·90 (78·72 to 87·24)	74·84 (63·04 to 88·22)	59·85 (44·42 to 78·90)	30·37 (0·469 to 53·430)	33·81 (26·533 to 42·44)	49·10 (42·849 to 56·00)	80·32 (72·780 to 88·53)	131·33 (119·81 to 143·60)	162·43 (143·22 to 183·51)

**Table-S4 Incidence rates per 1000 person-years (95% confidence interval) of clinical outcomes by smoking and obesity status in three ethnicity groups and five time periods**

		Not current smoker	Current smoker	Non-obesity	Obesity
		<b>All-cause mortality</b>			
European	<1998	12.76 (10.33 to 15.58)	10.24 (5.85 to 16.62)	6.71 (4.15 to 10.26)	6.80 (4.55 to 9.77)
	1999-2003	19.50 (17.32 to 21.87)	26.50 (21.39 to 32.47)	11.05 (8.83 to 13.67)	15.50 (13.04 to 18.29)
	2004-2008	17.35 (15.71 to 19.12)	25.86 (22.28 to 29.84)	13.11 (11.30 to 15.13)	19.25 (17.05 to 21.65)
	2009-2013	17.01 (15.21 to 18.97)	21.13 (18.14 to 24.47)	14.82 (12.86 to 17.00)	18.73 (16.39 to 21.31)
	2014-2018	9.67 (8.25 to 11.27)	13.78 (11.67 to 16.15)	11.03 (9.23 to 13.09)	11.28 (9.57 to 13.20)
Māori	<1998	14.90 (10.12 to 21.14)	15.86 (8.45 to 27.13)	6.88 (3.56 to 12.02)	17.31 (8.95 to 30.24)
	1999-2003	23.55 (19.12 to 28.70)	28.06 (21.41 to 36.11)	15.85 (12.33 to 20.05)	26.13 (18.49 to 35.86)
	2004-2008	20.47 (17.03 to 24.41)	25.38 (20.80 to 30.66)	19.92 (16.87 to 23.37)	25.38 (19.17 to 32.96)
	2009-2013	22.73 (18.51 to 27.62)	27.38 (22.97 to 32.39)	21.30 (18.04 to 24.96)	35.86 (28.06 to 45.16)
	2014-2018	10.42 (8.11 to 13.18)	18.52 (14.13 to 23.84)	11.30 (8.98 to 14.02)	18.92 (13.45 to 25.86)
Pacific	<1998	10.30 (7.04 to 14.54)	16.65 (7.19 to 32.80)	5.64 (2.82 to 10.09)	9.21 (3.97 to 18.14)
	1999-2003	14.34 (11.78 to 17.30)	15.88 (9.95 to 24.04)	7.43 (5.38 to 10.01)	15.91 (11.08 to 22.13)
	2004-2008	11.11 (9.19 to 13.32)	17.20 (12.59 to 22.95)	10.09 (8.16 to 12.33)	15.31 (11.33 to 20.24)
	2009-2013	13.82 (11.35 to 16.68)	16.12 (12.04 to 21.14)	12.79 (10.45 to 15.49)	18.16 (13.44 to 24.01)
	2014-2018	7.64 (5.98 to 9.62)	9.08 (6.80 to 11.87)	7.46 (5.95 to 9.24)	11.26 (7.93 to 15.52)
		<b>Cardiovascular mortality</b>			
European	<1998	4.10 (2.78 to 5.82)	2.54 (0.69 to 6.51)	1.91 (0.70 to 4.16)	4.83 (3.24 to 6.94)
	1999-2003	6.52 (5.29 to 7.94)	9.05 (6.19 to 12.78)	3.24 (2.10 to 4.79)	9.67 (7.91 to 11.70)
	2004-2008	4.71 (3.88 to 5.66)	5.85 (4.23 to 7.88)	3.40 (2.52 to 4.50)	6.33 (5.18 to 7.65)
	2009-2013	4.37 (3.49 to 5.41)	5.22 (3.81 to 6.99)	3.80 (2.84 to 4.96)	5.46 (4.31 to 6.83)
	2014-2018	1.91 (1.32 to 2.68)	2.39 (1.57 to 3.47)	1.64 (1.05 to 2.45)	2.57 (1.80 to 3.56)
Māori	<1998	2.86 (1.05 to 6.22)	2.43 (0.29 to 8.76)	1.15 (0.14 to 4.14)	5.10 (1.87 to 11.09)



	1999-2003	6.17 (4.03 to 9.04)	8.34 (4.94 to 13.17)	4.33 (2.61 to 6.77)	12.58 (8.14 to 18.57)
	2004-2008	4.88 (3.29 to 6.96)	6.27 (4.13 to 9.12)	4.67 (3.27 to 6.47)	7.63 (4.72 to 11.66)
	2009-2013	4.40 (2.69 to 6.79)	7.28 (5.12 to 10.03)	5.08 (3.58 to 7.01)	8.50 (5.19 to 13.13)
	2014-2018	4.82 (2.75 to 7.82)	2.22 (1.24 to 3.66)	2.70 (1.65 to 4.18)	4.10 (2.04 to 7.33)
Pacific	<1998	1.92 (0.70 to 4.18)	2.06 (0.05 to 11.46)	1.54 (0.32 to 4.49)	2.41 (0.66 to 6.17)
	1999-2003	4.04 (2.75 to 5.74)	3.56 (1.15 to 8.30)	2.41 (1.32 to 4.05)	6.72 (4.21 to 10.18)
	2004-2008	1.79 (1.08 to 2.79)	1.47 (0.40 to 3.77)	1.26 (0.65 to 2.20)	2.86 (1.43 to 5.11)
	2009-2013	2.75 (1.72 to 4.16)	3.67 (1.89 to 6.40)	2.31 (1.39 to 3.60)	4.92 (2.76 to 8.12)
	2014-2018	1.67 (0.96 to 2.71)	1.86 (0.93 to 3.32)	1.14 (0.61 to 1.94)	3.44 (1.88 to 5.78)
		<b>Cancer mortality</b>			
	<1998	1.99 (1.11 to 3.27)	1.27 (0.15 to 4.59)	0.64 (0.08 to 2.30)	2.50 (1.40 to 4.13)
	1999-2003	5.05 (3.98 to 6.32)	10.20 (7.14 to 14.11)	3.50 (2.31 to 5.09)	7.82 (6.25 to 9.67)
	2004-2008	5.68 (4.76 to 6.72)	8.85 (6.83 to 11.28)	4.24 (3.25 to 5.45)	8.30 (6.98 to 9.80)
	2009-2013	5.26 (4.29 to 6.39)	7.47 (5.75 to 9.53)	4.38 (3.35 to 5.63)	7.48 (6.12 to 9.06)
	2014-2018	4.19 (3.28 to 5.28)	6.05 (4.70 to 7.67)	4.59 (3.54 to 5.86)	5.25 (4.14 to 6.57)
European	<1998	2.37 (0.77 to 5.54)	7.30 (2.68 to 15.88)	2.86 (0.93 to 6.67)	5.09 (1.87 to 11.07)
	1999-2003	4.98 (3.08 to 7.62)	7.40 (4.23 to 12.01)	4.34 (2.61 to 6.78)	9.00 (5.33 to 14.23)
	2004-2008	5.37 (3.69 to 7.54)	6.74 (4.51 to 9.68)	4.81 (3.39 to 6.63)	9.06 (5.87 to 13.38)
	2009-2013	7.04 (4.82 to 9.94)	8.09 (5.80 to 10.97)	6.05 (4.40 to 8.12)	12.40 (8.30 to 17.80)
	2014-2018	3.90 (2.08 to 6.67)	3.86 (2.52 to 5.66)	3.66 (2.41 to 5.32)	4.48 (2.32 to 7.83)
	<1998	2.37 (0.77 to 5.54)	7.30 (2.68 to 15.88)	2.86 (0.93 to 6.67)	5.09 (1.87 to 11.07)
	1999-2003	4.98 (3.08 to 7.62)	7.40 (4.23 to 12.01)	4.34 (2.61 to 6.78)	9.00 (5.33 to 14.23)
	2004-2008	5.37 (3.69 to 7.54)	6.74 (4.51 to 9.68)	4.81 (3.39 to 6.63)	9.06 (5.87 to 13.38)
	2009-2013	7.04 (4.82 to 9.94)	8.09 (5.80 to 10.97)	6.05 (4.40 to 8.12)	12.40 (8.30 to 17.80)
	2014-2018	3.90 (2.08 to 6.67)	3.86 (2.52 to 5.66)	3.66 (2.41 to 5.32)	4.48 (2.32 to 7.83)
	<1998	1.92 (0.70 to 4.17)	4.14 (0.50 to 14.95)	1.02 (0.12 to 3.69)	3.62 (1.33 to 7.89)
	1999-2003	3.52 (2.32 to 5.12)	4.28 (1.57 to 9.33)	1.89 (0.95 to 3.39)	6.73 (4.22 to 10.19)
	2004-2008	3.39 (2.37 to 4.69)	2.94 (1.27 to 5.80)	3.05 (2.05 to 4.39)	3.90 (2.18 to 6.43)
	2009-2013	3.63 (2.43 to 5.21)	3.05 (1.46 to 5.61)	3.04 (1.97 to 4.48)	4.60 (2.52 to 7.72)
Pacific	<1998	1.92 (0.70 to 4.17)	4.14 (0.50 to 14.95)	1.02 (0.12 to 3.69)	3.62 (1.33 to 7.89)
	1999-2003	3.52 (2.32 to 5.12)	4.28 (1.57 to 9.33)	1.89 (0.95 to 3.39)	6.73 (4.22 to 10.19)
	2004-2008	3.39 (2.37 to 4.69)	2.94 (1.27 to 5.80)	3.05 (2.05 to 4.39)	3.90 (2.18 to 6.43)
	2009-2013	3.63 (2.43 to 5.21)	3.05 (1.46 to 5.61)	3.04 (1.97 to 4.48)	4.60 (2.52 to 7.72)

	2014-2018	1.57 (0.88 to 2.59)	1.52 (0.69 to 2.88)	1.75 (1.07 to 2.71)	0.98 (0.27 to 2.51)
		<b>Cancer hospitalisation</b>			
European	<1998	12.60 (11.43 to 13.86)	9.42 (7.45 to 11.76)	8.42 (7.12 to 9.89)	14.56 (13.08 to 16.16)
	1999-2003	35.70 (34.35 to 37.09)	41.00 (38.17 to 43.99)	32.86 (31.16 to 34.63)	40.11 (38.37 to 41.90)
	2004-2008	66.96 (65.38 to 68.58)	69.33 (66.57 to 72.19)	55.89 (54.07 to 57.75)	78.20 (76.15 to 80.29)
	2009-2013	116.14 (113.34 to 118.99)	121.64 (117.48 to 125.92)	117.04 (113.75 to 120.41)	118.74 (115.46 to 122.09)
	2014-2018	235.96 (230.09 to 241.94)	280.59 (272.59 to 288.76)	249.38 (242.56 to 256.35)	257.00 (250.39 to 263.74)
Māori	<1998	14.59 (12.05 to 17.50)	27.41 (22.63 to 32.91)	11.47 (9.21 to 14.11)	32.37 (27.26 to 38.15)
	1999-2003	35.79 (32.98 to 38.78)	47.36 (43.23 to 51.78)	35.57 (32.87 to 38.43)	49.57 (45.04 to 54.43)
	2004-2008	69.75 (66.14 to 73.52)	71.35 (67.46 to 75.41)	64.71 (61.69 to 67.84)	84.61 (79.24 to 90.24)
	2009-2013	137.20 (131.04 to 143.58)	141.00 (134.03 to 148.24)	125.41 (120.31 to 130.68)	177.54 (167.30 to 188.24)
	2014-2018	189.03 (175.65 to 203.17)	217.49 (208.35 to 226.94)	201.69 (192.83 to 210.84)	227.86 (213.34 to 243.12)
Pacific	<1998	8.52 (4.66 to 14.29)	16.02 (13.61 to 18.73)	8.10 (6.13 to 10.49)	25.88 (21.35 to 31.10)
	1999-2003	23.28 (19.10 to 28.10)	34.63 (32.40 to 36.98)	26.02 (23.89 to 28.29)	48.48 (44.12 to 53.16)
	2004-2008	49.31 (44.43 to 54.57)	58.68 (55.97 to 61.48)	55.65 (52.91 to 58.49)	60.05 (55.29 to 65.11)
	2009-2013	116.89 (108.65 to 125.60)	124.22 (118.49 to 130.16)	118.37 (112.92 to 124.02)	131.46 (122.15 to 141.30)
	2014-2018	142.98 (133.88 to 152.54)	160.85 (153.49 to 168.47)	141.06 (130.16 to 152.64)	158.73 (152.01 to 165.68)
		<b>Cardiovascular hospitalisation</b>			
European	<1998	25.48 (24.60 to 26.38)	32.91 (30.84 to 35.08)	19.40 (18.37 to 20.47)	32.85 (31.65 to 34.09)
	1999-2003	54.22 (53.28 to 55.18)	59.31 (57.39 to 61.27)	48.00 (46.88 to 49.14)	62.37 (61.11 to 63.66)
	2004-2008	82.20 (81.05 to 83.36)	87.34 (85.30 to 89.41)	78.98 (77.62 to 80.35)	88.22 (86.75 to 89.71)
	2009-2013	126.09 (123.91 to 128.31)	135.32 (131.98 to 138.72)	125.67 (123.00 to 128.38)	131.79 (129.28 to 134.33)
	2014-2018	247.47 (242.02 to 253.01)	295.51 (288.28 to 302.87)	248.26 (242.17 to 254.47)	283.86 (277.63 to 290.19)
Māori	<1998	25.28 (23.75 to 26.87)	26.18 (23.97 to 28.54)	17.69 (16.41 to 19.05)	40.87 (38.14 to 43.73)
	1999-2003	49.27 (47.78 to 50.79)	51.56 (49.50 to 53.70)	42.29 (40.98 to 43.64)	69.59 (66.92 to 72.33)

	2004-2008	71.15 (69.38 to 72.95)	83.57 (81.24 to 85.94)	75.35 (73.74 to 76.99)	78.72 (75.79 to 81.73)
	2009-2013	132.99 (129.25 to 136.80)	137.33 (133.66 to 141.08)	131.44 (128.50 to 134.44)	147.95 (142.25 to 153.82)
	2014-2018	277.19 (269.04 to 285.53)	315.19 (303.69 to 327.01)	290.86 (283.23 to 298.64)	291.40 (277.70 to 305.60)
Pacific	<1998	18.91 (16.15 to 22.02)	19.65 (18.43 to 20.94)	15.07 (13.82 to 16.40)	26.77 (24.65 to 29.02)
	1999-2003	39.83 (37.23 to 42.56)	42.72 (41.53 to 43.94)	39.43 (38.18 to 40.72)	48.67 (46.58 to 50.83)
	2004-2008	59.29 (56.60 to 62.08)	67.65 (66.20 to 69.13)	65.24 (63.74 to 66.77)	67.84 (65.39 to 70.36)
	2009-2013	130.52 (127.41 to 133.69)	135.66 (130.67 to 140.79)	125.14 (122.13 to 128.21)	150.59 (145.17 to 156.17)
	2014-2018	261.87 (253.19 to 270.78)	266.02 (259.01 to 273.17)	262.08 (255.78 to 268.49)	271.19 (260.28 to 282.45)
		<b>End-stage renal disease hospitalisation</b>			
European	<1998	0.92 (0.49 to 1.58)	0.65 (0.08 to 2.33)	0.56 (0.15 to 1.45)	1.09 (0.55 to 1.95)
	1999-2003	11.72 (10.52 to 13.03)	14.12 (11.57 to 17.06)	9.49 (8.10 to 11.06)	14.59 (12.96 to 16.38)
	2004-2008	21.86 (20.45 to 23.34)	21.87 (19.46 to 24.50)	18.36 (16.78 to 20.05)	25.30 (23.46 to 27.25)
	2009-2013	35.96 (33.77 to 38.26)	40.47 (37.06 to 44.12)	37.07 (34.53 to 39.74)	37.72 (35.02 to 40.56)
	2014-2018	67.33 (63.72 to 71.10)	77.51 (72.73 to 82.53)	62.07 (58.24 to 66.08)	80.46 (76.14 to 84.96)
Māori	<1998	1.25 (0.50 to 2.57)	1.52 (0.41 to 3.89)	0.57 (0.12 to 1.67)	2.68 (1.16 to 5.29)
	1999-2003	23.96 (21.35 to 26.81)	33.70 (29.34 to 38.52)	16.76 (14.62 to 19.12)	50.18 (44.66 to 56.19)
	2004-2008	37.41 (34.32 to 40.71)	43.01 (38.99 to 47.33)	33.08 (30.49 to 35.83)	59.84 (53.79 to 66.39)
	2009-2013	57.46 (52.45 to 62.81)	58.38 (53.38 to 63.73)	55.31 (51.37 to 59.47)	67.03 (59.04 to 75.80)
	2014-2018	88.59 (82.17 to 95.39)	128.76 (117.93 to 140.32)	92.94 (82.51 to 104.31)	105.34 (98.69 to 112.31)
Pacific	<1998	0.00 (0.00 to 2.47)	1.61 (0.86 to 2.75)	0.36 (0.04 to 1.31)	2.72 (1.36 to 4.87)
	1999-2003	19.44 (15.27 to 24.41)	21.57 (19.56 to 23.74)	18.98 (16.88 to 21.28)	25.67 (22.24 to 29.49)
	2004-2008	28.46 (26.29 to 30.76)	33.85 (29.37 to 38.81)	27.58 (25.34 to 29.97)	34.57 (30.67 to 38.83)
	2009-2013	44.68 (39.25 to 50.65)	54.53 (50.56 to 58.73)	46.22 (42.63 to 50.04)	65.71 (58.81 to 73.19)
	2014-2018	80.75 (75.51 to 86.25)	86.35 (79.52 to 93.61)	80.76 (72.82 to 89.32)	83.67 (78.79 to 88.77)

**Table S5· Stratified adjusted incidence rates ratio for clinical events in Māori and Pacific New Zealand population with type 2 diabetes compared to European New Zealand population with type 2 diabetes**

§ Age-stratification, SES, smoking status, obesity status and period were adjusted.

¶ Gender, SES, smoking status, obesity status and period were adjusted.

§ Gender, age-stratification, smoking status, obesity status and period were adjusted.

‡ Gender, age-stratification, SES, smoking status, and obesity status were adjusted.

¶ Gender, age-stratification, SES, obesity status and period were adjusted.

£ Gender, age-stratification, SES, smoking status and period were adjusted.

SES indicates socioeconomic status· SES was defined by NZDep2013· IMD indicates index of multiple deprivation.

European ethnicity was used as reference group.

Estimation was presented as adjusted incidence rates ratio (95% confidence interval).

	All-cause mortality		CVD mortality		Cancer mortality		ESRD hospitalisation		Cancer hospitalisation		CVD hospitalisation	
	Māori	Pacific	Māori	Pacific	Māori	Pacific	Māori	Pacific	Māori	Pacific	Māori	Pacific
<b>Gender<sup>§</sup></b>												
<b>Male</b>	2·00 (1·77 to 2·24)	1·13 (0·99 to 1·29)	2·14 (1·72 to 2·67)	0·98 (0·75 to 1·26)	1·38 (1·10 to 1·75)	0·74 (0·57 to 0·97)	2·01 (1·90 to 2·14)	1·52 (1·42 to 1·61)	1·33 (1·28 to 1·38)	1·05 (1·01 to 1·10)	1·31 (1·28 to 1·33)	1·12 (1·09 to 1·14)
<b>Female</b>	1·91 (1·68 to 2·17)	0·95 (0·83 to 1·10)	1·70 (1·30 to 2·22)	0·71 (0·53 to 0·96)	1·92 (1·53 to 2·42)	0·77 (0·59 to 1·01)	2·09 (1·96 to 2·24)	1·66 (1·55 to 1·77)	1·28 (1·24 to 1·33)	0·99 (0·96 to 1·03)	1·22 (1·20 to 1·24)	1·06 (1·04 to 1·08)
<b>Age stratification<sup>¶</sup></b>												
<b>35-44</b>	1·81 (0·97 to 3·37)	0·85 (0·42 to 1·72)	0·90 (0·27 to 2·97)	0·48 (0·13 to 1·84)	1·25 (0·16 to 9·84)	2·20 (0·35 to 13·79)	1·27 (1·01 to 1·59)	0·88 (0·69 to 1·12)	1·14 (0·97 to 1·33)	0·94 (0·81 to 1·10)	0·79 (0·74 to 0·85)	0·59 (0·54 to 0·63)
<b>45-54</b>	2·23 (1·63 to 3·03)	0·88 (0·61 to 1·26)	2·17 (1·46 to 5·03)	0·58 (0·25 to 1·34)	1·32 (0·73 to 2·39)	0·52 (0·26 to 1·06)	2·31 (2·00 to 2·67)	2·00 (1·73 to 2·32)	0·99 (0·92 to 1·06)	0·74 (0·69 to 0·79)	1·21 (1·17 to 1·26)	0·93 (0·89 to 0·97)
<b>55-64</b>	1·95 (1·62 to 2·35)	0·93 (0·75 to 1·15)	2·58 (1·71 to 3·88)	1·27 (0·80 to 2·00)	1·37 (1·00 to 1·87)	0·46 (0·31 to 0·70)	2·25 (2·04 to 2·47)	1·73 (1·57 to 1·91)	1·29 (1·23 to 1·35)	1·10 (1·05 to 1·15)	1·35 (1·32 to 1·39)	1·10 (1·07 to 1·13)
<b>65-74</b>	2·08 (1·78 to 2·42)	1·16 (0·98 to 1·37)	1·83 (1·33 to 2·52)	0·89 (0·62 to 1·28)	1·68 (1·29 to 2·19)	0·94 (0·70 to 1·27)	2·20 (2·03 to 2·39)	1·86 (1·71 to 2·02)	1·47 (1·41 to 1·53)	1·08 (1·03 to 1·13)	1·23 (1·21 to 1·26)	1·18 (1·15 to 1·21)
<b>75-84</b>	1·54 (1·28 to 1·87)	1·07 (0·90 to 1·28)	1·53 (1·08 to 2·16)	0·73 (0·51 to 1·06)	1·45 (1·00 to 2·09)	0·77 (0·52 to 1·13)	1·74 (1·57 to 1·92)	1·28 (1·16 to 1·41)	1·28 (1·20 to 1·36)	1·02 (0·96 to 1·09)	1·27 (1·23 to 1·31)	1·17 (1·14 to 1·21)
<b>SES<sup>£</sup></b>												
<b>Most Deprivation (NZDep2013=1 or 2)</b>	2·30 (1·57 to 3·38)	0·99 (0·54 to 1·80)	1·71 (0·53 to 5·44)	1·07 (0·26 to 4·36)	1·73 (1·36 to 2·20)	0·71 (0·55 to 0·92)	3·90 (3·23 to 4·72)	1·59 (1·14 to 2·21)	1·72 (1·53 to 1·93)	0·96 (0·93 to 1·00)	1·62 (1·52 to 1·72)	1·27 (1·15 to 1·40)

<b>IMD=2 (NZDep2013=3 or 4)</b>	2.25 (1.72 to 2.95)	1.24 (0.86 to 1.80)	1.66 (1.33 to 2.08)	1.05 (0.26 to 4.28)	2.43 (1.56 to 3.78)	1.31 (0.69 to 2.47)	2.31 (1.99 to 2.67)	1.97 (1.69 to 2.30)	1.42 (1.35 to 1.50)	1.32 (1.20 to 1.45)	1.31 (1.26 to 1.37)	1.23 (1.19 to 1.27)
<b>IMD=3 (NZDep2013=5 or 6)</b>	1.92 (1.42 to 2.59)	1.07 (0.87 to 1.31)	1.63 (0.51 to 5.20)	0.94 (0.34 to 2.58)	1.23 (0.87 to 1.72)	0.80 (0.54 to 1.18)	2.27 (2.04 to 2.53)	1.86 (1.66 to 2.08)	1.39 (1.29 to 1.51)	1.11 (1.04 to 1.18)	1.20 (1.16 to 1.25)	1.13 (1.07 to 1.18)
<b>IMD=4 (NZDep2013=7 or 8)</b>	1.86 (1.57 to 2.20)	0.95 (0.61 to 1.49)	1.62 (0.96 to 2.75)	0.91 (0.56 to 1.47)	1.18 (0.63 to 2.21)	0.65 (0.27 to 1.61)	1.82 (1.59 to 2.09)	1.76 (1.47 to 2.10)	1.39 (1.30 to 1.49)	0.88 (0.78 to 1.00)	1.20 (1.17 to 1.24)	1.10 (1.04 to 1.16)
<b>Least Deprivation (NZDep2013=9 or 10)</b>	1.82 (1.60 to 2.07)	0.97 (0.85 to 1.09)	1.69 (1.35 to 2.12)	0.78 (0.62 to 0.99)	1.36 (0.63 to 2.93)	0.24 (0.03 to 1.70)	1.80 (1.70 to 1.91)	1.39 (1.32 to 1.48)	1.20 (1.16 to 1.24)	0.58 (0.46 to 0.73)	1.22 (1.20 to 1.25)	1.02 (1.00 to 1.04)
<b>Smoking status ‡</b>												
<b>Not current smoker</b>	1.94 (1.74 to 2.18)	1.08 (0.97 to 1.21)	1.78 (1.42 to 2.23)	0.91 (0.72 to 1.14)	1.52 (1.21 to 1.90)	0.85 (0.68 to 1.06)	2.08 (1.96 to 2.21)	1.60 (1.51 to 1.69)	1.18 (1.08 to 1.28)	0.89 (0.84 to 0.95)	1.26 (1.23 to 1.30)	1.21 (1.18 to 1.24)
<b>Current smoker</b>	1.89 (1.63 to 2.15)	1.13 (0.95 to 1.34)	2.02 (1.51 to 2.67)	0.88 (0.60 to 1.29)	1.66 (1.31 to 2.12)	0.62 (0.43 to 0.91)	1.89 (1.76 to 2.03)	1.50 (1.38 to 1.63)	1.02 (0.96 to 1.08)	0.75 (0.70 to 0.81)	1.27 (1.22 to 1.32)	1.02 (0.96 to 1.07)
<b>Obesity Status £</b>												
<b>Non-obesity</b>	2.41 (2.07 to 2.80)	1.24 (1.05 to 1.45)	2.34 (1.75 to 3.16)	1.23 (0.90 to 1.68)	2.00 (1.50 to 2.66)	0.73 (0.51 to 1.04)	2.45 (2.27 to 2.65)	1.68 (1.56 to 1.82)	1.29 (1.19 to 1.40)	0.75 (0.68 to 0.83)	1.53 (1.47 to 1.59)	1.10 (1.06 to 1.14)
<b>Obesity</b>	1.96 (1.73 to 2.23)	1.03 (0.90 to 1.18)	1.87 (1.45 to 2.42)	0.72 (0.53 to 0.98)	1.70 (1.34 to 2.15)	0.83 (0.63 to 1.09)	1.85 (1.74 to 1.96)	1.50 (1.41 to 1.59)	1.04 (0.98 to 1.11)	0.84 (0.79 to 0.90)	1.18 (1.15 to 1.22)	1.17 (1.13 to 1.20)
<b>Period‡</b>												
<b>&lt;1998</b>	1.92 (1.34 to 2.76)	1.32 (0.90 to 1.95)	1.49 (0.71 to 3.14)	0.88 (0.37 to 2.07)	3.21 (1.43 to 7.21)	1.78 (0.72 to 4.45)	1.91 (0.83 to 4.42)	1.94 (0.85 to 4.43)	2.45 (2.08 to 2.90)	1.97 (1.64 to 2.38)	1.51 (1.42 to 1.61)	1.12 (1.05 to 1.21)
<b>1999-2003</b>	2.18 (1.79 to 2.65)	1.15 (0.94 to 1.42)	2.18 (1.52 to 3.12)	1.14 (0.77 to 1.67)	1.75 (1.19 to 2.59)	1.01 (0.67 to 1.53)	2.63 (2.29 to 3.02)	1.92 (1.67 to 2.21)	1.50 (1.39 to 1.61)	1.10 (1.02 to 1.19)	1.30 (1.26 to 1.34)	1.00 (0.97 to 1.04)
<b>2004-2008</b>	2.01 (1.71 to 2.36)	1.02 (0.86 to 1.22)	2.09 (1.52 to 2.87)	0.64 (0.42 to 0.97)	1.50 (1.10 to 2.02)	0.75 (0.53 to 1.05)	2.41 (2.20 to 2.65)	1.73 (1.57 to 1.90)	1.41 (1.35 to 1.48)	1.08 (1.03 to 1.14)	1.24 (1.21 to 1.27)	1.03 (1.01 to 1.06)
<b>2009-2013</b>	2.20 (1.87 to 2.59)	1.13 (0.94 to 1.36)	1.87 (1.35 to 2.58)	0.82 (0.56 to 1.19)	2.11 (1.57 to 2.84)	0.85 (0.58 to 1.23)	1.90 (1.74 to 2.07)	1.59 (1.45 to 1.73)	1.49 (1.43 to 1.55)	1.24 (1.19 to 1.30)	1.22 (1.18 to 1.25)	1.15 (1.12 to 1.18)
<b>2014-2018</b>	1.46 (1.18 to 1.80)	0.85 (0.68 to 1.05)	1.81 (1.16 to 2.81)	1.01 (0.65 to 1.58)	1.12 (0.77 to 1.62)	0.44 (0.28 to 0.69)	1.72 (1.60 to 1.85)	1.38 (1.29 to 1.48)	0.97 (0.93 to 1.01)	0.75 (0.72 to 0.79)	1.24 (1.20 to 1.27)	1.13 (1.10 to 1.17)

**Table-S6 Stratified adjusted absolute risk difference for clinical events in Māori and Pacific New Zealand population with type 2 diabetes comparing to European New Zealand population with type 2 diabetes**

§ Age-stratification, SES, smoking status, obesity status and period were adjusted.

¶ Gender, SES, smoking status, obesity status and period were adjusted.

§ Gender, age-stratification, smoking status, obesity status and period were adjusted.

‡ Gender, age-stratification, SES, smoking status, and obesity status were adjusted.

‡ Gender, age-stratification, SES, obesity status and period were adjusted.

£ Gender, age-stratification, SES, smoking status and period were adjusted.

SES indicates socioeconomic status. SES was defined by NZDep2013. IMD indicates index of multiple deprivation.

European ethnicity was used as reference group.

Estimation was presented as adjusted absolute risk difference (95% confidence interval) per 1,000 person-years.

	All-cause mortality		CVD mortality		Cancer mortality		ESRD hospitalisation		Cancer hospitalisation		CVD hospitalisation	
	Māori	Pacific	Māori	Pacific	Māori	Pacific	Māori	Pacific	Māori	Pacific	Māori	Pacific
<b>Gender<sup>§</sup></b>												
<b>Male</b>	26.91 (22.26 to 31.57)	3.55 (1.34 to 5.75)	8.03 (5.52 to 10.54)	-0.18 (-1.16 to 0.79)	2.24 (1.06 to 3.42)	-1.49 (-1.93 to -1.05)	34.54 (31.93 to 37.14)	17.15 (15.32 to 18.97)	46.29 (42.61 to 49.98)	7.58 (5.30 to 9.86)	52.21 (49.95 to 54.47)	19.91 (18.57 to 21.24)
<b>Female</b>	18.64 (15.12 to 22.15)	-0.93 (-2.12 to 0.27)	4.60 (2.44 to 6.76)	-1.91 (-2.45 to -1.37)	3.76 (2.59 to 4.93)	-0.94 (-1.23 to -0.65)	27.48 (25.28 to 29.68)	16.14 (14.73 to 17.55)	41.63 (38.59 to 44.66)	-1.28 (-2.56 to 0.00)	33.70 (32.05 to 35.36)	9.06 (8.25 to 9.87)
<b>Age stratification<sup>¶</sup></b>												
<b>35-44</b>	1.94 (1.20 to 2.67)	-0.35 (-0.32 to -0.38)	-0.08 (-0.19 to 0.08)	-0.43 (-0.67 to 0.19)	0.06 (-0.06 to 0.18)	0.27 (0.00 to 0.55)	4.04 (3.36 to 4.72)	-1.87 (-2.60 to 0.75)	4.97 (3.90 to 6.05)	-2.07 (-2.26 to -1.89)	-14.75 (-16.05 to -13.46)	-29.19 (-31.63 to -26.75)
<b>45-54</b>	5.18 (4.15 to 6.21)	-0.51 (-0.59 to -0.43)	1.65 (1.01 to 2.29)	-0.41 (-0.47 to -0.34)	0.47 (0.23 to 0.71)	-0.66 (-0.82 to -0.51)	15.34 (14.16 to 16.52)	11.52 (10.61 to 12.42)	-1.24 (-1.82 to -0.66)	-27.98 (-29.91 to -26.06)	24.68 (22.79 to 26.57)	-8.14 (-8.54 to -7.75)
<b>55-64</b>	9.37 (6.65 to 12.09)	-0.72 (-0.75 to -0.68)	2.36 (1.60 to 3.13)	0.40 (0.13 to 0.66)	1.32 (0.75 to 1.89)	-1.92 (-2.01 to -1.83)	23.42 (20.77 to 26.06)	13.61 (12.03 to 15.19)	39.13 (35.19 to 43.07)	13.44 (11.26 to 15.62)	44.70 (42.00 to 47.40)	12.47 (11.49 to 13.46)
<b>65-74</b>	17.20 (14.18 to 20.21)	2.58 (1.17 to 3.99)	3.06 (1.81 to 4.32)	-0.41 (-0.85 to 0.03)	4.03 (2.49 to 5.56)	-0.34 (-1.03 to 0.34)	32.08 (29.27 to 34.89)	22.36 (20.17 to 24.55)	80.41 (74.13 to 86.69)	14.04 (10.91 to 17.16)	47.07 (44.07 to 50.07)	36.18 (33.67 to 38.69)
<b>75-84</b>	22.13 (13.55 to 30.70)	4.90 (0.26 to 9.54)	7.90 (2.41 to 13.38)	-3.95 (-5.21 to -2.68)	5.03 (0.72 to 9.34)	-2.49 (-4.35 to -0.64)	40.25 (33.54 to 46.96)	13.97 (10.06 to 17.87)	63.62 (52.27 to 74.96)	5.49 (-1.77 to 12.75)	72.57 (66.01 to 79.12)	47.05 (42.12 to 51.98)
<b>SES<sup>§</sup></b>												
<b>Most Deprivation (NZDep2013=1 or 2)</b>	29.19 (12.21 to 46.17)	-0.49 (-10.38 to 9.40)	5.47 (-7.63 to 18.58)	0.54 (-8.66 to 9.73)	1.61 (-2.16 to 5.38)	-3.50 (-4.65 to -2.36)	65.65 (51.26 to 80.05)	13.65 (3.56 to 23.75)	99.87 (78.82 to 120.93)	-58.61 (-68.74 to -48.48)	83.00 (73.74 to 92.27)	36.59 (25.49 to 47.68)
<b>IMD=2 (NZDep2013=3 or 4)</b>	27.13 (16.78 to 37.47)	-0.90 (-6.56 to 4.77)	11.61 (1.74 to 21.49)	-0.41 (-4.74 to 3.93)	1.26 (-0.02 to 2.55)	-1.07 (-1.80 to 0.35)	40.30 (34.95 to 45.66)	26.96 (20.90 to 33.02)	59.11 (48.45 to 69.78)	-40.77 (-49.59 to -31.94)	52.27 (47.14 to 57.39)	25.73 (23.89 to 27.57)

<b>IMD=3 (NZDep2013=5 or 6)</b>	23.42 (17.36 to 29.49)	-1.85 (-4.92 to 1.22)	10.87 (4.73 to 17.01)	-1.06 (-3.53 to 1.41)	1.35 (-1.15 to 3.84)	-0.71 (-2.06 to 0.64)	33.28 (26.75 to 39.81)	23.29 (18.60 to 27.98)	54.75 (48.74 to 60.76)	-17.45 (-26.18 to -8.73)	36.12 (33.22 to 39.02)	18.94 (16.67 to 21.22)
<b>IMD=4 (NZDep2013=7 or 8)</b>	17.42 (8.78 to 26.06)	-2.16 (-4.72 to 0.41)	5.37 (0.23 to 10.52)	-1.68 (-4.97 to 1.60)	3.81 (1.75 to 5.86)	-0.25 (-1.21 to 0.71)	27.22 (22.88 to 31.57)	18.42 (12.39 to 24.45)	49.61 (42.79 to 56.42)	-14.19 (-17.83 to -10.55)	33.47 (29.63 to 37.30)	9.48 (5.77 to 13.19)
<b>Least Deprivation (NZDep2013=9 or 10)</b>	24.54 (20.28 to 28.80)	-1.05 (-1.74 to -0.35)	5.67 (3.72 to 7.62)	-2.25 (-2.49 to -2.00)	3.89 (2.73 to 5.05)	-1.54 (-1.58 to -1.50)	32.22 (29.89 to 34.55)	15.23 (14.19 to 16.27)	31.89 (29.45 to 34.34)	-5.53 (-5.91 to -5.14)	41.07 (39.33 to 42.82)	3.09 (2.74 to 3.43)
<b>Smoking status ‡</b>												
<b>Not current smoker</b>	20.78 (17.22 to 24.34)	1.87 (0.43 to 3.30)	5.71 (3.78 to 7.87)	-0.68 (-1.47 to 0.10)	2.21 (1.26 to 3.16)	-0.65 (-0.98 to 0.31)	30.91 (28.62 to 33.19)	17.10 (15.76 to 18.44)	26.08 (16.80 to 35.35)	-15.44 (-18.78 to -12.11)	24.09 (22.74 to 25.45)	19.08 (17.99 to 20.17)
<b>Current smoker</b>	18.79 (15.31 to 22.27)	2.81 (0.52 to 5.10)	5.85 (3.70 to 8.01)	-0.67 (-1.45 to 0.11)	4.33 (2.81 to 5.85)	-2.46 (-3.04 to -1.88)	30.47 (28.21 to 32.72)	17.08 (15.00 to 19.16)	3.19 (-6.09 to 12.46)	-39.38 (-42.71 to -36.04)	24.22 (23.08 to 25.37)	1.37 (-0.02 to 2.76)
<b>Obesity Status<sup>£</sup></b>												
<b>Non-obesity</b>	26.95 (21.40 to 32.50)	4.52 (2.08 to 6.96)	7.84 (4.60 to 11.09)	1.32 (-0.16 to 2.80)	4.20 (2.39 to 6.01)	-1.15 (-1.71 to 0.59)	43.75 (39.83 to 47.67)	20.54 (18.19 to 22.89)	42.81 (32.75 to 52.87)	-37.64 (-43.26 to -32.02)	43.43 (40.65 to 46.22)	8.19 (6.70 to 9.67)
<b>Obesity</b>	14.12 (11.71 to 16.53)	0.43 (-0.31 to 1.17)	3.69 (2.35 to 5.02)	-1.18 (-1.32 to 1.04)	2.44 (1.65 to 3.24)	-0.59 (-0.80 to 0.38)	25.21 (23.43 to 26.98)	14.85 (13.64 to 16.07)	6.11 (3.23 to 8.99)	-23.42 (-21.29 to -25.56)	16.43 (15.61 to 17.24)	14.99 (14.09 to 15.88)
<b>Period<sup>‡</sup></b>												
<b>&lt;1998</b>	14.94 (7.25 to 22.63)	5.21 (0.38 to 10.05)	2.93 (-1.43 to 7.29)	-0.72 (-3.06 to 1.61)	4.07 (0.53 to 7.62)	1.45 (-0.42 to 3.31)	0.67 (0.04 to 1.31)	0.69 (0.04 to 1.34)	21.57 (16.95 to 26.19)	14.43 (10.47 to 18.38)	14.51 (12.86 to 16.16)	3.53 (2.33 to 4.73)
<b>1999-2003</b>	36.17 (26.64 to 45.71)	4.69 (0.94 to 8.45)	13.18 (6.46 to 19.90)	1.51 (-1.03 to 4.06)	4.39 (1.80 to 6.97)	0.08 (-1.01 to 1.16)	19.85 (16.92 to 22.78)	11.21 (9.34 to 13.09)	21.16 (18.31 to 24.00)	4.47 (2.93 to 6.01)	18.51 (17.26 to 19.76)	0.14 (-0.60 to 0.87)
<b>2004-2008</b>	29.66 (22.67 to 36.65)	0.69 (-1.91 to 3.28)	9.52 (5.02 to 14.01)	-3.18 (-4.11 to -2.24)	3.15 (1.31 to 4.98)	-1.62 (-2.22 to -1.02)	37.68 (33.33 to 42.03)	19.47 (16.80 to 22.14)	28.44 (25.85 to 31.04)	5.87 (4.27 to 7.47)	19.51 (18.38 to 20.63)	2.61 (1.82 to 3.39)
<b>2009-2013</b>	30.00 (23.36 to 36.63)	3.21 (0.25 to 6.16)	6.61 (3.20 to 10.02)	-1.40 (-2.56 to -0.23)	5.95 (3.63 to 8.27)	-0.82 (-1.62 to -0.02)	32.61 (29.06 to 36.16)	21.34 (18.44 to 24.23)	51.26 (47.45 to 55.07)	25.56 (22.32 to 28.80)	24.95 (23.50 to 26.40)	17.01 (15.59 to 18.43)
<b>2014-2018</b>	7.75 (4.58 to 10.93)	-2.63 (-3.25 to -2.01)	2.77 (0.83 to 4.72)	0.04 (-0.74 to 0.82)	0.48 (-0.44 to 1.41)	-2.28 (-2.35 to -2.20)	50.71 (45.29 to 56.13)	26.71 (23.37 to 30.04)	-6.87 (-11.00 to -2.73)	-51.43 (-54.00 to -48.86)	52.23 (48.69 to 55.77)	29.52 (26.97 to 32.08)

**Figure-S1 Age-period-cohort influence on all-cause mortality in all diabetes population: DCSS, 1994-2018**

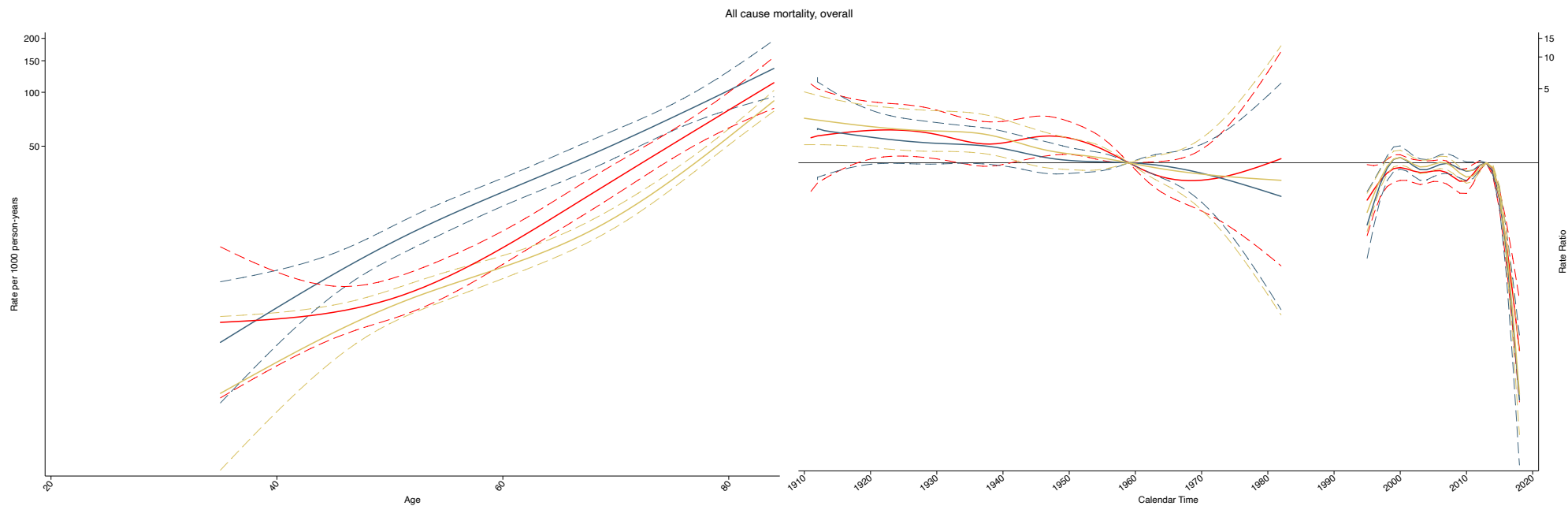
Left panel: adjusted rates of all-cause mortality by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for all-cause mortality (relative to reference birth cohort 1960) by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for all-cause mortality (relative to reference year 2013) by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.





**Figure-S2 Age-period-cohort influence on all-cause mortality in female diabetes population: DCSS, 1994-2018**

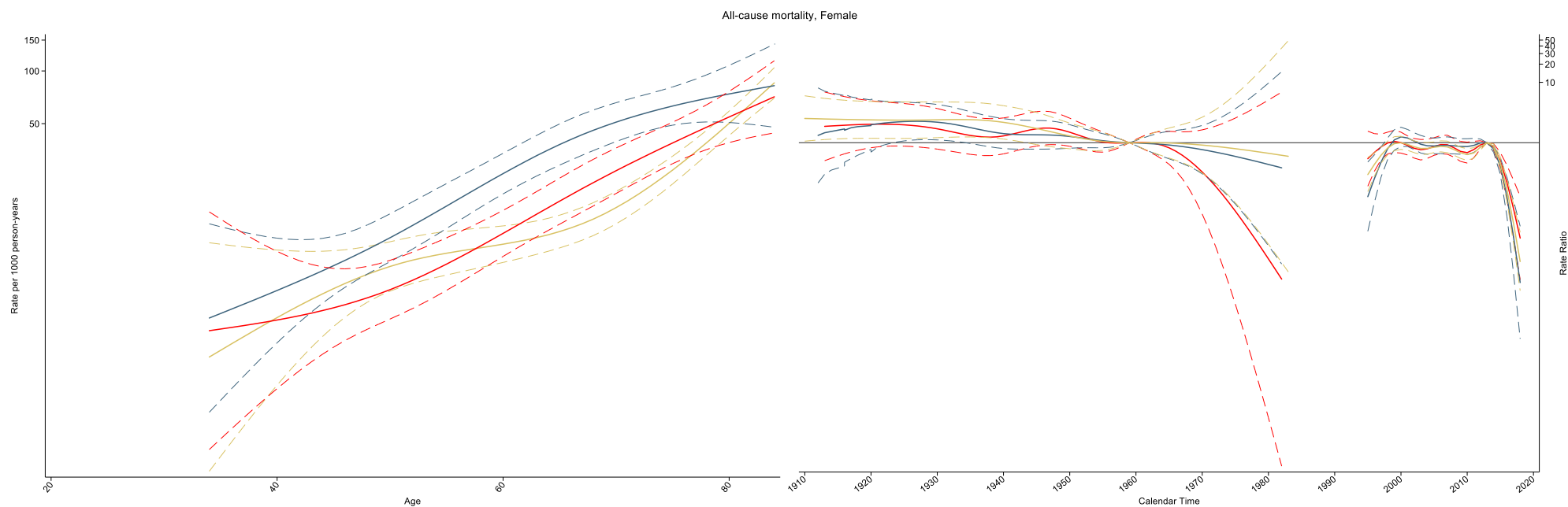
Left panel: adjusted rates of all-cause mortality in female diabetes population by age (35-85) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for all-cause mortality (relative to reference birth cohort 1960) in female diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for all-cause mortality (relative to reference year 2013) in female diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S3: Age-period-cohort influence on all-cause mortality in male diabetes population: DCSS, 1994-2018**

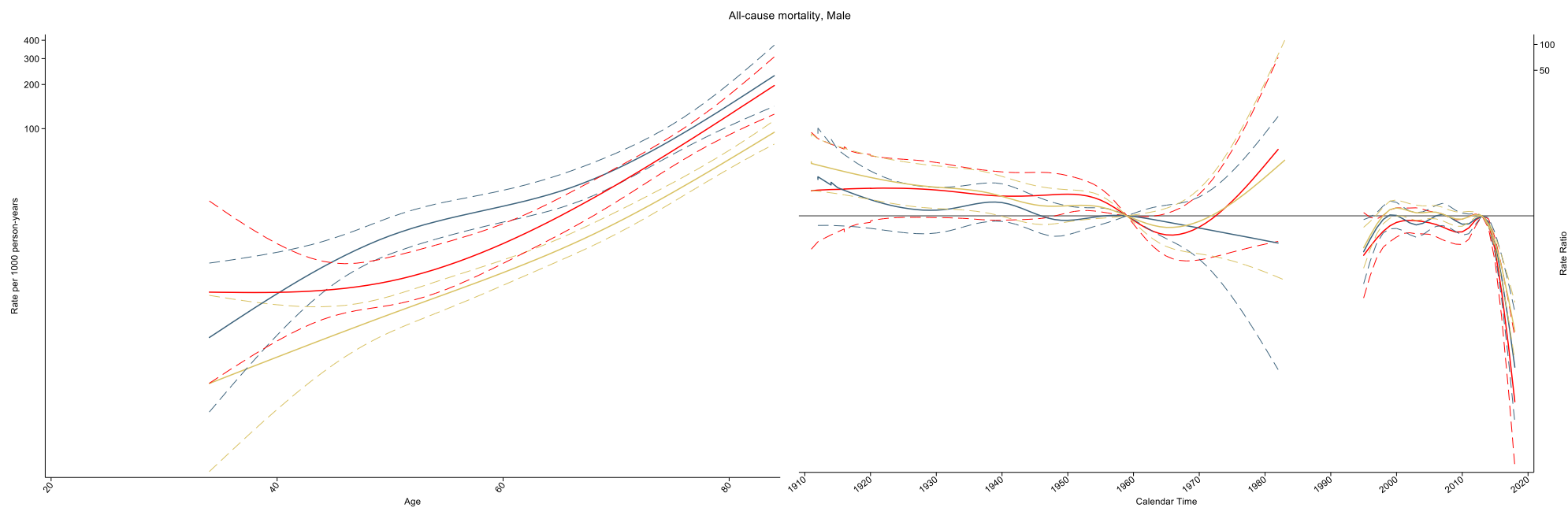
Left panel: adjusted rates of all-cause mortality in male diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for all-cause mortality (relative to reference birth cohort 1960) in male diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for all-cause mortality (relative to reference year 2013) in male diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S4 Age-period-cohort influence on all-cause mortality in the least deprived diabetes population: DCSS, 1994-2018**

Left panel: adjusted rates of all-cause mortality in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

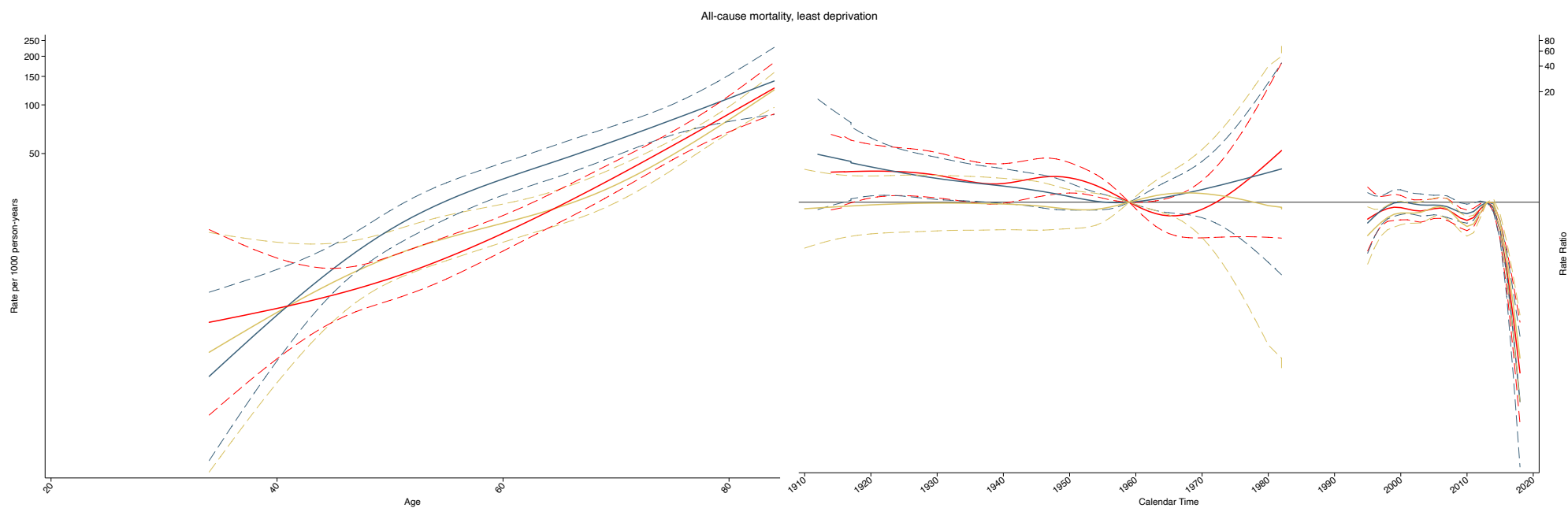
Middle panel: adjusted rates ratio for all-cause mortality (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for all-cause mortality (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

The least deprivation indicates NZDep2013 equals 1 or 2.



**Figure-S5 Age-period-cohort influence on all-cause mortality in the diabetes population with IMD equals 2: DCSS, 1994-2018**

Left panel: adjusted rates of all-cause mortality in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

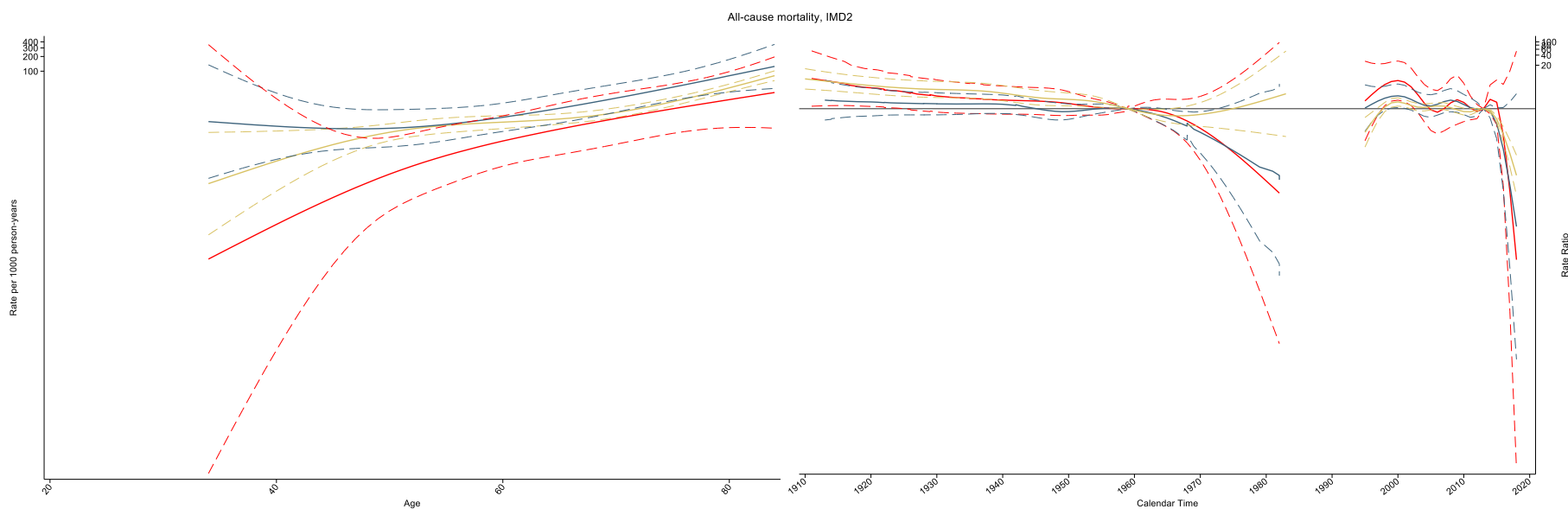
Middle panel: adjusted rates ratio for all-cause mortality (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for all-cause mortality (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

IMD indicates index of multiple deprivation. IMD=2 defined as DZDep2013 equals 3 or 4.



**Figure-S6 Age-period-cohort influence on all-cause mortality in the diabetes population with IMD equals 3: DCSS, 1994-2018**

Left panel: adjusted rates of all-cause mortality in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

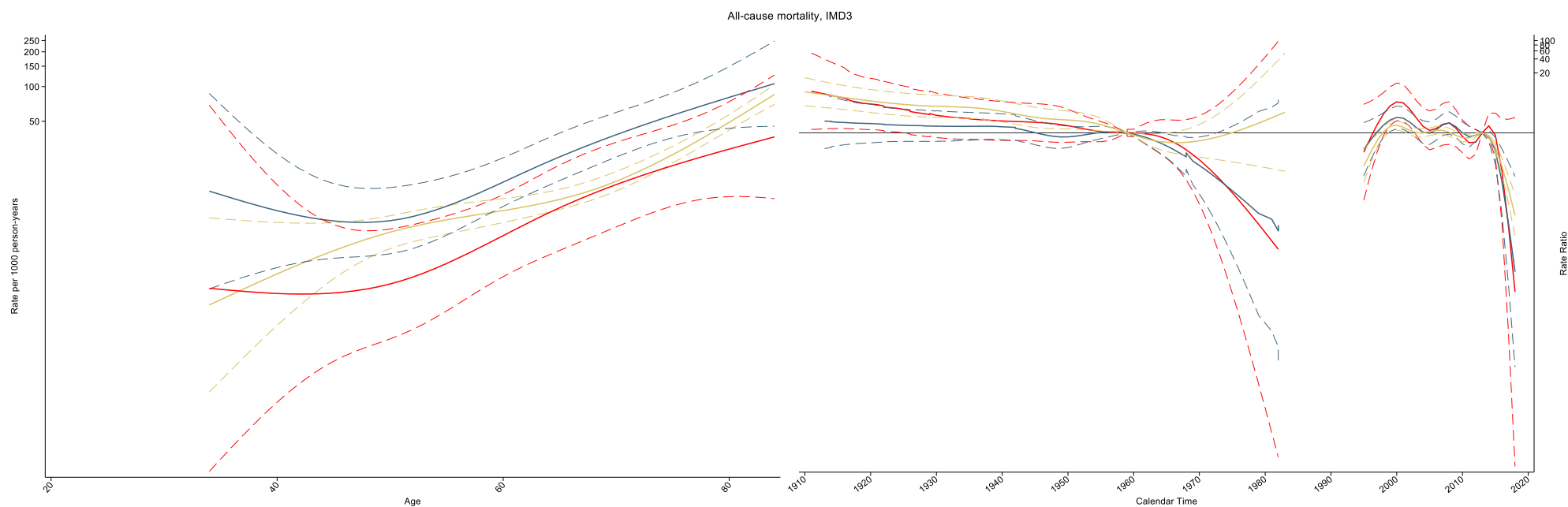
Middle panel: adjusted rates ratio for all-cause mortality (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for all-cause mortality (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

IMD indicates index of multiple deprivation. IMD=3 defined as DZDep2013 equals 5 or 6.



**Figure-S7 Age-period-cohort influence on all-cause mortality in the diabetes population with IMD equals 4: DCSS, 1994-2018**

Left panel: adjusted rates of all-cause mortality in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

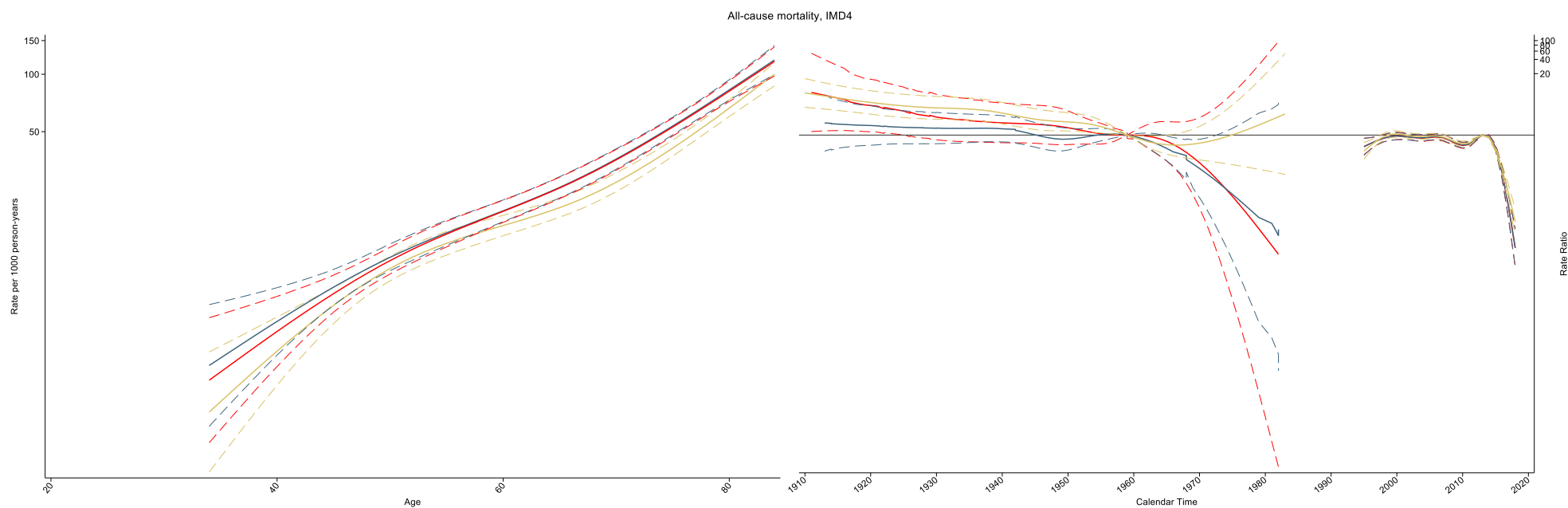
Middle panel: adjusted rates ratio for all-cause mortality (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for all-cause mortality (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

IMD indicates index of multiple deprivation. IMD=4 defined as DZDep2013 equals 7 or 8.



**Figure-S8 Age-period-cohort influence on all-cause mortality in the most deprived diabetes population: DCSS, 1994-2018**

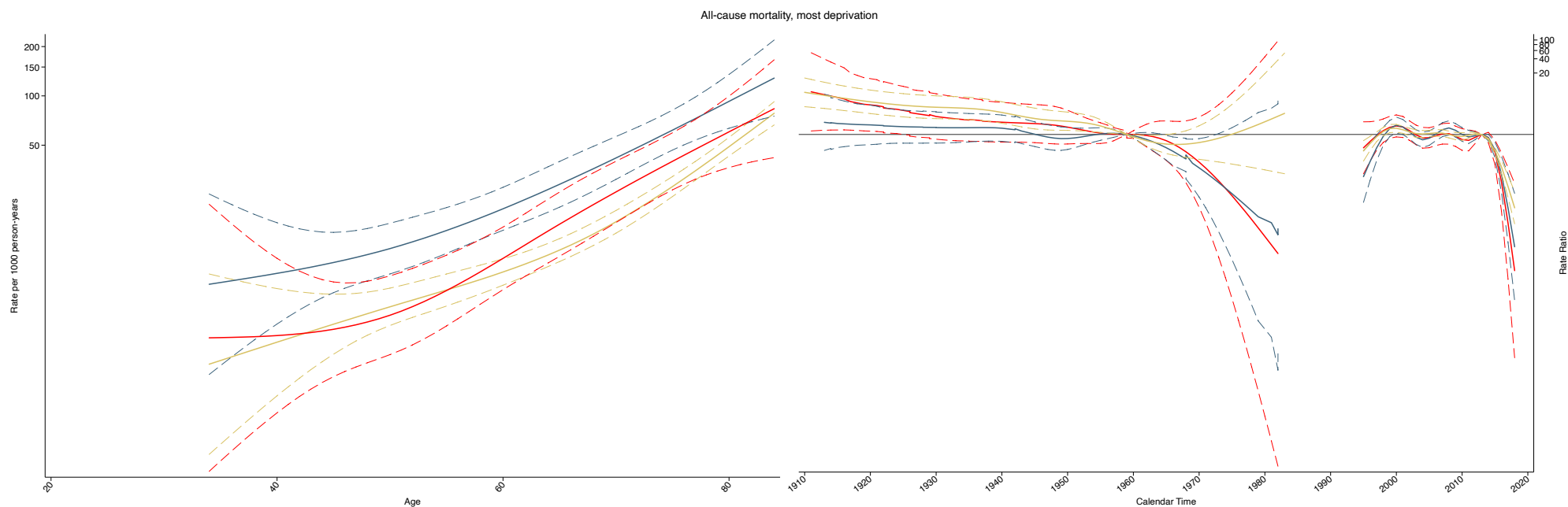
Left panel: adjusted rates of all-cause mortality in the most deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for all-cause mortality (relative to reference birth cohort 1960) in the most deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for all-cause mortality (relative to reference year 2013) in the most deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively. The most deprivation was defined as NZDep2013 equals 9 or 10.



**Figure-S9 Age-period-cohort influence on all-cause mortality in not-current smoking diabetes population: DCSS, 1994-2018**

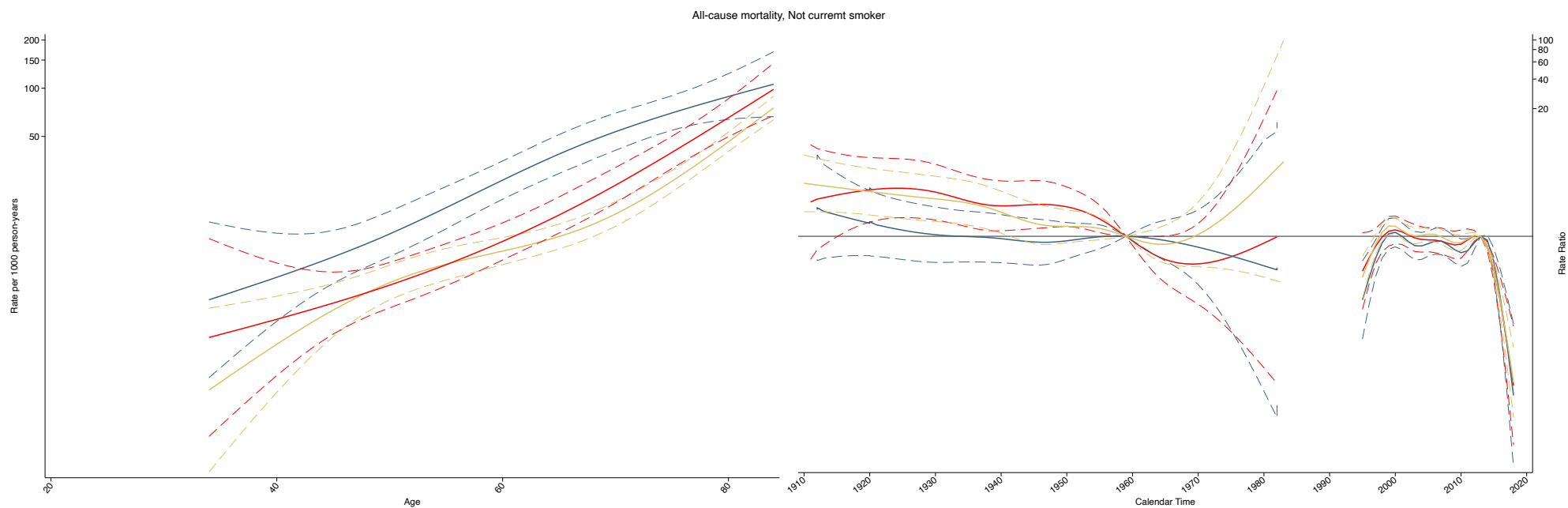
Left panel: adjusted rates of all-cause mortality in the not-current smoking diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for all-cause mortality (relative to reference birth cohort 1960) in the not-current smoking population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for all-cause mortality (relative to reference year 2013) in the not-current smoking diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.





**Figure-S10 Age-period-cohort influence on all-cause mortality in current smoking diabetes population: DCSS, 1994-2018**

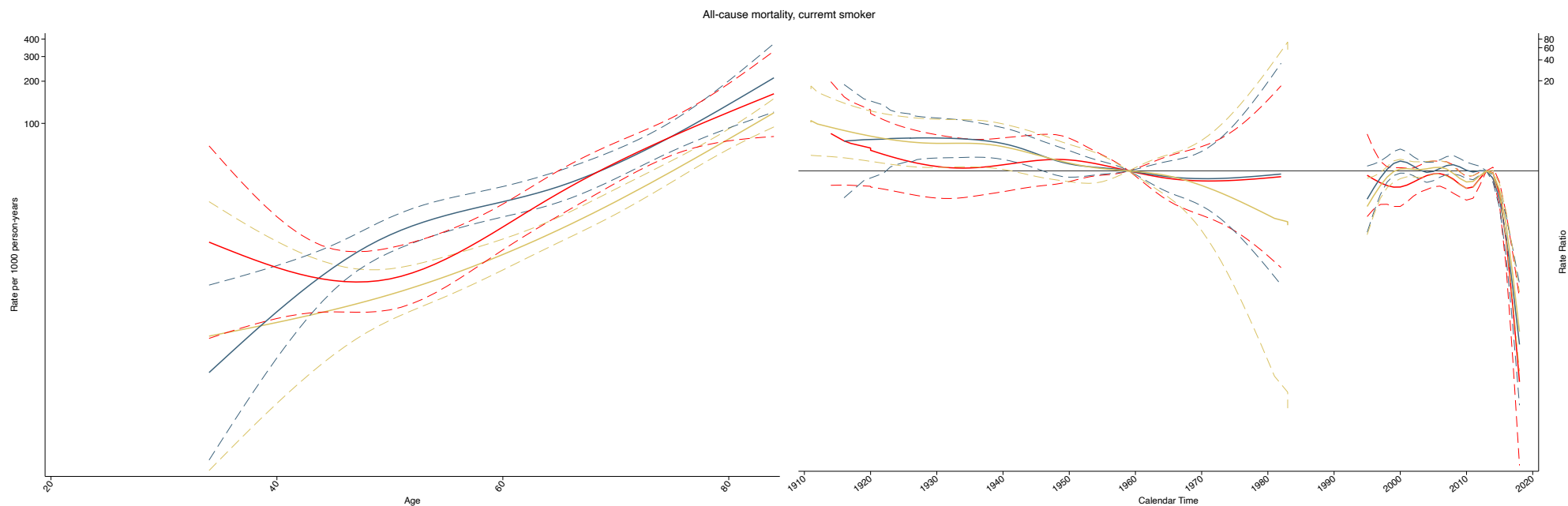
Left panel: adjusted rates of all-cause mortality in the current smoking diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for all-cause mortality (relative to reference birth cohort 1960) in the current smoking population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for all-cause mortality (relative to reference year 2013) in the current smoking diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S11 Age-period-cohort influence on all-cause mortality in non-obese diabetes population: DCSS, 1994-2018**

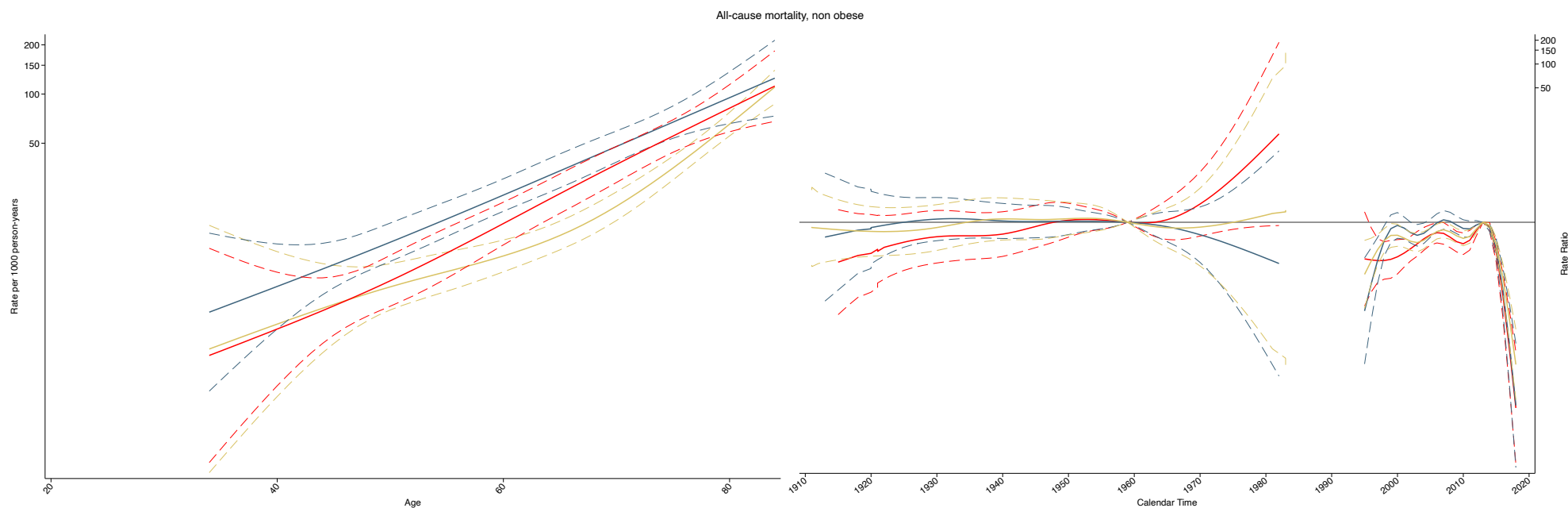
Left panel: adjusted rates of all-cause mortality in the non-obese diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for all-cause mortality (relative to reference birth cohort 1960) in the non-obese diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for all-cause mortality (relative to reference year 2013) in the non-obese diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S12 Age-period-cohort influence on all-cause mortality in obese diabetes population: DCSS, 1994-2018**

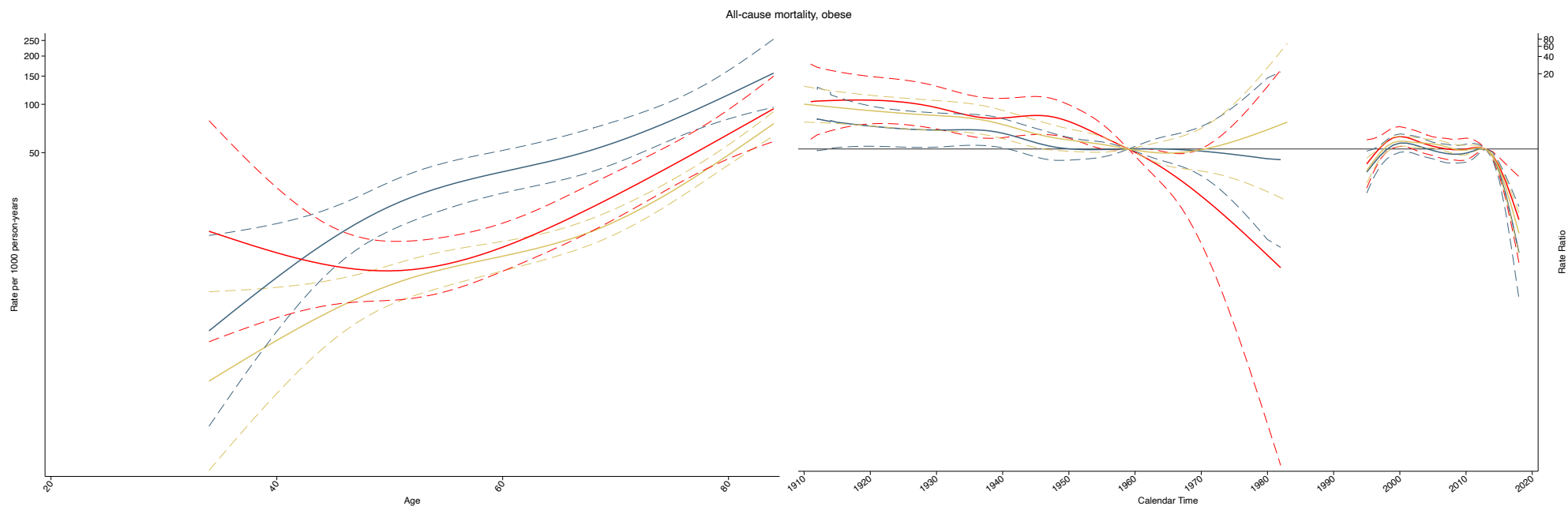
Left panel: adjusted rates of all-cause mortality in the obese diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for all-cause mortality (relative to reference birth cohort 1960) in the obese diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for all-cause mortality (relative to reference year 2013) in the obese diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S13 Age-period-cohort influence on cardiovascular mortality in all diabetes population: DCSS, 1994-2018**

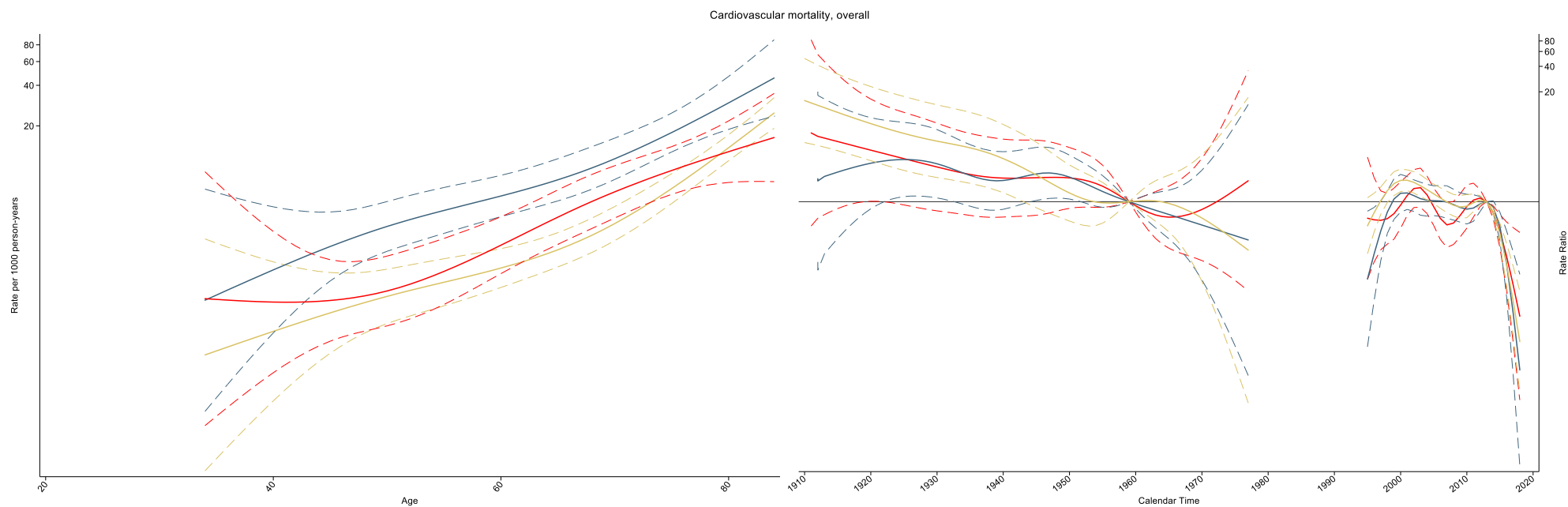
Left panel: adjusted rates of cardiovascular mortality by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cardiovascular mortality (relative to reference birth cohort 1960) by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular mortality (relative to reference year 2013) by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S14 Age-period-cohort influence on cardiovascular mortality in female diabetes population: DCSS, 1994-2018**

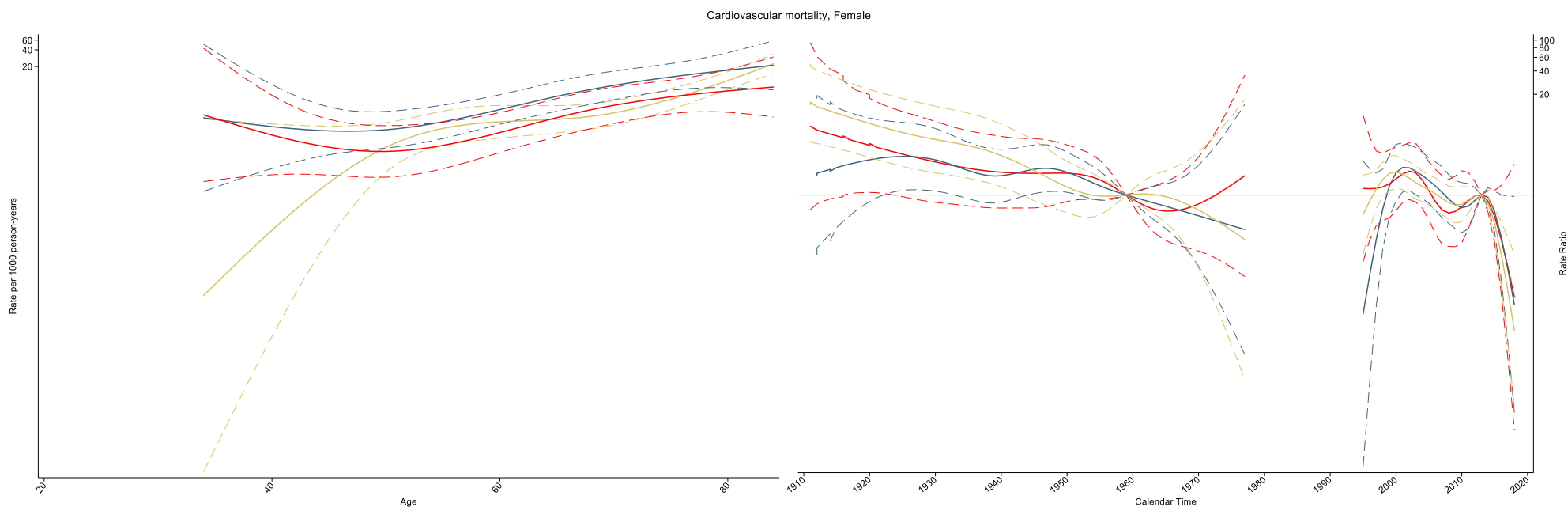
Left panel: adjusted rates of cardiovascular mortality in female diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cardiovascular mortality (relative to reference birth cohort 1960) in female diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular mortality (relative to reference year 2013) in female diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S15 Age-period-cohort influence on cardiovascular mortality in male diabetes population: DCSS, 1994-2018**

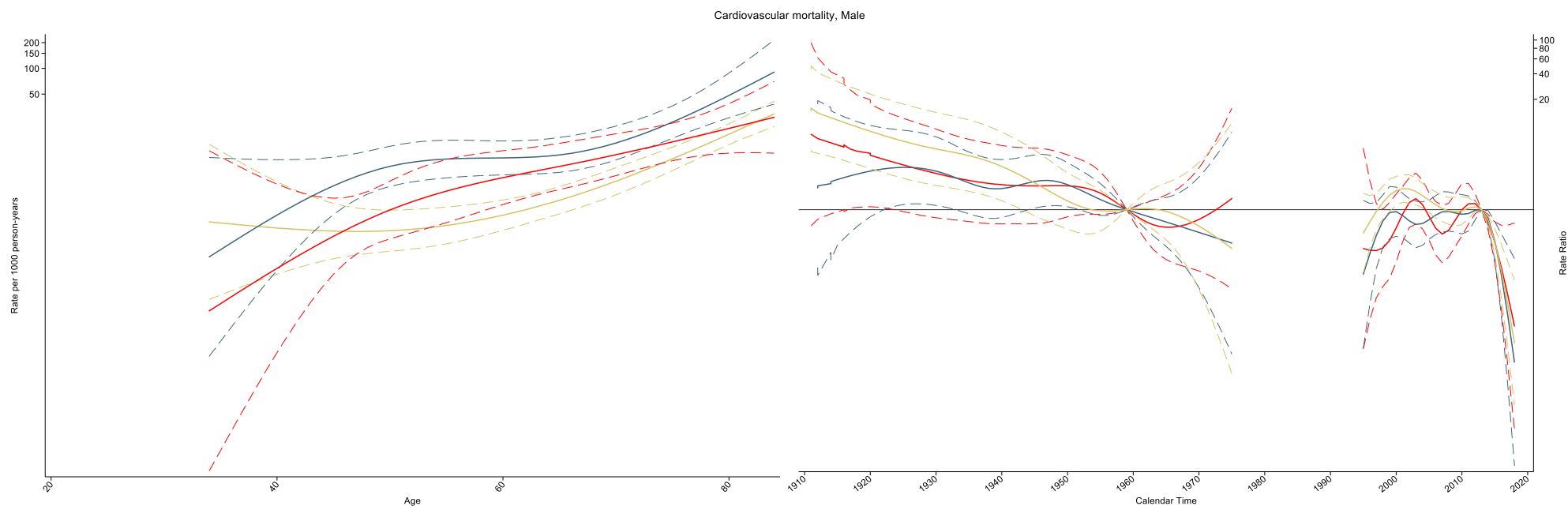
Left panel: adjusted rates of cardiovascular mortality in male diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cardiovascular mortality (relative to reference birth cohort 1960) in male diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular mortality (relative to reference year 2013) in male diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S16 Age-period-cohort influence on cardiovascular mortality in the least deprived diabetes population: DCSS, 1994-2018**

Left panel: adjusted rates of cardiovascular mortality in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

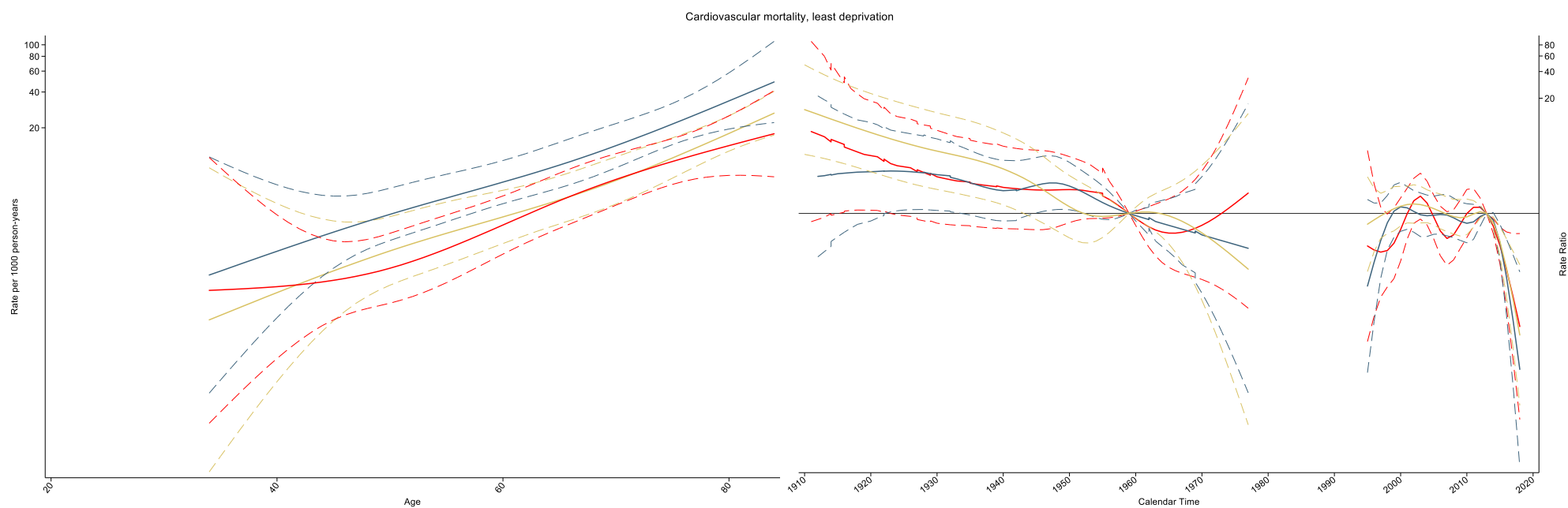
Middle panel: adjusted rates ratio for cardiovascular mortality (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular mortality (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

The least deprivation indicates NZDep2013 equals 1 or 2.



**Figure-S17 Age-period-cohort influence on cardiovascular mortality in the diabetes population with IMD equals 2: DCSS, 1994-2018**

Left panel: adjusted rates of cardiovascular mortality in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

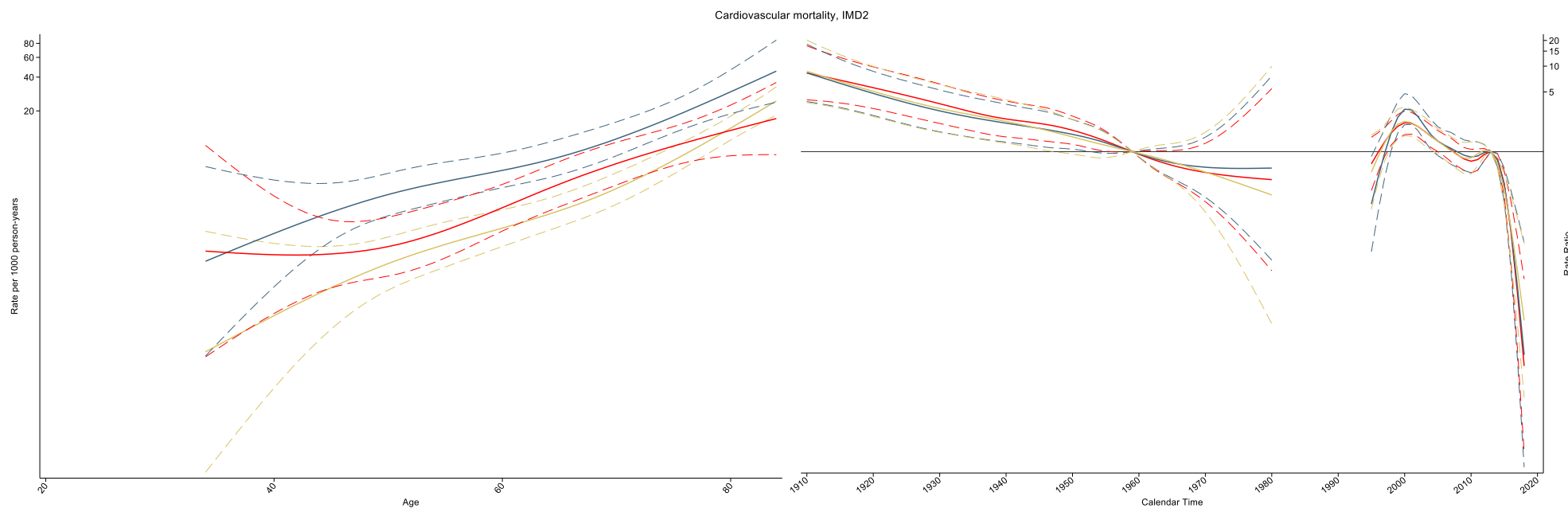
Middle panel: adjusted rates ratio for cardiovascular mortality (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular mortality (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

IMD indicates index of multiple deprivation. IMD=2 was defined as NZDep2013 equals 3 or 4.





**Figure-S18 Age-period-cohort influence on cardiovascular mortality in the diabetes population with IMD equals 3: DCSS, 1994-2018**

Left panel: adjusted rates of cardiovascular mortality in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

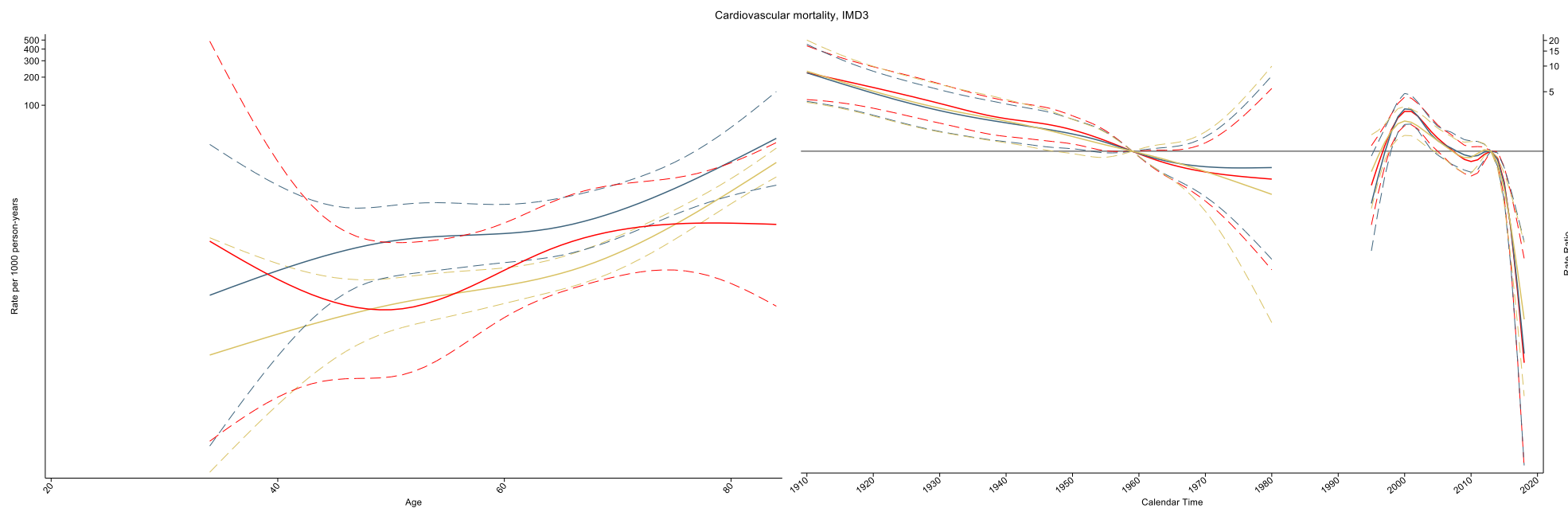
Middle panel: adjusted rates ratio for cardiovascular mortality (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular mortality (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

IMD indicates index of multiple deprivation. IMD=3 was defined as NZDep2013 equals 5 or 6.



**Figure-S19 Age-period-cohort influence on cardiovascular mortality in the diabetes population with IMD equals 4: DCSS, 1994-2018**

Left panel: adjusted rates of cardiovascular mortality in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

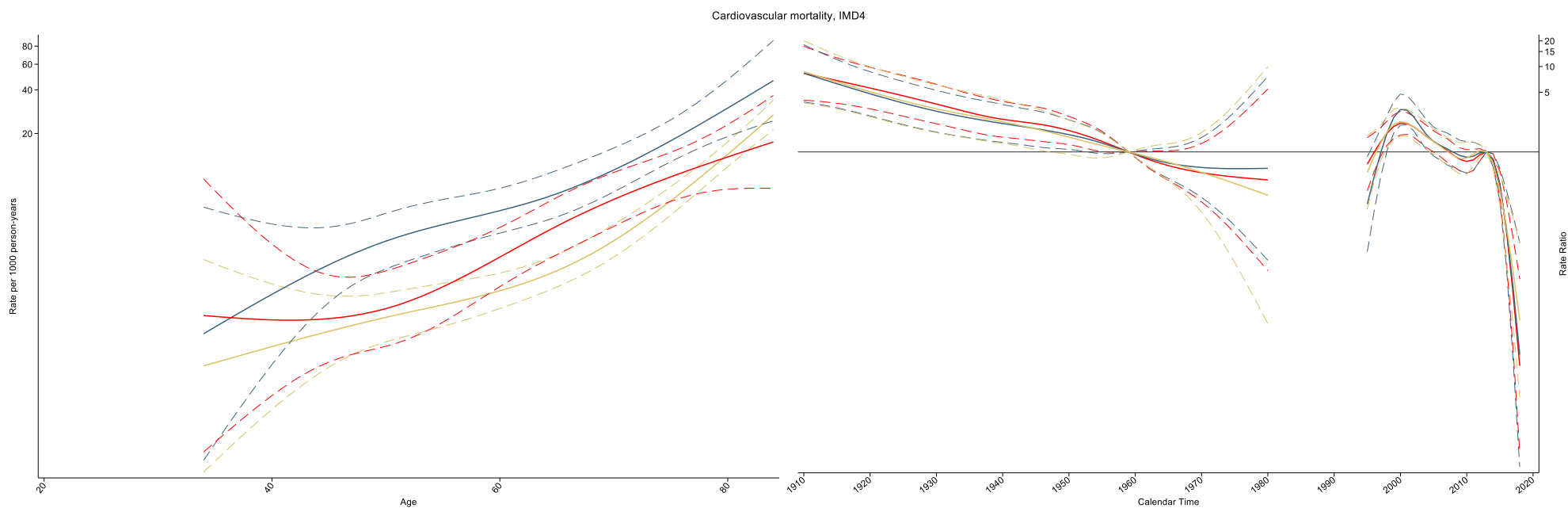
Middle panel: adjusted rates ratio for cardiovascular mortality (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular mortality (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

IMD indicates index of multiple deprivation. IMD equals 4 was defined as NZDep2013 equals 7 or 8.



**Figure-S20 Age-period-cohort influence on cardiovascular mortality in the most deprived diabetes population: DCSS, 1994-2018**

Left panel: adjusted rates of cardiovascular mortality in the most deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

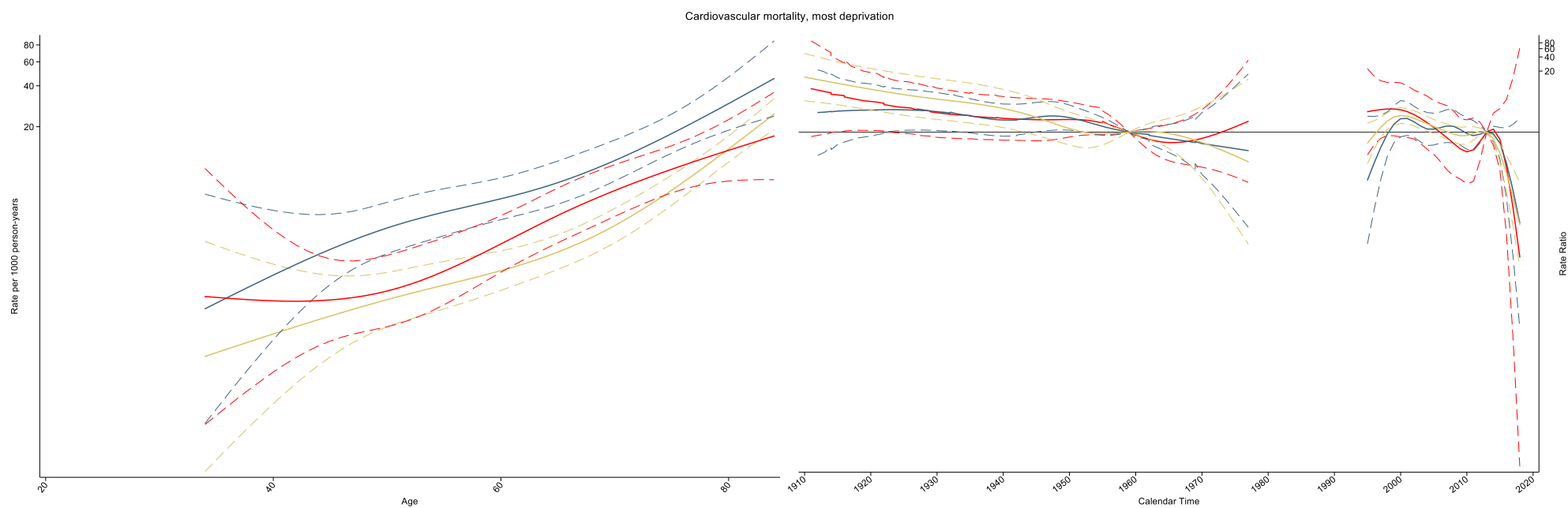
Middle panel: adjusted rates ratio for cardiovascular mortality (relative to reference birth cohort 1960) in the most deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular mortality (relative to reference year 2013) in the most deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

The most deprivation indicates NZDep2013 equals 9 or 10.



**Figure-S21 Age-period-cohort influence on cardiovascular mortality in not-current smoking diabetes population: DCSS, 1994-2018**

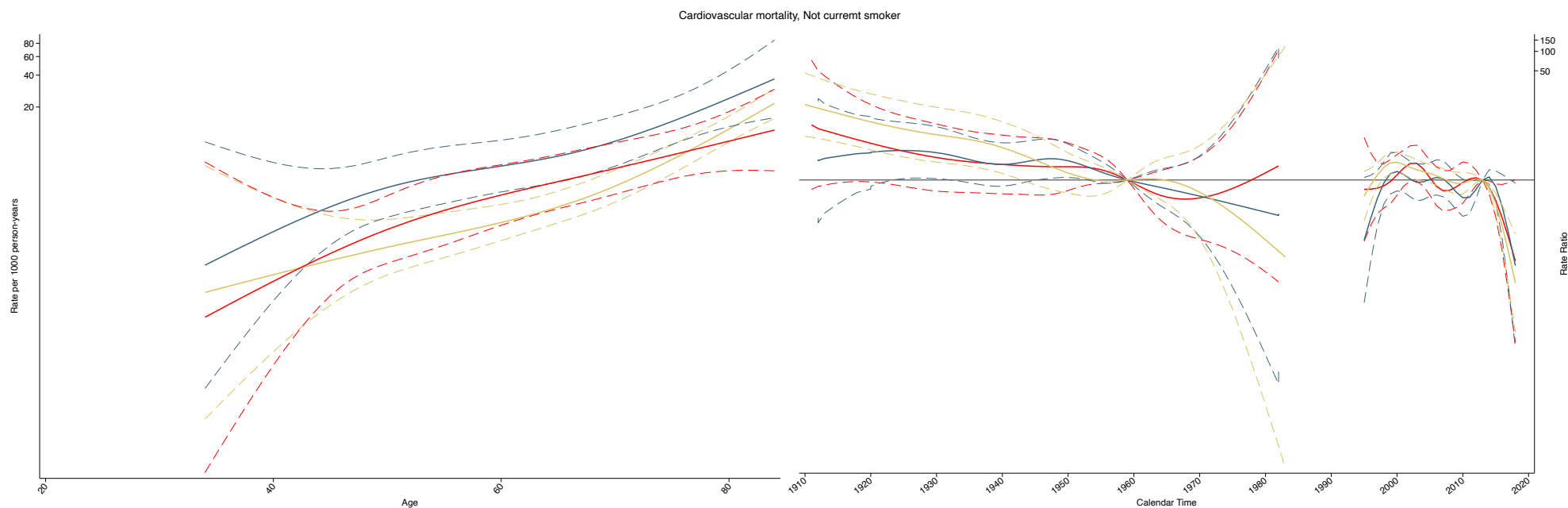
Left panel: adjusted rates of cardiovascular mortality in the not-current smoking diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cardiovascular mortality (relative to reference birth cohort 1960) in the not-current smoking population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular mortality (relative to reference year 2013) in the not-current smoking diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S22 Age-period-cohort influence on cardiovascular mortality in current smoking diabetes population: DCSS, 1994-2018**

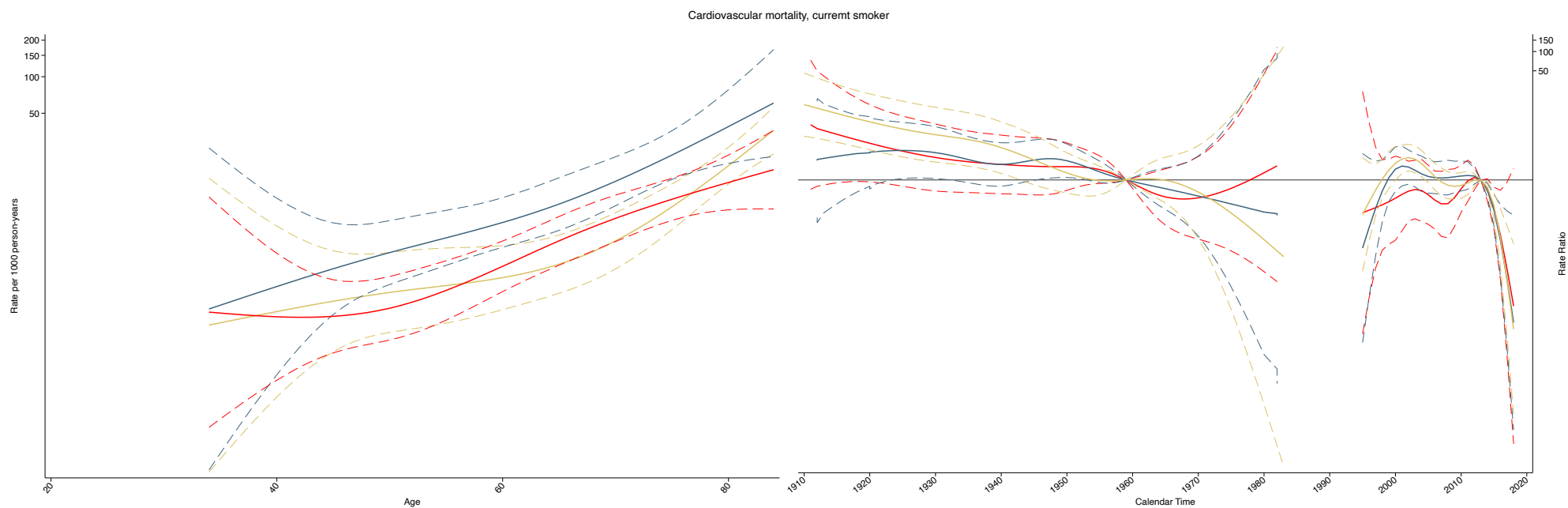
Left panel: adjusted rates of cardiovascular mortality in the current smoking diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cardiovascular mortality (relative to reference birth cohort 1960) in the current smoking population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular mortality (relative to reference year 2013) in the current smoking diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S23 Age-period-cohort influence on cardiovascular mortality in non-obese diabetes population: DCSS, 1994-2018**

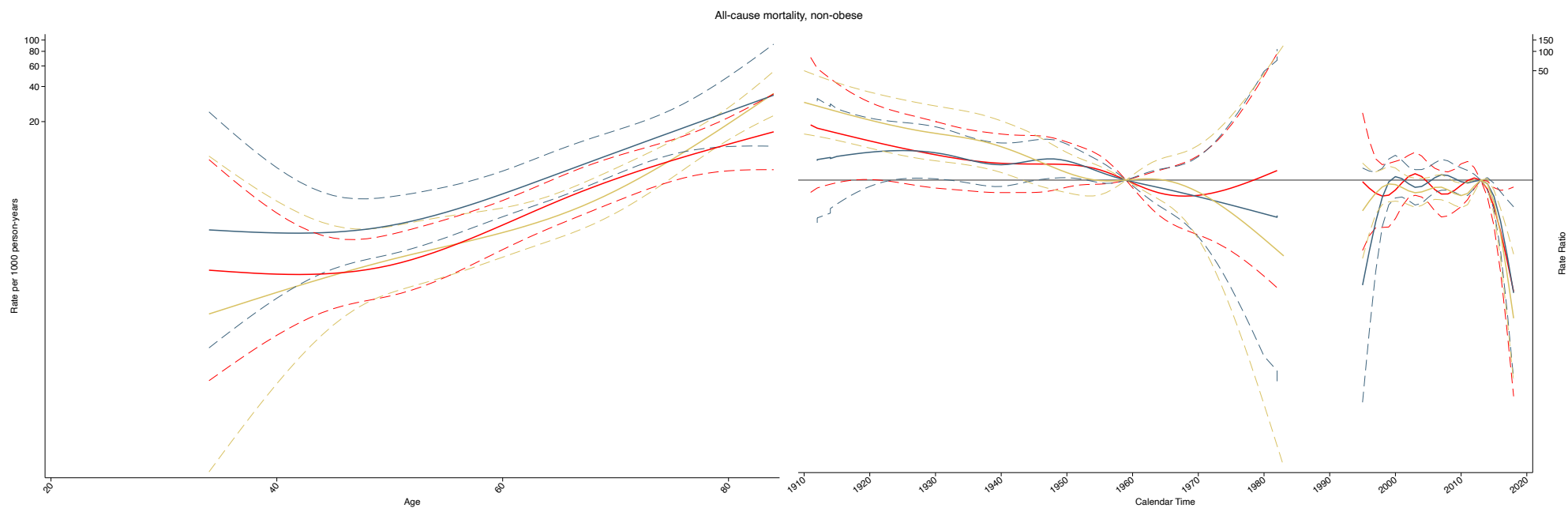
Left panel: adjusted rates of cardiovascular mortality in the non-obese diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cardiovascular mortality (relative to reference birth cohort 1960) in the non-obese diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular mortality (relative to reference year 2013) in the non-obese diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S24 Age-period-cohort influence on cardiovascular mortality in obese diabetes population: DCSS, 1994-2018**

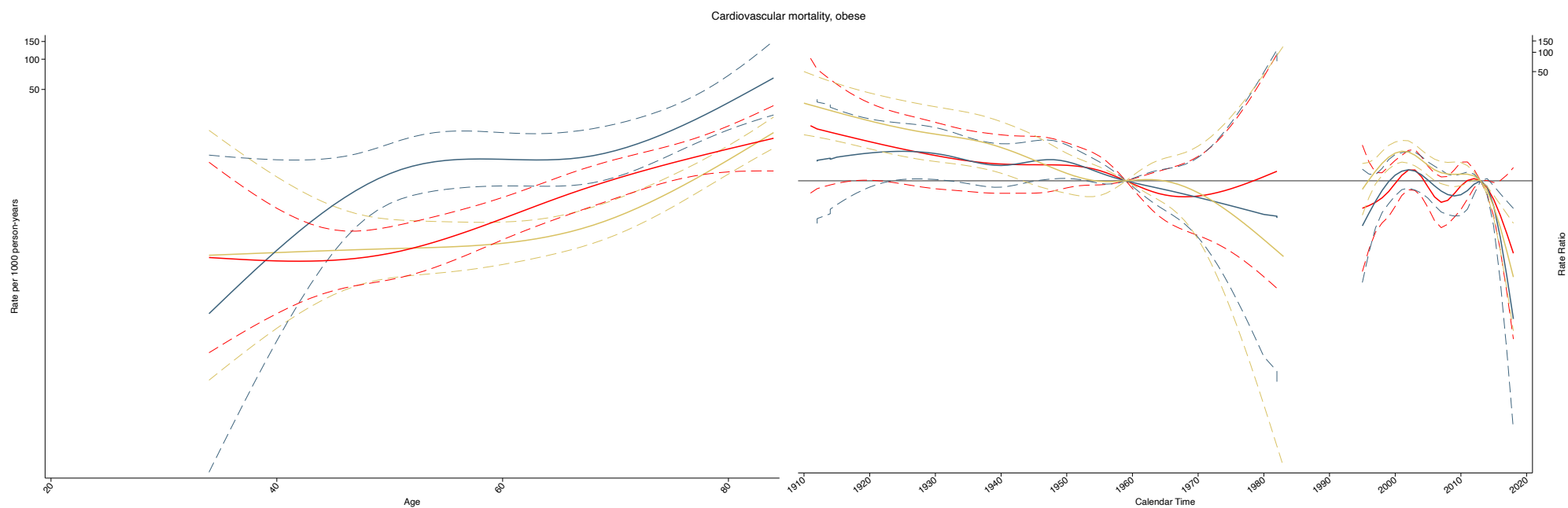
Left panel: adjusted rates of cardiovascular mortality in the obese diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cardiovascular mortality (relative to reference birth cohort 1960) in the obese diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular mortality (relative to reference year 2013) in the obese diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S25 Age-period-cohort influence on cancer mortality in all diabetes population: DCSS, 1994-2018**

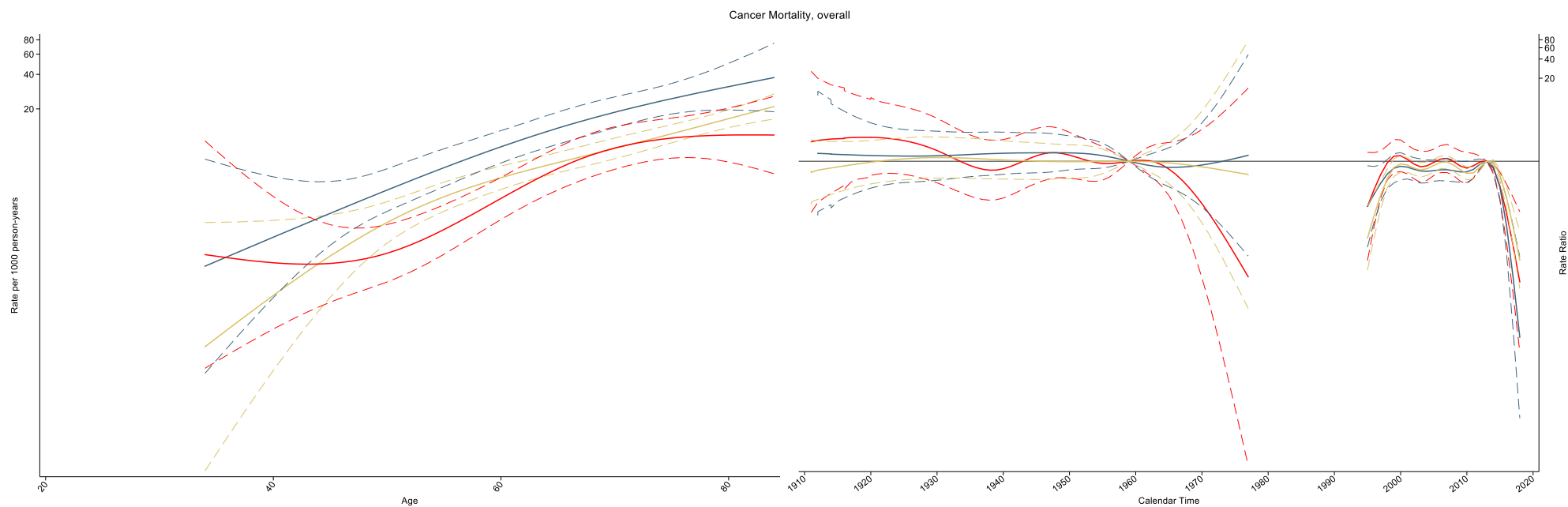
Left panel: adjusted rates of cancer mortality by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cancer mortality (relative to reference birth cohort 1960) by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer mortality (relative to reference year 2013) by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.





**Figure-S26 Age-period-cohort influence on cancer mortality in female diabetes population: DCSS, 1994-2018**

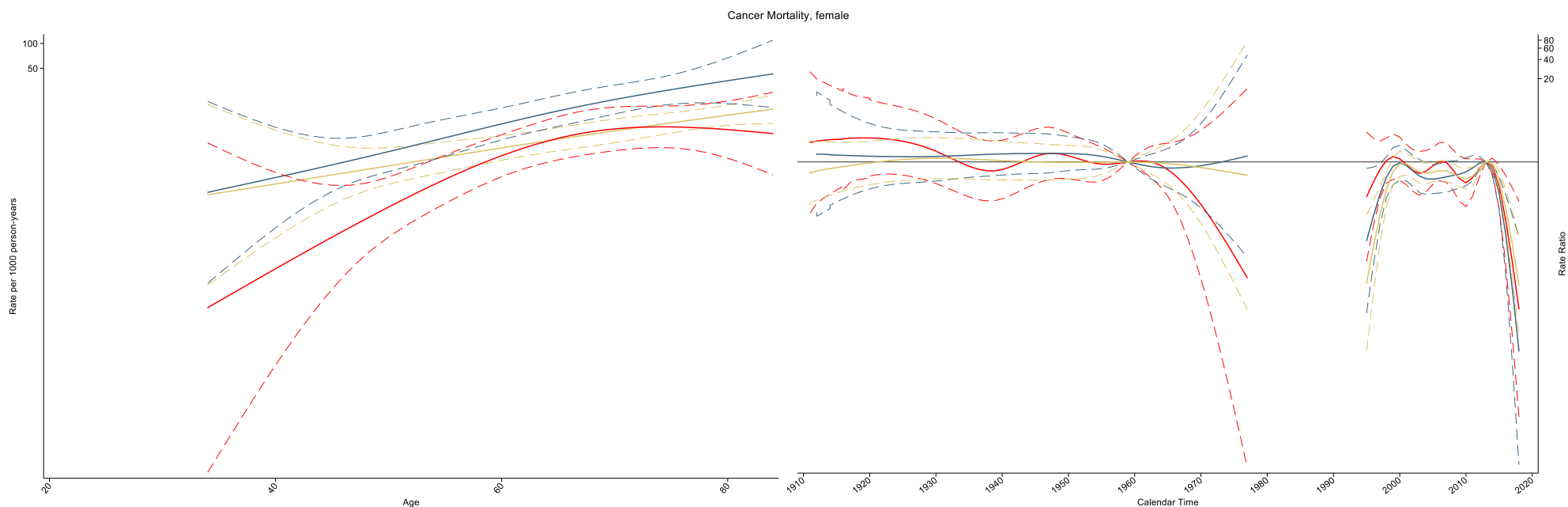
Left panel: adjusted rates of cancer mortality in female diabetes population by age (35-85) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cancer mortality (relative to reference birth cohort 1960) in female diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer mortality (relative to reference year 2013) in female diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S27 Age-period-cohort influence on cancer mortality in male diabetes population: DCSS, 1994-2018**

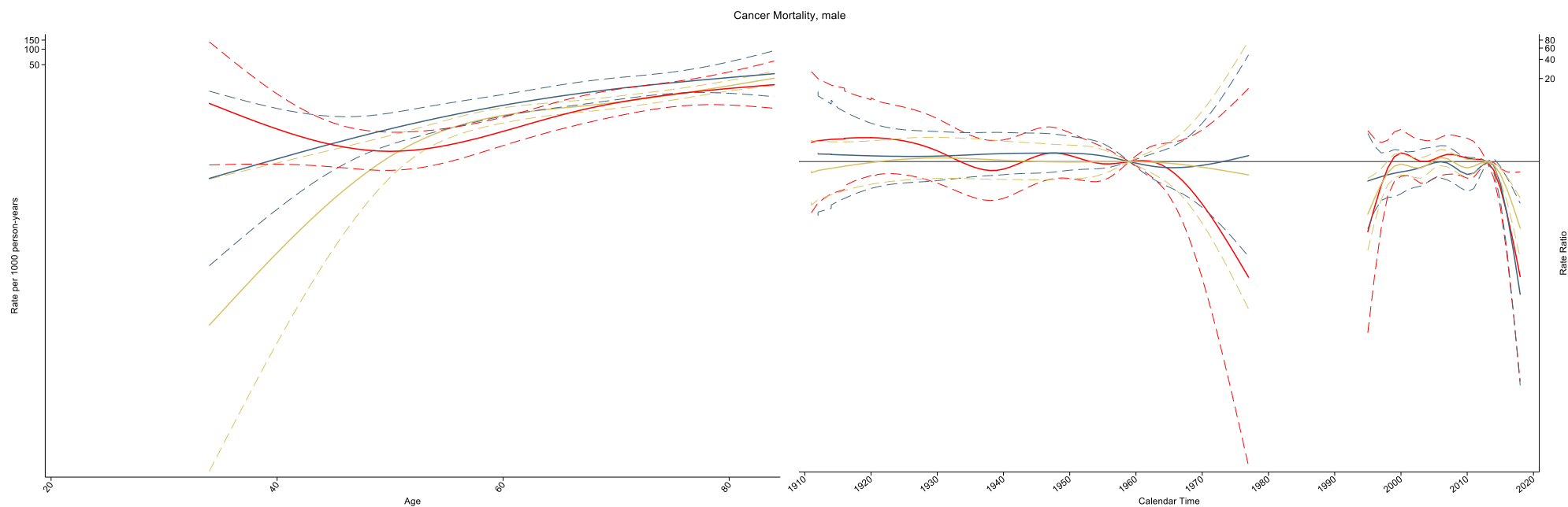
Left panel: adjusted rates of cancer mortality in male diabetes population by age (35-85) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cancer mortality (relative to reference birth cohort 1960) in male diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer mortality (relative to reference year 2013) in male diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S28 Age-period-cohort influence on cancer mortality in the least deprived diabetes population: DCSS, 1994-2018**

Left panel: adjusted rates of cancer mortality in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

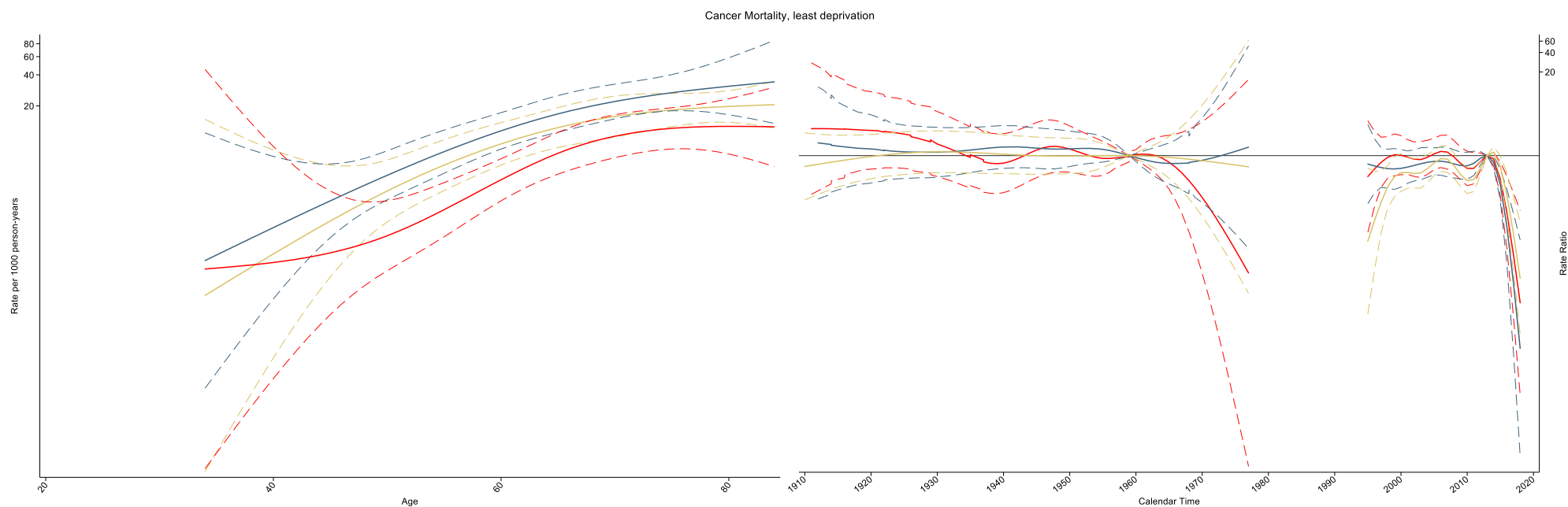
Middle panel: adjusted rates ratio for cancer mortality (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer mortality (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

The least deprivation indicates NZDep2013 equals 1 or 2.



**Figure-S29 Age-period-cohort influence on cancer mortality in the diabetes population with IMD equals 2: DCSS, 1994-2018**

Left panel: adjusted rates of cancer mortality in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

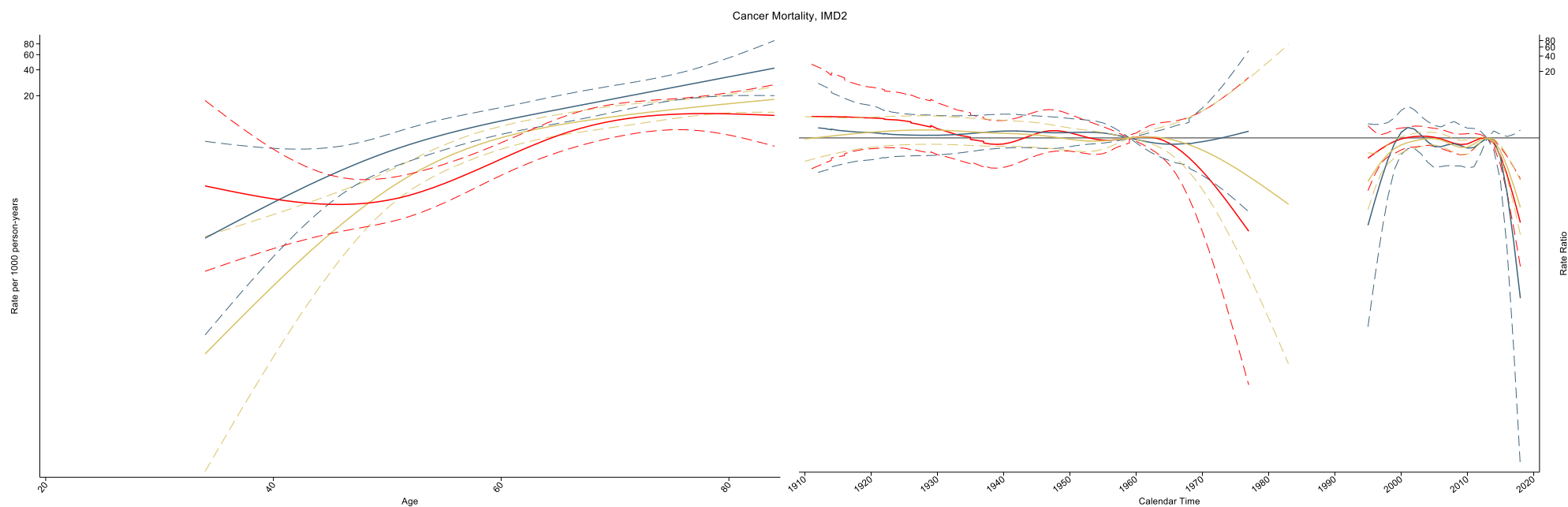
Middle panel: adjusted rates ratio for cancer mortality (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer mortality (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

IMD indicates index of multiple deprivation. IMD was defined as NZDep2013 equals 3 or 4.



**Figure-S30 Age-period-cohort influence on cancer mortality in the diabetes population with IMD equals 3: DCSS, 1994-2018**

Left panel: adjusted rates of cancer mortality in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

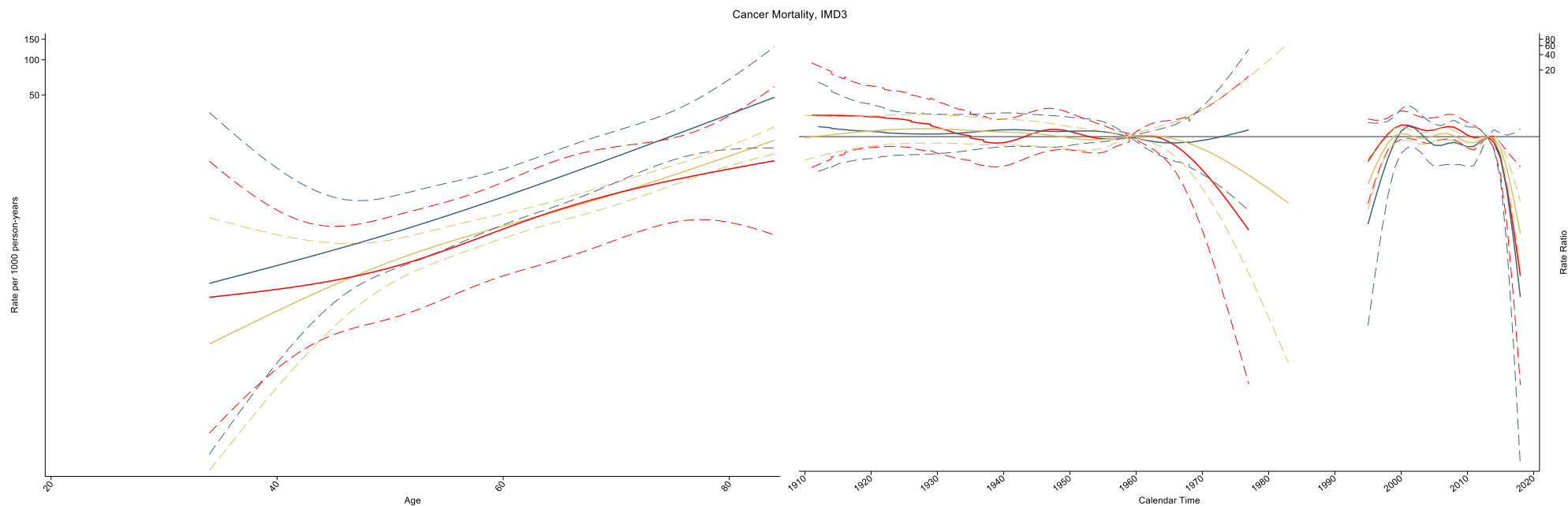
Middle panel: adjusted rates ratio for cancer mortality (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer mortality (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

IMD indicates index of multiple deprivation. IMD=3 was defined as NZDep2013 equals 5 or 6.



**Figure-S31 Age-period-cohort influence on cancer mortality in the diabetes population with IMD equals 4: DCSS, 1994-2018**

Left panel: adjusted rates of cancer mortality in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

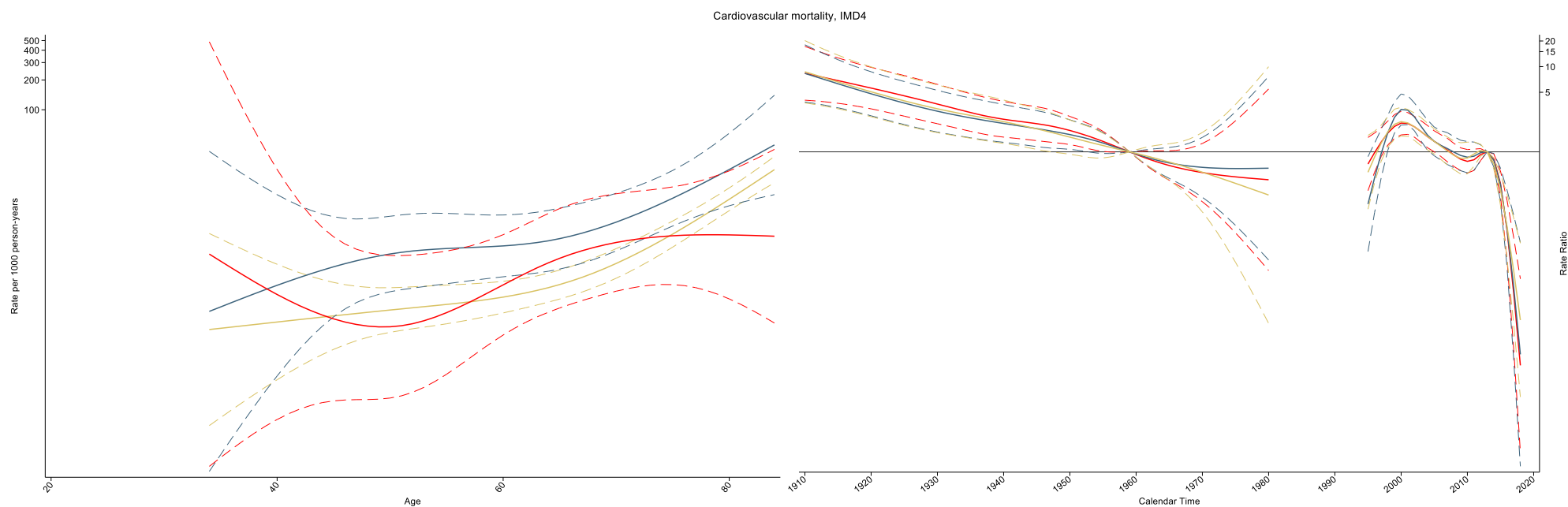
Middle panel: adjusted rates ratio for cancer mortality (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer mortality (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

IMD indicates index of multiple deprivation. IMD=4 was defined as NZDep2013 equals 7 or 8.



**Figure-S32 Age-period-cohort influence on cancer mortality in the most deprived diabetes population: DCSS, 1994-2018**

Left panel: adjusted rates of cancer mortality in the most deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

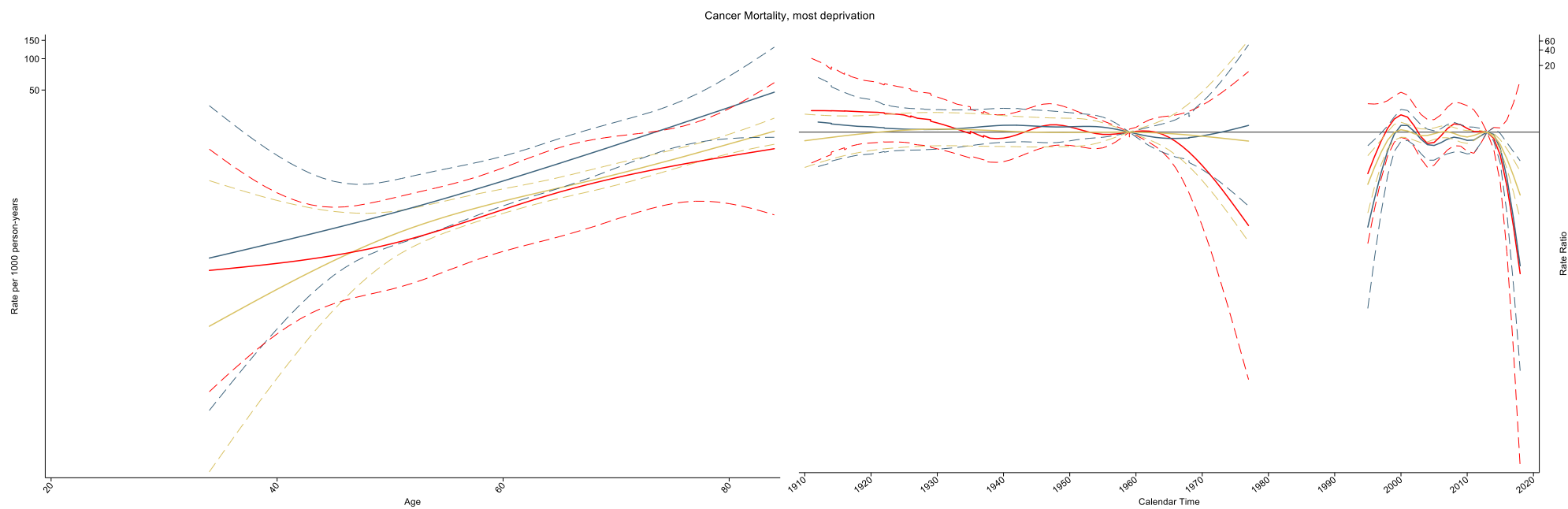
Middle panel: adjusted rates ratio for cancer mortality (relative to reference birth cohort 1960) in the most deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer mortality (relative to reference year 2013) in the most deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

The most deprivation indicates NZDep2013 equals 9 or 10.



**Figure-S33 Age-period-cohort influence on cancer mortality in not-current smoking diabetes population: DCSS, 1994-2018**

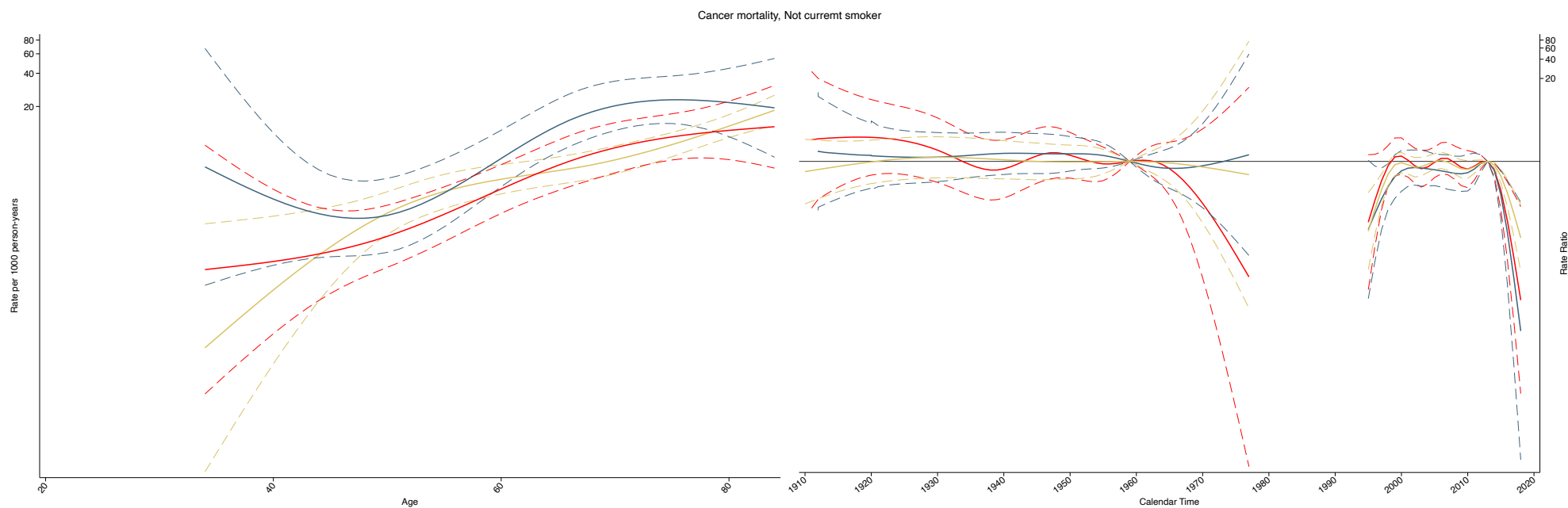
Left panel: adjusted rates of cancer mortality in the not-current smoking diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cancer mortality (relative to reference birth cohort 1960) in the not-current smoking population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer mortality (relative to reference year 2013) in the not-current smoking diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.





**Figure-S34 Age-period-cohort influence on cancer mortality in current smoking diabetes population: DCSS, 1994-2018**

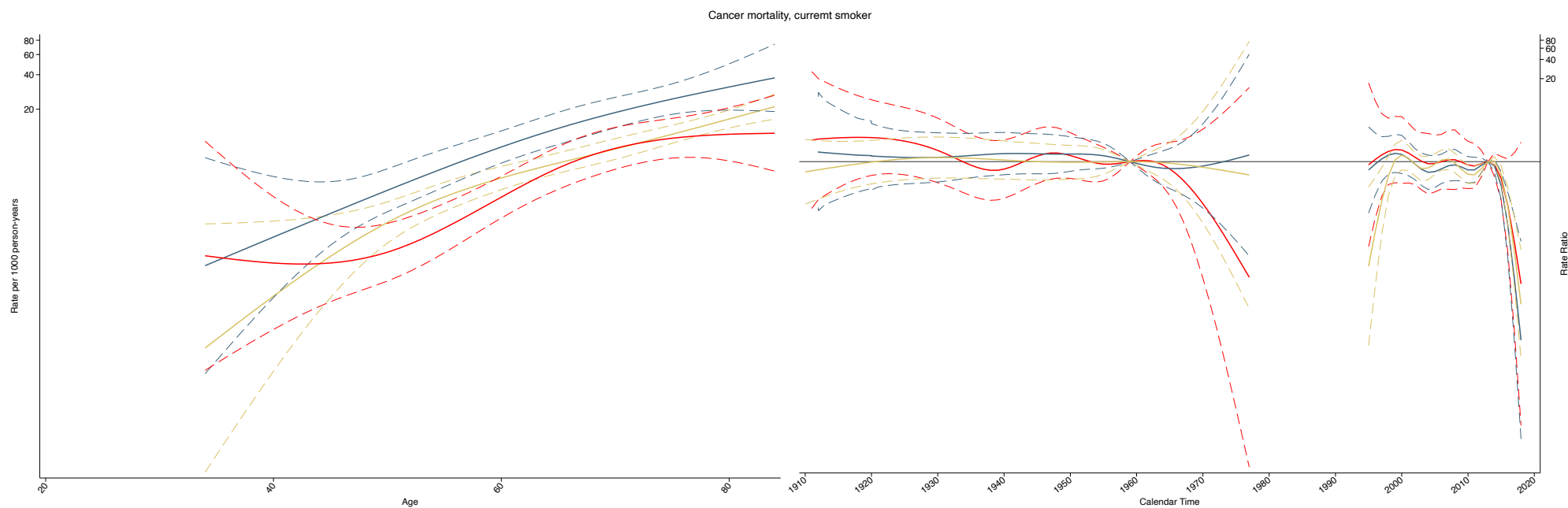
Left panel: adjusted rates of cancer mortality in the current smoking diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cancer mortality (relative to reference birth cohort 1960) in the current smoking population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer mortality (relative to reference year 2013) in the current smoking diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S35 Age-period-cohort influence on cancer mortality in non-obese diabetes population: DCSS, 1994-2018**

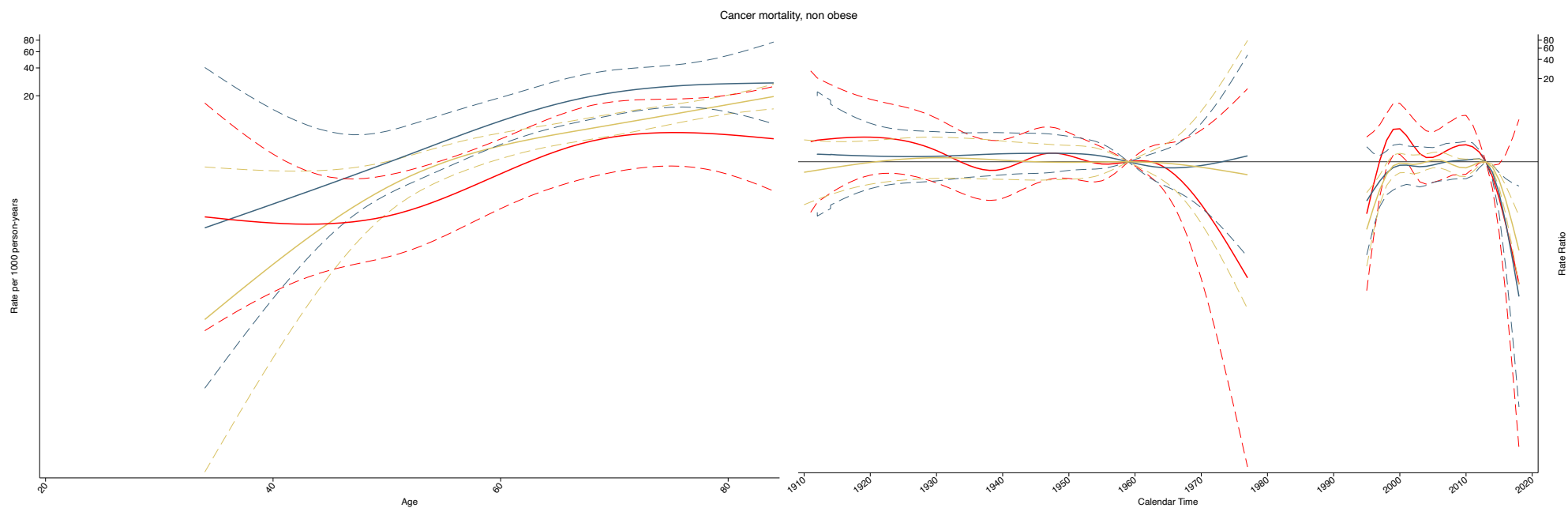
Left panel: adjusted rates of cancer mortality in the non-obese diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cancer mortality (relative to reference birth cohort 1960) in the non-obese diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer mortality (relative to reference year 2013) in the non-obese diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S36 Age-period-cohort influence on cancer mortality in obese diabetes population: DCSS, 1994-2018**

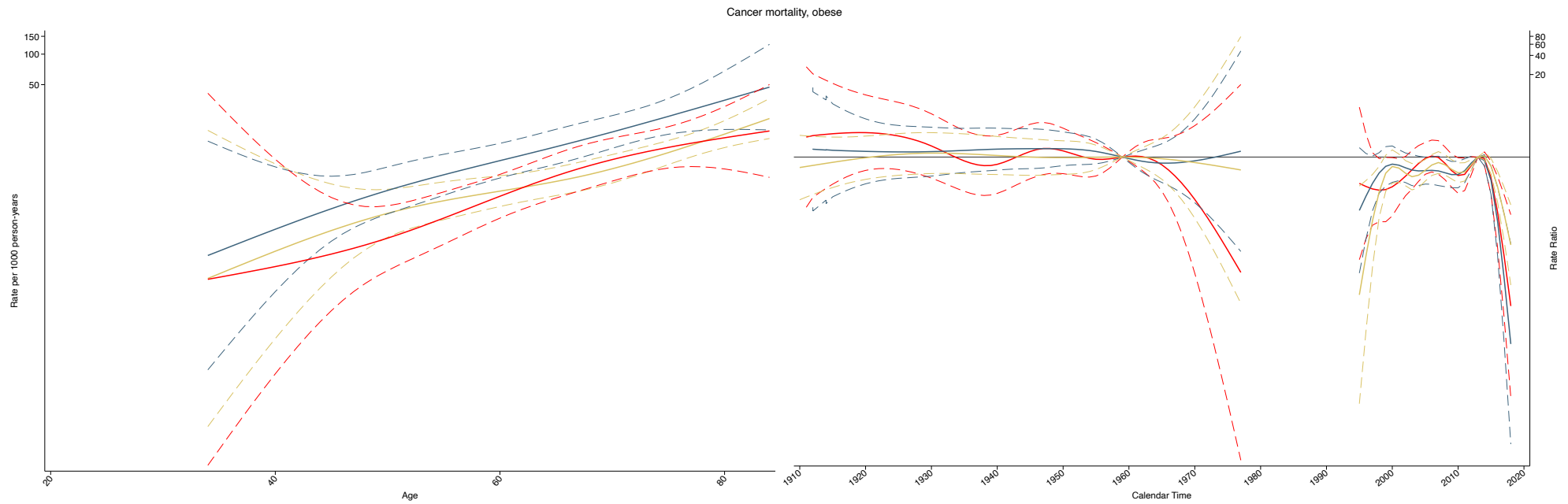
Left panel: adjusted rates of cancer mortality in the obese diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cancer mortality (relative to reference birth cohort 1960) in the obese diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer mortality (relative to reference year 2013) in the obese diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S37 Age-period-cohort influence on cardiovascular hospitalisation in all diabetes population: DCSS, 1994-2018**

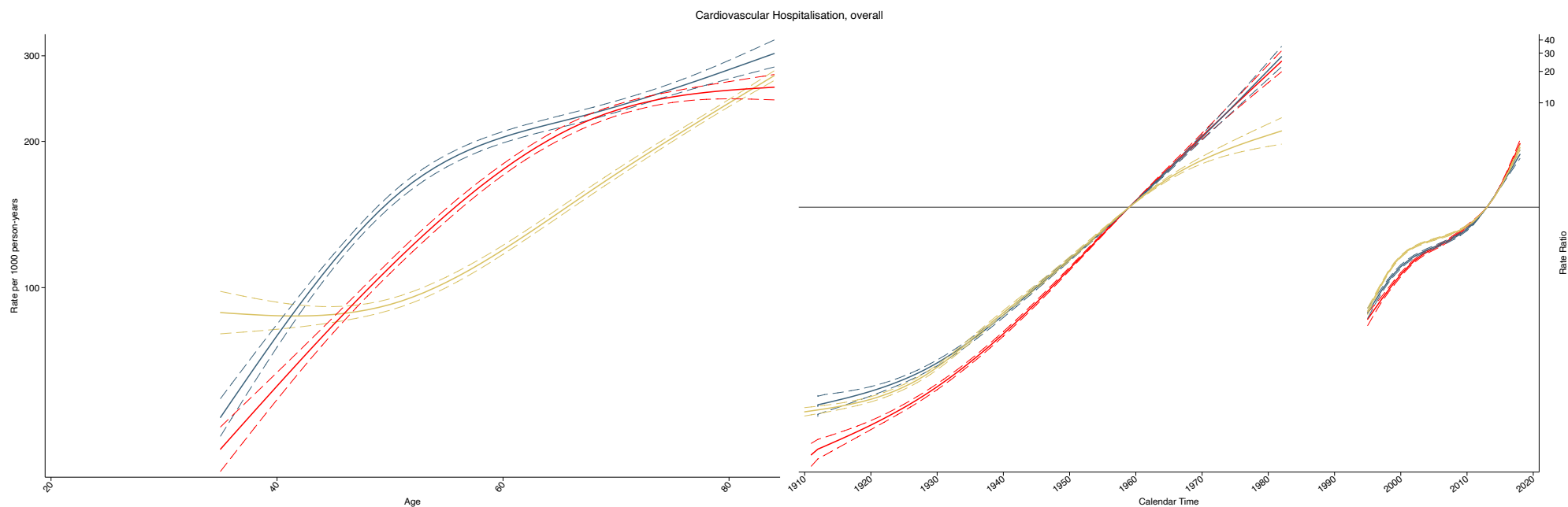
Left panel: adjusted rates of cardiovascular hospitalisation by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference birth cohort 1960) by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference year 2013) by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S38 Age-period-cohort influence on cardiovascular hospitalisation in female diabetes population: DCSS, 1994-2018**

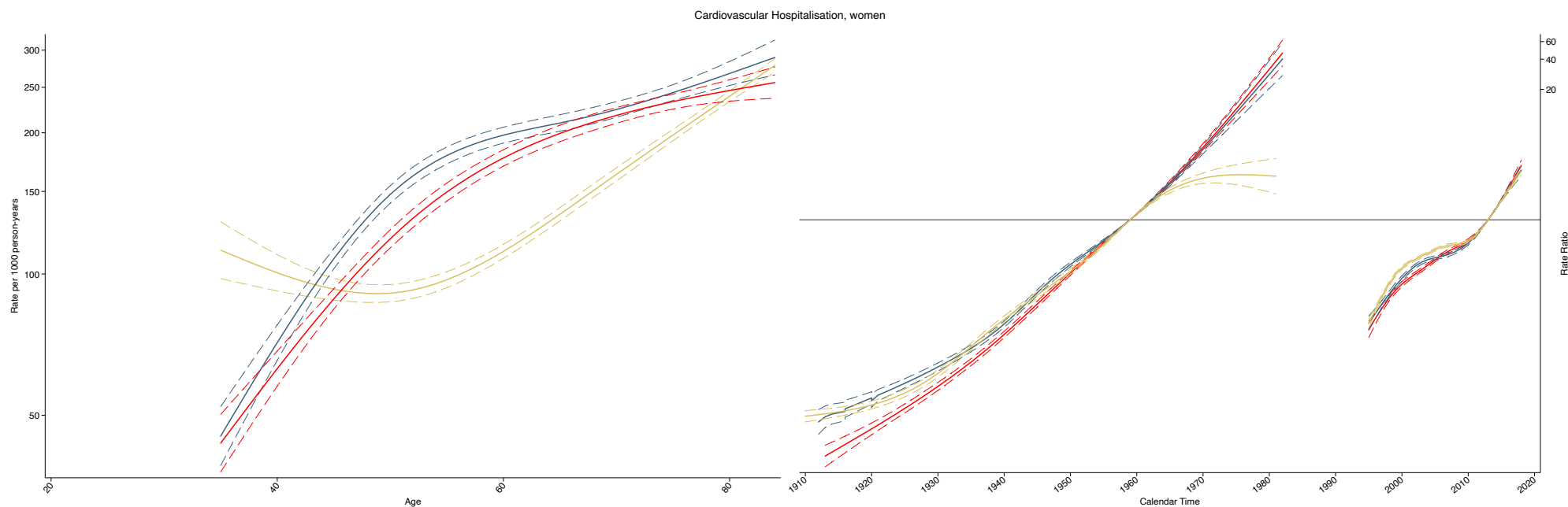
Left panel: adjusted rates of cardiovascular hospitalisation in female diabetes population by age (35-85) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference birth cohort 1960) in female diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference year 2013) in female diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S39 Age-period-cohort influence on cardiovascular hospitalisation in male diabetes population: DCSS, 1994-2018**

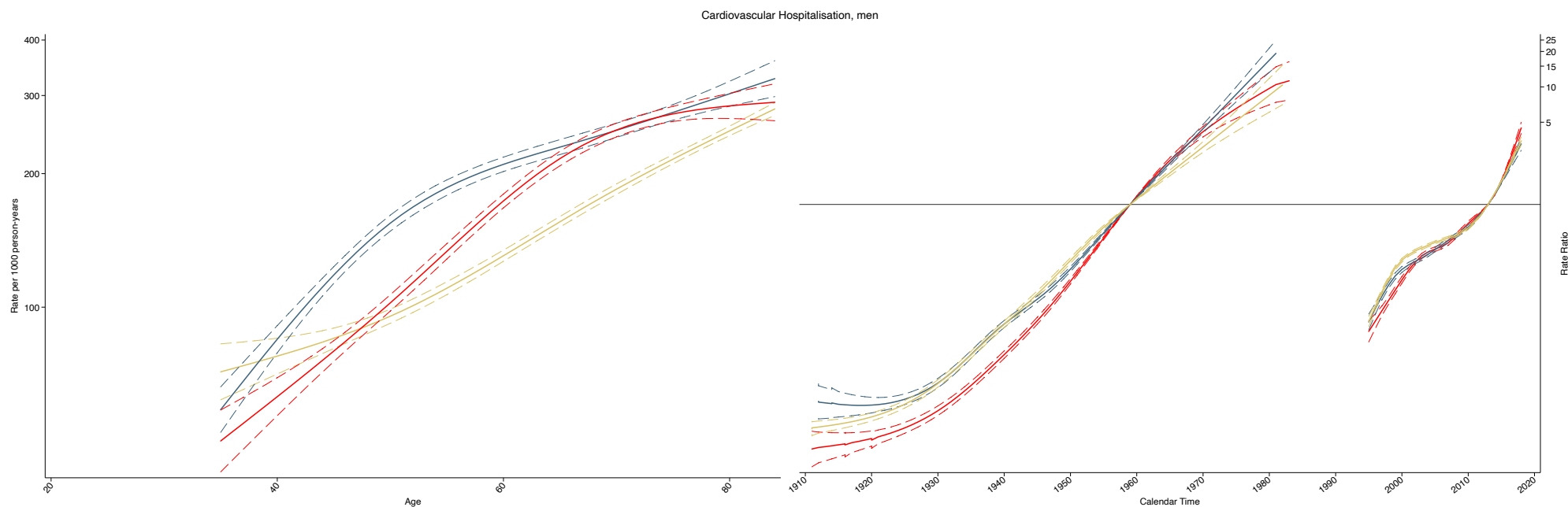
Left panel: adjusted rates of cardiovascular hospitalisation in male diabetes population by age (35-85) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference birth cohort 1960) in male diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference year 2013) in male diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S40 Age-period-cohort influence on cardiovascular hospitalisation in the least deprived diabetes population: DCSS, 1994-2018**

Left panel: adjusted rates of cardiovascular hospitalisation in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

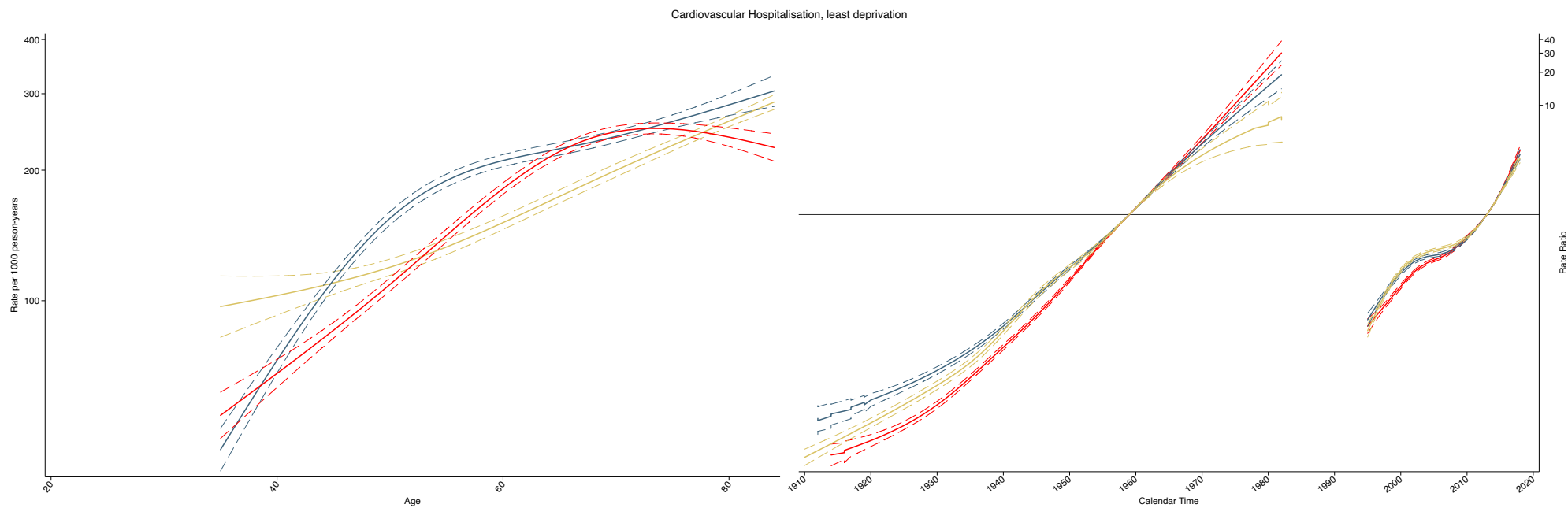
Middle panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

The least deprivation indicates NZDep2013 equals 1 or 2.



**Figure-S41 Age-period-cohort influence on cardiovascular hospitalisation in the diabetes population with IMD equals 2: DCSS, 1994-2018**

Left panel: adjusted rates of cardiovascular hospitalisation in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

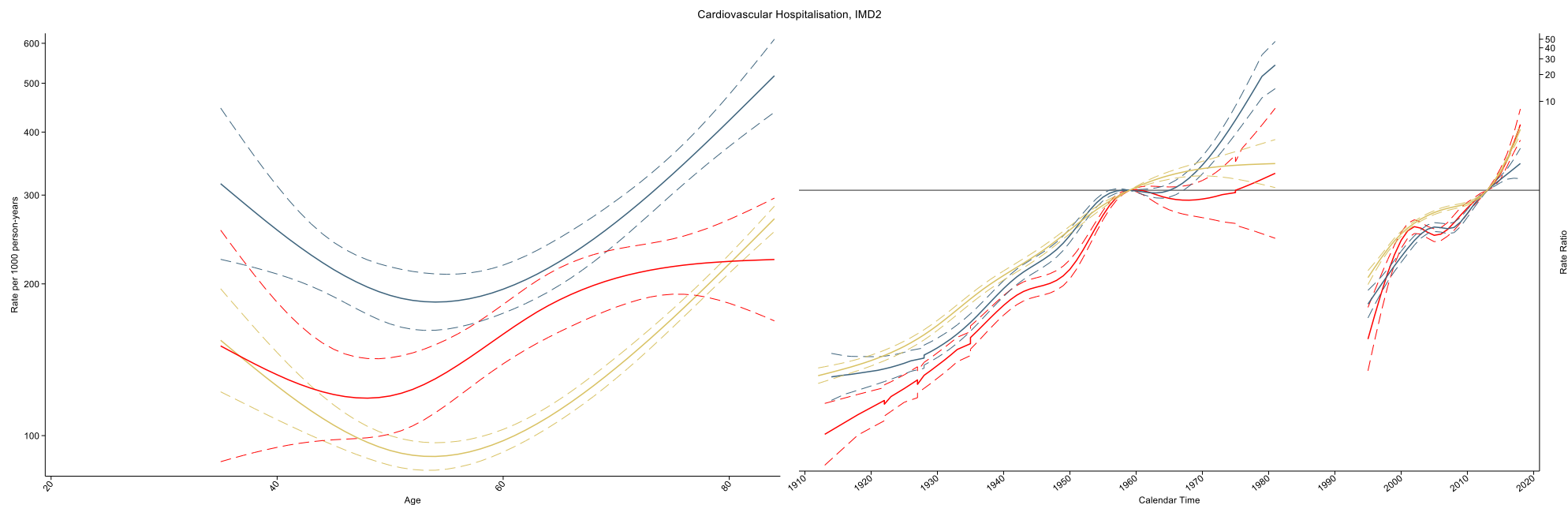
Middle panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

IMD indicates index of multiple deprivation. IMD=2 was defined as NZDep2013 equals 3 or 4.





**Figure-S42 Age-period-cohort influence on cardiovascular hospitalisation in the diabetes population with IMD equals 3: DCSS, 1994-2018**

Left panel: adjusted rates of cardiovascular hospitalisation in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

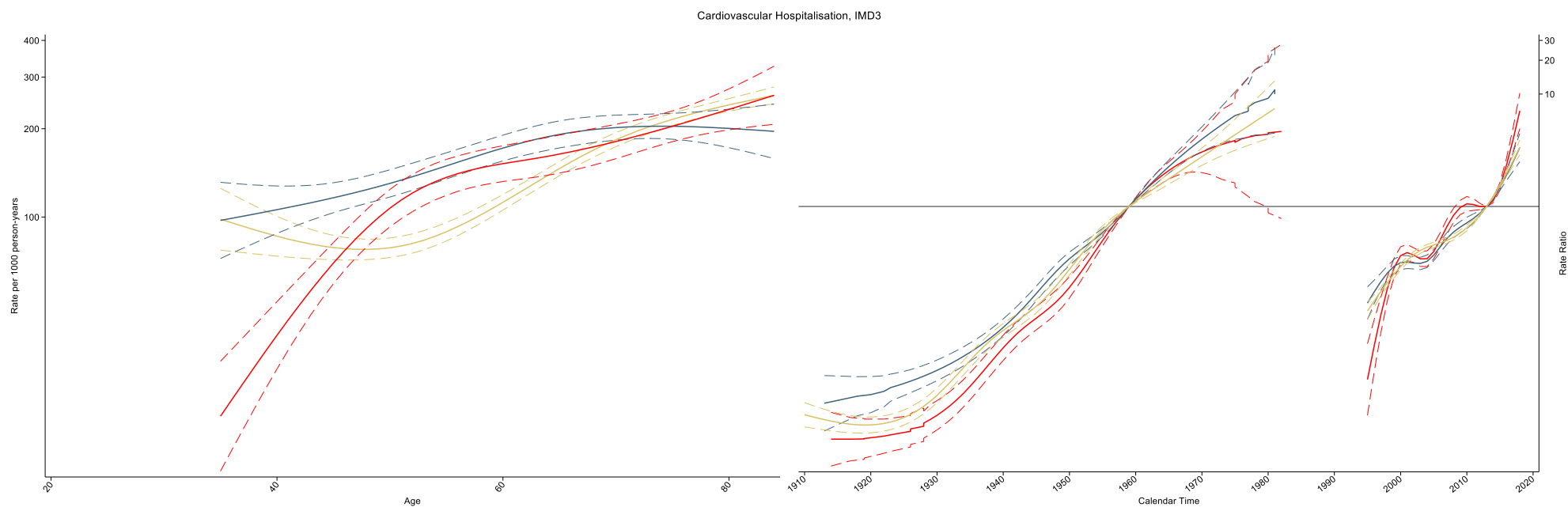
Middle panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

IMD indicates index of multiple deprivation. IMD=3 was defined as NZDep2013 equals 5 or 6.



**Figure-S43 Age-period-cohort influence on cardiovascular hospitalisation in the diabetes population with IMD equals 4: DCSS, 1994-2018**

Left panel: adjusted rates of cardiovascular hospitalisation in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

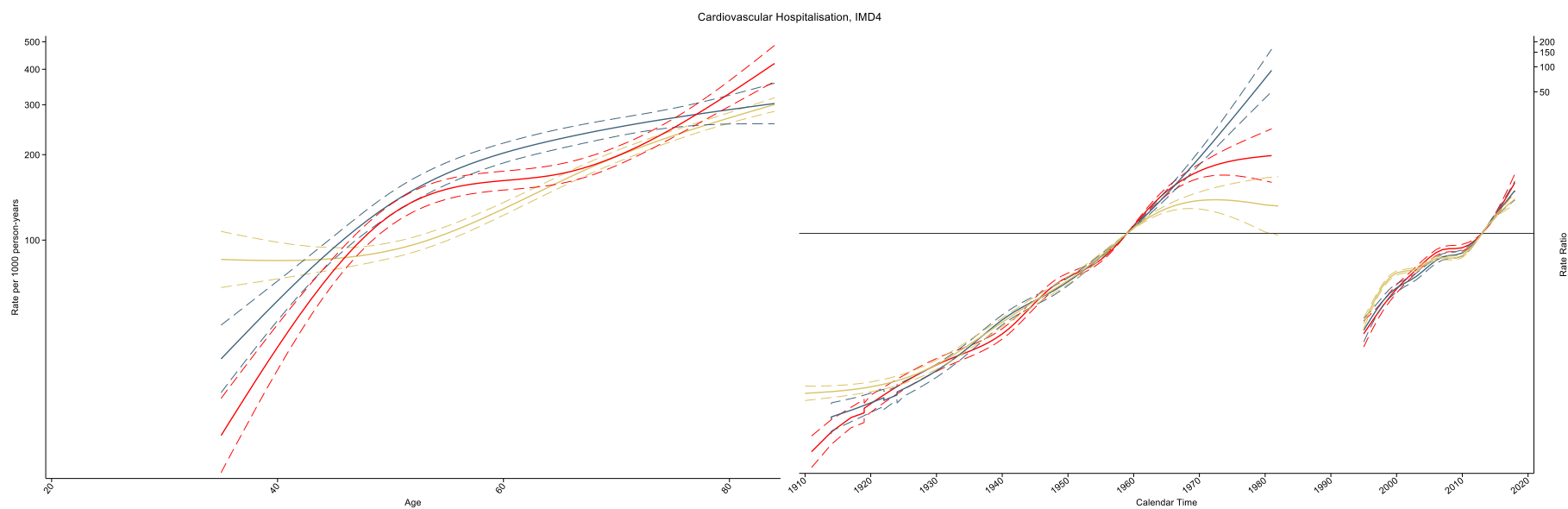
Middle panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

IMD indicates index of multiple deprivation. IMD=4 was defined as NZDep2013 equals 7 or 8.



**Figure-S44 Age-period-cohort influence on cardiovascular hospitalisation in the most deprived diabetes population: DCSS, 1994-2018**

Left panel: adjusted rates of cardiovascular hospitalisation in the most deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

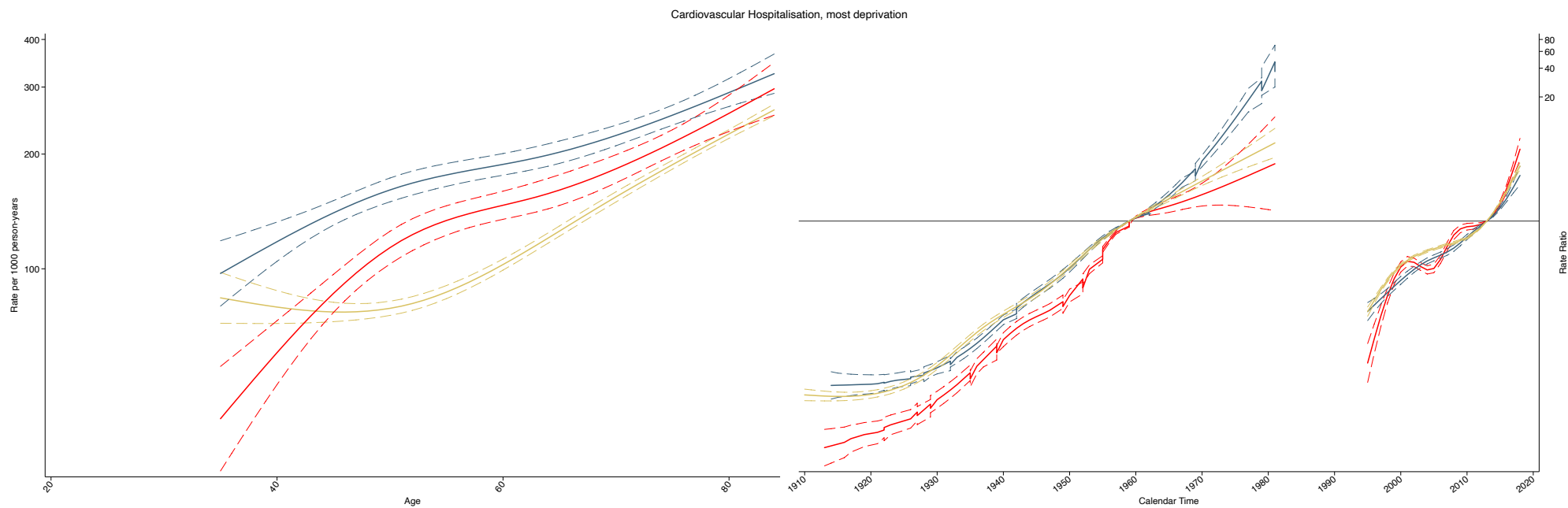
Middle panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference birth cohort 1960) in the most deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference year 2013) in the most deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

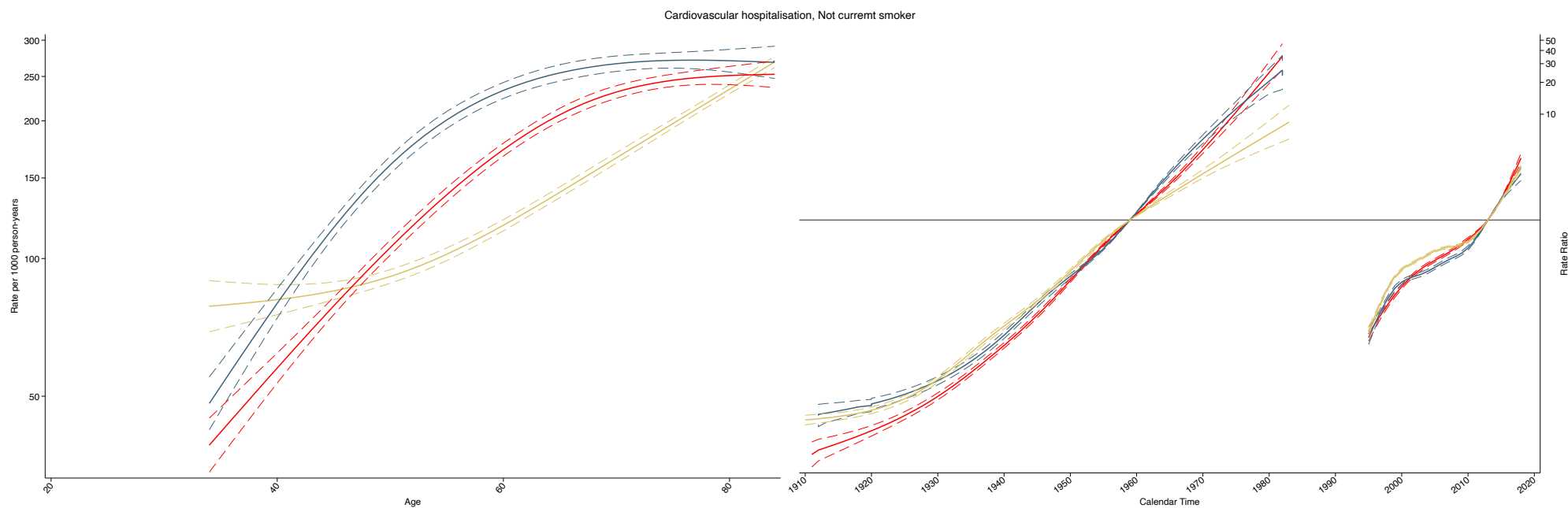
Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

The most deprivation indicates NZDep2013 equals 9 or 10.



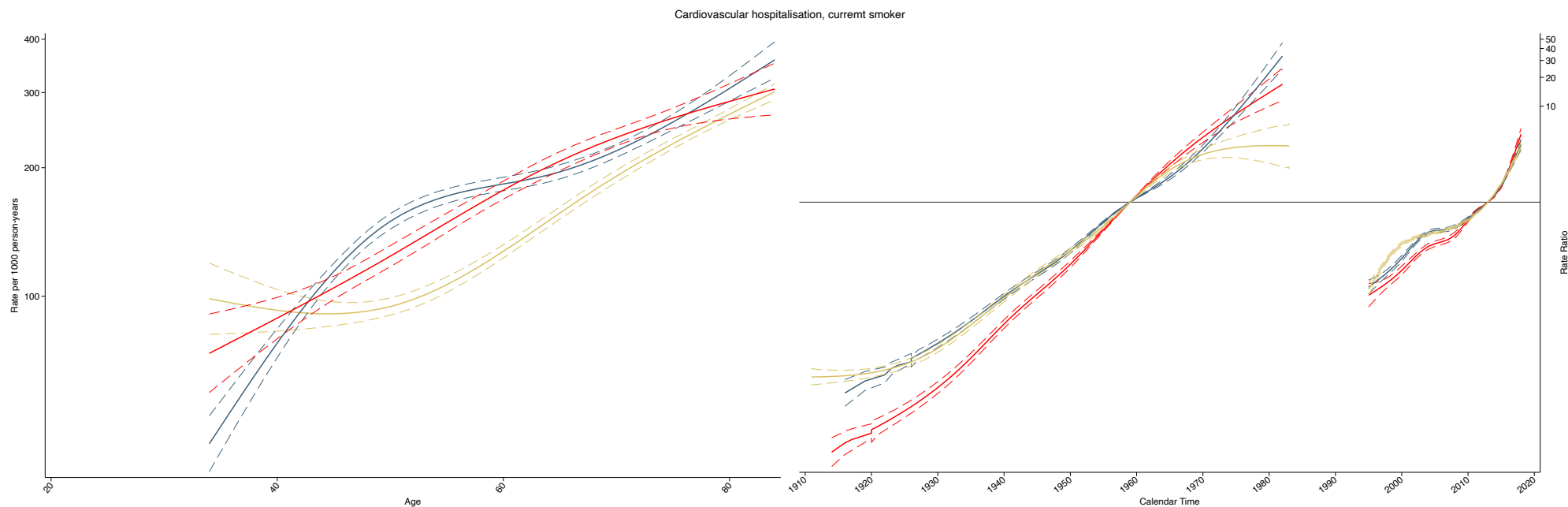
**Figure-S45 Age-period-cohort influence on cardiovascular hospitalisation in not-current smoking diabetes population: DCSS, 1994-2018**

Left panel: adjusted rates of cardiovascular hospitalisation in the not-current smoking diabetes population by age (35-84) with adjustment of period and birth cohort effects.  
Middle panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference birth cohort 1960) in the not-current smoking population by birth year (1910-1980) with adjustment of age and period effects.  
Right panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference year 2013) in the not-current smoking diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.  
Solid line indicates point estimations and dash line indicates 95% confidence interval.  
Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S46 Age-period-cohort influence on cardiovascular hospitalisation in current smoking diabetes population: DCSS, 1994-2018**

Left panel: adjusted rates of cardiovascular hospitalisation in the current smoking diabetes population by age (35-84) with adjustment of period and birth cohort effects.  
Middle panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference birth cohort 1960) in the current smoking population by birth year (1910-1980) with adjustment of age and period effects.  
Right panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference year 2013) in the current smoking diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.  
Solid line indicates point estimations and dash line indicates 95% confidence interval.  
Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S47 Age-period-cohort influence on cardiovascular hospitalisation in non-obese diabetes population: DCSS, 1994-2018**

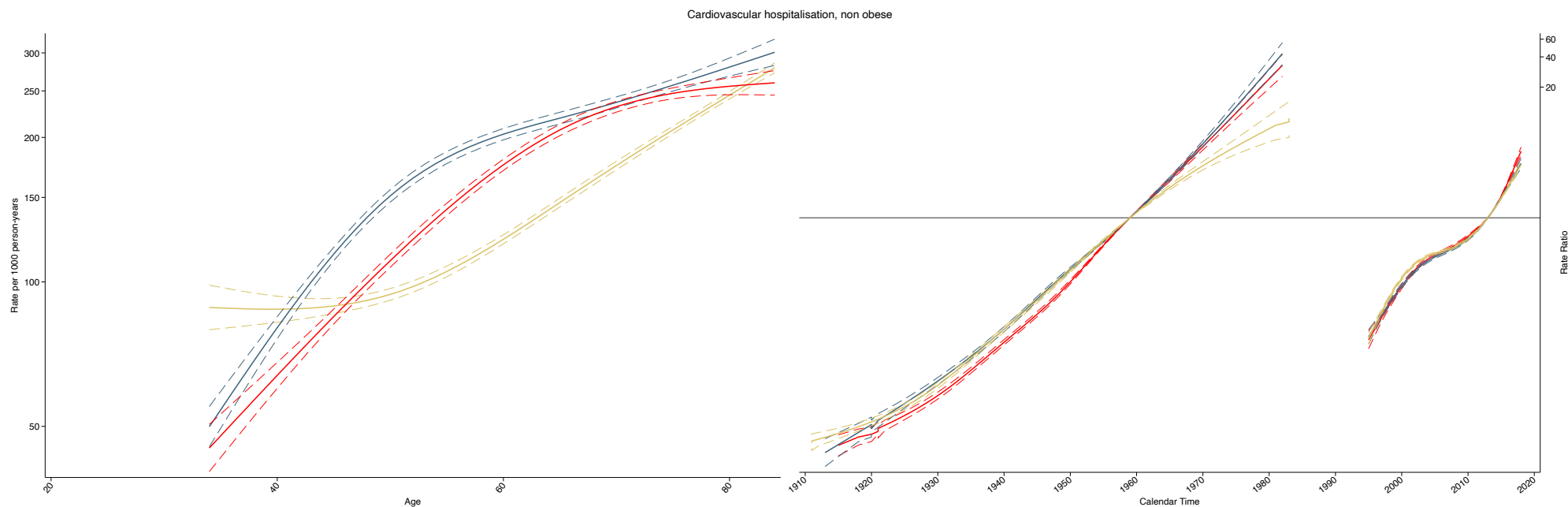
Left panel: adjusted rates of cardiovascular hospitalisation in the non-obese diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference birth cohort 1960) in the non-obese population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference year 2013) in the non-obese diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S48 Age-period-cohort influence on cardiovascular hospitalisation in obese diabetes population: DCSS, 1994-2018**

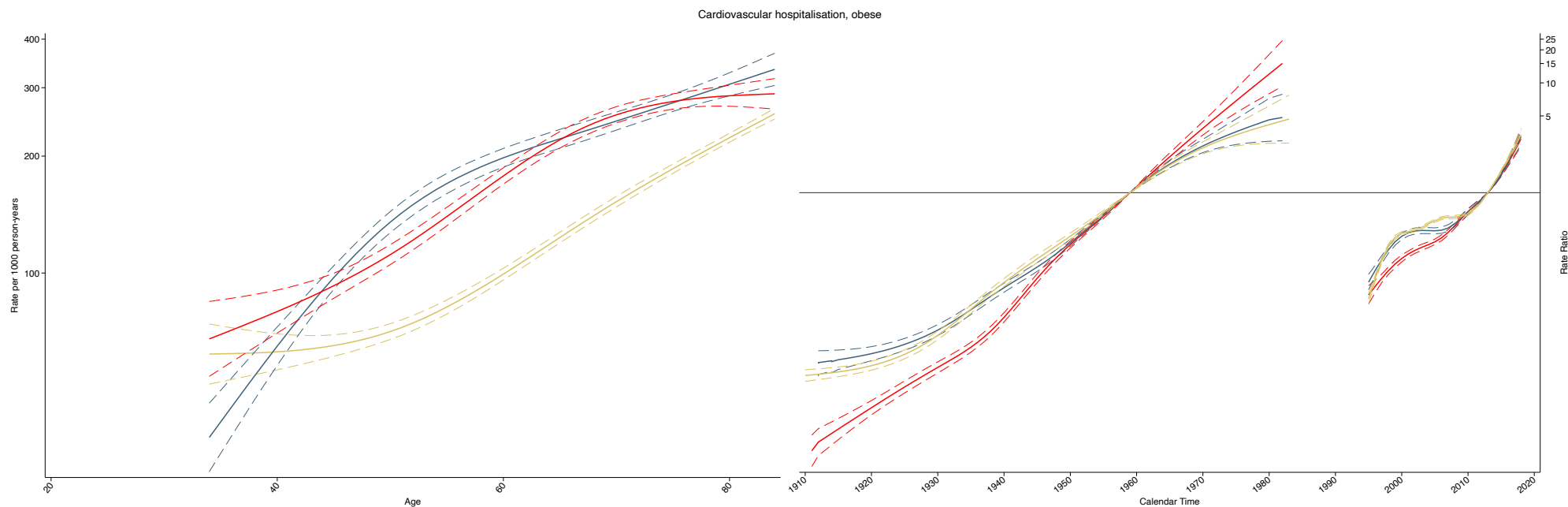
Left panel: adjusted rates of cardiovascular hospitalisation in the obese diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference birth cohort 1960) in the obese population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cardiovascular hospitalisation (relative to reference year 2013) in the obese diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S49 Age-period-cohort influence on cancer hospitalisation in all diabetes population: DCSS, 1994-2018**

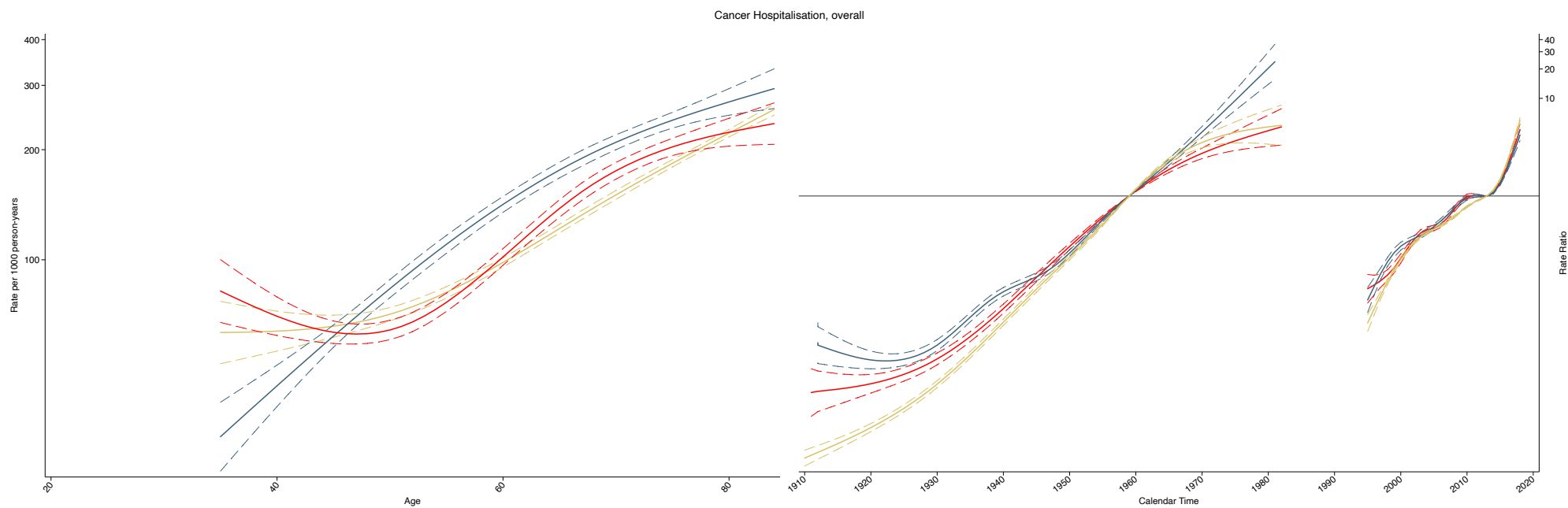
Left panel: adjusted rates of cancer hospitalisation by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cancer hospitalisation (relative to reference birth cohort 1960) by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer hospitalisation (relative to reference year 2013) by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.





**Figure-S50 Age-period-cohort influence on cancer hospitalisation in female diabetes population: DCSS, 1994-2018**

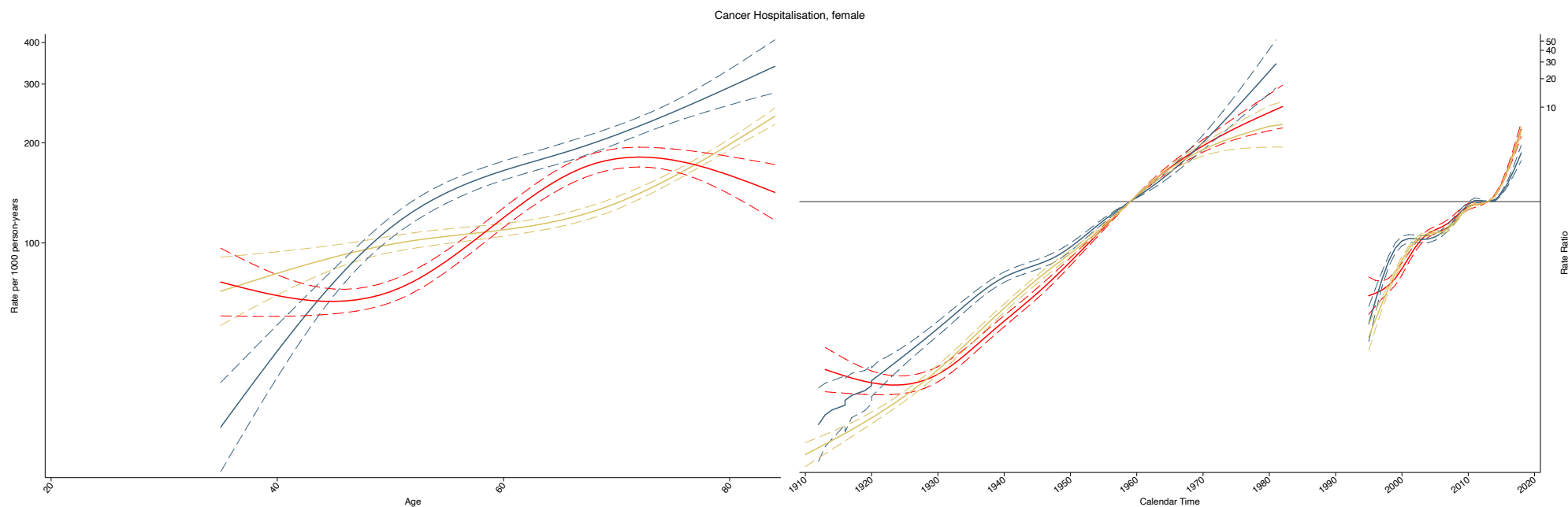
Left panel: adjusted rates of cancer hospitalisation in female diabetes population by age (35-85) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cancer hospitalisation (relative to reference birth cohort 1960) in female diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer hospitalisation (relative to reference year 2013) in female diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S51 Age-period-cohort influence on cancer hospitalisation in male diabetes population: DCSS, 1994-2018**

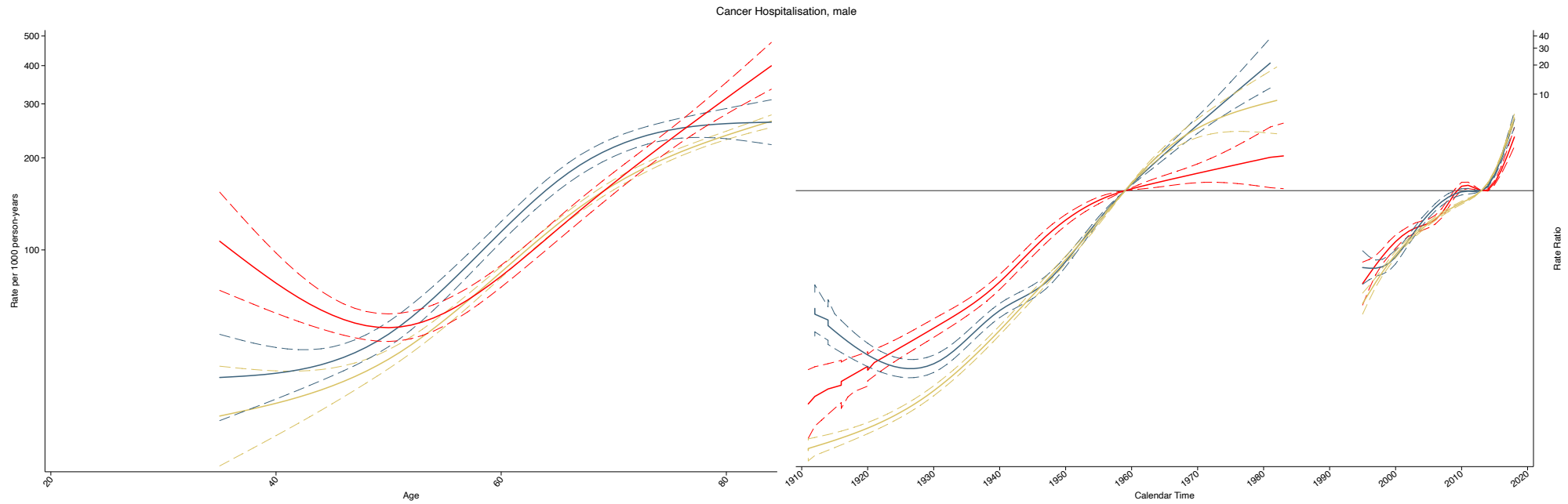
Left panel: adjusted rates of cancer hospitalisation in male diabetes population by age (35-85) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cancer hospitalisation (relative to reference birth cohort 1960) in male diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer hospitalisation (relative to reference year 2013) in male diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S52 Age-period-cohort influence on cancer hospitalisation in the least deprived diabetes population: DCSS, 1994-2018**

Left panel: adjusted rates of cancer hospitalisation in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

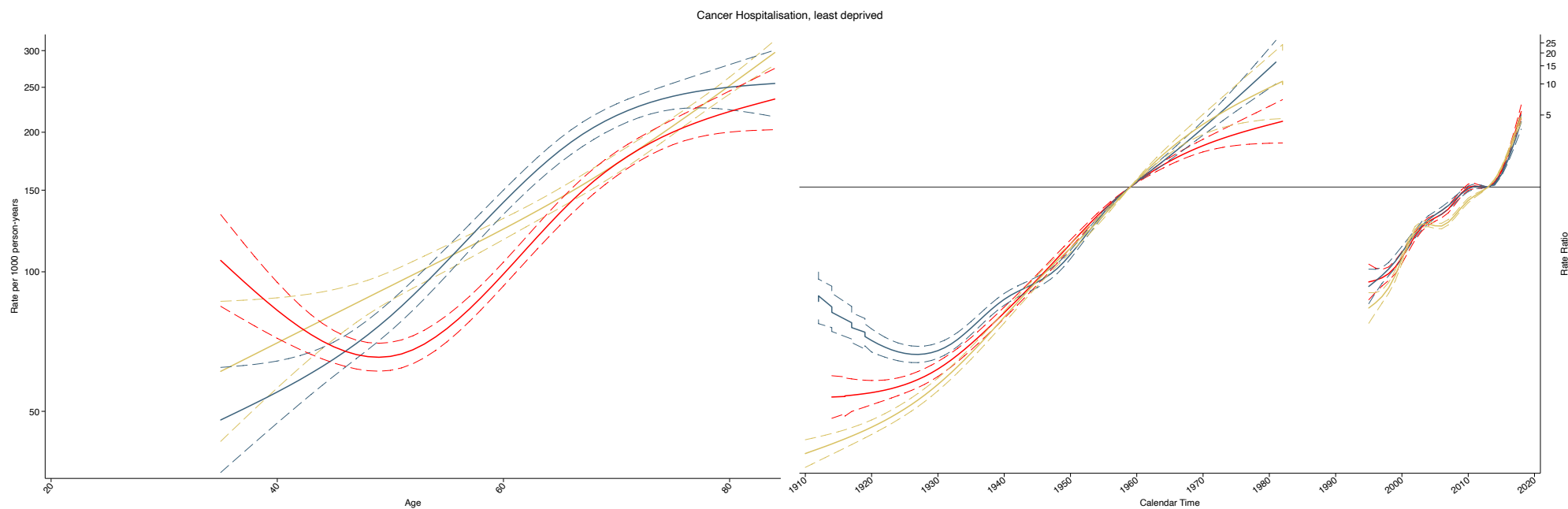
Middle panel: adjusted rates ratio for cancer hospitalisation (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer hospitalisation (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

The least deprivation indicates NZDep2013 equals 1 or 2.



**Figure-S53 Age-period-cohort influence on cancer hospitalisation in the diabetes population with IMD equals 2: DCSS, 1994-2018**

Left panel: adjusted rates of cancer hospitalisation in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

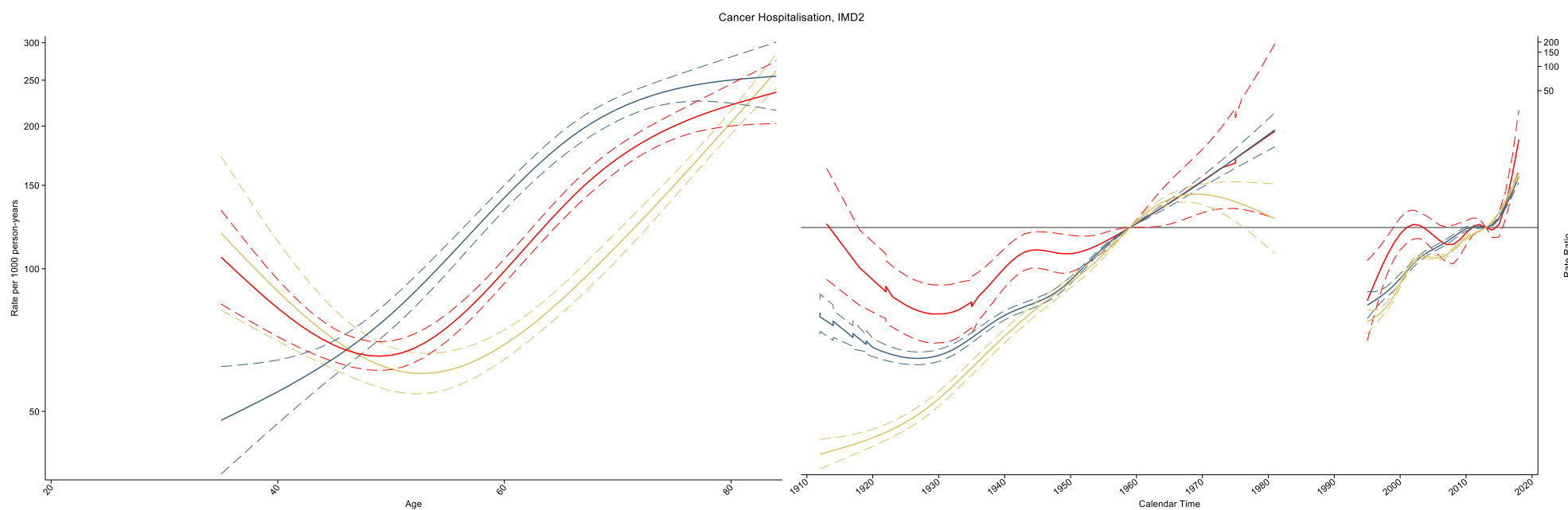
Middle panel: adjusted rates ratio for cancer hospitalisation (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer hospitalisation (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

IMD indicates index of multiple deprivation. IMD=2 was defined as NZDep2013 equals 3 or 4.



**Figure-S54 Age-period-cohort influence on cancer hospitalisation in the diabetes population with IMD equals 3: DCSS, 1994-2018**

Left panel: adjusted rates of cancer hospitalisation in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

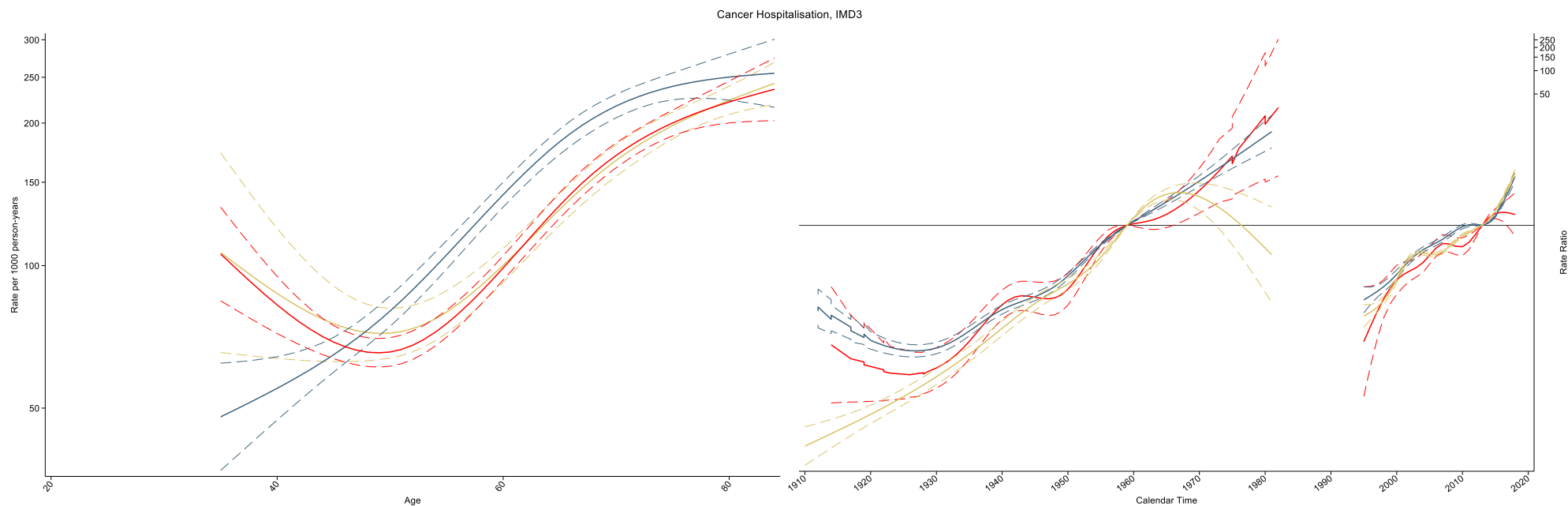
Middle panel: adjusted rates ratio for cancer hospitalisation (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer hospitalisation (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

IMD indicates index of multiple deprivation. IMD=3 was defined as NZDep2013 equals 5 or 6.



**Figure-S55 Age-period-cohort influence on cancer hospitalisation in the diabetes population with IMD equals 4: DCSS, 1994-2018**

Left panel: adjusted rates of cancer hospitalisation in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

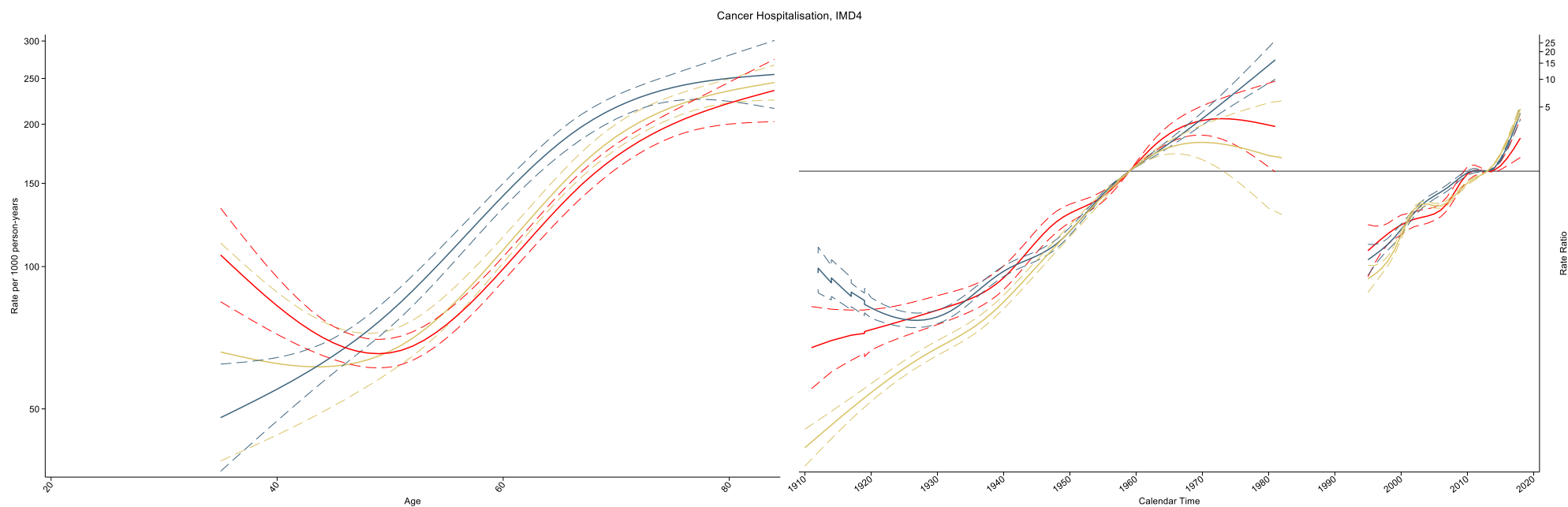
Middle panel: adjusted rates ratio for cancer hospitalisation (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer hospitalisation (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

IMD indicates index of multiple deprivation. IMD=4 was defined as NZDep2013 equals 7 or 8.



**Figure-S56 Age-period-cohort influence on cancer hospitalisation in the most deprived diabetes population: DCSS, 1994-2018**

Left panel: adjusted rates of cancer hospitalisation in the most deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

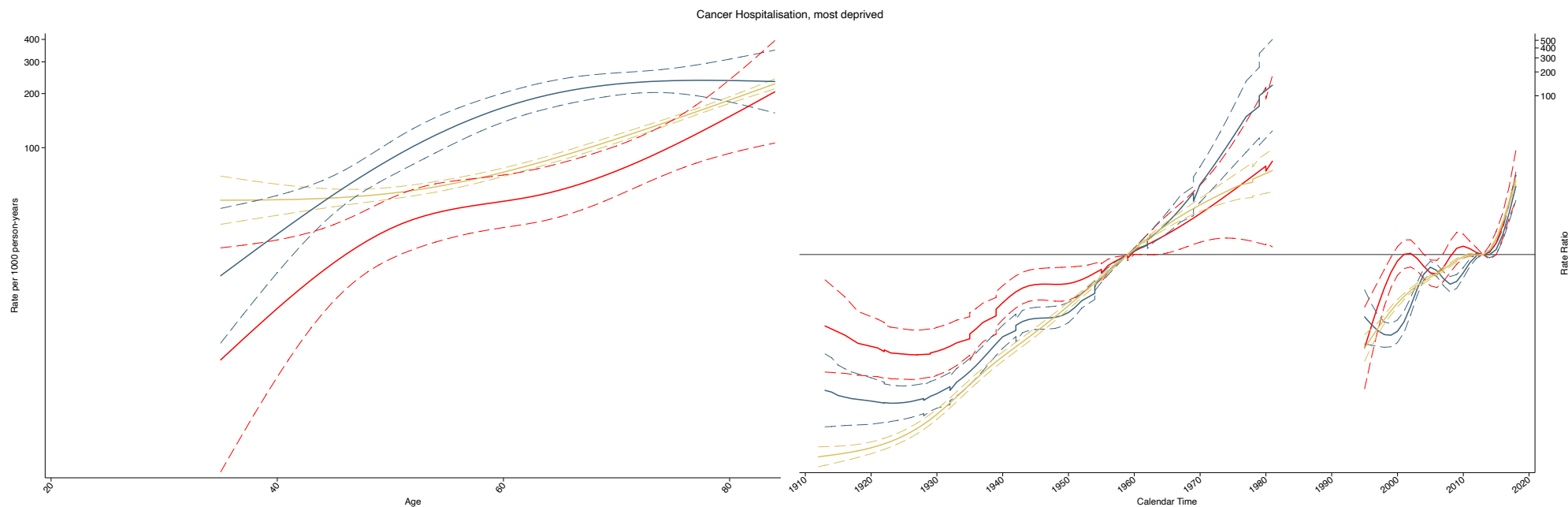
Middle panel: adjusted rates ratio for cancer hospitalisation (relative to reference birth cohort 1960) in the most deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer hospitalisation (relative to reference year 2013) in the most deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

The most deprivation indicates NZDep2013 equals 9 or 10.



**Figure-S57 Age-period-cohort influence on cancer hospitalisation in not-current smoking diabetes population: DCSS, 1994-2018**

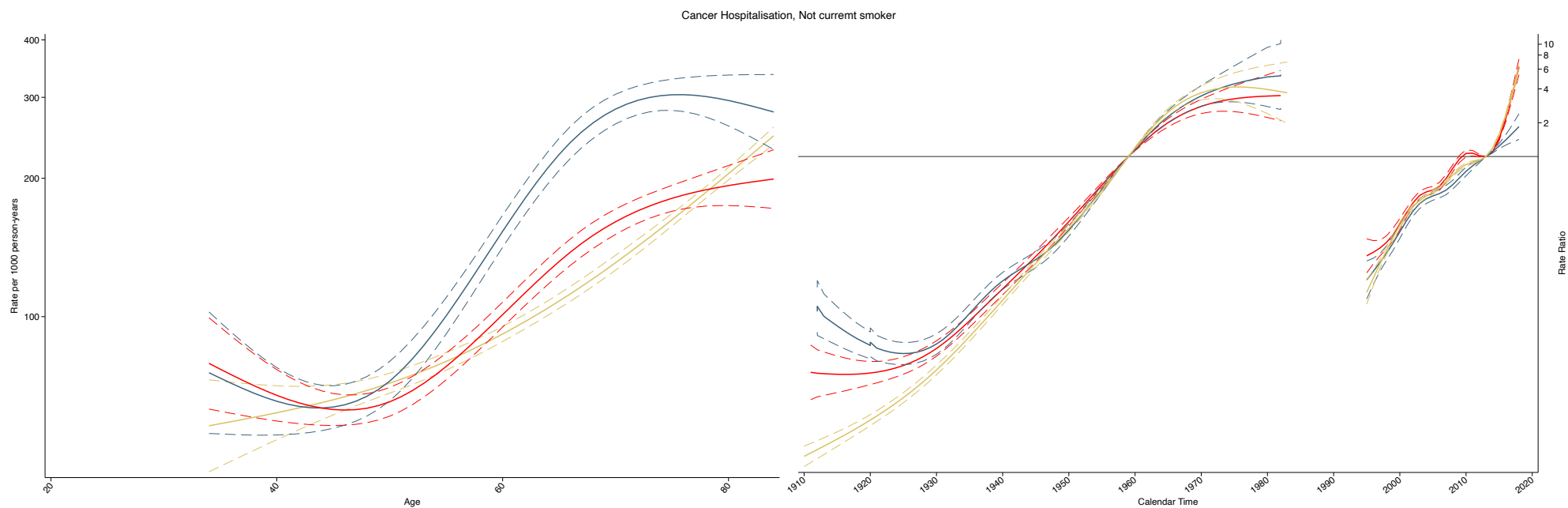
Left panel: adjusted rates of cancer hospitalisation in the not-current smoking diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cancer hospitalisation (relative to reference birth cohort 1960) in the not-current smoking population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer hospitalisation (relative to reference year 2013) in the not-current smoking diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.





**Figure-S58 Age-period-cohort influence on cancer hospitalisation in current smoking diabetes population: DCSS, 1994-2018**

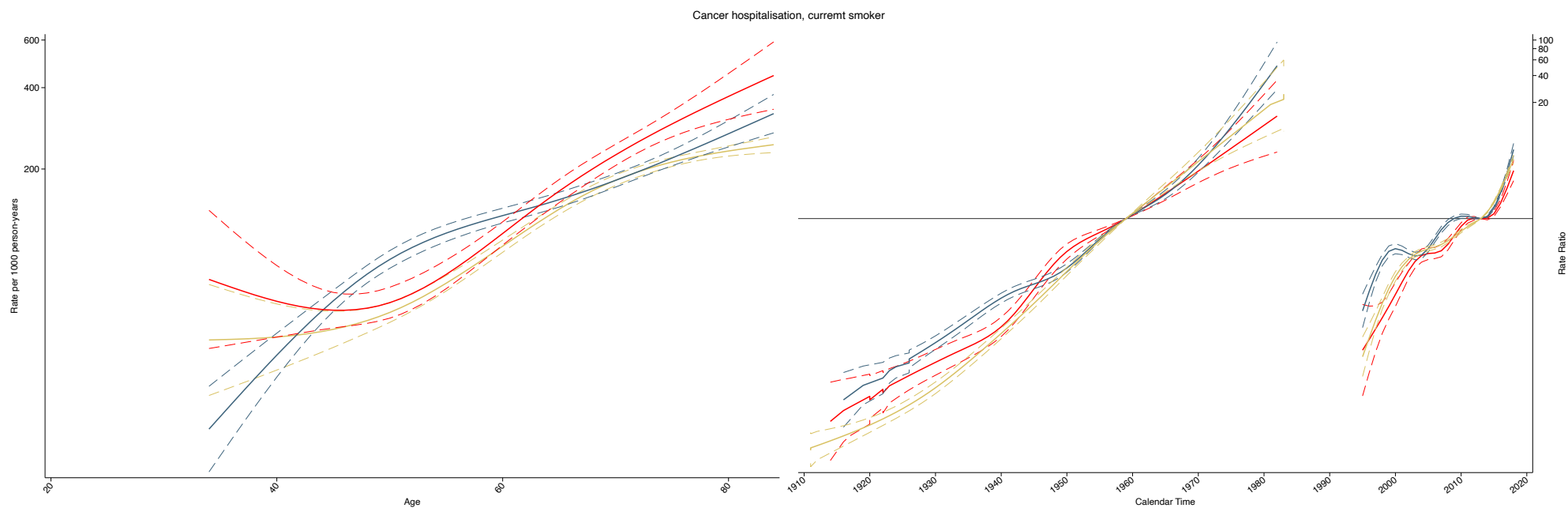
Left panel: adjusted rates of cancer hospitalisation in the current smoking diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cancer hospitalisation (relative to reference birth cohort 1960) in the current smoking population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer hospitalisation (relative to reference year 2013) in the current smoking diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S59 Age-period-cohort influence on cancer hospitalisation in non-obese diabetes population: DCSS, 1994-2018**

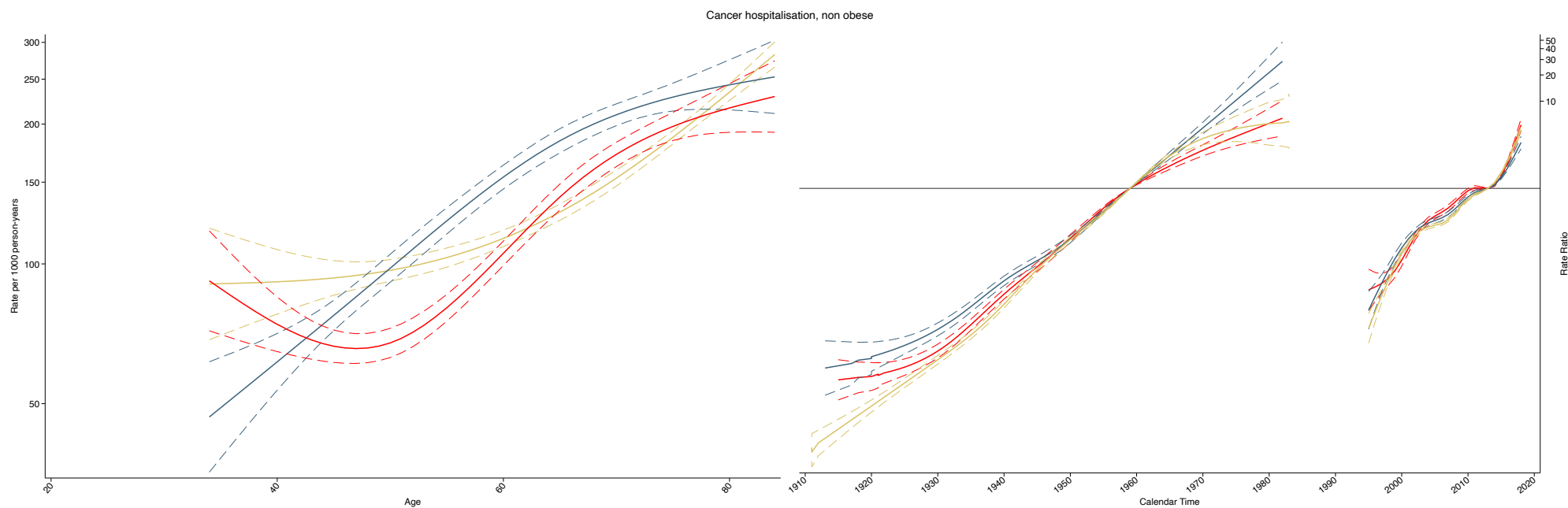
Left panel: adjusted rates of cancer hospitalisation in the non-obese diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cancer hospitalisation (relative to reference birth cohort 1960) in the non-obese diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer hospitalisation (relative to reference year 2013) in the non-obese diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S60 Age-period-cohort influence on cancer hospitalisation in obese diabetes population: DCSS, 1994-2018**

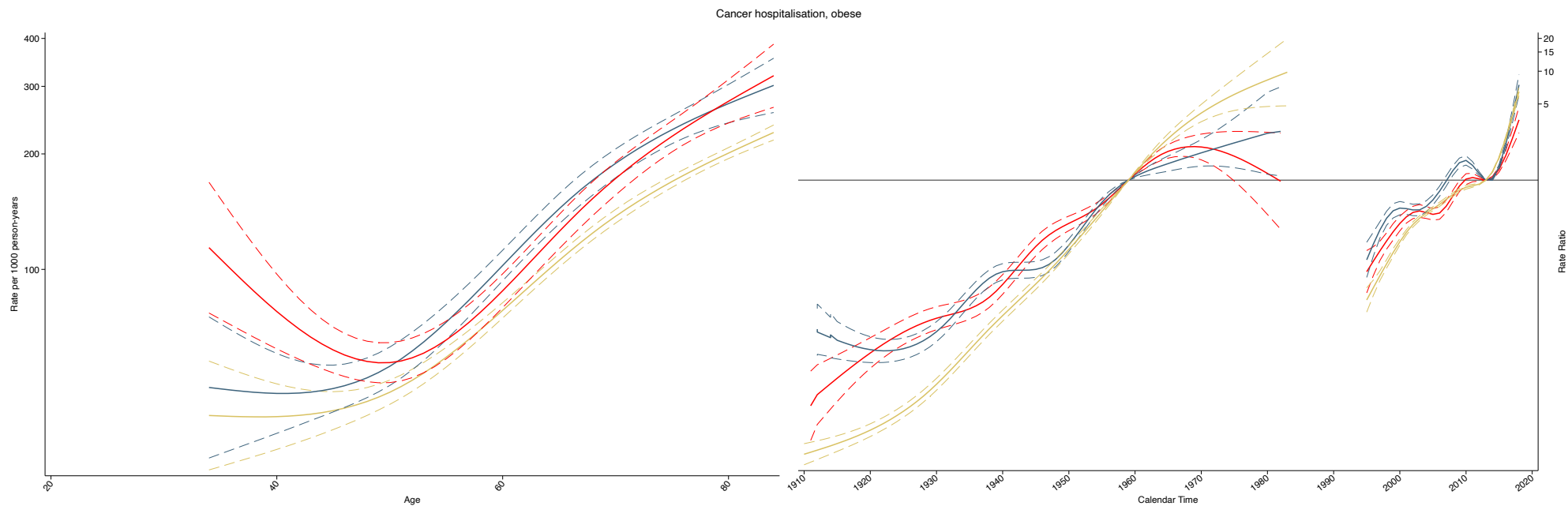
Left panel: adjusted rates of cancer hospitalisation in the obese diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for cancer hospitalisation (relative to reference birth cohort 1960) in the obese diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer hospitalisation (relative to reference year 2013) in the obese diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S61 Age-period-cohort influence on end-stage renal disease (ESRD) hospitalisation in all diabetes population: DCSS, 1994-2018**

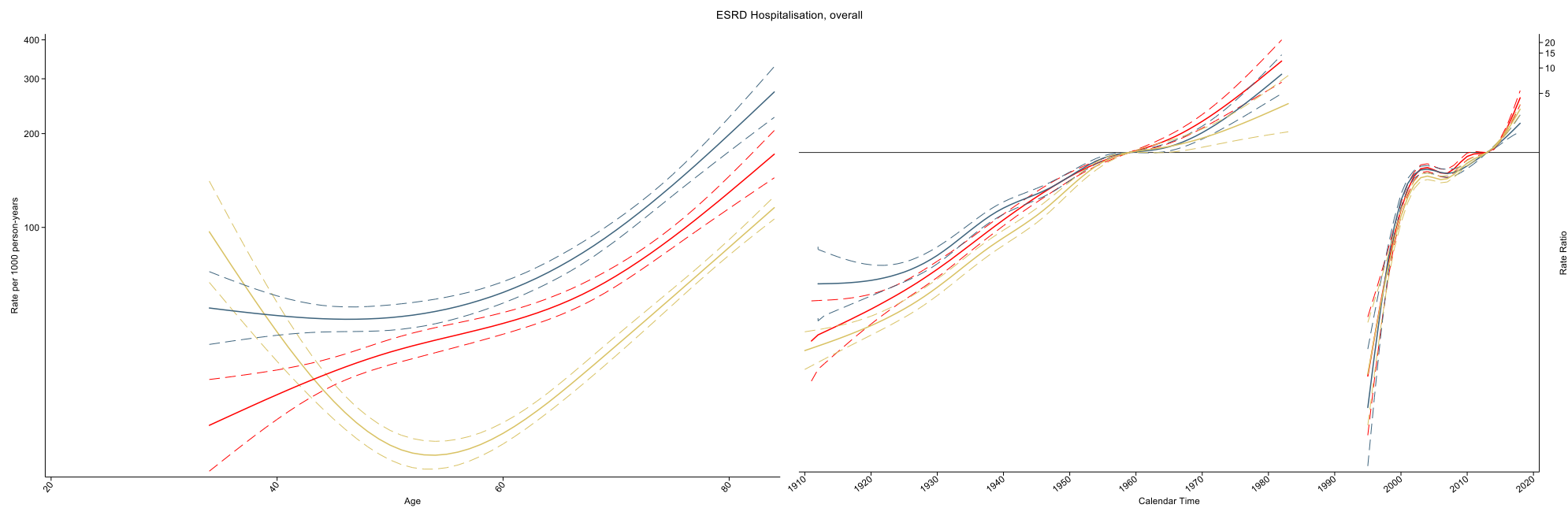
Left panel: adjusted rates of ESRD hospitalisation by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for ESRD hospitalisation (relative to reference birth cohort 1960) by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for ESRD hospitalisation (relative to reference year 2013) by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S62 Age-period-cohort influence on end-stage renal disease (ESRD) hospitalisation in female diabetes population: DCSS, 1994-2018**

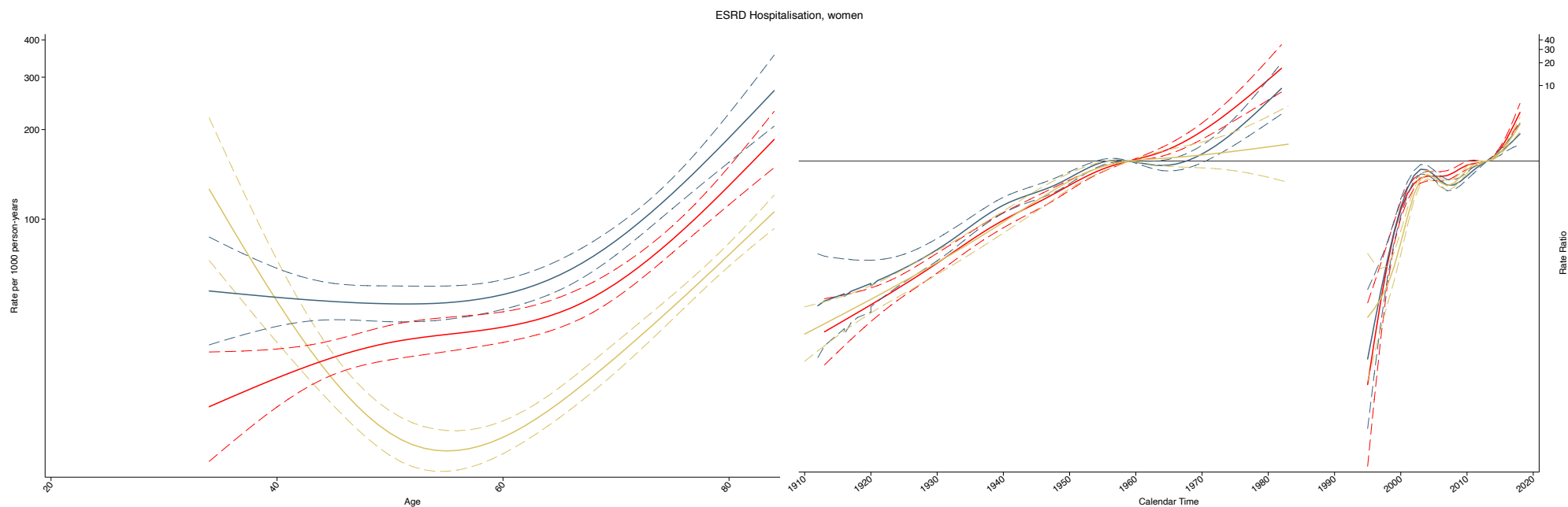
Left panel: adjusted rates of ESRD hospitalisation in female diabetes population by age (35-85) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for ESRD hospitalisation (relative to reference birth cohort 1960) in female diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for ESRD hospitalisation (relative to reference year 2013) in female diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S63 Age-period-cohort influence on end-stage renal disease (ESRD) hospitalisation in male diabetes population: DCSS, 1994-2018**

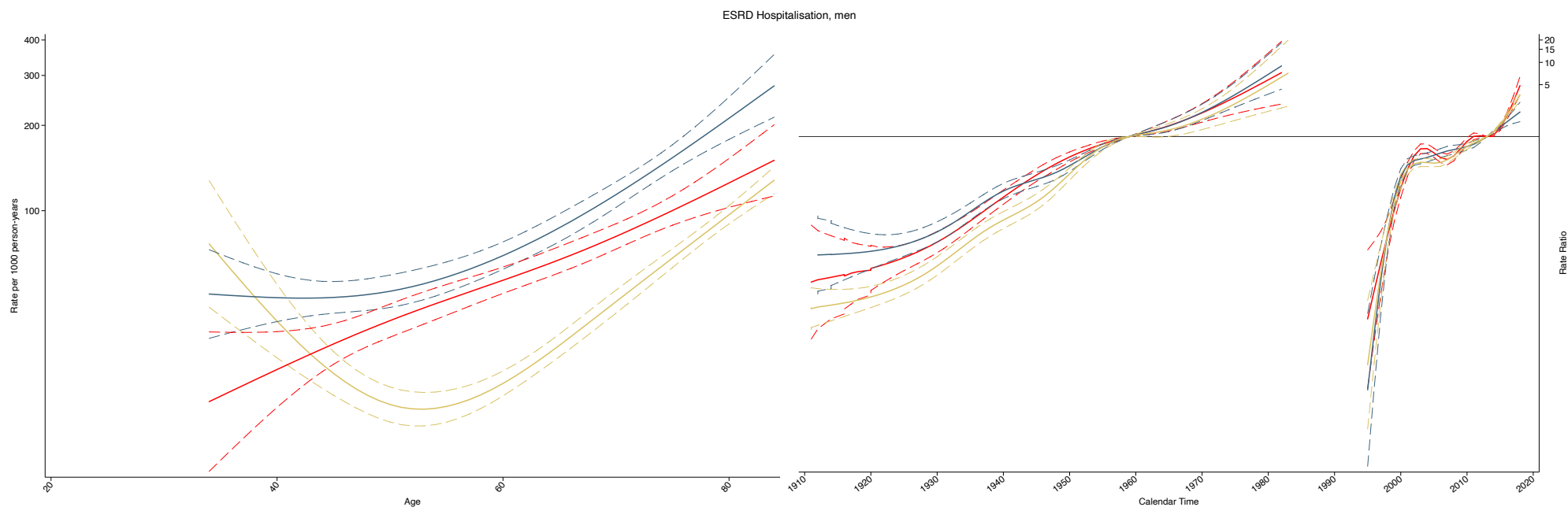
Left panel: adjusted rates of ESRD hospitalisation in male diabetes population by age (35-85) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for ESRD hospitalisation (relative to reference birth cohort 1960) in male diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for ESRD hospitalisation (relative to reference year 2013) in male diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S64 Age-period-cohort influence on end-stage renal disease (ESRD) hospitalisation in the least deprived diabetes population: DCSS, 1994-2018**

Left panel: adjusted rates of ESRD hospitalisation in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

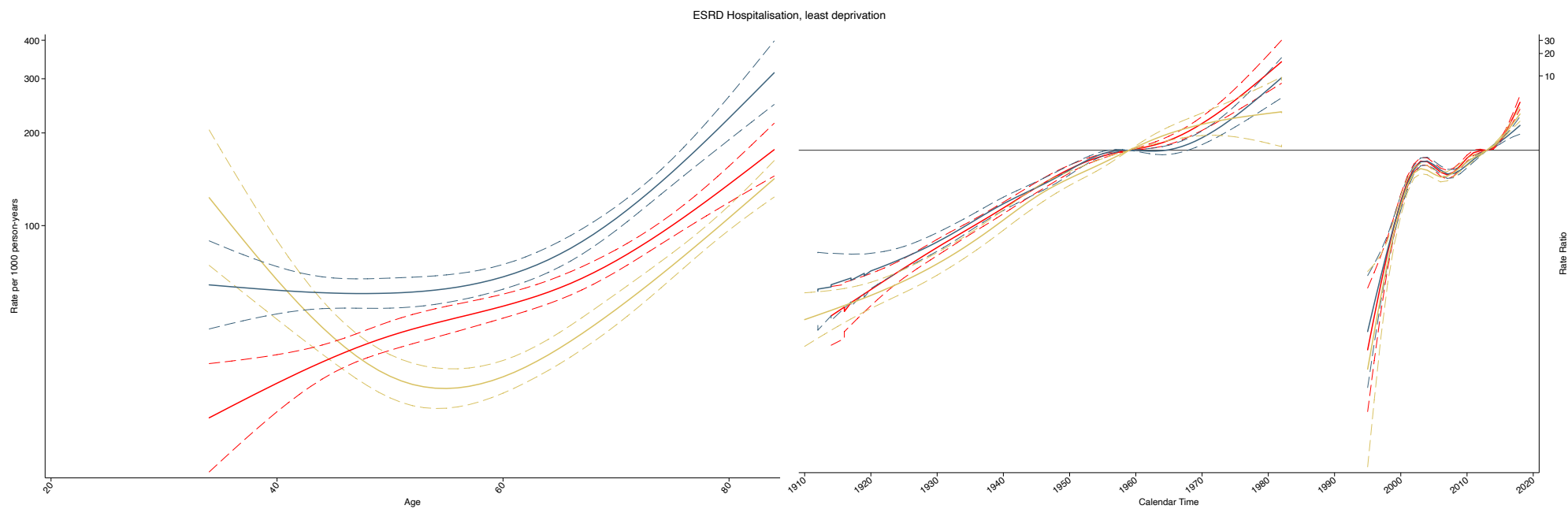
Middle panel: adjusted rates ratio for ESRD hospitalisation (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer hospitalisation (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

The least deprivation indicates NZDep2013 equals 1 or 2.



**Figure-S65 Age-period-cohort influence on end-stage renal disease (ESRD) hospitalisation in the diabetes population with IMD equals 2: DCSS, 1994-2018**

Left panel: adjusted rates of ESRD hospitalisation in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

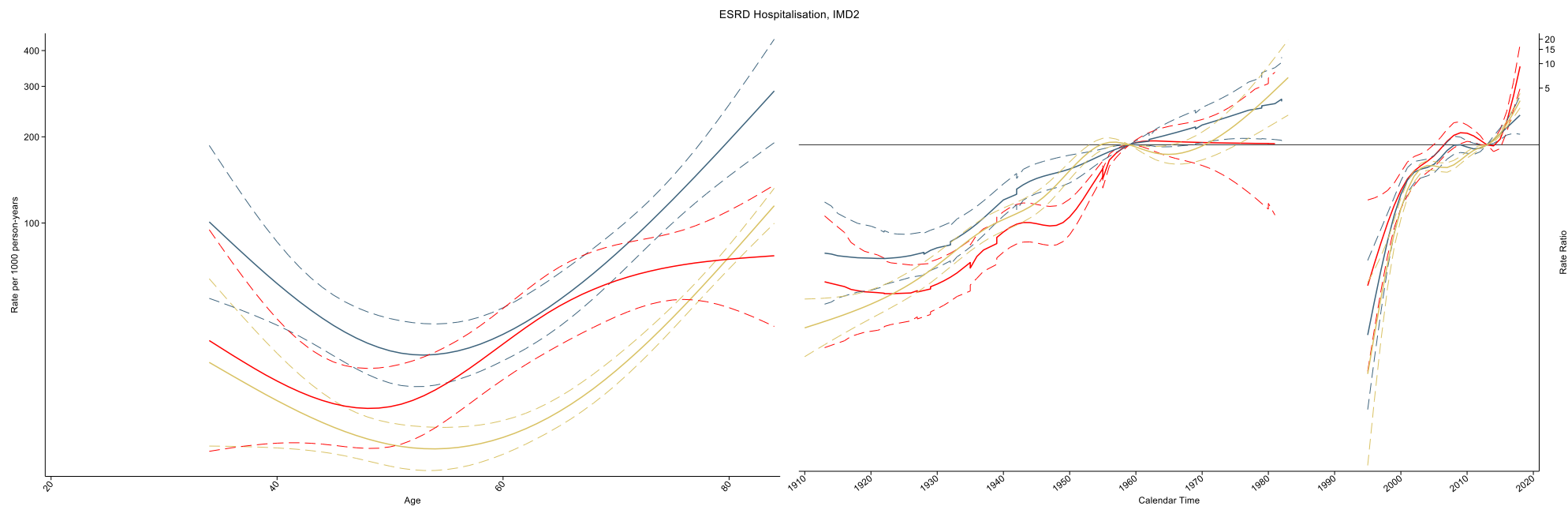
Middle panel: adjusted rates ratio for ESRD hospitalisation (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer hospitalisation (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

IMD indicates index of multiple deprivation. IMD=2 was defined as NZDep2013 equals 3 or 4.





**Figure-S66 Age-period-cohort influence on end-stage renal disease (ESRD) hospitalisation in the diabetes population with IMD equals 3: DCSS, 1994-2018**

Left panel: adjusted rates of ESRD hospitalisation in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

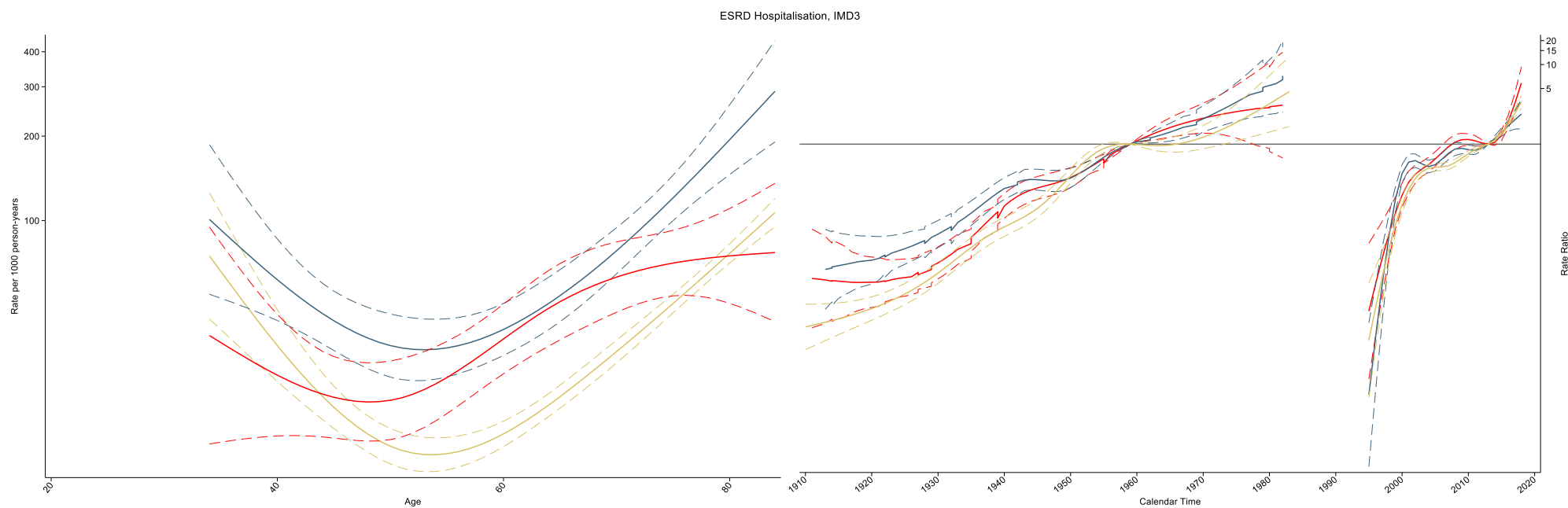
Middle panel: adjusted rates ratio for ESRD hospitalisation (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer hospitalisation (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

IMD indicates index of multiple deprivation. IMD=3 was defined as NZDep2013 equals 5 or 6.



**Figure-S67 Age-period-cohort influence on end-stage renal disease (ESRD) hospitalisation in the diabetes population with IMD equals 4: DCSS, 1994-2018**

Left panel: adjusted rates of ESRD hospitalisation in the least deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

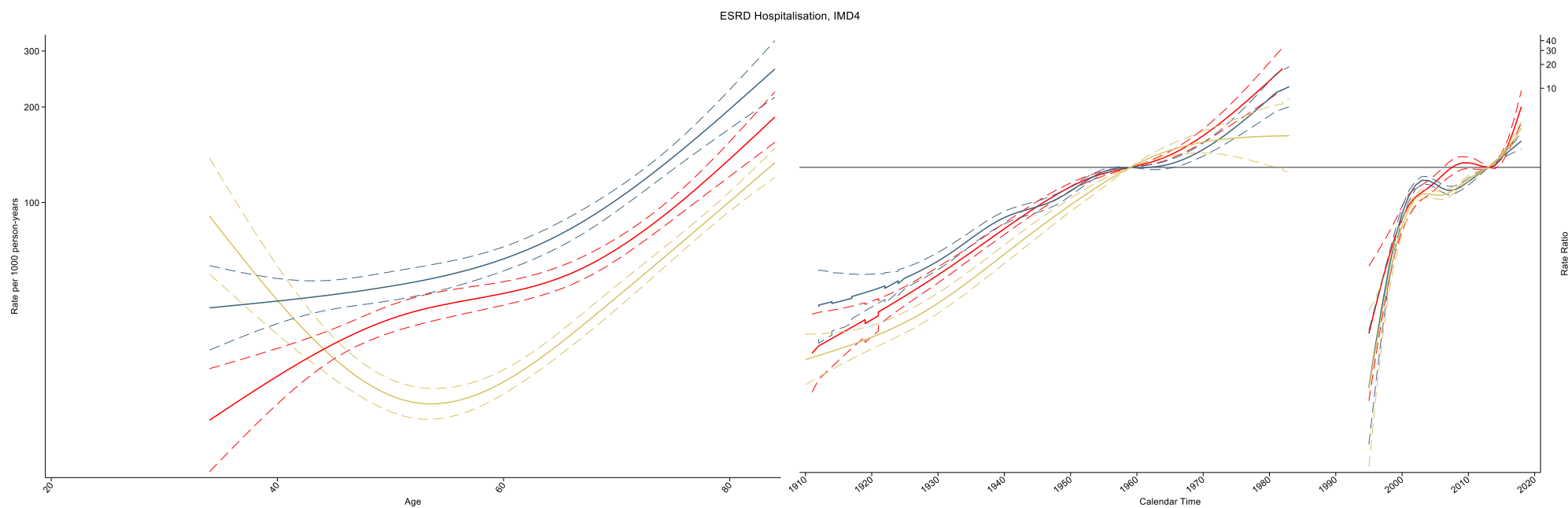
Middle panel: adjusted rates ratio for ESRD hospitalisation (relative to reference birth cohort 1960) in the least deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer hospitalisation (relative to reference year 2013) in the least deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

IMD indicates index of multiple deprivation. IMD=4 was defined as NZDep2013 equals 7 or 8.



**Figure-S68 Age-period-cohort influence on end-stage renal disease hospitalisation in the most deprived diabetes population: DCSS, 1994-2018**

Left panel: adjusted rates of ESRD hospitalisation in the most deprived diabetes population by age (35-84) with adjustment of period and birth cohort effects.

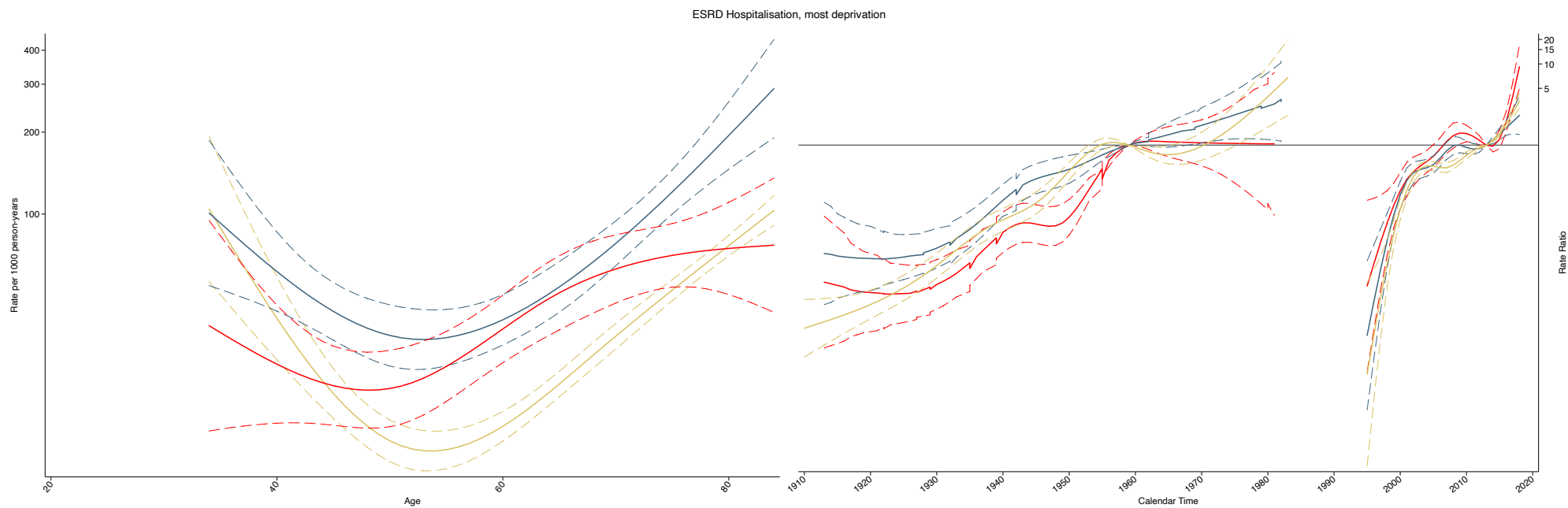
Middle panel: adjusted rates ratio for ESRD hospitalisation (relative to reference birth cohort 1960) in the most deprived diabetes population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for cancer hospitalisation (relative to reference year 2013) in the most deprived diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

The most deprivation indicates NZDep2013 equals 9 or 10.



**Figure-S69 Age-period-cohort influence on end-stage renal disease (ESRD) hospitalisation in not-current smoking diabetes population: DCSS, 1994-2018**

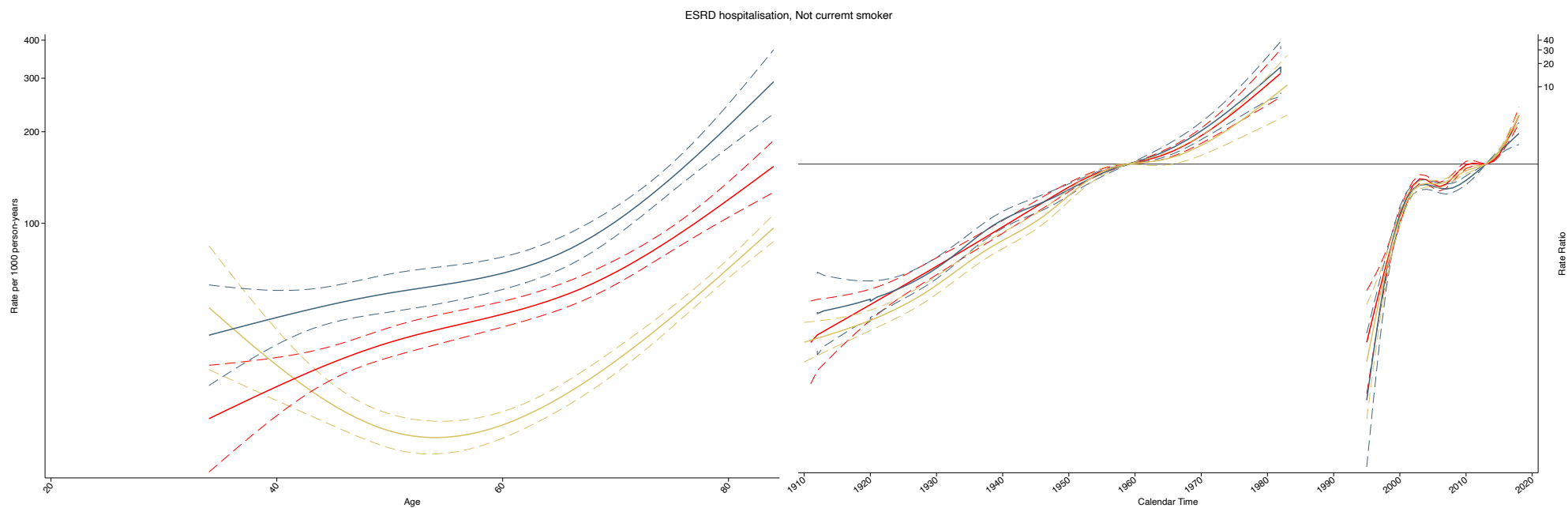
Left panel: adjusted rates of ESRD hospitalisation in the not-current smoking diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for ESRD hospitalisation (relative to reference birth cohort 1960) in the not-current smoking population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for ESRD hospitalisation (relative to reference year 2013) in the not-current smoking diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S70 Age-period-cohort influence on end-stage renal disease (ESRD) hospitalisation in current smoking diabetes population: DCSS, 1994-2018**

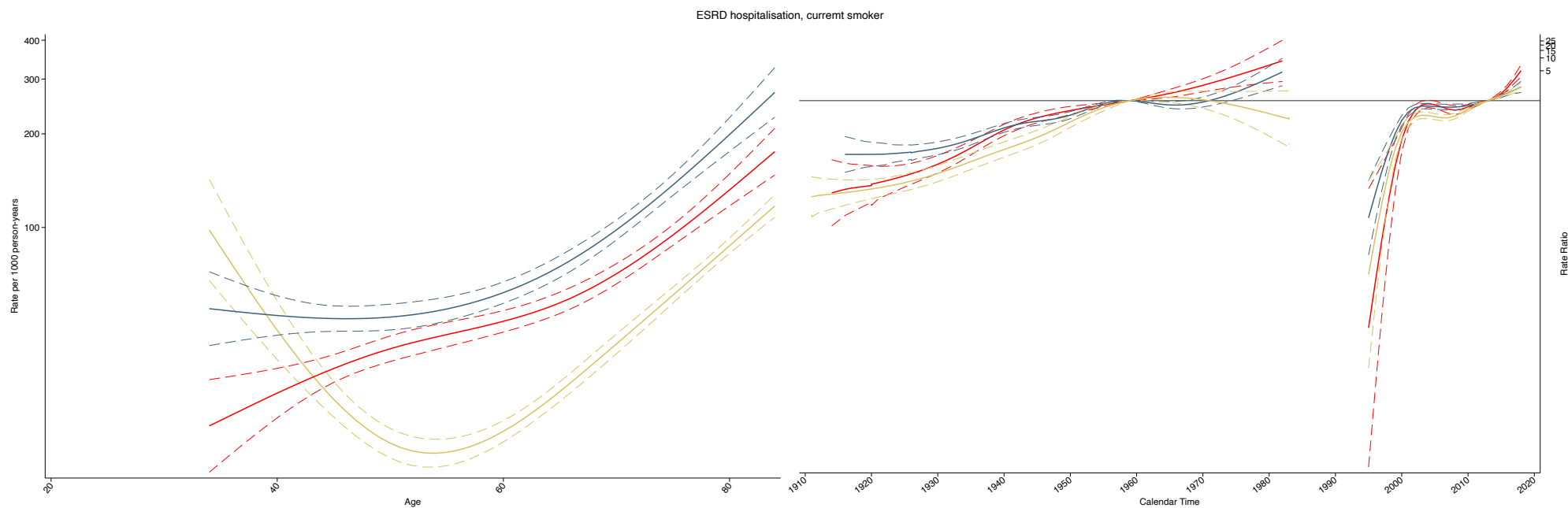
Left panel: adjusted rates of ESRD hospitalisation in the current smoking diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for ESRD hospitalisation (relative to reference birth cohort 1960) in the current smoking population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for ESRD hospitalisation (relative to reference year 2013) in the current smoking diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S71 Age-period-cohort influence on end-stage renal disease (ESRD) hospitalisation in non-obese diabetes population: DCSS, 1994-2018**

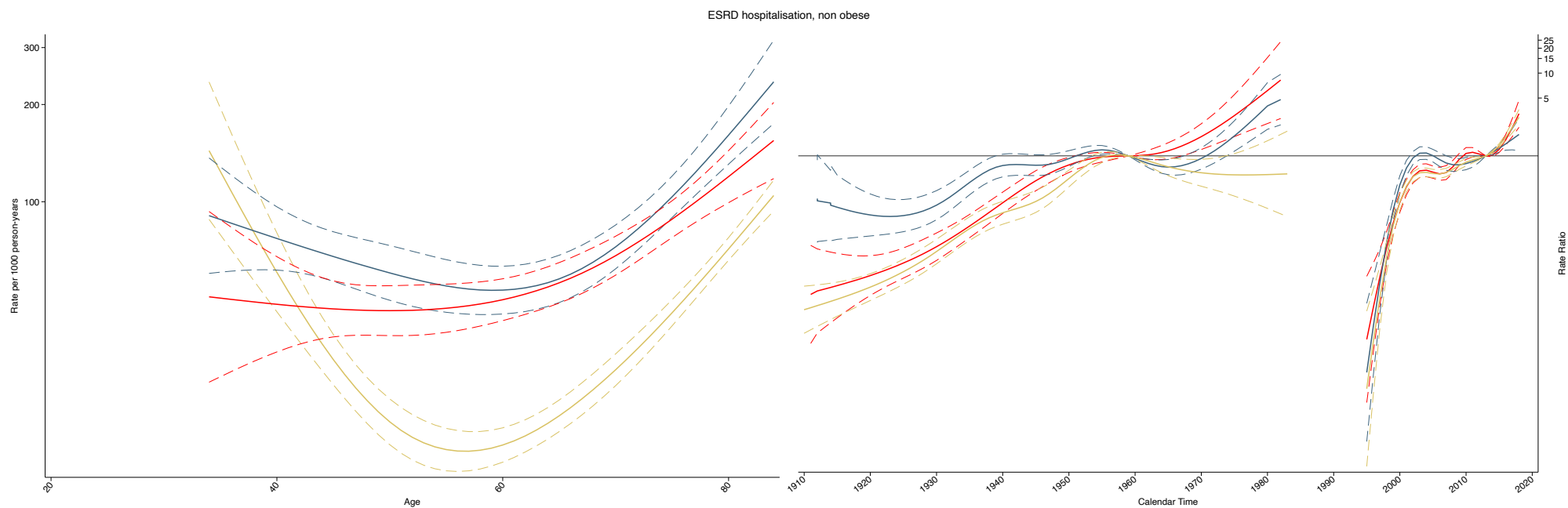
Left panel: adjusted rates of ESRD hospitalisation in the non-obese diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for ESRD hospitalisation (relative to reference birth cohort 1960) in the non-obese population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for ESRD hospitalisation (relative to reference year 2013) in the non-obese diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.



**Figure-S72 Age-period-cohort influence on end-stage renal disease (ESRD) hospitalisation in obese diabetes population: DCSS, 1994-2018**

Left panel: adjusted rates of ESRD hospitalisation in the obese diabetes population by age (35-84) with adjustment of period and birth cohort effects.

Middle panel: adjusted rates ratio for ESRD hospitalisation (relative to reference birth cohort 1960) in the obese population by birth year (1910-1980) with adjustment of age and period effects.

Right panel: adjusted rates ratio for ESRD hospitalisation (relative to reference year 2013) in the obese diabetes population by calendar year (1994-2018) with adjustment of age and birth cohort effects.

Solid line indicates point estimations and dash line indicates 95% confidence interval.

Yellow, blue and red line represents European, Māori and Pacific ethnicity, respectively.

