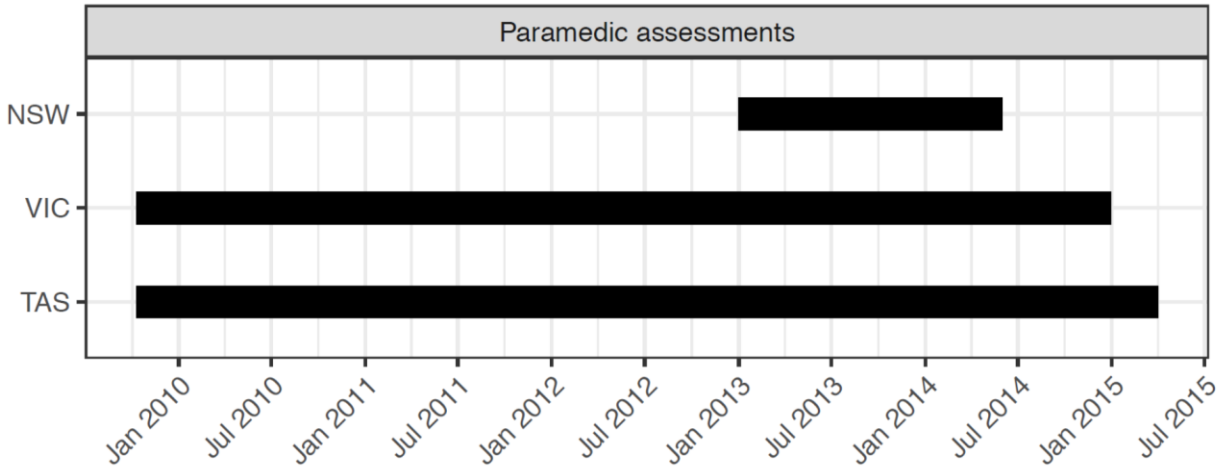
Supplemental digital content

Ambient particulate matter and paramedic assessments of acute diabetic, cardiovascular and respiratory conditions.



eFigure 1. Availability of paramedic assessment data in each State.

eTable 1. Daily mean number of paramedic assessments by sex and age groups (>65 years, 51-65 year, 16-50 years, 0-15 years)

Paramedic assessment	Female	Male	Age>65	Age 51-65	Age 16-50	Age 0-15
Diabetes related outcomes						
Hypoglycaemia	6	7	5	2	4	0
Hyperglycaemia	3	3	2	1	2	0
Cardiovascular outcomes						
Acute coronary syndrome	13	18	17	9	5	0
Angina	7	7	8	3	1	0
Heart failure	6	5	9	1	0	0
Arrhythmia	13	11	14	4	3	0
Faint	9	6	7	2	4	1
Stroke	7	6	9	2	1	0
Transient Ischaemic Attack	4	4	6	1	0	0
Respiratory outcomes						
Lower respiratory infections	16	16	20	4	4	2
Asthma	7	6	3	2	4	3
Chronic obstructive pulmonary disease	4	6	7	2	0	0
Croup	3	5	0	0	0	6

eTable S. Odds Ratios and 95%CI per 10µg/m^3 increase in $PM_{2.5}$ for paramedic assessments by sex and age-group (0-15, 16-50, 51-65, >65 years). **Bold** p< 0.5. The value NA indicates that there were an insufficient number of cases for the analysis.

Paramedic assessments	Lag	Female	Male	Age>65	Age 51-65	Age 16-50	Age 0-15
Diabetes related outcomes							
Hypoglycaemia	0	1.06(0.98-1.13)	1.07(1.01-1.14)	1.04(0.97-1.12)	1.10(1.00-1.20)	1.06(0.99-1.15)	NA
	1	1.03(0.96-1.11)	1.09(1.02-1.15)	1.08(1.01-1.16)	1.01(0.91-1.11)	1.07(0.99-1.16)	
	2	1.04(0.97-1.12)	1.02(0.96-1.08)	1.04(0.97-1.12)	1.01(0.92-1.11)	1.03(0.95-1.12)	
Hyperglycaemia	0	0.70(0.88-1.07)	0.95(0.86-1.05)	0.99(0.89-1.10)	0.93(0.79-1.08)	0.96(0.85-1.08)	NA
	1	1.02(0.93-1.13)	1.05(0.95-1.16)	1.06(0.95-1.17)	0.97(0.84-1.13)	1.04(0.92-1.18)	
	2	1.11(1.01-1.23)	0.96(0.87-1.06)	1.06(0.96-1.18)	1.03(0.89-1.19)	0.96(0.85-1.09)	
Cardiovascular outcomes							
Acute coronary syndrome	0	0.99(0.94-1.03)	1.05(1.01-1.09)	1.02(0.98-1.06)	1.03(0.98-1.08)	1.01(0.94-1.08)	NA
	1	0.97(0.93-1.02)	1.02(0.98-1.06)	1.01(0.98-1.05)	0.98(0.93-1.03)	0.98(0.92-1.05)	
	2	1.01(0.97-1.05)	1.03(0.99-1.07)	1.04(1.00-1.08)	1.01(0.96-1.06)	0.97(0.91-1.04)	
Angina	0	1.05(0.98-1.12)	1.03(0.97-1.09)	1.03(0.97-1.09)	1.04(0.95-1.14)	1.07(0.94-1.23)	NA
	1	1.02(0.96-1.09)	1.05(0.99-1.12)	1.04(0.98-1.10)	1.06(0.96-1.16)	1.02(0.89-1.17)	
	2	0.99(0.93-1.05)	1.01(0.94-1.07)	1.00(0.94-1.06)	1.01(0.92-1.11)	0.98(0.87-1.12)	
Heart failure	0	1.01(0.94-1.08)	1.02(0.95-1.10)	1.01(0.96-1.07)	0.99(0.83-1.19)	NA	NA
	1	1.02(0.95-1.09)	1.08(1.01-1.16)	1.04(0.99-1.10)	1.11(0.93-1.32)		
	2	1.11(1.04-1.19)	1.02(0.95-1.10)	1.07(1.01-1.12)	1.01(0.84-1.21)		
Arrhythmia	0	1.05(1.01-1.10)	1.05(1.00-1.11)	1.07(1.02-1.11)	1.01(0.94-1.09)	1.03(0.95-1.11)	NA
	1	1.01(0.97-1.06)	1.03(0.98-1.08)	1.03(0.98-1.07)	1.05(0.97-1.13)	0.97(0.89-1.05)	
	2	1.01(0.97-1.06)	1.02(0.97-1.07)	1.02(0.98-1.07)	1.01(0.94-1.09)	1.01(0.92-1.09)	
Faint	0	1.08(1.03-1.14)	1.10(1.03-1.18)	1.12(1.06-1.19)	1.04(0.93-1.15)	1.07(0.99-1.15)	1.02(0.84-1.24)
	1	1.04(0.99-1.10)	1.03(0.96-1.10)	1.02(0.96-1.09)	1.07(0.96-1.19)	1.04(0.96-1.13)	1.03(0.85-1.26)
	2	0.99(0.94-1.04)	1.00(0.94-1.08)	0.98(0.92-1.04)	1.04(0.94-1.16)	1.01(0.94-1.09)	0.93(0.77-1.13)

Stroke	0	1.03(0.96-1.10)	1.01(0.95-1.08)	1.02(0.97-1.07)	0.99(0.89-1.1)	1.12(0.96-1.31)	NA
	1	0.99(0.93-1.06)	1.00(0.93-1.06)	0.98(0.93-1.03)	1.05(0.94-1.17)	1.02(0.88-1.18)	
	2	1.00(0.94-1.07)	0.99(0.93-1.05)	0.98(0.93-1.03)	1.02(0.92-1.14)	1.07(0.95-1.20)	
Transient ischaemic attack	0	0.96(0.89-1.04)	1.02(0.94-1.11)	0.99(0.93-1.06)	0.97(0.83-1.12)	NA	NA
	1	0.99(0.91-1.07)	0.93(0.85-1.01)	0.93(0.87-1.00)	1.14(0.98-1.32)		
	2	0.98(0.91-1.06)	0.99(0.91-1.08)	0.98(0.92-1.05)	1.05(0.90-1.22)		
Respiratory Outcomes							
Lower respiratory infections	0	1.01(0.97-1.05)	1.01(0.97-1.06)	1.00(0.97-1.04)	1.02(0.94-1.10)	1.04(0.96-1.12)	1.05(0.95-1.16)
	1	1.02(0.98-1.07)	1.01(0.97-1.06)	1.06(1.02-1.09)	0.92(0.85-1.00)	1.02(0.95-1.11)	0.93(0.84-1.03)
	2	1.00(0.96-1.05)	1.03(0.99-1.07)	1.05(1.01-1.08)	0.96(0.89-1.03)	1.02(0.95-1.11)	0.88(0.79-0.98)
Asthma	0	1.01(0.95-1.07)	1.00 (0.94-1.07)	0.94(0.85-1.03)	1.03(0.92-1.15)	1.02(0.94-1.10)	1.04(0.96-1.12)
	1	1.07(1.01-1.14)	1.04(0.97-1.11)	1.02(0.93-1.12)	1.07(0.96-1.19)	1.06(0.98-1.14)	1.09(1.00-1.17)
	2	1.07(1.01-1.14)	1.02(0.96-1.09)	1.02(0.93-1.12)	1.06(0.96-1.17)	1.09(1.01-1.18)	1.03(0.95-1.11)
Chronic obstructive pulmonary disease	0	1.00(0.92-1.09)	1.04(0.97-1.11)	1.03(0.97-1.09)	1.02(0.91-1.15)	NA	NA
	1	1.08(0.99-1.17)	1.06(0.99-1.14)	1.09(1.02-1.16)	1.03(0.92-1.15)		
	2	1.04(0.96-1.13)	1.02(0.95-1.09)	1.02(0.96-1.09)	1.02(0.91-1.14)		
Croup	0	1.09(0.97-1.21)	1.08(1.01-1.17)	NA	NA	NA	1.08(1.02-1.15)
	1	1.12(1.00-1.26)	1.08(1.00-1.17)				1.09(1.03-1.17)
	2	1.06(0.94-1.18)	1.04(0.96-1.12)				1.05(0.98-1.11)

eTable 3. Percentage of paramedic assessments transferred to hospital, Tasmanian data only

Paramedic assessment	N	Transported to hospital (percent)	Most common reason not transported
Diabetes related outcomes			
Hypoglycaemia	3,174	50	not required
Hyperglycaemia	2,040	88	not required
Cardiovascular outcomes			
Acute coronary syndrome	11,470	99	required - declined/died at scene
Angina	9,180	96	required - patient declined
Heart failure	3,910	96	required - patient declined
Arrhythmia	9,684	95	not required
Faint	5,414	71	not required
Stroke	5,422	99	required - patient declined
Transient Ischaemic Attack	3,128	95	required - patient declined
Respiratory outcomes			
Lower respiratory infections	14,372	87	not required
Asthma	3,527	78	required - patient declined
Chronic obstructive pulmonary disease	3,192	91	required - patient declined
Croup	1,731	87	not required