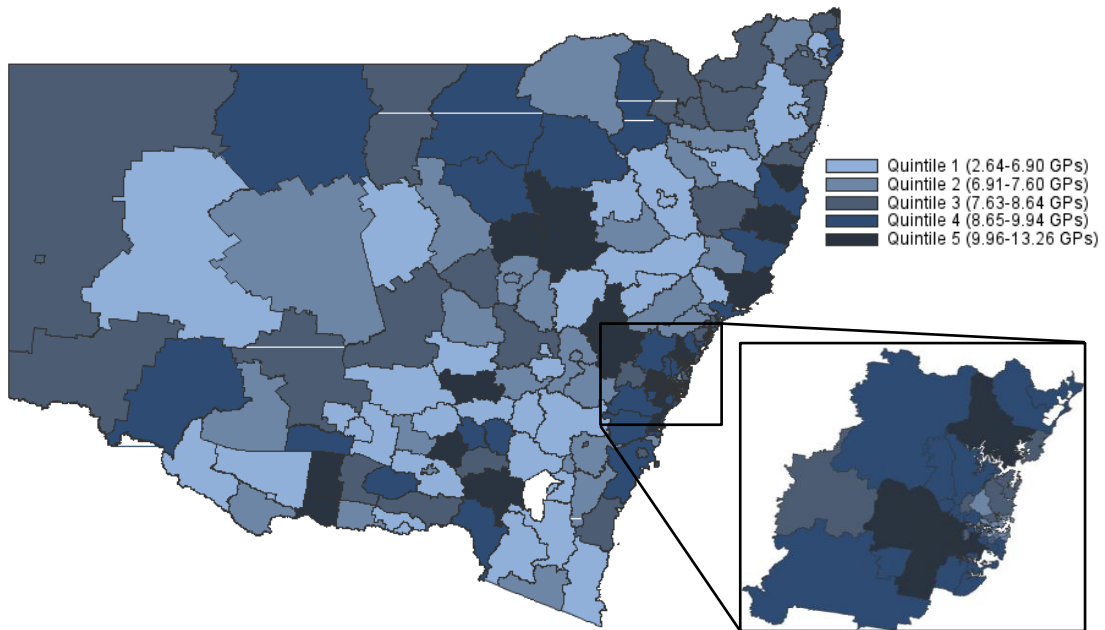


Supplementary Table 1: Conditions included in the Australian 2012 National Healthcare Agreement preventable hospitalisation indicator

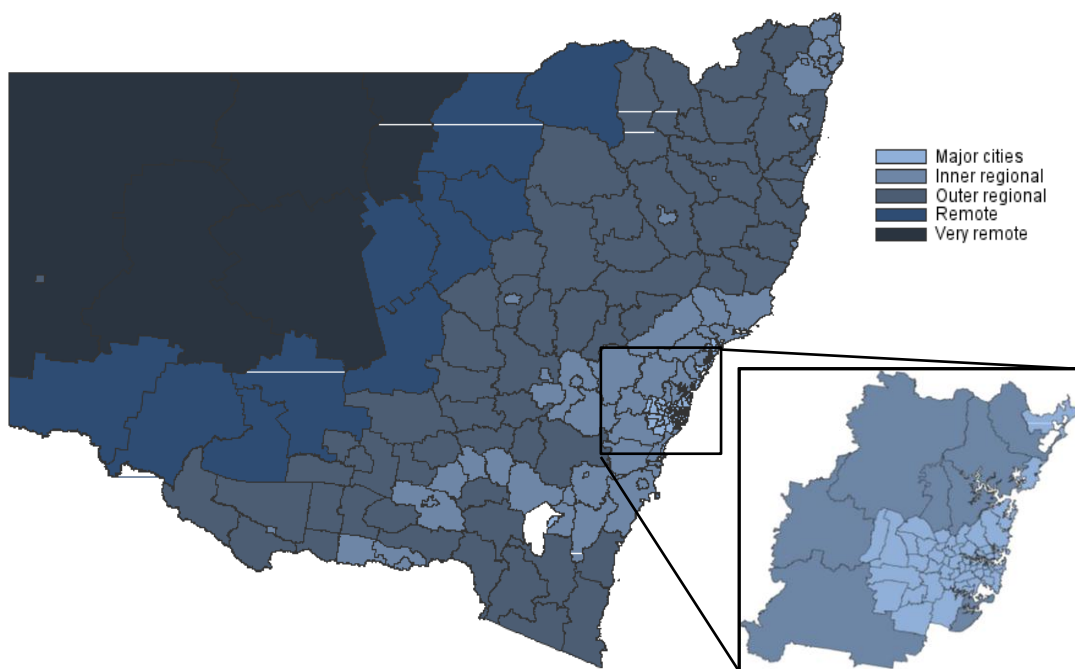
Category	ICD-10-AM diagnosis and procedure codes
Chronic	
Angina	I20, I24.0, I24.8, I24.9 as principal diagnosis only, exclude cases with procedure codes not in blocks [1820] to [2016]
Asthma	J45, J46 as principal diagnosis only
Chronic obstructive pulmonary disease (COPD)	J20, J41, J42, J43, J44, J47 as principal diagnosis only, J20 only with additional diagnoses of J41, J42, J43, J44, J47
Congestive cardiac failure	I50, I11.0, J81 as principal diagnosis only, exclude cases with the following procedure codes: 33172-00, 35304-00, 35305-00, 35310-02, 35310-00, 38281-11, 38281-07, 38278-01, 38278-00, 38281-02, 38281-01, 38281-00, 38256-00, 38278-03, 38284-00, 38284-02, 38521-09, 38270-01, 38456-19, 38456-15, 38456-12, 38456-11, 38456-10, 38456-07, 38456-01, 38470-00, 38475-00, 38480-02, 38480-01, 38480-00, 38488-06, 38488-04, 38489-04, 38488-02, 38489-03, 38487-00, 38489-02, 38488-00, 38489-00, 38490-00, 38493-00, 38497-04, 38497-03, 38497-02, 38497-01, 38497-00, 38500-00, 38503-00, 38505-00, 38521-04, 38606-00, 38612-00, 38615-00, 38653-00, 38700-02, 38700-00, 38739-00, 38742-02, 38742-00, 38745-00, 38751-02, 38751-00, 38757-02, 38757-01, 38757-00, 90204-00, 90205-00, 90219-00, 90224-00, 90214-00, 90214-02.
Diabetes complications	E10–E14.9 as principal diagnoses, and E10–E14.9 as additional diagnoses where the principal diagnosis was: hypersmolarity (E87.0), acidosis (E87.2), transient ischaemic attack (G45), nerve disorders and neuropathies (G50–G64), cataracts and lens disorders (H25–H28), retinal disorders (H30–H36), glaucoma (H40–H42), myocardial infarction (I21–I22), other coronary heart diseases (I20, I23–I25), heart failure (I50), stroke and sequelae (I60–I64, I69.0–I69.4), peripheral vascular disease (I70–I74), gingivitis and periodontal disease (K05), kidney diseases including end-stage renal disease (N00–N29), and renal dialysis (Z49)
Hypertension	I10, I11.9 as principal diagnosis only, exclude cases with procedure codes according to the list of procedures excluded from the Congestive cardiac failure category above.
Iron deficiency anaemia	D50.1, D50.8, D50.9 as principal diagnosis only.
Nutritional deficiencies	E40, E41, E42, E43, E55.0, E64.3 as principal diagnosis only.
Rheumatic heart disease	I00 to I09 as principal diagnosis only. (Note: includes acute rheumatic fever)
Acute	
Appendicitis with generalised peritonitis	K35.0 in any diagnosis field
Cellulitis	L03, L04, L08, L88, L98.0, L98.3 as principal diagnosis only, exclude cases with any procedure except those in blocks 1820 to 2016 or if procedure is 30216-02, 30676-00, 30223-02, 30064-00, 34527-01, 34527-00, 90661-00 and this is the only listed procedure
Convulsions and epilepsy	G40, G41, O15, R56 as principal diagnosis only
Dehydration and gastroenteritis	A09.9, E86, K52.2, K52.8, K52.9 as principal diagnosis only.
Dental conditions	K02, K03, K04, K05, K06, K08, K09.8, K09.9, K12, K13 as principal diagnosis only.
Ear, nose and throat infections	H66, H67, J02, J03, J06, J31.2 as principal diagnosis only.
Gangrene	R02 in any diagnosis field
Pelvic inflammatory disease	N70, N73, N74 as principal diagnosis only.
Perforated/bleeding ulcer	K25.0, K25.1, K25.2, K25.4, K25.5, K25.6, K26.0, K26.1, K26.2, K26.4, K26.5, K26.6, K27.0, K27.1, K27.2, K27.4, K27.5, K27.6, K28.0, K28.1, K28.2, K28.4, K28.5, K28.6 as principal diagnosis only.
Pyelonephritis	N10, N11, N12, N13.6, N39.0 as principal diagnosis only.
Vaccine-preventable	
Influenza and pneumonia	J10, J11, J13, J14, J15.3, J15.4, J15.7, J15.9, J16.8, J18.1, J18.8 in any diagnosis field, excludes cases with additional diagnosis of D57 (sickle-cell disorders) and people under 2 months
Other vaccine-preventable conditions	A35, A36, A37, A80, B05, B06, B16.1, B16.9, B18.0, B18.1, B26, G00.0, M01.4 in any diagnosis field

Supplementary Figure 1: Distribution of: (a) density of full time workload equivalent (FWE) general practitioners (GPs) per 10,000 residents across Statistical Local Areas (SLAs) in NSW. (b) Remoteness categories across SLAs in NSW, using remoteness categories from the Accessibility/Remoteness Index of Australia (ARIA+).

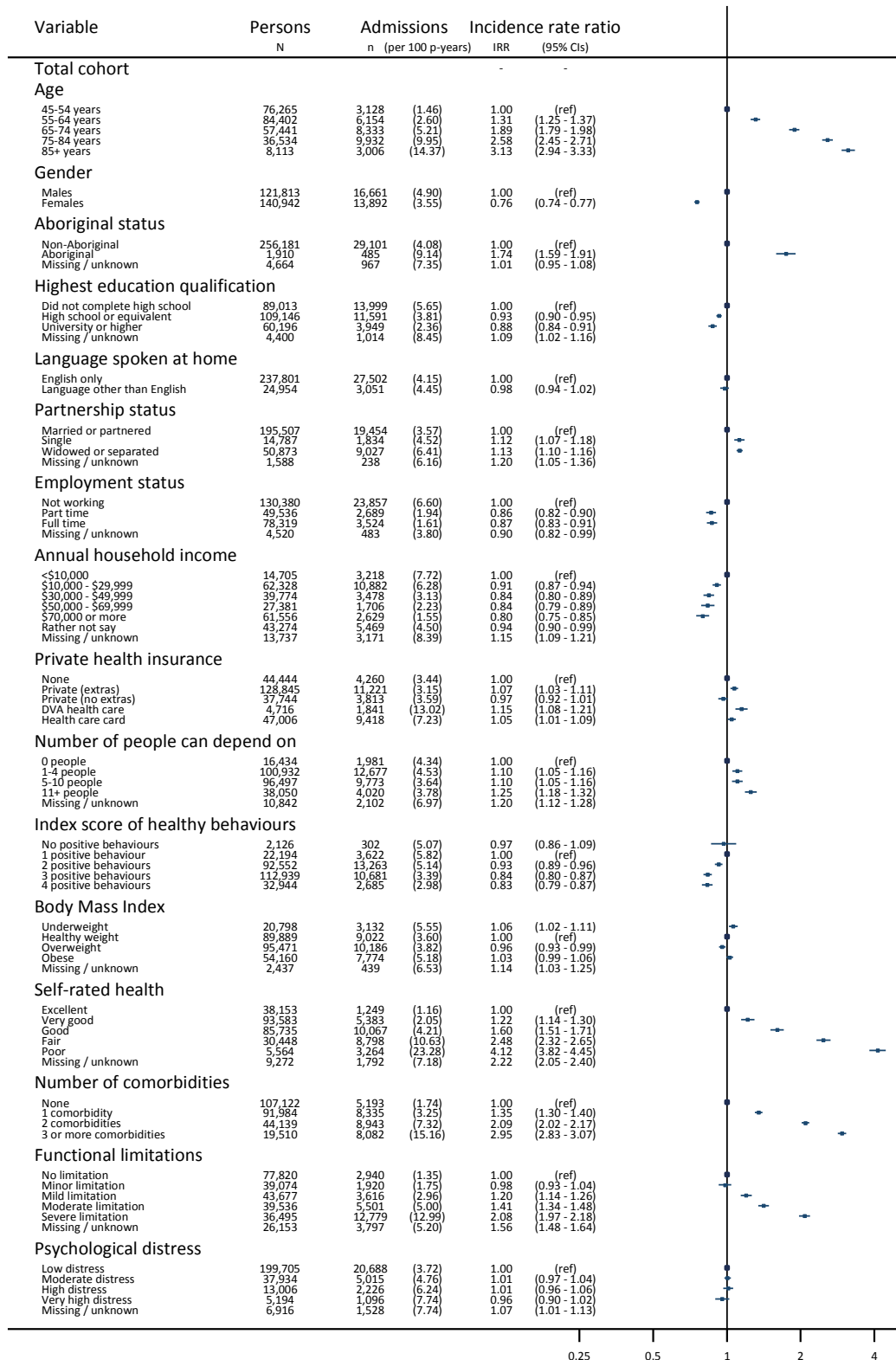
(a) Quintiles of the density of full time workload equivalent GPs per 10,000 residents



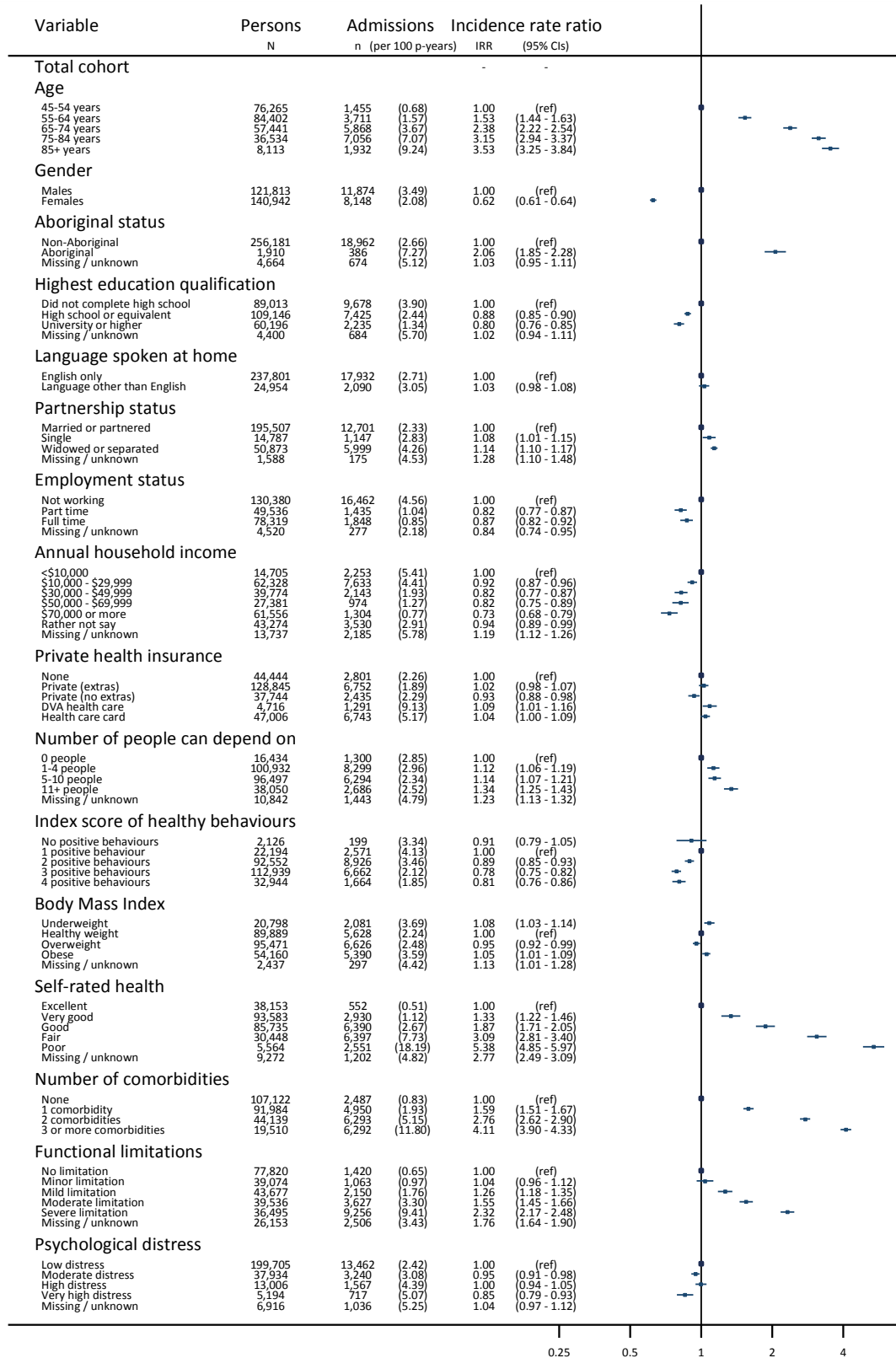
(b) Remoteness of area (ARIA+)



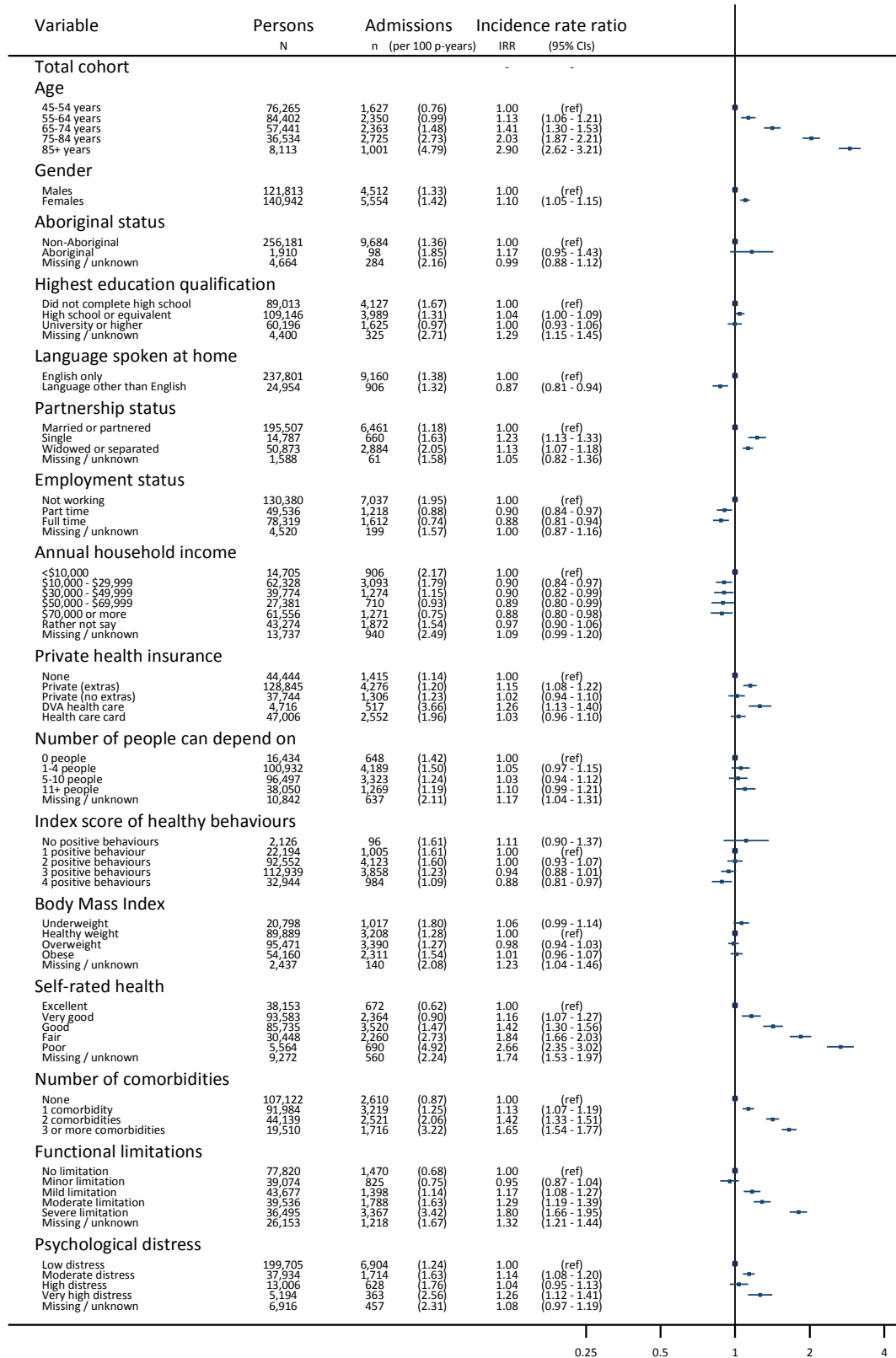
Supplementary Figure 2: Number of admissions and incidence rate ratios (IRRs) for person-level predictors of any preventable hospitalisation, in multilevel Poisson models simultaneously adjusted for all person-level variables and area-level quintiles of full time workload equivalent GPs



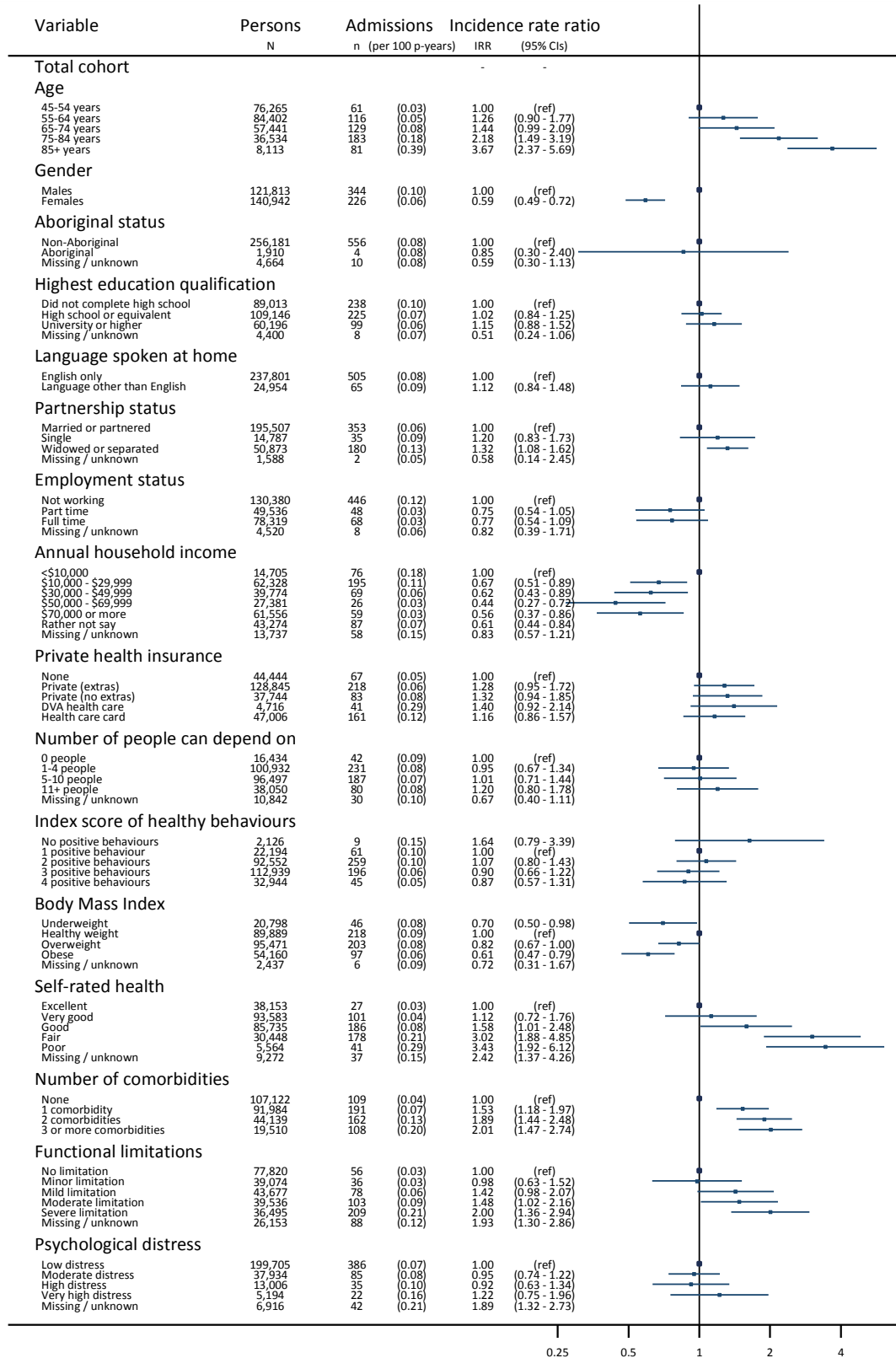
Supplementary Figure 3: Number of admissions and incidence rate ratios (IRRs) for person-level predictors of chronic preventable hospitalisations, in multilevel Poisson models simultaneously adjusted for all person-level variables and area-level quintiles of full time workload equivalent GPs



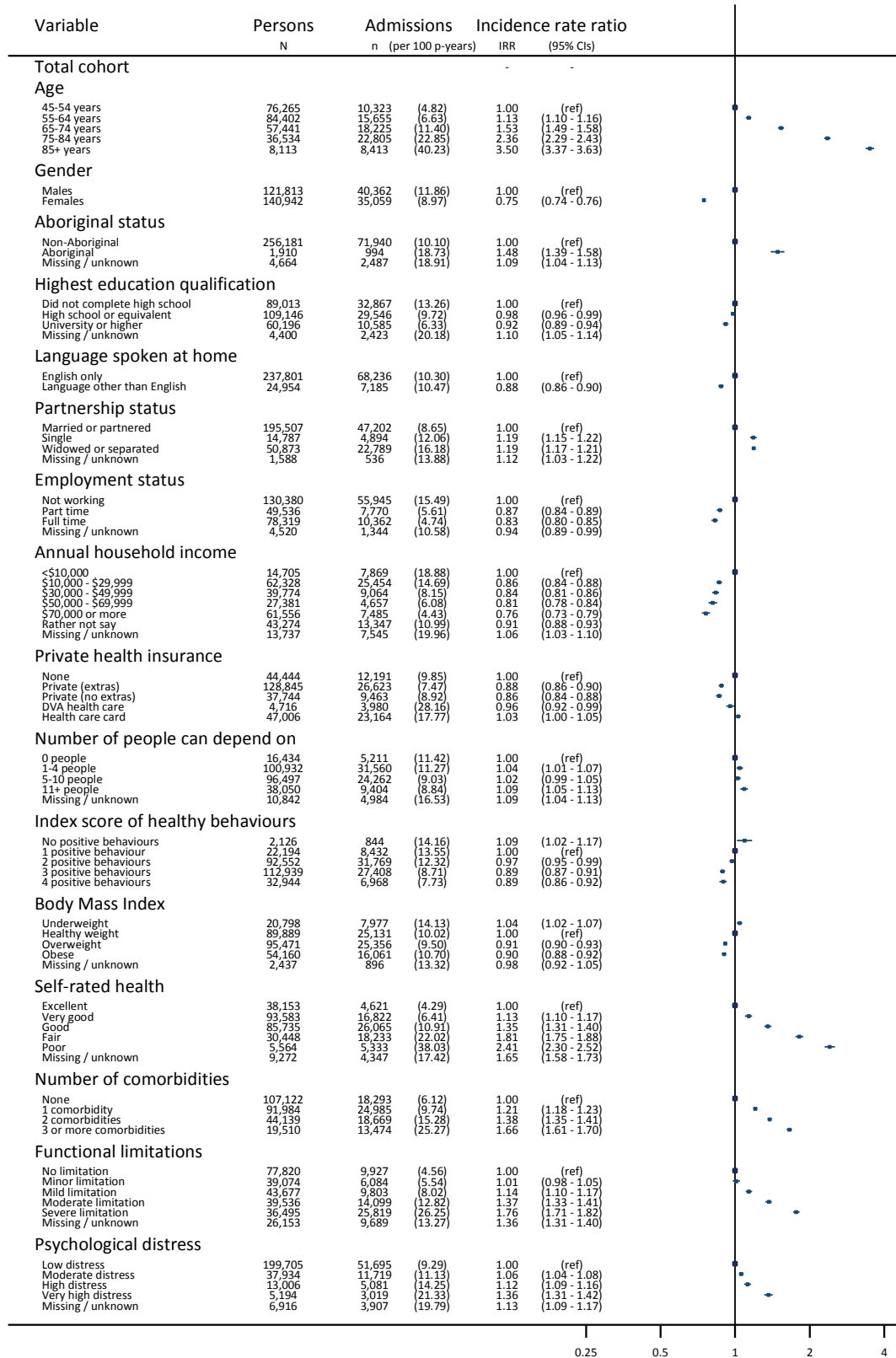
Supplementary Figure 4: Number of admissions and incidence rate ratios (IRRs) for person-level predictors of acute preventable hospitalisations, in multilevel Poisson models simultaneously adjusted for all person-level variables and area-level quintiles of full time workload equivalent GPs



Supplementary Figure 5: Number of admissions and incidence rate ratios (IRRs) for person-level predictors of vaccine-preventable hospitalisations, in multilevel Poisson models simultaneously adjusted for all person-level variables and area-level quintiles of full time workload equivalent GPs



Supplementary Figure 6: Number of admissions and incidence rate ratios (IRRs) for person-level predictors of 'non-preventable' emergency hospitalisation, in multilevel Poisson models simultaneously adjusted for all person-level variables and area-level quintiles of full time workload equivalent GPs



Supplementary Figure 7: Association between density of full time workload equivalent (FWE) general practitioners (GPs) per capita within Statistical Local Areas, with the rate of preventable and 'non-preventable' hospitalisations, from multilevel Poisson models adjusted for age and sex, and further adjusted for personal socio-demographic, health and behavioural characteristics.

