

Table S1. Classification codes for service outcomes

Service outcome	Included services	Danish National Health Service Register service codes
Annual chronic care consultations	Annual chronic care consultations	0120 (daytime)
Chronic care procedures	Lung function tests	7113 (daytime)
	Blood glucose measures	7136 (daytime)
	Electrocardiograms	7156 (daytime)
	Home blood pressure measures	2146 (daytime)
Outreach home visits	Outreach home visits	0120 (daytime)
Talk therapy	Talk therapy	6101 (daytime)
General contacts	Consultations	0101 (daytime)
	E-mail contacts	0105 (daytime)
	Telephone contacts	0201 (daytime)
	Ordinary home visits	04XX (daytime)

Table S2. Coding of covariates

Covariate	Coding levels	Description
Ethnicity	Danish	Danish origin, immigrants from western countries, or immigrants from non-western countries
	Western	
	Non-western	
Cohabitation status	Cohabiting	Living together as married/partners or single living
	Single	
Household income	1st quartile	Family disposable income (i.e. income after taxes and interest rates) adjusted for household composition according to the modified OECD scale and divided into quartiles.
	2nd quartile	
	3rd quartile	
	4th quartile	
Employment	Employed	Employed (including students), or unemployed (including sickness benefits, pensioners, early retirement and disability pensioners)
	Unemployed	
Education	< 10 years	Educational level was classified according to the UNESCO classification as low (≤ 10 years), medium (10–15 years), and high education (> 15 years).
	10-15 years	
	> 15 years	
	Unknown	

Table S3. The Danish Multimorbidity Index coding definitions^a

Category	Disease group	Coding definition	Diagnosis codes (ICD-10)	Diagnosis time frame	Drug codes (ATC)	Prescription time frame
Circulatory system	Hypertension	Diagnosis AND/OR prescriptions of antihypertensives, if not ischemic heart disease or heart failure (or kidney disease: only diuretics)	I10-I13, I15	Ever	C02, C04, C07, C08, C09, C03	Twice last year
	Dyslipidaemia	Diagnosis AND/OR drug prescription for lipid-lowering drugs if not ischemic heart disease.	E78	Last two years	C10	Twice last year
	Ischaemic heart disease	Diagnosis AND/OR prescription for antianginal drug	I20-I25	Ever	C01DA	Twice last year
	Atrial fibrillation	Diagnosis	I48	Ever		
	Heart failure	Diagnosis	I50	Ever		
	Peripheral artery occlusive disease	Diagnosis	I70-I74	Ever		
	Stroke	Diagnosis	I60-I64, I69	Ever		
Endocrine system	Diabetes mellitus	Diagnosis AND/OR prescription of antidiabetics	E10-E14	Ever	A10A, A10B	Twice last year
	Thyroid disorder	Diagnosis AND/OR prescription of thyroid therapy drugs	E00-E05, E061-E069, E07	Last two years	H03	Twice last year
	Gout	Diagnosis	E79, M10	Ever		
Pulmonary system and allergy	Chronic pulmonary disease	Prescription for obstructive airway disease drugs			R03	Twice last year
	Allergy	Prescription for non-sedative antihistamines AND/OR nasal antiallergics			R06AX, R06AE07, R06AE09, R01AC, R01AD	Twice last year
Gastrointestinal system	Ulcer/chronic gastritis	Diagnosis	K221, K25-K28, K293-K295	Ever		
	Chronic liver disease	Diagnosis	B16-B19, K70-K74, K766, I85	Ever		
	Inflammatory bowel disease	Diagnosis	K50-K51	Ever		
	Diverticular disease of intestine	Diagnosis	K57	Ever		
Urogenital system	Chronic kidney disease	Diagnosis	N03, N11, N18-N19	Ever		
	Prostate disorders	Diagnosis AND/OR prescription of prostate hyperplasia therapy drugs	N40	Ever	C02CA, G04C	Twice last year
Musculoskeletal system	Connective tissue disorders	Diagnosis	M05-M06, M08-M09, M30-M36, D86	Ever		
	Osteoporosis	Diagnosis AND/OR prescription for osteoporosis drugs	M80-M82	Ever	M05B, G03XC01, H05AA	Twice last year
	Painful condition	Repeated prescriptions of analgesics			N02A, N02BA51, N02BE, M01A, M02A	Four times last year
Haematological system	HIV/AIDS	Diagnosis	B20-B24	Ever		
	Anaemias	Diagnosis	D50-D53, D55-D59, D60-D61, D63-D64	Last two years		
Cancers	Cancer	Diagnosis	C00-C43, C45-C97	Last five years		
Neurological system	Vision problem	Diagnosis	H40, H25, H54	Ever		
	Hearing problem	Diagnosis	H90-H91, H931	Ever		
	Migraine	Diagnosis AND/OR prescription of specific anti-migraine drugs	G43	Last two years	N02C	Twice last year

	Epilepsy	Diagnosis AND prescription of anti-epileptics	G40-G47	Ever	N03	Twice last year
	Parkinson's disease	Diagnosis	G20-G22	Ever		
	Multiple sclerosis	Diagnosis	G35	Ever		
	Neuropathies	Diagnosis	G50-G64	Last two years		
Mental health conditions	Mood, stress-related, or anxiety disorders	Diagnosis	F32-F34, F40-F48	Last two years		
	Psychological distress	Prescription of antidepressants if not other mental disorder			N06A	Twice last year
	Alcohol problems	Diagnosis	F101-F109	Last two years		
	Substance abuse	Diagnosis	F11-F16, F18-F19	Last two years		
	Anorexia/bulimia	Diagnosis	F50	Last two years		
	Bipolar affective disorder	Diagnosis AND/OR prescription of lithium salts	F30-F31	Ever	N05AN	Twice last year
	Schizophrenia or schizoaffective disorder	Diagnosis	F20, F25	Ever		
	Dementia	Diagnosis AND/OR prescription of anti-dementia drugs	F00-F03, F051, G30	Ever	N06D	Twice last year

Abbreviations: ICD-10, International Classification of Diseases, version 10; ATC, Anatomical Therapeutic Chemical Classification System; HIV, human immunodeficiency virus; AIDS, acquired immunodeficiency syndrome.

ICD-10 diagnosis code recorded or redeemed prescription of ATC-coded drug registered within defined time frames in national health registers (the Danish National Patient Register, the Danish Psychiatric Central Register, and the Danish National Prescription Registry.)

^aPrior A, Fenger-Grøn M, Larsen KK, et al. The association between perceived stress and mortality among people with multimorbidity: A prospective population-based cohort study. *Am J Epidemiol.* 2016;184(3):199-210. doi:10.1093/aje/kwv324

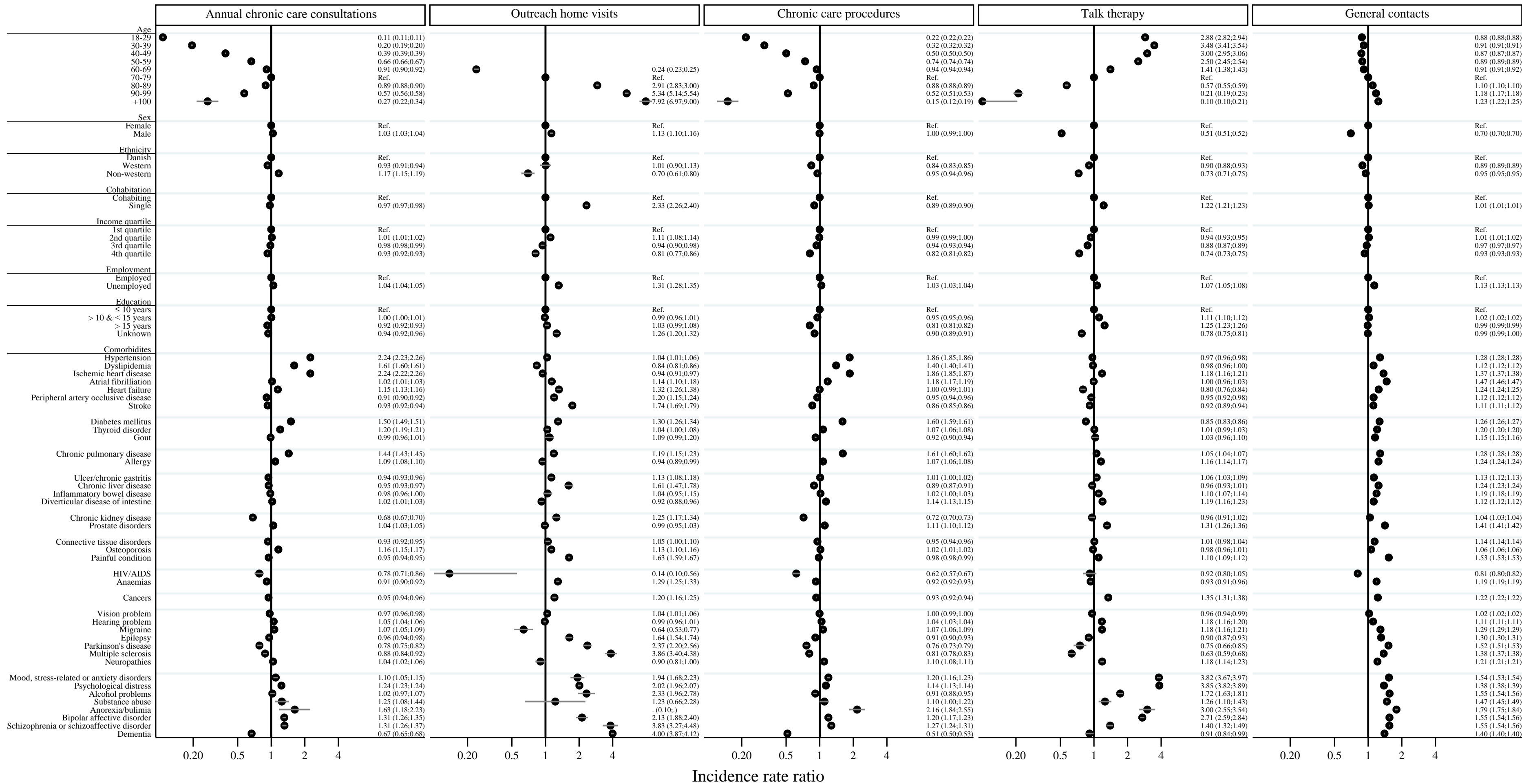


Figure S1. Associations between patient characteristics and chronic care services

Table S4. Association between GP service outcomes and number of patient comorbidities

Service outcome	IRR (95% CI)*				
	Number of comorbidities				
	0	1	2	3	4+
Annual chronic care consultations	1 (Ref.)	3.49 (3.46, 3.52)	5.18 (5.13, 5.22)	6.22 (6.16, 6.28)	6.66 (6.60, 6.73)
Chronic care procedures	1 (Ref.)	2.15 (2.14, 2.17)	2.98 (2.96, 3.00)	3.58 (3.56, 3.60)	3.95 (3.93, 3.97)
Outreach home visits	1 (Ref.)	1.85 (1.70, 2.02)	2.80 (2.58, 3.04)	3.64 (3.36, 3.95)	5.92 (5.47, 6.40)
Talk therapy	1 (Ref.)	1.85 (1.83, 1.86)	2.09 (2.07, 2.12)	2.21 (2.17, 2.24)	2.57 (2.53, 2.61)
General contacts	1 (Ref.)	1.66 (1.66, 1.67)	2.24 (2.23, 2.24)	2.77 (2.76, 2.77)	3.87 (3.87, 3.88)

*Adjusted for all demographic and socioeconomic factors

Abbreviations: IRR: Incidence rate ratio, CI: Confidence interval.

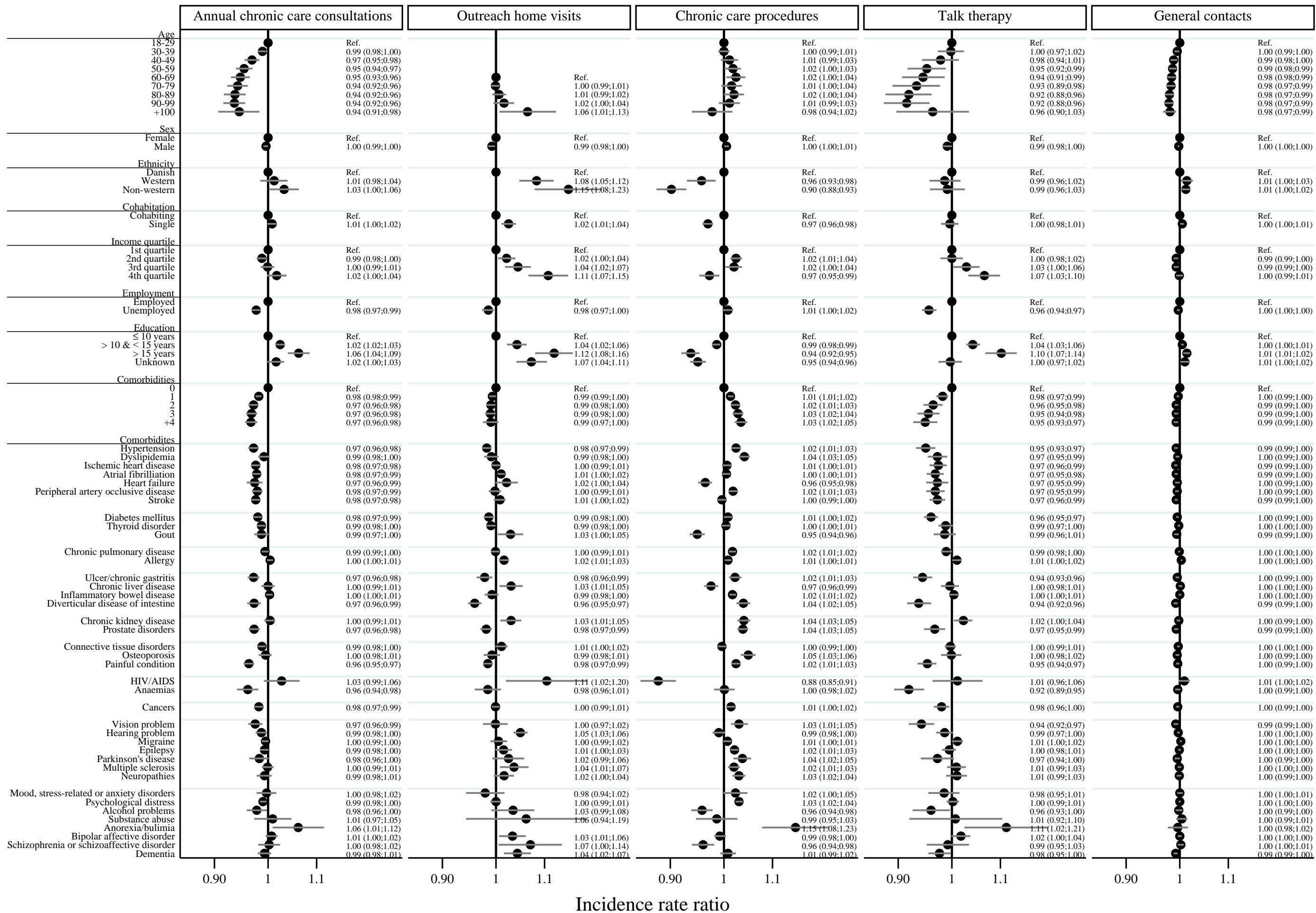


Figure S2. Associations between patient characteristics and general practice propensity to provide chronic care services