

Supplemental Table 1. Chronic conditions and geriatric syndromes recorded.

Chronic conditions	Geriatric syndromes and risk factors
Charlson Index	
1. AIDS/HIV	Acute confusional syndrome/delirium
2. Any malignancy (excluding skin)	Chronic pain
3. Cerebrovascular disease	Cognitive/Intellectual impairment
4. Chronic obstructive pulmonary disease	Constipation
5. Congestive heart failure	Depression or Anxiety
6. Dementia	Dysphagia
7. Diabetes with complication	Frailty
8. Diabetes without complication	Immobility
9. Hemiplegia	Incontinence (Urinary/faecal)
10. Leukaemia	Instability/falls
11. Lymphoma	Malnutrition
12. Metastatic solid tumour	Polypharmacy
13. Mild liver disease	Pressure ulcers
14. Moderate or severe liver disease	Sensorial deficit
15. Moderate or severe renal disease	Sleep disorders/Insomnia
16. Myocardial infarction	
17. Peptic ulcer disease	
18. Peripheral vascular disease	
19. Rheumatologic disease	
Other conditions	
20. Amputation	
21. Anaemia	
22. Asthma	
23. Cardiac arrhythmia	
24. Cataract	
25. Chronic hepatitis (B or C)	
26. Chronic pancreatic disease	
27. Degenerative arthropathy	
28. Dermatitis or eczema	

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29. Diverticular disease of the colon
 30. Drug-related conditions
 31. Dyslipidaemia (risk factor)
 32. Fibromyalgia
 33. Gallstones (previous hepatic colic)
 34. Chronic gastritis or gastro-oesophageal reflux
 35. Glaucoma
 36. Gout
 37. Haemorrhoids
 38. Haematologic disorders (myelodysplastic syndrome, gammopathy, polycythaemia)
 39. Hypertension (risk factor)
 40. Inflammatory osteoarticular disease
 41. Irritable bowel syndrome
 42. Ischaemic heart disease without infarction
 43. Migraine
 44. Neurologic disorder of the central nervous system
 45. Non-congestive heart failure
 46. Non-ischaemic heart disease (miocardiopathy, valvulopathy)
 47. Non-schizophrenic mental disorders (excluding depression and anxiety)
 48. Obesity (risk factor)
 49. Osteoporosis (risk factor)
 50. Other neurological pathologies (essential tremor)
 51. Other vascular diseases (ischaemia, aneurism)
 52. Parkinson

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57. Prostatic benign hypertrophy
 58. Schizophrenia
 59. Sleep apnoea
 60. Chronic thyroid disease
 61. Tuberculosis
 62. Urinary tract stones (nephritic colic)
 63. Varicose veins of lower extremities
 64. Vertigo
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Supplemental Table 2. Prevalence rates of chronic conditions and geriatric syndromes / risk factors in the study population by sex, separately listed in decreasing order of total prevalence rate.

	Female (394)			Male (346)			Total (740)		
	N	%	95% CI	N	%	95% CI	N	%	95%CI
CHRONIC CONDITIONS									
Risk factors									
Hypertension	330	83.76	79.79 - 87.07	273	78.90	74.30 - 82.87	603	81.49	78.53 - 84.12
Dyslipidaemia	189	47.97	43.08 - 52.90	171	49.42	44.19 - 54.67	360	48.65	45.06 - 52.25
Obesity	127	32.23	27.81 - 37.00	66	19.08	15.28 - 23.55	193	26.08	23.05 - 29.36
Osteoporosis	82	20.81	17.09 - 25.09	21	6.07	4.00 - 9.10	103	13.92	11.61 - 16.60
Drug-related conditions	44	11.17	8.42 - 14.66	23	6.65	4.47 - 9.78	67	9.05	7.19 - 11.34
Chronic Diseases									
Heart failure	255	64.72	59.88 - 69.28	188	54.34	49.07 - 59.51	443	59.86	56.29 - 63.34
Cardiac arrhythmia	216	54.82	49.89 - 59.67	207	59.83	54.58 - 64.86	423	57.16	53.57 - 60.68
Degenerative arthropathy	228	57.87	52.94 - 62.64	157	45.38	40.21 - 50.64	385	52.03	48.43 - 55.61
Anaemia	182	46.19	41.33 - 51.13	152	43.93	38.80 - 49.20	334	45.14	41.58 - 48.74
Moderate or severe renal disease	164	41.62	36.86 - 46.55	156	45.09	39.93 - 50.35	320	43.24	39.72 - 46.84
Chronic obstructive pulmonary disease (COPD)	90	22.84	18.97 - 27.24	183	52.89	47.63 - 58.09	273	36.89	33.49 - 40.43
Non-ischaemic heart disease	125	31.73	27.33 - 36.48	113	32.66	27.93 - 37.77	238	32.16	28.90 - 35.61
Diabetes without complication	101	25.63	21.57 - 30.17	100	28.90	24.38 - 33.89	201	27.16	24.08 - 30.48
Cerebrovascular disease (including hemiplegia)	95	24.11	20.15 - 28.57	93	26.88	22.48 - 31.78	188	25.41	22.40 - 28.66
Dementia	103	26.14	22.05 - 30.70	76	21.97	17.92 - 26.62	179	24.19	21.24 - 27.40
Varicose veins of lower extremities	98	24.87	20.86 - 29.37	66	19.08	15.28 - 23.55	164	22.16	19.32 - 25.29
Previous fracture (not hip)	87	22.08	18.27 - 26.44	52	15.03	11.65 - 19.18	139	18.78	16.13 - 21.76
Gout	57	14.47	11.34 - 18.28	80	23.12	18.99 - 27.84	137	18.51	15.88 - 21.47
Chronic thyroid disease	93	23.60	19.68 - 28.04	42	12.14	9.11 - 16.00	135	18.24	15.63 - 21.19
Diabetes with complication	70	17.77	14.31 - 21.85	63	18.21	14.50 - 22.62	133	17.97	15.37 - 20.90
Ischaemic heart disease without infarction	58	14.72	11.56 - 18.56	62	17.92	14.24 - 22.31	120	16.22	13.74 - 19.05
Myocardial infarction	47	11.93	9.09 - 15.50	64	18.50	14.76 - 22.93	111	15.00	12.61 - 17.75
Neoplasia (including leukaemia, lymphoma, metastatic solid tumour)	29	7.36	5.17 - 10.37	82	23.70	19.52 - 28.45	111	15.00	12.61 - 17.75
Peripheral vascular disease	31	7.87	5.60 - 10.95	74	21.39	17.39 - 26.01	105	14.19	11.86 - 16.89
Chronic gastritis or gastro-oesophageal reflux	55	13.96	10.88 - 17.73	42	12.14	9.11 - 16.00	97	13.11	10.87 - 15.73

	Female (394)			Male (346)			Total (740)		
	N	%	95% CI	N	%	95% CI	N	%	95%CI
Asthma	74	18.78	15.23 - 22.93	8	2.31	1.18 - 4.50	82	11.08	9.02 - 13.55
Gallstones	39	9.90	7.33 - 13.25	40	11.56	8.61 - 15.36	79	10.68	8.65 - 13.11
Vertigo	54	13.71	10.66 - 17.45	23	6.65	4.47 - 9.78	77	10.41	8.41 - 12.81
Previous hip fracture	52	13.20	10.21 - 16.90	15	4.34	2.64 - 7.03	67	9.05	7.19 - 11.34
Sleep apnoea	34	8.63	6.24 - 11.82	32	9.25	6.63 - 12.76	66	8.92	7.07 - 11.19
Peripheral neuropathy or neuritis	27	6.85	4.75 - 9.79	34	9.83	7.12 - 13.42	61	8.24	6.47 - 10.45
Inflammatory osteoarticular disease	26	6.60	4.54 - 9.49	23	6.65	4.47 - 9.78	49	6.62	5.04 - 8.65
Peptic ulcer disease	11	2.79	1.57 - 4.93	35	10.12	7.36 - 13.74	46	6.22	4.69 - 8.19
Haematologic disorders	14	3.55	2.13 - 5.88	22	6.36	4.24 - 9.44	36	4.86	3.53 - 6.66
Parkinson									

	Female (394)			Male (346)			Total (740)		
	N	%	95% CI	N	%	95% CI	N	%	95%CI
Sleep disorders/Insomnia	189	47.97	43.08 - 52.90	144	41.62	36.54 - 46.88	333	45.00	41.45 - 48.60
Sensorial deficit	169	42.89	38.10 - 47.83	145	41.91	36.83 - 47.17	314	42.43	38.92 - 46.02
Instability/falls	158	40.10	35.38 - 45.01	128	36.99	32.08 - 42.20	286	38.65	35.21 - 42.21
Depression or anxiety	193	48.98	44.08 - 53.91	75	21.68	17.66 - 26.32	268	36.22	32.83 - 39.74
Acute confusional syndrome / delirium	118	29.95	25.64 - 34.65	117	33.82	29.03 - 38.95	235	31.76	28.50 - 35.20
Cognitive/Intellectual impairment	133	33.76	29.26 - 38.56	96	27.75	23.29 - 32.69	229	30.95	27.72 - 34.37
Immobility	114	28.93	24.68 - 33.60	78	22.54	18.46 - 27.23	192	25.95	22.92 - 29.22
Dysphagia	78	19.80	16.16 - 24.01	81	23.41	19.26 - 28.15	159	21.49	18.68 - 24.59
Malnutrition	76	19.29	15.70 - 23.47	71	20.52	16.60 - 25.09	147	19.86	17.15 - 22.89
Pressure ulcers	57	14.47	11.34 - 18.28	38	10.98	8.11 - 14.72	95	12.84	10.62 - 15.44

Supplemental Table 3. Weight as an indicator of importance on clinical management assigned to each chronic condition. Weight values range from 0 to 8, where 0 means no clinical management was required and 1 to 8 indicate clinical management from main cause of hospitalization (1) to chronic condition requiring the least medical attention (8). Chronic conditions are displayed in alphabetical order.

Chronic conditions	Weight 0		Weight 1		Weight 2		Weight 3		Weight 4		Weight 5		Weight 6		Weight 7		Weight 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
AIDS/HIV	740	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Amputation	739	99.86	0	0	1	0.14	0	0	0	0	0	0	0	0	0	0	0	0
Anaemia	596	80.54	28	3.78	46	6.22	40	5.41	19	2.57	8	1.08	3	0.41	0	0	0	0
Asthma	704	95.14	30	4.05	3	0.41	2	0.27	1	0.14	0	0	0	0	0	0	0	0
Rheumatologic disease	729	98.51	5	0.68	3	0.41	3	0.41	0	0	0	0	0	0	0	0	0	0
Cardiac arrhythmia	595	80.41	35	4.73	69	9.32	28	3.78	10	1.35	3	0.41	0	0	0	0	0	0
Cerebrovascular disease (including hemiplegia)	703	95	28	3.78	3	0.41	3	0.41	2	0.27	1	0.14	0	0	0	0	0	0
Chronic gastritis or gastro-oesophageal reflux	733	99.05	4	0.54	1	0.14	1	0.14	1	0.14	0	0	0	0	0	0	0	0
Chronic pancreatic disease	739	99.86	0	0	1	0.14	0	0	0	0	0	0	0	0	0	0	0	0
Chronic obstructive pulmonary disease (COPD)	554	74.86	153	20.68	19	2.57	8	1.08	5	0.68	0	0	1	0.14	0	0	0	0
Chronic thyroid disease	722	97.57	2	0.27	1	0.14	4	0.54	7	0.95	3	0.41	1	0.14	0	0	0	0
Degenerative arthropathy	718	97.03	3	0.41	7	0.95	4	0.54	4	0.54	3	0.41	1	0.14	0	0	0	0
Dementia	687	92.84	32	4.32	14	1.89	4	0.54	3	0.41	0	0	0	0	0	0	0	0
Diabetes with complication	710	95.95	9	1.22	7	0.95	5	0.68	4	0.54	2	0.27	3	0.41	0	0	0	0
Diabetes without complication	698	94.32	11	1.49	5	0.68	13	1.76	8	1.08	2	0.27	1	0.14	2	0.27	0	0
Drug-related conditions	722	97.57	5	0.68	3	0.41	3	0.41	4	0.54	1	0.14	1	0.14	1	0.14	0	0
Dyslipidaemia	735	99.32	0	0	0	0	0	0	4	0.54	1	0.14	0	0	0	0	0	0
Fibromyalgia	739	99.86	0	0	1	0.14	0	0	0	0	0	0	0	0	0	0	0	0
Gallstones	730	98.65	6	0.81	3	0.41	1	0.14	0	0	0	0	0	0	0	0	0	0
Gout	737	99.59	0	0	0	0	2	0.27	0	0	1	0.14	0	0	0	0	0	0
Haematologic disorders	730	98.65	2	0.27	5	0.68	2	0.27	1	0.14	0	0	0	0	0	0	0	0
Heart failure	410	55.41	227	30.68	85	11.49	13	1.76	4	0.54	0	0	1	0.14	0	0	0	0
Hypertension	698	94.32	10	1.35	14	1.89	12	1.62	4	0.54	2	0.27	0	0	0	0	0	0
Inflammatory osteoarticular disease	727	98.24	8	1.08	1	0.14	1	0.14	1	0.14	1	0.14	1	0.14	0	0	0	0
Irritable bowel syndrome	740	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ischaemic heart disease without infarction	714	96.49	10	1.35	14	1.89	1	0.14	0	0	1	0.14	0	0	0	0	0	0

Migraine	740	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mild liver disease (including chronic hepatitis B or C)	733	99.05	5	0.68	0	0	1	0.14	0	0	0	0	0	0	0	1	0.14
Moderate or severe liver disease	724	97.84	12	1.62	2	0.27	1	0.14	0	0	1	0.14	0	0	0	0	0
Moderate or severe renal disease	552	74.59	39	5.27	77	10.41	44	5.95	23	3.11	4	0.54	1	0.14	0	0	0
Myocardial infarction	716	96.76	20	2.7	3	0.41	1	0.14	0	0	0	0	0	0	0	0	0
Neoplasia (including leukaemia, lymphoma, metastatic solid tumour)	724	97.84	5	0.68	7	0.95	1	0.14	1	0.14	2	0.27	0	0	0	0	0
Neurologic disorder of the CNS	736	99.46	2	0.27	2	0.27	0	0	0	0	0	0	0	0	0	0	0
Non-ischaeamic heart disease	695	93.92	15	2.03	16	2.16	12	1.62	0	0	2	0.27	0	0	0	0	0
Non-schizophrenic mental disorders	732	98.92	2	0.27	2	0.27	1	0.14	2	0.27	1	0.14	0	0	0	0	0
Obesity	737	99.59	0	0	1	0.14	2	0.27	0	0	0	0	0	0	0	0	0
Osteoporosis	730	98.65	2	0.27	3	0.41	2	0.27	2	0.27	0	0	1	0.14	0	0	0
Other neurological pathologies	740	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parkinson's disease	737	99.59	3	0.41	0	0	0	0	0	0	0	0	0	0	0	0	0
Peptic ulcer disease	737	99.59	2	0.27	1	0.14	0	0	0	0	0	0	0	0	0	0	0
Peripheral neuropathy or neuritis	737	99.59	1	0.14	1	0.14	1	0.14	0	0	0	0	0	0	0	0	0
Peripheral vascular disease	728	98.38	9	1.22	1	0.14	1	0.14	0	0	0	0	1	0.14	0	0	0
Post-traumatic stress disorder	739	99.86	1	0.14	0	0	0	0	0	0	0	0	0	0	0	0	0
Previous fracture (not hip)	730	98.65	5	0.68	2	0.27	2	0.27	1	0.14	0	0	0	0	0	0	0
Previous hip fracture	740	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Schizophrenia	740	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sleep apnoea	716	96.76	5	0.68	9	1.22	5	0.68	1	0.14	4	0.54	0	0	0	0	0
Tuberculosis	740	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Urinary tract stones	740	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Varicose veins of lower extremities	725	97.97	1	0.14	6	0.81	2	0.27	4	0.54	2	0.27	0	0	0	0	0
Vertigo	740	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Supplemental table 4. Prevalence, Observed/Expected (O/E) ratios and exclusivity of chronic conditions and geriatric syndromes / risk factors per multimorbidity cluster. Conditions with prevalence >2% were included. O/E ratios were calculated by dividing the prevalence of a disease within the cluster by its prevalence in the overall population. Exclusivity was calculated by dividing the number of patients with the disease in the cluster by the total number of participants with the disease. Conditions are ordered by decreasing O/E ratio of cluster 1.

	Cluster 1			Cluster 2			Cluster 3			Cluster 4		
	Prevalence (%)	O/E ratio	Exclusivity (%)	Prevalence (%)	O/E ratio	Exclusivity (%)	Prevalence (%)	O/E ratio	Exclusivity (%)	Prevalence (%)	O/E ratio	Exclusivity (%)
Vertigo	29.58	2.84	50.67	9.52	0.91	18.92	6.85	0.66	15.90	4.05	0.39	14.52
Sleep apnoea	22.11	2.48	44.19	5.82	0.65	13.50	8.12	0.91	21.99	4.85	0.54	20.33
Osteoporosis	33.39	2.40	42.76	9.95	0.71	14.79	9.44	0.68	16.38	9.72	0.70	26.07
Previous fracture (not hip)	39.67	2.11	37.65	17.87	0.95	19.68	15.16	0.81	19.49	11.66	0.62	23.19
Inflammatory osteoarticular disease	13.61	2.06	36.65	2.78	0.42	8.69	7.21	1.09	26.31	5.03	0.76	28.36
Asthma	22.50	2.03	36.19	9.37	0.85	17.49	7.77	0.70	16.94	8.72	0.79	29.37
Varicose veins of lower extremities	44.58	2.01	35.86	15.2	0.69	14.19	24.37	1.10	26.56	13.89	0.63	23.40
Amputation	4.190	1.94	34.56	1.72	0.8	16.45	2.00	0.92	22.30	1.55	0.71	26.69
Peripheral neuropathy or neuritis	15.37	1.86	33.23	6.00	0.73	15.06	9.03	1.10	26.46	5.58	0.68	25.26
Drug-related conditions	16.31	1.80	32.12	11.23	1.24	25.66	7.41	0.82	19.76	5.45	0.60	22.46
Chronic thyroid disease	32.14	1.76	31.40	13.73	0.75	15.57	16.06	0.88	21.26	15.52	0.85	31.77
Ischaemic heart disease without infarction	27.75	1.71	30.5	10.85	0.67	13.84	17.59	1.08	26.20	12.79	0.79	29.46
Obesity	44.29	1.70	30.27	19.14	0.73	15.18	25.15	0.96	23.28	21.84	0.84	31.27
Chronic pain	91.68	1.69	30.09	50.3	0.93	19.15	59.72	1.10	26.55	35.23	0.65	24.22
Instability/falls	65.05	1.68	30.00	36.74	0.95	19.66	40.06	1.04	25.03	26.19	0.68	25.30
Depression or Anxiety	60.05	1.66	29.56	35.49	0.98	20.27	30.57	0.84	20.38	28.89	0.80	29.79
Neurologic disorder of the CNS	7.10	1.64	29.28	4.92	1.14	23.54	4.78	1.11	26.72	2.37	0.55	20.47
Previous hip fracture	14.76	1.63	29.06	9.23	1.02	21.08	6.20	0.69	16.55	8.08	0.89	33.31
Degenerative arthropathy	80.19	1.54	27.48	48.11	0.92	19.13	56.15	1.08	26.06	38.08	0.73	27.34
Chronic gastritis or gastro-oesophageal reflux Parkinson	19.39	1.48	26.37	9.09	0.69	14.35	12.6	0.96	23.22	12.66	0.97	36.07

Myocardial infarction	19.88	1.33	23.63	10.00	0.67	13.79	14.68	0.98	23.64	15.64	1.04	38.94
Dyslipidaemia	64.28	1.32	23.55	35.21	0.72	14.97	55.63	1.14	27.62	44.11	0.91	33.86
Frailty	81.11	1.31	23.41	82.71	1.34	27.70	55.05	0.89	21.53	45.26	0.73	27.36
Anaemia	59.26	1.31	23.40	42.23	0.94	19.35	47.71	1.06	25.53	38.34	0.85	31.72
Gallstones	13.87	1.30	23.16	10.6	0.99	20.54	9.66	0.90	21.85	9.85	0.92	34.46
Haematologic disorders	6.24	1.28	22.88	2.80	0.58	11.91	6.24	1.28	30.99	4.46	0.92	34.22
Constipation	57.53	1.25	22.32	58.53	1.27	26.35	36.80	0.80	19.34	39.36	0.86	31.99
Incontinence (Urinary/faecal)	72.26	1.24	22.17	82.95	1.43	29.52	54.73	0.94	22.75	39.78	0.68	25.56
Gout	22.86	1.23	22.01	9.85	0.53	11.01	27.66	1.49	36.08	15.32	0.83	30.90
Diabetes with complication	21.71	1.21	21.53	14.68	0.82	16.89	19.79	1.10	26.59	16.84	0.94	34.99
Polypharmacy	96.12	1.20	21.45	64.75	0.81	16.77	92.87	1.16	28.08	72.07	0.90	33.70
Rheumatologic disease	5.08	1.17	20.93	4.16	0.96	19.91	3.34	0.77	18.66	4.69	1.08	40.50
Dysphagia	24.83	1.16	20.60	36.49	1.70	35.13	29.98	1.40	33.70	6.09	0.28	10.58
Cerebrovascular disease (including hemiplegia)	29.02	1.14	20.36	30.75	1.21	25.04	28.38	1.12	26.98	18.79	0.74	27.62
Acute confusional syndrome/delirium	36.00	1.13	20.21	54.77	1.72	35.67	35.27	1.11	26.82	14.71	0.46	17.30
Heart failure	66.53	1.11	19.81	57.88	0.97	20.00	54.09	0.90	21.82	61.52	1.03	38.37
Peripheral vascular disease	15.71	1.11	19.74	10.69	0.75	15.58	14.98	1.06	25.50	14.89	1.05	39.17
Hypertension	89.07	1.09	19.48	78.13	0.96	19.83	84.73	1.04	25.11	77.62	0.95	35.57
Cardiac arrhythmia	61.85	1.08	19.29	52.03	0.91	18.82	56.49	0.99	23.87	58.20	1.02	38.02
Peptic ulcer disease	6.70	1.08	19.22	5.00	0.80	16.64	6.97	1.12	27.09	6.17	0.99	37.05
Sensorial deficit	39.51	0.93	16.60	44.27	1.04	21.58	43.84	1.03	24.95	41.89	0.99	36.87
Immobility	23.10	0.89	15.87	56.49	2.18	45.03	26.23	1.01	24.41	10.21	0.39	14.69
Moderate or severe liver disease	2.23	0.87	15.46	4.33	1.69	34.91	0.69	0.27	6.51	2.96	1.15	43.11
Neoplasia (including leukaemia, lymphoma, metastatic solid tumour)	12.74	0.85	15.15	13.39	0.89	18.46	16.19	1.08	26.07	16.20	1.08	40.32
Chronic obstructive pulmonary disease (COPD)	29.97	0.81	14.48	27.29	0.74	15.30	34.75	0.94	22.75	46.90	1.27	47.47
Mild liver disease (including chronic hepatitis B or C)	3.41	0.79	14.04	4.69	1.08	22.41	4.81	1.11	26.84	4.25	0.98	36.70
Cognitive/Intellectual impairment	23.44	0.76	13.50	62.07	2.01	41.48	39.53	1.28	30.85	11.74	0.38	14.17
Diabetes without complication	20.64	0.76	13.54	30.98	1.14	23.59	29.45	1.08	26.18	26.69	0.98	36.69
Pressure ulcers	7.44	0.58	10.33	28.11	2.19	45.28	16.20	1.26	30.48	4.78	0.37	13.90
Dementia	12.34	0.51	9.10	47.13	1.95	40.30	30.43	1.26	30.38	13.10	0.54	20.23
Malnutrition	8.69	0.44	7.80	42.75	2.15	44.50	13.57	0.68	16.50	16.60	0.84	31.20

