Supplement 1: PRISMA checklist

Section and topic	Item No	Checklist item
ADMINISTRATIVE INFORMATION		
Title		
Identification	1a	**Identify the report as a protocol of a systematic review** Prevalence of multimorbidity in community settings: a systematic review and meta-analysis of observational studies.
Update	1b	**If the protocol is for an update of a previous systematic review, identify as such** N/A
Registration	2	**If registered, provide the name of the registry (such as PROSPERO) and registration number** PROSPERO – Ref no. CRD42018087435
Authors		
Contact	3a	**Provide name, institutional affiliation, e-mail address of all protocol authors, provide physical mailing address of corresponding author** Hai Nguyen King's College London hai.nguyen@kcl.ac.uk Gergana Monolova King's College London gergana.monolova@kcl.ac.uk Christina Daskalopoulou King's College London christina.daskalopoulou@kcl.ac.uk Dr Matthew Prina King's College London matthew.prina@kcl.ac.uk Dr Silia Vitoratou King's College London silia.vitoratou@kcl.ac.uk

		Prof. Martin Prince King's College London martin.prince@kcl.ac.uk Corresponding author: Hai Nguyen Institute of Psychiatry, Psychology & Neuroscience Health Service & Population Research Dept, PO36 Centre for Global Mental Health & Primary Care Research David Goldberg Centre De Crespigny Park London SE5 8AF United Kingdom
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review
Amendments	4	**If the protocol represents an amendment of a previously completed or published protocol, identify as such as list changes; otherwise, state plan for documenting important protocol amendments** N/A
Support		
Sources	5a	Indicate sources of financial or other support for the review
Sponsor	5b	Provide name for the review funder and/or sponsor
Role of sponsor or funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol
INTRODUCTION		
Rationale	6	**Describe the rationale for the review in the context of what is already known** As the world's populations are ageing rapidly, multimorbidity, the co-existence of two or more chronic diseases in an individual (Morrison et al, 2016), is becoming a major concern in public health. Patients experiencing multiple chronic conditions often have poorer health outcomes, such as declined physical and mental health functioning, higher mortality

		rates and frailty (Fortin et al, 2007). Their needs for medical care are also different. Instead of a highly specialized but isolated approach, as used for single disease treatment, multimorbidity patients need a complex and structured care plan (Salisbury et al, 2011). This has serious impact on disease management, healthcare utilisation and costs (Huntley et al, 2012). To assess the impact of multimorbidity on public health and to project medical care needs for patients with multimorbidity, an accurate estimation of its prevalence is critical. Although multimorbidity prevalence and its variations have been examined and summarised in a number of systematic reviews, these reviews usually included studies in high-income countries (HICs). Only one review synthesised evidence on the prevalence and outcomes of multimorbidity in South Asia (Pati et al, 2015). Nonetheless, there has not been a review that systematically assessed the variations of multimorbidity prevalence estimates at a global level. The aim of this review is therefore to fill this gap in the literature. References: 1. Fortin, M. et al. A systematic review of prevalence studies on multimorbidity: toward a more uniformed methodology. *Ann Fam Med*. 2012; 10(2): 142-151. 2. Huntley, A. L.. et al. Measures of Multimorbidity and Morbidity Burden for Use in Primary Care and Community Settings: A Systematic Review and Guide. Annals of Family Medicine, 2012; 10(2): 134-141. 3. Morrison, D. et al. Managing multimorbidity in primary care in patients with chronic respiratory conditions. *NPJ Prim Care Respir Med*. 2016; 26: 16043 4. Pati, S. et al. Prevalence and outcomes of multimorbidity in South Asia: A systematic review. *BMJ Open*. 2015; 10(5) 5. Salisbury, C. et al. Epidemiology and impact of multimorbidity in primary care: a retrospective cohort study. *British Journal of General Practice*. 2011; 61(582): e12-e21
Objectives	7	**Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)** The objectives of this systematic review are: 1. Summarise the available evidence in the literature on multimorbidity prevalence in HICs and LMICs, in the context of community settings. 2. Carry out a meta-analysis of the prevalence estimates 3. Assess how multimorbidity was operationalised across the different studies, to see whether this factor could partly explain the heterogeneity of the estimates
METHODS		
Eligibility criteria	8	**Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review** PICO

		• Population: Eligible studies will include participants who are community based with no restrictions regarding age, sex, socioeconomic and demographic backgrounds. Studies that recruit participants from communal establishments, such as hospitals, hospices, nursing homes or prisons, will not be included. • Intervention(s)/Exposure(s): N/A • Comparator(s)/control(s): N/A • Outcome: multimorbidity (prevalence) Study design Observational (cross-sectional and baseline of longitudinal) studies are eligible for inclusion in this review. Interventional studies (e.g. randomised controlled trial) will be excluded. Setting Community-based settings only. Report characteristics Studies included in this review are restricted to original, peer reviewed articles (published, either online or as hard copy, up to January 2018) in English language. Opinion pieces, conference presentations, books, letters, editorials, dissertations/theses or abstracts will not be included. Studies with an index disease (studies about comorbidity) will also be excluded.
Information sources	9	**Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage** MEDLINE (OVID interface) EMBASE (OVID interface) PsycINFO (OVID interface) Global Health (OVID interface) Web of Science COCHRANE Library The authors of the original articles will be contacted if supplementary data/information is required.
Search strategy	10	**Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated** The term 'multimorbidity' and its various spellings (e.g. 'multi-morbidity', 'multimorbidities', 'multi-morbidities', 'multi morbidity', 'multi morbidities', multiple morbidities', 'multiple-morbidities') and ('prevalence' or 'epidemiology') will be used. We are interested in how 'multimorbidity' is defined so deliberately exclude 'comorbidity' and other synonyms. The search will be carried out on the electronic databases identified above. In addition, the references from relevant articles will be scanned through and appropriate papers from these lists will be included in the review.
Study records:		
Data management	11a	**Describe the mechanism(s) that will be used to manage records and data throughout the review** EndNote X8 will be used to store the retrieved articles from the electronic databases. This bibliographic management software maintains a searchable database of references related to the systematic review and creates citations when writing

		up the results. Authors' names and articles' titles will be listed in alphabetical order. The auto-deduplication function of EndNote X8 will also be exploited. Where necessary, deduplication will be done manually.
Selection process	11b	**State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)** Studies are selected based on their relevance, determined by their title and/or abstract. Following the PICO framework specified above, the selection process will be carried out as follows: • Eligibility: Potentially eligible studies must be original, peer-reviewed articles (with available abstracts in English), which report multimorbidity prevalence. Only studies that clearly state that their participants are community-based adults and the designs are observational studies (e.g. cross-sectional and baseline of cohort studies) in the abstract are considered. • Screening: First, the title and abstract of all studies returned by the search will be screened. Only studies that satisfy all the eligibility criteria specified above will be kept for full text screening. Full text screening will be done by two independent reviewers (HN & GM). First reviewer (HN) will be responsible for screening out 'definitely' eligible studies. Studies that are ambiguous will be assessed by the second reviewer (and if necessary, a third reviewer) for final inclusion. A second reviewer (CD) will also test a random sample of 10% of all references in the first screening to make sure eligible studies are not missed out. • Meta-analysis: final selected studies will be included for meta-analysis
Data collection process	11c	**Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators** A data extraction sheet will be developed, pilot-tested on 5 randomly selected eligible studies and refined accordingly. The first reviewer will extract data from the included studies and the second reviewer will check the extracted data. If there are any disagreements, the first and second reviewers will discuss to resolve them. If agreement cannot be reached, a third reviewer will be consulted. Where necessary, original authors of the included studies will be contacted for further information.
Data items	12	**List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications** Data extracted from eligible studies include: • Year of study • Study design • Study sample size • Country of study • Length of follow-up (if applicable) • Definitions of multimorbidity • Number of diseases • Combination of diseases • Ascertainment of diseases • Measures of multimorbidity

		• Prevalence of multimorbidity
Outcomes and prioritisation	13	**List and define all outcomes for which data will be sought, including prioritisation of main and additional outcomes, with rationale** Primary outcome: multimorbidity prevalence Secondary outcome: operationalisation of multimorbidity assessment
Risk of bias in individual studies	14	**Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis** To reduce the risk of bias for individual studies, the Newcastle-Ottawa Scale (NOS) for assessing the quality of non-randomised studies will be used. NOS uses eight items, categorised into 3 domains of potential bias, namely selection (representativeness of the exposed cohort, selection of the non-exposed cohort, ascertainment of exposure, demonstration that outcome of interest was not present at start of study), comparability (on the basis of the design or analysis controlled for confounders) and outcome (assessment of outcome, was follow-up long enough for outcomes to occur and adequacy of follow-up of cohorts). A study can be given a maximum of one star for each item within the selection and outcome categories. A maximum of two stars can be given for Comparability. Thresholds for converting the Newcastle-Ottawa scales to AHRQ standards (good, fair and poor) are as follows: • Good quality: 3 or 4 stars in selection domain AND 1 or 2 stars in comparability domain AND 2 or 3 stars in outcome/exposure domain • Fair quality: 2 stars in selection domain AND 1 or 2 stars in comparability domain AND 2 or 3 stars in outcome/exposure domain • Poor quality: 0 or 1 star in selection domain OR 0 star in comparability domain OR 0 or 1 star in outcome/exposure domain.
Data synthesis	15a	**Describe criteria under which study data will be quantitatively synthesised** If sufficient studies are available and providing they are homogeneous, a meta-analysis will be carried out.
	15b	**If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency** Overall and stratified analyses according to multimorbidity operational definitions will be performed. I-squared statistic will be employed to evaluate heterogeneity across studies (Higgins & Thompson, 2002). A random effect model for meta-analysis will be used.
	15c	**Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)** Subgroup analysis based on multimorbidity definitions and HICs/LMICs status will be performed. Sensitivity analysis which tests the influence of a single study on the meta-analysis estimation of the pooled prevalence will also be carried out.
	15d	**If quantitative synthesis is not appropriate, describe the type of summary planned** If due to the heterogeneity of the selected studies (e.g. in defining multimorbidity) a meta-analysis is not possible, a narrative/descriptive synthesis will be carried out to summarise and compare the prevalence of multimorbidity in community settings between HICs and LMICs.
Meta-bias(es)	16	**Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)**

		We will assess whether the protocol of cross-sectional, longitudinal or case-control study designs are followed properly to determine whether reporting bias is present. From here we can evaluate whether the authors report results selectively (i.e. only statistically significant results are reported/published). A funnel plot can also be employed to check for the existence of publication bias if there are sufficient studies.
Confidence in cumulative evidence	17	**Describe how the strength of the body of evidence will be assessed (such as GRADE)** The quality of our findings will be assessed by performing a sensitivity analysis, if the selected studies allow it. For instance, only high quality studies (based on the Newcastle-Ottawa Scale) will be included to see if our findings change.

Supplement 2: search strategy

Interface	Datasets	Search Strategy	Limits applied	Number of articles retrieved	Final no. exported to Endnote
OVID	MedLine Embase Embase Classic Global Health PsycINFO	1. multimorbidit*.mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kw, fx, nm, kf, px, rx, an, ui, sy, bt, id, cc, tc, tm] 2. multi-morbidit*.mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kw, fx, nm, kf, px, rx, an, ui, sy, bt, id, cc, tc, tm] 3. (multi adj morbidit*).mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kw, fx, nm, kf, px, rx, an, ui, sy, bt, id, cc, tc, tm] 4. multiple morbidit*.mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kw, fx, nm, kf, px, rx, an, ui, sy, bt, id, cc, tc, tm] 5. multiple-morbidit*.mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kw, fx, nm, kf, px, rx, an, ui, sy, bt, id, cc, tc, tm] 6. 1 or 2 or 3 or 4 or 5 7. prevalence.mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kw, fx, nm, kf, px, rx, an, ui, sy, bt, id, cc, tc, tm] 8. epidemiology.mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kw, fx, nm, kf, px, rx, an, ui, sy, bt, id, cc, tc, tm] 9. 7 or 8 10. 6 and 9 11. remove duplicates from 10	de-duplication	1. 6939 2. 1261 3. 1261 4. 860 5. 860 6. 8810 7. 1853143 8. 1847977 9. 3238987 10. 3209 **11. 2142**	**2142**

Web of Science	Web of Science Core Collection	#1. TI=multimorbidit* #2. TI=multi-morbidit* #3. TI=(multi NEAR/0 morbidit*) #4. TI=multiple morbidit* #5. TI=multiple-morbidit* #6. #1 OR #2 OR #3 OR #4 OR #5 #7. TI=prevalence #8. TI=epidemiology #9. #7 OR #8 #10. #6 AND #9	N/A	1. 1146 2. 118 3. 118 4. 253 5. 54 6. 1517 7. 142417 8. 56656 9. 198277 **10. 107**	**107**
Willey Online Library	Cochrane Database of Systematic Reviews	#1. multimorbidit* #2. multi-morbidit* #3. multi NEXT morbidit* #4. multiple morbidit* #5. multiple-morbidit* #6. #1 OR #2 OR #3 OR #4 OR #5 #7. prevalence #8. epidemiology #9. #7 OR #8 #10. #6 AND #9	N/A	1. 119 2. 35 3. 35 4. 4988 5. 24 6. 5111 7. 29947 8. 62781 9. 83654 **10. 2111**	**2111**

Supplement 3: the Newcastle-Ottawa Scale (NOS) for data quality assessment

No.	Study	representativeness	sample size	non-respondents	ascertainment of the exposure	comparability	assessment of the outcome	statistical test	selection score	comparability score	outcome score	Total score	Good/Fair/Poor?
1	Afshar 2015	1	1	1	1	1	1	1	4	1	2	7	good
2	Agborsangaya 2013	1	1	1	1	1	1	1	4	1	2	7	good
3	Alaba & Chola 2013	1	1	1	1	1	1	1	4	1	2	7	good
4	Alimohammadian 2018	1	1	1	1	1	1	1	4	1	2	7	good
5	Amaral 2018	0	0	0	1	1	1	1	1	1	2	4	poor
6	Araujo 2018	1	1	1	1	1	1	1	4	1	2	7	good
7	Banjare & Pradhan 2014	1	0	1	1	0	0	1	3	0	1	4	poor
8	Buttery 2016	1	1	1	1	1	1	1	4	1	2	7	good
9	Camargo-Casas 2018	1	1	1	1	1	1	1	4	1	2	7	good
10	Chen 2018	1	1	1	1	1	1	1	4	1	2	7	good
11	Cheung 2018	1	1	1	1	1	1	1	4	1	2	7	good
12	de Carvalho 2017	1	1	1	1	1	1	1	4	1	2	7	good
13	de Souza Santos Machado 2012	0	1	1	1	1	1	1	3	1	2	6	good
14	de Souza Santos Machado 2013	1	1	1	1	1	1	1	4	1	2	7	good
15	Dhawalni 2016	1	1	1	1	1	1	1	4	1	2	7	good
16	El Lawindi 2019	1	1	1	1	1	1	1	4	1	2	7	good
17	Fuchs 2012	1	1	1	1	1	1	1	4	1	2	7	good
18	Garin 2016	1	1	1	1	1	1	1	4	1	2	7	good
19	Ge 2018	1	1	1	1	1	1	1	4	1	2	7	good
20	Gu 2017	1	1	1	1	1	1	1	4	1	2	7	good
21	Hameed 2015	0	0	0	1	0	1	0	1	0	1	2	poor
22	Hien 2014	1	1	1	1	1	1	1	4	1	2	7	good
23	Humphreys 2018	1	1	1	1	1	1	1	4	1	2	7	good
24	Islam 2014	1	1	1	1	1	1	1	4	1	2	7	good

25	Jankovic 2018	1	1	1	1	1	1	1	4	1	2	7	good
26	Jerliu 2013	1	1	1	1	1	1	1	4	1	2	7	good
27	Johnston 2019	1	1	1	1	1	1	1	4	1	2	7	good
28	Khanam 2011	1	1	0	1	1	1	1	3	1	2	6	good
29	Kiliari 2014	1	1	1	1	1	1	1	4	1	2	7	good
30	Kirchberger 2012	1	1	1	1	1	1	1	4	1	2	7	good
31	Kshipra 2018	1	0	1	1	1	1	1	3	1	2	6	good
32	Kumar 2015	0	1	1	1	1	1	1	3	1	2	6	good
33	Lai 2019	1	1	1	1	1	1	1	4	1	2	7	good
34	Laires 2019	1	1	1	1	1	1	1	4	1	2	7	good
35	Lalitha 2016	1	1	1	1	1	1	1	4	1	2	7	good
36	Lang 2015	1	1	1	1	1	1	1	4	1	2	7	good
37	Larsen 2017	1	1	1	1	1	1	1	4	1	2	7	good
38	Le Cossec 2016	1	1	1	1	1	1	1	4	1	2	7	good
39	Li 2019	1	1	1	1	1	1	1	4	1	2	7	good
40	Loprinzi, P.D 2015	0	0	0	1	0	1	0	1	0	1	2	poor
41	Loza 2009	1	1	1	1	1	1	1	4	1	2	7	good
42	Lujic 2017	1	1	1	1	1	1	1	4	1	2	7	good
43	Maregoni 2016	1	1	1	1	1	1	1	4	1	2	7	good
44	Mini & Thankappan 2017	1	1	1	1	1	1	1	4	1	2	7	good
45	Ninh 2015	1	1	1	1	1	1	1	4	1	2	7	good
46	Noguchi 2016	1	1	1	1	1	1	1	4	1	2	7	good
47	Nunes 2019	1	1	1	1	1	1	1	4	1	2	7	good
48	Nunes 2016	1	1	1	1	1	1	1	4	1	2	7	good
49	Nunes 2015	1	1	1	1	1	1	1	4	1	2	7	good
50	Pache 2015	1	0	0	1	1	1	1	2	1	2	5	fair
51	Park 2018	1	1	1	1	1	1	1	4	1	2	7	good
52	Picco 2016	1	1	1	1	1	1	1	4	1	2	7	good
53	Ramond-Roquin 2016	1	0	0	1	1	1	1	2	1	2	5	fair

54	Roberts 2015	1	1	1	1	1	1	1	4	1	2	7	good
55	Rodrigues 2019	1	1	1	1	1	1	1	4	1	2	7	good
56	Romana 2019	1	1	1	1	1	1	1	4	1	2	7	good
57	Ruel 2014	1	1	1	1	1	1	1	4	1	2	7	good
58	Ruel 2014	1	1	1	1	1	1	1	4	1	2	7	good
59	Ryan 2018	1	1	1	1	1	1	1	4	1	2	7	good
60	Sakib 2019	1	1	1	1	1	1	1	4	1	2	7	good
61	Singh 2019	1	1	1	1	1	1	1	4	1	2	7	good
62	Su 2016	1	1	0	1	1	1	1	3	1	2	6	good
63	Timmermans 2019	1	1	1	1	1	1	1	4	1	2	7	good
64	Valadares 2015	1	1	1	1	1	1	1	4	1	2	7	good
65	Violan 2013	1	1	1	1	1	1	1	4	1	2	7	good
66	Wang 2014	1	1	0	1	1	1	1	3	1	2	6	good
67	Wang 2017	1	1	1	1	1	1	1	4	1	2	7	good
68	Wang 2015	1	1	1	1	1	1	1	4	1	2	7	good
69	Wang 2015	1	1	1	1	1	1	1	4	1	2	7	good
70	Wong 2008	0	0	0	1	1	1	1	1	1	2	4	poor

- Good quality: 3 or 4 stars in selection domain AND 1 or 2 stars in comparability domain AND 2 or 3 stars in outcome/exposure domain
- Fair quality: 2 stars in selection domain AND 1 or 2 stars in comparability domain AND 2 or 3 stars in outcome/exposure domai n
- Poor quality: 0 or 1 star in selection domain OR 0 star in comparability domain OR 0 or 1 star in outcome/exposure domain.

Supplement 4: Multimorbidity prevalence by gender

Study	Male	Female	Difference	Sample size
Agborsangaya 2013	38.2	39.6	1.4	4803
Alaba & Chola 2013	26.0	74.0	48.0	11638
Alimohammadian 2018	13.4	25.0	11.6	49946
Banjare & Pradhan 2014	63.4	50.3	-13.1	310
de Carvalho 2017	18.2	28.4	10.2	60202
Johnston 2019	4.8	6.0	1.2	7184
Kshipra 2018	32.8	28.1	-4.7	400
Fuchs 2012	36.3	43.9	7.6	21262
Hien 2014	59.1	71.8	12.7	389
Jankovic 2018	24.6	34.9	10.3	13765
Khanam 2011	39.7	65.3	25.6	452
Kumar 2015	0.7	0.6	-0.1	55091
Le Cossec 2016	18.7	15.2	-3.5	11089
Li 2019	15.2	16.8	1.6	4833
Nunes 2019	58.9	75.5	16.6	9412
Nunes 2016	20.4	35.2	14.8	2927
Nunes 2015	67.3	82.1	14.8	1593
Pache 2015	28.7	40.2	11.5	3714
Picco 2016	49.6	52.9	3.3	2565
Ryan 2018	42.7	57.3	14.6	4823
Roberts 2015	10.6	15.1	4.5	105416
Wang 2014	9.2	13.0	3.8	162464
Wang 2017	23.8	27.9	4.1	8841
Wang 2015	90.4	90.6	0.2	1480
Average difference	**8.2**			
Weighted average difference	**6.5**			

Supplement 5: Meta-analysis of multimorbidity prevalence

Study	Prevalence (95% CI)
LMICs	
Afshar (2015) Myanmar	1.7 (1.4 - 2.1)
Afshar (2015) Bangladesh	6.8 (6.2 - 7.5)
Afshar (2015) Bonia and Herzegovina	7.6 (6.1 - 9.3)
Afshar (2015) Brazil	13.4 (12.5 - 14.4)
Afshar (2015) Burkina Faso	6.31 (5.7 - 7.0)
Afshar (2015) Dominican Republic	7.2 (6.5 - 8.0)
Afshar (2015) Georgia	9.6 (8.6 - 10.7)
Afshar (2015) Ghana	3.6 (3.1 - 4.2)
Afshar (2015) Kazakhstan	8.49 (7.7 - 9.3)
Afshar (2015) Kenya	4.2 (3.7 - 4.8)
Afshar (2015) Laos	3.6 (3.1 - 4.2)
Afshar (2015) Malaysia	5.6 (5.1 - 6.2)
Afshar (2015) Mauritius	7.8 (7.0 - 8.7)
Afshar (2015) Morocco	6.4 (5.8 - 7.1)
Afshar (2015) Namibia	7.9 (7.1 - 8.7)
Afshar (2015) Nepal	15.2 (14.5 - 16.0)
Afshar (2015) Pakistan	4.9 (4.4 - 5.5)
Afshar (2015) Paraguay	5.7 (5.1 - 6.4)
Afshar (2015) Philippines	7.1 (6.6 - 7.6)
Afshar (2015) South Africa	11.2 (10.0 - 12.4)
Afshar (2015) Sri Lanka	3.9 (3.5 - 4.4)
Afshar (2015) Ukraine	10.0 (9.0 - 11.2)
Afshar (2015) Uruguay	7.3 (6.4 - 8.3)
Agrawal (2016) China	21.8 (21.2 - 22.5)
Agrawal (2016) Ghana	23.3 (22.1 - 24.5)
Agrawal (2016) India	23.7 (22.9 - 24.5)
Agrawal (2016) Mexico	29.6 (27.8 - 31.4)
Agrawal (2016) Russia	54.7 (53.1 - 56.3)
Agrawal (2016) South Africa	22.0 (20.7 - 23.3)
Alaba & Chola (2013) South Africa	4.0 (3.6 - 4.4)
Alimohammadian (2018) Iran	19.4 (19.1 - 19.8)
Amaral (2018) Brazil	66.3 (60.4 – 71.7)
Araujo (2018) Brazil	29.0 (27.6 – 30.4)
Banjare & Pradhan (2014) India	56.8 (51.2 - 62.2)
Camargo-Casas (2018) (Colombia)	40.4 (38.3 – 42.6)
Chen (2018) China	46.1 (44.5 – 47.7)
de_Carvalho (2017) Brazil	23.6 (23.3 - 23.9)
de_Souza_Santos_Machado (2012) Brazil	39.3 (34.5 - 44.3)
de_Souza_Santos_Machado (2013) Brazil	58.2 (54.3 - 62.0)
El Lawindi (2019) Egypt	19.6 (18.0 – 21.3)
Garin (2016) China	46.5 (45.6 - 47.3)
Garin (2016) Mexico	68.7 (66.8 - 70.6)
Garin (2016) South Africa	61.9(60.4 - 63.5)

Garin (2016) Ghana	47.6 (46.1 - 49.1)
Garin (2016) India	57.9 (56.7 - 59.1)
Garin (2016) Russia	73.9 (72.4 - 75.2)
Gu (2017) China	49.4 (47.4 - 51.4)
Hameed (2015) India	79.5 (75.1 - 83.3)
Hien (2014) Burkina Faso	64.8 (59.9 - 69.4)
Jankovic (2018) Serbia	30.2 (29.4 - 30.9)
Jerliu (2013) Kosovo	51.1 (48.8 - 53.3)
Khanam (2011) Bangladesh	53.8 (49.2 - 58.3)
Kshipra (2018) India	31.0 (26.7 – 35.7)
Kumar (2015) India	0.7 (0.6 - 0.7)
Lalitha (2016) India	44.1 (40.7 - 47.5)
Mini & Thankappan (2017) India	30.7 (29.8 - 31.6)
Ninh (2015) Vietnam	39.2 (37.3 - 41.2)
Nunes (2016) Brazil	29.1 (27.5 - 30.8)
Nunes (2019) Brazil	67.8 (66.9 – 68.7)
Nunes (2015) Brazil	81.3 (79.3 - 83.1)
Ruel (2014) China	14.0 (12.0 - 16.3)
Singh (2019) India & Pakistan	14.7 (14.2 – 15.3)
Su (2016) China	49.2 (47.0 - 51.3)
Valadares (2015) Brazil	53.0 (49.4 - 56.6)
Wang (2014) China	11.1 (11.0 - 11.2)
Wang (2015) China	90.5 (88.9 - 91.9)
Wang (2015) China	24.7 (24.1 - 25.3)
Pooled prevalence estimate for LMICs	**29.7 (26.4 – 33.0)**
HICs	
Afshar (2015) Czech Republic	9.4 (7.7 - 11.4)
Afshar (2015) Estonia	11.5 (9.7 - 13.6)
Afshar (2015) Hungary	15.0 (13.3 - 17.0)
Afshar (2015) Latvia	9.6 (7.9 - 11.6)
Afshar (2015) Spain	7.8 (7.2 - 8.5)
Agborsangaya (2013) Canada	36.1 (34.8 - 37.5)
Buttery (2016) Germany - Male	36.1 (33.6 - 38.7)
Buttery (2016) Germany - Female	40.5 (38.1 - 43.0)
Cheung (2018) Hong Kong	41.8 (39.9 – 43.7)
Dhawalni (2016) England	31.7 (30.8 - 32.6)
Fuchs (2012) Germany - Male	36.3 (35.4 - 37.2)
Fuchs (2012) Germany - Female	43.9 (43.0 - 44.8)
Garin (2016) Finland	69.2 (66.8 - 71.5)
Garin (2016) Spain	68.4 (66.8 - 69.9)
Garin (2016) Poland	70.1 (68.5 - 71.8)
Garin (2014) Spain	20.0 (18.9 - 21.2)
Ge (2018) Singapore	36.9 (34.7 – 39.0)
Humphreys (2018) UK	43.4 (41.4 – 45.5)
Islam (2014) Australia	52.0 (50.5 - 53.4)
Johnston (2019) UK	5.4 (4.9 – 6.0)
Kiliari (2014) Cyprus	28.6 (24.7 - 32.9)
Kirchberger (2012) Germany	59.7 (58.2 - 61.2)

Lai (2019)	3.5 (3.2 – 3.8)
Laires (2019)	43.9 (43.1 – 44.7)
Lang (2015) US	30.6 (29.0 - 32.3)
Larsen (2017) Denmark	39.7 (39.4 - 39.9)
Le Cossec (2016) France - Male	18.7 (17.6 - 19.9)
Le Cossec (2016) France - Female	15.2 (14.3 - 16.1)
Loprinzi P.D (2015) US	58.4 (56.3 - 60.5)
Loza (2009) Spain	30.0 (28.1 - 32.0)
Lujic (2017) Australia	37.4 (37.1 - 37.7)
Maregoni (2016) Sweden	52.4 (50.7 - 54.1)
Noguchi (2016) Australia	68.6 (66.4 - 70.8)
Pache (2015) Switzerland	34.8 (33.3 - 36.4)
Park (2018) Korea	26.8 (25.7 – 27.9)
Picco (2016) Singapore	55.4 (53.4 - 57.3)
Ramond.Roquin (2016) Canada	63.8 (61.5 - 66.1)
Roberts (2015) Canada	12.9 (12.7 - 13.1)
Rodrigues (2018) Portugal	67.9 (66.0 – 69.7)
Romana (2019)	38.4 (37.0 – 39.8)
Ruel (2014) Australia	31.6 (29.5 - 33.7)
Ryan (2018) Ireland	53.7 (52.3 – 55.1)
Timmermans (2019) the Netherlands	43.6 (41.6 – 45.7)
Violan (2013) Spain	59.6 (58.8 - 60.4)
Wang (2017) Australia	28.7 (27.8 - 29.7)
Pooled prevalence estimate for HICs	**37.9 (32.5 - 43.4)**
Overall pooled prevalence estimate	**33.1 (30.0 – 36.3)**

Supplement 6: Forest plot showing the pooled prevalence of multimorbidity (non-standardised)