

Online supplement, estimates of psychiatric bed needs

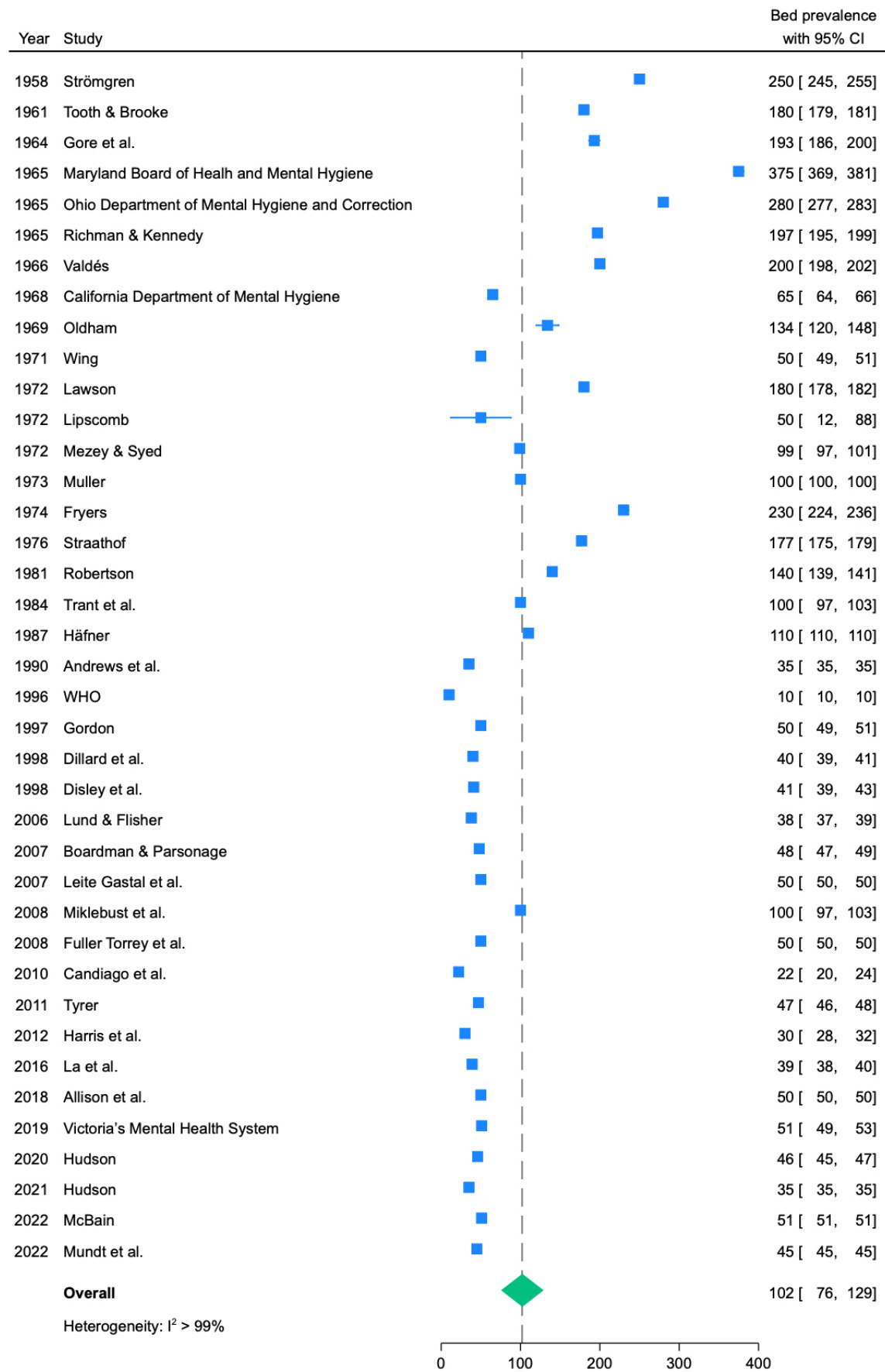
Supplement Table 1:

Supplement Table 1. Number of studies per country, categorized by World Bank Income group of the country.

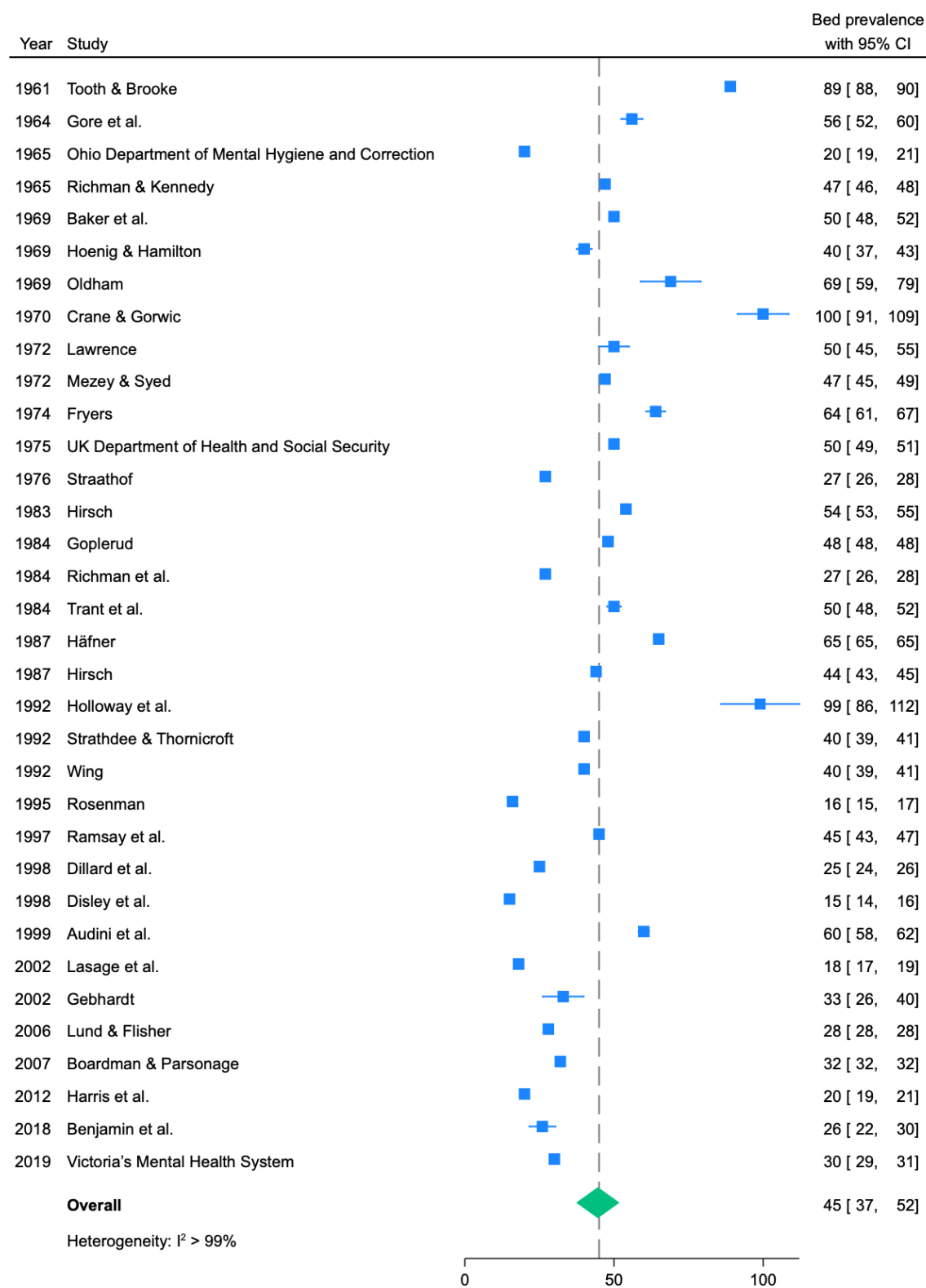
Income group	Country	Studies
High-income	United Kingdom	24
	USA	12
	Australia	8
	Canada	6
	Germany	2
	Denmark, Ireland, Japan, Netherlands, New Zealand, Norway, Spain, Switzerland*	1
	Low- and middle-income	Brazil
	South Africa	1
	International	3
Total		66

*One study for each country.

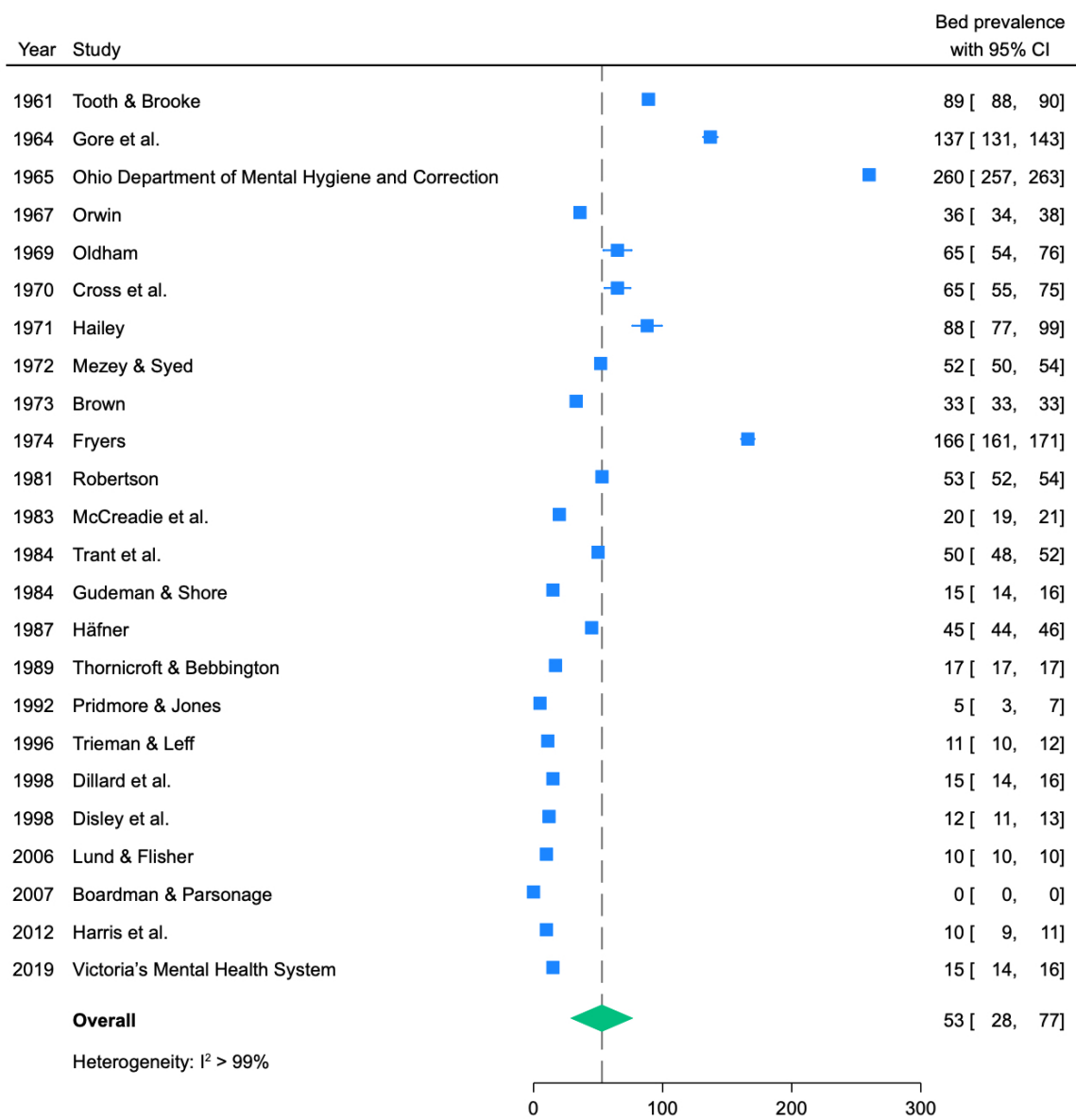
Supplement Figure 1: Need estimates of psychiatric beds with unspecified length of stay per 100 000 population



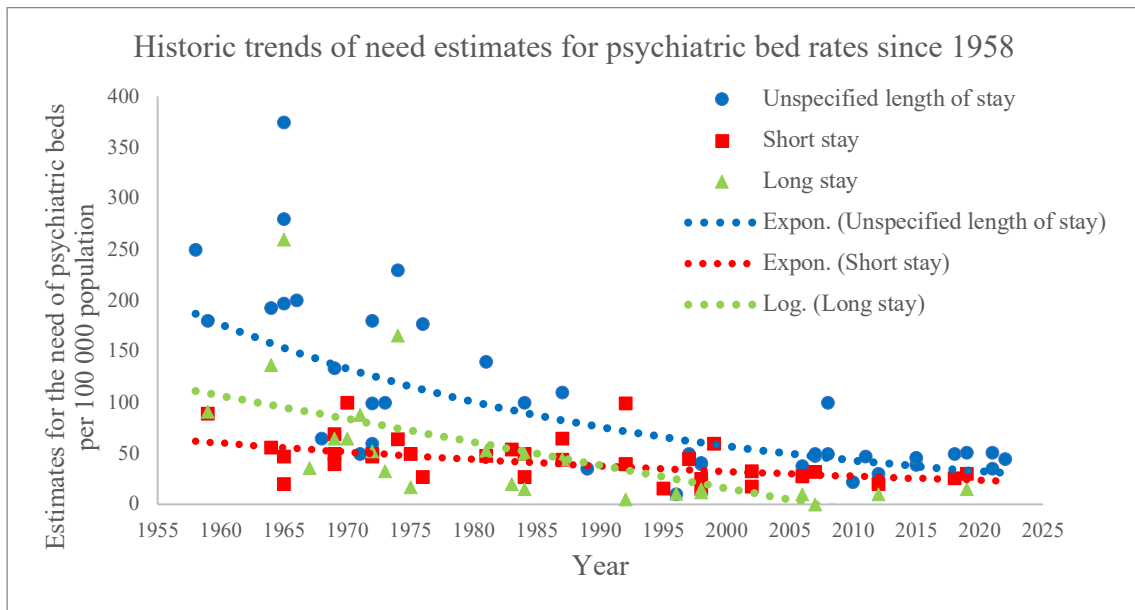
Supplement Figure 2: Need estimates of psychiatric short-stay beds per 100 000 population



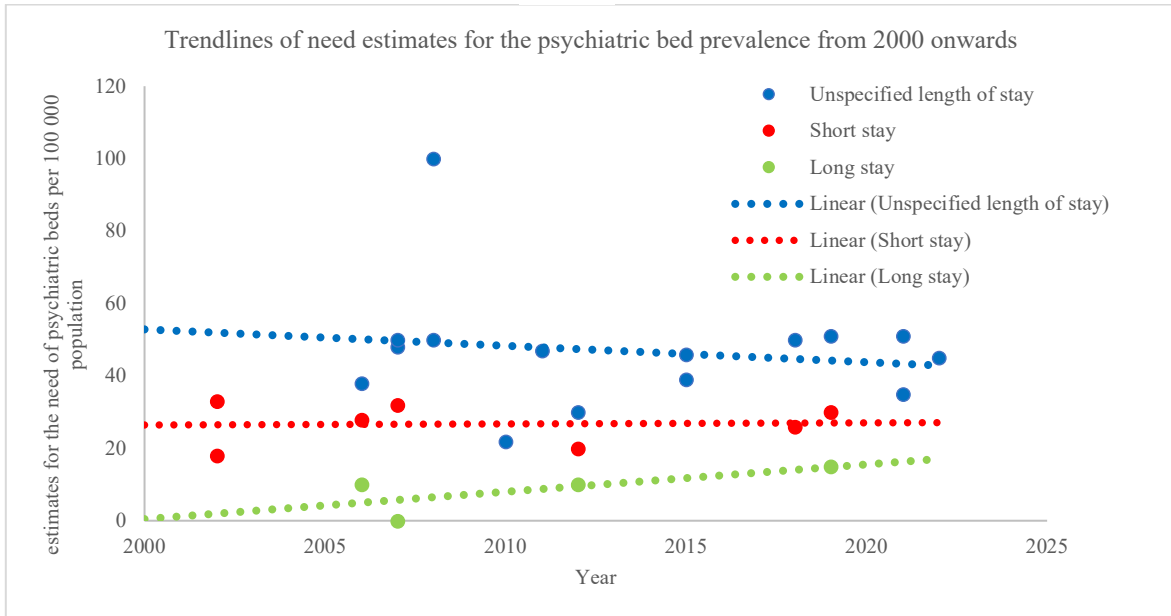
Supplement Figure 3: Need estimates of psychiatric long-stay beds per 100 000 population



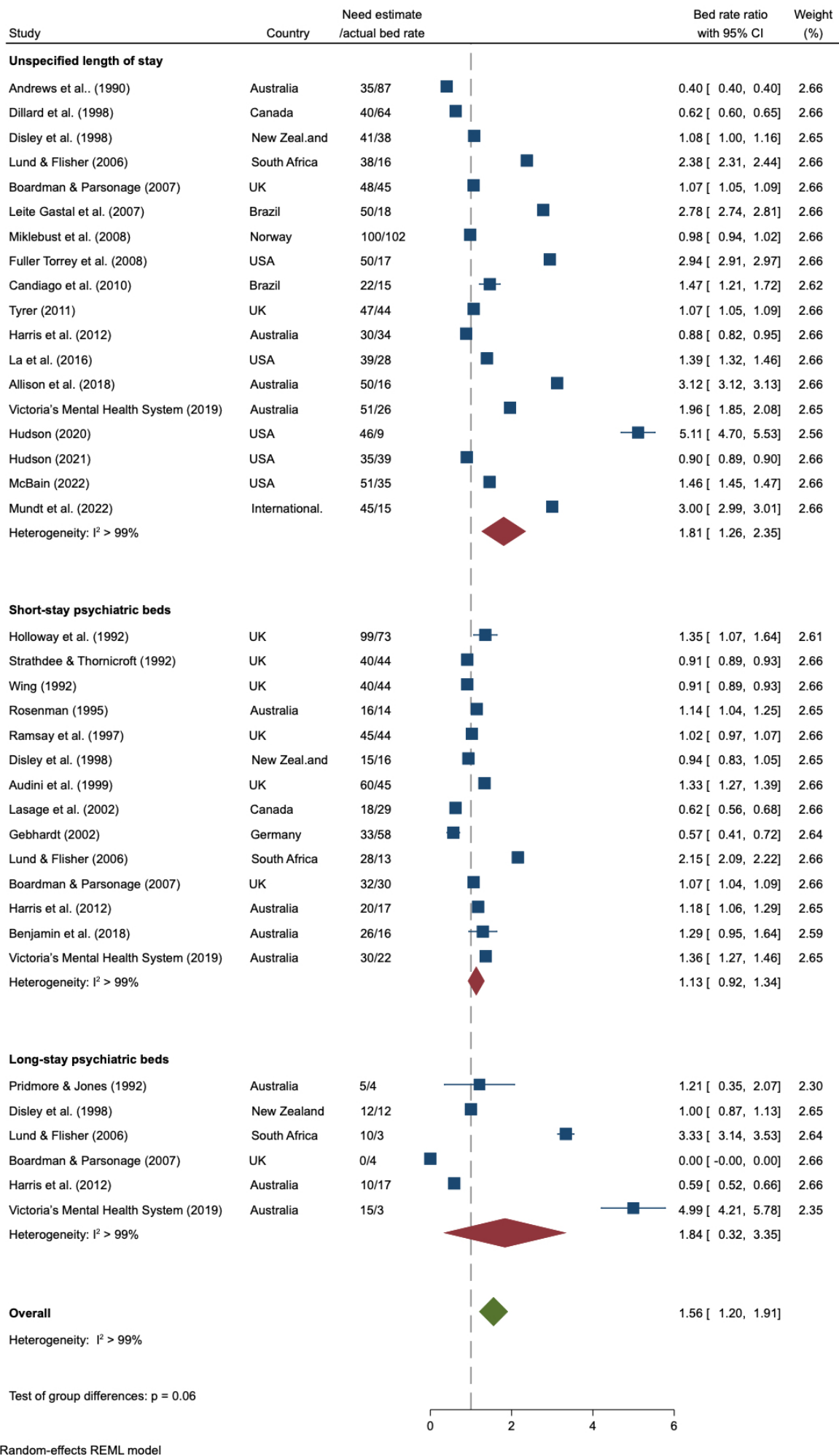
Supplement Figure 4: Trendlines of need estimates for psychiatric beds per 100 000 population over time.



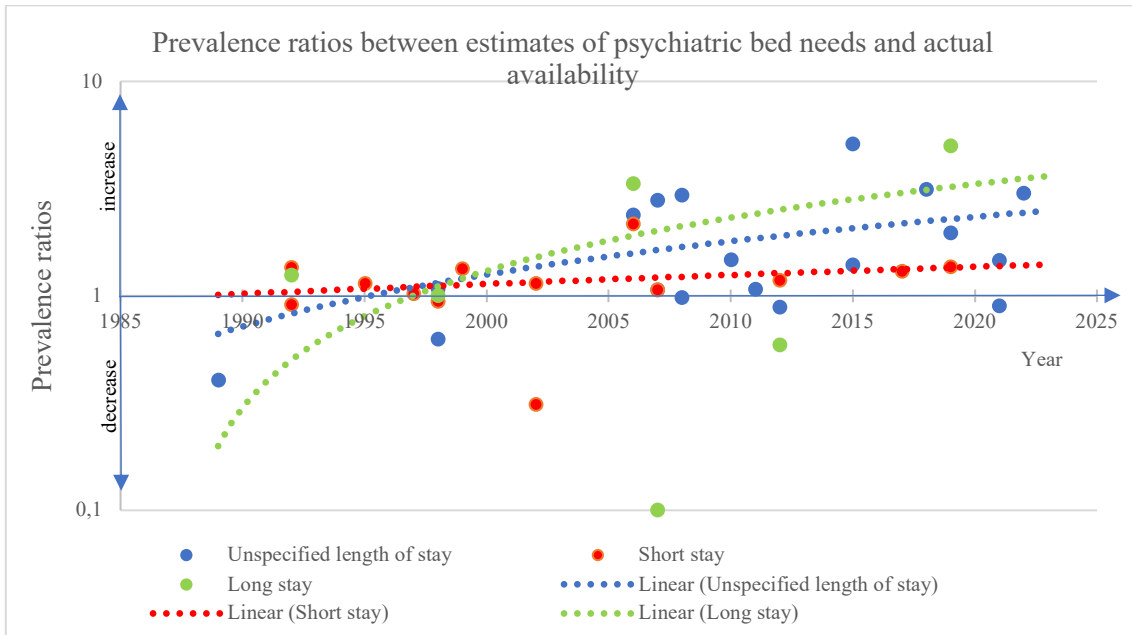
Supplementary Figure 5: Trendlines of need estimates for the psychiatric bed prevalence from 2000 onwards.



Supplement Figure 6: Prevalence ratios between need estimates and actually available psychiatric beds by length of stay.



Supplementary Figure 7: Linear trendlines for prevalence ratio between estimates of psychiatric bed needs and actual availability over time (from 1990 onwards) on a semi logarithmic scale. Prevalence ratios smaller than 1 indicate recommendations to remove, and greater than 1, recommendations to increase psychiatric bed numbers. Lines are curved due to the logarithmic scale.



Supplementary Table 2: Quality appraisal of the scientific literature reporting need estimates for psychiatric beds.

Supplement Table 2. Quality appraisal of publications.								
	Author (year of publication)	Published in indexed journal with peer review	Recommendation based on original epidemiological data	Primary aim of the study was the recommendation of bed numbers	Clear definition of length of stay	Provided as prevalences of beds per population	Provided as a single number (vs range)	Definition of recommendation as "minimal" ^a
1	Strömngren E (1958)	X	X	X		X	X	X
2	Tooth GC & Brooke E (1961)	X	X	X	X	X	X	
3	Gore et al (1964)	X	X	X	X			
4	Richman & Kennedy (1965)	X	X	X	X	X	X	
5	Ohio Department of Mental Hygiene and Correction (1965)			X	X	X	X	
6	Maryland Board of Health and Mental Hygiene (1965)			X		X	X	
7	Valdés AJ (1966)	X		X		X	X	
8	Orwin A (1967)	X	X	X	X	X	X	X
9	California Department of Mental Hygiene (1968)			X	X	X		
10	Baker et al (1969)	X	X	X	X	X	X	X
11	Oldham AJ (1969)	X	X	X			X	
12	Hoening J & Hamilton MW (1969)		X	X	X	X	X	X
13	Crane & Gorwic (1970)		X	X	X	X	X	
14	Cross et al (1970)	X	X	X	X	X	X	
15	Hailey (1971)	X	X	X	X	X	X	
16	Department Health and Social Security (1971)			X	X	X	X	X
17	Mezey & Syed (1972)	X	X	X	X	X	X	
18	Lipscomb CF (1972)	X	X	X	X	X		
19	Lawrence M (1972)				X	X	X	
20	Lawson JS (1972)	X		X		X	X	
21	Brown BM (1973)		X	X		X		
22	Muller C (1973)	X		X		X	X	
23	Fryers T. (1974) ^b	X	X	X	X	X	X	
24	UK Department Health and Social Security (1975)			X	X	X	X	
25	Straathof LJ (1976)	X	X	X	X	X	X	
26	Robertson G (1981)	X	X	X	X	X	X	
27	Hirsch SR (1983)	X	X	X		X		X
28	McGreadie et al (1983)	X	X	X	X	X	X	
29	Goplerud EN (1984)	X	X	X	X	X		
30	Richman et al (1984)	X	X	X	X	X	X	
31	Gudeman & Shore (1984)	X	X	X	X	X	X	
32	Trant et al (1984)		X	X	X	X	X	X
33	Häfner H (1987)	X	X	X	X	X		X
34	Hirsch SR (1987)	X	X	X	X	X		X
35	Andrews et al (1990)	X	X			X	X	X
36	Holloway et al (1992)	X	X		X	X	X	
37	Strathdee & Thornicroft (1992)		X	X	X	X		
38	Wing JK (1992)		X	X	X	X		
39	Pridmore & Jones (1992)	X	X	X	X	X	X	X
40	Rosenman S (1995)	X	X	X	X	X	X	
41	World Health Organisation (1996)			X		X	X	
42	Trieman & Leff (1996)	X	X	X	X	X		
43	Gordon A (1997)			X		X	X	
44	Ramsay et al (1997)		X	X	X	X		
45	Dillard et al (1998)		X	X	X	X	X	
46	Disley et al (1998)		X	X	X	X	X	X
47	Audini et al (1999)	X	X	X	X	X		X
48	Gebhardt (2002)	X	X	X	X		X	X
49	Lasage et al (2002)	X	X	X	X	X	X	X
50	Lund & Flisher (2006)	X	X	X	X	X	X	
51	Boardman & Parsonage (2007)		X	X	X	X	X	
52	Leite Gastal et al (2007)	X				X	X	
53	Fuller Torrey et al (2008)			X		X		X
54	Miklebust et al (2008)	X	X	X		X	X	X
55	Candiago et al (2010)	X	X					X
56	Tyrer P (2011)	½ ^b		X			X	X
57	Harris et al (2012)	X	X	X	X	X	X	
58	La et al (2016)	X	X	X			X	
59	Allison et al (2018)	X		X		X	X	X
60	Benjamin et al (2018)	½ ^b		X	X		X	X
61	Victoria's Mental Health System (2019)		X	X	X	X	X	
62	Hudson (2020)	X	X	X		X	X	X
63	Hudson (2021)	X	X	X		X	X	X
64	McBain et al (2021)		X	X	X	X	X	X
65	Mundt et al (2022)	X		X	X	X		X

^a "Minimal" considers all reports that refer to the recommendation as "minimal", "sufficient", "at least", "necessary", "bedrock" or "required".
^b Indexed journal, but format that does not typically undergo peer review, like correspondence