A comparison of health outcomes in public versus private settings in low- and middle-income countries

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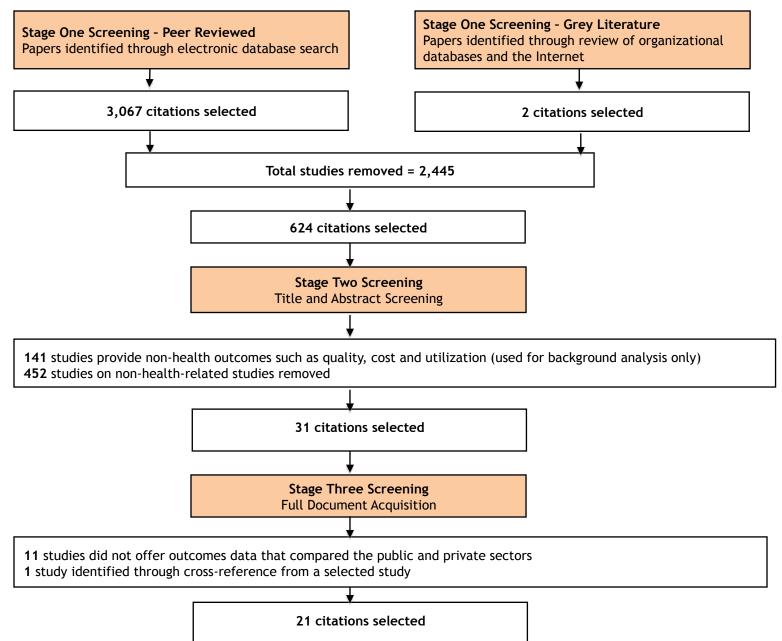
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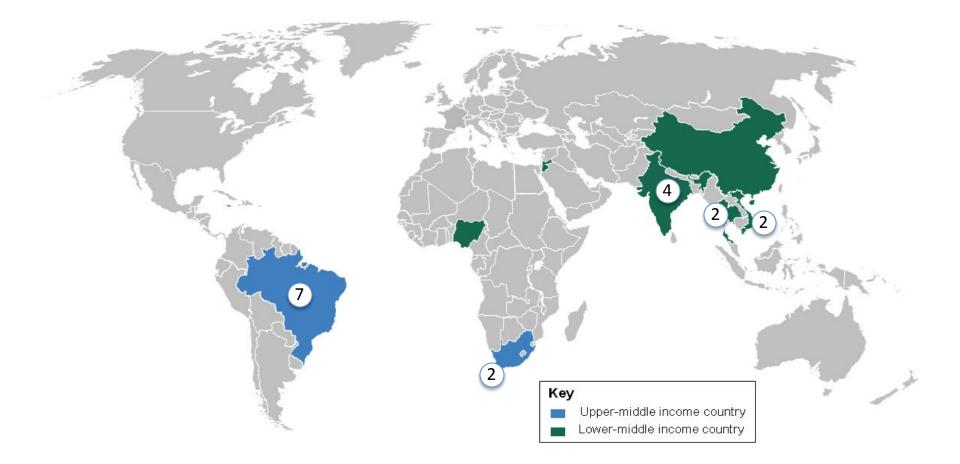
Context

- Meta-analysis of 31 observational studies reveals <u>no</u> <u>systematic difference in quality</u> between private for-profit, private not-for-profit and government controlled hospitals. Eggleston et al. (2008). Hospital Ownership and Quality of Care: What Explains the Different Results in the Literature? Health Economics, 17: 1345-1362.
- Systematic review finds that quality of care is poor among private providers, but <u>equally poor among public providers</u>. Berendes et al. (2011) Quality of Private and Public Ambulatory Health Care in Low and Middle Income Countries: Systematic Review of Comparative Studies. PLoS Med. 8(4)

Process for filtering papers



21 included studies from 8 countries, differentiated by national income



Study details

Location	Study goal/ objective	Study design
	Assess impact on case notification and treatment outcome of PPM approach for TB control involving private	
Mumbai, India	providers not previously involved in NTP	Cohort
	Assess the feasibility of a PPM for improved TB control and determine impact on case detection, case	
Delhi, India	management quality, treatment outcome and patient convenience	Cohort
Thailand	Inform PPM TB scale-up in Thailand	Cohort
	Compare operations and performance of public and private hospitals focusing on differences in patient case-	
Guangdong, China	mix and quality of care	Cross-sectional
Bahia, Brazil	Compare mortality and morbidity in patients with AMI hospitalized in public and private hospitals	Cohort
Kaduna State, Nigeria	Compare public and private facilities for TB management practices and treatment outcomes	Cross-sectional
	Determine patient characteristics, management practices and in-hospital outcomes between public and	
Thailand	private hospitals for patients with ACS	Cohort
Sao Paulo State, Brazil	Compare mortality among elderly patients attended within either private or public setting	Cross-sectional
	Describe the practices in intensive care units in Mumbai hospitals regarding limitation and withdrawal of care	
Mumbai, India	at the end of life .	Cohort
Ho Chi Minh City,		
Vietnam	Compare TB case management and treatment outcome between a semi-private chest clinic and public NTP	Cohort
Brazil	Assesses the variations in mortality, length of stay between public and private hospitals	Cohort
Brazil	Compare clinical outcomes for diabetic patients attending private clinic or public health clinic	Cohort
Ho Chi Minh City,	Determine treatment outcome among patients treated by private lung specialists in a PPM project for	
Vietnam	improved TB control	Cohort
	Estimate average outpatient cost per patient in care and responding to treatment 1 year after initiation of	
South Africa	ART under different models of treatment delivery	Cohort
	Verify the actual incidence density and outcome of	
Brazil	sepsis in Brazilian ICUs	cohort
Mysore, India	Compare outcomes, costs, cost-effectiveness of strategies for provision of cataract surgery	Cohort
	Assess the standard direct costs of sepsis management in Brazilian ICUs and disclose factors that could affect	
Brazil	those costs	Cohort
Johannesburg, South		
Africa	Impact of RA on disability in private and public facilities in South Africa	Cohort
	Compare the epidemiological and socioeconomic profiles, clinical features, etiology, length of hospitalization,	
Niteroi, Brazil	and mortality of patients with decompensated heart failure admitted to public and private hospitals	Cross-sectional
	Assess nutritional status and compare quality of treatment among hemodialysis patients in public and private	
Jordan	hospitals	Cohort
Jamaica	Determine guality of monitoring and control of hypertension	Cohort

Lower Risk of Mortality in Private Care

Study or Subaroun	los[Odds Datio]	6.5	Wainht	Odds Ratio	Odds Ratio
Study or Subgroup	log[Odds Ratio]			IV, Random, 95% CI	IV, Random, 95% CI
Ambe 2005		0.30457	8.4%	0.36 [0.20, 0.66]	- -
Arora 2003	-0.7133499	1.256	1.9%	0.49 [0.04, 5.75]	
Chengsorn 2009	-2.21	0.307	8.4%	0.11 [0.06, 0.20]	- -
Eggleston 2010	-2.94	1.45	1.5%	0.05 [0.00, 0.91]	←
Ferreira 2009	-1.561	0.641	4.9%	0.21 [0.06, 0.74]	
Gidado 2009	0.3784	0.3336	8.1%	1.46 [0.76, 2.81]	+
Hutayanon 2007	-0.8329	0.146	10.0%	0.43 [0.33, 0.58]	
lucif 2004	-0.2744	0.047	10.6%	0.76 [0.69, 0.83]	•
Lonnroth 2003	-1.347	1.087	2.4%	0.26 [0.03, 2.19]	
Martins 2004	0.887	0.351	7.9%	2.43 [1.22, 4.83]	_ -
Quy 2003	0.47	0.354	7.8%	1.60 [0.80, 3.20]	+ -
Rosen 2008	1.99	0.734	4.2%	7.32 [1.74, 30.83]	
Silva 2004	-1.05	0.1717	9.8%	0.35 [0.25, 0.49]	
Sogayar 2008	-0.51	0.186	9.7%	0.60 [0.42, 0.86]	
Tavares 2004	-0.573	0.7289	4.2%	0.56 [0.14, 2.35]	
Total (95% CI)			100.0%	0.60 [0.41, 0.88]	(\bullet)
Heterogeneity: Tau ² =			4 (P < 0.	00001 ; $I^2 = 88\%$	0.05 0.2 1 5 20
Test for overall effect	Z = 2.62 (P = 0.0)	09)			Favours Private Favours Public

Weighted effect estimates from individual studies

• Subtotal and total summary estimates

TB studies vs. non-TB studies: No significant difference in mortality risk

Study or Subgroup	log[Odds Ratio]	ŚE	Weight	Odds Ratio IV, Random, 95% CI	Odds Ratio IV, Random, 95% CI
9.2.1 TB Studies					
Ambe 2005	-1.02	0.30457	8.4%	0.36 [0.20, 0.66]	_
Arora 2003	-0.7133499	1.256	1.9%	0.49 [0.04, 5.75]	
Chengsorn 2009	-2.21	0.307	8.4%	0.11 [0.06, 0.20]	_ _
Gidado 2009	0.3784	0.3336	8.1%	1.46 [0.76, 2.81]	- +-
Lonnroth 2003	-1.347	1.087	2.4%	0.26 [0.03, 2.19]	
Quy 2003	0.47	0.354	7.8%	1.60 [0.80, 3.20]	
Subtotal (95% CI)			37.1%	0.50 [0.17, 1.43]	
Heterogeneity: Tau ² =	= 1.38; Chi ² = 47.0	0, df = 5 (P < 0.00	001 ; $I^2 = 89\%$	
Test for overall effect	Z = 1.29 (P = 0.2)	0)			
9.2.2 Non-TB Studie	5				
Eggleston 2010	-2.94	1.45	1.5%	0.05 [0.00, 0.91]	←
Ferreira 2009	-1.561	0.641	4.9%	0.21 [0.06, 0.74]	
Hutayanon 2007	-0.8329	0.146	10.0%	0.43 [0.33, 0.58]	
ucif 2004	-0.2744	0.047	10.6%	0.76 [0.69, 0.83]	-
Martins 2004	0.887	0.351	7.9%	2.43 [1.22, 4.83]	-
Rosen 2008	1.99	0.734	4.2%	7.32 [1.74, 30.83]	-
Silva 2004	-1.05	0.1717	9.8%	0.35 [0.25, 0.49]	
Sogayar 2008	-0.51	0.186	9.7%	0.60 [0.42, 0.86]	
Tavares 2004	-0.573	0.7289	4.2%	0.56 [0.14, 2.35]	
Subtotal (95% CI)			62.9%	0.66 [0.43, 1.00]	
Heterogeneity: Tau ² =	= 0.24; Chi ² $= 60.2$	4, df = 8 (P < 0.00	001 ; $I^2 = 87\%$	
Test for overall effect					
Total (95% CI)			100.0%	0.60 [0.41, 0.88]	•
Heterogeneity: Tau ² =	= 0.35; Chi ² $= 112$.	15. df = 1	4 (P < 0.	00001); $I^2 = 88\%$	
Test for overall effect					0.05 0.2 1 5 20
Test for subgroup dif			(P = 0.63)	3), $ ^2 = 0\%$	Favours Private Favours Publi

Upper-middle- vs. lower-middle-income countries: No significant difference in mortality in private care

Study or Subgroup	log[Odds Ratio]	SE	Weight	Odds Ratio IV, Random, 95% CI	Odds Ratio IV, Random, 95% CI
9.4.1 Upper Middle-	Income				
Ferreira 2009	-1.561	0.641	4.9%	0.21 [0.06, 0.74]	
lucif 2004	-0.2744	0.047	10.6%	0.76 [0.69, 0.83]	-
Martins 2004	0.887	0.351	7.9%	2.43 [1.22, 4.83]	_
Rosen 2008	1.99	0.734	4.2%	7.32 [1.74, 30.83]	
Silva 2004	-1.05	0.1717	9.8%	0.35 [0.25, 0.49]	
Sogayar 2008	-0.51	0.186	9.7%	0.60 [0.42, 0.86]	
Tavares 2004	-0.573	0.7289	4.2%	0.56 [0.14, 2.35]	
Subtotal (95% CI)			51.3%	0.77 [0.47, 1.25]	
9.4.2 Lower Middle-	Income				
		0.20457	0 40/	0.26 [0.20, 0.66]	
Ambe 2005 Arora 2003	-0.7133499	0.30457	8.4% 1.9%	0.36 [0.20, 0.66] 0.49 [0.04, 5.75]	
Chengsorn 2009	-0.7153499	0.307	8.4%		
Eggleston 2010	-2.94	1.45	1.5%		
Gidado 2009	0.3784	0.3336	8.1%	1.46 [0.76, 2.81]	·
Hutayanon 2007	-0.8329	0.146	10.0%	0.43 [0.33, 0.58]	+
Lonnroth 2003	-1.347	1.087	2.4%		
Quy 2003	0.47	0.354	7.8%	1.60 [0.80, 3.20]	+
Subtotal (95% CI)			48.7%	0.44 [0.21, 0.91]	
Heterogeneity: Tau ² =	= 0.74; Chi ² = 49.4	5. $df = 7$ (P < 0.00	001); $ ^2 = 86\%$	-
Test for overall effect					
Total (95% CI)			100.0%	0.60 [0.41, 0.88]	•
Heterogeneity: Tau ² =	= 0.35; Chi ² = 112.	15, df = 1	4 (P < 0.	00001 ; $I^2 = 88\%$	0.01 0.1 1 10 1
Test for overall effect					0.01 0.1 1 10 1 Favours Private Favours Public
Test for subgroup dif	ferences: $Chi^2 = 1.5$	6, df = 1	(P = 0.21)), $I^2 = 36.1\%$	ravours rrivate ravours rubin

Weighted effect estimates from individual studies

Subtotal and total summary estimates

Upper Middle-Income

Middle-Income

Lower

Outpatient versus inpatient settings: No significant difference in mortality in private care

Study or Subgroup	log[Odds Ratio]	SE	Weight	Odds Ratio IV, Random, 95% CI	Odds Ratio IV, Random, 95% CI
9.3.1 Outpatient Se	tting				
Ambe 2005	-1.02	0.30457	8.4%	0.36 [0.20, 0.66]	_
Arora 2003	-0.7133499	1.256	1.9%	0.49 [0.04, 5.75]	
Chengsorn 2009	-2.21	0.307	8.4%	0.11 [0.06, 0.20]	- -
Gidado 2009	0.3784	0.3336	8.1%	1.46 [0.76, 2.81]	+ -
Lonnroth 2003	-1.347	1.087	2.4%	0.26 [0.03, 2.19]	
Quy 2003	0.47	0.354	7.8%	1.60 [0.80, 3.20]	+
Rosen 2008	1.99	0.734	4.2%	7.32 [1.74, 30.83]	
Subtotal (95% CI)			41.3%	0.71 [0.24, 2.06]	
	= 1.66; Chi ² $= 60.0tt: Z = 0.63 (P = 0.5$				
9.3.2 Inpatient Sett	ing				
Eggleston 2010	-2.94	1.45	1.5%	0.05 [0.00, 0.91]	(
Ferreira 2009	-1.561	0.641	4.9%	0.21 [0.06, 0.74]	-
Hutayanon 2007	-0.8329	0.146	10.0%	0.43 [0.33, 0.58]	-
lucif 2004	-0.2744	0.047	10.6%	0.76 [0.69, 0.83]	-
Martins 2004	0.887	0.351	7.9%	2.43 [1.22, 4.83]	_ -
Silva 2004	-1.05	0.1717	9.8%	0.35 [0.25, 0.49]	
Sogayar 2008	-0.51	0.186	9.7%	0.60 [0.42, 0.86]	
Tavares 2004	-0.573	0.7289	4.2%		
Subtotal (95% CI)			58.7%	0.57 [0.38, 0.85]	
Heterogeneity: Tau ²	= 0.20; Chi ² = 49.9	4, df = 7 (P < 0.00	001); $I^2 = 86\%$	
Test for overall effec	t: $Z = 2.76 (P = 0.0)$	06)			
Total (95% CI)			100.0%	0.60 [0.41, 0.88]	◆
Heterogeneity: Tau ²	= 0.35; Chi ² = 112.	15, df = 1	4 (P < 0.	00001 ; $l^2 = 88\%$	0.01 0.1 1 10 10
Test for overall effect	t: $Z = 2.62 (P = 0.0)$	0.9)		,	
reactor overall ener		~ ~ /			Favours Private Favours Public

Weighted effect estimates from individual studies

Subtotal and total summary estimates

GRADE evidence profiles: Overall low quality rating

Factors affecting quality of evidence

Grading of quality of evidence (score)

Mortality

Design Risk of bias (NOQAS) Directness (generalizability) Inconsistency Imprecision Publication/reporting bias Overall quality rating All observational studies (-2) Minor (0) No serious indirectness (0) Serious (-1) No serious imprecision (0) Unlikely (0) Very low

Unsuccessful TB treatment

Design Risk of bias (NOQAS) Directness (generalizability) Inconsistency Imprecision Publication/reporting bias Large Effect Estimate Overall quality rating All observational studies (-2) Minor (0) No serious indirectness (0) No serious inconsistency (0) No serious imprecision (0) Unlikely (0) Greater than 2.0 (+1) Moderate

All other outcomes

Design Risk of bias (NOQAS) Directness (generalizability) Inconsistency Imprecision Publication/reporting bias Overall quality rating All observational studies (-2) Minor (0) No serious indirectness (0) No serious inconsistency (0) Serious imprecision (-1) Unlikely (0) Very low

Findings 1

- I. Most outpatient studies (6/10) were focused on TB
- II. There is no comparative outcome data on public vs. private from Low-Income Countries
- III. Data from Middle-Income Countries is of uncertain quality, coming primarily from observational studies
- IV. The limited data available suggests that treatment in private settings in LMICs leads outcomes that may be better than outcomes in public settings.

Findings 2

Health Risks in Private Settings are Lower than Health Risks in Public Settings

