

Study of Quality of Care in Public and Private Sectors

Research Symposium
Quality of Healthcare in Sri Lanka

Hosted by SLMA, CMASL and IHP

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Study Organization

*Study Team

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Study Objective

- To assess levels and differences in quality of care in public and private medical sectors in Sri Lanka

Funding

- World Bank contract to IHP, IHP Public Interest Research Fund Grant PIRF-2012-03, IDRC Grant 106439-003

Ethical Review

- Ethical review and clearance of study design and survey instruments by IHP Ethical Review Committee (IHP ERC Approval Nos. 2012/006A, 2012/006B)

Outline

- Study Organization
- Background
- Methodology
- Findings
- Conclusions

Background

- Importance of measuring quality
- Background on Sri Lanka

Why did we measure quality?

- How to optimise the contribution of the private sector within Sri Lanka's mixed health system?
 - Who they treat
 - Relative costs
 - **Quality of care provided**
- Research questions
 - Does clinical quality differ between the public and private sectors in Sri Lanka
 - Does interpersonal quality differ between the public and private sectors in Sri Lanka

Concepts

What is quality?

- “The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.”
 - Institute of Medicine 1991

Dimensions of quality (Donabedian 1980)

- **Structure**
 - Whether providers have correct inputs, equipment, training, etc.
- **Process**
 - Whether good practices are followed
- **Outcomes**
 - Impact of medical services on patients, including health outcomes and patient satisfaction

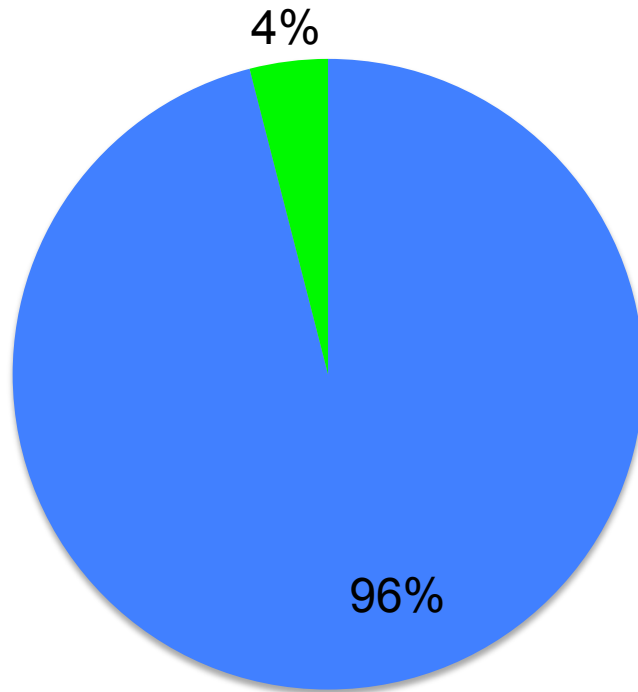
Measuring process quality

- No widely accepted approach
- Methods differ
 - Developing countries:
 - Single conditions
 - Little relevance to Sri Lanka (tuberculosis, HIV, malaria)
 - Developed countries
 - Broader methods (range of conditions)

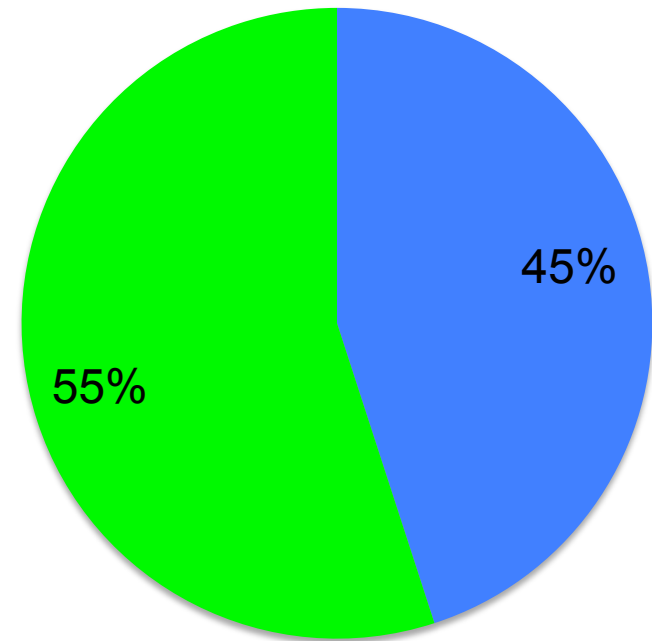
Utilization of healthcare services

CBSL CFS 2003/04

Inpatient



Outpatient



■ Public ■ Private

Key indicators of hospitals in Colombo, Gampaha, Galle (2011)

Category	Hospitals	Beds	Admissions	Inpatient spending per admission
	<i>n</i>	<i>n</i>	<i>n</i>	<i>rupees</i>
Public hospitals	72	20,949	1.6 million	10,297
Private hospitals	64	2,395	0.2 million	94,614

Sources: Management Development and Planning Unit (2011) and Institute for Health Policy (2013)

Inpatient quality of care

Comparison between public and private sectors

Methodology

- Study design
- Tracer indicators & inclusion criteria
- Sampling

Study design – inpatient care

Overview

- Study object
 - **Process quality**, *i.e.*, *what providers actually do*
- Approach
 - Retrospective review of inpatient medical records
 - Analysis of care using tracer conditions

Inpatient tracer conditions

Criteria for selection

- Conditions should be relatively frequent
- Feasible quality indicators should exist with support in literature
- Should be representative of a range of conditions and patient populations

Tracer conditions (initial)

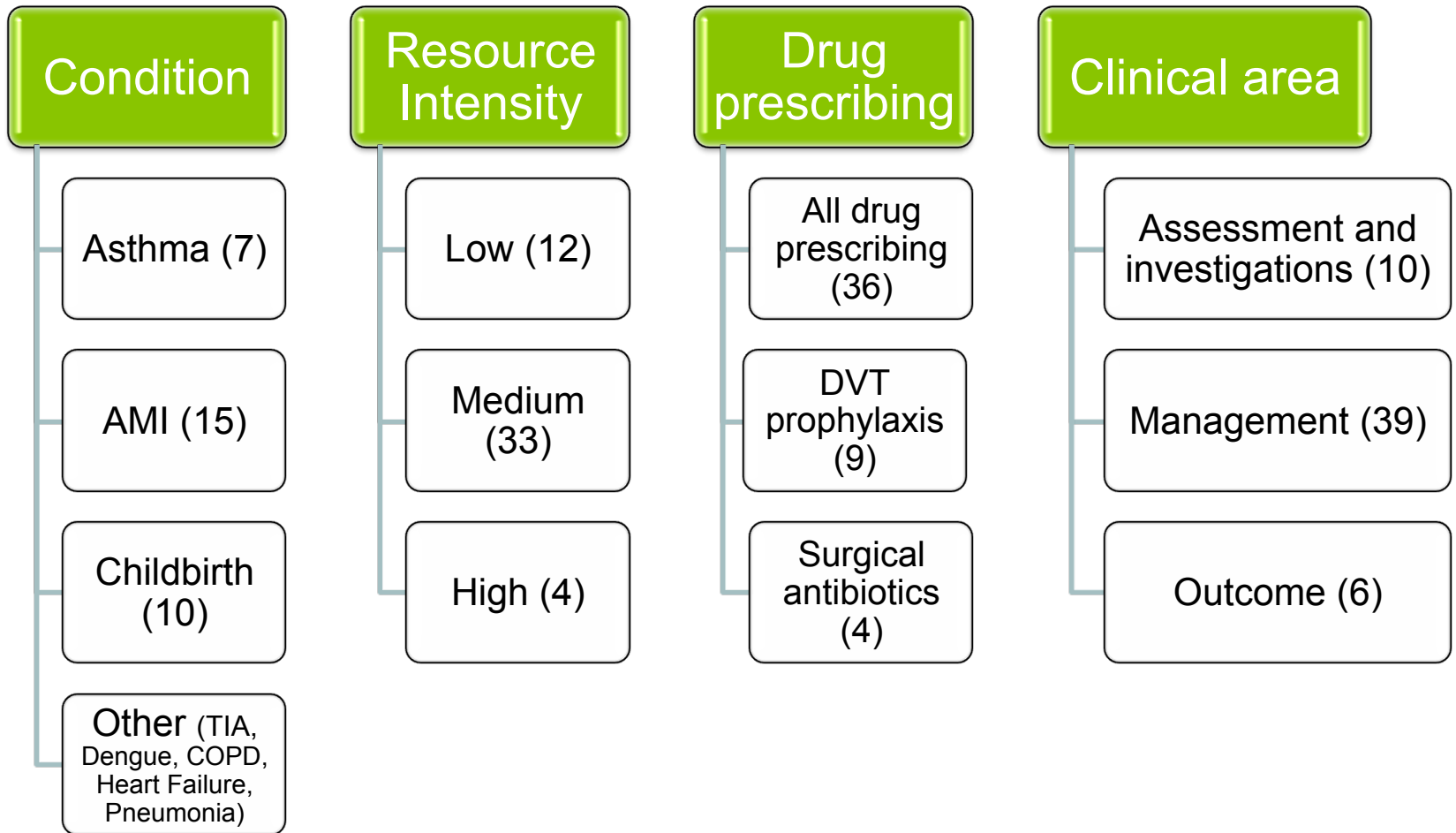
1. Acute Myocardial Infarction (AMI) (1% of discharges)
2. Acute Asthma (4% of discharges)
3. Childbirth (6% of discharges)

Selecting quality indicators

- Identified possible quality indicators
 - Quality clearing houses
 - Quality assessment agencies
 - Studies: developed and developing countries
 - Clinical guidelines
- Review by panel of doctors
- Subsequent review of RAND quality assessment tool
 - Identification of additional tracer conditions and quality indicators
 - Choice of method to aggregate quality indicators

Inpatient Quality Indicators

55 Quality Indicators



Inpatient quality indicators – examples

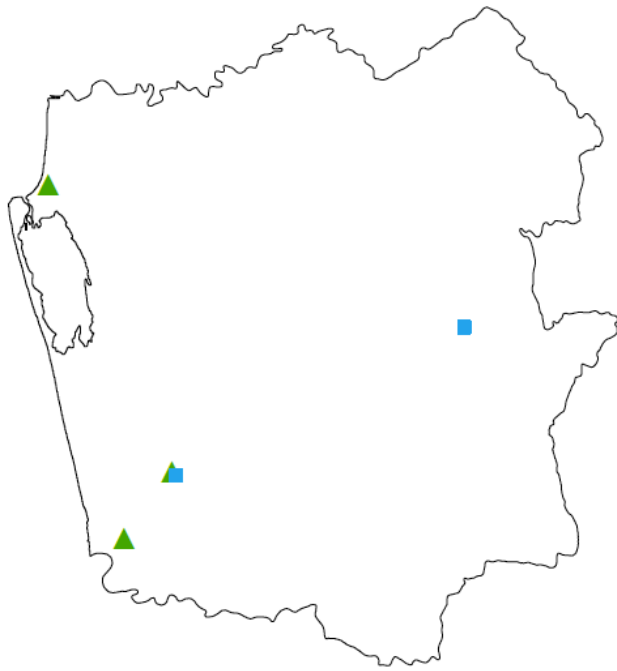
Indicator	Condition	Clinical area	Resource intensity	Drug prescribing
Neonatal APGAR score recorded	Childbirth	Assessment / Investigations	Low	-
Prophylactic antibiotics given during LSCS	Childbirth	Management	Medium	All drug prescribing, surgical antibiotics
Live discharge, AMI	AMI	Outcome	-	-
AMI patient underwent PCI / stenting	AMI	Management	High	-
Oxygen saturation measured in acute asthma	Acute asthma	Assessment / Investigations	High	-

Sampling

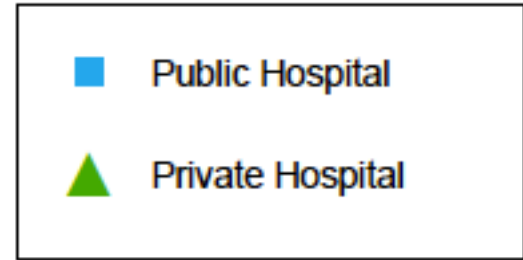
Distribution of sampled facilities

Hospital type	Sampled facilities			
	Colombo	Gampaha	Galle	Total
Public				
Large	2	1	1	4
Intermediate	2	1	1	4
Obstetric	1	0	1	2
Paediatric	1	0	0	1
Other specialist	0	0	0	0
Total	6	2	3	11
Private				
Large	3	1	0	4
Intermediate / small	1	2	2	5
Obstetric	1	0	0	1
Paediatric	0	0	0	0
Other specialist	0	0	0	0
Total	5	3	2	10

Gampaha



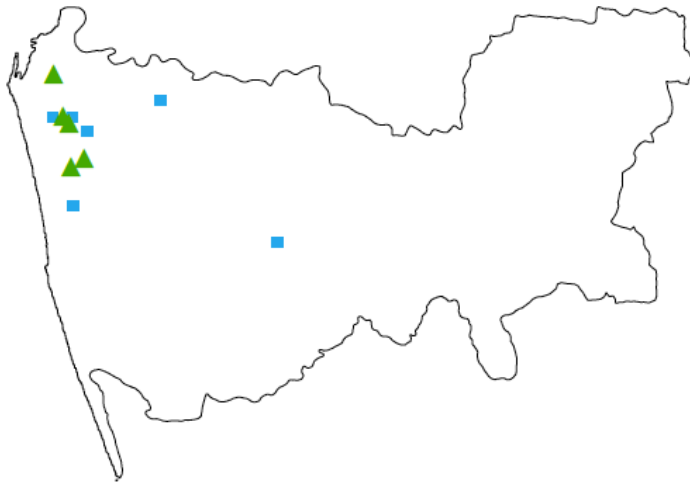
Geographic distribution of sampled providers



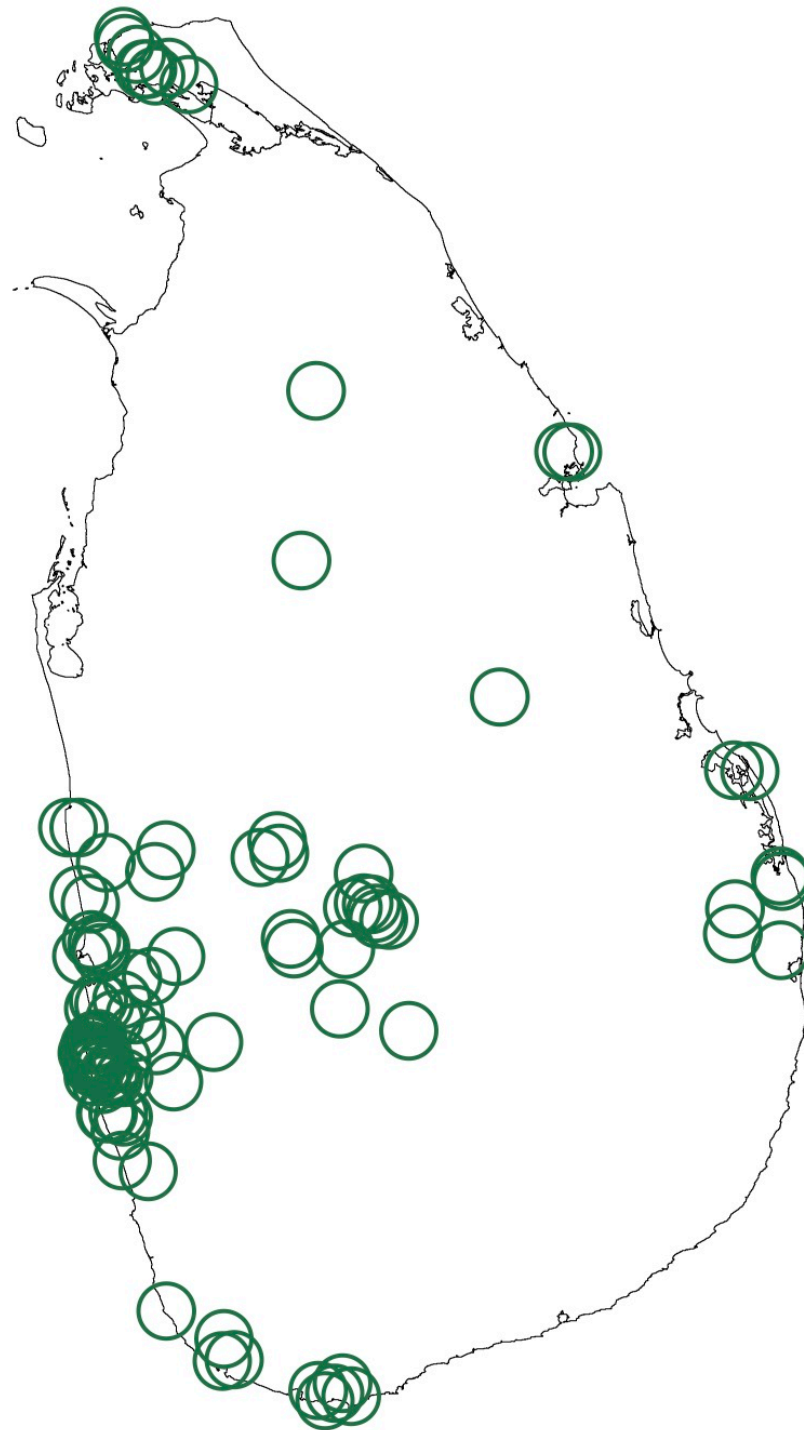
Galle



Colombo



Distribution of private hospitals, Sri Lanka 2012



Data collection and processing

Patient sampling

- Systematic sample of patient records from 2011 discharges
- Supplementary samples of tracer conditions

Data collection

- Data extraction and entry by pre-intern medical graduates using Apple iPads. Drug name entry using pre-coded listing of brand and generic names.

Data analysis

- Diagnoses coded to ICD-10 by physician.
- All analysis using Stata 12.0.

Data collection and processing

Quality and satisfaction scores

Adapted method used by RAND quality study (McGlynn et al)

- Quality instance = each opportunity a patient could potentially receive recommended care

$$\text{Aggregate score} = \frac{\text{total number of times recommended care was given for each quality instance}}{\text{number of quality instances}}$$

Data collection and processing

Quality scores

Asthma indicators	Public sector		Private sector	
	Number of times recommended care was given	Number of quality instances	Number of times recommended care was given	Number of quality instances
Oxygen saturation measured	4	25	11	22
FEV1 or PEFr measured	0	25	0	22
Smoking status assessed in males 15 years or older	5	11	3	6
Received inhaled bronchodilator on admission	24	25	21	22
Systemic corticosteroids prescribed during hospitalisation	19	25	16	22
Did not receive beta blocker medications	25	25	22	22
Live discharge for asthma	25	25	22	22
Totals	104	÷ 164	94	÷ 136
Score		63%		69%

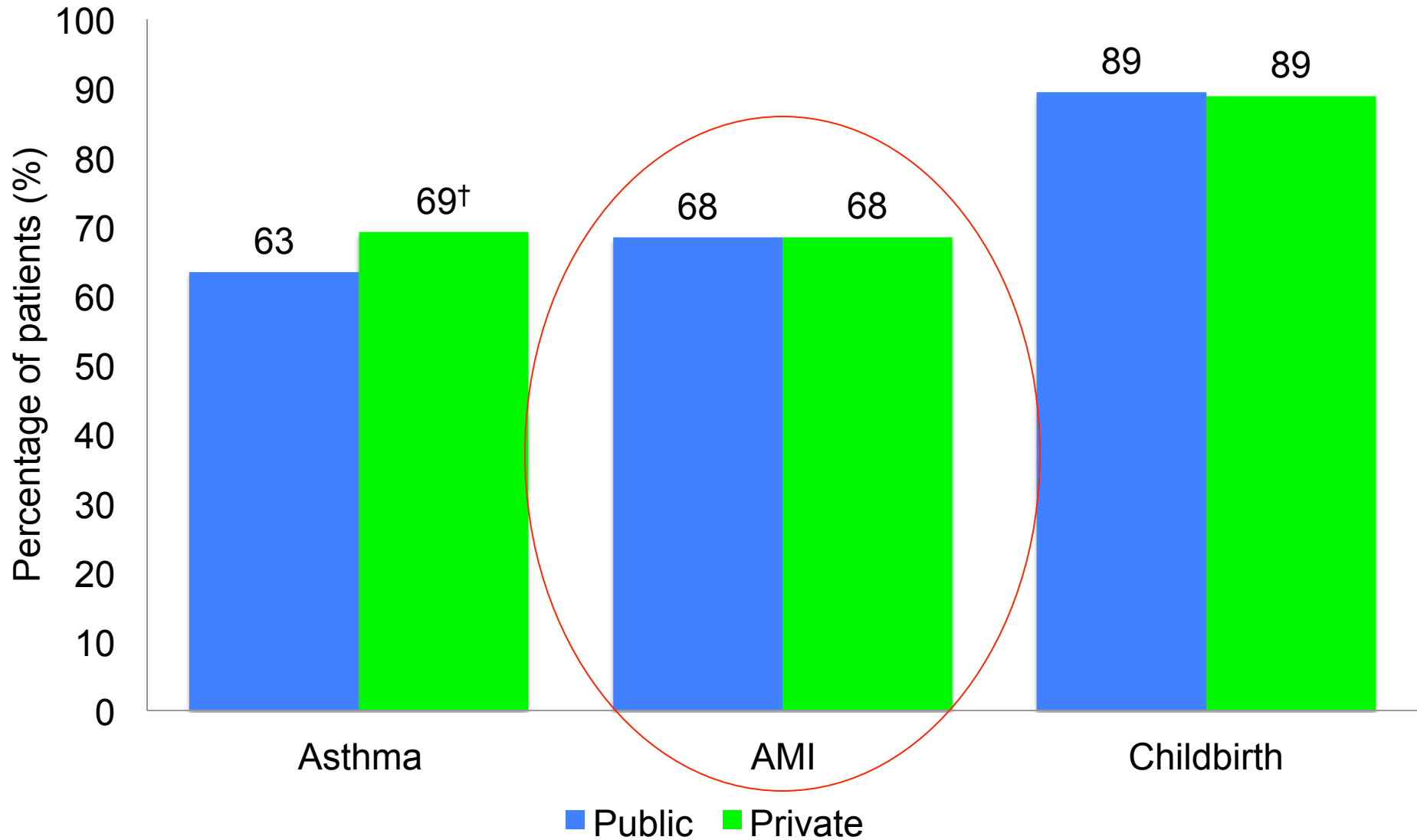
Findings

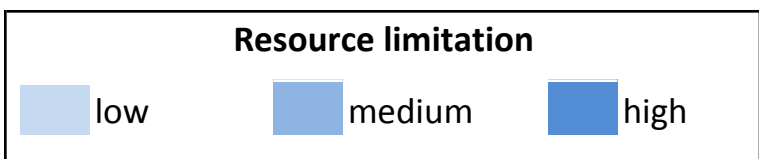
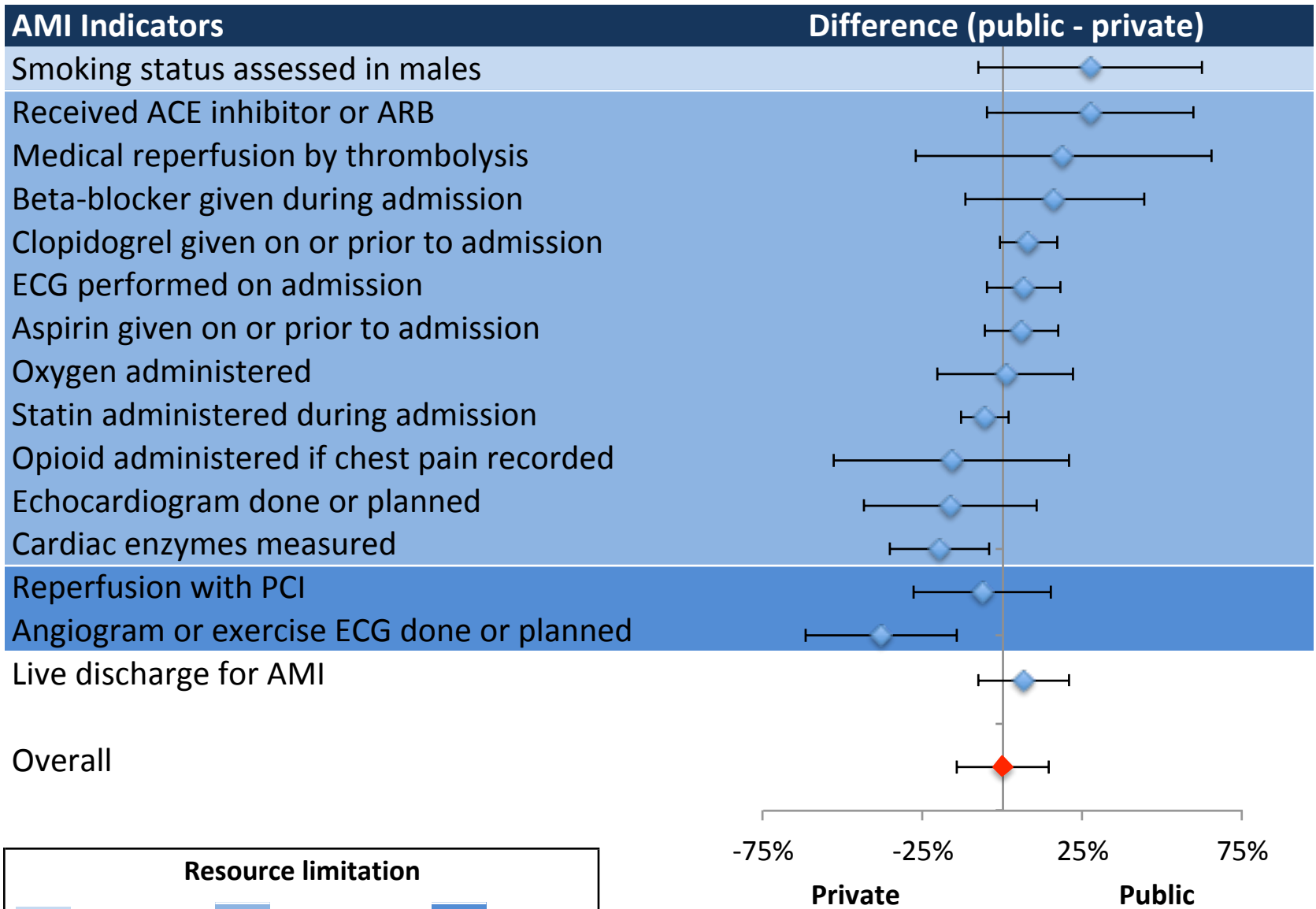
- Inpatient quality of care

Characteristics of patient sample

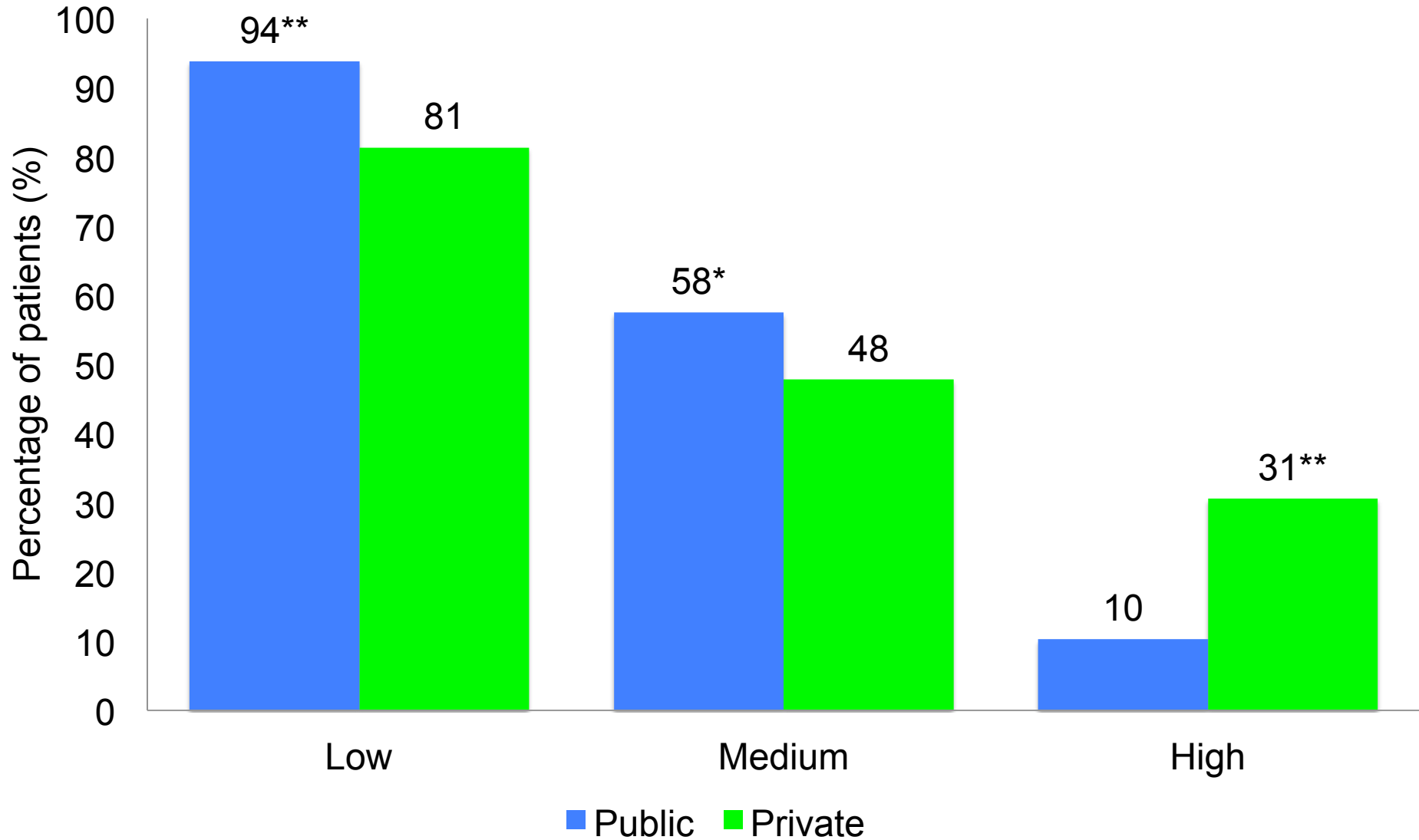
Characteristic	Weighted, standardized		Standardized <i>p</i> value
	Public Sector (n = 2,523)	Private Sector (n = 1,815)	
Average age, <i>years</i>	36.8	37.0	1.0
Male sex, %	47.9	47.8	1.0
Discharge diagnoses			
Asthma, %	1.0	1.2	0.7
AMI, %	0.6	0.7	0.8
Childbirth, %	6.9	6.2	0.9
Average length of stay, <i>days</i>	3.6	3.0	0.1

Quality by condition

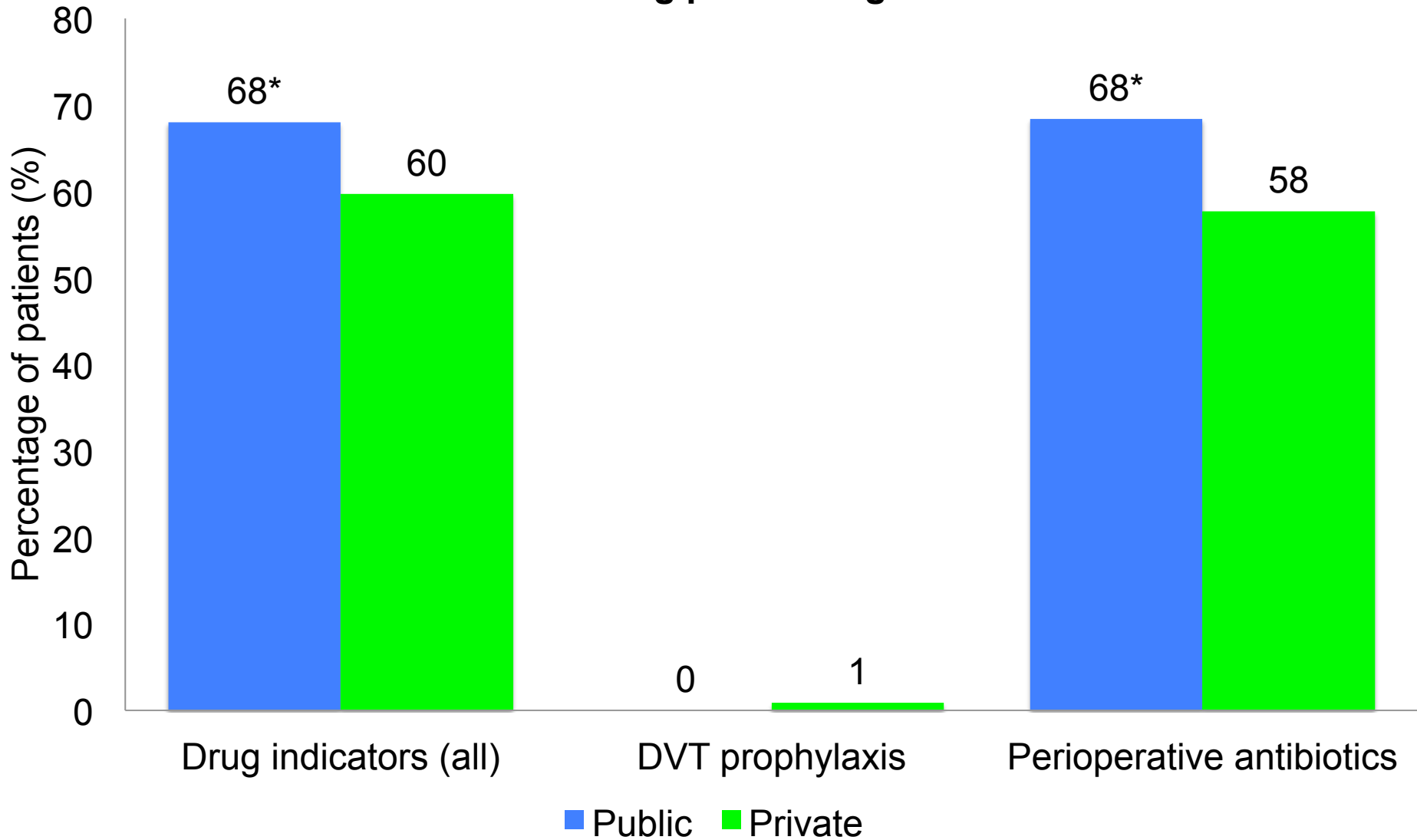




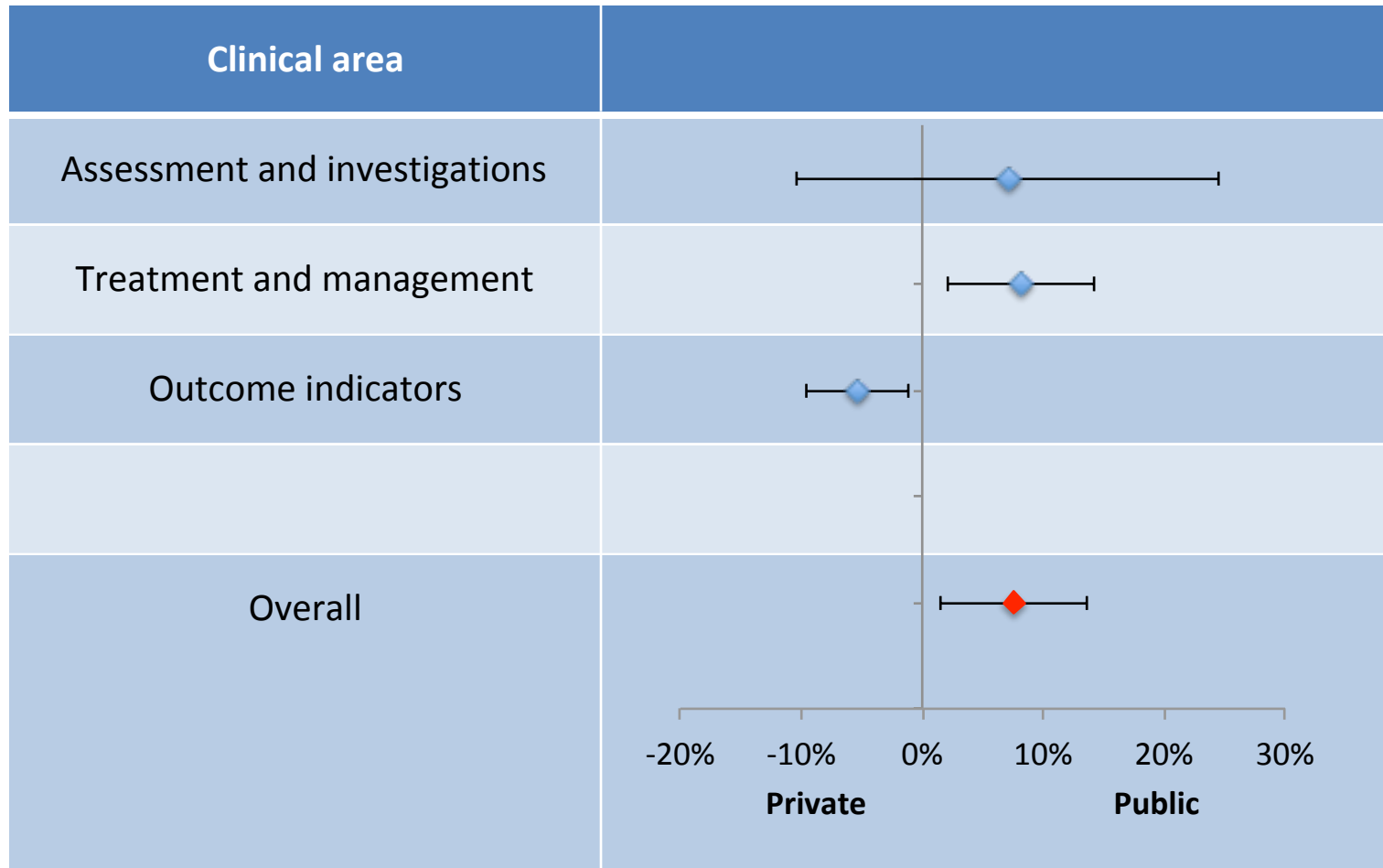
Quality by resource limitation



Drug prescribing

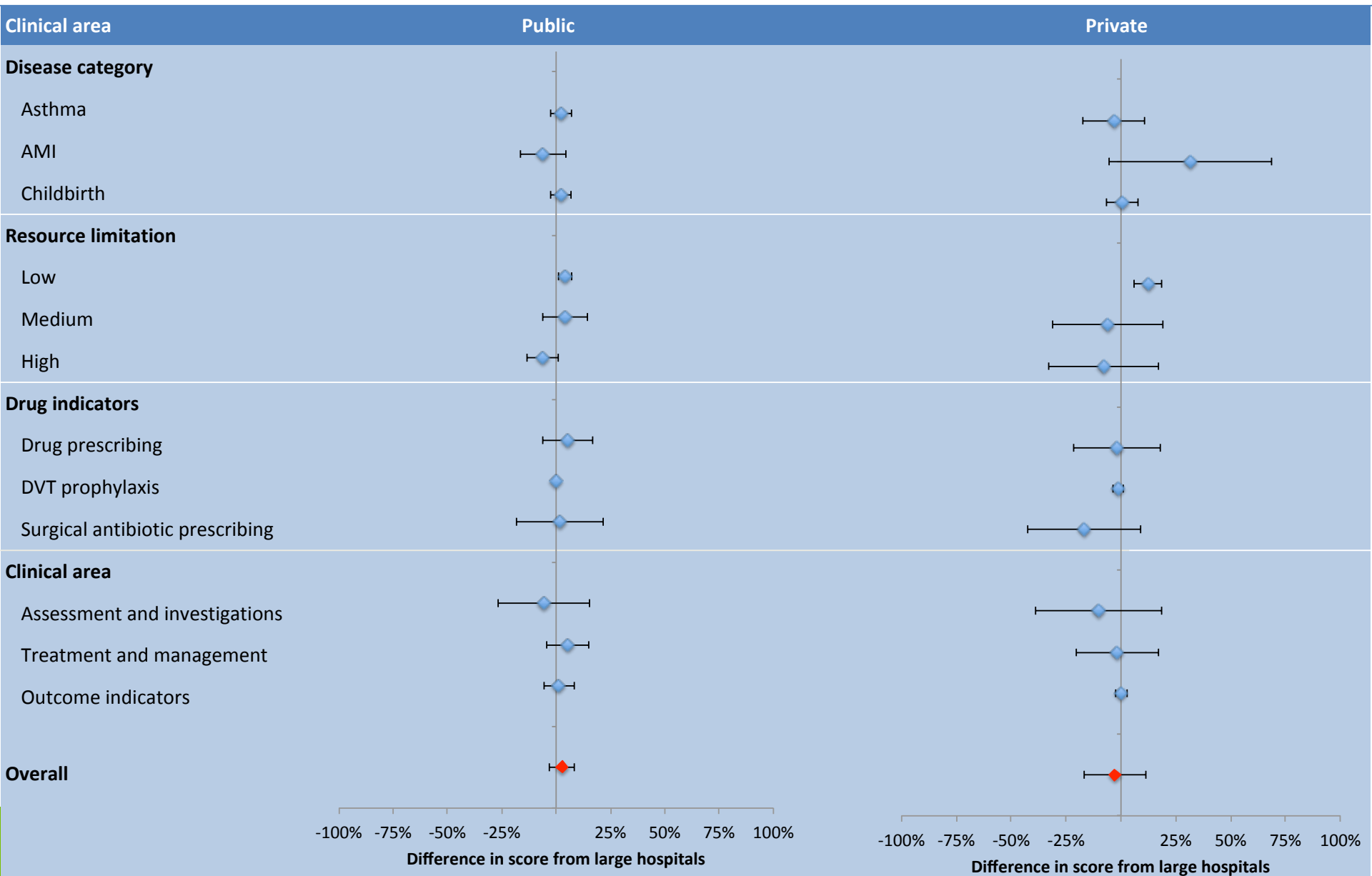


Difference in scores by clinical area



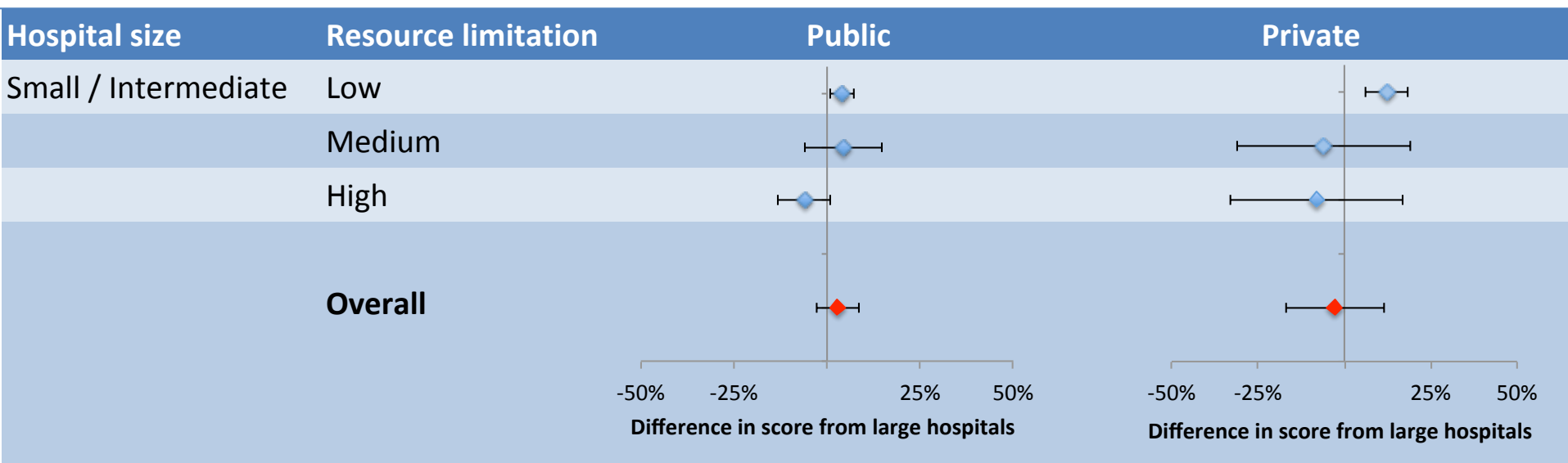
Quality scores by hospital size

Is quality better in small/intermediate hospitals than large hospitals?



Quality scores by hospital size and resource limitation

Difference in scores compared to large hospitals



Conclusions

Key findings

Public vs. private

- Quality is fairly similar, although the public sector is slightly better
- Private sector performs better in indicators that are resource intensive
- Smaller hospitals tend to do slightly better in both sectors in low resource intensity indicators

Outpatient quality of care and patient satisfaction

Comparison between public and private sectors

Study design - outpatient

Overview

- Study objects: **Process quality** and **Patient Perceptions**
- Approach
 - Observation of patient consultations
 - Analysis of care using tracer conditions
 - Exit interview of patient
 - Patient satisfaction
 - Socioeconomic background and ethnicity

Final conditions

- Common conditions from Sri Lanka Primary Care Survey, 2000
- Conditions with quality indicators used in other settings – India study, RAND
 - Cough
 - Diarrhoea
 - URTI & tonsillitis
 - Asthma
 - Hypertension
 - Diabetes
 - Pregnancy

Quality indicators

39 quality indicators

Condition

Diarrhoea (7)

Cough (4)

Hypertension (7)

Diabetes (6)

Asthma (3)

Pregnancy (2)

Clinical Area

History (6)

Examination (7)

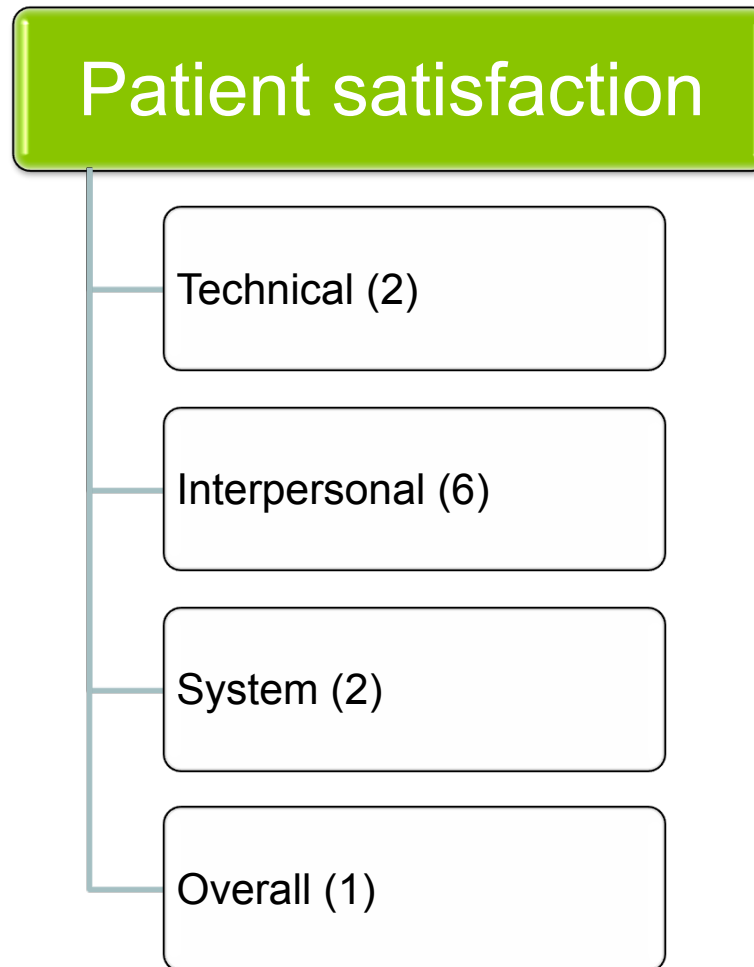
Investigations and Management (20)

Patient education (6)

Outpatient quality indicators – examples

Condition	Indicator	Type
Diarrhoea	Patient asked about fever	History
Cough	Physician performed a physical examination	Examination
Diabetes	Physician gave dietary advice	Education
Other	Patients 65 years or older given < 5 drugs	Assessment and management

Patient satisfaction



Sampling

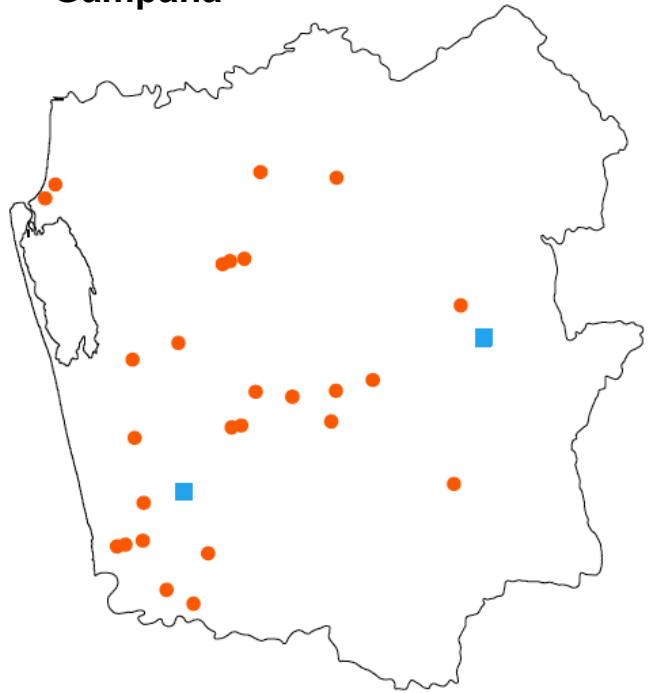
Distribution of sampled facilities

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Intermediate	2	1	1	4
Obstetric	1	0	1	2
Paediatric	1	0	0	1
Other specialist	0	0	0	0
Total	5	2	3	10
Private				
General practitioners	27	25	14	66

Geographic distribution of sampled providers



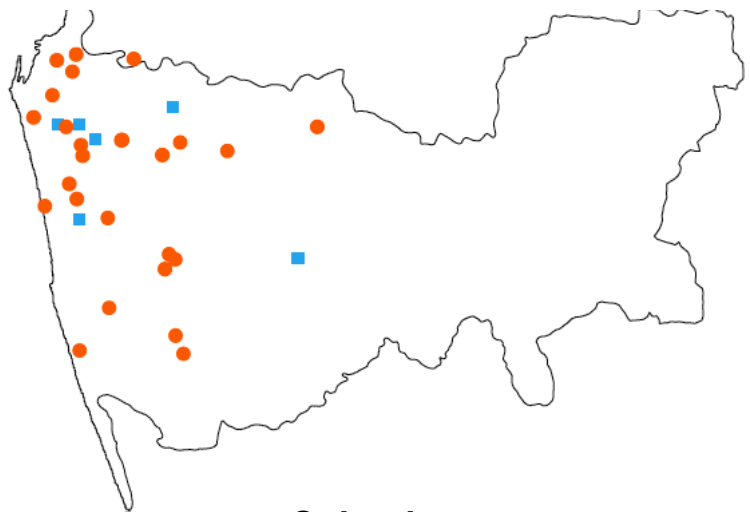
Gampaha



Galle



Colombo



Data collection and processing

Patient sampling

- Systematic sampling of patients waiting for consultation
- All patients asked to give consent

Data collection and analysis

- Patient symptoms and doctor diagnosis coded using ICPC
 - In field where possible
 - Coding by physicians

Findings

- Outpatient quality of care

Final sample

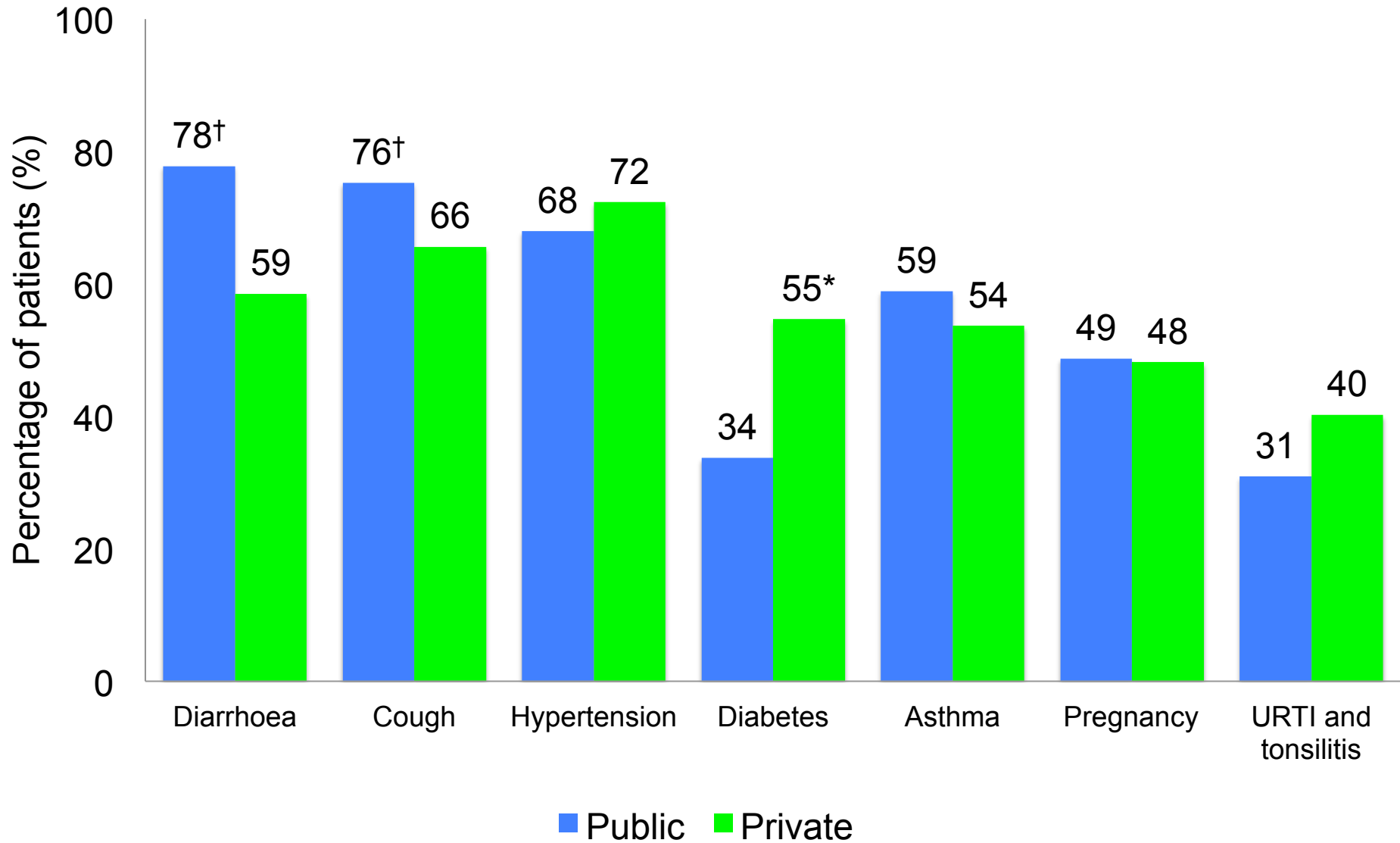
	Patients approached for observation of consultation (for PER)		Patients approached for exit survey of patient satisfaction	
	n	%	n	%
Total number of patients approached	1,971	100.0	1,948	100.0
Participation				
Participated	1,948	98.8	1,906	97.8
Refused	23	1.2	42	2.2

- Small number of refusals
- No significant differences in age and sex in participants vs. refusals

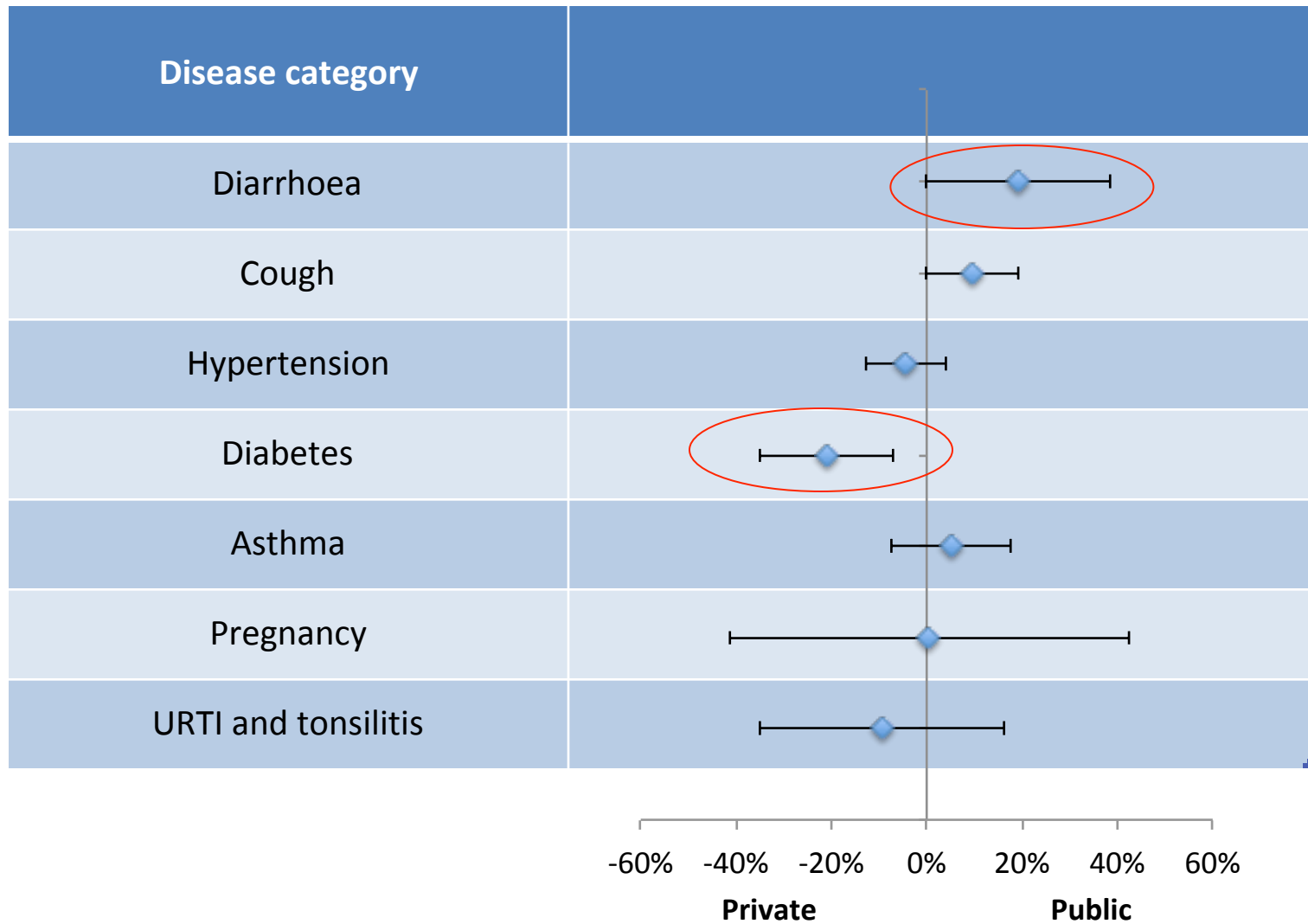
Patient characteristics after standardization

Characteristic	Weighted, standardized		Standardized <i>p</i> value
	Public Sector (n = 1,027)	Private Sector (n = 944)	
Average age, <i>years</i>	32.2	32.1	1.0
Male sex, %	35.2	35.3	1.0
Socioeconomic status			
Lower third, %	29.1	14.1	0.0
Middle third, %	42.2	38.8	0.4
Upper third, %	28.6	47.1	0.0
Conditions of interest			
Diarrhoea, %	1.9	2.5	0.7
Cough, %	20.8	23.8	0.5
Hypertension, %	6.8	6.4	0.9
Diabetes, %	5.3	3.0	0.3
Asthma, %	2.9	5.1	0.2
Pregnancy, %	5.9	0.7	0.3
URTI and Tonsillitis, %	16.5	26.4	0.0
Other, %	60.3	58.5	0.8
Length of consultation, min	3.1	7.8	0.0

Quality by condition



Quality by clinical area



Diarrhoea indicators

Asked about fever

Asked about vomiting

Asked about stool

Performed a physical examination

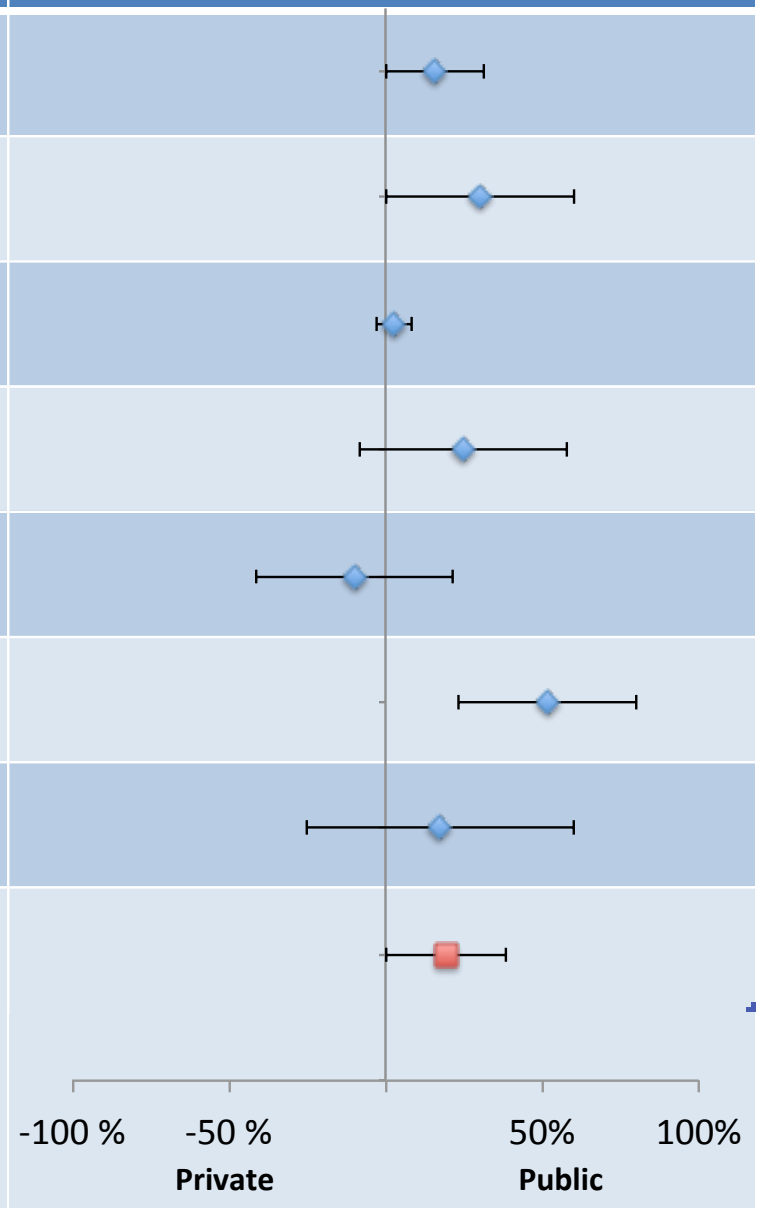
Prescribed oral rehydration solution

Did not receive antibiotics (excluding patients with dysentery and concomitant illnesses)

Did not receive antidiarrhoeals (excludes patients with vomiting)

Overall diarrhoea score

Antidiarrhoeals - adsorbents, bulk forming medicine, anti-motility, antispasmodics



Diabetes indicators

Blood pressure measured

Fasting blood sugar ordered

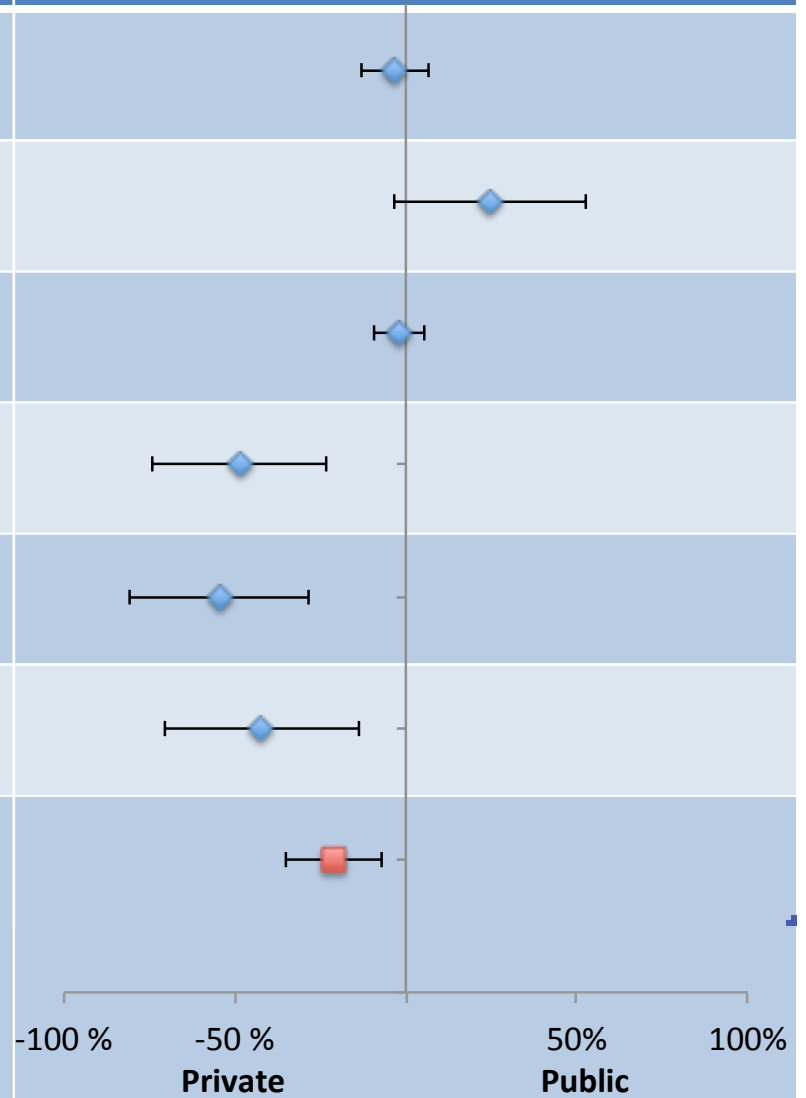
HbA1c measured

Dietary advice given

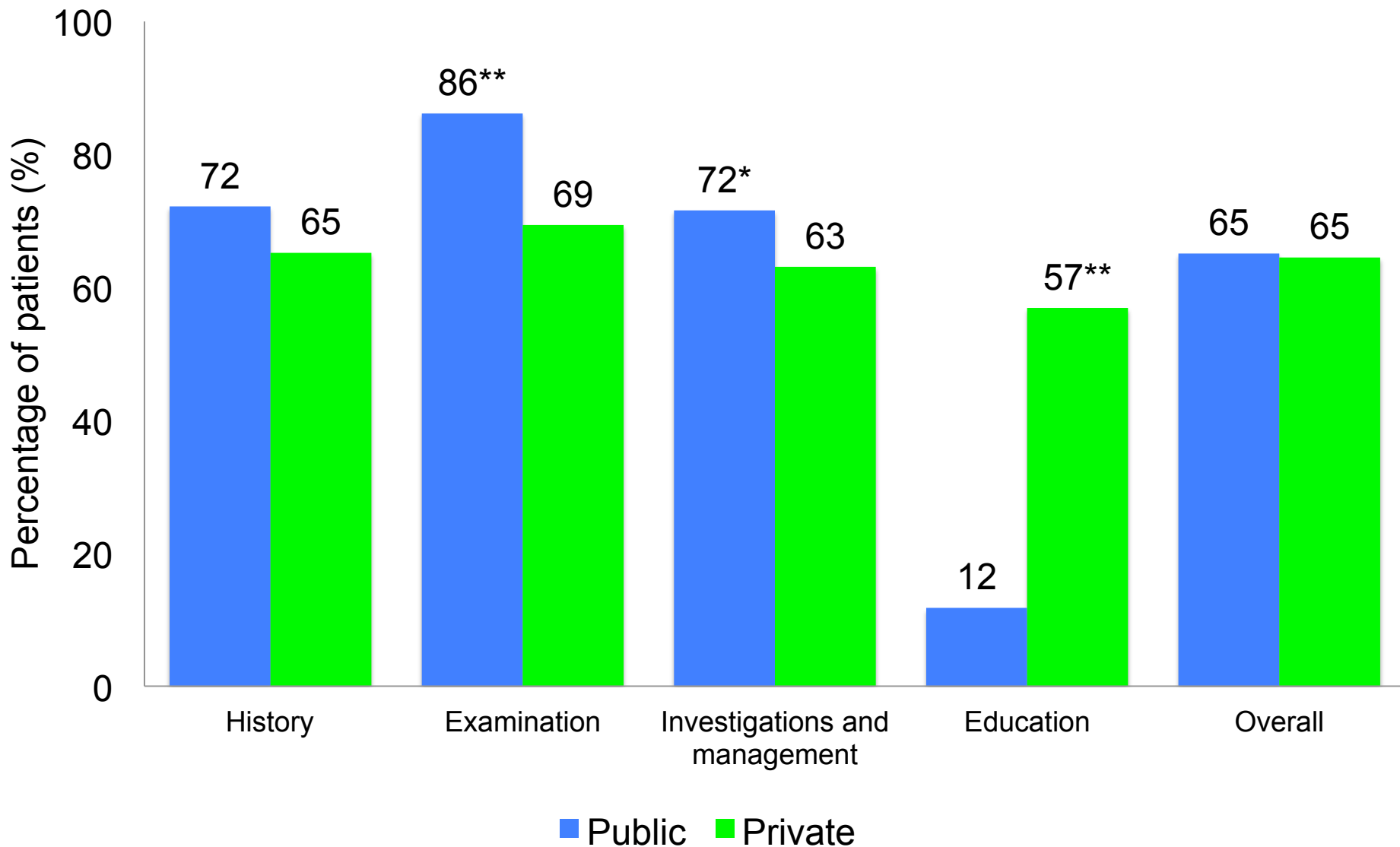
Advice on compliance to medications

Advice on condition given

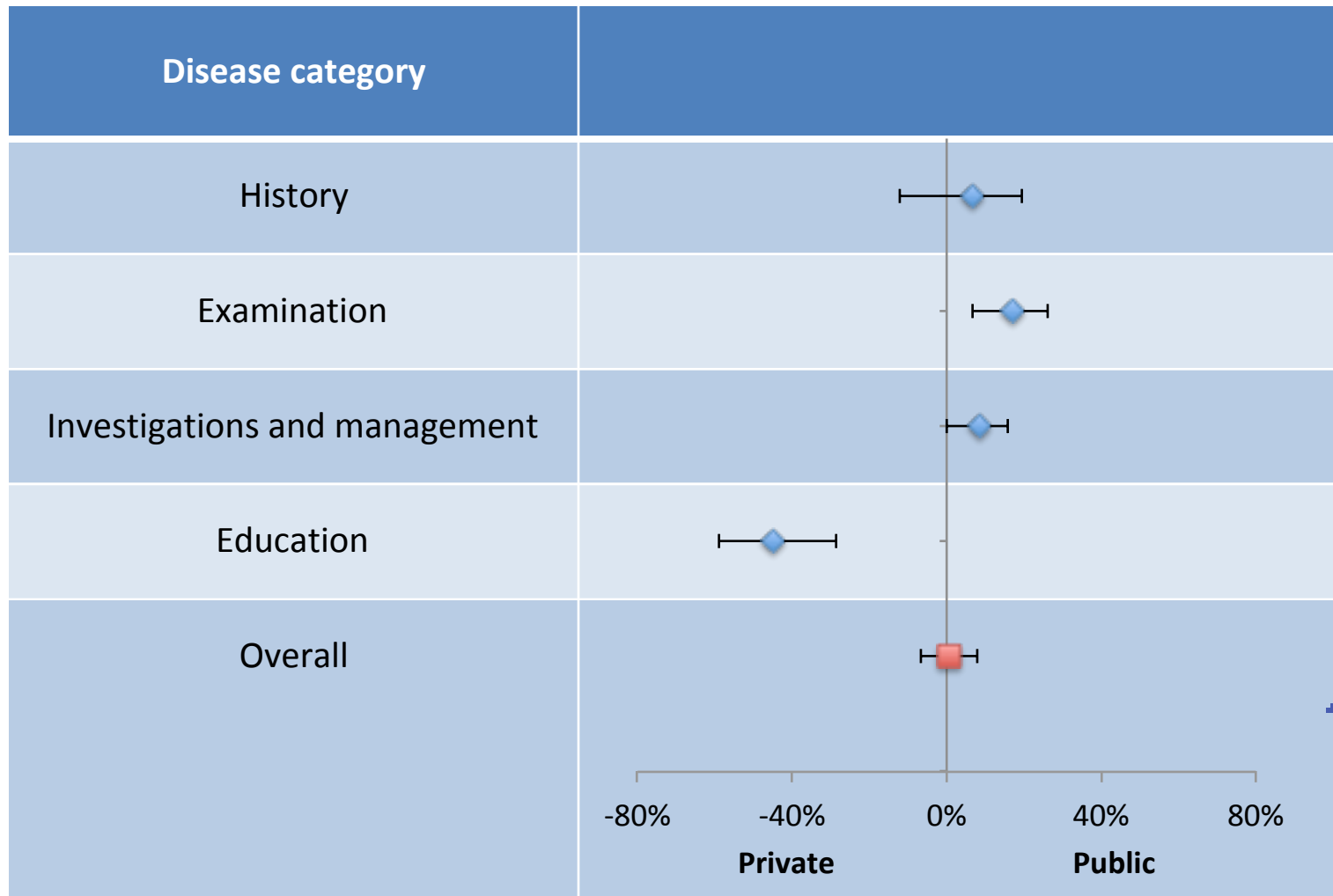
Overall diabetes score



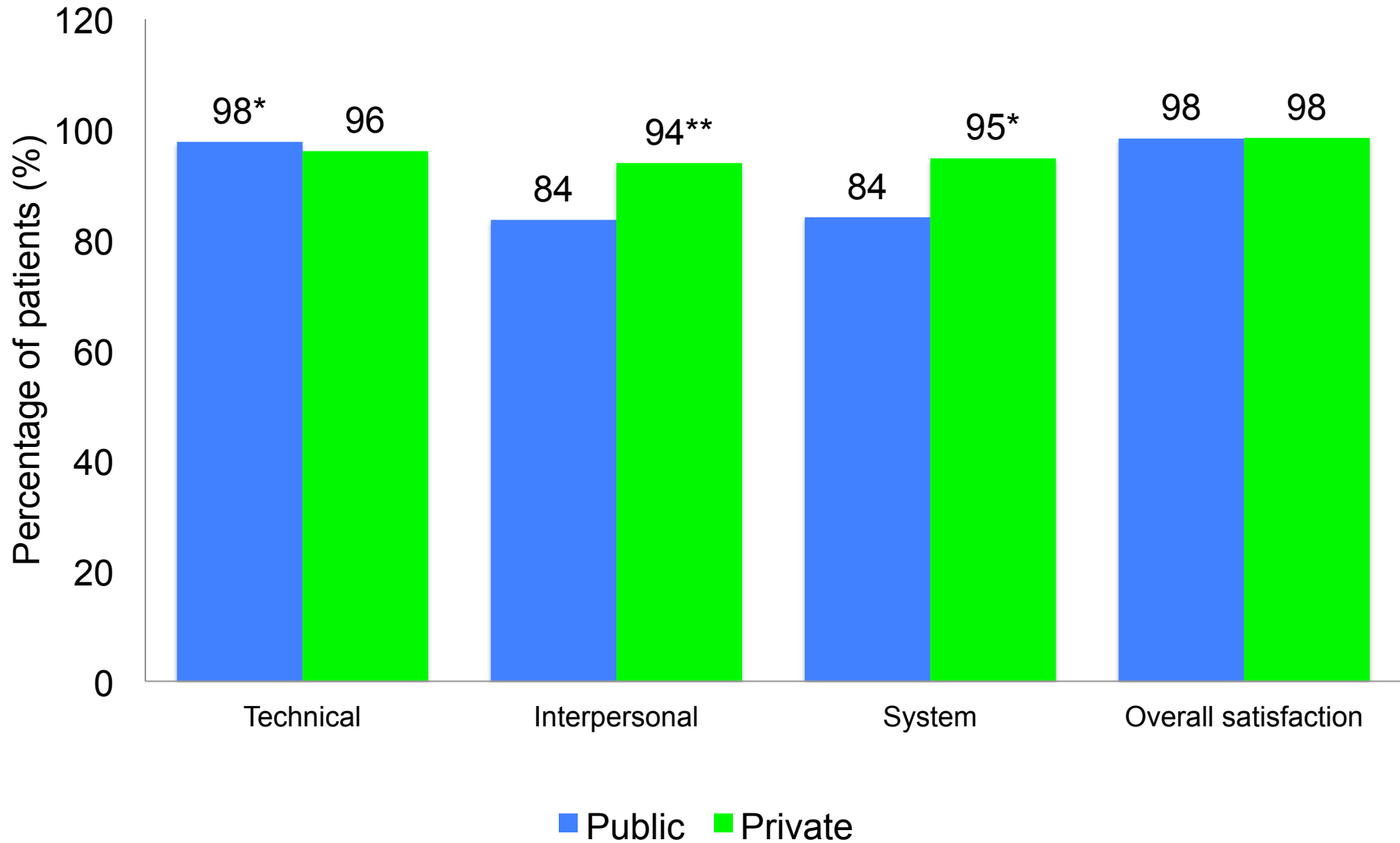
Quality by clinical area



Quality by clinical area



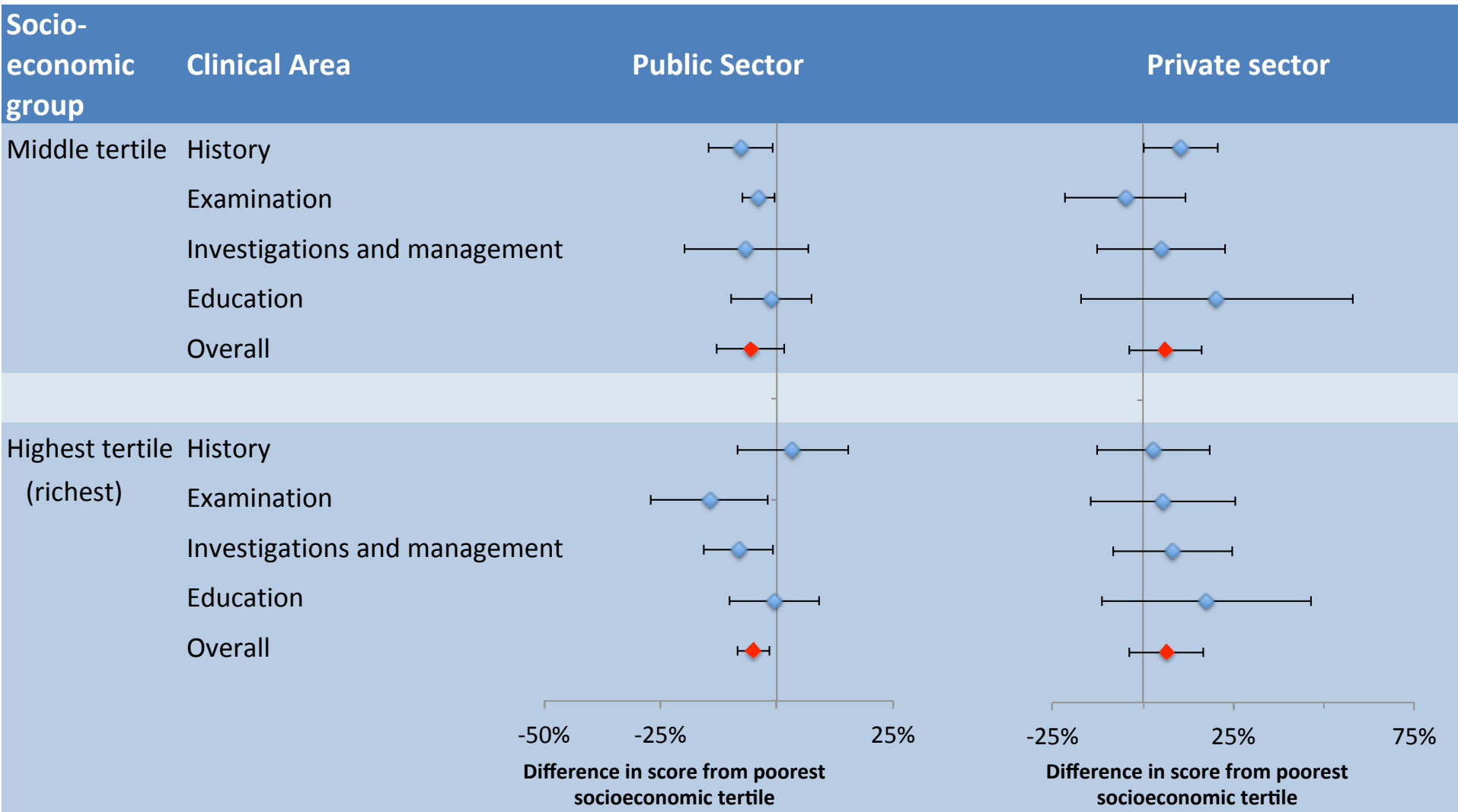
Patient satisfaction



- Comparison of public and private sectors
 - Socioeconomic status
 - Ethnicity

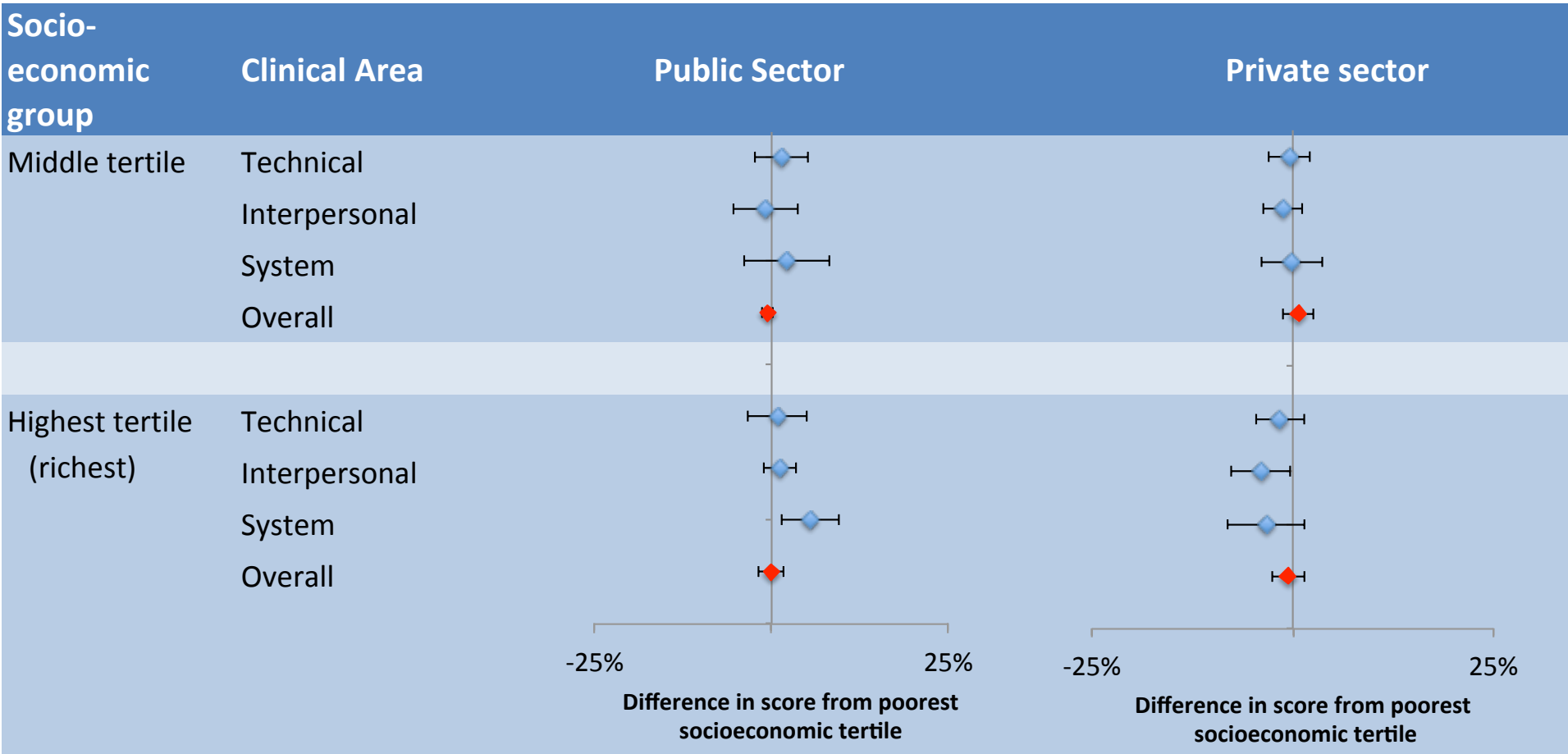
Process quality by socioeconomic status

Difference in scores compared to the poorest tertile



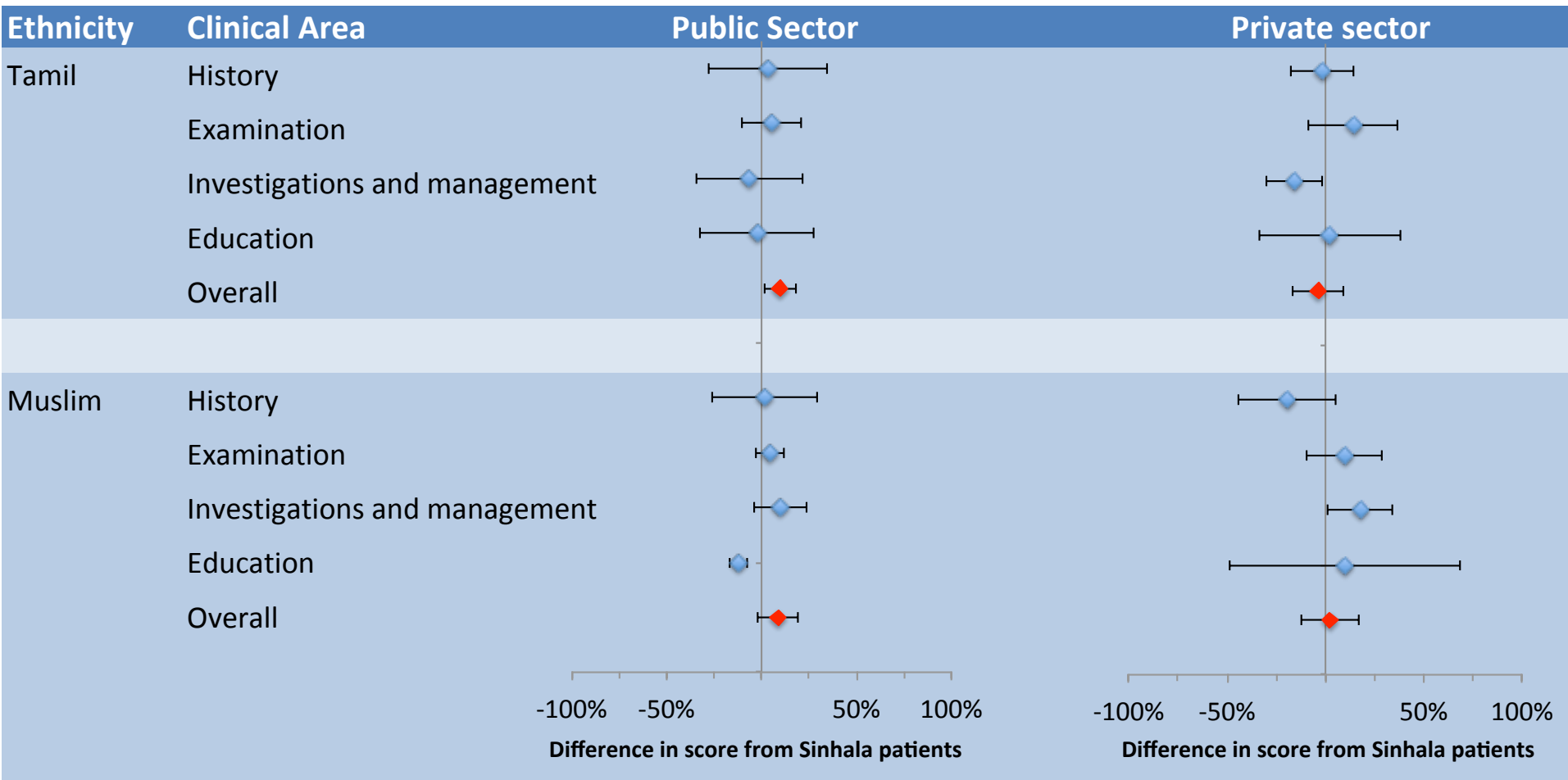
Patient satisfaction by socioeconomic status

Difference in scores compared to the poorest tertile



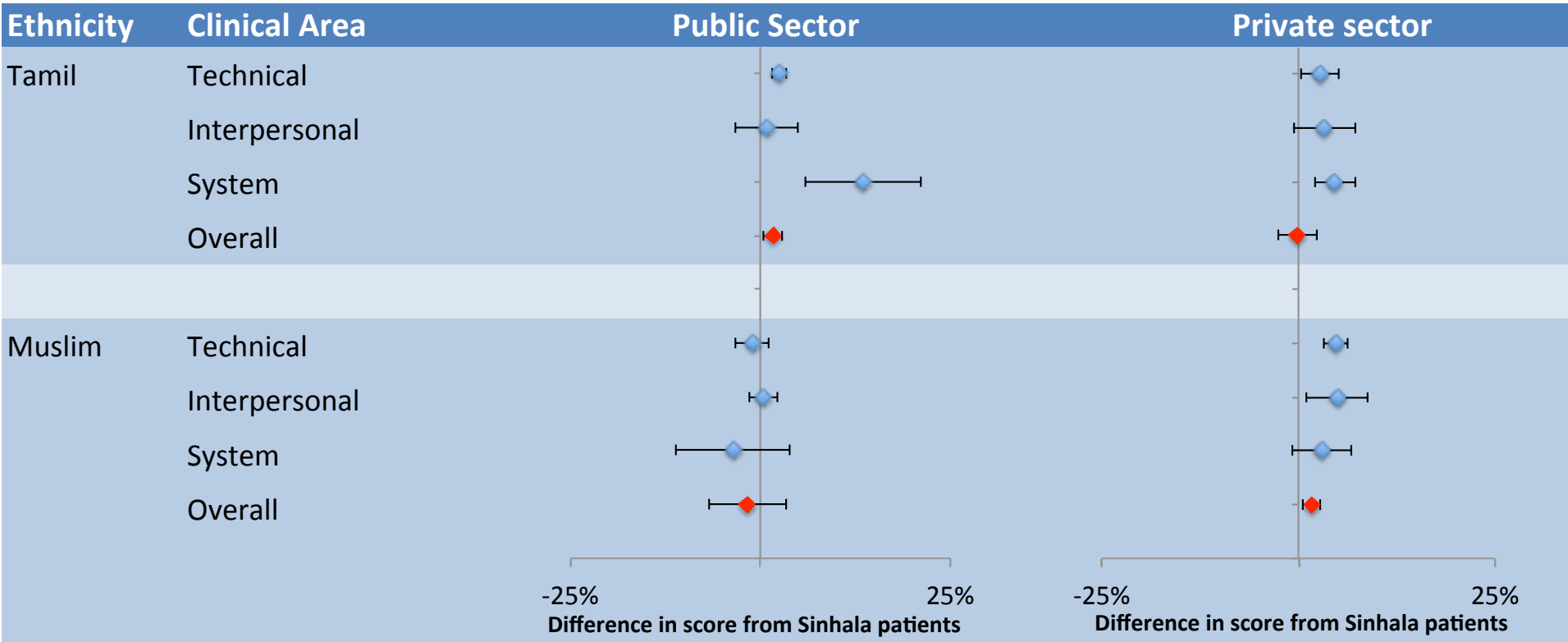
Process quality by ethnicity

Difference in scores compared to Sinhala patients



Patient satisfaction by ethnicity

Difference in scores compared to Sinhala patients



Conclusions

Key findings

Outpatient

Public vs. private

- Overall quality, diagnosis and treatment is similar between the two sectors
- Patients in the private sector receive more
 - Time from the physician
 - Education and advice (independent of time from physician)
- Patient satisfaction reflects this
 - Overall satisfaction & satisfaction with technical aspects similar
 - Satisfaction with interpersonal quality & systems quality better in private sector

Key findings

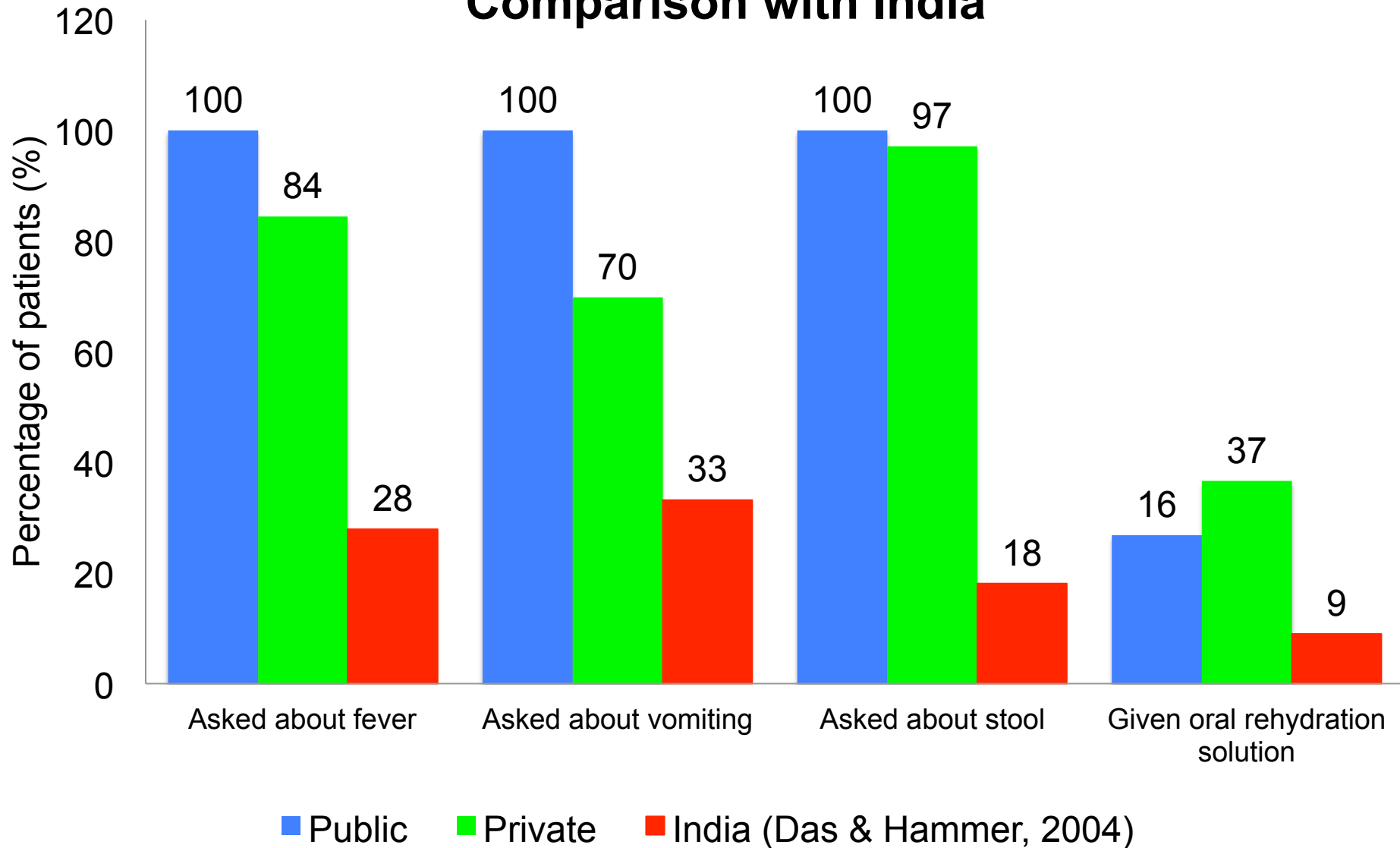
- Seems to be no large systematic differences between socioeconomic and ethnic groups
- **Socioeconomic groups**
 - Richer patients scoring less in examination, investigations and management in public sector
- **Ethnic groups**
 - Tamil patients more satisfied with the public sector
 - Moor patients more satisfied with the private sector

International comparisons

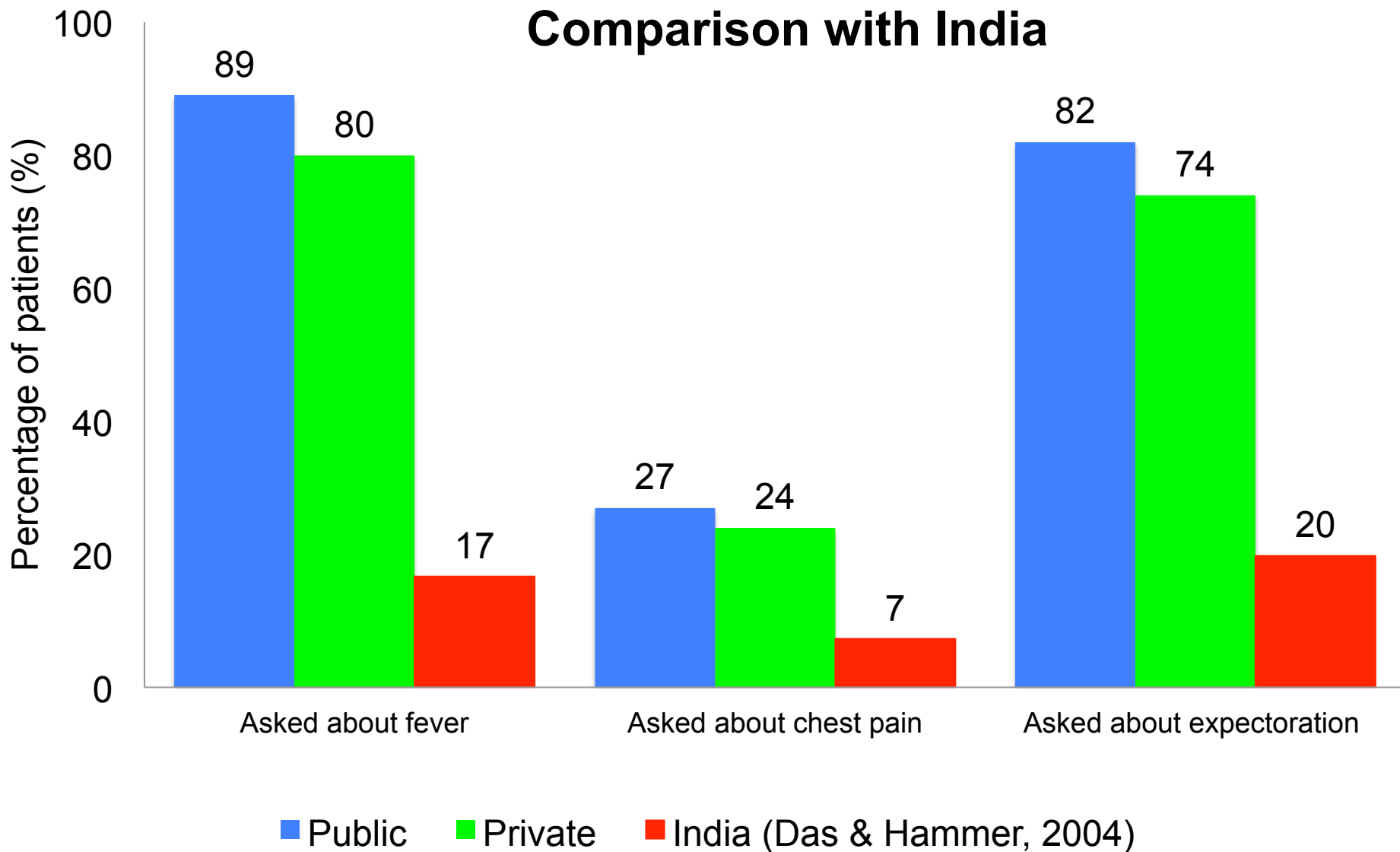
International comparisons

- Limited
- Sources of comparison
 - Indian study (Das & Hammer, 2004)
 - US study – RAND Quality Assessment Tool
 - Australian study – RAND + others

Outpatient process quality – diarrhoea Comparison with India



Outpatient process quality – cough Comparison with India



International comparisons

Conclusions

Sri Lanka's performance compared to:

- India
 - Sri Lanka performs better
- US
 - Sri Lanka performs similarly in inpatient and outpatient
 - caveat – we are mainly looking at indicators with low resource intensity
- Australia – awaiting
 - Australia's quality study results were similar to the US

Concluding Thoughts

Research Symposium Quality of Healthcare in Sri Lanka

Hosted by SLMA, CMASL and IHP

30 July 2013



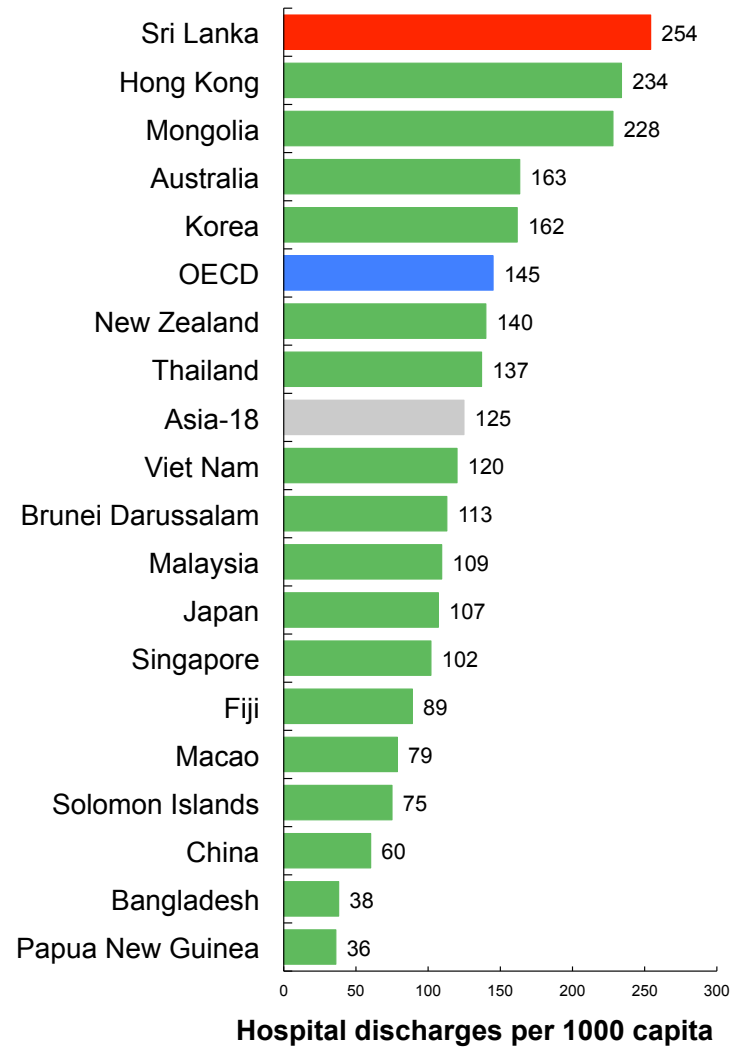
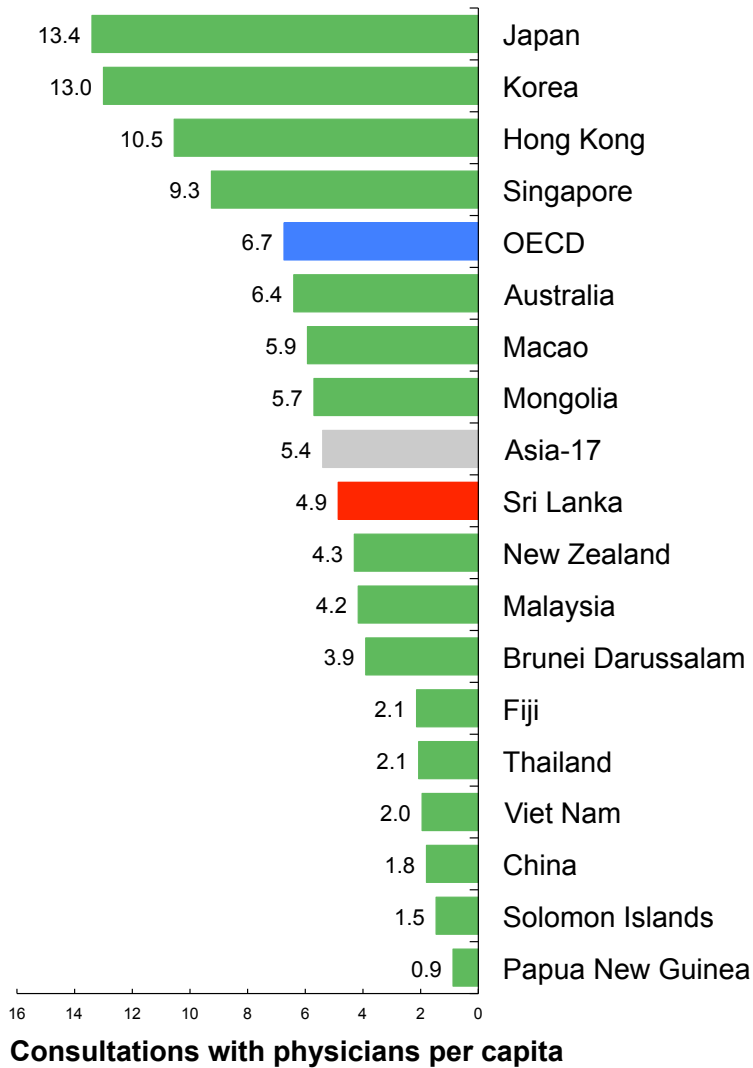
Health outcomes – Sri Lanka comparative performance

Explanations

65. Evidently, controlling for its levels of income, education, nutrition Sri Lanka continues to perform far better than average in terms of health. Increasing body of evidence indicates that this exceptional performance is due to the superior performance of both curative and preventive health services on this island and the extensive provision of health services (Caldwell et al. 1999; 2001; Rannan-Eliya and Sikurajapathy 2009). So this achievement must be attributed to the government's healthcare policies, which have fostered universal access to healthcare services since the 1930s.

66. These low mortality outcomes are the result of rapid and continuous improvement over half a century (Meegama 1986). In the past, there has been academic debate as to whether Sri Lanka's achievements were merely the consequence of a period of decline, and how good its subsequent performance was (Aturupane, Gleeson 1994). However, from the late 1970s onwards, and again in the 1990s, the rate of improvement in IMR has accelerated. This is exceptional, since during most of this latter period Sri Lanka experienced almost continual internal conflict and declining numbers of people. The acceleration in the reduction of the IMR can also be contrasted with that of other developing countries that liberalized their economies in the late 1970s - 1980s, which have seen stagnating health indicators, despite much faster growth in income. The divergence in performance of Sri Lanka from that of China can largely be attributed to the latter's rapid economic growth in the late 1970s and early 1980s.

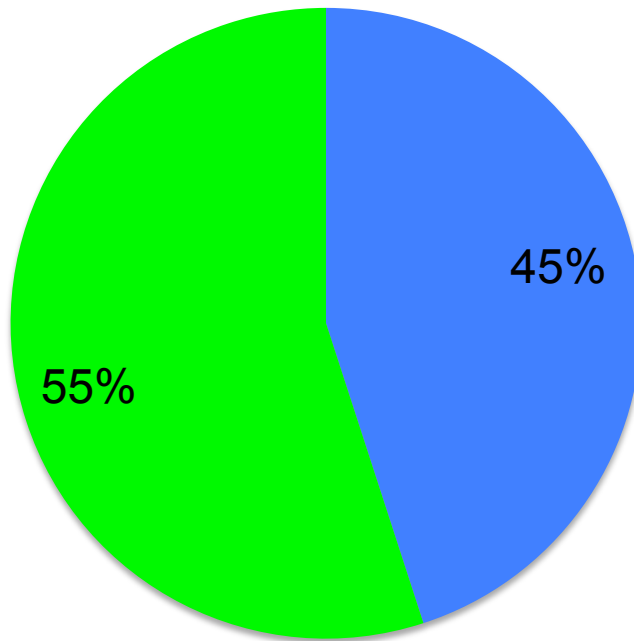
Health services utilization, Sri Lanka and regional countries



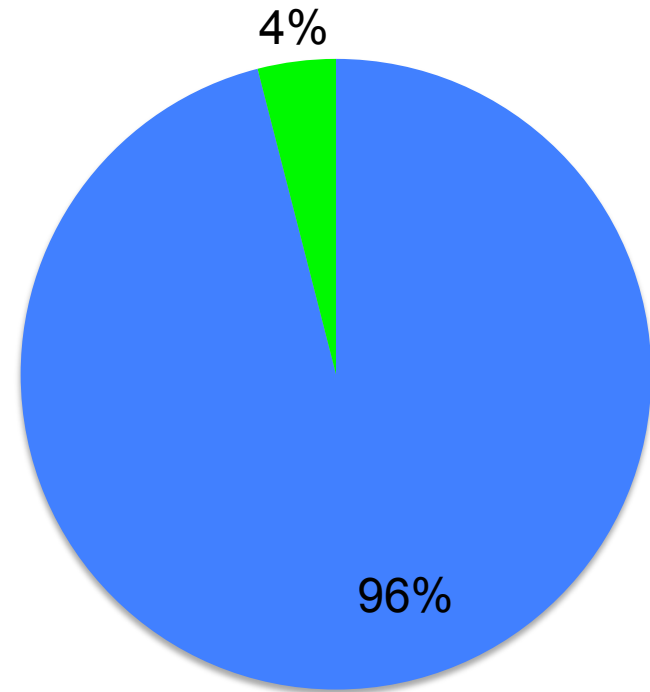
Source: IHP-OECD AP HaG 2010 Database

Utilization of healthcare services, 2003

Outpatient



Inpatient



■ Public ■ Private

Concluding Thoughts on Sri Lanka's Mix

- To a large extent achieves comparable clinical quality across income levels
 - Except expensive services for the better off
 - Segregation is largely achieved through differences in interpersonal quality
- But
 - Improving quality overall probably does need to address interpersonal quality
 - Important for patient perception
 - Related to better management of NCDs
- Quality in public sector
 - Largely constrained by resource/funding levels
 - Private sector cannot provide that better quality at comparable cost levels, so improvements in system quality will depend on increased public financing