STAR RATING SYSTEM AND EVALUATION

A MIXED METHODS ANALYSIS OF TANZANIA'S NATIONAL HEALTH FACILITY QUALITY ASSESSMENT SYSTEM

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STAR RATING SYSTEM

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BACKGROUND

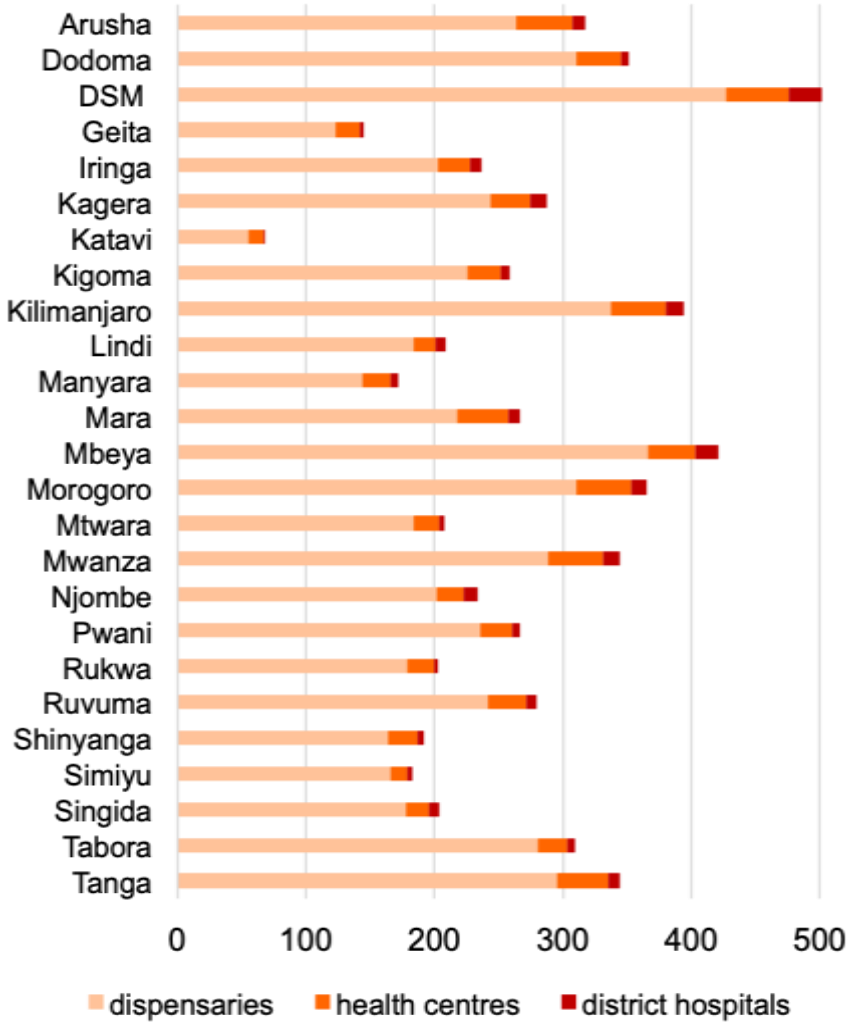
- Ministry of Health Initiative started in 2014 during Big Results Now Initiative
- System was designed to be aligned with key health system initiatives
- Four workstreams
  - Human resources
  - Commodities
  - RMNCH
  - Performance management
- Conducted twice to-date (2015/16 and 2017/18)



I

We have no idea on the baseline/gaps for each health facilities

6760 health facilities are not holistically assessed



Source(s): BRN Healthcare (2014)

Initiative

Assess, rate and develop specific facility improvement plans for primary level health facilities

Approach

- Develop a specialised health facilities assessment tool based on the identified issues on the ground
- Roll-out the assessment tool in all primary health facilities in all regions
- While assessing the health facilities, specific gaps are identified for improvement
- Health facilities are rated after assessment
- Specific intervention programmes are rolled-out at selected regions to improve the heath facilities below 3-Star

Aspiration

80% of primary health facilities in selected regions will be 3-Star and above by 2018

DEVELOPING THE TOOL

- Participatory process
- Comparative studies were conducted looking at other assessment tools
  - SafeCare
  - Results-Based Financing
  - Pay-for-Performance
  - Service Provision Assessment
- Key question – use existing tools or create our own

	Benefits	Drawbacks
Using existing measuring tools	• Ready-to-use • Internationally accredited (SafeCare)	• Does not address HRH performance issues • Requires funds • Requires fully-trained assessors
Create own measuring tools in BRN lab	• Full ownership by MoHSW • Data is owned by the government • High impact – addressing on-the-ground issues	• Need expertise from a person who has widespread experience in the healthcare and criteria development • The tool needs to be developed and tested

ASSESSMENT AREAS

2. Health Facility Management (12 indicators)

3. Use of facility data for service improvements (6 indicators)

4. Staff Performance Management (5 indicators)

5. Organisation of services (8 indicators)

6. Handling of emergencies/referral (7 indicators)

7. Client Focus (4 indicators)

8. Social accountability (7 indicators)

9. Facility infrastructure (14 indicators)

10. Infection Prevention and Control (11 indicators)

11. Clinical Services (13 indicators)

12. Clinical Support Services (20 indicators)

SCORING

	0-Star	1-Star	2-Star	3-Star	4-Star	5-Star
Minimum Score in Four Domains	0-19%	20-39%	40-59%	60-79%	80-89%	90-100%
		*	**	***	****	*****

MULTI-LEVEL ASSESSMENT PROCESS

National Team (*HSIQAS*)

(to cover 24 regions and 3 municipals of Dar es Salaam Region)

1. MoHSW (DCS, DPS, DHR)
2. Muhimbili National Hospital
3. National Institute for Medical Research
4. Medial Store Department
5. Tanzania Food and Drug Authority

Regional Team

(6 per council)

Council Team

6 assessors/LGA
(assessors to jointly assess district hospitals)

Team A

2 assessors/disp & HCs

Team B

2 assessors/disp & HCs

Team C

2 assessors/disp & HCs

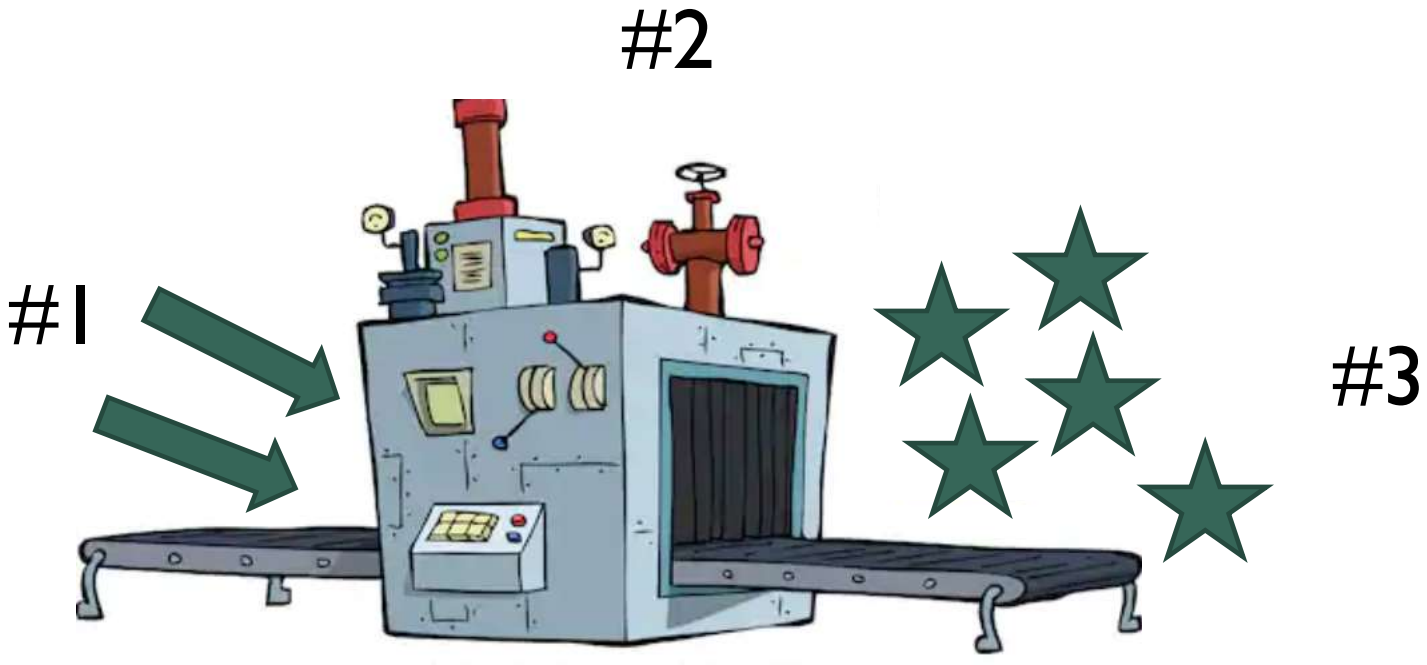
BASELINE OPERATIONS

Total number of district hospitals, health centers and dispensaries	• 6996
Total number of assessors	• 1140
Estimated assessment duration per region	• ~4 weeks
Estimated assessment cost	• $200 per facility

EVALUATION FINDINGS

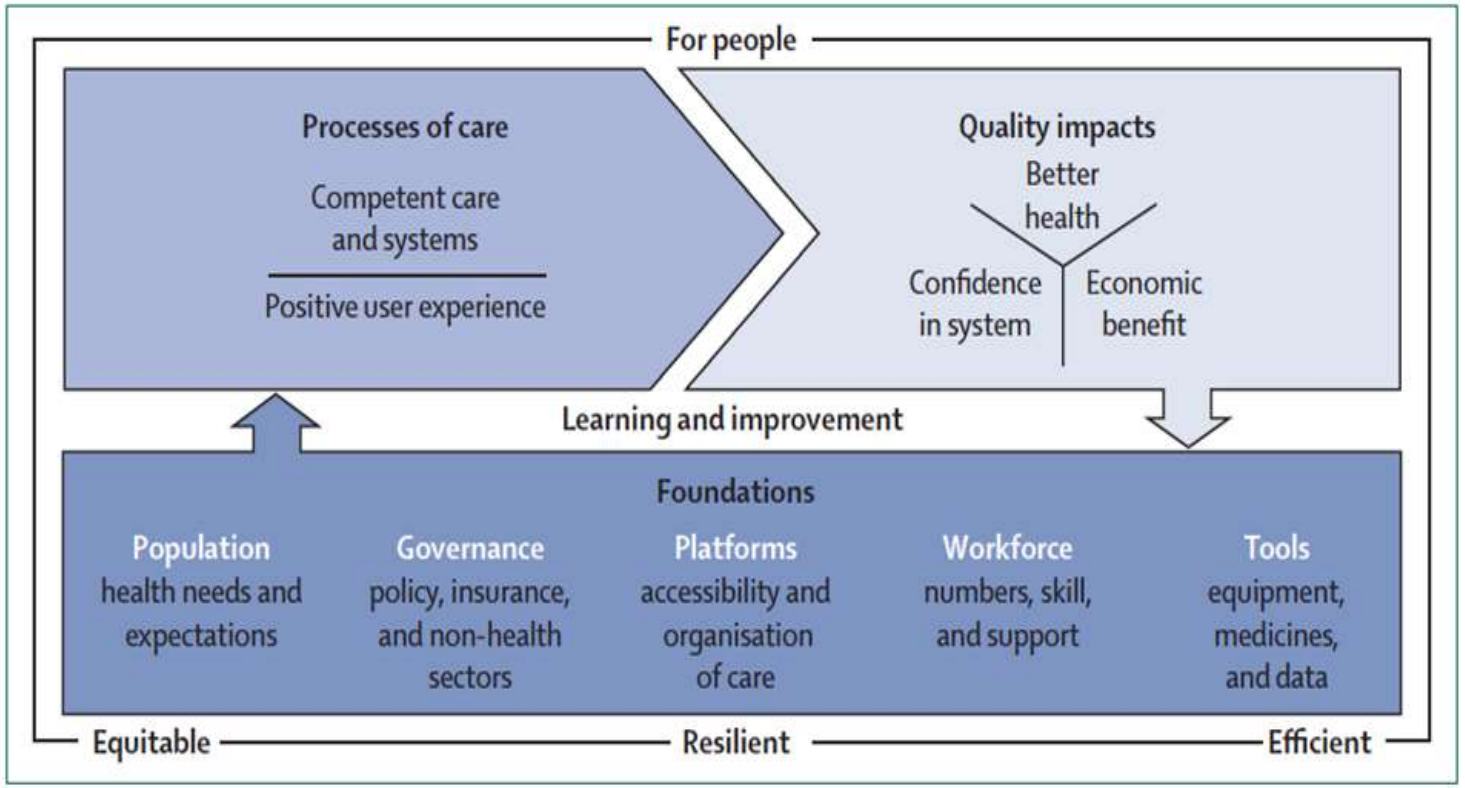
RESEARCH QUESTIONS

1. What factors are associated with variation in facility capacity to improve?
2. What are the mechanisms through which facility-level quality improvement occurs using the Star Rating System?
3. How does the Star Rating instrument perform as a quality measurement tool?



CONCEPTUAL FRAMEWORK

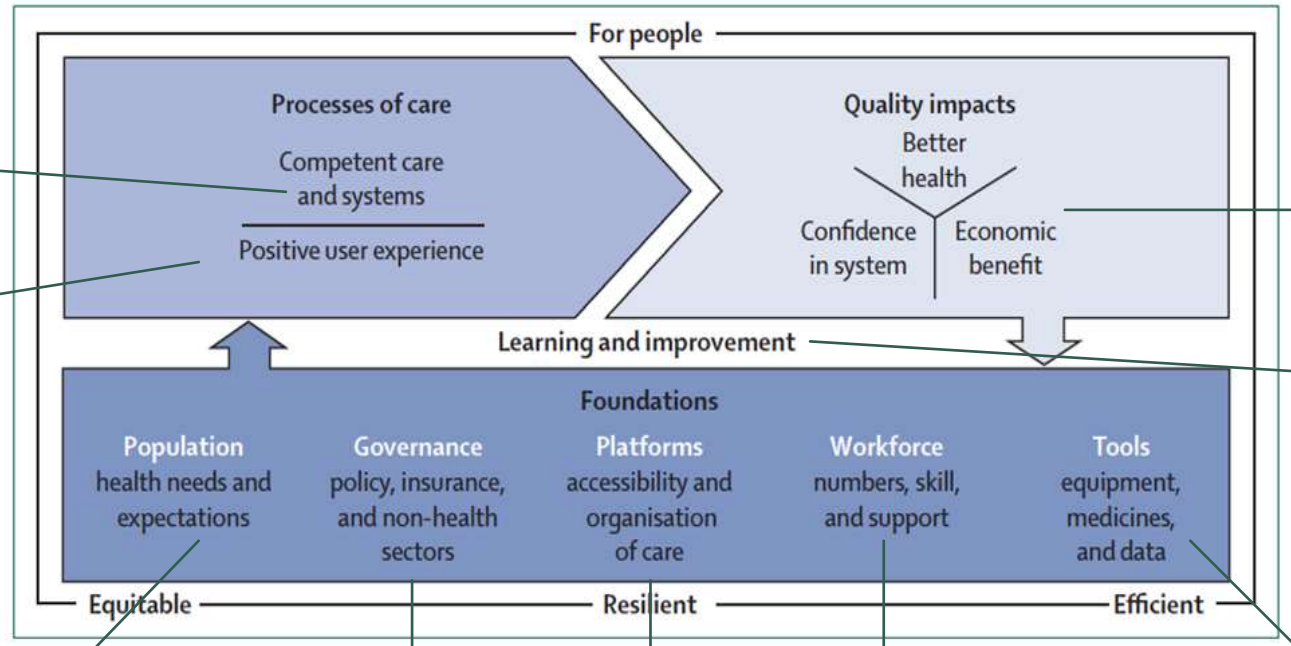
High Quality Health Systems Framework



A high quality health system is one that optimizes health care in a given context by consistently delivering care that improves or maintains health outcomes, by being valued and trusted by all people, and by responding to changing population needs

Kruk et al 2018 High Quality Health Systems in the Sustainable Development Goals era: time for a revolution

DATA SOURCES AND QUALITY CONSTRUCTS



Clinical observations
Provider surveys
Provider interviews
Facility audits

Clinical observations
Patient exit interviews

Patient pre-visit interviews
Patient exit interviews

Facility audit
Provider surveys
Provider interviews

Patient pre-visit interviews
Patient exit interviews

Facility audit
Provider surveys
Provider interviews

Facility audit

Facility audit
Provider surveys
Provider interviews

Facility audit
Provider surveys

6 data collection modalities

QUANTITATIVE DATA

1. **Star Rating Data Set**

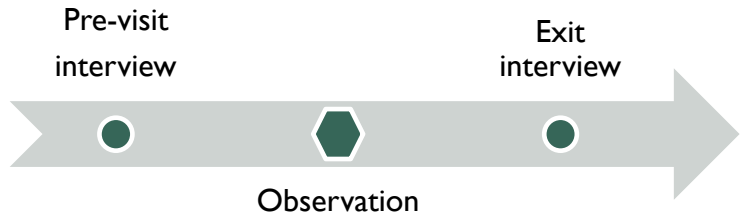
- 2 rounds of data collection (2015/16 and 2017/18)
- All primary care facilities on the mainland excluding Dar es Salaam
- N=5595 facilities

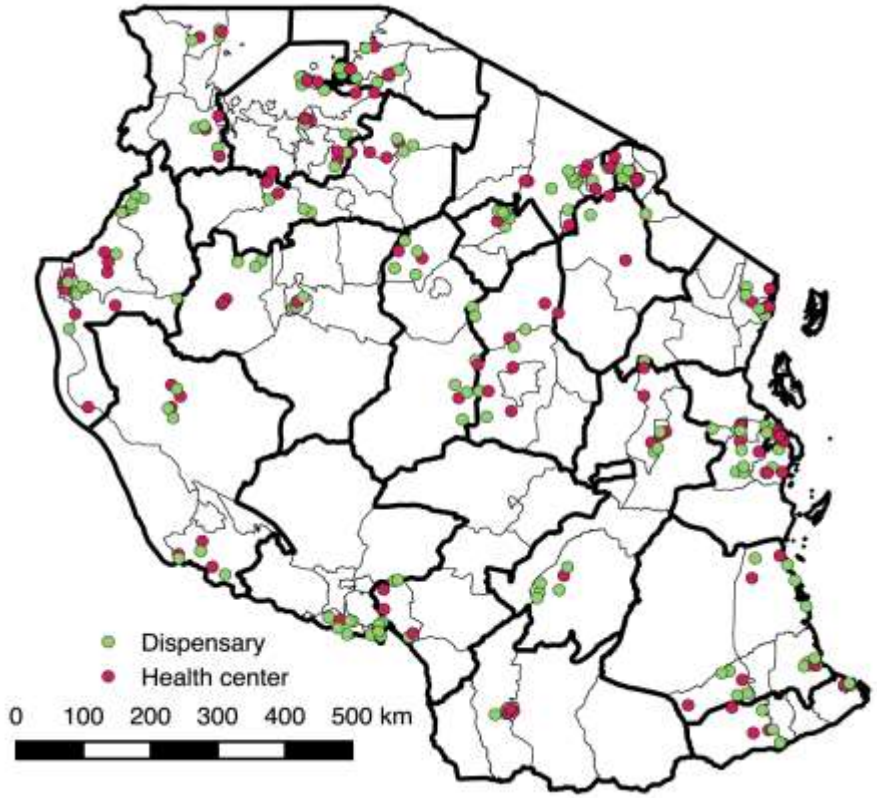
3. **Additional survey data**

- Service provision assessments 2016
- DHS 2015
- World Pop 2015
- Geographic data
  - Open street map
  - Natural earth

2. **Evaluation Data Set**

- All regions on mainland
- 47 districts
- 280 facilities
  - 609 provider interviews
  - 1,275 client interviews and observation





QUANTITATIVE EVALUATION SAMPLE

Random

47 districts

3 dispensaries

3 health centers

Convenience

3 providers
5 clients

QUALITATIVE EVALUATION SAMPLE

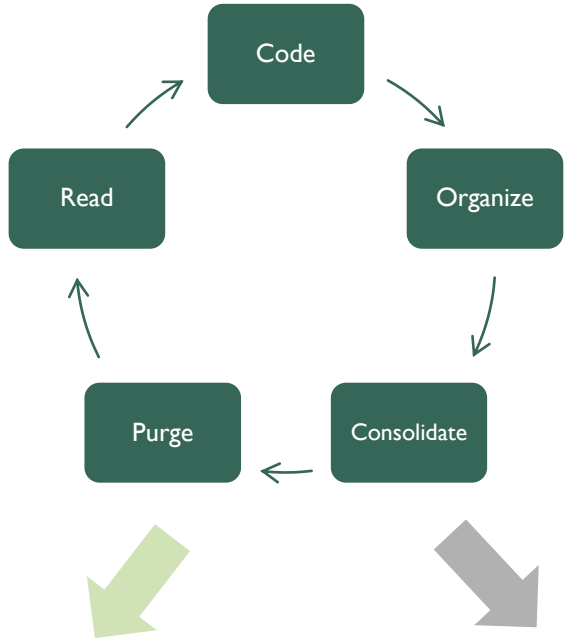
Most improved				**Least improved**			
Southern Highland		Lake Zone		Southern Highland		Lake Zone	
Dispensary	Health center	Dispensary	Health center	Dispensary	Health center	Dispensary	Health center
N=3	N=3	N=4	N=3	N=4	N=4	N=3	N=3

- Most improved = 2 or 3 star change
- Least improved = 0 or -1 star change

N=27

MIXED METHODS

- Quantitative
  - Descriptive statistics
  - Multivariable regression
  - Geospatial methods
- Qualitative
  - Thematic content analysis of interviews using grounded theory
  - Open coding until saturation of codes
- Mixed
  - Simultaneous collection and convergent analysis
  - Multi-disciplinary discussion of results → local theory of improvement



Most improved

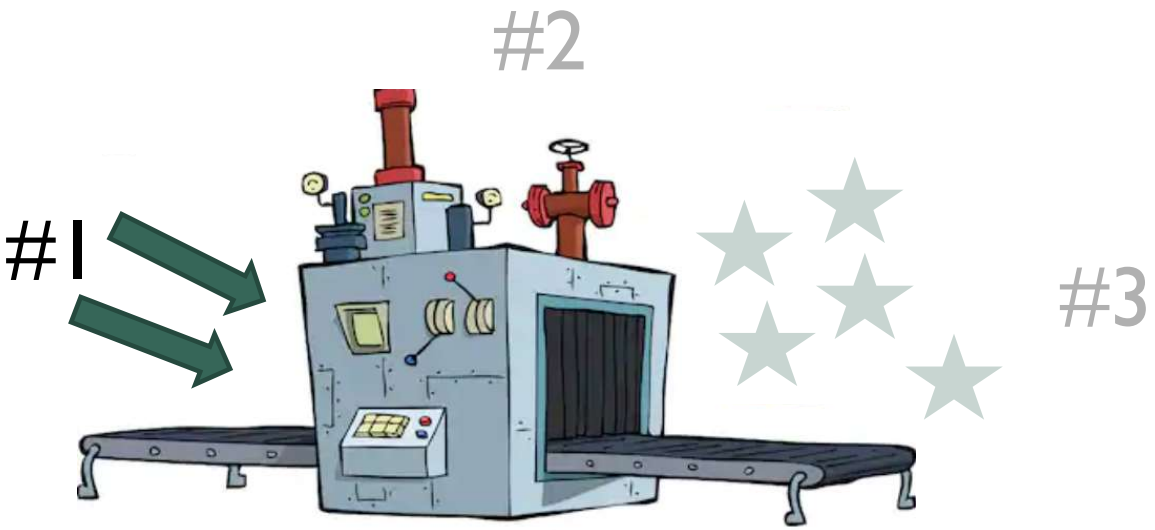
Least improved

RESEARCHER BIAS

- Facilities know their weaknesses
- Changes to system are primary drivers of improvement: funding, workforce
- Participation vs. top-down programming

WHAT FACTORS ARE ASSOCIATED WITH VARIATION IN FACILITY CAPACITY TO IMPROVE?

FINDINGS: QUESTION 1

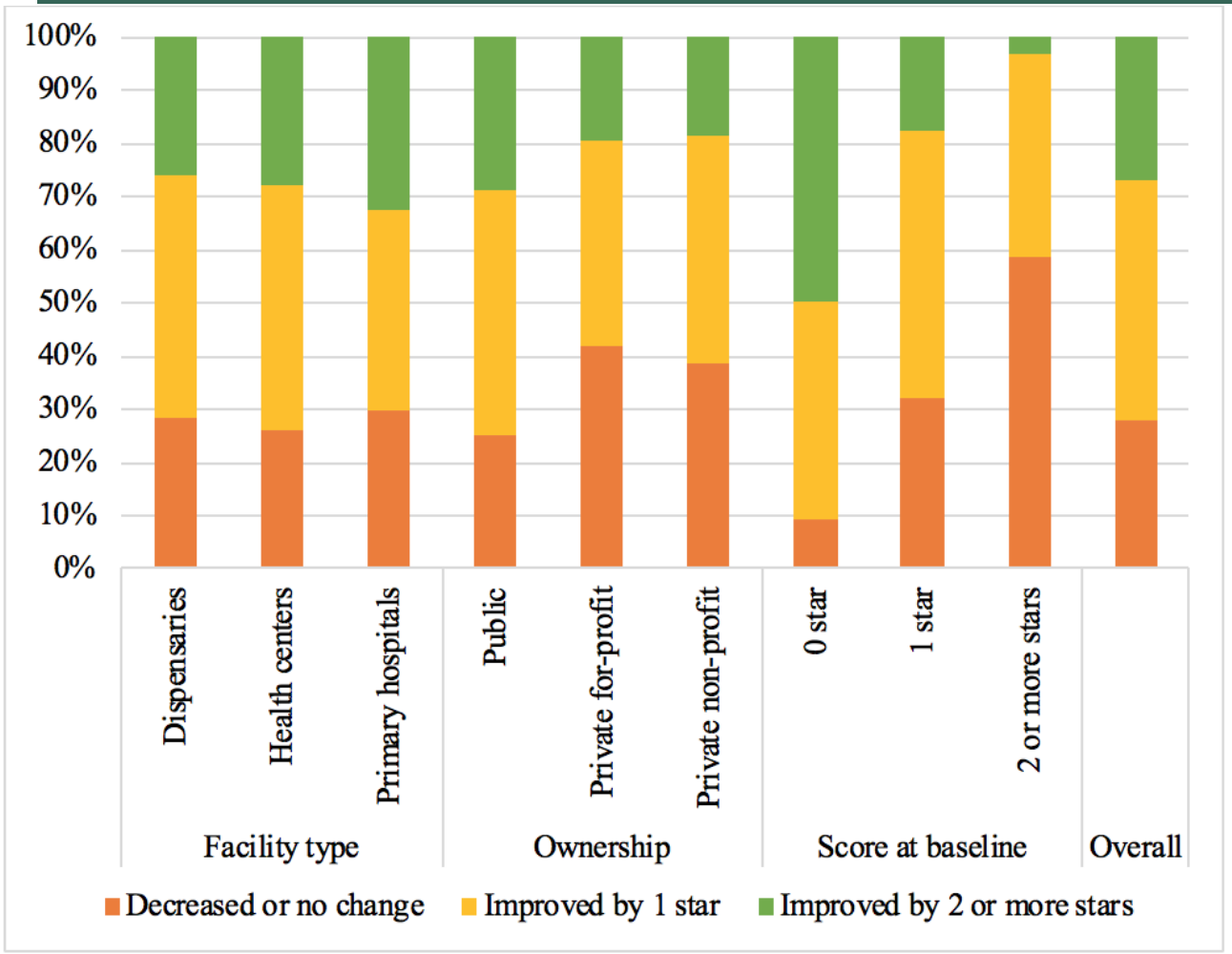


STAR RATING ASSESSMENT RESULTS

Mean Star Rating scores in country, N=5807			
	Baseline	Reassessment	Change
Star rating (0-5)	0.78	1.76	0.98
Overall score (0-100)	37	56	19
Domain A. Facility management and staff performance	34	56	22
Domain B. Fulfilment of service charters and accountability	36	58	22
Domain C. Safe and conducive facilities	35	54	19
Domain D. Quality of care and services	43	56	13

- **72% of facilities improved**
- 27% improved by 2+ stars
- 45% improved by one star
- 28% same or lower score

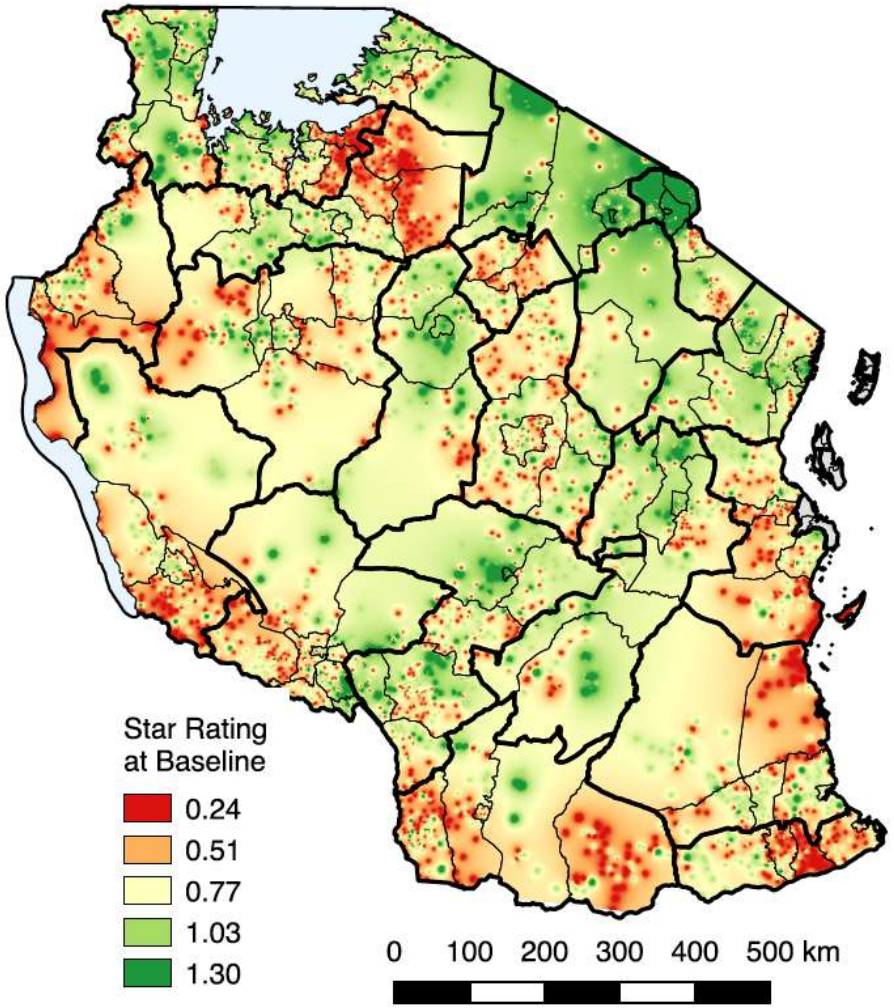
IMPROVEMENT IN FACILITY SUBGROUPS

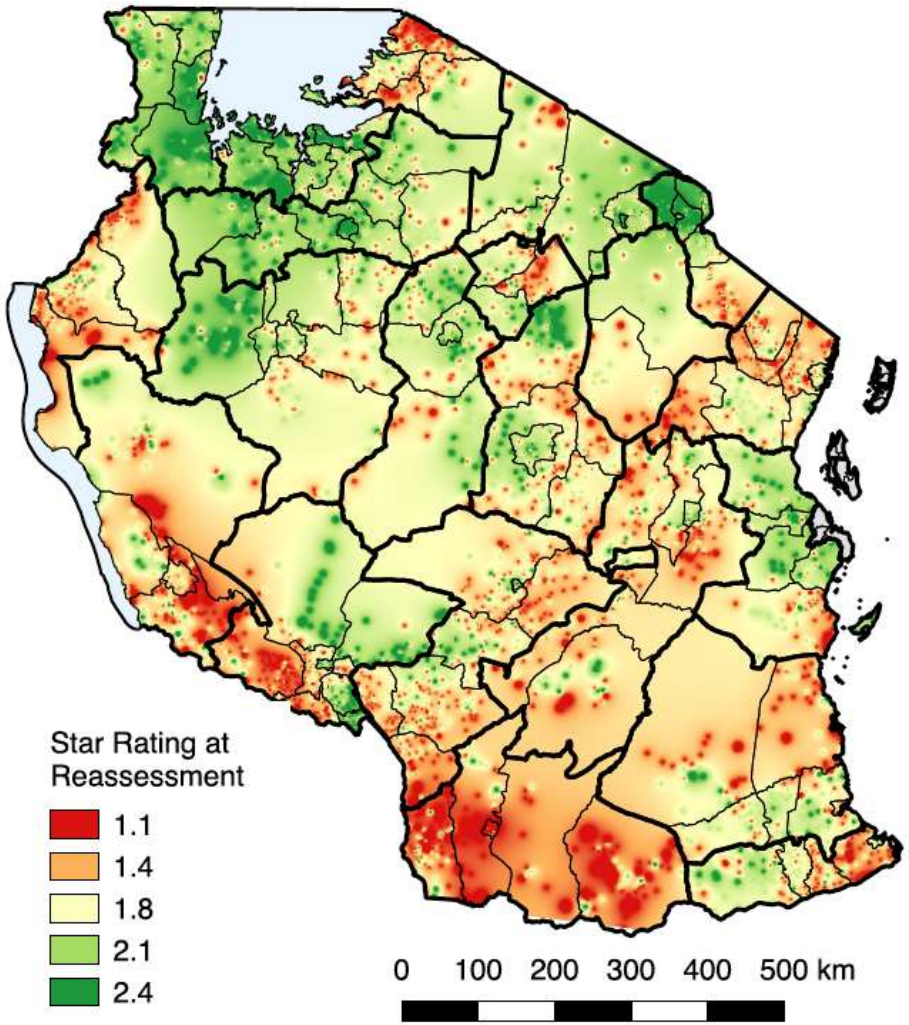


- No difference in facility type
- Public facilities improved more than private for-profit and non-profit facilities, but also had lower baseline
- Strong baseline effect

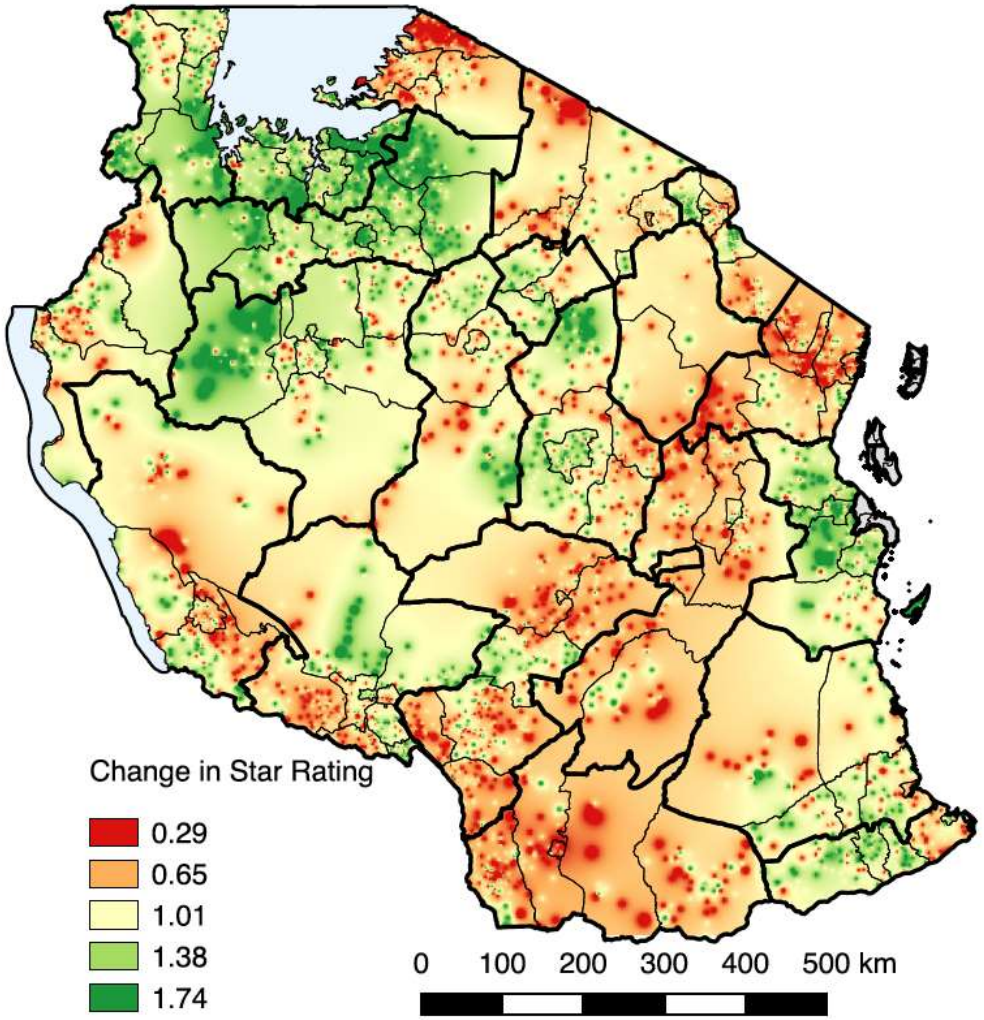
N=5595

GEOGRAPHIC FACTORS



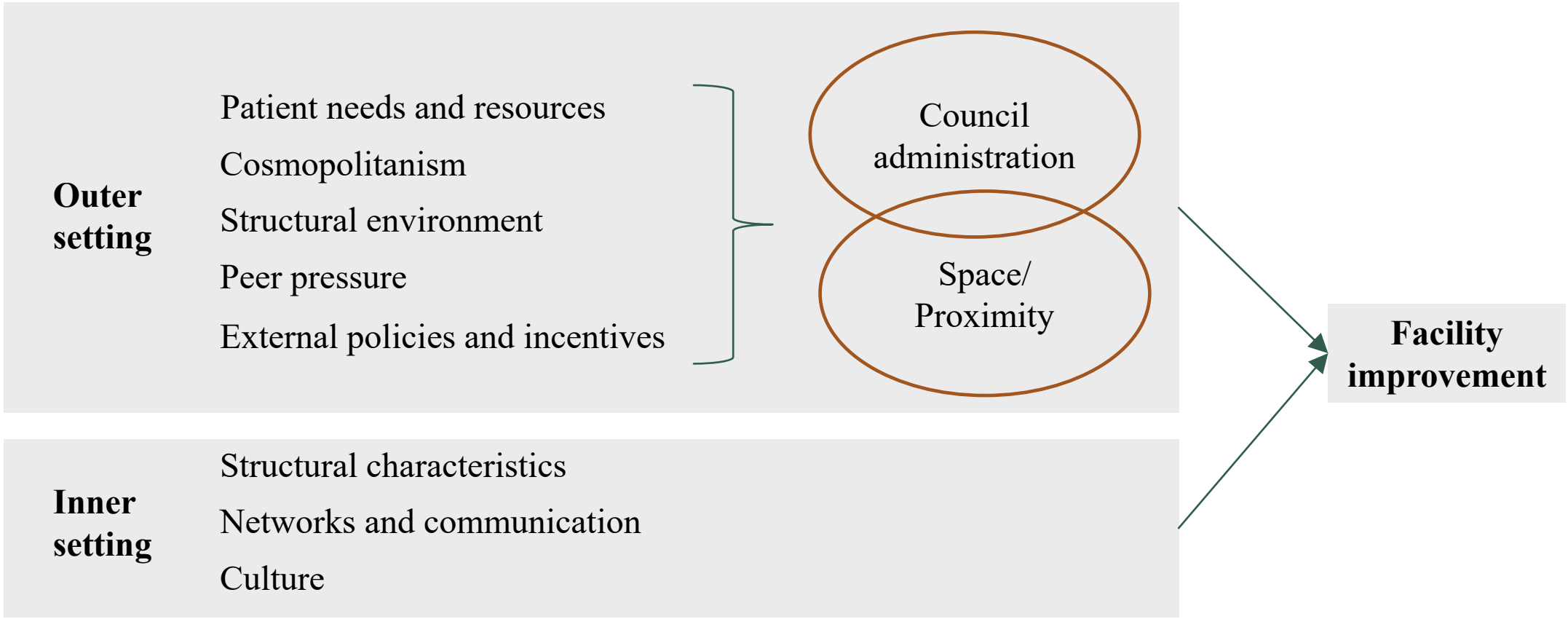


GEOGRAPHIC FACTORS – A LOCAL EFFECT



- Greatest improvements (averages up to 1.75 stars)
  - Lake Zone (except Mara)
  - Pwani region
- Least improvement
  - Southern Highlands Zone (except Mbeya)
- 11% of the total variation in ability to improve was due to differences between regions
- 14% was due to differences between districts within regions
- Beyond administrative boundaries, there is a local neighborhood effect where facilities near improving facilities also improved

POTENTIAL IMPLEMENTATION FACTORS

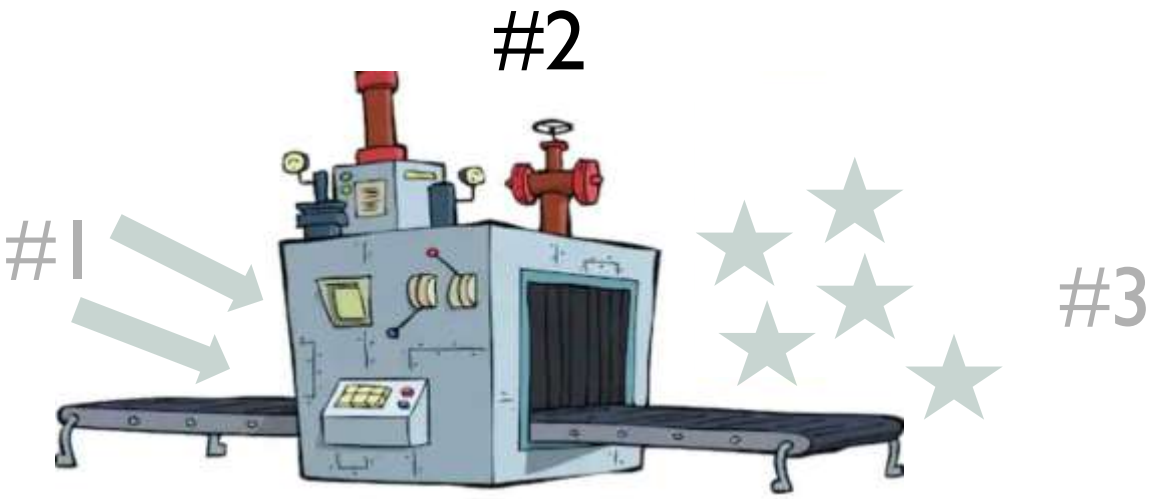


IMPLEMENTATION FACTORS ASSOCIATED WITH IMPROVEMENT

	Coef.	95% CI
★ Sum of people within 5 km radius of facility (ln)	0.8	(0.4,1.2)
Institutional delivery percent in council	1.7	(-6.1,9.5)
Female primary education percent in council	3.8	(-8,15.6)
Healthcare decisions percent in council	-8.7	(-22.9,5.6)
Number of facilities in council	0.0	(-0.1,0)
Distance to major road (ln)	-0.1	(-0.2,0.1)
Distance to large city (10 kms)	0.1	(-0.1,0.2)
Percentile rank at baseline	3.6	(0.5,6.7)
★ RBF Participation	6.0	(4.3,7.6)
RBF ineligibility due to low baseline	11.0	(9.2,12.9)
★ Ownership (Public ref.)		
Private	-4.2	(-5.5,-2.9)
Non-profit	-2.1	(-3.3,-1)
★ Level (Dispensary ref.)		
Health center	3.0	(2,4)
Primary hospital	7.3	(5.4,9.3)
★ Baseline performance	-10.0	(-11.6,-8.4)

- **Multivariable regression using change in Star Rating Score (0-100) as the outcome**
- Population density associated with improvement
- Facilities with RBF improved by 6 points more than non-RBF facilities, but facilities that were ineligible for RBF because they scored zero at baseline improved by 11 points
- Public facilities improved more than private for- or non-profit facilities
- Hospitals and health centers improved more than dispensaries
- Strong baseline effect: most of the improvement came from very low performing facilities

WHAT ARE THE MECHANISMS THROUGH WHICH FACILITY-LEVEL QUALITY IMPROVEMENT OCCURS USING THE STAR RATING SYSTEM?



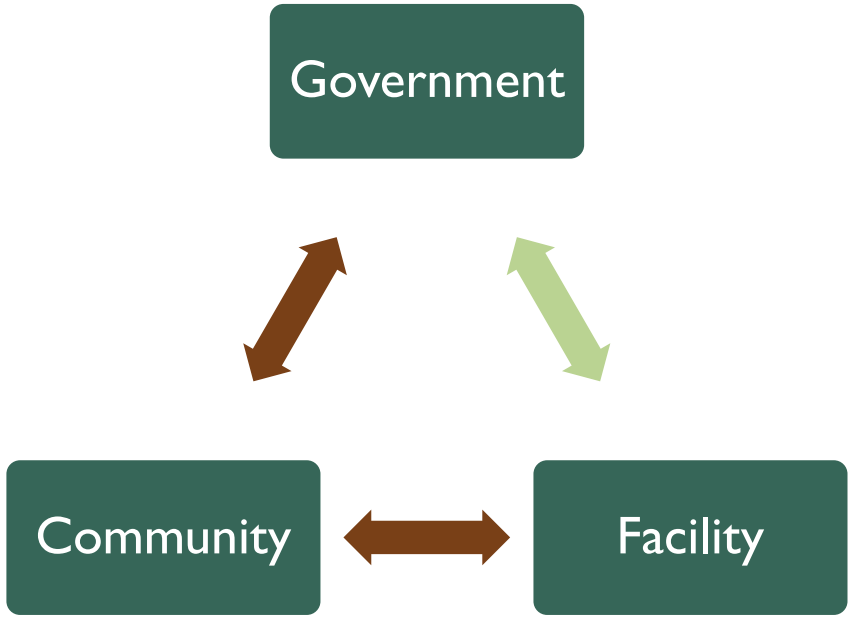
FINDINGS: QUESTION 2

THREE CORE MECHANISMS

1. Accountability
2. Learning
3. Group identity and benchmarking

MECHANISM 1: ACCOUNTABILITY

- Internal accountability
  - Having a common language
  - Data
  - Hierarchy is important - Coming from MOH
  - CHMT involvement
- External accountability
  - Health Facility Governing Board
  - Suggestion boxes (mixed results)
  - "Sweet language"
  - Quality->utilization->funds



MECHANISM 2: LEARNING

- **Respondents learn from the assessment process**
  - Learn about weaknesses
  - Learn about how to deliver high quality care
  - Stay current
  - Make up for gaps in pre-service education

- …not everything I deal with in the facility I was taught in school. Other things I was not taught…When assessing they will find weakness where by in my point of view I thought it was a normal thing but them they see [no]. (Ibaba)
- At first, as I told you, we didn't know a lot of things but after they came we knew we needed to have a lot of things. Like when serving a customer we never paid attention to how long to we need to attend to one customer but after the assessment we were told it was important to use time when attending a customer, so per day we watch the average we used to serve how many clients. (Kisale)
- Another thing that I thought was good about star rating was how they used guidelines to inspect, there were things that I realize that day I was suppose to have just by the question they ask. (Ngulugulu)

MECHANISM 3: GROUP IDENTITY AND BENCHMARKING

- **Providers identify with their own facility and compete with other facilities**
  - Respondents report knowing the star rating results of neighboring facilities
  - Facilities that have scored higher motivate respondents to improve

- Because the aim is to emphasize people, especially us the provider in the facilities that we have a lower rank, we should feel jealous. Why should your fellow get 2 stars while you have one, or why he has 3 you have 2? (Mwengemshindo)
- …being one of the providers in the facility you are among the reasons of the facility to perform well or you might be among the reasons for the facility's down fall. (Bweri)
- With BRN you know what you are supposed to do, the system has inspired providers, even creating competition among facilities. (Tenende)
- So they will be the one to celebrate, they even ate pilau….they danced, they had a lot to drink, so it helped them. (Bweri)

QUALITY ACTIONS

I. Advocacy

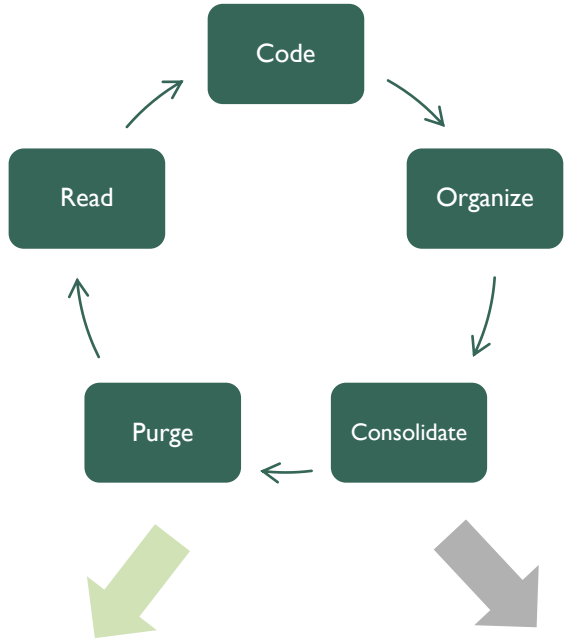
II. Self-checking

III. Collaboration

- For instance, in 2017/2018 it was seen that we don't have administrative building and the Matron office is in the ward. It was suggested that, the council together with the region will take this information to the Ministry if possible we should get the administrative building also paediatric ward should be improved. (Murangi)
- ...so you will just know, that day they came they asked these questions, so when you are about to do something that involves that question asked you will do it with caution since you know you are doing it to help improve star ratings. (Bweri)
- The first thing was collaboration of providers because if there was no collaboration then none of these could have been possible. So what happened was after getting that report we sat all the providers and noted all that was written in the work plan (Kisale)

MOST - LEAST

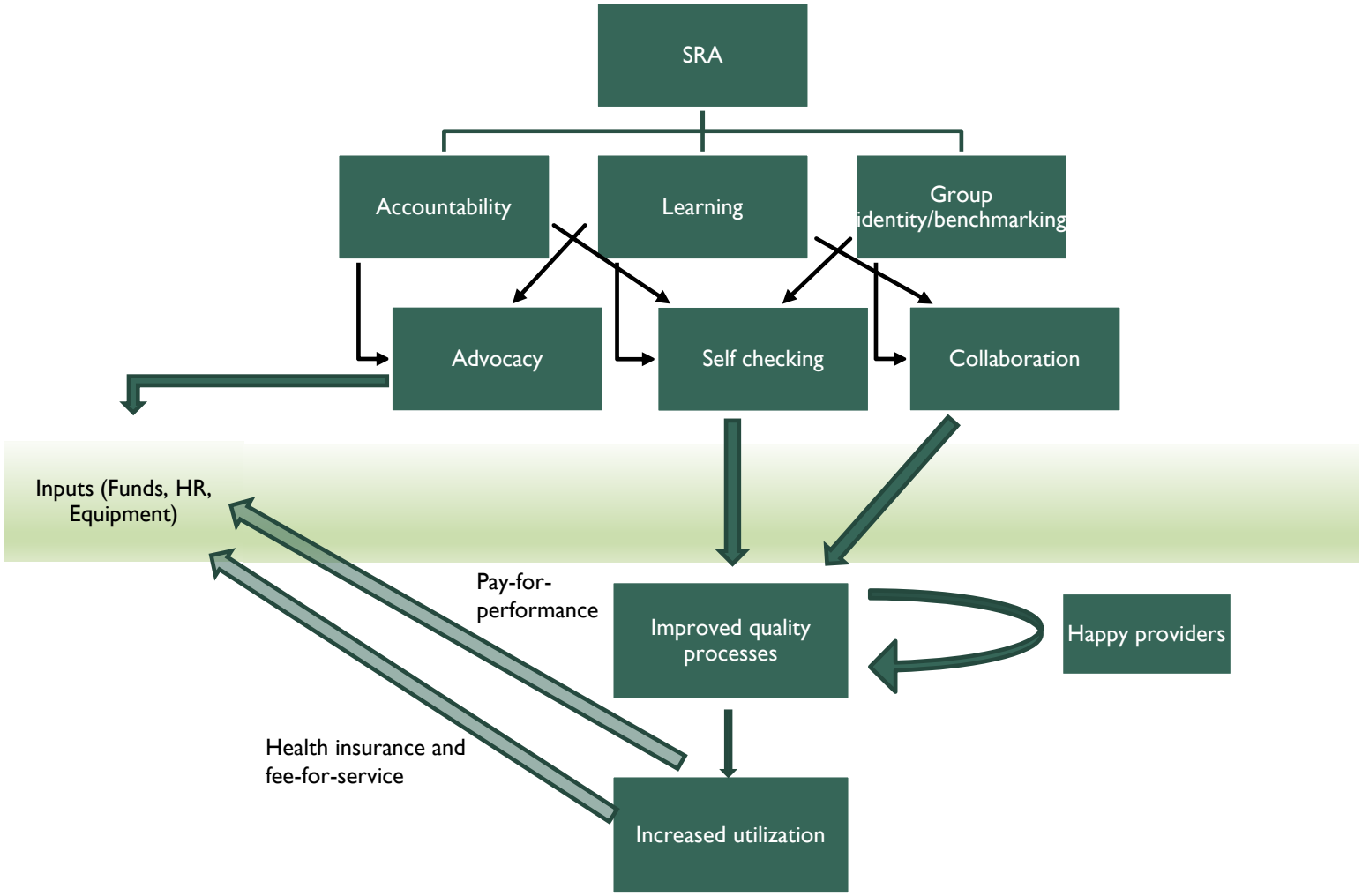
- Divergent
  - Bureaucracy
  - No ownership over improvement
  - Supervision not happening
  - Don't know about stars or baseline
- Convergent
  - No control over human resources
  - Funding as an enabler



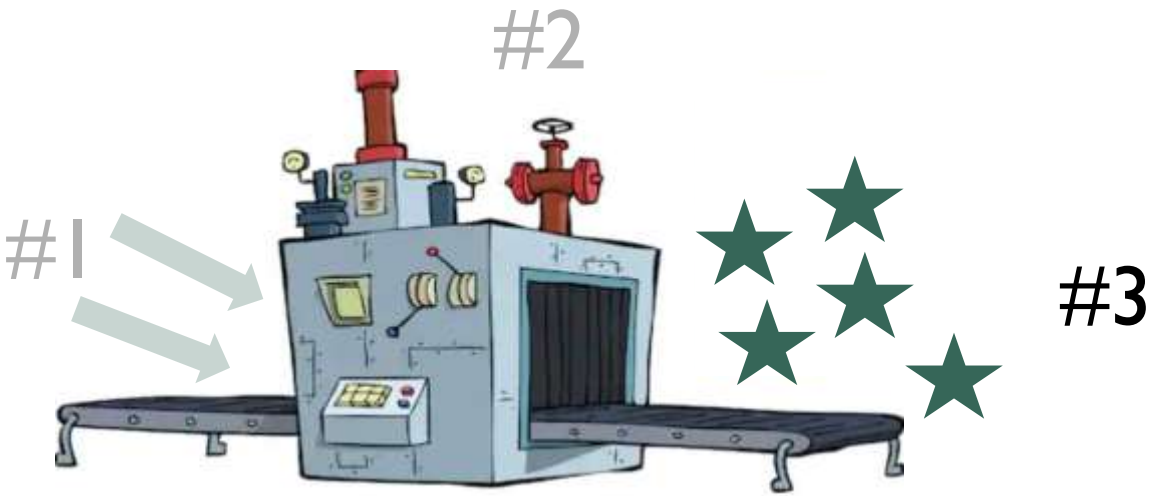
Most improved

Least improved

LOCAL THEORY OF IMPROVEMENT

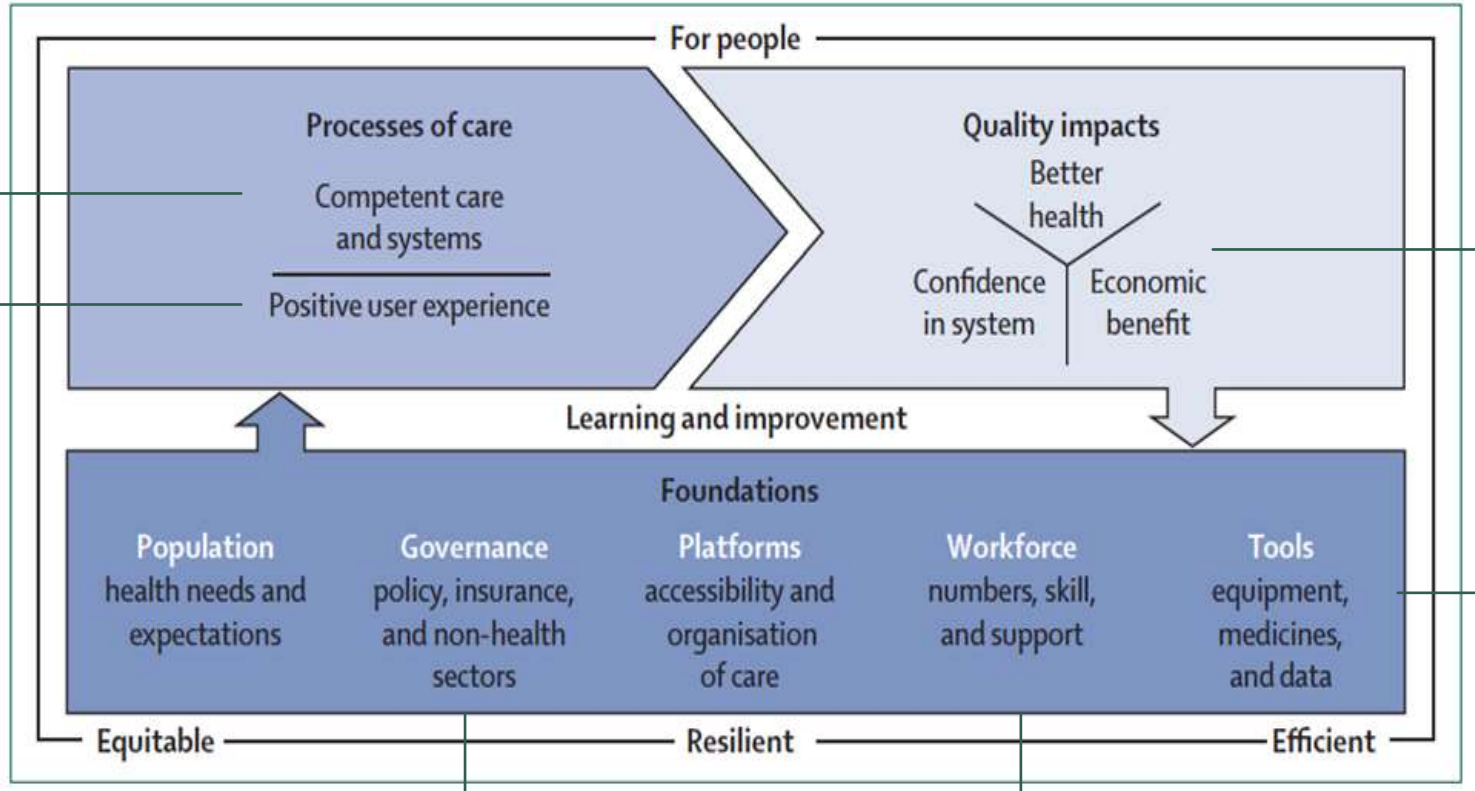


HOW DOES THE STAR RATING INSTRUMENT PERFORM AS A QUALITY MEASUREMENT TOOL?



FINDINGS: QUESTION 3

HOW DOES THE STAR RATING MAP TO OTHER QUALITY MEASURES?



Good medical practice

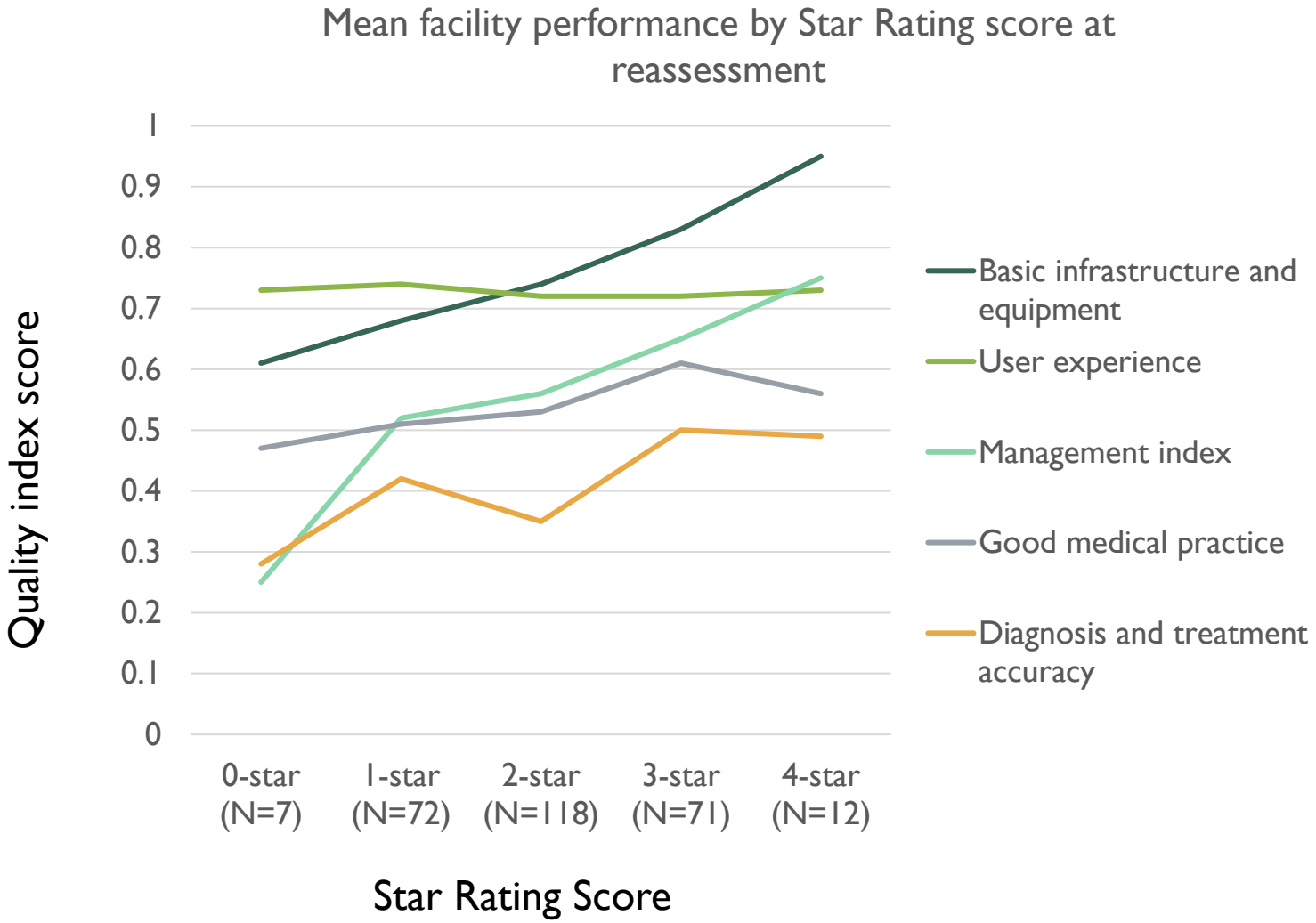
User experience

Basic infrastructure and equipment

Management index

Diagnostic and treatment accuracy

HOW DOES THE STAR RATING MAP TO OTHER QUALITY MEASURES?



- Quality measures increase with each level of star rating except for user experience
- Star rating does not reflect user experience
- Star rating only discriminates diagnostic and treatment accuracy at low level of performance
- Management index has largest discriminatory power

HOW DOES THE STAR RATING MAP TO OTHER QUALITY MEASURES?

Multivariable regression using reassessment star rating as the outcome, controlling for facility type, ownership, location and expectation

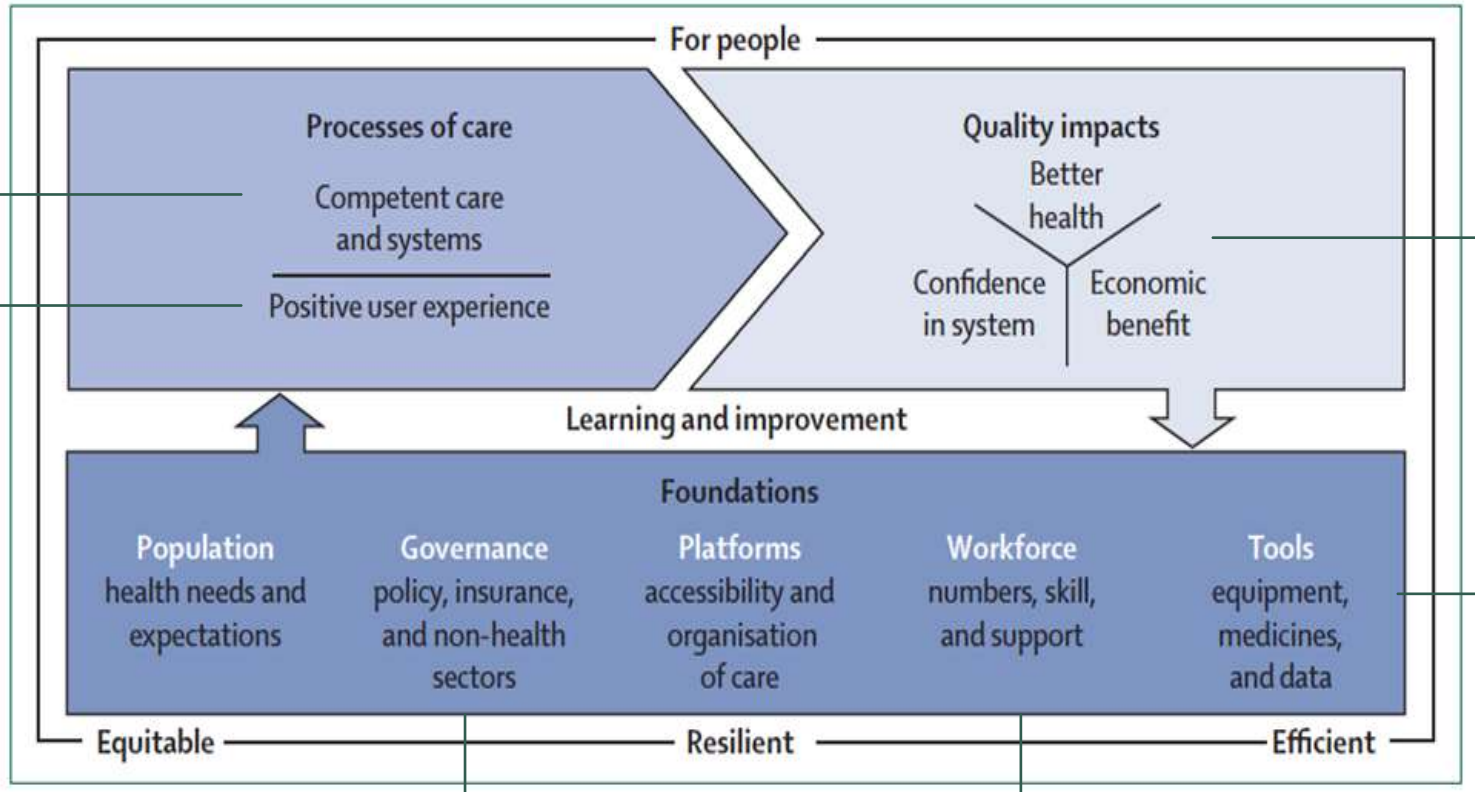
	Beta	95% CI
Basic infrastructure and equipment	0.98	(0.28,1.68)
Management index	0.48	(0.07,0.90)
Diagnosis and treatment accuracy	0.27	(-0.32,0.86)
Good medical practice	0.89	(0.15,1.62)
User experience	-0.17	(-0.93,0.60)

- Basic infrastructure and equipment, management and good medical practice are associated with the star rating
- Good medical practice is not directly measured by Star Rating, but the totality of measures included in Star Rating are associated with good medical practice
- The management index was poorly correlated with domain A on management (.18)
- Diagnostic and treatment accuracy and user experience are not captured by the Star Rating

HOW DOES THE STAR RATING MAP TO OTHER QUALITY MEASURES?

Good medical practice

User experience



User experience

Basic infrastructure and equipment

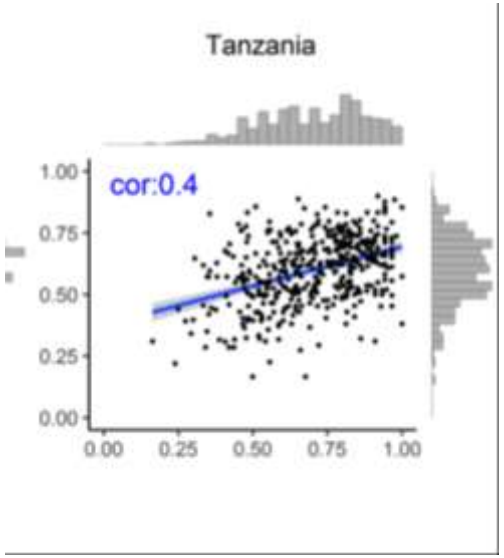
Management index

Diagnostic and treatment accuracy

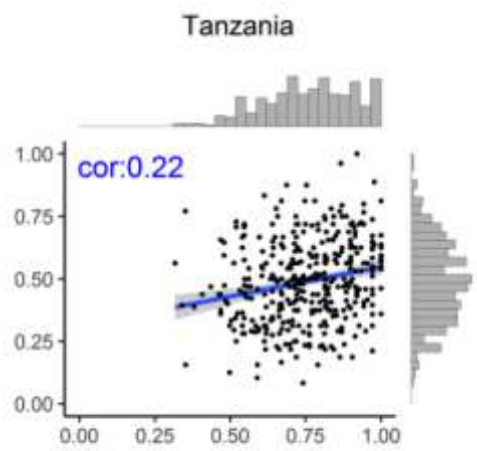
INFRASTRUCTURE DOES NOT EQUAL QUALITY

Observed clinical quality

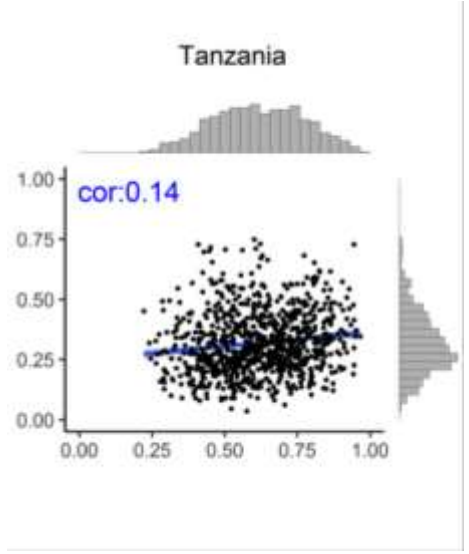
Antenatal care



Family planning



Sick child care



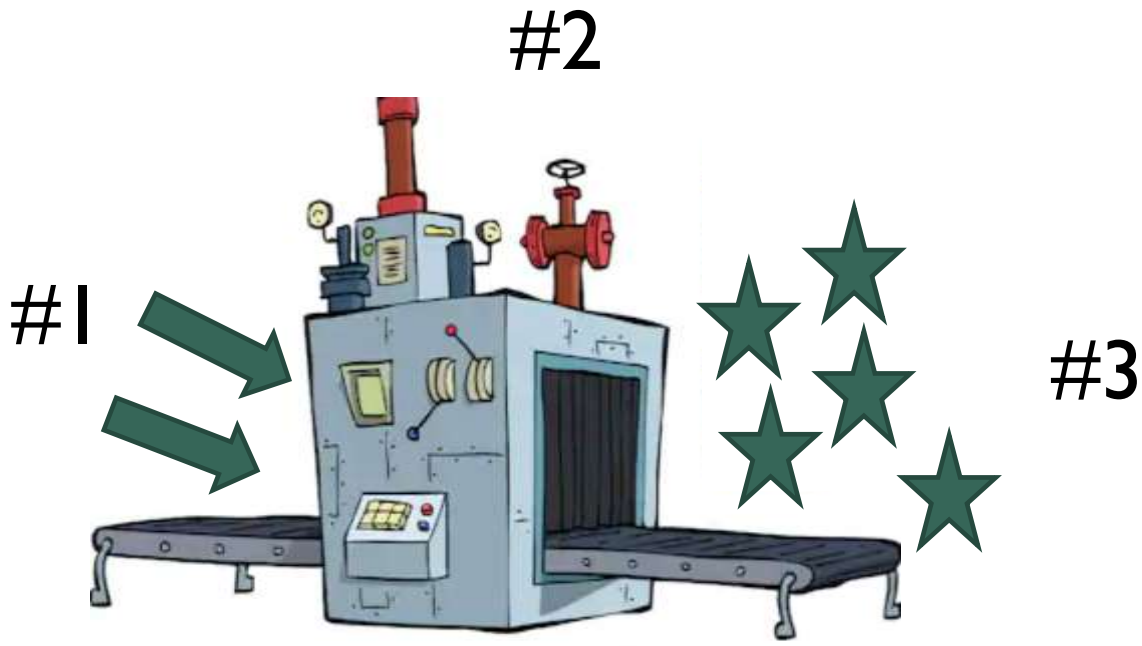
Infrastructure

Leslie H, Zen S, Kruk M 2017. Association between infrastructure and observed quality of care in 4 healthcare services: A cross-sectional study of 4,300 facilities in 8 countries. Plos Medicine

RESEARCH QUESTION 3: HOW DOES THE STAR RATING INSTRUMENT PERFORM AS A QUALITY MEASUREMENT TOOL?

Yes and No!

CONCLUSIONS



- **This evaluation suggests that the Star Rating Assessment is supporting primary care facilities to improve quality in Tanzania**
- Targeted revisions to the instrument could make it even better
- The assessment should be integrated into other quality programs

NEXT STEPS

- Revising and piloting new tool
- Assess tertiary hospitals
- Next assessment soon
- Digital (offline)

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