

**Evaluating Process and Outcome Metrics in
the context of quality
OR
What is quality and why should we bother to
measure it**

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Questions

- What are the dimensions of quality critical to measure in the context of clinical care systems
- What are the attributes of a robust clinical quality measure?
- What are the critical components for a feasible and effective quality measurement system in resource limited settings
- How is quality measurement useful for quality improvement and overall program monitoring and evaluation?
- And where does information systems and electronic health data sources fit in?

Why don't people do what we know works?

Primary Questions

- If we know **how care** should be delivered, **why** isn't it being done that way and **how can we make it better?**
 - Ex. TB screening, pre-natal care, cotrimoxazole use in patients with CD4 count <200
- Why does it take so long for simple advances (never mind more complex interventions) to make it into routine practice?

Quality/Implementation gap

- Occurs at provider, site level and higher levels
- Require combination of knowledge transfer, behavior change and identifying and fixing system gaps
- **Quality Improvement** works at this gap on a local level
- **Implementation research** attempts to understand how to do this on a broader level

So why bother with quality?

- When services are delivered/performed as they are supposed to be, organization will be more efficient , effective and stronger
 - Patient health
 - Lab accuracy
 - Data quality and use
 - Research quality
 - Financial reporting
 - Community engagement
 - Training

In clinical care, quality predicts outcomes

- Quality is important as a predictor of outcomes of care-are we making a difference
 - Cotrimoxazole treatment reduces death
 - PMTCT reduces transmission
 - Improved access and responsiveness increases retention
- Poor quality is associated with higher rates of death

What is quality improvement all about

- Knowing what to do
- Knowing if it being done
- Knowing how to make changes if a problem is found

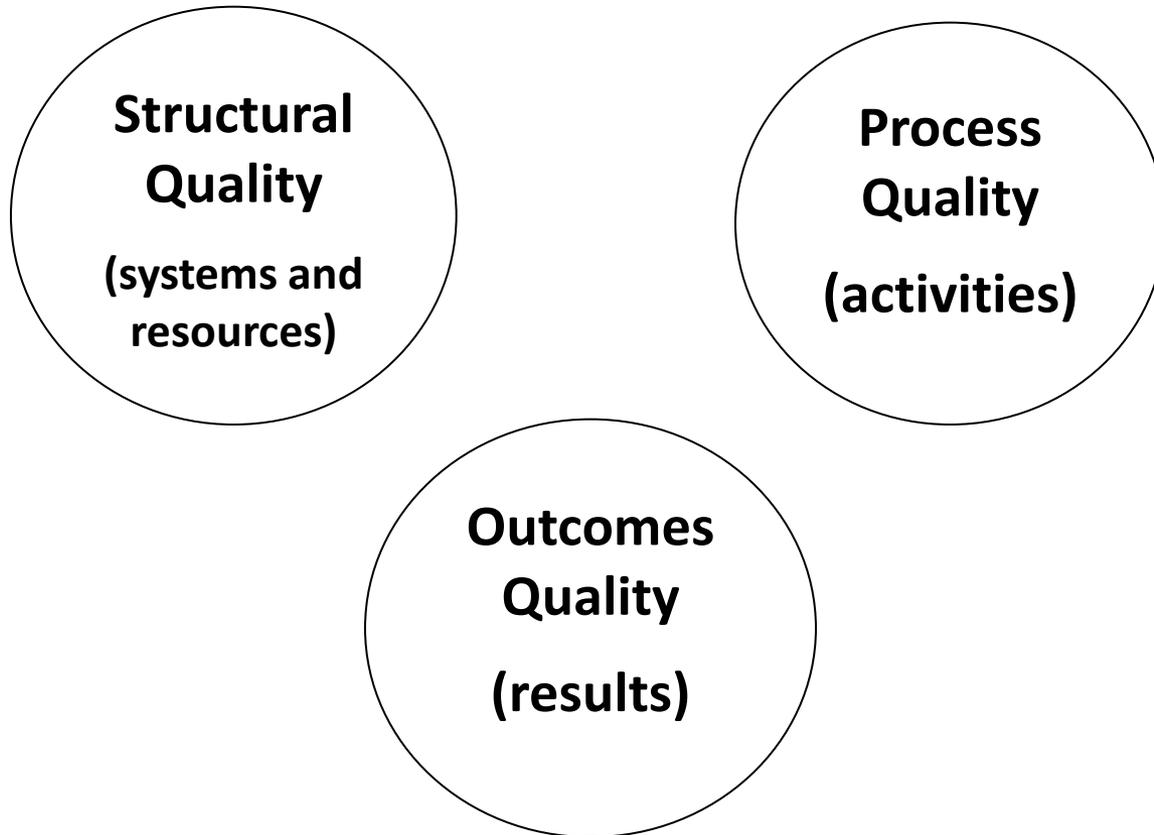
The core steps for Quality Improvement

- **Defining quality** (standards/guidelines)
- **Identifying what to measure** (indicators)
- **Performance/quality measurement**
linked to
- **Improvement**
- **Ensuring Structure, resources and capacity** to perform and support (Quality Management)

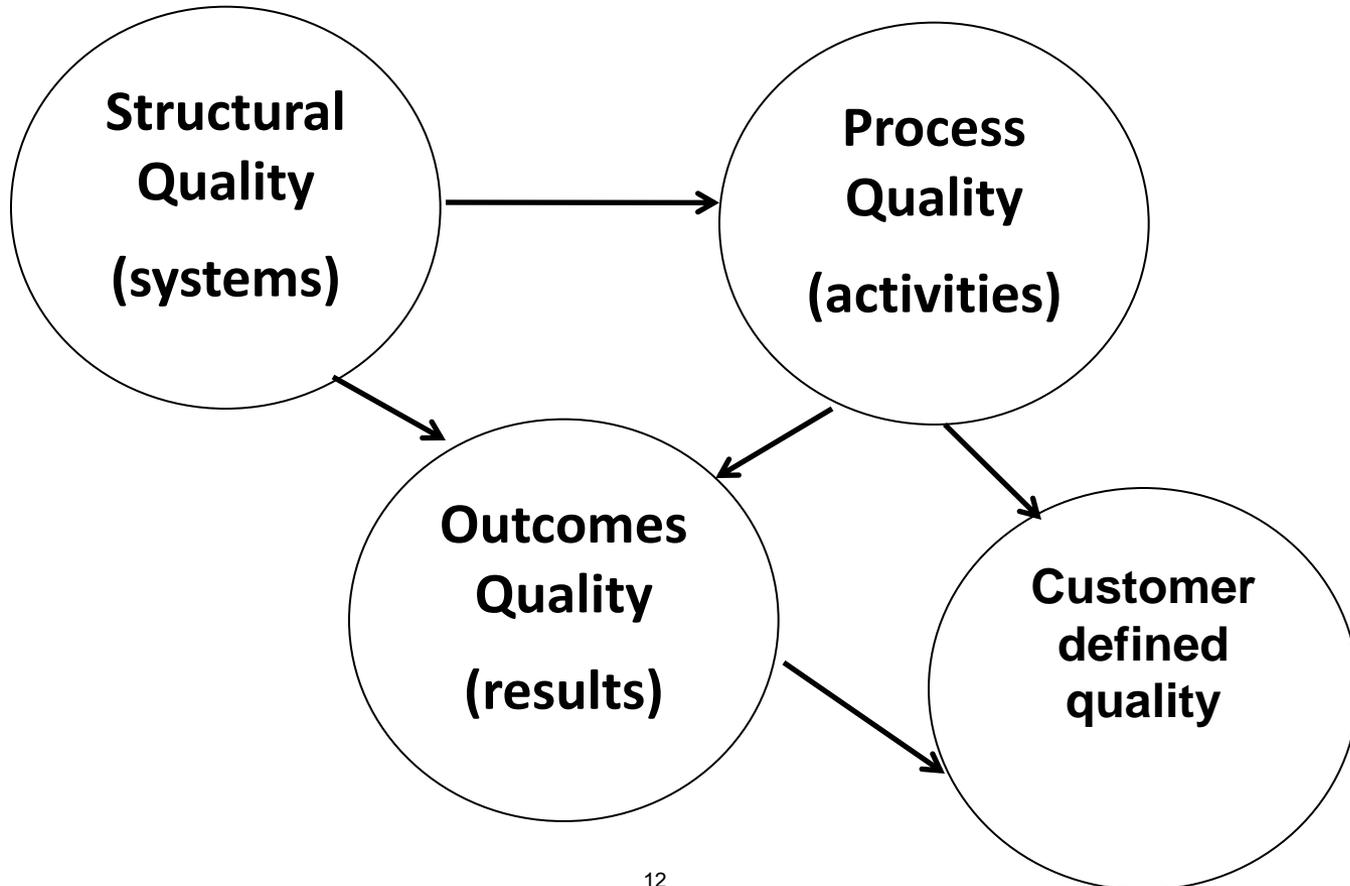
Where do we look for quality?

Donabedian: 3 Domains of Quality

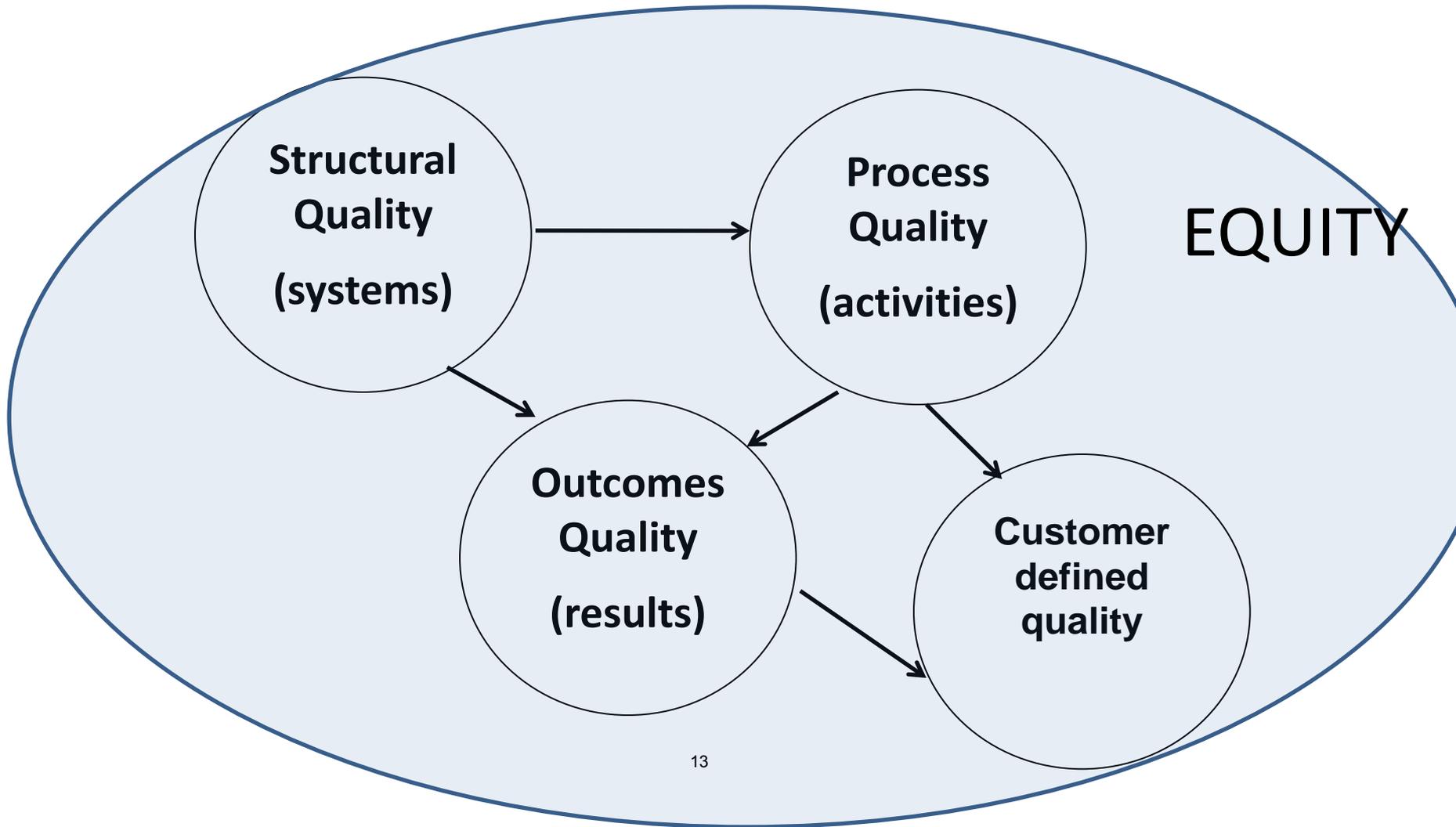
Quality is often determined by the systems and infrastructure rather than individual performance



Donabedian: 3 Domains of Quality plus customer/client's perspective



Is there a 5th domain from public health perspective?



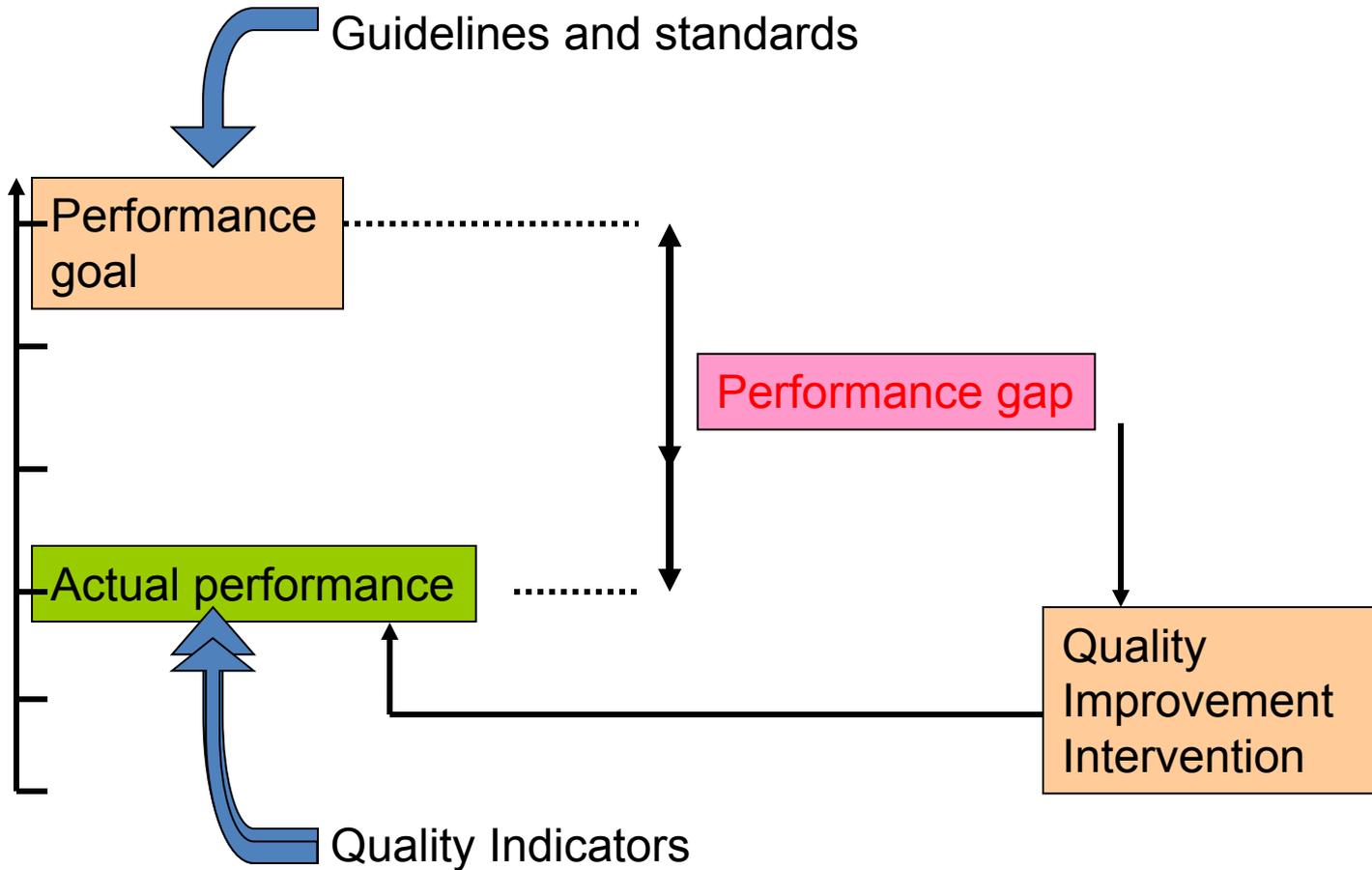
Some approaches to improve quality

- PDSA cycles
- Total Quality management (TQM)
- Continuous Quality Improvement (CQI)
- Collaboratives
- Supportive supervision/ mentoring
- Community partnering
- Positive deviance
- Six sigma
- Balanced score card
- Performance based financing (pay for performance)
- Organizational change
 - And changing human behavior
- Build capacity for QI

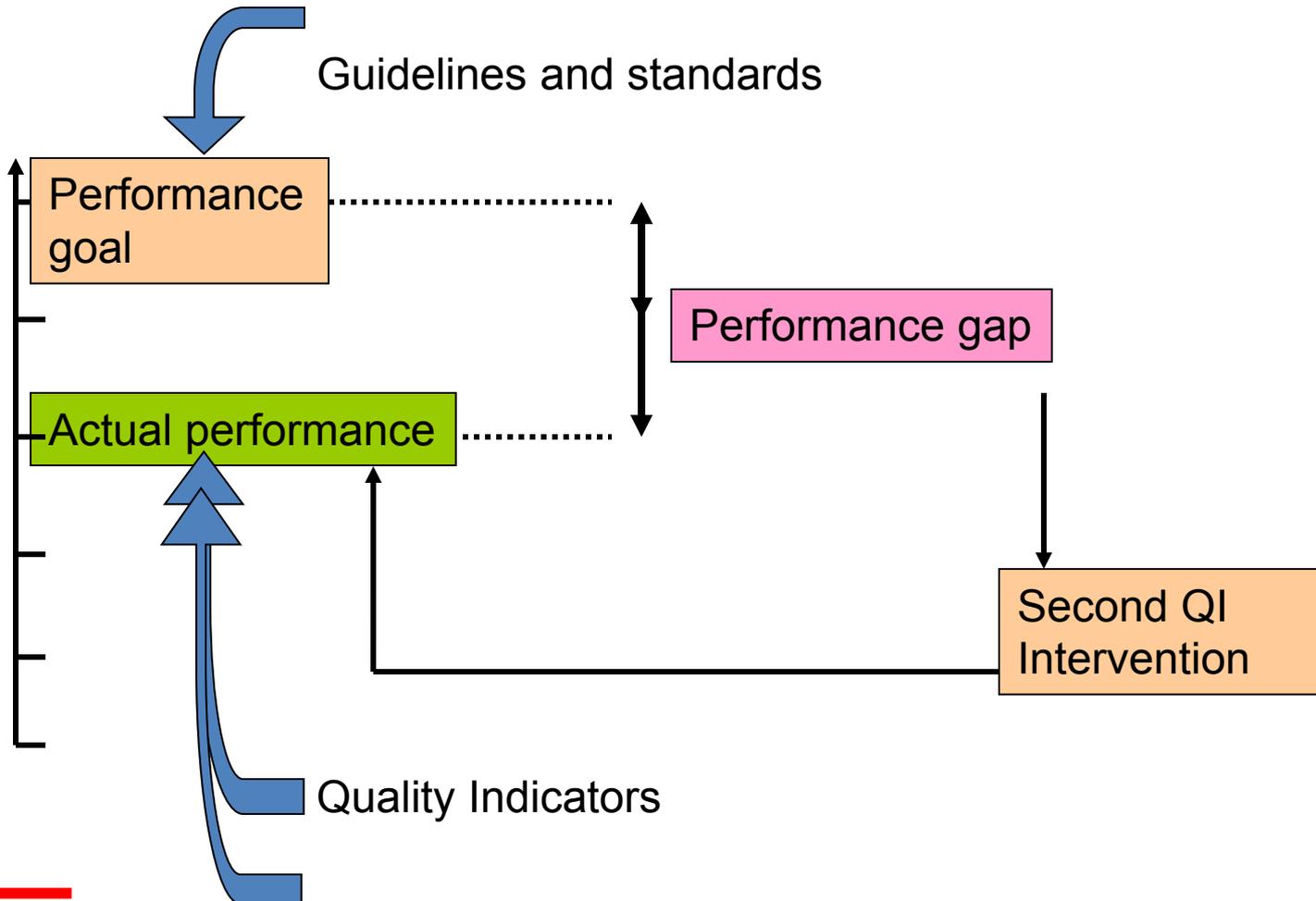
What do they have in common?

- All trying to close the gap between what should be happening and what actually is happening
 - Why does the gap exist
 - How can we close the gap
 - Did we succeed?
- All (most) are based on using data to identify gaps and to understand if improvement occurs
- Focus is on improving the SYSTEM not the performance of an individual

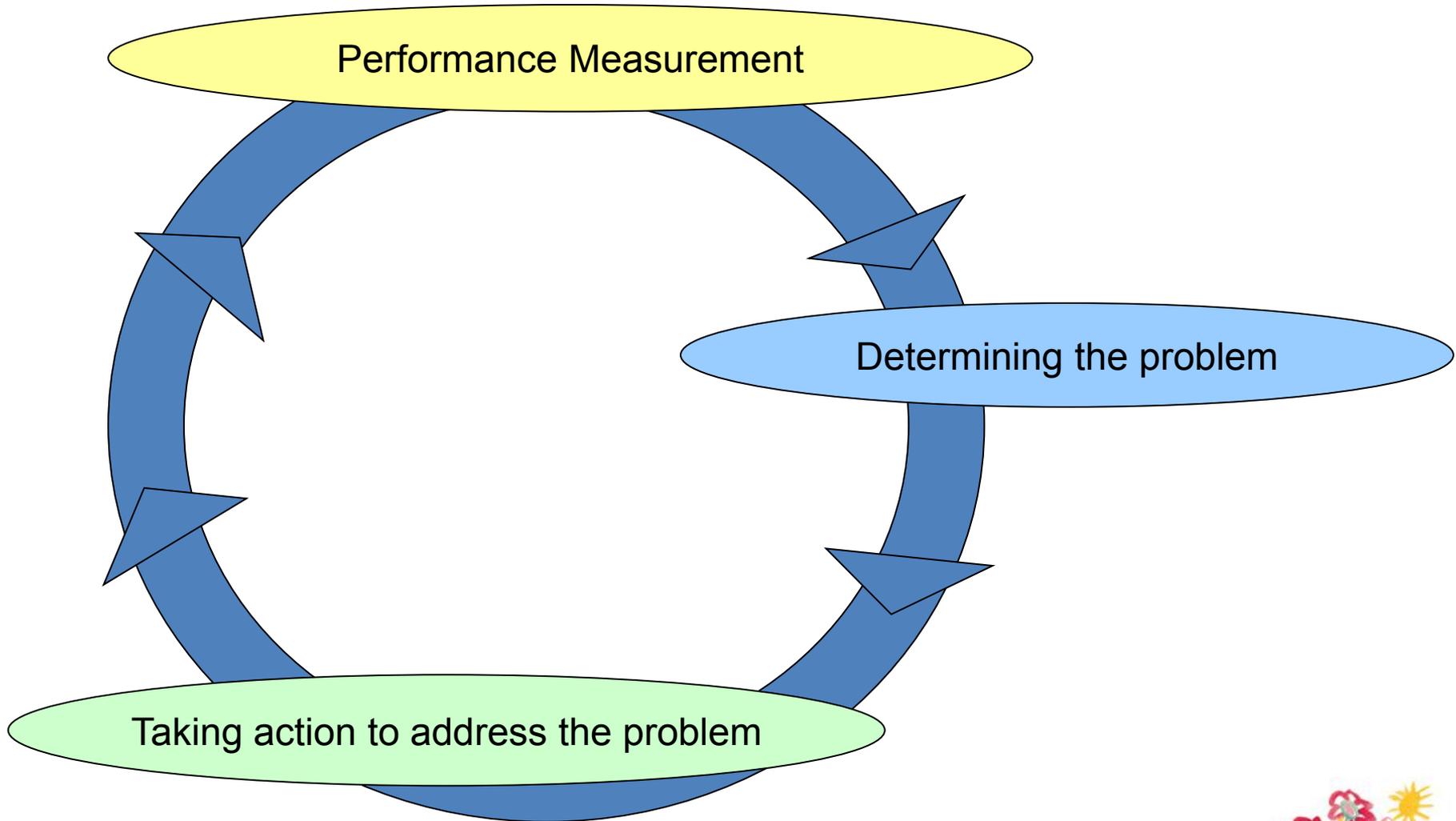
Quality Improvement



Quality Improvement: second intervention



Steps in the QI Process



To measure, you need data

- Quantitative: how many, how often, what is effect?
- Qualitative: how is it being done, how is the system functioning, patient satisfaction, etc.

Why do you need a PM system?

- A system ensures you look at all the steps
 - WHAT you measure (and what you do not)
 - HOW you measure
 - WHAT you will do with the data (improvement)
 - HOW you will support ongoing PM
- Focuses attention on all priorities (internal and external)
 - Balanced score card, dashboard
- More efficient system allows focus on main goal-IMPROVEMENT

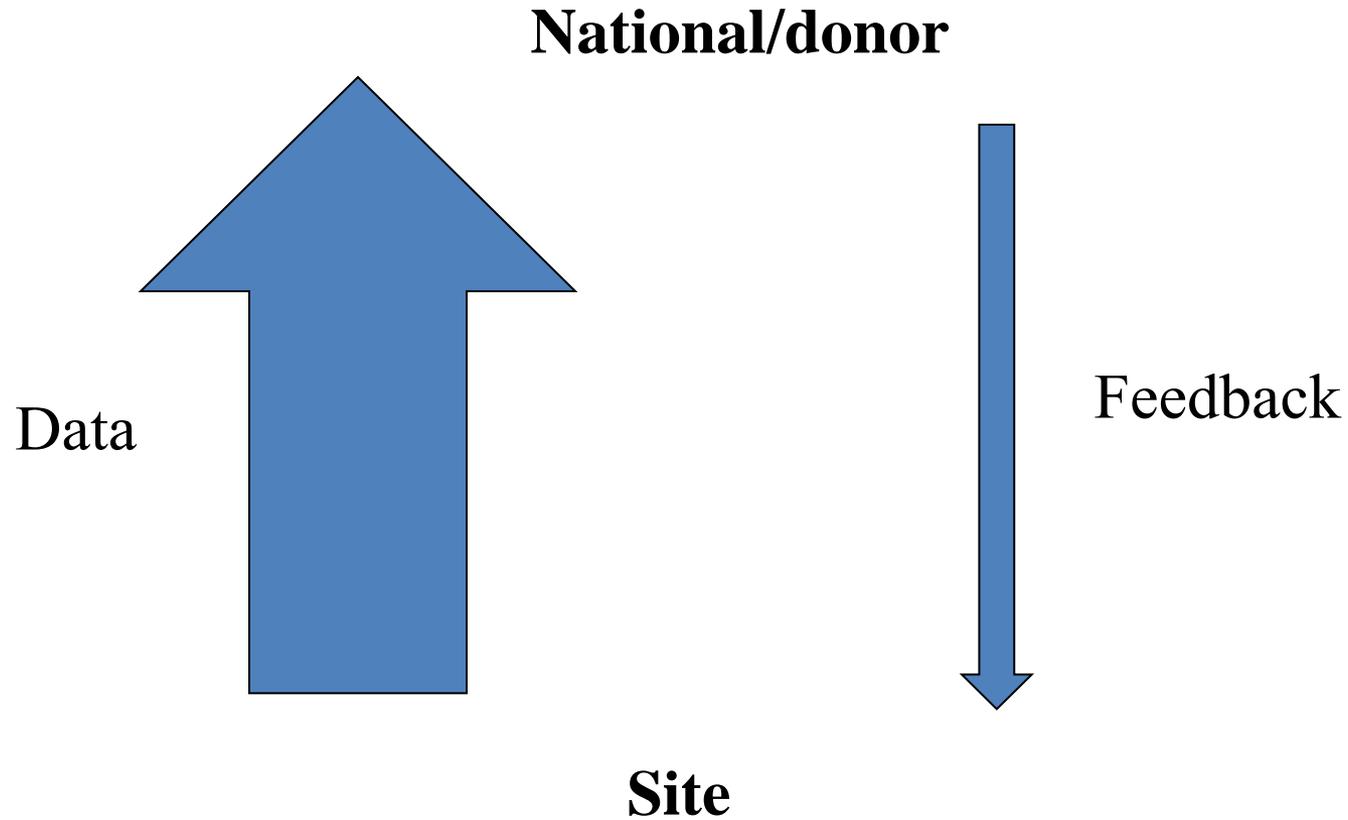
So do we agree.....

- Measuring is the critical step to
 - identify/prioritize where QI is needed
 - establish baseline
 - Define possible causes of system problems
 - Guide and evaluate changes to improve the systems and outcomes
- 3 key steps in measuring
 - Define measures
 - Collect performance data
 - Analyze data
- Not useful unless this is linked to USING and COMMUNICATING

What is Monitoring and Evaluation

- Structured approach to assess program
 - What is being done, how it is being done and is it making a difference
- Provides link between what is put into the program (**inputs**: staff, computers, medications), the services provided (process: number of children receiving PMTCT, number of visits; **outputs**: percent of eligible patients on ART), and the results (**outcomes/impact**: better health, fewer deaths)

What good M and E if not.....



Monitoring and QI

- Most (all) donor-supported and many programs require significant amount of data for monitoring programs and for clinical care
- Often focus on process measures
 - How many treated, how many enrolled
- Significant resources and time often committed
- These data can be used to help programs **begin** to understand quality and need for improvement
- Ideally data involved in M and E informs quality activities and vice versa and are integrated

What does that have to do with QI?

- Monitoring is more typically just reporting
- Using data to understand and drive improvement
 - Services
 - Data quality itself

Why does this not happen

- Burden of reporting
 - Success is an on-time “complete” report
- Do not trust the data
 - Data quality gap-the data do not reflect the care being given
 - QOC gap-the care being given does not reflect the standards

Don Berwick's 4 stages

- Stage I: “The data are wrong....”
- Stage II: “The data are right, but it’s not a problem...”
- Stage III: “The data are right, it’s a problem, but it’s not *my* problem...”
- Stage IV: “The data are right, it’s a problem, it’s my problem...”

Don Berwick's 4 stages plus one

- Stage 0: What data?
- Stage I: “The data are wrong....”
- Stage II: “The data are right, but it’s not a problem...”
- Stage III: “The data are right, it’s a problem, but it’s not *my* problem...”
- Stage IV: “The data are right, it’s a problem, it’s my problem...”

What are our challenges beyond individual QI projects (and where can IT help)

- How do we make measurement truly just the first step?
 - How can we make data a tool not an endpoint
- How do we institutionalize quality and QI
- How do we sustain these efforts
- How do we get people to make the first step?

- Readily available QUALITY data on quality of care can move this along

Where can information systems help?

- Diagnose where there is a problem
 - Performance measurement
- Triage where to start
 - Looking at the results
- Measuring effectiveness of QI
 - Remeasurement
- As the QI intervention itself

What do we know about IS and
improving quality?

Improving Availability of the data

- Amoroso and colleagues in Rwanda
- Identified problem of clinicians using outdated CD4 count results
- Migration to the OpenMRS-based laboratory information system
- Use of outdated CD4 counts decreased from 24.7% pre-intervention to 16.7% post intervention, (32.4% reduction, $p=.002$)

QI intervention (reminder)

- Were et al in Kenya
- IS-generated reminder of overdue CD4 count test
- Increase in intervention clinic compared with control (53% vs 38%, $p < .0001$)
 - 68% of encounters where reminders were printed out
- Question-why did it not reach 100%?
 - Disagreed
 - Had other source of Cd4 count
 - ??what else

EMR to streamline PM and QI

- Haiti
- National Electronic HIV database
- HIVQUAL-national QI program including set of National performance measures
- Programmed into EHS
- Produces measurements across all participating sites
 - Time is focused on using the data

Quality of Data vs. Quality of Care

Quality of Data

- Accurately reflect services provided
- No difference between:
 - Services that are actually provided
 - Services your data show as provided

Quality of Care

- Care delivered reflects the accepted standards of care
- No difference between:
 - Services that should be provided
 - Services that are actually provided

Quality of Data gap vs. Quality of Care gap

Quality of Data

- 50% of patients had a visit in last 3 months (retention)
- You know that you have much higher rates

You may have a data quality issue

Quality of Care

- Your data are accurate
- Only 50% of patients had a visit in last 3 months

This is a quality of care issue

How do we help people use the data?

- Know the audiences
 - Literacy, numeracy
- Borrow from industry
 - Dashboards
- Avoid the “monster” report
- Ensure the data is quality
 - Good enough for QI

Dashboards

- Rwanda-Site survey-
 - ~100 questions
 - 10 domains
- Facilitates rapid feedback and use
- Triage where to focus and then can look more deeply in the area

Health Center	Infrastructure	Clinical Services	Human Resources	Laboratory	Pharmacy	Sanitation/ Infection Control	Equipment	Referral System	Medical Information/ M&E	Social Services	Management	AVERAGE
A	5.0	9.1	9.3	5.0	9.5	7.7	8.1	5.0	2.9	5.0	6.7	6.7
B	7.5	9.1	9.3	10.0	10.0	9.2	7.5	5.0	7.1	10.0	10.0	8.6
C	5.0	8.2	6.7	10.0	10.0	7.7	8.1	5.0	7.1	0.0	6.7	6.8
D	6.3	6.4	8.9	6.7	6.7	6.9	8.8	5.0	5.7	0.0	6.7	6.2
E	1.3	4.5	9.6	6.7	6.7	8.5	7.5	0.0	7.1	5.0	10.0	6.1
F	8.8	7.3	7.4	10.0	10.0	7.7	8.8	5.0	7.1	0.0	6.7	7.2
G	3.8	6.4	8.5	10.0	10.0	9.2	6.9	0.0	7.1	0.0	6.7	6.2
H	10.0	8.2	8.1	3.3	3.3	6.2	6.9	10.0	7.1	5.0	10.0	7.1
Average Score	5.9	7.4	8.5	7.7	8.3	7.9	7.8	4.4	6.4	3.1	7.9	6.8
Minimum Score	1.3	4.5	6.7	3.3	3.3	6.2	6.9	0.0	2.9	0.0	6.7	6.1
Maximum Score	10.0	9.1	9.6	10.0	10.0	9.2	8.8	10.0	7.1	10.0	10.0	8.6

How can quality be spread and sustained?

Need to **teach and support** a culture for quality

- **Agreement on how quality is defined**
- Openness to **measuring care** and discussing gaps
- Willingness to **try to improve**
- Share successes and support ongoing work to address challenges
- Supportive leadership and adequate time and resources to measure and improve
- Team work
- Relevant training and mentoring as the work is started
- Culture change

Quality management Program

- The quality management program is the big picture: it's everything you do around quality in your program.
 - How you set up your quality management infrastructure
 - Who is involved
- What you'll measure
- What and how you'll seek to improve

Why infrastructure?

Without infrastructure,

- QI activities can become disconnected
 - No agreed upon plan/vision for QM
 - May not reflect the goals of the organization nor challenges identified
 - May be less likely to spread and be sustained
 - Can not ensure/push for adequate training and resources
 - No “voice” to advocate and ensure ongoing activities
-
- How to evaluate and improve the quality improvement program

Glickman (2007): (2) Promoting quality: the healthcare organization from a management perspective

- Key factors associated with successful implementation to support organizational structure for quality activities:
 - Executive management (leadership)
 - Culture
 - Organizational design
 - Incentive structure
 - Information management and technology

Umar 2009: The “Little Steps” Approach to Sustainability

- Capacity refers to the ability of an organization to carry out essential processes associated with successful QI.
- Sustainability poses a challenge at national and regional levels and requires attention to *local* implementation and context.
- Focus on attaining high impact immediate change threatens sustainability when systems, resources and culture are not aligned with the targeted changes.
- Literature review identifies four major categories of external models: accreditation/certification; quality awards/recognition; professional supervision; payment incentives
- Models can be mixed but often one tends to predominate
 - In past, donor agencies often drive which dominates.

Umar, N et al. Toward More Sustainable Health Care Quality Improvement in Developing Countries: The “Little Steps” approach. *Q Manage Health Care*. 2009; 18; p.295-304. Slide adapted from Bruce Agins, HEALTHQual International. NYAIDS Institute

While all changes
do not lead to improvement,
all improvement requires change*

*Institute for Healthcare Improvement

Remember

- "If we keep doing what we have been doing, we'll keep getting what we've always gotten

Batalden

- *Every system is perfectly designed to get the results it gets*

- Batalden

Discussion

- Looking at your experience to date using IS or providing services
 - Where have there been potential opportunities to measure and improve quality?
 - What are the barriers to adoption
 - How can we make this happen more quickly and more effectively
 - How can we make changes or systems sustainable over time

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