

Comparing METS and RRS to other quality interventions

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John Øvretveit,

Director of Research, Karolinska Medical Management Centre Sweden and
Professor of Health Management, Faculty of Medicine, Bergen University

Outline

- 1 Why compare?
- 2 What do we compare?
- 3 What helps and hinders comparisons?
- 4 How do we compare?
- 5 Conclusions

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Introduction

Subjects

- 1) Comparing effectiveness of RRS to other interventions – evidence
(METS one of four elements of a RRS)
- 2) Tool for you systematically to compare different interventions

Focus on 2)

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1 Why compare

– to help whom, with which actions?

To inform action about...by....

Professionals on the ground:

eg what is the best way to train nurses on detecting deterioration and when to call MET

Hospital/health system management leaders:

– should we introduce MET? How in our setting?

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Payers

– which safety intervention should we give incentives for?

Regulators

– which safety interventions should be standard requirement?

Q&S leaders & leading institutions

– which should we promote and which is best implementation process to provide assistance for?

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2 Compare what and why?

Action about "failure to rescue" (FTR)

Or, Investment in which safety/quality intervention?

Level 1 decision/actions

A) which type of MET or RRS is best for us?

(compare operational items – eg different METs)

B) What is the best way to implement it

(compare different ways to implement the same type of MET)

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Types of MET - USA

Missouri Baptist Hospital

- * Physician Assistant
- * ICU Nurse
- * Respiratory Therapist

Special feature: Linked beepers alert all team members simultaneously; all hospital phones have a sticker with the Rapid Response Team beeper number listed for quick reference.

Tallahassee Memorial HealthCare

- * ICU Nurse from the ICU associated with the patient's floor
- * Respiratory Therapist

Special feature: The bedside nurse phones ICU desk to alert ICU nurse, who decides whether or not to call the Respiratory Therapist after assessing patient.

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Different staffing

McLeod Regional Medical Center

- * ICU Nurse from the ICU associated with the patient's floor
- * Respiratory Therapist

Special feature: Pharmacists are informal team members who may be called in for a rapid consult.

Kadlec Medical Center

- * Critical Care Nurse
- * Respiratory Therapist
- * Patient Care Coordinator

Special feature: Rapid Assessment Team (RAT) has tee shirts with rat logos; stuffed rats on units remind nurses to "Call the RAT."

UPMC McKeesport

- * Code Team: Senior Resident
- * Nurse Anesthetist
- * Respiratory Therapist
- * Up to 4 nurses in addition to bedside nurse

Special feature: Bedside nurse does not distinguish between Rapid Response Team and Code Blue calls.

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Level 2 decision – interventions for "failure to rescue" (FTR) problem

Should we implement MET or RRS compared to other "failure to rescue" interventions?

Eg hospitalist, nurse training

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Level 3 decision – all interventions for quality and safety

Which of all quality and safety interventions should we implement?

In what sequence?

How?

Eg which of ARHQ 11 (2001), or NQF 2003, or JC goals to implement, in which sequence and how?

Eg same site surgery intervention, SBAR, antibiotic prophylaxis

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Choose one :

Hands up who is most interested in comparison for

Level 3 decision

Which of all quality and safety interventions should we implement?

Level 2 decision

Should we implement MET or RRS compared to other safety intervention (eg which saves most lives or costs?)

Level 1 decision/actions

A) which type of MET or RRS is best for us? (compare operational items – eg different METs)

B) What is the best way to implement it (compare different ways to implement the same type of MET)

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My focus

Not these comparison findings:

Evidence of effectiveness of all hospital quality improvement approaches (Ovretveit 2003)

Evidence of effectiveness of all quality and safety tools (Øvretveit 2005)

Evidence of effectiveness of all safety interventions (Øvretveit 2006)

This is next: Method

A Tool for you to compare and assess alternatives:

- to decide what to implement & how

(or to improve what you have using comparison)

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Process comparison
 Comparisons for better actions in phases of 1)choice, 2)implementation, 3)operations 4)improvement and 5)spread

<i>Eg compare</i>	Before,	implementation processes,	operational entity	improvement/ maintenance/ actions/ systems	spread actions/ systems
MET nurse led					
MET Physician lead					
Other type of MET					

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Case example
 Division of Medicine, 4 wards, teaching hospital (many acute older patients)

- Safety review listed 4 top safety problems
 - Adverse drug events, Infection rates, collection of problems due to poor communications between shifts and professions, high arrest and in hospital mortality rate (identified a failure to rescue problem)
- How big and how serious?
- Which can we do something about quickly/effectively/low cost?
- Which work on first?

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Information on problem – elsewhere? our service?
 On each – others data (research) – incidence for similar hospitals,
 for ADEs, Infection, communication errors causing AEs, failure to rescue

Which are most serious for our division of medicine - different views

How compare? – quantify in some way

Quantify: how many patients affects; Quantify suffering ((1=death, 0.5 serious disability” after 1 year, 0.1 = more than 1 day extra stay and pain)

Agreements about which are avoidable Which can we do something about?

Different criteria to judge possible: Actions Effective, Quick, Low cost? (Can't get all 3- choose 2!) 15

Information on interventions – elsewhere? our service?
 ADEs – many interventions – some effective, some quicker, some low cost
 Infection, - specific or general – service wide not effective
 Communication – SBAR effective, quick, low cost
 Failure to rescue: MET or MET/RRS; nurse training; hospitalists, nurse practitioners, or physician assistants on hospital units, automated monitoring systems.

Comparison
 JO>Table 7by4

Problem Burden of suffering Solution effectiveness
 Certainty of effectiveness in our setting, cost, risks

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Comparison

Problem	Burden of suffering	Solution effectiveness	Certainty of effectiveness in our setting,	cost,	risks	Total score
ADEs						
Infection						
Communication						

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Overtaken by events

- Payer wants MET,
- CEO signs up to 100k and decides MET
- Which MET?
- Use similar assessment approach

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Lesson from case?

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- Define the problem using information
- List the solution options
- Compare each on criteria
- Make assessment
- Problem Burden of suffering solution effectiveness
certainty of effectiveness in our setting, cost, risks

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Systematic, rough-and-ready comparison helps decisions
and makes actions more effective and justifiable.
Not perfect, but better than no comparison.

Used 5 step: PiSCER method

5 step: PiSCER method

Step 1: know your problems

Step 2: know possible solutions

Step 3: decide criteria for comparing problem-
solution combinations

Step 4: estimate suffering solution achievable index
(SSAI) (probability)

Step 5: Recommendations

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Step 1: know your problems

List safety problems and amount of avoidable
suffering likely for each problem

List problems,

Use others research or you own indicators to
estimate:

number of patients affected,

calculate "burden of suffering

(1=death, 0.5 serious disability" after 1 year, 0.1 = more than 1
day extra stay and pain)

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Step 2: know possible solutions

Get information about effectiveness in other settings,

Estimate likely ease of implementation
and effectiveness in our setting

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Step 3: decide criteria for comparing
problem-solution combinations

Benefits, costs, risks

Benefits,

Direct patients, personnel

Indirect patients, personnel

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Costs

- People-time
- Quantify in money & add other costs

Risks

- Partial or failed implementation
- Harm – direct patients, personnel, indirect (resources not available for other interventions)

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Step 4: estimate suffering solution achievable index (SSAI) (probability)

Suffering solution achievable index (SSAI) (probability)

= Avoidable suffering index X (Benefits – costs – risks)

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Step 5: Recommendations - summary table

Problem	Burden of suffering	solution effectiveness	certainty of effectiveness in our setting,	Costs	Risks
Problem 1		Solution 1			
		Solution 2			
		Solution 3			

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To find out more

PPT analysing safety interventions

PPT the case for MET/RRS

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Comparison challenges

- Anti-comparators
- Why comparison not possible
- Apples and oranges
- Computer physician order entry for ADEs not comparable to SBAR for communication problems
- (things comparing very different)
- Evidence elsewhere not transferrable to your setting
- Effectiveness, costs.
- You or they may not fully implement (depth and scope)
- The intervention should be improved and continually developing and evolving – not comparable

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Comparison challenges - summary

- Different RRS models
- Different implementation depth and scope
- Different ICU features
- Different study periods (publicity/campaigns)
- Different data gathering (definition and collection of cardiac arrest, mortality etc)
- Different patient case mix (and staff skills)

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Pro-comparators

- Just because its complex does not mean we cannot and should not compare
- Make these choices consciously
- Or waste resources doing less good implementing less well and less effective interventions on wrong problems
- Must consider opportunity costs
- Can make broad assessment about
- Which might save most lives/suffering or costs
- Which more easy to implement
- Which carries most risks
- & which best for us now, with out problems and resources and situation

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John's view

- What would work best for us, for this problem, in our setting?
- What are our problems, what are effective solutions, could we implement it fully, affordably, quickly?
- Effectiveness, in our setting, implementability - depth and scope (resources, change/implementation capability, culture)

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Advice

Principle 1: widen your thinking & consider range of alternatives

Principle 2: judge value by making comparisons

Principle 3: combine different information – evidence from research, data and information from your setting, peoples judgements about implementability

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Advice

Principle 4: translate to your setting

Don't compare "ideal" interventions in special settings

Yes, use evidence of their implementation and results

But estimate what you could do / would get in your setting, and costs (given your resources, culture, capacity for change/improvement)

Put the case showing evidence *and* your estimates for your setting

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Questions

1. Your experience comparing METS, RRS, safety interventions?
2. What did you compare, and why?
3. What actions resulted from your comparison?
4. How did you relate comparison to your setting?
5. Could you use 5 step: PiSCER method? When is it useful?

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Safety solutions AHRQ 2001 top 11

1. Appropriate use of prophylaxis to prevent venous thromboembolism in patients at risk (heparin)
2. Use of perioperative beta-blockers in appropriate patients to prevent perioperative morbidity and mortality.
3. Use of maximum sterile barriers while placing central intravenous catheters to prevent infections.
4. Appropriate use of antibiotic prophylaxis in surgical patients to prevent perioperative infections.
5. Asking that patients recall and restate what they have been told during the informed consent process

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Safety solutions

6. Continuous aspiration of subglottic secretions (CASS) to prevent ventilator-associated pneumonia.
7. Use of pressure relieving bedding materials to prevent pressure ulcers.
8. Use of real-time ultrasound guidance during central line insertion to prevent complications.
9. Patient self-management for warfarin (Coumadin™) to achieve appropriate outpatient anticoagulation and prevent complications.
10. Appropriate provision of nutrition, with a particular emphasis on early enteral nutrition in critically ill and surgical patients.

11 Use of antibiotic-impregnated central venous catheters to

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Safety solutions

Joint commission goals list

Goal: Identify Patients Correctly (medications)

Goal: Improve Effective Communication

Goal: Improve the Safety of High-alert Medications (concentrated electrolytes)

Goal: Eliminate Wrong-site, Wrong-patient, Wrong-procedure Surgery

Goal: Reduce the Risk of Health Care-acquired Infections

Goal: Reduce the Risk of Patient Harm Resulting from Falls

<http://www.jcrrinc.com/publications>

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Safety solutions - NQF

“that should be universally utilized in applicable healthcare settings to reduce the risk of harm resulting from processes, systems, or environments of care”

Compiled using an expert consensus.

1. Create a healthcare culture of safety.
2. For designated high-risk, elective surgical procedures or other specified care, patients should be clearly informed of the likely reduced risk of an adverse outcome at treatment facilities that have demonstrated superior outcomes and should be referred to such facilities in accordance with the patient’s stated preference.
3. Specify an explicit protocol to be used to ensure an adequate level of nursing based on the institution’s usual patient mix and the experience and training of its nursing staff.

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4. All patients in general intensive care units (both adult and pediatric) should be managed by physicians having specific training and certification in critical care medicine (“critical care certified”).
5. Pharmacists should actively participate in the medication-use process, including, at a minimum, being available for consultation with prescribers on medication ordering, interpretation and review of medication orders, preparation of medications, dispensing of medications, and administration and monitoring of medications.
6. Verbal orders should be recorded whenever possible and immediately read back to the prescriber—i.e., a healthcare provider receiving a verbal order should read or repeat back the information that the prescriber conveys in order to verify the accuracy of what was heard.

etc

The NQF also issues a further 27 promising practices which should be further studied.

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Massachusetts safety coalition comparison method

NQF 30 expert consensus: specificity, evidence of effectiveness, likely benefit, generalizability, and readiness.

Mass coalition: frequency and severity of the problems, the availability of a tested safe practice for each, and evidence for its efficacy

10 - Topics chosen by coalition members, QI Directors and hospital CEOs, and by review of data from the Massachusetts reporting system on errors, the NQF list of serious reportable events, and the AHRQ Patient Safety Practices with Greatest Strength of Evidence.

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Massachusetts safety coalition comparison method

- Wrong site surgery or other procedures
- Transfusion errors
- Medication errors at patient transitions (reconciling)
- Communicating critical test results
- Warfarin complications Heparin complications
- Falls
- Retained foreign bodies
- Pressure ulcers
- Surgical site infections

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Massachusetts safety coalition comparison method

Table 1 Factors influencing hospitals’ decisions to participate in the collaboratives

Factors	CEOs (N=41-44)	RM teams (N=39-42)	CTR teams (N=32-34)
Evidence provided at leadership briefing	81%	95%	70%
MHA trustees endorsement at flagship project	82%	83%	81%
MHA’s engagement of your hospital leadership	81%	77%	85%
Coalition’s endorsement	89%	90%	85%
Interest in the topic among clinical leaders	91%	85%	94%
Interest in the topic among front line clinicians	77%	59%	76%
Sentinel event experienced	29%	28%	39%
Sense that recommendations are likely to work	91%	93%	94%
JCAHO emphasis on patient safety	89%	90%	94%
Participation was voluntary	82%	69%	59%
Costs of participating were low	93%	80%	71%
Collaborative provided access to experts	91%	98%	97%
Collaborative embraced learning from peers	98%	98%	97%
Offered a set of implementation strategies	93%	100%	91%

MHA, Massachusetts Hospital Association; JCAHO, Joint Commission for the Accreditation of Healthcare Organizations.
Percentage of respondents indicating “a lot” or “some”.

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