Principles of Performance Measurement: The qualities of a good performance measurement

The performance measure should be collected and analyzed in real time.

When a performance measure is collected, but not analyzed for months afterwards, the application of what this measure uncovers is largely no longer relevant. Still, you can probably remember many instances when performance measures were collected, held, and analyzed for months later (or not at all). When this happens, the persons who collect the data lose interest in its relevancy – the data that they do collect becomes less valid and they become more resentful of the time necessary to collect data that is not relevant to their current situation (or worse) is not ever analyzed.

Performance measures should be adaptive.

The nature of what we are measuring changes in these systems and the issue that we wish to measure also changes. It is not advisable to use "hard wired" performance measures that don't permit change. Moreover, as a system moves effectively towards an intended goal – the issues that impede its ability to meet this goal change and (thus) different measures are required to direct progress.

Performance measures should also be collected in the course of doing the work.

Many performance measures are "add-ons" to an individual's work. Individuals see the collection of these data as a "pain" that they only marginally tolerate. Many persons within healthcare speak of "doing their paperwork" with a sigh and a complaint – when the paperwork is actually the collection of system performance measures. Collecting data that the System is going to use to guide its progress in this way is very risky. Workers can forget the phenomenon that they are supposed to describe even minutes after it has occurred – making any collection of

data about these phenomena inaccurate.

Workers who don't see the relevancy of describing the data they are collecting because they rarely receive a timely report they can use – don't spend the time necessary to ensure the data they are recording is accurate OR may not know that they are inaccurately recording their data. It is challenging to figure out how to collect performance data in the course of work, and usually it requires some technological assistance – such as PDAs, Teleform®, Tablet PCs, iPads, etc. However, it is so important that those who are performing the work see the collection of data that is used (and they see the results of its collection

Performance Measure Quality Checklist

- [ ] Collected in the course of work
- [ ] Provide meaningful information
- [ ] Be reported back to the persons doing the work in a way tha tthey can use the information to determine how to improve their processes
- [ ] Be reported back to all personnel in as close to real time as possible
- [ ] Be reported as close as possible to the individual patient - change is best accomplished one patient at a time
- [ ] Use aggregated data only sparingly to quickly identify meaningful trends

in as close to real time as possible) to continuously improve their organization's performance as part of their work and not a tiresome and worthless "add on".

Performance measures should be simple but meaningful.

There is a great tendency to require the collection of measures that are really not necessary to the measurement of the work under question and to require the collection

of measures that are really hard (if not impossible) to interpret. Workers are very cognizant of this issue, and they quickly become disenchanted with the performance measurement system if it involves the collection of needlessly complex and ambiguous data.

Performance measurement systems should be as transparent as possible and every member of the system should have access to the data collected.

Workers who think that the data collected is "held back" for review by the "chosen few" will resent the collection of these data. Likewise, workers will feel that when they can't see certain data or don't know how it is being used, that it will be used "against them." Oftentimes the good ideas regarding how to improve the organization based upon the performance data collected come from the workers who are closest to the work being performed. A transparent performance measurement system is absolutely necessary to elicit ideas from this layer of the workforce that could potentially move the organization more rapidly towards its vision and goals.

Principles of Internal Learning

Internal learning is a systematic process that a System uses to apply the data and information it generates for the purpose of continuously increasing its capacity to reach its intended vision. Typically, the data and information used within an Internal Learning system comes from its quality improvement or performance measurement efforts. Internal Learning involves the persons (agents) within the system applying these systematic processes in the course of doing their work and the results ("learnings") derived from their efforts are ideally sustained and spread using methods that the system defines, manages, and monitors. In general, the energy needed to perpetuate an Internal Learning system is generated from inside the organization.

Four Rules of Use with the Toyota Production System:

- Rule 1: All work must be highly specified as to content, sequence, timing, location, and expected outcome.

- Rule 2: Every customer-supplier connection must be simple and direct, and there must be a binary, yes-or-no way to send requests and receive responses.

- Rule 3: The pathway for every product and service must be predefined, simple, and direct with no loops or forks.

- Rule 4: Any improvement must be made using the scientific method, under the guidance of a teacher, and close in time, space, and person to the problem and toward the ideal.

All four rules have built-in internal tests that let you know if the activities, connections, pathways, and improvements are being done as expected.

Principles of External Learning: How people (especially adults) learn information (convert it to knowledge) and learn new skills.

Adults only learn what they believe they need to learn.

Adults do not learn or master well knowledge or skills that they cannot immediately see is relevant to a specific

Activity: Highly Specified: Content Sequence Timing Location Expected Outcomes	Pathway: Highly Specified: Predefined Simple and Direct With No Loops or Forks
Connection: Highly Specified: Simple Direct Binary (yes/no)	Improvement: Highly Specified: Using the Scientific Method Under the Guidance of a Teacher Close in Time, Space, and Person to the Problem Towards the Ideal

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problem that is meaningful to them. This means that all trainings should be contextualized by the type of system problem (as indicated by the performance measurement and internal learning process) it is intending to address and by how the knowledge/skill that is achieved through the training will address the System's overall vision.

Humans do not convert knowledge to skill.

For a very long time, clinical knowledge presented in trainings was assumed to be easily converted by the participants into skills when they returned to their workplace. Skill development follows a different process than knowledge acquisition. Much of what is learned in clinical trainings is advance knowledge application and NOT skill development or proficiency. Skill development involves seeing a skill being applied, practicing the skill until there is at least beginning proficiency, and then applying the skill with relevant feedback throughout the person's use of the skill (even after the person has used the skill for a great period of time). Skills can decay and change, and when a specific skill is important to realizing an anticipated impact -- we must extend the training to include ongoing review of the demonstrated skill within the workplace as long as the trainee works within that system.

Effective and efficient training programs provide just the amount of knowledge/skill that is needed to address a very specific problem/need.

Many training programs fail to link the training to a specific problem identified via a performance measurement and internal learning system. When the training program is linked this way, it is easier to determine exactly the kind and amount of knowledge/skill necessary to address this problem. When training programs exceed the required amount of knowledge and skill necessary to address a stated problem (most likely because the problem hasn't been clearly identified and evaluated), the trainees lose perspective as to how to apply the knowledge/skills they are acquiring, the system can no longer validly assess the effect of the training in addressing the identified problem,

and (what is probably most important) the trainees, through a loss of interest, fail to apply what is presented in an effective and efficient manner.

Skill is developed in stages.

Maslow has described four stages of learning, and these stages of learning are often applied to skill development within healthcare: 1. Unconscious Incompetence (you don't know that you don't know something), to 2. Conscious Incompetence (you are now aware that you are incompetent at something), to 3. Conscious Competence (you develop a skill in that area, but have to think about it), to the final stage 4. Unconscious Competence (you are good at it, and it now comes naturally). Many persons who achieve a skill within healthcare remain or regress to the first stage (unconscious incompetence), which can have devastating effects upon the patients who are receiving services. Skill development MUST MUST MUST involve an ongoing assessment by an objective observer throughout the person's professional career to assure that he/she moves beyond the first phase (or worse, does not regress back to the first stage and land in a place where he/she does not know what they do not know).

Adults (especially younger adults) don't like to expend much energy learning things without "lubricants" such as humor, gamesmanship, surprises, etc.

Persons within the 21st century loathe boredom. Our high-impact information age provides stimulation at high rates of speed that we all have come to expect as "normal" for how information should be presented and digested. Thus, when information is presented that requires more careful consideration, we ask that this information be dosed with something we find pleasant – such as humor, games, surprises, etc. In the absence of these additives, we quickly lose interest in what is being presented (or think it is too "hard") – and the training becomes less effective.

Presentation of training materials can mean as much or more than the training topic.

The manner in which information is presented or skills taught affects enormously how well trainees will learn or master the intended information/skills. The presentation methods can include things such as the manner in which the "teacher" presents/communicates the intended information/skills, the speed in which the information/skills are presented, the type of "lubricants" used to facilitate the presentations of the information/skills, the visual and oral strategies used to present the information/skills, etc.

All trainings should be evaluated as to: (a) whether it met the trainee's needs; and (b) whether the trainees learned or mastered what was intended.

Trainings are no different from any other planned interventions within a system; they should be linked to the system vision, they should be described as to the problem they are addressing within the system, they should include a planned experiment to test whether they have addressed adequately the problem described, and they should include methods of ensuring they meet the trainee's needs. The latter point is rarely addressed in trainings. Each trainee is, in essence, his/her own "system". The trainee will have identified his/her own vision for what they would like to achieve in their work life, as well as will bring his/her own adaptive system that learns material in his/her own pace and degree. Only the learner can tell whether the way the material is being presented meets his/her intended vision and specific learning facilities. The "teacher" cannot presume to know each trainee's perspective and preferences – thus, the teacher should ask the trainees throughout the training (if it is a long training) or at the end of the training – if the training met his/her needs and the stated training's goals/objectives. Trainings should also be evaluated as to whether the trainees acquired the desired knowledge or mastered the stated skills. This is often accomplished via pre/post tests or the application of strategies such as proficiency checklists.

Training matrices are effectively used by systems to track training for each member.

Systems that use learning systems that seek to reduce waste will use things like a training matrix to map out each member's learning progress against established trainings that have already been demonstrated as effective and necessary to provide the knowledge/skills the system needs to continuously move towards its intended vision. These training matrices are usually prominently displayed within the workspace so that every worker can see his/her progress and compare this with his fellow workers.

Training topics should be appropriately evidence-based or practice-based.

Training topics that include the introduction of knowledge or skills that are established within the scientific literature should be firmly based within this literature. We speak to the application of a scientifically established evidence-based practice in a manner that is true to what the developers have demonstrated to be effective as fidelity. Knowledge that is derived from the literature should be accurately based in that literature and appropriately cited for further reference. Sometimes, training topics arise from what the system has learned is an effective practice based upon its application to an established performance measurement and internal learning system – these training topics should also follow closely these "practice-based evidences" in a manner that would permit the trainees to apply what the system has learned reliably and validly.

Learners may favor having their knowledge/skills presented in different ways.

The educational literature has referred to this as different learning styles or multiple intelligences. It would behoove those who design training programs to become familiar with these different learning styles and ensure that there is some variety to the way knowledge and skills are presented.