

# Towards a Framework for the Continual Improvement of Healthcare

## The Integration of Improvement Knowledge with Professional Knowledge

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**Quality improvement has become an integral part of healthcare systems. Substantial improvements can only be expected through the creation of new systems. Transforming a healthcare organisation so that it is capable of continual improvement requires a specific framework. This framework includes the linking of professional knowledge (subject, discipline and values) and improvement knowledge (system, variation, psychology and theory of knowledge) to daily work. Improvement knowledge enables linking of the knowledge and interrelationships of the elements of a system, consideration of the type of variation, teamwork and motivation of participants and the use of prediction and measurement to link theory and action.**

### Improvement and change of healthcare organisations and systems

Since the late 1980s and early 90s there has been an increased interest in quality and quality improvement in healthcare. The concepts of quality have become commonplace in health services and organisations to different degrees and are built into the structure of various provider units. For example the United Kingdom has made quality improvement an integral part of the healthcare system. The website of the Department of Health in the UK <http://www.doh.gov.uk/> gives examples of initiatives taken in this country.

Berwick's leading article on improvement of systems<sup>1</sup> outlined a number of principles on improvement and change derived from what the author authoritatively called 'the central law of improvement'. He stressed on the 'indissoluble bond between improvement and change' and explained that 'not all change is improvement, but all improvement is change'. Every system is perfectly designed to achieve the results it achieves and reframes performance from a matter of effort to a matter of design. Better or worse performance cannot be obtained from a system of work (any set of activities with a common aim) merely on demand. The results of health care are themselves properties of the system of care in analogy to the length of an athlete's maximum long jump being inherent in the nature of his body. Although mere effort can achieve some improvement, this improvement is not fundamental and does not often represent a new level of capability. While different players in the health care system want to bring about change, the results everyone wants to change (performance) are properties inherent in the system and new results can only be expected through the creation of new systems. The author emphasised on change of a system, not change within a system. Stressing the current

system (relying on more of the same) hits without much effect on the historical walls of performance while introducing a truly new system leaps over these walls. Improvement begins in the will but can be achieved through a method for systematic change.<sup>1</sup>

## Transforming a healthcare organisation so that it is capable of continual improvement

Transforming a healthcare

**Table I** A framework for the continual improvement of healthcare organisations<sup>2</sup>

- development of improvement knowledge to be used together with professional knowledge
- creation of leadership policy that fosters a shared sense of purpose and promotes organisational learning
- mastery of tools and methods that accelerate improvement of work
- application of systematic strategies for building and using knowledge to the process of daily work

organisation so that it is capable of continual improvement requires a framework for the continual improvement of healthcare (Table I). Central to the continual improvement of healthcare is the application of professional and improvement knowledge to daily work. Throughout most of history, medical advances have resulted from the application of professional knowledge of subject and discipline (pharmacy, medicine, nursing) in the context of a set of underlying values. These values stem from the underlying moral values of patients, families and providers, as well as from the social values implicit in social and scientific policy.

Now healthcare is being asked to do better, in a way that will increase the impact of healthcare for even more segments of society. Today a second body of knowledge, improvement knowledge, is available for use in the

improvement of healthcare in a new way - through continual improvement of health care. Joining professional knowledge with improvement knowledge makes possible the continual improvement of healthcare, characterised by more improvements of a different kind and a faster pace than before.<sup>2</sup>

Improvement knowledge consists of four elements:<sup>2</sup>

- knowledge of systems
- knowledge of variation
- knowledge of psychology
- theory of knowledge

### Knowledge of a system

Guiding an organisation effectively toward continual improvement depends on the organisation's leaders developing, basing their leadership on,

**Table II** Considerations about a system<sup>2</sup> the means of 'production' of a system

what is created, made or produced (services/products), how services/products are produced (processes), for whom they are produced (beneficiaries or customers) and with dependence upon whom (suppliers)

#### The aim of the system

developing and deepening customer knowledge and understanding the needs of the organisation

#### How to improve the system

developing knowledge of what must be done to improve towards a shared vision and formulating specific plans (design or redesign) based on these improvement priorities

and communicating to everyone knowledge of the organisation as a system of production, that is, a group of interdependent people, items, processes, and products and services that have a common purpose or aim.<sup>3</sup> Table II lists some of the considerations about a system.

Making wise decisions about what and how to improve requires linking

knowledge of the various elements in a system and it is critical to understand the interrelationship of the essential elements. Changes that will improve the overall system are those that increase the system's capacity to deliver services and products that meet the needs and expectations of the customer it seeks to serve.<sup>2</sup>

Batalden and Stoltz (1993)<sup>2</sup> noted a number of problems which healthcare workers encounter in relation to their systems:

- difficulty with defining what they do
- failure to think often enough and deeply enough about the need that their clients, patients and patients' families have for their work
- making assumptions about what customers need and failing to study and to check these assumptions thus missing the opportunity for improvement or making inappropriate changes
- traditionally thinking about an organisation as a collection of departments with various functions rather than as the flow of linked processes forming the core process, to which additional processes provide support
- focusing improvement efforts on departmental gains at the cost of failing to improve the system
- rarely coming together to learn from the work of others and from their own experiences.

These observations may be used for reflection on how we relate to the system in which we work, whatever it may be.

### Knowledge of variation

Variation is always present in processes, products and people. Batalden and Stoltz (1993)<sup>2</sup> gave the analogy of variation in body temperature and explained that the point-to-point differences observed over time (the variation) are caused by a variety of factors or influences. When the value falls above or below the

expected range we look for some special circumstance or event. Understanding variation over time is the key to recognising and using differences observed for the purpose of continual improvement. Deming<sup>4</sup> described two types of causes of variation: 'common causes', or causes found regularly within every occurrence of the process and 'special causes', specific causes or sets of circumstances not regularly present in the system which influence variation. Distinguishing the type of variation present in a process is critical for improvement because each type of variation requires a different type of action.

While plotting data over time is commonly done in the management of patients it is usually not done in the management of other processes in health care work. Moreover data are most commonly presented in tabular form, which encourages two point comparisons rather than processes occurring over time. Variation is rarely studied as a guide to causal theory and subsequent action. People are suspicious and fearful of measures related to their work, probably because information has historically been used to judge people, not process performance.<sup>2</sup>

### Knowledge of psychology

Early management theorists assumed that workers represent a component of the production capability of an organisation, an asset or resource to be managed. In the resource-based management system, direction setting

comes from top, the role of leadership is to think and plan and the role of workers is to act and carry out the plan.<sup>5</sup> Deming (1993)<sup>6</sup> and Juran (1989)<sup>7</sup> both pointed out that in the vast majority of cases the variation in outputs can be attributed to the effect of multiple causes in a system of common-cause variation, not to individual workers. Improving the performance of such a system requires fundamental change in the system, not further work on the behaviour of the below-average worker. Motivating performance and improvement (with least risk of overall system suboptimisation) may be accomplished by removing barriers to the internal or intrinsic motivation of workers. Fundamental to human behaviour is curiosity, a desire to learn by taking action on the environment, and pride and joy in the accomplishment of that which one believes to be worthwhile. Batalden and Stoltz (1993)<sup>2</sup> believed that usable knowledge of what nurtures curiosity and learning, joy and pride of work in workers in a health care setting is often limited and incompletely integrated into daily work. The prevalence and extent of fear among health care workers is underestimated by leaders. Fear serves as a silent thief, often robbing healthcare organisations of precious energy for improvement.

### Theory of knowledge

Developing a theory allows us to organise and share information but does not alone lead to learning. Taking action allows us to engage in and share

experiences, but does not alone lead to learning. When we link theory and action, we have the potential for learning and building knowledge. Prediction and measurement help us to link theory and action.<sup>2</sup>

Batalden and Stoltz (1993)<sup>2</sup> demonstrated how clinicians use the model for building knowledge and learning in the routine management of patients: a preliminary diagnosis is established (theory), a trial of therapy is instituted (action), a particular response is anticipated within a certain time frame (prediction), at the appropriate time the response is evaluated (measurement). If the predicted effect of the trial and the actual response are close, the clinician has useful confirmatory knowledge; the diagnosis is probably right and the treatment probably effective. The clinician has new knowledge for managing the patient from this point on. The clinician has linked theory and action with prediction and measurement to create new knowledge that can be used to guide the next step. The same model can be used for building knowledge and learning in the integration of quality improvement as part of daily activity.

The framework towards the continual improvement of healthcare as part of normal daily activity involves the linking of professional knowledge with improvement knowledge. Batalden's statement 'if we do not like the current level of performance we must choose between change and frustration' gives one the courage to take on the challenge. ★

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**'The people who get on in this world are the people who get up and look for the circumstances they want, and, if they can't find them, make them.'**  
GB Shaw