

Total Quality in Healthcare

For healthcare organizations

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Introduction

Nothing focuses management on quality issues like a process failure. No organization operating in the unforgiving world of reality can escape occasional incident. An organization faced with a failure responds logically by identifying the cause and introducing quality measures that are designed to avoid similar problem in the future. The organization is trying to make only the new exciting mistakes – not the tired old ones. The challenge is, as always, in implementing the change properly.

Approaching solution to a specific problem with a long term view is always preferable. The optimal solution to a specific problem is to address a class of problems (such as problem of losing one application form is a part of a class of problems in the document management). Following the same approach, we should review the organization processes and structure in order to design the optimization into the organizational workflows.

The TQM (Total Quality Management) and ABC (Activity Based Costing) are well recognized concepts in manufacturing and other industries. They represent recognition that costs are related to organizational activities and that the quality must be closely related to activities. These methodologies were initially developed for manufacturing environment over 50 years ago and represent a proven way to the improvement.

This paper outlines the organizational approach to quality that is based on a proven methodologies and how it applies to the operation of a health plan.

Why TQM and ABC?

Let's investigate what are Total Quality Management and Activity Based Costing and how they can be used to improve organization efficiency of a health plan.

Health plans operate in challenging environment. Not only is the healthcare industry extensively regulated, but there are many complexities in any healthcare organization. The organization survival in the industry depends on its ability to effectively manage many of relationships – members, providers, employers, and the government. The capability of the organization to manage this complexity depends on the ability of its workers to perform a large number of tasks correctly and quickly.

The term Medical Loss Ratio is frequently used to describe the efficiency of a health plan. It describes the percentage of amounts received in premiums and other sources to total provider payments. While it does reflect how much of the incoming dollars is spent on payments to providers, it does not properly define the organizational efficiency. The problem is its inability to determine effectiveness of the monies spent on payments to providers. For example, if a plan spends \$90 of each \$100 in incoming premiums on payments to providers, the Medical Loss Ratio is 90%. Are those \$90 properly spent? If, for example, the plan uses additional \$5 in administrative expenses to decrease the \$90 payments to \$80, the health plan is more efficient at 80% Medical Loss Ratio because it gained \$10 in net profit for \$5 increase in costs. The measure would allow the plan to decrease the premiums while maintaining its profit margin.

It is clear that more sophisticated metrics are needed to properly describe efficiency of a health plan organization. Correct approach must recognize that in order to manage, the process and metrics of its performance need to be defined. Management of detailed activities and measuring their quality metrics becomes critical.

Activity Based Costing

The ABC has been used in manufacturing for a long time. To understand the concepts of ABC, we need to understand the basic concepts of costing – cost accounting.

Traditional methods use the Cost Center based accounting. It is the natural outcome of the standard asset accounting: the company purchases asset (equipment, building, or other tangible or intangible asset); the asset is recognized on the balance sheet as an asset account. When the particular equipment incurs costs (repairs, fees, etc.), the costs are charged to an expense account that is closely related to that asset. The result shows the asset value, and the costs incurred on monthly or annual basis. There is a value to this approach and the information thus acquired can be used for decision about replacing the equipment and other decisions.

The Activity Based Costing approaches the same subject from a different side. Rather than attaching costs to asset related expense accounts, it attaches them to the activities. For example, the cost of a fax machine is expressed as part of “sending faxes” and “receiving faxes” activities. Rather than stating: we have spent X on fax machine – we are able to state: we spent X on “Sending Faxes”.

The principal benefit of ABC is that it directly measures what the company does – the activities. Based on analysis of the activities and their relevance to the business process, the business can focus properly on the activities that are most expensive or those that need to be restructured.

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Total Quality Management

This term first identified by W. E. Deming in 1950's to describe a development of business processes that are designed to meet a set of expectations. Such business processes are constructed with quality criteria in mind and equipped to minimize deviations from a norm.

The quality management methods have evolved since then. The Six Sigma methodologies popular today are statistically oriented and somewhat flamboyant in terminology (green/black/etc. belt certification?!), but they are using well known and long used statistical measures to focus on keeping the probability of failure to a minimum (outside of $\pm 6 \sigma$ range).

Total quality management requires that the organization identifies its workflows (activities), establishes criteria that define the quality requirements, and incorporates steps to ensure the quality.



Organizations may run into difficulties defining the workflows. Most health plans have division of responsibilities by department (claims department, medical review, etc.), but definitions of workflows and quality metrics are typically not easily available. It is due to complexity of the environment, and due to reaction of the organization to the process of developing workflows. The best approach is to start with a limited part of the organization and promote its benefits to other departments— success in one department will improve the prospects of success in another one.

Definition of metrics and their connection to the workflows are specified as separate steps, but should be in reality done concurrently with the workflow development. Since the metrics define the desired outcome of workflows, the workflows need to be constructed to make achievement of favorable metrics likely.

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Applying TQM and ABC in Health Plan

How does this apply to the health plan organization? If history is a guide, the workload of health plan organizations will not be reduced in the future.

- First, governmental influence will increase because of general aging of the population for Medicare and Medicaid. If the ARRA (American Recovery and Reinvestment Act of 2009) reaches realization, the increase in required reporting and other government induced activities will be phenomenal – delivery of healthcare may become byproduct of paperwork.
- Second, the complexity of medical services continues to increase and change. The introduction of additional services, different payment arrangements, and the increase in individual coverage will increase the volumes of all activities.
- Third, the competition among the plans for employer group contracts will continue to drive changes in the health plan operation to meet the new employer requirements.

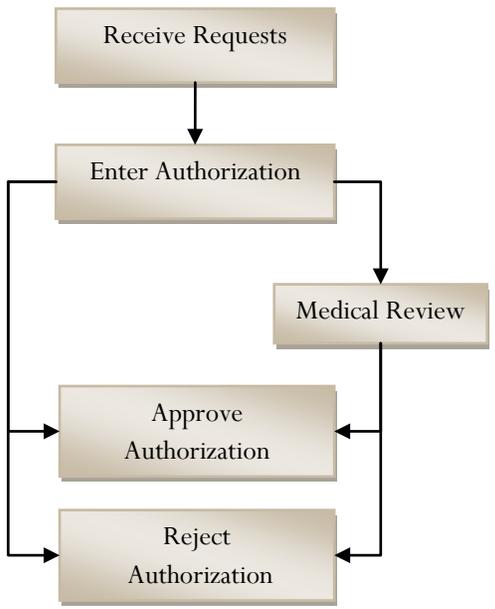
The challenge will be to achieve output increase while keeping the cost increases minimal. To meet the challenge, health plans will have to make continuous improvement of business processes permanent part of their agenda.

The premises of continuous improvement are: clearly identified goal, optimization of methods, and metrics to provide feedback. To make the improvement continuous, it must be accepted and internalized by management and staff. The acceptance will come easier with success of initial quality initiatives.

Application Example

As an example let's define a simple function of the Utilization Review and see how the concepts apply to this activity. Since this is an illustration of process, the details are limited.

The Utilization Review workflow processes requests for authorization. The request is received via fax or phone call. Using the information received, the reviewer establishes an authorization. Establishing authorization include verification of eligibility, verification of coverage, and evaluation of the request medically. The authorization is either accepted (approved), or rejected (with reasons), or sent for further medical review.



The simple outline of the process identifies states of the request. For example, when the state is “Receive Request” the request is received but not yet entered.

Let's assume that the goal of this workflow is:

“Process all requests correctly and efficiently.”

The statement of goal contains three important metrics: “**All**” means that none are lost or delayed (**M1**), “**correctly**” means that there should be no mistakes in processing (**M2**), and the “**efficiently**” means that the requests are processed as quickly as possible (**M3**).

The **M1** can be defined as number of received requests that resulted in entered authorization within a particular

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time frame. For example: percentage of requests that were entered as authorization within 1 hour of receipt. Full compliance with this metric is 100%.

In similar manner all processes can be outlined, metrics defined, and their parameters established. We know what the individual activities are and how to measure them. Note that the activities and quality measures are integrated – the quality becomes part of the process.

Total Quality Management

Making quality part of the process means that a business process includes task necessary to measure the quality criteria. This may increase the cost (time) of the particular activity. Is there a way to justify the additional time dedicated to quality?

The answer depends on value of risk incurred by not meeting the quality criteria. For example, if all requests in the above example that are not made into authorization within one hour were to be lost, and a loss of one request would represent additional \$100 in costs (searching for the document, dealing with the submitter of requests, etc.), we can establish the value of quality by multiplying the reduction in number of lost cases by the above rate.

The analysis would be as follows:

- 1) Loss rate per 1000 is currently 15 and we assume that it drops to 5 after implementing quality measures.
- 2) The savings due to quality are \$1,000 ($\$100 * 10$) for 1000 transactions.
- 3) If quality inclusion costs less than \$1 per each transaction, the quality inclusion makes sense.

Our simple example shows how a process can be evaluated on relatively simple basis provided that you know the costs of individual activities. This shows the value of **ABC** (Activity Based Costing) – the ability to establish a list of tasks the organization performs with their associated costs.

It is important to realize, that the process may require quality protection against failures the business cannot afford – any risks affecting health or lives of people, major destruction etc. The manner of analysis for quality measures of this kind will depend more on risk probabilities than on a simple per-transaction limits.

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Activity Based Costing

The computation of costs based on activities follows from realization that all organizational costs are all related to activities. For example, the organization offices exist to allow the organization staff to perform the organization activities. If the 70% of total time in the office is spent doing one activity and 30% doing another activity, then the costs of office could be associated with each activity using the same ratio.

The most appropriate is the application of ABC to company activities. Assuming that the total activities of an organization are divided into workflows and each workflow is divided into activities, then we can describe the Utilization Review workflow in terms of its individual activities.

Activity Id	Description	Duration	Staff/Hr	OH/Hr	Cost
A01	Receive Request	5min	\$50	\$20	\$5.83
A02	Enter Authorization	10min	\$60	\$20	\$13.33
A03	Medical Review	20min	\$100	\$20	\$40.00
A04	Approval	5min	\$60	\$20	\$6.67
A05	Rejection	10min	\$60	\$20	\$13.33

Costs of each activity is based on its duration, class of employee and their loaded (benefits, etc.) rate, and allocation of overhead (office, admin, etc.) Note that the allocation of overhead is typically computed on basis of average monthly costs divided into work time (here assuming \$20 per person per hour). For example, a simple authorization that consists of A01, A02, and A04 will cost $(\$5.83 + \$13.33 + \$6.67 = \$25.83)$.

Computation of costs must include analysis of its premises that are by nature statistical. For example, the 5 min duration represents an average activity durations that have statistical distribution. The results of the ABC must be comparable to the cost analysis based on traditional cost accounting – the total costs based on standard P&L (Profit and Loss Statement) must be equal to total costs of all activities the organization performs.

While traditional cost accounting uses P&L account numbers, the Activity based costing uses Activity codes.

The primary benefits of ABC for optimizing the organization functions are:

- ABC identifies activities that are most expensive – based on number of times the activity is performed and the unit cost of the activity. Focusing on the most expensive activities provides best ROI in business process improvement.
- ABC analysis of activities can identify those that will benefit most from automation. For example, if a particular activity can be automated, its unit cost will probably decrease. The cost of automation can be compared with potential savings to establish correct ROI (Return on Investment).
- ABC also provides foundation for restructuring or outsourcing. If the same activity can be provided by an external supplier for lower total cost, the activity costing will provide clear economic justification. For example, printing can be outsourced to an organization that has lower unit costs thanks to its investment into more advanced technology with costs that accrue over higher volume of transactions.

Most real-world applications of the TQM and ABC concepts are more complex than these examples. There is an extensive literature and other information available on both methodologies on the internet.

In Conclusion

The health care management is typical of many other knowledge based industries – most of the work is performed by highly qualified individuals applying their knowledge and experience to resolve complex problems. This is true for physicians treating patient, for reviewer trying to evaluate medical necessity of a procedure, or for producer trying to structure the best coverage for his client. Implementing the management approach using TQM and ABC is not easy in this environment. However, with the margins narrowing, the industry is becoming much more cost conscious and open to quantitative methods of evaluating its operation. The Total Quality Management and Activity Based Costing are useful and tried concepts for use in the healthcare administration.

The TQM and ABC provide means for rational evaluation of even the most complex operation. Their primary benefits are Business Process Transparency, Quality Integration, and Activity Based Costing.

Business Process Transparency

Having your business processes defined in term of workflows and activities provides your organization with ability to analyze the processes on more rational basis. It also promotes the shared understanding of the operation through the organization.

Quality Integration

The quality processes tend to be implemented separate from business processes. Integrating them into the business process focuses the organization on designing processes that are less error prone.

Activity Based Costing

The Activity Based Costing provides the management with cost information cast into a more realistic, activity related form. Knowledge of the activity cost can be used for the process improvement with clearly defined goal, or optimization of some activities by transferring them to more efficient venues.

Successful process improvement starts with analysis and planning. Properly implemented technology (software) is only part of the picture.

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