

# Using Patient Acuity to Drive Healthflow

By Barry P. Chaiken, MD, FHIMSS

As decreasing reimbursement rates continue to flog hospital budgets, organizations struggle to find ways to reduce their costs. As labor represents approximately 60% of hospital expenditures, staffing remains a prime target for reductions.

While the options to reduce labor costs in healthcare reflect those available in other industries, choosing one path over another delivers significant secondary effects. For example, reducing the number of technical support representatives available to provide telephone support to customers may increase on-hold wait times, but reducing nursing staff may lead to an increase in bedsores or higher hospital infection rates. In healthcare, the downstream impact of changes in staffing presents potentially dangerous and expensive outcomes.

To reduce labor costs, managers have just a few levers to work with:

- Decrease staffing levels
- Decrease average cost per hour of staff
- Increase staff productivity

These approaches are easier to implement in industries such as manufacturing and retail. Many of us are familiar with organizations that lay off workers as demand for products decreases, or that replace experienced, higher-paid staff with less expensive employees. For example, the use of robots and information technology drove much of the increased productivity seen over the last two decades in the manufacturing sector.

Healthcare, however, does not lend itself to such easy solutions. Nevertheless, health information technology (IT) offers ways to manage labor costs better by leveraging the data collected through transactional systems (e.g., electronic medical records or EMR) to drive clinical

staffing that delivers superior clinical and financial outcomes.

## Healthflow

Businessdictionary.com defines workflow as any task performed in series or parallel by two or more members of a work group to reach a common goal. A “task” refers to any activity or action undertaken by individuals. “Series or parallel” implies tasks performed one after another or simultaneously. “Work group” means a team of individuals working on the same project. Finally, “common goal” indicates that a group’s various activities are performed in concert and contribute to a well-defined and shared outcome.

At a granular level, workflow functions to deliver information to the appropriate people, organize information to be immediately useful, ensure that the information is acted on, and file information and record actions taken.

The needs of the healthcare industry make it an ideal match with workflow concepts. Healthcare involves complex procedures that include both clinical and administrative tasks. As a result, workflow increases efficiency and effectiveness through the maximal integration and use of relevant, timely information. Due to its heavy reliance on information, healthcare is in a unique position to take advantage of the information benefits provided by the implementation of workflow concepts.

The principles of workflow applied to the delivery of healthcare is termed healthflow:  $Healthflow = Healthcare + Workflow$

Creating a particular healthflow process requires stringing together various healthcare tasks, both clinical and administrative, to achieve a desired outcome in the most efficient manner possible. Analysis

of current healthflow provides the building blocks to deconstruct processes and staff activities to better understand how care is being delivered. This basic data, provided in much greater granularity through the transactional use of health IT systems, can be used to create new healthflows that deliver greater efficiencies while enhancing clinical outcomes.

## Transactional patient acuity workloads

In 2004, California became the first state to require, by law, minimum nurse-to-patient ratios that must be maintained at all times by every care unit within a hospital. In 2014, Massachusetts passed legislation requiring minimum staffing in all hospital ICUs. Seven other states require hospitals to maintain standing staffing committees responsible for plans and staffing policy—Connecticut, Illinois, Nevada, Ohio, Oregon, Texas, and Washington—while five states require some form of disclosure or public reporting—Illinois, New Jersey, New York, Rhode Island, and Vermont (McEwen & Furillo, 2014).

Although the patient acuity and nurse staffing level systems intuitively enhance patient safety and quality of care, the real value obtained from these systems comes from analysis of the transactional data collected during their use.

A properly built patient acuity workload system relies on medical evidence to understand the details of each potential clinical activity required by patients during their hospital stay. Individually, these clinical activities require a variety of clinical expertise, licensing, and training to be completed. By understanding the clinical needs of a patient, these systems tally up the workload requirements of each patient and match those requirements to the workload capacity of

each nurse. This allows the equitable distribution of workloads among available nurses and identifies situations where patient workload needs exceed or are under the capacity of the available staff. When used prospectively, this allows managers to adjust staffing in real time to match patient needs.

Assigning staff based on patient needs provides great value. Analysis of the transactional data offers insight into processes and delivered healthflow; it also helps identify potential areas for process improvement. Examples of opportunities discovered through the use of the patient acuity workload systems include:

- Substitution of a less expensive, newer technology in place of an older one (e.g., pulse-oximeter equipment replacing a blood draw)
- Reduction in required staff time due to use of new technology (e.g., smart infusion pumps)
- Shifting of nonclinical patient care to less expensive, nonclinical staff

Patient acuity workload systems utilize HL7 messaging provided through integration engines to extract patient information and physician orders from transactional EMRs and drive staffing levels. This contrasts with form-based systems that solely collect patient information from staff, a method impacted by subjectivity and potential gaming. While many patient acuity workload systems also collect staffing data, the bulk of the data utilized to drive staffing is based on objective clinical data.

Pressure to reduce labor costs to adjust to decreasing reimbursement creates difficult choices for hospital C-suite leaders. Although reducing the size of the labor force and hiring less expensive staff offers a quick way to lower costs, the risks to patient welfare should discourage organizations from relying upon these methods to reduce expenses. The potential morbidity and mortality associated with improper staffing based solely on finances rather than medical science is just too great and morally suspect.

In this era of declining reimbursements, organizations forced to reduce their labor costs to survive must rely on clinically proven healthflow created and iterated through frequent analysis of the transactional data collected during healthcare delivery. Patient acuity workload systems, driven by EMRs, provide a source of transactional data to measure the effectiveness of the healthflow and insights into ways to change the healthflow to deliver better clinical and financial outcomes. ■

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