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Population Health NEWS

Population Health Requires Healthcare Optimization

by Eugene Litvak, Ph.D.

Shifting the focus of healthcare in America to population health requires a move to healthcare optimization. That's because the capitation underlying payment for population health will not be sufficient to support the excesses created by unwarranted numbers of procedures and building beds to accommodate peak demand—both common practices that capitation is meant to control. Fortunately, the tools needed to make that shift are known. Some are even in place, while others must still be added.

Healthcare optimization is the application of proven techniques of managing operations and patient flow to hospitals, as well as out-patient facilities and medical practices. It's crucial to ensuring quality, safety and efficiency while these operations are optimized.

Optimization increases patient access to existing facilities to ensure their maximum benefit while avoiding unnecessary new construction. It modifies the peaks and valleys of patient flow to smooth the care and improve patient experience.

Building to the peaks has been a prevalent practice among healthcare providers nationwide, which involves constructing as many hospital or clinic beds as needed to accommodate the highpoints of patient activity. That scenario creates inefficiencies, as the healthcare facilities are then underutilized during valleys of activity.

The peaks also create their own logjams, as high volumes for different activities are often not aligned. The notorious overflow in emergency rooms, for instance, is typically caused not by the volume of patients there but by the unavailability of beds when they leave the emergency room. Thus, the peaks in one part of the hospital create stoppages in other parts. And too often the solution has been to build more beds in both parts, magnifying the inefficiencies further.

That solution was viable, however inadvisable it may have been, under a "cost plus" reimbursement scenario. With the shift to population health, the focus will be on keeping people out of the hospital. In that case, the relative height of the peaks should fall in the first place, but the need to smooth the peaks and valleys will become even more crucial for two reasons. First, it will be even harder to justify the empty beds in the valleys. Secondly, the peaks—where staffing is inevitably most over-taxed—are where the greatest incidences of medical errors, readmissions and even mortality typically occur.

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Smoothing the peaks is not just a matter of efficiency or even cost-savings; it's essential to achieving the uniformly high-quality care that healthcare providers should deliver. That is a core goal of population health.

An article published in the *Joint Commission Journal on Quality and Patient Safety*[1] says, "Increases in adverse clinical outcomes have been documented when hospital nurse staffing is inadequate. Since most hospitals limit nurse staffing to levels for average rather than peak patient census, substantial census increases create serious potential stresses for both patients and nurses. By reducing unnecessary variability, hospitals can reduce many of these stresses and thereby improve patient safety and quality of care."

Fortunately, the techniques of operations management and patient flow are proven. They must now be applied more consistently to healthcare providers across the nation.

The evidence of the techniques' compelling impact is clear. The New Jersey Hospital Association, for instance, recently joined with the Institute for Healthcare Optimization in a 15-month, 14-hospital, patient-flow collaborative as part of the Center for Medicare and Medicaid Innovation's hospital engagement program. The results were dramatic:

- Additional patients—11,800 to 17,300—were treated without adding inpatient beds or operating rooms.
- Hospital emergency departments accommodated roughly 20,000 additional patients.
- Wait times for emergency department patients to be admitted to a hospital bed decreased 21% to 85%.

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To implement healthcare optimization within healthcare systems—or across multiple systems as was the case in New Jersey—new analytical tools are often needed.

The basic infrastructure is growing rapidly nationwide because of the federal government's commitment of nearly $20 billion to the widespread adoption of health information technology by healthcare providers. That is expanding the core systems needed for effective data collection and analysis dramatically.

But for the most part, electronic medical records (EMRs) are utilized for the collection and accessibility of clinical information on patient health and care, as well as to reconcile that information. Typically they don't provide the data needed for healthcare optimization.

Information on a patient's condition, for instance, will not tell who needs access to what care and when. It also does not reveal how long the care will be needed.

For healthcare optimization, it is necessary to find out how long a particular patient will be in a particular bed, how many people need to see a certain doctor or receive a certain procedure on a particular day and where that patient will go afterwards.

Scheduled procedures must be separated from emergency ones so that holding capacity for emergencies doesn't interfere with the efficient scheduling of elective surgery. The crucial distinction is between practice (the delivery of care) and need (the demand for care). Understanding the need is crucial to optimization: the need for beds, for procedures, for particular physicians. If the need is properly understood, then the demand can be accommodated and scheduled with precision, and that precision can in turn yield the desired optimization.

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There are three keys to understanding the need. The first is typically available: a system of EMRs to capture and make accessible the required data. The second is new data that often necessitates modifications to booking and scheduling systems, as well as adaptations of the EMR system to incorporate needed fields. The third is the active engagement of healthcare staff, whose inputting of that data is essential.

The good news is that implementation, while demanding, is not arduous, and the direct improvement that stems from it is quickly evident and inspiring. That improvement benefits the healthcare system, its staff and its patients. It's a win-win-win, and one that will need to be celebrated widely for population health to become a reality.

[1] Litvak E, Buerhaus BI, Davidoff F, Long MC, et al. "Managing Unnecessary Variability in Patient Demand to Reduce Nursing Stress and Improve Patient Safety." *Joint Commission Journal on Quality and Patient Safety.* June 2005; 31(6):330-338.

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