Average Length of Stay: It's Time for a New Metric

Hospital effectiveness has traditionally been measured by the "average length-of-stay" (LOS) metric. But Rick Jackson, Chairman and CEO of Jackson Healthcare believes that LOS is an ill-advised measuring tool and the time has come for hospitals to adopt a new metric.

"It is a common misconception that reducing LOS lowers hospital costs," says Jackson. "But eliminating a few meals and use of a bed makes very little difference to the bottom-line," he adds. According to Jackson, a recent study has determined that room and board represents 10.5% in total hospital revenues.[1] Therefore, eliminating one day from a five-day LOS amounts to a reduction of less than 2% of costs.

Jackson strongly recommends that hospital management shift its focus to the real culprit in hospital costs – bottlenecks in and between departments. "What if a new metric were developed measuring hospital effectiveness, not by LOS, but with a new statistic we are calling ELOS, enterprise length–of–stay?" asks Jackson. ELOS is the sum of the various department lengths–of–stay *(continued)*

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[1] *Jackson Healthcare commissioned the firm of Oliver Wyman Actuarial Consulting, Inc. to conduct a study of hospital revenues. The firm used data from the 2005 5% sample of Medicare claimants and data from the 2006 statutory financial statements filed with state departments of insurance. The statutory financial statements include data from over a billion member months representing over 86 million covered members.*

(DLOS) for each patient. This includes the time required for diagnosis, treatment, and slack time (time wasted while waiting for a process to begin), from the time of departmental admission to departmental discharge. DLOS includes time spent in every department including the ED, the OR, Radiology, nursing unit, pharmacy, and lab (i.e. any part of the hospital that consumes space and time). Obviously, reductions in DLOS will improve a patient's ELOS.

System-centric vs. department-centric. LOS is an unpreventable outcome, whereas ELOS is the preventable cause and the rationale for managing it, ultimately ending in earlier discharges. "The payoff in discharging patients sooner is not reducing the cost of an inpatient hospitalization, which is shown to be minimal, but rather to free physical capacity so it can generate additional revenue," says Jackson. "And that payoff comes about," he adds, "through identifying and managing slack time in each department." According to Jackson, analyzing bottlenecks, especially in peak periods, requires a sophisticated hospital-wide management system. It has to connect and communicate between

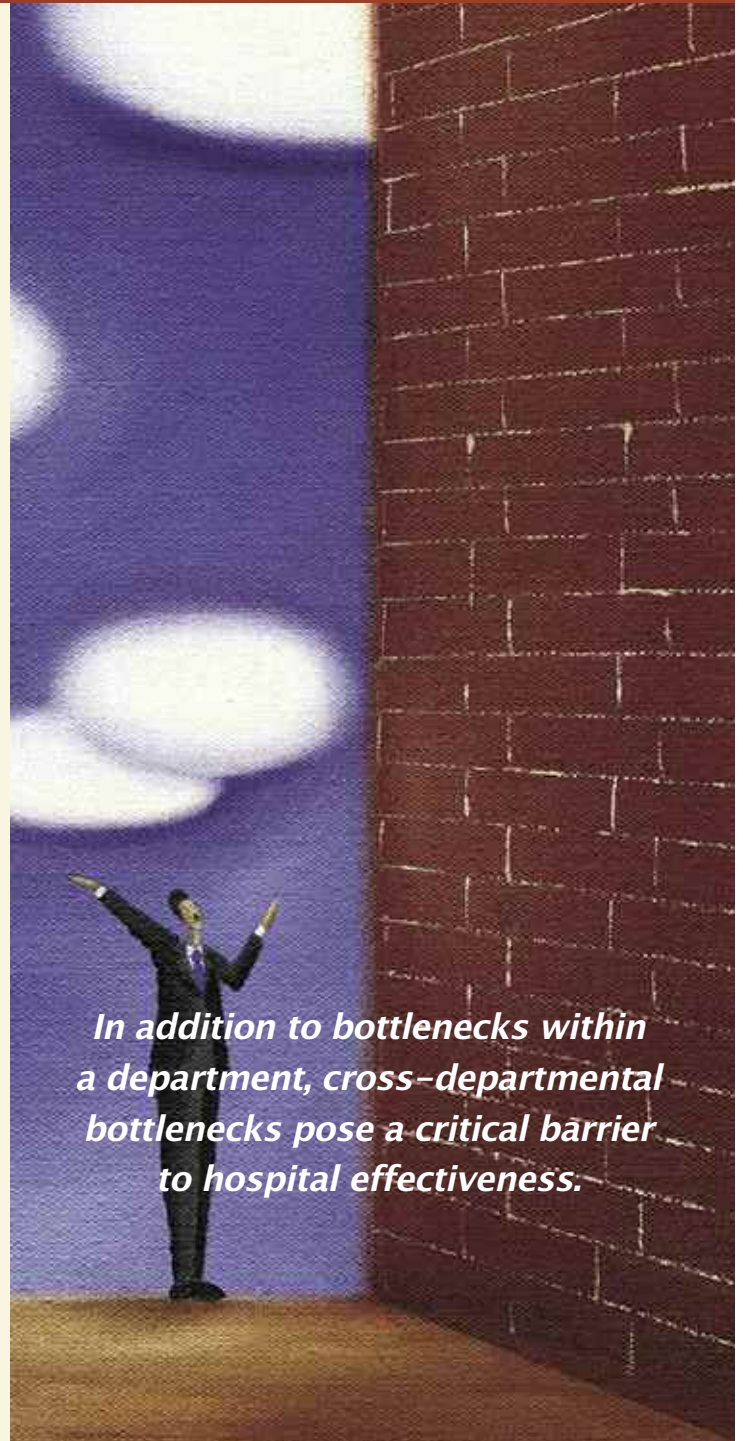*"How do I optimize all the patients through my department during the course of the day?"*
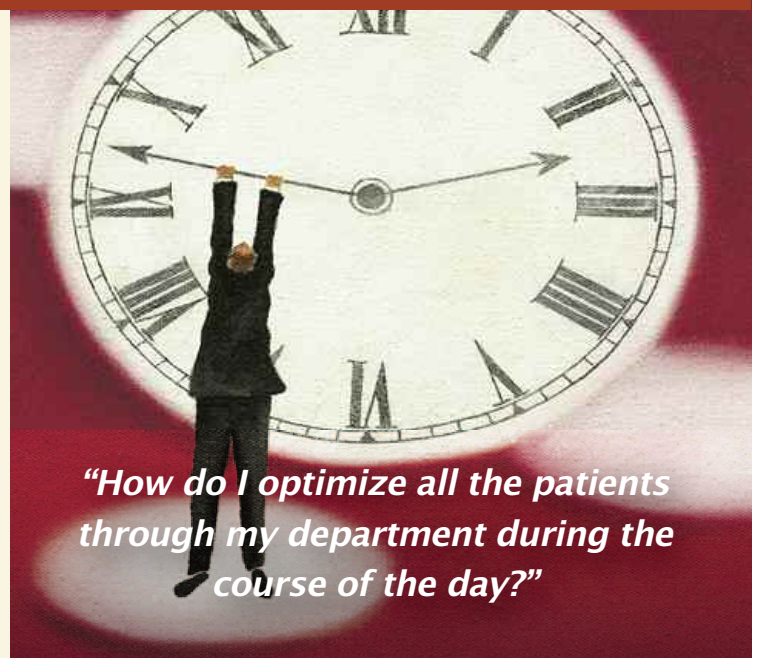
departments in a way that prevents "pushing the bubble around" (i.e. relocating the bottlenecks rather than reducing them).

According to Jackson, hospitals often pride themselves on becoming "centers of excellence," always striving to uphold high standards of patient care. And within those hospitals, there are "islands of excellence," departments that strive to meet or exceed patient care standards. "This is clearly an admirable goal, but when a hospital is department-centric rather than system-centric, it can hinder interdepartmental cooperation and coordination," says Jackson. "A department- centric organizational structure constricts the scope of the hospital's vision, affecting hospital performance and revenues," he adds.

Department heads presently ask the question, "How do I optimize my department during the course of a day?" when in fact, they should be asking "How do I optimize all the patients through my department during the course of the day?" or "How do I optimize the entire system?" For instance, radiology departments target "end-of-the-day" as their deadline for performing inpatient diagnostic tests, with the philosophy that "We're only late if an inpatient test is done tomorrow." In a hospital that is focusing on maximum optimization, "end-of-day" is not acceptable. If a patient is supposed to be discharged or is scheduled for surgery, that department should place a higher priority on moving that particular patient through the department.

Cross-departmental bottlenecks. In addition to bottlenecks within a department, cross-departmental bottlenecks pose a critical barrier to hospital effectiveness. For example, it is imperative that ED and OR patients be released and moved to Intensive Care Units quickly on a priority basis. Failure to do so creates ED, OR and PACU boarders. It is also important that multiple services – lab, physical therapy, respiratory therapy, etc. – be coordinated based on what would facilitate the patient leaving the hospital sooner, rather than on optimizing personnel.

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Root Causes of Bottlenecks and Increased ELOS

Department-centric organizations rather than system-centric lead to disconnected "islands of excellence," causing bottlenecks and increased ELOS. They are manifested in three primary ways:

1. Cross-vertical handoffs do not occur seamlessly. Ideally, the movement of patients from admission through diagnostics, treatment, nursing units, and finally to discharge occurs without significant delays. In the department-centric hospital, however, one department's needs are not necessarily compatible with another department's priorities. For instance, nurses on a med/surg unit may not notify bed management — or they do so only after a substantial delay — that a bed has been vacated. Consequently, there are vacant beds that could be occupied by revenue-generating patients who are kept waiting somewhere else.

2. Inputs and outputs are controlled at a departmental, not system, level. Unless the hospital is on diversion, the usual patient entry points (i.e., admissions and the ED) have little or no control over their inputs. In other words, they are expected to accommodate all comers. Problems arise when other departments, such as nursing units, limit their inputs, causing a backlog of patients and making it difficult to deliver patient care according to prescribed protocols. Although unintentional, they reflect the exercise of departmental priorities over that of the system. When there is a backlog in the PACU, it has a domino effect in the OR Suite, the most expensive real estate in the hospital, thus limiting accessibility for the next patient. This can cripple a hospital with over-occupancy and flow back ups, creating a costly ripple effect throughout the hospital.

3. Efficiencies gained in one department do not necessarily contribute to hospital-wide patient flow. It is quite common for individual departments to undertake efficiency improvement initiatives. Frequently, however, the efforts of one department are not synchronized with those of other departments, and overall patient flow remains unchanged. If, for example, the transport department boosts its efficiency, but it is not coordinated with a similar endeavor in a procedural area, patients will find themselves in that age-old predicament of "hurry up and wait."

Solutions for Reducing ELOS

There are four principal solutions for reducing departmental slack time and ELOS, says Jackson:

1) System-Centered Optimization. Typically patients are scheduled based on what will provide efficiency for the department. But with system-centered optimization, patients are scheduled based upon their scheduled discharge date, minimizing total global slack time for all patients hospitalized at any given time. Rules-based scheduling of patients for tests and treatments focuses on minimizing wait queues based on the ELOS of all departments in a patient's plan, assuring the earliest discharges for the greatest number of patients at any given time. Accomplishing optimization requires sophisticated management systems, algorithms, and performance dashboards. "Freeing capacity for better utilization and revenue generation is the prime motive in system-centric optimization," says Jackson.

2) Information Float. Patient information, including test and treatment orders, as well as results and discharge schedules, is said to "float" until it is made known and acted upon. Information float, among other
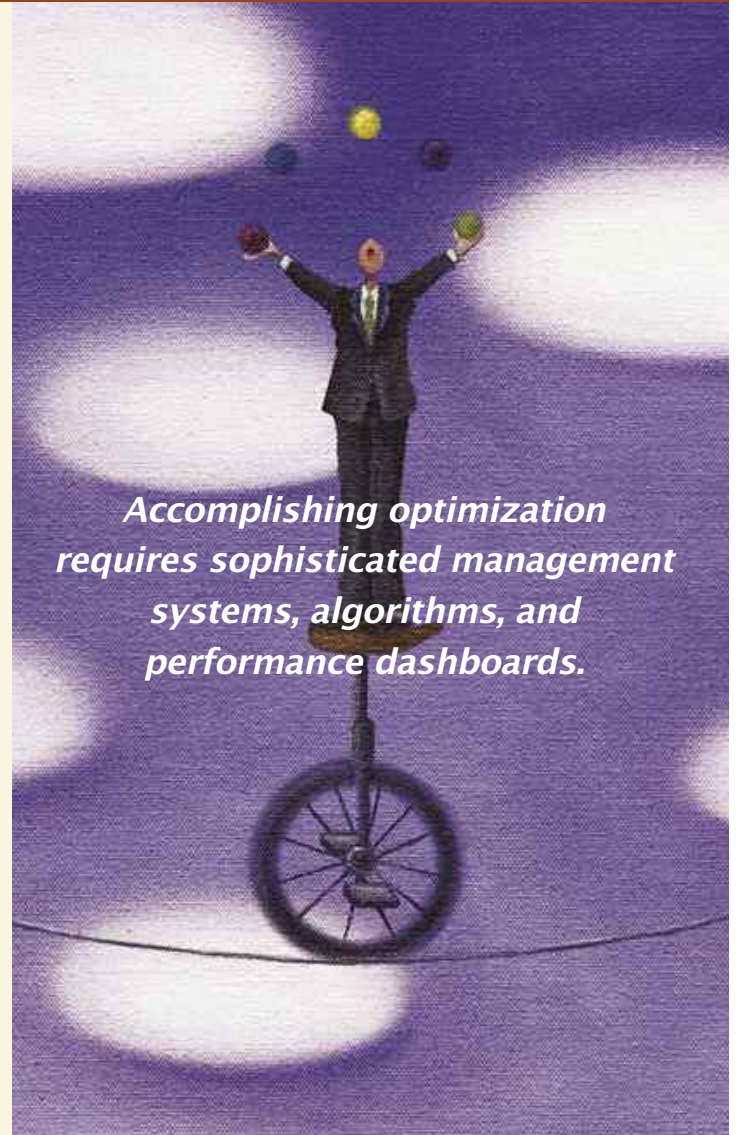
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causes, creates slack time, reflected in a longer DLOS and extended ELOS.

An effective management system anticipates certain patient information at a particular time, and if not received when due, will alert a search for it. When information is received, it is automatically entered into a patient's record and the "patient manager" is notified so that individual can be pulled to the next department in his/her plan.

3) Proactive Management of Patient Logistics. A patient may get "off plan" for any number of reasons such as a failure to dispatch or return a patient to a department, including the nursing unit, when planned. Until this "off plan" condition is known and acted upon, avoidable slack time is created. Therefore, alerts should be automatically generated to notify patient managers that a patient is "off plan" and that an intervention is required. The cause for being "off-plan" is determined and recorded which then provides data to better understand the location of bottlenecks in a system. Proactive management involves presenting choices to the patient manager along with the consequences of each choice so that he/she can make an informed choice in advancing the patient through the system-centric plan.

4) Hospital Operations System. There is currently no system in the hospital that ensures that all patients will collectively flow at their best possible rate with regard to quality, service, safety, and resource consumption – towards an effective ELOS. As a result, the necessary feedback data required to understand the severity of the cross-vertical flow problem is missing.

Hospital operations software would enable hospitals to solve these challenging patient throughput and capacity management challenges by executing dynamically prioritized actions for all patients spanning the entire hospital, providing real-time information at every step. The resulting operational shifts would be:
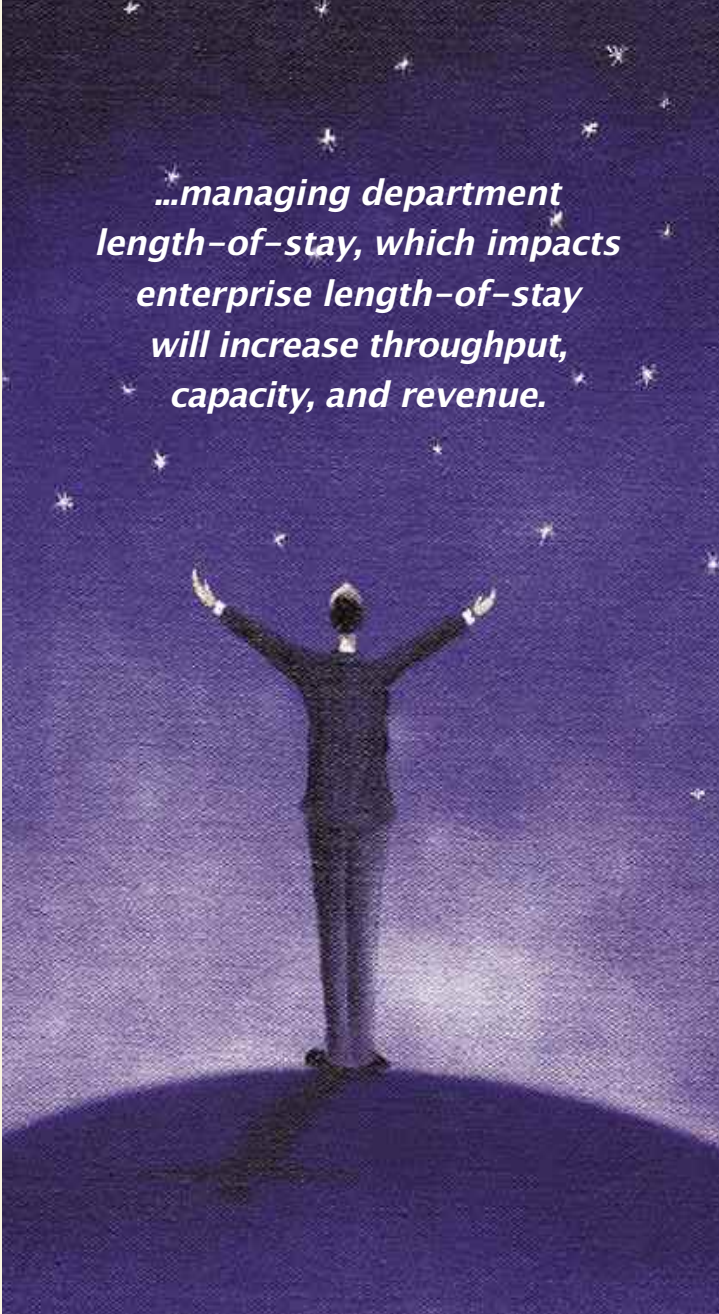
a) *From silo driven data – To hospital-wide information on all patients simultaneously across verticals*

b *From optimizing parts – To optimizing the whole*

c) *From anecdote and opinion – To more effective fact-based decisions*

d) *From low coordination and collaboration – To orchestrated care execution*

e) *From highly uncertain service delivery – To more predictable service performance*

This next level of hospital operational excellence will provide the bedrock upon which current and future growth and patient satisfaction strategies can be built. When patients are able to flow across and between departments (DLOS) at the best possible rate with respect to quality, service, safety, and

resource consumption, the resultant ELOS represents the best path to exceptional productivity and performance.

Jackson believes that managing a hospital is much like an air traffic control system. Controllers need to know where every plane is currently located, whether or not it is "on plan," what the next event is in the flight plan, and when a plane exits the universe of control. "In a hospital environment, keeping track of every patient in every department throughout every process can eliminate slack time and assure that the largest number of patients will be discharged in the shortest period of time," says Jackson. And the payoff for discharging patients sooner is not in cost savings, but in freeing up physical capacity that could generate additional revenue.

New metric for changing times in hospital management. "We are entering a new era of hospital management, and it's time we seriously consider shifting from the traditional LOS metric to the ELOS," says Jackson. "It enables an increase in the throughput of every department, thereby freeing up capacity, providing increased revenues from better utilization of resources, reducing costs by eliminating

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wasted efforts and delays, improving productivity, and increasing bottom-line performance." Bottom line, LOS is an outcome which cannot be managed directly, whereas, managing department length-of-stay, which impacts enterprise length-of-stay, will increase throughput, capacity, and revenue.

Oliver Wyman Study

Nationwide Medical PMPM Managed Care Plans~2006 by Type of Service

The information provided in this study was used to determine that room and board represents 10.5% in total hospital revenues. The subtotals of Inpatient Hospital ($ 61.35) and Outpatient Hospital ($ 42.28) were added together for a total of $ 103.63, then divided into the total PMPM for Room and Board ($ 10.92) to equal 10.5%.

Type of Service	Commercial PMPMPMPM	Medicare PMPMPMPM	Medicaid	Total
Inpatient Hospital				
Non Room & Board				
Medical	$ 17.58	$ 69.02	$ 23.76	$ 21.06
Surgery	19.43	112.15	7.70	22.18
Maternity	3.94	--	5.17	3.93
Mental Health/Subst. Abuse	1.97	2.18	0.93	1.82
ECF/SNF	0.31	24.03	0.05	1.44
Room & Board	9.36	44.9	8.14	**10.92**
Subtotal	$ 52.60	$ 252.30	$ 45.75	**$ 61.35**
Outpatient Hospital				
Surgery	$ 14.51	$ 29.56	$ 7.84	S 14.23
Emergency Room	6.71	10.02	8.16	7.09
Radiology	8.88	25.49	3.60	8.88
Lab/Pathology	3.05	4.25	1.95	2.94
Other	8.30	35.57	5.00	9.13
Subtotal	$ 41.45	$ 104.89	$ 26.55	**$ 42.28**
Professional				
Surgery	$ 24.28	$ 46.57	$ 7.33	$ 22.77
Evaluation and Management	37.24	64.27	37.18	38.56
Emergency Room	1.79	4.39	2.32	2.00
Maternity	2.44	--	2.69	2.36
Radiology/Lab/Pathology	22.88	40.94	8.67	21.59
Cardiovascular	3.03	15.84	3.95	3.80
Mental Health/Subst Abuse	2.54	1.15	2.04	2.40
Other	8.56	68.03	10.65	11.80
Subtotal	$ 102.76	$ 241.19	$ 74.84	$ 105.27
Other	7.83	34.82	4.99	8.72
Total	$ 204.64	$ 633.20	$ 152.14	$ 217.62

Rick Jackson and Jackson Healthcare

Rick Jackson, Chairman and CEO of Jackson Healthcare, is an expert in health care trends and has been instrumental in developing more than 25 healthcare-related companies over the past 30 years. In both 2006 and 2007, Jackson was a southeast regional finalist for Ernst and Young's Entrepreneur of the Year Award. Jackson Healthcare was named to the Inc. 500 list of the fastest-growing private U.S. companies in 2004 and to the Inc. 5000 in 2007 as one of the top 100 healthcare companies. It was also on *Entrepreneur* magazine's 2007 list of the "Hot 500" U.S. entrepreneurial companies and was ranked fifth on Staffing Industry Analysts' list of "Top U.S. Healthcare Staffing Providers" in October 2008.

Jackson Healthcare has been included for the last three years on *Atlanta Business Chronicle's* list of "Pacesetters," Atlanta's fastest-growing private companies, ranking number seven on that list in 2007. In 2007 and 2008, *Atlanta Business Chronicle* named Jackson Healthcare to its annual list of "Atlanta's Best Employers" based on an independent employee survey.

Jackson Healthcare, located in Alpharetta, Georgia, is the parent company of:
- **Jackson & Coker**, a retained physician search and temporary physician recruitment firm
- **Jackson Hospital Affiliates**, owner and manager of hospitals
- **Jackson Therapy Partners**, provider of supplemental rehabilitation therapists and other allied healthcare professionals
- **LocumTenens.com**, a full-service locum tenens (temporary) physician recruitment agency
- **Parker Staffing Services**, provider of supplemental IT staffing
- **Patient Placement Systems**, a supplier of discharge planning and management software
- **Premier Anesthesia**, an anesthesia (department) management company
- **StatCom**, a supplier of patient flow logistics software
- **Travel Nurse Solutions**, the nation's largest rapid-response travel nurse staffing company

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