



**TeleTracking**

Patient Flow Automation for Healthcare™

## **Why healthcare won't heal itself.**

*One word keeps healthcare from improving care delivery, but industrial-style process improvements in Patient Transport can overcome resistance.*

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Overview: Process improvement is not a fad, but the natural goal of humans from the beginning of time. Still, healthcare has been resistant to process improvement techniques found in other organizations, in large part because healthcare practitioners do not see themselves as part of an "industry." They shun the comparison of patient care to a manufacturing line because each patient and case is unique. However, positive results are derived by applying process improvement methods from the manufacturing sector. The following article demonstrates the application of lean methodology and goals for process improvement as it relates to a critical healthcare patient flow process -- patient transport

Why is Healthcare one of the last industries to embrace industrial productivity techniques? A major reason is that most practitioners don't believe healthcare is an "industry."

To them, it is a profession, a calling. So, by definition, they rule out improvements which can aid them in meeting the high standards of care their patients expect and deserve.

The word "industry" means 1) diligence in an employment or pursuit and 2) systematic labor, especially for some useful purpose or the creation of something of value.

Still, most healthcare practitioners see no parallels between making a "widget" better and making a human better. How can one compare improving the repetitive process of widget-making with the unpredictable variables of the human organism under siege? Since each patient has unique symptoms and conditions requiring customized care, they aren't accustomed to thinking about systemic change.

While hospitals are quick to adopt multi-million dollar treatment technology, business process improvement in healthcare had been, until recently, restricted to non-clinical areas such as billing, fulfillment and facility management. This overlooked the rewards that process improvement tools can yield when applied to the processes underlying care delivery. Like faster access to treatment for more people, speedier diagnostic results, a safer hospital environment, more time for patients and better resources for sound decision-making.

Now hospital executives are looking for more industrial parallels for improvement. Driving this are more stringent Joint Commission guidelines on overcrowding and safety, rising costs for insurance, facilities and medication, stagnant or diminishing resources, and the advent of Medicare's "never" event policy regarding compensation for medical errors.

As they investigate industrial solutions, hospitals are discovering a growing number of process improvement opportunities with a clinical component.

## **"Streamlining" isn't just for factories.**

Clinicians and caregivers fear that applying the "streamlining" techniques of factory or manufacturing processes would turn hospitals into "express oil change" facilities. Because care is their product and each patient is unique, they aren't accustomed to thinking about systemic change. In fact, without proof of better patient outcomes or the validation of peers, they typically will resist change.

In the static world of manufacturing where the same product is produced en masse, examination and improvement of repetitive processes is much simpler than in a clinical setting. However, if the focus remains on process, rather than individual case, the results include more time with patients to preserve and expand opportunities for sound clinical judgment.

And better outcomes are everyone's goal. Medical professionals are open to new advances in medical technology precisely because they've heard presentations from peers and evidence of technology's impact on treatment.

The rapid advances in medical technology over the past 50 years parallel the technology surge which launched the Industrial Revolution. The difference is that in other "industries," technology implementation usually required a change in work processes. Technology alone doesn't necessarily equal efficiency.

A classic example is the Model-T Ford. The birth of the mass-produced automobile was more about process and job redesign than “whiz bang” technology. Henry Ford’s goal was a car his workers could afford to buy. To do that, he took craftsmen who labored independently at their own pace throughout his factory and positioned them along a conveyor belt. By assigning each a specific task on the “assembly line,” this new work model reduced the time to complete one of his vehicles from 36 hours to an amazing 90 minutes.

Process improvement is key to Japanese dominance in the auto industry today. As “quality” gurus like Hammer, Champy, Deming, and Ohno emerged to lead modern industrial management strategies like Lean, Six-Sigma, Kaizen, JIT, and TPS, other countries adopted them more quickly than the U.S. because they promised a competitive edge.

Are these passing management fads or lessons that can be applied to healthcare in a larger way? And should healthcare professionals even care?

They should if they care about improving the quality of care they deliver. The results can be faster access to treatment for more people, speedier diagnostic results, a safer hospital environment, more time for patients and better resources for sound decision-making.

## Automating the right processes

A fundamental tenet in the application of Lean Management theory is that you must do the right thing in the right way. Automating the wrong process is just hiding waste. This is sometimes described as “paving over the ox paths.”

One example of applied lean management in hospitals is patient transport, a true hybrid with a clinical component and a “delivery” (industrial) component. Much of what happens to a hospital patient involves transport, from admission, to lab work, to transfer, to

treatment, rehab and discharge. The process involves a unique blend of direct patient interactions and basic logistics. The safety, well-being and satisfaction of the patient depend on efficiency and timely movement. Process improvement can yield great gains in terms of efficient dispatch, performance measurement, and exceptional patient handling through the course of transport.

One way automation can help is to determine which job should be done next and by whom. A human dispatcher may unknowingly hold a critical transport request while processing a routine discharge transport. An automated dispatcher relies upon built-in logic which weights requests against a large series of criteria, such as who is closer to the patient, who is equipped with the proper hardware and other resources, and how the request ranks against a batch of other requests. Processing the request involves collecting data, locating an available employee and relaying information. Automating routine transport dispatch allows dispatchers to focus more attention to higher-priority transport requests much faster.

The Lean approach requires the ability to quantify and analyze waste in the transport process. No process is completely waste-free, but the goal is to always minimize wasted resources and effort. Each type of waste requires a strategy to reduce or eliminate its effect on the process, thereby improving overall performance and quality. The results of such analysis greatly aid supervisors in targeting potential bottlenecks in the flow process.

The patient transport process depends on communication. Poor communication can result in transport delays, additional disruptive phone calls and diminished patient care. Failure to affirm an action (transporter is on the way, patient is on the way) also can have a negative impact on the overall process.

## Waste Targets in Patient Transport

Eight areas of waste can be reduced using the Lean approach in patient transport. They are:

### 1. Overproduction.

This is work done before its needed or work that is unsuccessful, such as dispatching a transporter for a request which is ultimately cancelled. The transporter arrives to find that the patient is gone, or the transport must be deferred. Effort and energy are consumed with no successful outcome.

To analyze cancellations as waste, we:

Capture the percentage of cancelled dispatches vs. the total number of completed requests.

Collect data on the reasons for cancelation, delay or rescheduling to prevent repeat problems at the source. Broadly, the reasons for these problems fall into three categories:

Patient issue – not ready, not available, not well enough.

Nursing / Care-giver issue – not prepared, not notified.

Equipment / Communication issue – wrong equipment, no available required equipment

To minimize this waste, “pre-schedule” requests to allow management to adjust and be properly staffed at the appropriate times.

### 2. Waiting

By connecting other steps in the process so that each triggers the next automatically, we can dramatically reduce wasted time. The sooner a transporter can get the next assignment, the sooner work can begin.

Other waits include unforeseen delay (nurse must prep patient, locating required equipment, requesting assistance, etc.) while in the middle of a transport request. When these types of delays are captured and monitored, trends can be recognized and steps may be taken to mitigate future delays. For example, excessive time spent in locating equipment can be remedied by

acquiring more of that equipment or staging equipment better. Locating technology is an increasingly popular option.

### 3. Transporting

Excessive movement of materials between process steps adds no value to the output and could damage overall quality. In patient transport, excessive movement is caused by slow and inaccurate information. Unnecessary requests for information, repeats of existing information or investigation to receive missing information all contribute to wasted time in the patient transport process. Communicating accurate transport requirements is the key to reducing the problem.

Flow mapping of the transport process can uncover the pitfalls of current processes. It will indicate the mechanics of what is now being done and should clarify the specific communication points in the process. Then action can be taken to ensure the proper information is relayed to the proper actor in the step involved. Any delays, schedule changes, cancellations or requests for assistance should be available instantly and simultaneously via alerts to the transporter and the party requesting the transfer.

### 4. Inappropriate Processing

Don't over-do the technology. Since all hospitals have a telephone network, that should be the life-line transporters use for job interactions. Pagers also can be part of a transporter's arsenal. PDA's, wireless tracking devices and alternative communication methods are rapidly becoming more accessible to a wide range of users within the healthcare setting. But one must ask if the cost justifies the improvement to the overall process. Use of simple technologies will decrease the amount of training time required while avoiding costs to repair or replace devices.

The phone can place requests into an automated, computer-based real-time display of the entire process which includes locations, request status and other data via a “dashboard” on computer screens. While such technologies offer opportunities for process improvement, they must be measured in terms of value to the overall transport process.

## 5. Unnecessary Inventory

In manufacturing, excess inventory consumes space, hides problems, slows communication and creates unneeded expense. In the patient transport process, the workforce is the inventory. Currently, most departments staff for 'peak' volume because during 'off-peak' times an excess of employees wastes salary dollars.

Automated measurement tools allow a "Staff-to-volume" approach, which is always best, even at peak times. These tools can gauge volumes by time of day, area of hospital, etc. and reveal trends in request volume to ensure that you are appropriately staffed during different shifts. By knowing the trends of volume peaks or valleys, and recommended rules of thumb for staffing according to volume, managers can apply Just in Time theory to maintain the appropriate inventory (staff) to meet demand (transport requests). Set achievable and realistic goals for your employees based on your specific facilities needs and requirements so that you have the right inventory to meet request demand.

## 6. Unnecessary / Excess Motion

In patient transport, wasted motion refers to empty-handed trips or assignments which don't deploy the worker closest to the job. Proximity matching for patient transporter dispatching helps reduce this waste. The goal should always be to reduce the time needed to have an available transporter reach their next assignment. This improves staff efficiency and utilization, while decreasing excessive wait times for patients and increasing their satisfaction. In addition, the sooner a transporter gets to the assignment, the sooner it can be determined if additional staff or lift teams are needed to aid transport.

## 7. Defects

Defects in the manufacturing world cost money. Defects in patient transport cost time, which translates to lost revenue and diminished patient care. Defects in patient transport are, for example, cancelled transport requests due to poor response time, rescheduled requests caused by miscommunication, transporter delays due to care-givers or missing equipment, dispatching transporters for patients who have already been moved. Identifying and reducing these defects should

be ongoing through good communication and data analysis.

## 8. Underutilization of Employees

Hospital transport departments employ their staff for their legs, but forget they come to work each day with a brain. Transport managers often neglect to tap into their employees' creativity and observations. Employees engaged daily with your customers can offer a wealth of new ideas to improve the transport process. Any process analysis should always include those employees who do the work. By including requesters and transporters in process analysis and redesign, time wasters can be kept to a minimum since almost all of them are due to poor or missing communication points at critical points in the transport process. It sounds obvious, but what looks good from a manager's perspective may not work at all in practice.

## Get Started, NOW!

You don't need a formal initiative, a team of consultants or a hospital-wide Lean project to start making process improvement gains. You just need to make the decision to change your transport operation. You can start right now with your own improvement initiative by targeting 5 new or different things that can be done within your operation. Here are five ways to start now:

**1. Get out of the office.** Walk with your transporters, introduce yourself to your customers throughout the facility, and put a face to your name and department. The most effective way to manage is to get to where the action is. This shows your customers you are a proactive partner in patient care and not a desk-bound manager without any insight to the real problems facing the patient transport process.

**2. Blow your own horn.** Putting out fires is part of your job. To get noticed, capture and publish positive metrics and service events that your department achieves. Interview members of the departments you serve and their patients to get the positive aspects of the service you provide. Take these to department meetings or administrative conferences to reinforce your impact to good patient care. Data is powerful, but only when it gets out there.

**3. Challenge your staff.** Healthy competition can drive positive results. Start capturing and publishing statistics on individual performance (total number of transports, short response times, lowest number of delays) and name a weekly “transport star” within your department. A little positive recognition goes a long way and incites the non-performers to do better.

**4. Walk a mile (or two) in their shoes.** Tied to suggestions 1 and 2 above, actually doing transports from time to time ensures that you get in front of your customers while experiencing the same conditions that your employees face. This builds credibility with your staff and your customers, while providing you with feedback directly from the trenches.

**5. Identify your three most common barriers.** Which three things most prohibit your employees from doing their job effectively? Availability of equipment? Poor communication between care-givers? Opportunities to avoid assignment? Make lists of these bottlenecks regularly and target simple refinements to address them. If it's equipment, find different and better places

to store it. If it's communication, train your employees to be cross-department ambassadors to facilitate required information. If it's a lack of assignments, find alternate tasks for your staff that keep them available for patient transports while reinforcing departmental productivity. Once you tackle the first 3, find 3 more.

Small changes can have big impact. Positive changes create a domino-effect that can extend beyond your areas of management. Human nature drives us to improve every day. That spirit of achievement can be infectious. Tools have always enabled us to do better but human initiative is ultimately what leads to achievement.

The hardest part is getting started.

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### About Thomas Perry

Tom Perry is a healthcare automation expert with TeleTracking Technologies, the leading manufacturer of automated patient flow solutions.