

**Improving
Capacity
& Quality**

**Can
Help “Future
Ready”**

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**Your
Program**

The last four decades have seen survival rates for most major cancers markedly improve even as incidence rates have climbed. Such progress is widely attributed to an increased focus on early detection and intervention, particularly with cancers deemed highly “curable” if detected early. Also, many more end-stage cancers today are being rendered manageable for years or even decades, where previous generations of patients with similar diagnoses were given significantly shorter prognoses. With this success comes a host of new needs, mainly in the form of capacity and quality. Timely, affordable, quality care is the great challenge ahead. If this challenge is to be adequately met, community cancer centers need to play a greater role than ever.

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Building Capacity

The principal future readiness challenge facing the oncology community is how to ensure that community cancer centers can handle patient capacity so that the right treatment reaches the right patient at the right time. Community cancer centers are (and will remain) main gateways for initial assessment and care. But as more people seek proper screening and care earlier in the cancer continuum, many of these cancer centers will need to build capacity to provide timely diagnosis and treatment of a greater volume of patients.

A patient's treatment path is punctuated with waits. Wait to learn "if" they have cancer. Wait to learn "what kind" of cancer it is. Wait for a consultation on how to treat the disease. Wait for second opinions. Wait to find out how long the patient will have to wait before he or she can begin treatment. Community cancer centers should look at these "waits" as true access opportunities to bring patients to their physician strategists and nurse tacticians. Effective management of patient flow can pay significant dividends. In time, this efficiency frees up additional capacity to consistently provide the same level of high-quality care to more patients without having to expand treatment hours, staff, or facilities.

Here's a brief look at how one community cancer center used Lean Six Sigma principles to make process improvements and "future ready" itself.

Improvements Needed

Being unable to provide timely care to cancer patients is disconcerting to any oncologist—particularly knowing a patient may wait more than 14 days to get an appointment. The provider team at Hematology Oncology Medical Specialists (HOMS), the anchor practice at Lancaster General Health (LGH), faced this reality in 2011 and knew that improvements were needed immediately. HOMS is part of a collaborative team that provides comprehensive care for patients with many types of cancer, including chemotherapy, as well as connecting with surgeons and radiation oncologists to develop an individualized plan of care for each patient. Complicating the situation was LGH's plan to expand services through the

development of a state-of-the-art cancer center for the local community.

LGH leadership understood that improving efficiencies within this medical oncology practice would need to occur prior to the expansion of services in the new cancer center and before the practice's planned electronic medical record (EMR) implementation.

Getting Started

In order to truly understand the issues and challenges that impeded workflow, our first step was to take a hard look at the current state of the oncology practice and its associated chemotherapy infusion services. Our goal was two-fold: to improve patient access and, ultimately, obtain a substantial boost in capacity. To achieve these goals, a combined team of LGH Health System and HOMS practice leadership understood that process improvements, combined with next generation technology, were required.

LGH made the decision to partner with Genpact, a global business process management company that had spun-off from GE (General Electric) in 2007. With this partnership came the decision to use education and mentoring to introduce and promote widespread use of Lean Six Sigma improvement methodology.

The LGH Experience

With the understanding that quality cancer care requires a capable multidisciplinary team (wherein each member of that team is assigned the appropriate roles and responsibilities), we took a hard look at our processes. One of the first efforts was to evaluate how we educated patients about their chemotherapy regimen. We made the decision to reassign that task to licensed physician assistants (PAs), which freed up block time for our physicians and added potential capacity for 84 new patient appointments annually.

Next, a close look at our physicians' administrative processes revealed two improvement opportunities. The first involved reducing the time physicians spent looking for forms by using a Lean Six Sigma 5S tool (Figure 1, page 44). Five S

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is the methodology of organizing a workspace for efficiency and effectiveness by reducing waste, a powerful tool that can be used to improve physical spaces, as well as processes. The goal was to eliminate all but essential paperwork, and then ensure a standardized location for easy document retrieval. The second involved recognition that 75 percent of the “required” documentation on forms need not be done by the physicians themselves. A detailed analysis of this paperwork process, followed by some simple procedural changes, immediately reduced the number of forms processed by our physicians from five each day to one per week.

Without an active commitment to evaluating each work process, small problems are easy to miss—yet they can have a negative impact on quality of care and the cancer program’s bottom line. Something as seemingly insignificant as when insurance co-pays are collected on the day new patients arrive for their initial consult can make a difference in how patients view their experience. Through analysis of our processes, we discovered that well-meaning clerical staff often skipped asking a visibly distraught patient for the required co-pay in person. Instead our clerical staff was using mail to solicit payment, thus delaying collection for weeks. By simply moving the collection of co-

pays to when patients were registering but had yet to have any weighty interactions with a physician, we were able to improve collections by 60 percent. This change also removed “bottle-necks” in the already burdensome check-out process by 13 percent (see Figure 2, right).

Next we looked at freeing up capacity by reducing our staff “travel” time. For example, when our laboratory relocated supplies to the specimen-receiving station, it reduced staff travel by 180 steps a day. In our chemotherapy infusion center, we were seeing travel waste as a result of a floor plan that did not allow busy nursing staff to see each patient as he or she arrived. Our nurses walked, on average, about 1,200 steps per day; the unit facilitator was walking nearly 3,000 steps per day.

After process mapping to visualize barriers, we used scheduling software and 5S tools to make improvements. Our improvements resulted in:

- A 66 percent reduction of walking by our nursing staff
- 40 percent improved utilization of the documentation area
- A 30 percent reduction of non-value-added time spent searching for charts and supplies.

We also identified significant opportunities for improvement in areas of “rework.” As an example, consider the infusion order, a critical component in oncology treatment work streams. Not surprisingly, these orders are among the most complicated medication order sets required for patient therapy. In addition, transmission of these orders to the compounding pharmacy introduces the potential for increasing points of error. Integrating the need for customization of each order based on individual laboratory values often creates a confusing process for the patients too. One patient safety ini-

Figure 1. Lean Six Sigma 5S Tool

STEP 1. SORT	Remove from the workplace all items that are not needed for current operation. Sorting means leaving only the bare necessities. “When in doubt, throw it out.”
STEP 2. SET IN ORDER	Arrange needed items so that they are readily accessible and labeled so that anyone can find them or put them away.
STEP 3. SHINE	Sweep and clean the work area. The key purpose is to keep everything in top working order so that when someone needs to use something, it is ready to be used.
STEP 4. STANDARDIZE	Define the “normal” condition of the work area and how to correct “abnormal” conditions. The standard should be easily understood and easy to communicate using visual tools where possible.
STEP 5. SUSTAIN	Implement solutions to address the root causes of work area organization issues. All staff must be properly trained and use visual management techniques.

Figure 2. A Process to Improve Co-Pay Collection

1	Three-minute collection process is moved from checkout to check-in.
2	Shorter checkouts free up 13% more capacity for processing departing patients.
3	More (exhausted) patients are now able to go home sooner after care is complete.
4	Time-of-visit payments rise 60% with the switch to requesting co-pay at check-in.
5	Post-visit collections are avoided, sparing patients “surprise” when bills arrive weeks after treatment.

tiative has been to build redundancy into the process; however, this redundancy can affect both physician efficiency and pharmacy productivity. By standardizing the ideal variables necessary to accurately complete the orders through use of “critical-to-completeness” protocols that could be quickly implemented and easily followed, we increased our chemo order completeness from 13 percent to over 80 percent at first pass, while the required touch points for each order—defined as any time a pharmacist, administering nurse, or ordering physician needed to interact with the chemo order itself, often for the reason of seeking clarification—fell by 46 percent.


We also looked at our scheduling process. Although it seems obvious that a busy practice with a long wait for patient appointments would have very few open slots, this was not the case at our oncology practice. A patient’s diagnostic and treatment course is at the mercy of many variables beyond the patient’s control, often forcing last-minute cancellations. At the start of the process our cancellation block refill rate was only 5 percent. In other words, our staff was only able to fill 5 percent of the cancellations. After conducting a Lean Evaluation of our block refill process, we developed a multi-pronged approach that included visual management (visual cues instead of the written word to communicate information) to track cancellations and the creation of a standard process using existing technology to refill potential slots. Enhanced timely communication to our physician providers was also critical. Our efforts in this area improved the practice’s cancellation block refill rate to 75 percent.

One of the most difficult process improvements involved inpatient daily rounding. Each physician rounded to his or her own attributed patients every day, which resulted in reduced availability for office patients. Developing and implementing a clear, single, dedicated rounder structure solved our

logistical problem and resulted in consistent treatment for the inpatient population, as well as improved access for new patients requiring oncologic treatment.

Going Forward

The dual quest for capacity and quality begins and ends with the rigorous pursuit of more efficient and effective patient-centered care. Cancer patients are fighting a near constant battle with fear and treatment-induced fatigue. It is not enough to simply treat their disease. How we treat the person burdened with that disease matters just as much. This premise is the basis of the patient-centered care treatment delivered at the new Ann B. Barshinger Cancer Institute located on the grounds of the Lancaster General Health Pavilion. Our aim for the new Cancer Institute is to arrange our providers so that debilitated patients are largely anchored in one place. Using this non-moving patient model, care providers go to the patient, instead of the reverse.

The precepts of Lean Six Sigma process re-engineering require a consistent drive to remove non-value-adding activity and evaluate workflows that directly or indirectly impact quality of care and its financial and emotional cost to patients. Transformation is a journey, not a destination, and ongoing efficiency-improvement efforts will be key to meeting tomorrow’s cancer care challenge today. 

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