

INFUSION CENTER OPERATIONAL IMPROVEMENT: MAXIMIZING THE PATIENT THROUGHPUT OF INFUSION CENTERS

The demand for cancer services has never been higher, and is expected to grow. This trend is exasperated by the expanding aging population, along with cancer survivors seeking disease management and survivorship services. Most growth is forecasted to occur in the outpatient setting,¹ and as this trend comes full swing, organizations will be looking towards expansion as their natural solution for managing the increase in population. When facility improvements are required, there are key design concepts that can help support throughput and patient satisfaction. But before an organization decides to increase capacity through investment in additional space, steps should be taken to maximize the use of what currently exists. By increasing the utilization and operational efficiency of the current space, improved patient throughput can significantly increase revenue, strengthen patient satisfaction, and reduce wait times.² This can help an organization achieve significant cost savings, including precious capital resources. This report highlights both operational and design best practices for infusion centers that will help increase overall infusion performance.

Operational Tactics to Improve Throughput

Realizing the challenges within the operations of an infusion center and defining the solutions require a thoughtful understanding of current state and consideration of alternative care delivery models. With the help of Lean methodologies, including value stream mapping, gemba walks, and spaghetti diagramming, understanding and evaluating the current state of the infusion center space and operations can be simplified. Once the challenges are identified, simple low-cost solutions exist that can be put into place to drive efficiency and improve patient throughput. The following tactics are growing in popularity and are proven to significantly impact patient throughput.

IN THIS REPORT

- Best practices for improving infusion center throughput
- Strategies for making infusion center spaces more operationally efficient
- Design concepts that support throughput tactics and improved patient experience



UW Cancer Center at Johnson Creek

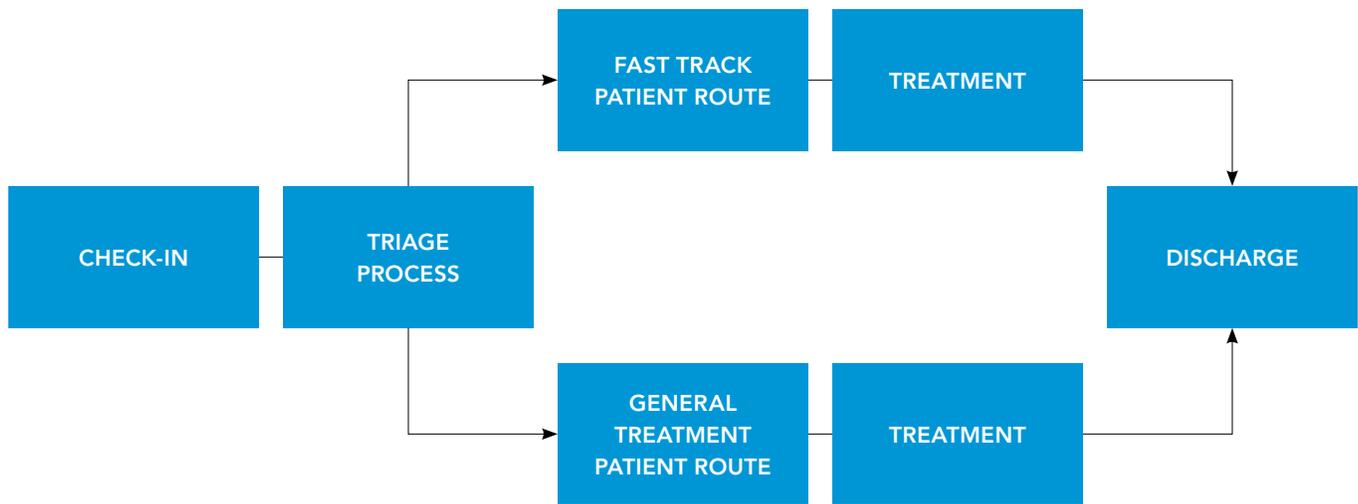


FIGURE 1 Infusion Fast Track Process Map

Tactic 1: Fast Tracking Quick Treatment Patients

With the increase in demand of outpatient cancer services, infusion suites are becoming busier. As patient volumes increase over the course of a day, coordinating the care of a variety of patients and treatments becomes exceedingly complex. It is not uncommon for patients to experience wait times that far exceed treatment time. This is particularly sensitive for the patient scheduled for a treatment that is less than one hour.

The fast track concept streamlines the process for those patients that have a quick “in and out” appointment. A quick treatment is commonly defined as any treatment or chemotherapy intervention that takes less than an hour to complete. This hour includes any preparation time needed for the given treatment.

This population can be identified based upon the daily schedule, or a nurse in a “triage” function can utilize his or her clinical knowledge in real time. The latter process is initiated by the triage nurse who can identify the patient as “fast track” by recognizing which drug(s) the patient will receive and deciding if that treatment will last under an hour. Once the triage nurse observes this patient’s arrival to the clinic, he or she will notify the fast track nurses who will then administer the treatment.

(FIGURE 1)

Streamlining the arrival and treatment process directly translates to a reduction in wait times. For this to be successfully implemented, resources must be protected for this use. This will be further discussed in Tactic 2.

A successful implementation results in significantly reduced wait times for short treatments leading to improved patient satisfaction. It should be noted that patient education regarding this process upon their arrival into clinic is critical to prevent “long treatment” patients from developing the perception that others are cutting in line. On the contrary, extracting these fast track patients reduces the competition for resources and should positively impact wait times for “long treatment” patients as well.

Tactic 2: Dividing Infusion Space into Zones

Infusion centers can be designed in a variety of ways, and utilizing the current space in an efficient way is vital to maximizing patient throughput. Zoning (FIGURE 2) was a solution CannonDesign implemented at a recent client site.

Reorganizing the infusion center into zones allows nurses to be staffed to a specific zone, improving the efficiency of care delivery and increasing patient safety by optimizing consistent “line of sight” by a care provider. As seen in Figure 2, an infusion suite is divided into large numbers of infusion chairs/bays. Prior to zoning, a nurse may have three patients located on different sides of the center. This breaks the line of sight and creates potential patient safety issues. From an efficiency perspective, distributed assignments also increase travel distances for the nurse. Staffing nurses to specific zones restricts the placement of their patients, limiting travel distance and increasing line of sight.

In addition to patient placement, zoning the infusion center creates groups of nurses and promotes teamwork. Each grouping of nurses is in charge of monitoring its zone and assisting the other nurses in that same zone. The groupings of nurses become care teams, which allows for more effective teamwork during acute events as well as providing patient coverage when one of the nurses requires a break, such as for lunch. The care teams also allow the nurses to have end-of-shift patient coverage.

As mentioned in Tactic 1, zoning also offers the ability to cohort staff and space by function. One zone may primarily host fast track patients. Another may be the area to manage patients who present as ill on their day of treatment.

There is also the option to zone by patient segmentation. Perhaps one zone is primarily leukemia/lymphoma and others are solid tumors types that have similar treatment protocols. This allows the opportunity for nurses to develop subspecialization as well as enhance the patient experience by offering a greater continuity of care providers.

Both Tactics 1 and 2 can be further enhanced with patient scheduling strategies. Scheduling patients to either specific zones or chairs assists in accurately managing to a reasonable capacity as well as adjusting placement of staff to meet the needs of the patients in that treatment area. It must be mentioned that even the most sophisticated scheduling must flex to daily, even hourly alterations. Patients may not arrive on time. Lab results may identify add-on interventions or cancelled treatments. These variables provide an opportunity for a nimble Charge Nurse/ Flow Coordinator/ Triage nurse to redistribute patient flow to mitigate wait times.



FIGURE 2 Infusion Zoning



Allegheny Health Network, Wexford Health + Wellness Pavilion

Tactic 3: Designating Key Nursing Roles

Nurses are critical to the ongoing efficiency of an infusion clinic. Effective management of patient throughput can be supported through a variety of nursing roles.

Flow Coordinator: This “traffic cop” of an infusion suite is empowered to repurpose staff and/ or zones as required by unforeseen changes in patient needs and volume (i.e., converting Fast Track zone to long treatment chairs, or assigning nurses to lab check patients when blood products are needed, etc.), and monitors patient flow of the entire clinic.

Order Verification Nurse: It is somewhat common for orders to be missing or incomplete when the patient arrives on the day of service. An Order Verification Nurse ensures orders are present and aligned with patient’s treatment protocol prior to Date of Service. This mitigates patient wait associated with the coordination of this activity with the medical oncologist.

Fast Track Nurse: Aligned with the processes described in Tactics 1 & 2, the Fast Track Nurse is a protected resource who provides treatments under an hour, performs quick assessment for patients prior to treatment, and central line access for patients that need their blood drawn.

SWOT Nurse: Flexibility is critical for an effective infusion suite. Some staffing models include a “SWOT” nurse whose duties change throughout the day depending on activity that jeopardizes throughput. This commonly includes management of sick patients, same day add-ons, or lab check patients that convert to blood transfusions, and generally acts as a pressure valve when volumes are high, promoting care flexibility.

Depending on the nursing manager’s staffing preferences, these roles can be consistent or rotating. The consistent scheduling of roles allows the selected nurses to build special competencies and relationships related to their designated duties. Each will have a deeply rooted knowledge of his or her position. The rotational schedule allows each nurse to perform every role. This will allow the nurses to become more clinically rounded and ensures coverage of the roles, but with a more shallow knowledge of each role.

Design Tactics to Improve Throughput

Operational efficiencies are integral to improving patient throughput in an infusion clinic, and the design of the clinical environment can have a deep impact on the viability of a number of the aforementioned tactics.

Creating a Patient-Centered Infusion Environment

A friendly and soothing infusion center environment can dramatically increase patient satisfaction. Creating a healing environment for the patients can reduce the fear and stigma of undergoing chemotherapy. Introducing patient-centered design elements are crucial to a successful and safe infusion center environment. Innovative design elements such as natural light, individual infusion bays, comfortable furniture, warm and inviting paint colors and materials, as well as improved way-finding are all potential additions or renovations that can improve an infusion space.³

The ability to create the feeling of privacy without compromising line of site for practitioners is imperative for patient safety and satisfaction. Strategic placement of shortened walls, viewing windows or other elements to provide an audible and visual connection between the patient and provider can be supportive to the successful implementation of operational tactics used to improve throughput.

The most important factors influencing the patient-centered design of infusion spaces are desire for control, varying levels of privacy, and accommodations for the patients' guests.⁴ Control is referring to the patient's ability to control the environment around them, whether that be related to temperature, entertainment, or lighting. Patients also have varying levels of privacy needs. Having the choice between private and social treatment environments is conducive to patient satisfaction. Social treatment areas encourage patient interaction and comradery, while private rooms support seriously ill patients and those that have visiting guests.⁴ These are examples of the many considerations and design elements that should be investigated when designing an infusion space that can directly tie to patient satisfaction, staff satisfaction and patient safety.

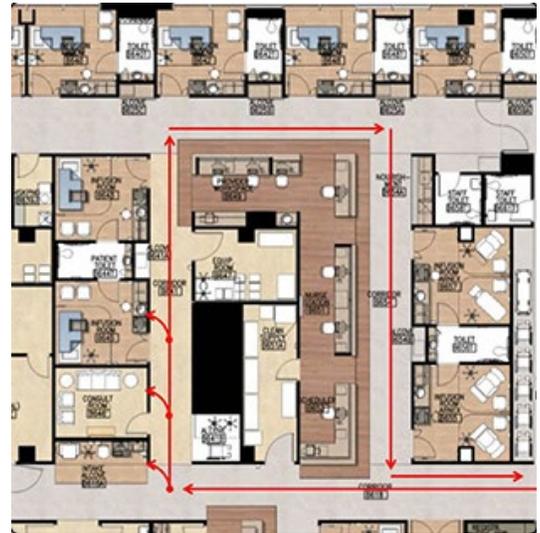


FIGURE 3 Example of a Race Track Layout

Assisting Process Flow with a "Race Track" Layout

Designing an infusion space that is oriented around the cancer treatment process can greatly improve flow, patient throughput, and the patient experience. By utilizing the "race track" space layout (FIGURE 3), patient way-finding becomes simple. The circular layout supports the appointment process, starting with the waiting room, reception, sub-waiting, and treatment areas. The pharmacy can also be integrated into the space. Placing pharmacy support near the nursing station greatly improves communication and minimizes staff travel distances, which increases overall staff satisfaction and efficiency.

The racetrack layout also allows the nurses/providers to be at the core of the unit, allowing easy contact and pathways to the patients. Encompassing each of these design elements helps to create a patient-centered, efficient infusion space.

Conclusion

Increasing throughput by enhancing operational and space efficiency can improve patient experience and reduce the cost of care and labor, and positions organizations to successfully adapt in the ever changing cancer environment. Focusing on continuous improvement and making the most of an existing space will reduce expenditures, and provides the opportunity for organizations reprioritize capital investments.

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Additional Resources

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