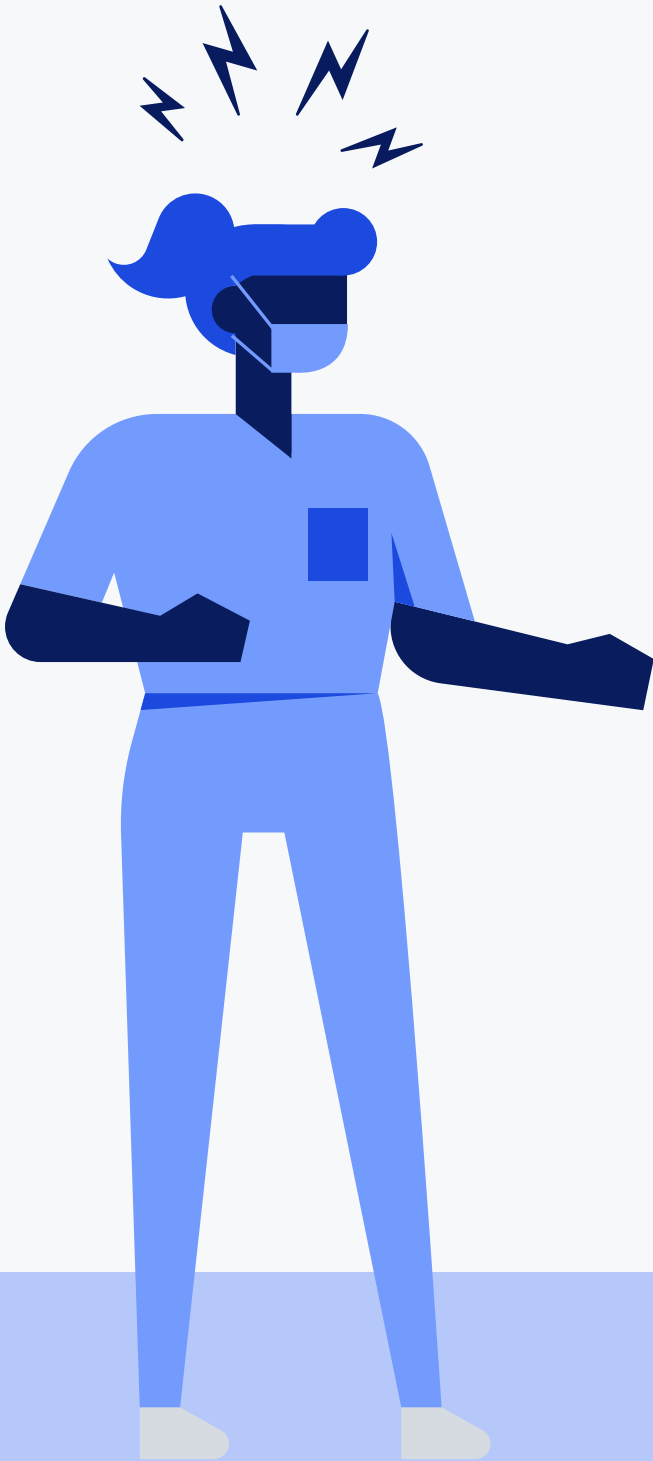


EBOOK

How much room is left? Understanding infusion capacity by defining utilization



Introduction

The capacity at any infusion center is limited by scarce resources such as chairs, nurses, and pharmacy. Once the center has built an optimized scheduling template that accounts for each of these constraints, leadership often asks whether capacity is fully maximized or if there is still room to grow. The key to answering this is to understand the definition and different aspects of **utilization**.

Scheduled and actual utilization

Utilization measurements indicate how “full” an infusion center is filling its optimized templates with patient hours and provide a realistic view of its capacity. There are two types of utilization to consider: **scheduled utilization** and **actual utilization**.

Scheduled utilization conveys the number of scheduled patient hours compared to the total number of patient hours on the template. For example, if a Monday template can accommodate up to 100 patient hours and the center scheduled 80 patient hours for a Monday, the scheduled utilization would be 80%.

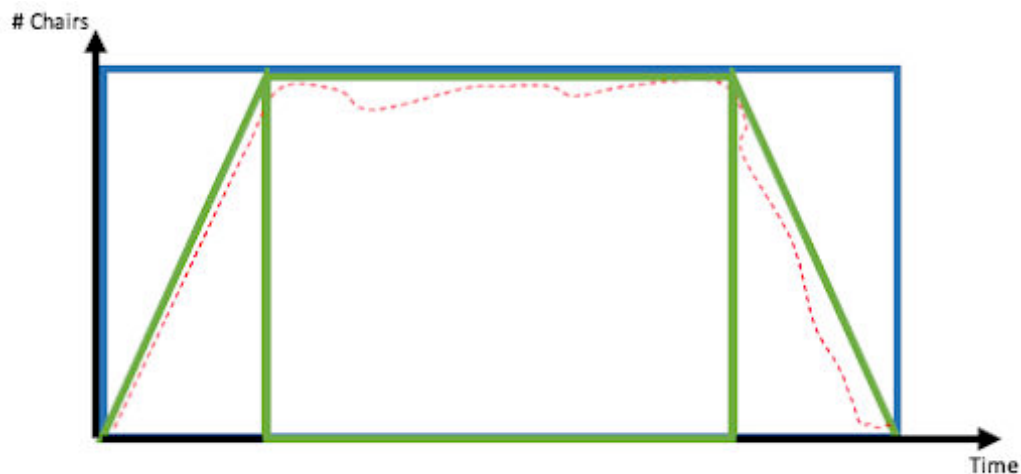
Actual utilization describes the completed patient hours on a given day compared to that day’s optimized template. In other words, the metric looks at where the center ended up versus where it planned to be. Also presented

as a percentage, actual utilization considers how the day unfolded by calculating occupied chair time based on timestamps received from the center's EHR. A particular Monday might have 100 patient hours on the template and 80 patient hours scheduled. If 70 patient hours were completed at the end of the day, the actual utilization would be 70%.

Due to the variability of infusion centers, actual utilization may be higher or lower than scheduled utilization. No-shows and same-day cancellations would cause the actual utilization to shrink, while many same-day add-ons could increase the actual compared to scheduled. Additionally, the cycle time, or actual treatment length, of an appointment running longer or shorter than its planned or scheduled duration will impact the actual utilization calculation.

Effective and overall utilization

There is a difference between **effective chair utilization**, which is achievable in actual practice, and **overall utilization**, which is not. Oncology leaders are often challenged by trying to achieve full overall utilization, which mistakenly tries to measure the rectangle illustrated below by multiplying total chairs by total hours of operation.



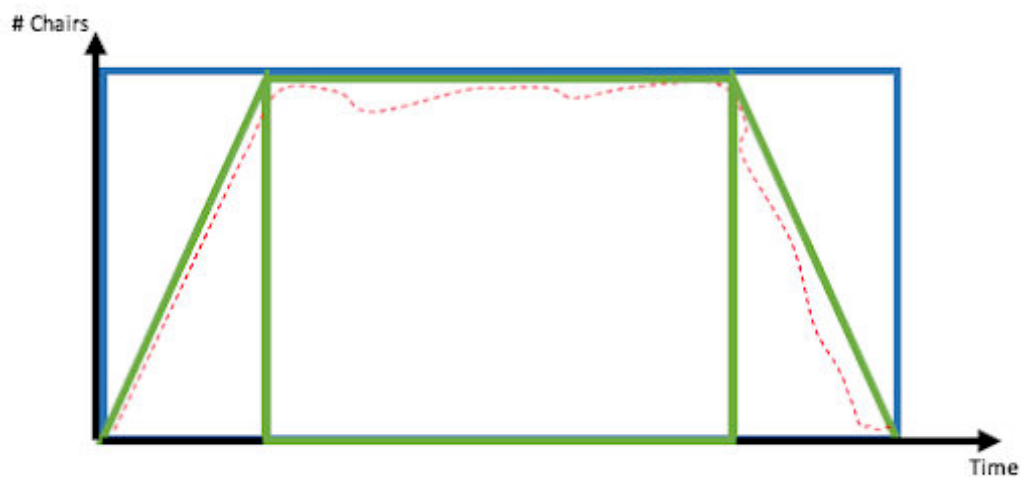
This is not realistic or usable math; in practice, no center can have 100% of seats full immediately upon opening, all throughout the day, and all the way to the last minute of closing. Even if time, money, and nursing resources were no object, attempting to occupy all chairs from the very start would actually result in reduced capacity.

The amount of throughput is similar to a series of connecting pipes with pumps processing water. If the first pump outputs 100 gallons per minute and the second pump can only

process 10 gallons per minute, there are three options for managing the overflow:

1. Slow the first pump to also operate at 10 gallons per minute.
2. Keep a large tank between pumps 1 and 2 so that the extra 90 gallons per minute can be safely stored; then throttle to allow the pumps to catch up or slow down.
3. Deal with an oversized puddle, due to pump 2's inability to keep pace with pump 1, on a continuous basis.

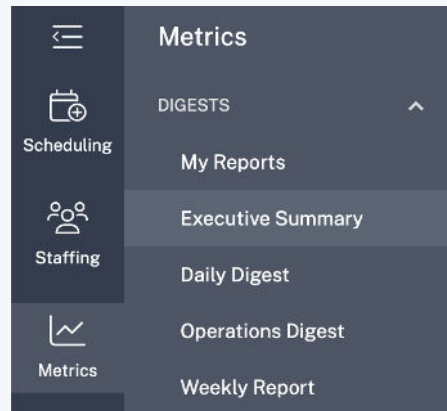
Forcing 100 gallons through the pipe produces a bottleneck, which creates a compounding effect that slows down the entire process and ultimately reduces the overall capacity that can come through the other end. Resource constraints, as in the pipe example, impact infusion centers as well. Therefore, the correct way to understand achievable capacity is to measure effective chair utilization, which is illustrated by the green trapezoid in the rectangle illustration.



Effective chair utilization considers actual capacity and measures performance against it. The trapezoid representing this metric accounts for a necessary ramp up, a period of steady-state, and then ramp down. Thus, **effective** chair utilization shows what a center can practically achieve given real-world resource constraints. Once a center is nearing maximum effective utilization and still has demand, leadership should evaluate potential levers to pull to change constraints.

Finding utilization metrics in iQueue for Infusion Centers

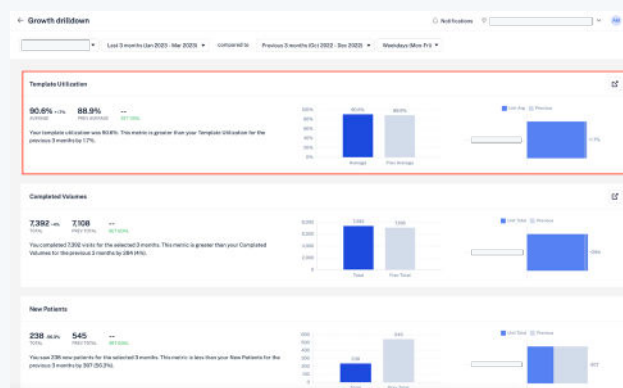
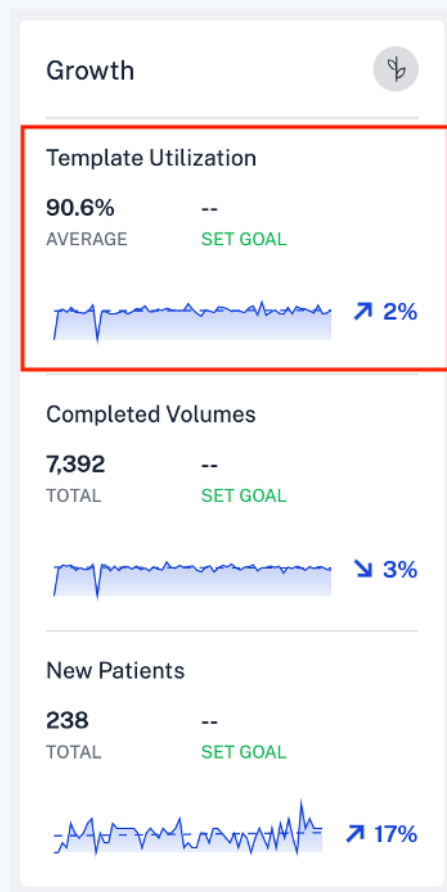
There are two sections of the iQueue for Infusion Centers application where users can find utilization metrics for their center: **Executive Summary** and **Operations Digest**.

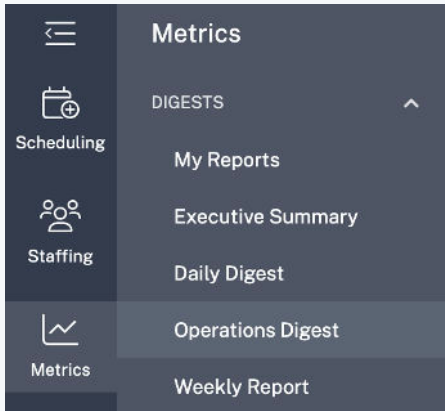


1. Executive Summary: The Executive Summary report in the *Metrics* section of the application presents a **Template Utilization** metric, which is synonymous with actual utilization defined previously. It is located in *Metrics* and then *Executive Summary* in the left hand navigation panel.

After selecting the desired unit and timeframe from the top of the page, the user can scroll to the Growth pillar to view the *Template Utilization* metric. The percentage indicates the actual utilization, which is the total number of completed patient hours compared to the total number of hours on the template.

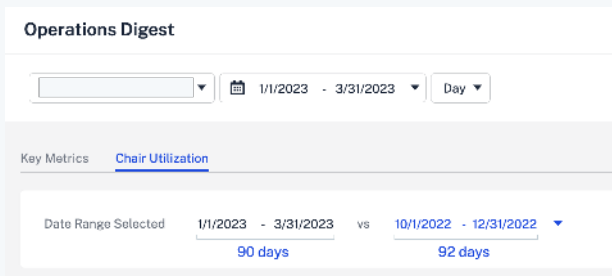
The user can compare two periods of *Template Utilization* by clicking on the Growth header, which will launch another page. At the top of the page, the user can select the desired timeframes for comparison. The *Template Utilization* section will then provide the actual utilization metrics for each of the select periods.





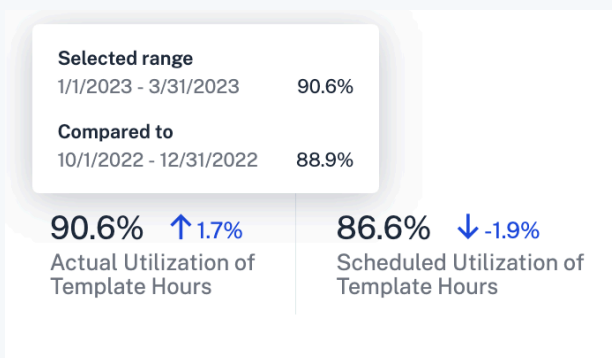
2. Operations Digest: The Operations Digest provides both the **scheduled utilization** and **actual utilization** for a selected period of time. Again in the *Metrics* section of the application of the navigation panel, the user will select *Operations Digest*.

Next, the user will navigate to the *Chair Utilization* tab and select the desired date ranges.



The *Chair Utilization* section first presents the *Actual Utilization of Template Hours*, a metric which describes the total completed patient hours as a percentage of the total template hours for the selected date range.

The second metric shown, **Scheduled Utilization of Template Hours**, describes the total scheduled patients hours as a percentage of total template hours for the selected date range. Finally, the blue arrows indicate the increase or decrease in utilization compared to the secondary date range selected.

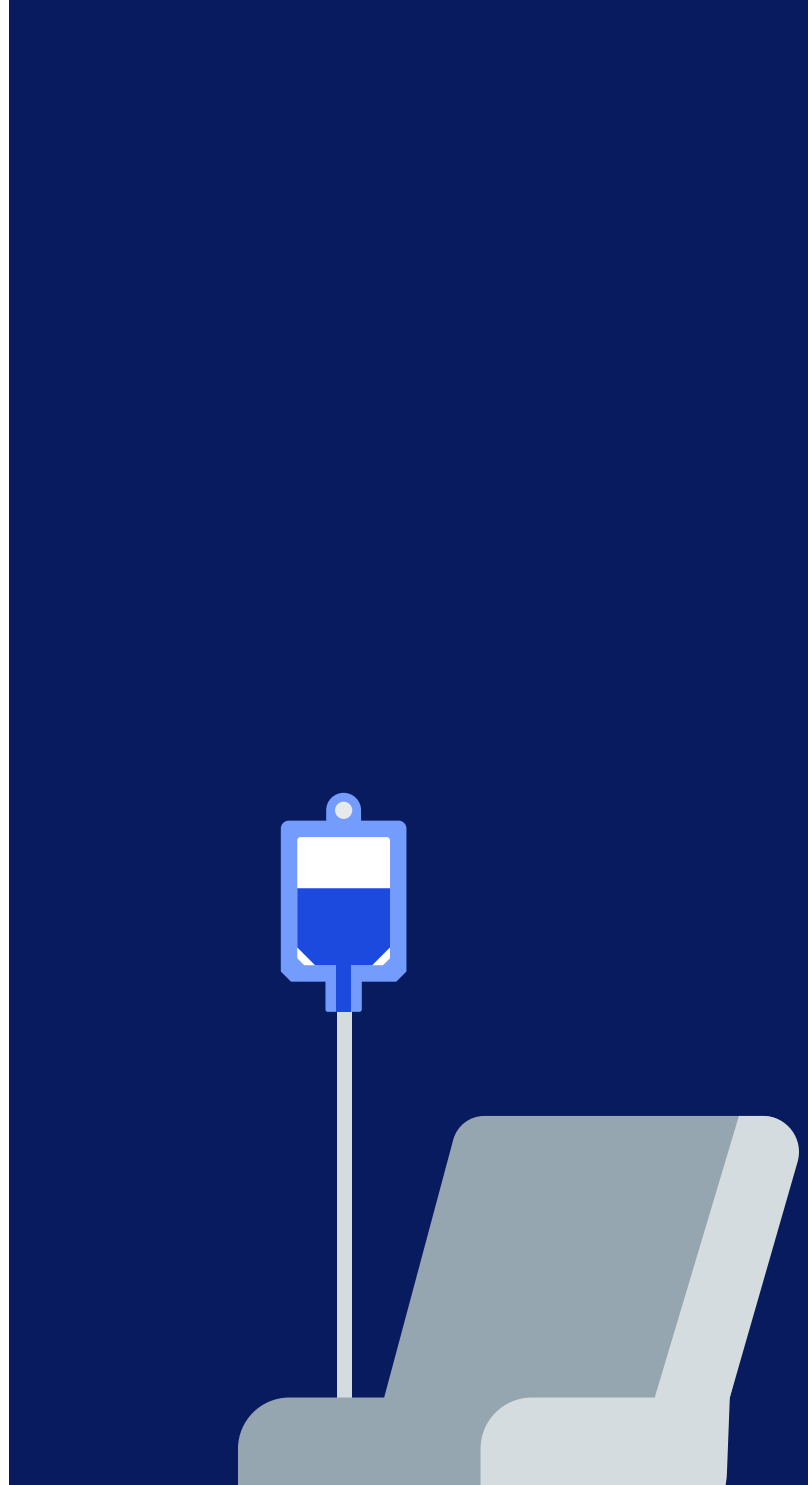


Interpreting utilization metrics at the infusion center

Utilization metrics provide an indication of opportunities to grow patient volumes and hours within existing chairs, staffing, and operating hours.

A scheduled utilization nearing $\geq 90\%$ likely indicates that capacity needs to expand to meet the patient demand. This may signal that templates must be updated to accommodate more volume or patient hours. Template updates to increase capacity will facilitate growth and provide scheduling flexibility as long as there is demand to fill the new capacity. If the current templates are already at maximum capacity due to physical constraints (chairs) or staffing constraints (nurses), leadership at the center may consider operational adjustments to accommodate the demand. For example, pulling levers such as expanding operating hours, adding chairs, or increasing nursing staff may be appropriate at this stage.

A significantly lower actual compared to scheduled utilization indicates that fewer patient hours were completed than expected. Comparing the actual utilization and scheduled utilization metrics can also provide valuable information to drive operational improvements. Lower actual numbers may be due to high no-show



and same-day cancellation rates; diving deeper into the causes for these rates can inform interventions to lower these rates, thus resulting in increased patient access.

Another factor contributing to a low actual compared to scheduled utilization could be cycle times (treatment length) running shorter than expected. Consider 6 months of infusion appointments scheduled for 3 hours. Based on the actual cycle times of these appointments, an infusion center can identify how frequently these treatments ran longer than, shorter than, or within range of the 3-hour expected duration, thus indicating how successful the center is at predicting the actual duration of appointments. Too much buffering, which results in appointments running shorter than expected, limits capacity. On the other hand, being too conservative, which results in appointments running longer than expected, creates unnecessary wait times. The goal is not to be 100% perfect in every estimate; however, if roughly $\geq 20\%$ of appointments are running short/long, leaders should do a deeper dive and create some process improvement initiatives around the findings. Often, this information may prompt clinical leaders and staff to analyze treatment plans and update the expected duration of certain regimens to more closely match the actual time needed.

Applying utilization learnings in the infusion center

Scheduled and actual utilization metrics can guide infusion center leaders in understanding the ability to grow, budget planning, and help support data-driven decisions for longer term planning. Effective chair utilization, as opposed to overall chair utilization, considers real-world resource constraints. Therefore, leaders should focus on effective chair utilization and patient demand when identifying potential growth targets. Leaders can evaluate utilization metrics to determine if their center can absorb additional patient volume within existing operational parameters (supply) or if additional levers need to be pulled to accommodate the demand.

To continue defining and addressing effective infusion center utilization, contact your iQueue partner, or see more on how iQueue for Infusion Centers supports this information.

