

# Impact of CQI on Telehealth Compliance Amid Staffing Shortages

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## ABSTRACT

Staffing shortages continue to be a concern in the current healthcare system, adversely impacting quality of care. Post-pandemic burnout coupled with an increasing elderly population has led to a severe mismatch between provider supply and demand. It is estimated that by 2030 individuals over 65 will outnumber children for the first time in US history.<sup>1,2</sup> The surge of the elderly population will continue to put strain on the already limited number of specialty providers, specifically Neurologists. The 2013 AAN Workforce Survey estimates that by 2025 the demand for neurologists in South Carolina will outweigh the supply by greater than 50%.<sup>3</sup> Utilizing technology, specifically telehealth, is part of the AAN's plan to minimize effects of this shortage.<sup>2</sup> Subsequently, telehealth volumes and tele-neurologist demand will continue to grow.

The tele-neurology inpatient consultative service within MUSC's Center for Telehealth (CFT) is helping to bridge the gap and increase health equity. The CFT aims to improve this immediate need by minimizing no shows and late cancellations through continuous quality improvement (CQI). The CQI purpose is to improve access through real-time data collection, CQI initiatives, and interprofessional and interhospital communication. The project specifically focuses on five domains of quality improvement outlined in the 2001 IOM report *Crossing the Quality Chasm*: timeliness, efficiency, effectiveness, patient-centered care, and safety.<sup>4</sup> Between April 2023 and August 2023 a 75% reduction in late cancellations and no shows and a 100% reduction in inappropriate acute tele-neurology consultations at the site involved in the CQI was seen. There was also a program-wide reduction in wait times greater than 24 hours of 39%.

## METHOD

Inpatient telehealth consults are scheduled as one-hour appointments. Due to scheduling guidelines, when partner sites fail to cancel appointments one hour in advance of the start of the scheduled consult, the time slot is unable to be filled for the day. The CFT Patient Access Representative (PAR) and Clinical Service Success Coordinator (CSSC) identified a real-time issue with late cancellations and no shows. These issues were particularly problematic on days when access was reduced due to physician staffing shortages.

Once the problem was identified by the PAR and CSSC, a method of collecting data was created. The PAR collected data on all partner sites that failed to cancel at least one hour prior to the scheduled consult time or did not show within 15 minutes of the start of the scheduled consult. Data points included site name, time of scheduled appointment, and the time and reason for cancellation. After nine months of data was collected, a site was identified for CQI.

Once the site was identified, the Clinical Outreach Coordinator created a workgroup for CQI. This workgroup included hospital administration and nursing leadership from the spoke site as well as CFT leadership and the clinical operations team. The group met biweekly for six weeks, monthly for three months, and then quarterly. Prior to the first workgroup, data on wait times, cancellation rates, and appropriateness of acute tele-neurology consults was analyzed. During the initial CQI workgroup this data was shared, and a starting agenda (Table 1) was created. At the end of the first-quarter, data was reanalyzed on wait times, cancellation rates, and appropriateness of acute tele-neurology consults.

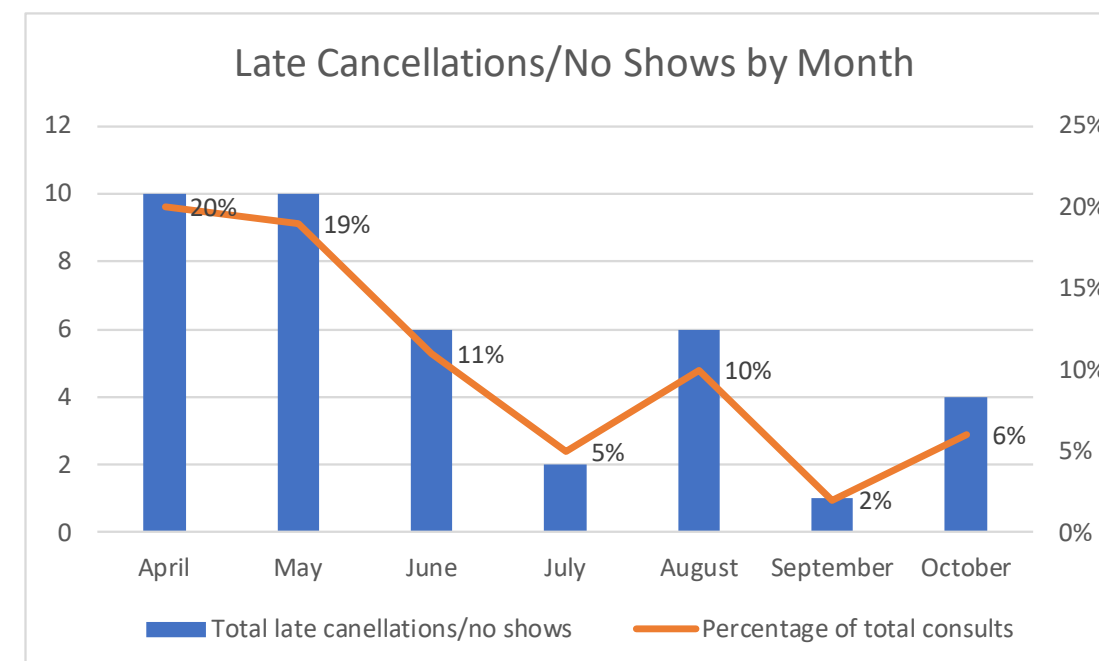
## RESULTS

Over the first-quarter following the initial CQI workgroup, there was a 75% reduction in late cancellations and no shows (Figure 1) and a 100% reduction in inappropriate acute tele-neurology consultations (Figure 2). There was also a program-wide reduction in wait times greater than 24 hours of 39% (Figure 3) and a network-wide reduction in wait times greater than 24 hours of 48% (Figure 4). There was no increase in density seen during the initial 6 months following CQI (Figure 5). Additionally, a continued downward trend is noted during the second-quarter of CQI for cancellation rates and no shows (Figure 1), inappropriate ATN consults (Figure 2), and wait times for both TN (Figure 3) and all other services (Figure 4).

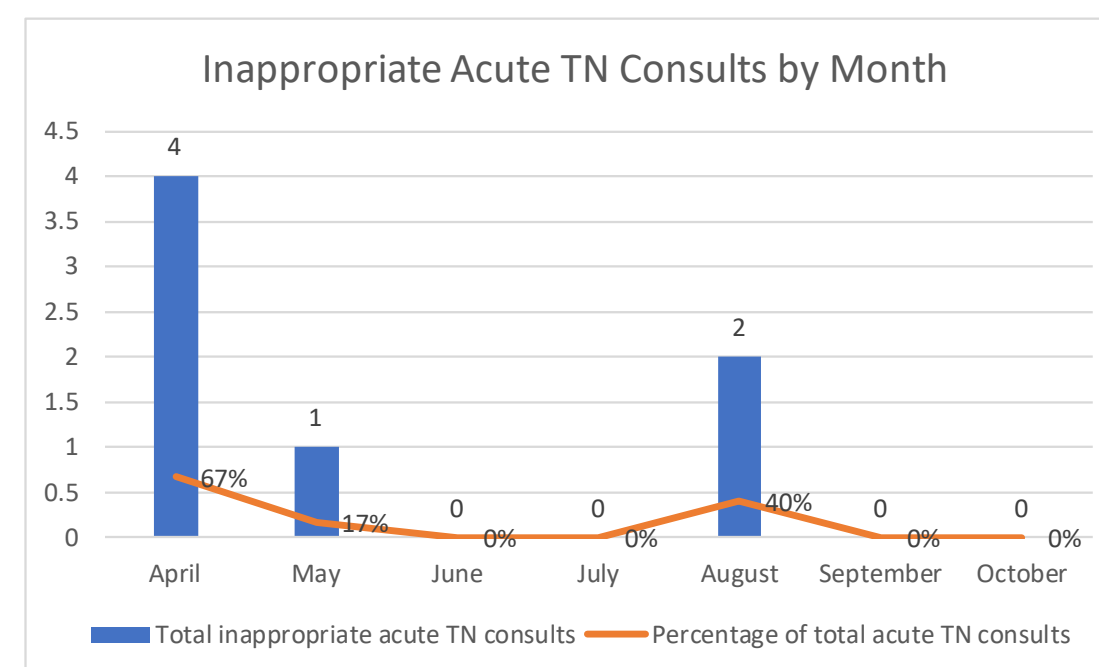
**Table 1. CQI Workgroup initial agenda**

Action Item	Background	Progress	Intervention
Extended Wait Times	Multiple consults that were scheduled outside of the 24-hour window		Educate ATC on protocol for scheduled consults. If there are no consults available, a rescue will be requested.
			Patient Access Representative to check schedule daily and move patients up in real-time as cancellations arise.
			Center for Telehealth creating data report for wait times
Cancellations	High number of "no shows" or "late cancellations"		Re-educate PMC staff on cancellation protocol
			Ensure all staff watches training module to improve timely registration
			Share cancellation data on monthly basis to track improvement process
			Share Cancellation data in real-time with telehealth representative
			Clinical Outreach Coordinator to send daily consult schedule to telehealth representative
			Create and share scheduled consult log for charge RNs and secretaries
			Introduce concept of tele-presenter role within PMC
			Update acute tele-neurology and acute tele-stroke Protocols
Acute Consult Workflow	Inappropriate use of acute consult requests by site.		Review protocols with Hospitalist team and clarify any misunderstandings
			Review protocols with Intensivist team and clarify any misunderstandings
Technology	Ongoing connectivity concerns at site level resulting in carts being offline for extended periods of time.		Confirm IT contacts for site
			Continued TTT support
Communication	Room for improvement with communication between MUSC and PMC		Site IT to maintain carts on secure network
			Continue biweekly leadership check-ins
Scheduled Consult Chart Review	Unclear expectations for RN role during consultation		Real-time communication of questions and concerns
			Create and share Kardex to assist RN with preparation for TN consult
			Meet internally to discuss expectations of providers

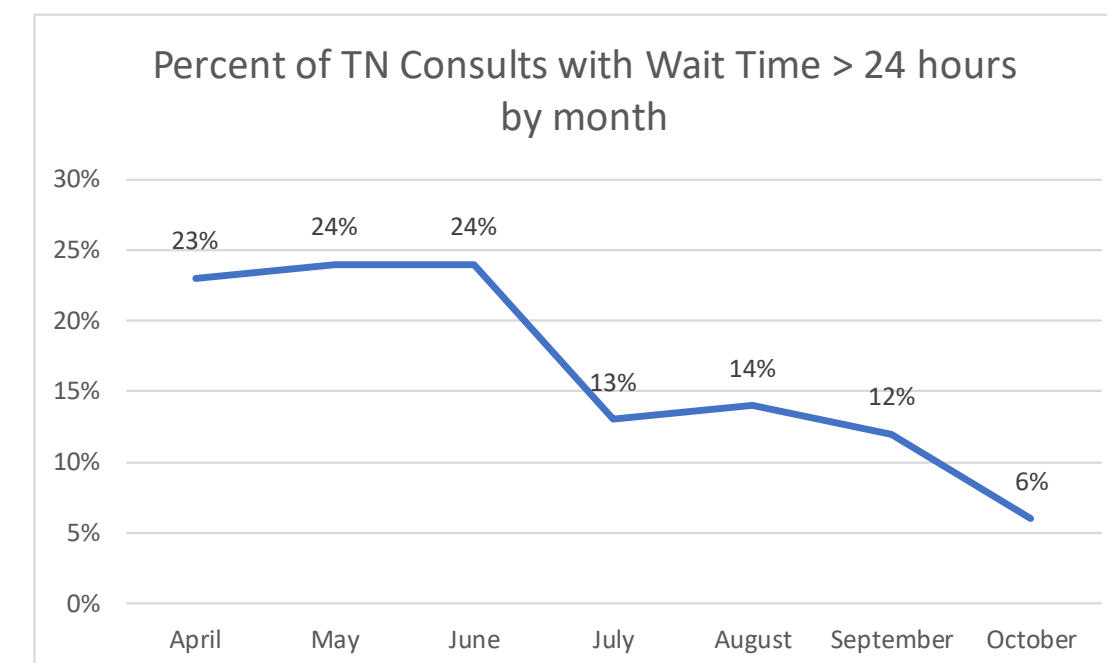
**Figure 1. Cancellation/no show rates**



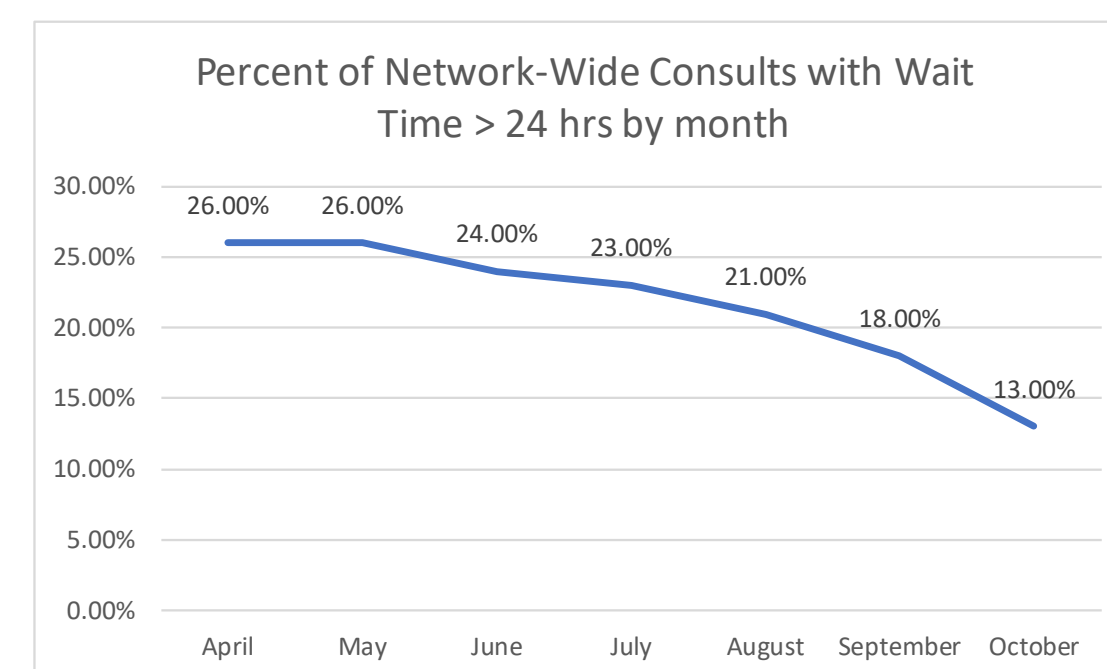
**Figure 2. Inappropriate ATN consults**



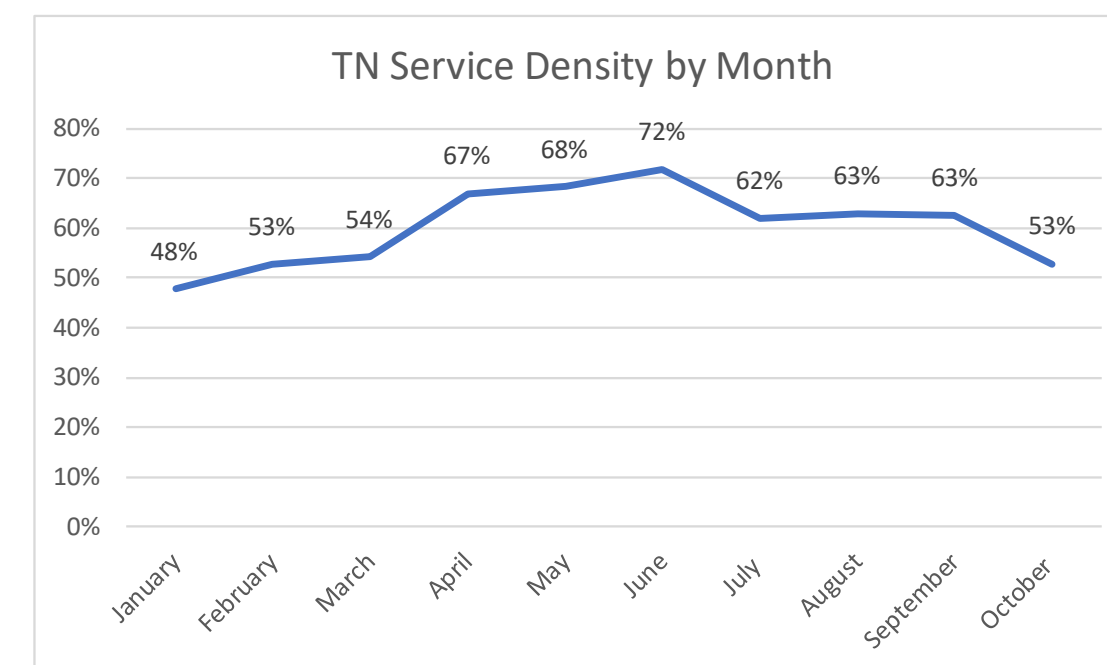
**Figure 3. Wait times: TN**



**Figure 4. Wait times: network-wide**



**Figure 5. TN density**



## SUMMARY

The results showed that implementing CQI at one hospital within the CFT's tele-neurology network has positive effects on reducing late cancellations and no shows, reducing inappropriate tele-neurology consults, and decreasing the number of wait times greater than 24 hours. Despite improvements with the site-specific metrics, there was not a significant increase in density within the tele-neurology program after implementation at only one site.

Although we did not see improvement in program density after the CQI, we hypothesize that implementing similar CQIs at additional sites within the network will have a significant impact on program density. The recent TN density data may be affected by physician shortages, resulting in falsely elevated densities during months with lower physician coverage and subsequent decreased patient access.

## FUTURE OPPORTUNITIES

During the CQI workgroups, opportunities for program expansion were highlighted. One area of opportunity that was highlighted during CQI is the need for continuity of care in critically ill neurological patients. This continuity of care would aim to decrease inappropriate acute TN consults and keep complicated neurologic patients in their own communities, further improving patient-family centered care. As a result of this need, the CFT is currently developing a tele-neurologic critical care service with this patient-family centered care focus in mind.

We were also able to show at least one advantage of implementing a dedicated tele-presenter in partner hospitals when comparing our data between sites with dedicated tele-presenters and those who rely solely on nurse or patient-care technicians to facilitate the TN consult. In the sites that utilized dedicated tele-presenters, there were minimal late cancellations or no shows, most of which occurred when the dedicated tele-presenter was on leave. We plan to continue to use this data to advocate for dedicated tele-presenters in each of our partner sites as there are many time, volume, and density metrics that could improve from this implementation.

Most importantly, it highlighted the need for improvement in program-wide data collection and analytics leading our hospital operations team to advocate for the addition of a dedicated data analyst to the operations team.

## REFERENCES

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4. Institute of Medicine (US) Committee on Quality of Health Care in America. (2001). *Crossing the Quality Chasm: A New Health System for the 21st Century*. National Academies Press (US).