

INTRODUCTION

Minnesota Gastroenterology (MNGI) is a Twin Cities-based physician practice specializing in the diagnosis and treatment of digestive system disorders. Their expansion plans led the group to build a state-of-the-art endoscopy and ambulatory care center in Woodbury, Minnesota. At this new center, patient care areas were designed to provide quality care in an ambulatory setting. The center is sleek and modern with an open layout and an abundance of natural light making it feel accessible and welcoming.

In addition to the general challenges that come with a ground-up build, including state regulatory compliance, budget and profitability expectations, MNGI extended the goals from their existing facilities to provide consistent, excellent healthcare services and patient-centered care.

Achieving these goals would mean low patient wait times, a consistency between multiple locations, and lean workflow process management. MNGI also desired to maintain a respectful, caring approach to patients and their families along with an organizational culture that supports and enables staff.

Size: More than 75 Gastroenterologists, physician assistants, and nurses provide a full range of diagnostic and therapeutic GI services

Facilities: 9 locations throughout Minnesota

Procedures: Specializing in the diagnosis and treatment of virtually all aspects of digestive disorders

CHALLENGES

A large concern MNGI faced was designing the center with a focus towards delivering quality care on a consistent and ongoing basis. Defining what constitutes quality is a challenge for any healthcare organization. According to the National Academy of Medicine the six domains for measuring “quality” should be safe, effective, patient-centered, timely, efficient, and equitable healthcare. [*Institute of Medicine. Crossing the Quality Chasm: A New Health System for the 21st Century. Research. Washington D.C.: National Academy Press, 2001.*]

For MNGI, realizing and measuring these domains required examining their existing workflows and systems. In doing so, MNGI identified the following potential improvements:

- **Safe Healthcare:** MNGI’s patient safety concerns included a need for clear staff response protocols for routine and emergent issues and a fall prevention plan. In addition, MNGI prioritized safe and effective management of specimens along with environmental management. Previously, lights and tones indicated emergent and non-emergent needs, therefore staff did not know how to respond. This often wasted time and effort as multiple people would respond to the same event taking time away from patients and risking alarm fatigue.

- **Effective Healthcare:** For services to be valuable, MNGI understood that workflow and communication processes among personnel and departments must be lean, seamless, reproducible and measurable.
- **Patient-Centered Healthcare:** The patient and family experience should exceed expectations from the moment they entered the center until discharge. Throughput had to be coordinated with excellent staff interactions to influence documented patient satisfaction.
- **Timely Healthcare:** The delivery of timely healthcare requires minimizing wait times to see a provider and receive services.
- **Efficient Healthcare:** Meeting the desired outcomes would involve managing provider workflow (i.e., who is needed where), as well as the logistics of managing supplies, minimizing wait times, maximizing room turnover, and minimizing waste.
- **Equitable Healthcare:** MNGI understood that for healthcare to be equitable, it must be delivered consistently from patient to patient and from encounter to encounter. As processes were defined, they would need to be repeatable regardless of the patient population being treated.

Evaluating what it means to provide “quality” goals while continuously improving healthcare delivery, it was clear that MNGI could no longer rely on old technology such as placing a patient into an exam room and manually extending “room status flags” above doors to manage status and flow. Flag systems, which often are forgotten by staff, had proven to be inefficient. For example, moving a flag in or out of position may result in an available exam room going unused or a patient waiting longer than needed.

Designing a new facility provided MNGI with the opportunity to address these quality concerns and implement a system-wide solution to manage healthcare delivery in a customized manner, while exceeding current standards of care. MNGI’s Site Administrator, Laura Reinke, RN, and her design team, looked at all potential technology options for their new facility and selected the Provider Ambulatory Solution.

THE JERON PROVIDER AMBULATORY SOLUTION

The Provider Ambulatory Solution uses automated alerting technology to guide providers, patients and workflow. A team including a Registered Nurse from Jeron, worked closely with MNGI to customize a solution to meet their goals. By utilizing lean management concepts in the design process and best practices for technology implementation, this would enable staff adoption and hardwiring.



The solution includes **large displays in key staff locations**, such as the nurses' stations and dictation rooms, which give caregivers a complete, real-time view of the status of all of their rooms including patient and provider locations, outstanding workflows, and housekeeping requests, along with any urgent patient or staff calls.

Multicolor dome light indicators outside of each exam or procedure room lets staff simply look down the corridor to see action items, presence, or requests. The dome light indications tell providers:

- *If a room is occupied by a patient*
- *If a patient is in a procedure*
- *When there is a provider in the room and the provider type*
- *Where a specific provider is needed next*
- *If a room is clean or needs cleaning*
- *If there is an emergency or code event in the room*
- *Where a particular supply is needed during a procedure*
- *Patient's current status within the workflows of their visit*
- *Status of procedure and when a procedure is complete*



Touchscreen displays facilitate workflows between areas. The displays are used to expedite moving a patient into the care area. Immediately after a patient is registered, the receptionist reserves a room assigned to a particular physician. The system alerts both the nurse and provider that the patient is ready to start the rooming process by indicating when a patient has been checked-in and is waiting to be roomed.



Inside exam and procedure rooms, there are multi-button or touchscreen devices. From these stations, each push activates a step in the care process assuring consistent and timely care delivery. The buttons support rooming a patient, requesting a specific provider to visit the room, calling the front desk, alerting staff to an emergency situation, and much more. The workflows are customized and scalable to meet the needs of different areas within MNGI. The one-touch operation allows staff to relay their needs to other team members without wasting time or leaving their patient.

In the infusion and peri-endoscopy areas, patients are given controls for both the television and to summon and communicate with their caregivers.



BENEFITS IN CARE DELIVERY

The Provider Ambulatory Solution met MNGI's goals for delivering quality patient care in many ways that they had not anticipated when starting this project. Based on the framework of the six domains for measuring quality healthcare, the system supports goals for:

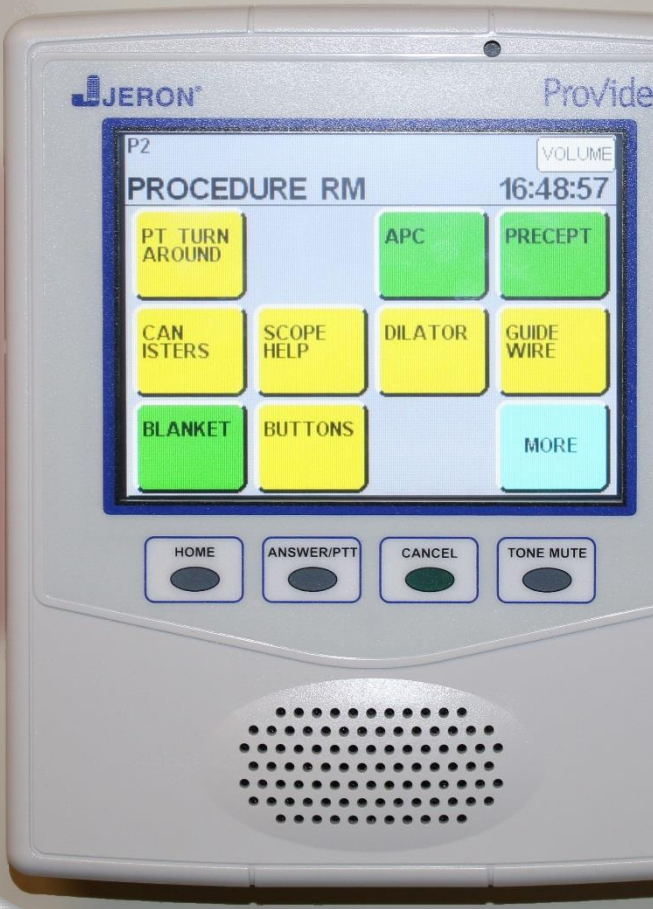
Safety:

Potential emergency situations have a proactive plan throughout the facility. With a push of a button, the system delivers critical alarm information in plain language to display in key staff areas and outside of every patient room. Code Blue and Rapid Response alerts in patient areas with distinct alarm tones and light illuminations, as well as clear overhead annunciations, quickly notify all staff to the urgent call. Workflow buttons in each treatment and procedure room identify when the room is dirty or clean; maintaining cleanliness and monitoring infection control practices. Direct alerts from patients notify staff if they are in discomfort or pain, in accordance with MNGI's pain management protocol. The system helps minimize potential falls due to reduced response times.

Effective:

Customized workflows are now in place. For example, a specimen management alert workflow notifies the lab when a specimen has arrived supporting immediate handling and processing, minimizing lost samples, and automating the log-in process. The workflow features eliminate time-wasting steps and phone calls to relay important workflow events. By putting real-time information in front of staff, they can respond to queries from anywhere in the facility.

EXAMPLES OF WORKFLOW BUTTONS



“PT TURNAROUND” is a multidisciplinary response that quickly ends an upper GI and preps for a lower GI. In the process, the patient is repositioned.

“APC” stands for Argon Plasma Coagulation, which is a chemical to control bleeding. The button calls for an RN to dispense it during a procedure.

“DILATOR” button notifies staff that a specific piece of equipment, including size, is needed during a procedure.

“BLANKET” button calls for warm blankets. It goes directly to the location of the blanket warmer.

Patient-Centered:

Improved patient throughput, reduced wait times, streamlined procedure timing, and more staff time with patients all supports high patient satisfaction. In the infusion and peri-endoscopy areas, patients can alert and communicate directly with staff who, in turn, can assure patients that they have acknowledged their call and assistance is on the way.

Timely:

Stations instantly alert staff to the needs of a patient or staff in that room, streamlining response times. The multiple modes of alerting (wall displays, dome lights outside of each room, and wall-mounted touchscreens) ensure staff are quickly notified of any event. In addition, when staff are not near a display, an automated overhead page into key staff areas alerts them to an outstanding workflow.

Efficient:

Utilizing the improved workflow processes, a single person responds to a need where previously up to six different MNGI staff members would respond, causing an unsafe and ineffective ripple in other care areas. In the procedure area, the circulating RN knows the status of all rooms and all procedures by viewing an application on her PC. A Registered Nurse no longer works in the reception area after hours for patient pickup. An outside doorbell alerts through the system, that someone is at the door.

“Eliminating the need to staff an empty waiting room saves us over \$10K a year.”

Laura Reinke, RN
MNGI Site Administrative Director

“One of the remedies of roomed patient wait times is that staff knows what is needed before going to the exam room...saving us 8 minutes per patient.”

Laura Reinke, RN
MNGI Site Administrative Director

Buttons in procedure rooms allow MNGI to manage equipment and supplies in a lean manner which reduces costs without compromising care or workflow. Streamlined processes also support the same care standard with better throughput while requiring one less RN in endoscopy, allowing them to use these staff resources elsewhere.

Equitable:

The system organizes workflow assuring care delivery according to standards. The system supports providers seeing their patients in the order they were scheduled and roomed, while indicating how long a patient has been waiting in a room.



MOVING FORWARD

Jeron works closely with MNGI to continuously improve the efficiency of their operations by reassessing ongoing needs to implement new, and fine-tune existing workflows. With each operational day, MNGI's leadership has found additional ways to deliver quality care to their patients. One of the tools they will be using is the Provider Reporting option.

The care measures they will be able to analyze will include:

Physicians "Time at the Bedside" measure for accuracy in billing. This allows for evidence-based billing and avoids risk of inaccuracies.

The collected data will be used as a parameter for their future staff incentive program.

Nurse management can monitor benchmarked times for patient length of stay along with the process steps for each workflow. They will use the data to improve performance as needed and will endeavor to increase the number of procedures performed per day, ultimately growing revenue.

Another consideration will be to integrate physician phones to the system, which will allow one-touch messaging and simplified mobile communications.

Minnesota Gastroenterology continues to build upon their reputation as one of the leading endoscopy and ambulatory care centers in the Midwest, and the Provider Ambulatory Solution is now an integral part of their direction.

