PATIENT FLOW *quarterly*™

CENTRALIZED INTELLIGENCE

Command Centers yield big patient flow outcomes.

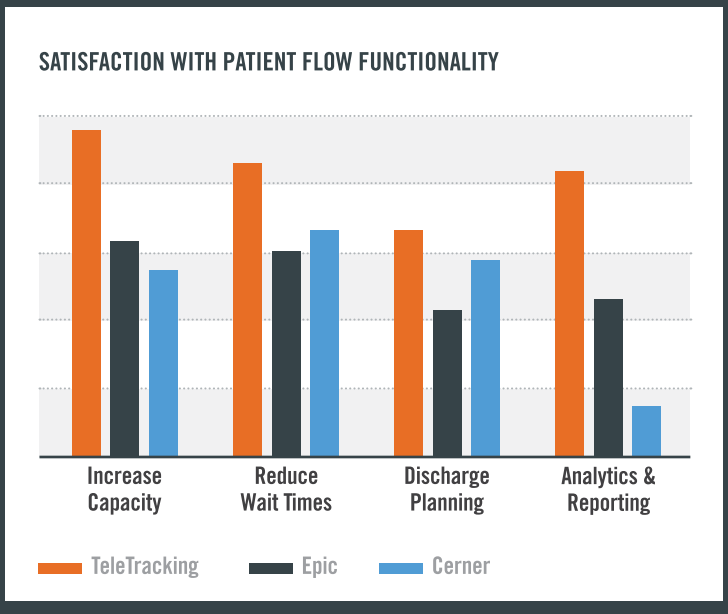
SUMMER 2017

A QUARTERLY PUBLICATION FROM TeleTracking

CALL IT WHAT YOU WANT

(so long as it's about the patient)

In the past month, new research published by KLAS named TeleTracking the highest rated overall patient flow vendor.[1] To many of our clients and industry collaborators, that likely comes as no surprise. That said, what made this study particularly interesting was the inclusion of patient flow outcomes as part of the ranking methodology. With those added measures, from discharge efficiency and capacity creation to analytics and reporting, TeleTracking again outperformed the competition.



Source: Patient Flow 2017 - No Reason to Wait, KLAS June 2017

Not only does this validate the investment we've made in partnership with our clients over the past 25 years, but it also signifies a growing understanding that a focus on patient flow as a strategic imperative can yield extraordinary results. In this issue of Patient Flow Quarterly, *we feature some of the many clients who share in that belief—and as a result, are serving their patients and communities better than ever before. They are among more than a hundred health systems that have adopted a centralized operational model anchored by our technology, best practices and support teams.*

Whether you call it a Command Center, Logistics Center, Operations Center, Placement Center, or any other name—it doesn't really matter. So long as it's about the patient; so long as it's about ensuring that care is delivered at the right place, in the right setting, with the right care team, at the right time, you can call it whatever you want. Irrespective of preferred naming conventions, I would be remiss if I did not credit our clients and their exceptional engagement as we push the boundaries of what a true operational command center can mean for patients, staff and the timely delivery of care.

This one is for you.

KRIS KANETA
Managing Editor
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[1] *http://bit.ly/TeleRanking*

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SUMMER 2017

A QUARTERLY PUBLICATION FROM TeleTracking

Award-winning health systems are establishing Operational Command Centers to expand access to care across their systems and patient populations. Command Centers "turn on the lights," so you can assess your system in real-time, predict and manage demand, and proactively assign the right resources.

WHAT'S *HAPPENING*

A quick look at what's driving our industry and our work together going forward.

01. TeleTracking was named as the clear leader for overall performance in a new study, *Patient Flow 2017 - No Reason to Wait*, released by KLAS on June 26, 2017.

02. Jackson Health System in Miami was featured in *Health IT News*, "Using Data to Drive Process Improvement and Enhance the Patient Experience."

03. The Royal Wolverhampton NHS Trust won the first ever Carter Innovation Award in recognition of their work related to decreasing day-of-operation cancellations by 60 percent.

04. Learn from the successes our customers by listening to recent episodes of Patient Flow Podcast at **podcast.teletracking.com**.

05. Don't forget to register for the Client Community. The Client Community is designed to enhance your experience with TeleTracking by opening up new learning opportunities and two-way conversations with other TeleTracking users. Visit **go.teletracking.com/community** and get started today!

EVENTS

Join TeleTracking at one of these upcoming events and learn about our KLAS category-leading patient flow solutions while sharing ideas with other professionals.

TRANSFORMING PATIENT ACCESS: A HEALTHCARE EXECUTIVE FORUM (SITE VISIT TO SHARP HEALTHCARE)

SEPTEMBER 7 & 8, 2017
THE HYATT LA JOLLA AVENTINE, SAN DIEGO, CA

Learn how health system executives are achieving impressive gains in patient access, community relations and system growth.

For more information:
go.teletracking.com/sandiego

TELETRACKING ANNUAL CLIENT CONFERENCE

OCTOBER 22-25, 2017
SHERATON GRAND AT WILD HORSE PASS
CHANDLER, AZ

Join us and hundreds of your peers from around the globe to network, share best practices and success stories, and learn about the latest product developments. There is no fee to attend.

For more information:
conference.teletracking.com

September
7 and 8, 2017

The Hyatt
La Jolla Aventine

San Diego, CA

Learn how health system executives are achieving impressive gains in patient access, community relationships, and system growth.

During this executive forum, your peers will discuss their innovative Operational Command Centers, which streamline patient intake and throughput, improve discharge workflows and provide system-wide visibility.

Learn what Command Center elements are key to driving patient outcomes, how to overcome organizational obstacles, and what returns on investment you can expect.

On Friday, September 8th, there will be a site visit to Sharp HealthCare. TeleTracking will provide transportation to/from Sharp's Patient Placement Center.

This is an intimate, interactive forum, and seats are limited.

Who should attend:
CNOs, CMOs, COOs, CIOs, VPs & Directors of Patient Placement, Patient Access, Patient Logistics, Operational Excellence / Lean, Continuous Improvement, Physician Liaisons, etc.

FOR MORE INFORMATION AND TO REGISTER, VISIT:

go.teletracking.com/sandiego

DIGITAL INNOVATION FOR PATIENT FLOW EFFICIENCY

Insights from Bernard Quinn

Q IT-enabled innovation is a topic heard frequently in the NHS. Why do you think IT innovation is taking on such importance? Is this a new emphasis?

A Globally, health services are challenged by the rising demand that is driven by developments in diagnostics and treatments, the impacts of lifestyle choices and increasing life expectancy. What this means is that we have to be smarter about how we deliver the best quality care to the people that need it. Digital innovations can help with simplifying processes, improving flow through the system and delivering better patient outcomes.

Q What barriers stand in the way of the NHS embracing IT-enabled transformation and what can be done to overcome them?

A IT-enabled change has progressed well in clinical environments such as radiology, but less when it comes to operational processes. One barrier is the mind-set that digital is for IT employees, but 'not for me.' Another one can be taking time out from a pressured work schedule to explore and implement digital-enabled change—remembering that short term inconvenience can have long-term benefits. On the other hand, some barriers are actually quality 'hurdles'—that before being considered, technology must demonstrate that it works, is safe, and delivers the cited benefits for patients and staff. Our goal is to always support care providers finding, piloting and sharing the digital innovations that we have evidence of that work and are transferrable.

Q There are different definitions of efficiency. How do you define efficiency in regards to the NHS and how does it impact quality of care?

Efficiency for me means good quality, effective, patient-centered clinical processes. If we get each of these components right, it will mean great care, efficient use of clinical resources and better outcomes for patients. Waiting for a bed—or once in one—for test results is not good quality, effective care or an effective use of staff and facilities. Either is waiting for an operation or to be discharged.

Q You were recently asked to speak at the Hospital Innovations Conference in London around digital outpatients in the NHS. What is the NHS Improvement's role in supporting Trust's in adopting and sustaining IT solutions?

A We are focussed on improving outcomes for all users of our health services. That includes keeping track of users expectations and determining where we can do more in the digital space. Eighty-eight percent of the population is connected digitally—but only 2% report a digital interaction with the NHS. In a world of smartphones and tablets, where booking a flight or delivery is a click away, the NHS could do much more to be receptive to our customer's needs. Online appointment booking is not just easier for the public, it helps to ensure all clinic slots are used, can save £millions in postage—in addition to freeing up staff time to provide more value-added support. It can also be the gateway to digital pre-assessment, follow-ups and access to condition specific guides and videos.

Q What are some of the major areas of impact that you are looking for the pilot sites to achieve? How does this align with creating a sustainable healthcare model for the NHS?

A We are looking for the patient flow pilots to recreate the benefits seen elsewhere—including reductions in four-hour A&E (accident & emergency department) delays, fewer operations cancelled due to lack of available beds, a reduction in medical outliers, faster bed turnover, more clinic staff time and better inter-hospital transfers for priority diagnoses like cancer. For digital outpatients we want to see every hospital have at least one clinic area where a digital alternative to a face-to-face appointment is available.

*** In April 2017, under Bernard's leadership, NHS Improvement launched five NHS provider pilot Trusts that will use TeleTracking to improve quality of care.*

BERNARD QUINN
Director of Operational Performance for the United Kingdom's National Health Service [NHS] Improvement

Bernard also serves as the program director for the delivery of the 2016/17 national elective care improvement plan. His responsibilities include working with the Department of Health, the Prime Minister [No.10] and the National Health Service Employees [NHSE] to assess and implement the necessary innovations—including pilots—that the NHS needs to put in place for the most challenged systems. Part of Bernard's role is to foster the testing of pilot-service innovations.

PATIENT VOLUMES ON THE RISE

Exponential increase in access to care through new transfer center.

The Transfer Center at Baylor Scott & White Health opened as a way to manage patient transfer requests from hospitals who expressed difficulty in transferring patients to the flagship campus, track the number of patients being turned away and the revenue lost in doing so, and to ultimately keep patients within the system versus losing them to the competition.

HOW IT HAPPENED:

- A steering committee came together to discuss options
- The committee visited a number of transfer centers
- The decision was made to implement technology
- A small department of RNs and a director to manage inpatient requests opened in 2009

Since then, the center has grown—serving 12 campuses and managing patient placement for four campuses. Transfer volumes have grown from 1,771 in FY2010 to 12,016 in FY2017.

"We had little idea how much volume we were losing and why."

Elisa Ayers, Director of Patient Placement Center, Baylor Scott & White Health

BY THE NUMBERS:

- Largest not-for-profit healthcare system in Texas, and one of the largest in the U.S.
- Born from the 2013 merger of Baylor Health Care System and Scott & White Healthcare
- 48 hospitals
- 5,439 licensed beds
- 48,000 employees
- 9,600 physicians
- 1,006 patient access points

CHALLENGES:

- Competition in the Dallas market
- No standardized vision or process for managing patient transfers
- Lack of understanding about patient transfer population—requests, accepts vs. declines, market leakage, impact to bottom line, etc.
- No technology or process in place — were using MS Word and Excel to track requests
- Tipping point occurred when community hospital expressed concerns about getting patients into the flagship campus

ACTIONS:

- The transfer center opened in January 2009 and was designed to streamline and improve the patient transfer experience for patients, physicians and hospital staff.
  - *Open 24x7x365*
  - *Initially staffed with a director, a medical director, six RNs and two clerical staff*
  - *Reported up through care coordination umbrella*
- Had to build trust and overcome obstacles related to:
  - *Staff who were not convinced a new process was warranted*
  - *Physicians who were concerned that referral patterns may be broken*
  - *Hospitals were concerned that patients would not be evenly distributed across the systems*
- Established an executive steering committee to oversee the transfer process and strategy — inclusive of hospital CEO's, CMO's and CNO's.
- Partnered with marketing to target community communications
- The transfer center looks very different today than it did in 2009:
  - *Open 24x7x365*
  - *Staffed with a director, medical director, 16 RNs, eight room control coordinators*
  - *Managing transfers for North Texas Division (12 hospitals) and centralized patient placemen for 3 campuses*
  - *Reports to the system CNO*
  - *Resides in a neutral location*

RESULTS:

- Metrics that are regularly reviewed include:
  - *Volume by campus and service line*
  - *Volume by referring hospital FY2017*
  - *Abandoned call rate*
  - *Self-pay transfers by campus*
  - *Case contribution margin*
  - *Lost transfers by campus and transfer nurse*
  - *Turnaround times for inpatient and ED transfers*
- 600% increase in transfers from 2010 to 2017

PUTTING COMMAND CENTERS ON THE MAP

To date, more than 100 health systems across the US and UK have established Command Centers to coordinate care across their systems, expand patient access, and continually improve outcomes.

WEST

SHARP HEALTHCARE

San Diego's leading healthcare provider. Centralized patient logistics system-wide to improve throughput and reduce overcrowding in its emergency departments. Achieved bed turnover time of under 60 minutes at all Sharp facilities, and are admitting an additional 840 patients per year.

UNIVERSITY OF UTAH HEALTH CARE

Major regional referral center for Utah and seven surrounding states. Established transfer center to increase capacity, manage care transitions, and improve physician and patient satisfaction. Achieved an additional 620 transfers per year, representing a 90 percent reduction in diversions and $19.7 million in additional annual revenue.

UNIVERSITY OF NEW MEXICO HEALTH SYSTEM

New Mexico's cornerstone academic medical center. The CMO championed the project to improve community health and expand patient access. UNM increased inbound transfer acceptances by 40%—while securing beds for ED patients 173% faster.

SOUTH CENTRAL

OKLAHOMA UNIVERSITY MEDICAL CENTER

Oklahoma's largest and most comprehensive hospital, including the state's only Level I Trauma Center. Brought Transfer Center in-house to expand patient access to OUMC. Increased transfers more than 500% over six years.

BAYLOR SCOTT & WHITE HEALTH

One of the largest not-for-profit health systems in the US. Built its Transfer Center to streamline and increase referrals, and gain visibility into transfer populations, referral patterns, and ROI. Increased transfer volume more than 600% since Transfer Center established.

SOUTHEAST

BAPTIST MEMORIAL HEALTH CARE

Largest non-profit healthcare system in the mid-South, and named one of Becker's 100 Great Hospitals in America. Centralized patient flow to expand patient access across its large service area and increase market share. Bed availability and throughput improvements have led to an ED hold hour decrease of 52% at the flagship hospital, while system ED volume and patient transfer volume have each increased 15%.

NORTHEAST

CARILION CLINIC

Six-hospital system in Virginia serving nearly 1 million people. Established transfer and communications center to improve patient care, quality, and throughput, and break down internal silos. Increased transfers at secondary campus by 40%, increasing utilization there while freeing up capacity at main campus.

NEW YORK-PRESBYTERIAN

One of the nation's most comprehensive, integrated academic health care delivery systems. Built its patient placement operations center to address long wait times and move from a reactive to a proactive state. In three months, increased ED admissions by 69 patients per month on average, while cutting ED boarding hours by nearly a third.

NORTH CENTRAL

OHIO STATE UNIVERSITY WEXNER MEDICAL CENTER

Ranked among the top academic medical centers in the US. Established Transfer Center to manage increasing volume. In six months, achieved a 45% decrease in time from initial call to arrival for external transfers, and a 42% decrease in diversion hours at Main Campus.

UIC MEDICAL CENTER

Part of the University of Illinois at Chicago, and the state's largest public healthcare facility. Established centralized patient access and placement to expand capacity, increase market share, and improve patient care. Accepts 400 patients/month, up from an average of 100 patients/month—while reducing boarding hours by 40%.

MCLEOD HEALTH

Seven-hospital system serving nearly 1 million people in North and South Carolina. Established its Transfer Center to gain enterprise visibility, improve throughput, and increase transfer volume. Transfer volumes have more than tripled since the center's inception, and transfer case acceptance times have dropped from 90 minutes to 21 minutes.

UAB MEDICINE

1,157-bed academic medical center, and the only magnet designated hospital in Alabama. Created Center for Patient Flow to expand patient access, provide timely care, and transform health system operations. Increased accepted transfers from 59% to 76%, decreased diversion from 60% to 19%, and decreased LOS by nearly a third of a day.

UK

THE ROYAL WOLVERHAMPTON NHS TRUST, WOLVERHAMPTON UK

One of the largest acute and community providers in the West Midlands. Established its Care Coordination Centre to improve timely access to care. Achieved improvements in multiple areas: 25% reduction in number of breaches in ED due to bed availability, 61% reduction in number of cancelled operations due to bed unavailability, 126 hours additional bed capacity per day due to bed turn efficiency, and an 11% reduction of medical ALOS in a 19 month period.

C-Suite & Success

STORY BY BY SCOTT NEWTON, DNP, RN, MHA, EMT-P

Design and Implementation of Operational Command Centers

Health systems are focused on delivering timely, quality patient care—while also creating a positive work environment for clinical and administrative staff. In today's operating environment, achieving these goals can be challenging—however, Operational Command Centers provide the tools to make these goals a reality by emphasizing the operational piece of health care. A command center changes the culture, centralizes functions and improves communications—resulting in the greater accountability and visibility that contributes to positive patient outcomes, expedites transfers and referrals, increases hospital admissions, reduces system leakage, strengthens referral patterns, enhances physician satisfaction, and ultimately improves the financial bottom line.

These benefits go across all levels of the health system—and the same is true for each position in the C-suite. When these executives are engaged, driving change through their teams, and creating a culture focused on best practices, the health system is stronger because of it. It's important to understand the personas and priorities of each of these positions within your system so your command center can be the most it can be for all invested and impacted.

CHIEF OPERATING OFFICER

Chief Operating Officers oversee facilities and operations—everything from the actual building to the equipment to working with physicians and managing requests. Their day includes fielding calls from physicians when they can't schedule operating room time or when a patient is still sitting in the emergency department 12 hours later. They look at the physical structure of the building—and at latent capacity—and how that can be optimized to enhance patient care. COOs look at the venues of care delivery, and how it has shifted from inpatient to outpatient, and consequently how space can either be optimized or if a plan needs to be developed to expand the system's footprint. A command center provides COOs with transparency, visibility and access to real-time and trended demand for care. It results in fewer calls related to operational issues, happier physicians, strong workforce retention and enhanced ROI due to the efficient use of space and effective processes.

"Standing-up a system-wide Patient Placement Center, where we centrally manage all patient transfers in every hospital, has allowed us to better manage patient flow and overall capacity."

DERICK ZIEGLER, VP OF REGIONAL OPERATIONS, BAPTIST MEMORIAL HEALTH CARE, TN

CHIEF EXECUTIVE OFFICER

The Chief Executive Officer is responsible for all aspects of the health system and is accountable to the board and trustees. They are responsible for every person who walks through the doors—both patients and employees. CEOs drive the economic engine that a health system plays in any given community. These leaders are also responsible for leading critical operational decisions —such as land planning, waste management, expenses and spending, workforce stability, community affairs, publicly reported metrics, long-term strategic planning and being the protector of the brand.

A command center makes it possible for your CEOs to have immediate feedback by putting systems, controls, and feedback loops in place. They can see the services that are growing, which ones are right sized, and what services can be transitioned to alternative points of care and done in a simpler way. With visibility and trust, the command center provides objective data indicating if the system is meeting, exceeding, or is off target with core metrics.

CHIEF INFORMATION OFFICER

Chief Information Officers are looking for timely, actionable data, interoperability across platforms, consistent up-time, and turnkey implementations—along with the ability to reduce redundancies, clear disaster planning processes, and a strong frontline of people to provide support. A command center helps them deploy the right systems and in turn provide the right types of actionable data to drive best practices. It also provides insight into the demands being placed on the systems that are being deployed and the direct impact that technology can have on patients. And since a command center works as the central hub, it's possible to deploy a scalable ecosystem across an entire health system.

"By centralizing bed management, we have seen improved communication between providers, care coordination for our patients, and can identify and plan for emergent, as well as non-emergent, admissions. ED patient wait times and admission wait times have been significantly reduced, enabling us to take better care of our patients more efficiently. We have also seen improvement in the accuracy and efficiency of patient placement by identifying the appropriate level of care prior to admission. These key metrics work together to reduce the patient's length of stay, increase bed occupancy, and improve overall operational efficiency."

SKIP ROLLINS, CHIEF INFORMATION OFFICER, FREEMAN HEALTH SYSTEM, MO

CHIEF MEDICAL OFFICER

The Chief Medical Officer is focused on improving system performance, facilitating medical staff interactions with the hospital's administration and governing board, and engaging staff members in quality initiatives. They deal with issues related to getting patients into the system, and then making sure they progress to the next level of care. A command center helps physicians anticipate those needs, and lets them stay focused on their clinical responsibilities, unburdening them from non-clinical tasks. A command center helps the CMO put the proper processes in place so patients can navigate through the system and receive the proper standards of care. It helps them create a closed loop system between acute care and community care. Finally, it helps with long-range strategic planning—for example, they can look at shifting population needs, like an increase in diabetes, and ensure that there are enough endocrinologists to effectively serve these patients. This leads to quality outcomes for patients, especially for the most vulnerable populations.

"Having an operational command center has allowed us to say "yes" to a greater number of patients. We can do this because we triage to the most appropriate level of care by using our community partners to care for patients who do not absolutely need a quaternary care center. This is a win for the patients who get the appropriate level of care for their illness without long delays. Our physicians at UNM are able serve the mission of taking care of the sickest patients in the state."

DR. IRENE AGOSTINI, MD, CHIEF MEDICAL OFFICER, UNM HEALTH SYSTEM, NM

CHIEF FINANCIAL OFFICER

The Chief Financial Officer is responsible for the dollars and cents of the organization—the key person for verifying that the right amount is spent for the right return. From a staffing perspective, they want to be sure people are well equipped to do their jobs and can adapt to micro-changes in the organization—both of which have an exponential effect on efficiency. When the experts can be experts, they have increased potency in delivering care.

The goal is to not waste patient and clinician time. And that's because anytime a patient waits, outcomes are negatively impacted and satisfaction rates go down. And if those rates go down, reimbursement can be affected. It is also known that when patients wait, they can become sicker and it costs more to care for them. The commend center helps accelerate decision-making process and workflows, so results can be seen quickly. It also helps with bringing the right patients in—where their needs align with the services the health system can deliver. The ability to access significant amounts of data also helps with the decision-making process for both small and large projects.

CHIEF NURSING OFFICER

CNO's are responsible for one of the largest workforces in a health system, and so it's paramount for them to understand where their patients are because they are focused on delivering excellent patient care. They want to be good stewards for their nurses, being respectful of their time and talent while upholding accountability to the high standards of the profession. With access to data that provides tracking and trending visibility, it's possible for them to understand the acuity of the hospital in aggregate, so they can staff for it. It helps answer questions such as—how many nurses do I need, are we placing and deploying them in smartest way to meet patient needs, how do I attract qualified staff, and how do I retain them? It provides deep awareness, allows them to be proactive in managing staffing and workforce wellness, as well as managing purchasing budgets and fleets of equipment. Most importantly, a command center enhances effectively meeting the needs of the patients across the health system.

"Centralizing operations has enabled us to see bed availability across our system at any given moment. Because our system is located across three states, knowing that we may need to move a patient to a bed that we know is available has saved us time and resources."

SUSAN FERGUSON, VP/CHIEF NURSING EXECUTIVE, BAPTIST MEMORIAL HEALTH CARE, TN


AMBULANCE

TAKING COMMAND
IMPROVING ACCESS
ENHANCING OUTCOMES

STORY BY PAUL A. HASKINS, MD,
MEDICAL DIRECTOR OF CARILION CLINIC'S TRANSFER
AND COMMUNICATIONS CENTER

It's the challenge every health system faces—how do you find ways to increase access to care, enable precision placement, and create improved patient outcomes? We certainly did at Carilion Clinic, and I've faced it many times over my 20-year career as an emergency medicine physician.

Here at Carilion, we are the only Level 1 Trauma Center for 150 miles in any direction, and we also have a Pediatric Emergency Department. We manage this steady flow of patients through the Carilion Clinic Transfer and Communications Center (CTaC), where we are responsible for facilitating patient transfers into and out of our system; ensuring the ease of patient admissions; addressing EMTALA issues; and spearheading the policies that improve patient flow and communications through the system. In fact, our CTaC is recognized as a national model for best practices.

ABOUT CARILION CLINIC

- Not-for-profit health care organization based in Roanoke, VA
- Hospitals: 7
- Licensed Beds: 1,026
- Annual Admissions: 50,399
- ED Visits: 167,211
- Physicians: 696
- Specialties: 76+
- Practice Sites: 209
- Employees: 12,800
- Accredited by The Joint Commission
- Top 5 Hospital in Virginia by *U.S. News & World Report* (Carilion Roanoke Memorial Hospital)
- Consumer Choice No. 1 by National Research Corporation (ninth consecutive year, Carilion Roanoke Memorial Hospital and Carilion Roanoke Community Hospital)

01. COMMAND CENTER OVERVIEW

Let's start by defining what a command center is. A command center helps break down system-wide silos and brings together disparate groups. For example, our CTaC is comprised of: Patient Placement, Transfer Center, Case Management, Patient Transport, Environmental Services, Behavioral Health Call Intake and Ambulance/Helicopter Dispatch—all staffed 24x7x365 under one roof.

From a physical perspective, it is an assigned space that brings together hardware and software to provide system-wide visibility and transparency. This technology-driven system replaces what were previously manual tasks—white boards, phone calls, and paper orders. It basically looks like something from NASA—banks of computer screens in one room allow teams to easily determine what patients are coming into the system, what rooms are available at each hospital, and where each patient should be moved or placed in order to receive the care required—greatly enhancing the ability to do precision patient placement geographically or by service.

The CTaC is staffed 24x7x365 and is comprised of patient placement, transfer center, case management, patient transport, EVS, behavioral health intake and air & ground dispatch.

This structure gives us an unprecedented level of responsiveness, with everything occurring in real time. It also gives us a level of transparency so we always know when patients are coming in/going out—and can predict the times that will be busier in order to effectively staff for demand. Just as importantly, changes can be easily communicated across departments—and we know that when patients receive more rapid placement, care commences sooner, leading to better overall outcomes.

The integrated approach, and the extensive data driving it, enables the command center to serve as the source of truth for data and analytics for the entire health system. It is a truly synergistic approach between people, process, and technology.

02. PRE-CTAC — BARRIERS TO ACCESS AND THROUGHPUT

Carilion Clinic is responsible for serving the healthcare needs of more than one million Virginians—prior to the build-out of the CTaC, we were dealing with barriers to patient access and throughput that impacted our ability to serve these people. We were experiencing increasing patient volumes—but did not have enough beds to accommodate them. This, in turn, created a stressed, over-extended workforce, as well as dissatisfied patients and families due to inefficiencies. As a first step, we needed to determine what was the best approach to rollout system-wide—not just what was best for individual hospitals and physicians.

We were also dealing with length-of-stay issues that were inhibiting our ability to bring in new patients. One of the first components of this challenge that needed to be addressed was determining the services that could be administered on an outpatient vs. inpatient

basis—which would in turn free up capacity. In addition, there were a variety of different portals leading into the system—and when a hospital is between 95 to 98% capacity this can be extremely dangerous, especially with time-sensitive medical issues.

03. *CTAC GOALS AND IMPLEMENTATION*

After a fact-finding period, the decision was made to create the CTaC in 2011 to address the access and throughput issues. With that decision, three core goals were established:

- Seamless entry of patients into the health system
- Coordination of the safest, most appropriate transport of patients
- Efficient management of hospital throughput needs

We were fortunate to be given the physical space previously occupied by the hospital library—a semi-circle layout that works perfectly from a collaboration standpoint. We worked closely with a space planner to maximize the floor area to create strong collaborations between nurses and dispatchers, as well as allowing for the proper space for monitors and dashboards. In fact, due to the success of the center, and increasing needs, we are in the process of moving to a new, larger 4,400 square foot, off-site space.

The physical space was previously occupied by the hospital library —now the semi-circle layout promotes collaboration between clinicians and dispatchers. Due to the success of the CTaC, and increasing needs, the Center is in the process of moving to a new, larger, 4,400 square foot, off-site space.

Another key to our success was engaging our staff, since this new workflow was a significant change for them. Open communication, including having everyone who would be impacted involved in the planning, was an important first step. Transparent communications were also essential to overcoming other adoption challenges that included:

- **INITIAL PHYSICIAN RESISTANCE:** Physicians are dealing with more patients, with more complicated conditions. We were able to prove to them that the flow of patients is longer and more complicated than it was in the past and that this approach would give them more time at the bedside.
- **PATIENT PLACEMENT CONCERNS:** Communicating how a command center can help determine which patients are coming in and where they need to go—which is a critical tactic in helping to decrease patient length of stay.
- **ACCESS TO DATA:** When people saw the level and timeliness of data and that short-term operational decisions and long-term strategies could be made based on the data, they embraced the new way of doing things.
- **TRAINING:** An extensive training program on both the actual software and the new processes and workflows was implemented.

04. BENEFITS

The CTaC opened in 2012 and the benefits were felt almost immediately. Multiple phone calls dropped to ONE call to place a patient. Not to mention the fact that the ability to have real-time capacity updates across all areas—and being able to predict discharge dates based on historical data—had a positive impact on throughput and customer service.

The benefits were especially significant for the emergency department, which had been the biggest point of congestion, including:

- The ability to see exactly how many patients are in the ED and where they're going, making it possible to know if the department will be ahead on beds/staffing or need to add to them.
- Allowing a helicopter to be instantly queued to launch in order to transport a critically ill patient from a referring hospital.
- Allowing for real-time ETAs and patient updates during transport.
- Preplanning is launched before a patient arrives in order to make sure the hospital has the right bed—leading to better overall outcomes because the right treatment starts sooner.
- Pre-planning the acceptance, as well as the mode of transport, thus removing the burden of transfer logistics

05. OUTCOMES

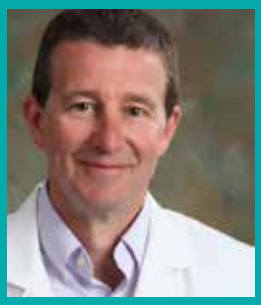
The outcomes to date have also been significant:

- Eliminating 30 minutes of wasted time per patient means beds become available 30 minutes quicker and overall length of stay decreases
- Using the metric of 1,900 admitted patients per month moving through the ED via the CTaC, translates to approximately 60,000 hours saved per month to care even for more critically ill patients, and 720,000 hours per year
- Real-time ER alerts make it possible to precisely place patients and open up space to treat more people—resulting in a 50% reduction in the time it takes to place a patient in a room.
- Year over year increases in transfer volumes, including a 40% increase in transfer admissions to the secondary campus.
- A decrease of .3 days in intensive care length of stay.
- The CTaC plays a central role in emergency operations and disaster management logistics at both the local and regional levels
- Positive impact on the six dimensions of quality outlined by the Institute of Medicine.
- A real-time dashboard for senior leadership to monitor patient flow and make short and long-term strategic decisions.

06. CONCLUSION

Providing exceptional care to patients and their families is at the heart of what we do—the CTaC helps us maximize our capacity to do that. By providing us with highly accurate, real-time data we are able to drive systematic change at our organization.

As a physician and an administrator, you certainly have your instincts—however, data is essential to having effective discussions that drive best practices and improvement around flow, transfer volume, length of stay, and precision placement.



PAUL A. HASKINS, MD
Medical Director of Carilion Clinic's Transfer and Communications Center (CTaC)

Paul is Board Certified in Emergency Medicine with 20 years of clinical experience, and is an Assistant Professor of Emergency Medicine for the Virginia Tech Carilion School of Medicine.

Sharp HealthCare and the Maturity Model

The journey to building a successful command center is a step-by-step process with key milestones along the way. San Diego's Sharp HealthCare started their journey more than five years ago and are well on their way to maturity—as well as being an inspiration to other health systems that are on their own journey to improve patient care.

BY THE NUMBERS

Four acute care hospitals
two specialty hospitals

1,500 beds

18,000 employees and volunteers

2,600 physicians

Magnet Designation at two sites

2007 Malcolm Baldrige Quality Award Winner

THE JOURNEY BEGINS

Sharp turned to TeleTracking in 2012 when looking to solve challenges related to asset management across their system. They liked the idea of being able to integrate patient and asset tracking technology with TeleTracking's Capacity Management Suite™ to improve patient flow—since that was also a priority. A system-wide group of leaders was involved in the due diligence process and conducted site visits across the United States. Janet Hanley was the Chief Nursing Officer at the time at Sharp, and given the impact these changes would have to her staff, she quickly became involved in the project.

Sharp was faced with a decentralized patient placement model; losing patients to nearby health systems; patients leaving emergency rooms without being seen; an inefficient discharge process which impacted capacity; a lack of standardization and adherence to best practices; and a deficiency when it came to real-time data, data inaccuracy and delayed reports—all of which contributed to the challenges that Sharp knew they needed to address in order to improve access to care.

It took a cross-functional, engaged team to drive this new way of doing business going forward with accountable executives, a planning team focused on workflow and design, steering committees, a marketing communications team and engaged users. The lead metrics they agreed to focus on included: expediting discharge to exit, exit to dirty, dirty to clean, admit order ready to move, ready to move to assignment of a bed, and assignment of a bed to occupying of a bed.

PROJECT KICK-OFF

To address those target improvements, the initial project ran from February 2013 – August 2013. Working closely with TeleTracking, the Sharp team re-designed workflows across all sites, built an off-campus placement/transfer center, looked at gaps in staff expertise and hired new team members accordingly. They also held meetings at each site to educate teams on the new culture of care, talked to physician groups about how this would benefit them, and educated everyone on how the technology would be integrated into existing processes.

The first hospital went live with Capacity Management Suite™ [CMS] in September 2013. And then with an aggressive rollout schedule in place, additional hospitals went live every other month with either CMS or Asset Tracking—in a mere 10 months, six hospitals were live, and Asset Tracking was live at all outpatient facilities. TeleTracking also helped Sharp launch their transfer center—with a strong team of experienced nurses, bed coordinators, and patient access advocates. At launch, the center was comprised of four people; it is currently staffed by 25 people and operates 24 hours a day, seven days a week, 365 days a year.

TRANSPARENCY

A key factor to both the initial success at launch, as well as the subsequent growth that Sharp has experienced over the years, has to do with system-wide transparency.

"We wanted everyone to be engaged with the new way of doing things, so we intentionally gave everyone access to the data—everyone could see what everyone else was doing and how they were doing it," says Janet Hanley, now Vice President of Patient Technology & Innovation.

"Initially this made people a little nervous and there were conversations about loss of control, and how could an off-site center possibly know what's going on at each site. However, people quickly realized the benefits of this off-site operational command center and how it was benefiting both staff and patients."

"It was incredibly helpful to always know what is going on at my site, Chula Vista, as well as the other sites because it puts things in perspective," adds Deanna White, Acute Care Director at Sharp Chula Vista.

THE EVOLUTION

The evolution of the Centralized Patient Placement Center [CPPC] was a key milestone in Sharp's patient flow journey. They noticed right away the impact that visibility across the system was having—it now took one nurse to do what previously took two nurses to accomplish. Another benefit to that system-wide visibility—and increased reporting capabilities—was the fact that they could take a predictive versus reactive approach to hospital operations.

For example, previously if a nursing home patient was coming for testing, and they weren't ready for them, they would either make them wait for the necessary service or in some cases, have to reschedule the case. The CPPC now knows the patient is coming and can plan for their arrival. Another benefit was repatriating patients back to Sharp.

"We have a team that looks at where patients are across the San Diego region, specifically facilities that have Sharp patients," says Hanley. "What used to happen is Sharp would be notified that a facility had one of our patients, and since we didn't have transparency across the system, we'd call the nearest Sharp facility to see if they had a bed. If they didn't, then the patient would stay at the other facility, until we did. Of course, we want the patients to get the highest quality of care. TeleTracking has helped us change this since we can now see bed availability across all of our campuses and a patient can be placed at one of the facilities that has an available bed."

PHYSICIANS . . . AND THE HIGH SEAS

Sharp works with a wide range of physician groups—however, that can become tricky to manage because not all physicians have privileges at all Sharp sites.

"When we went live with our transfer center, our volume increased to more than 1,000 patients," adds Hanley. "We were able to start capturing the patients that were bypassing our hospitals because we were saying no. We don't say no anymore, because we can look across the system to see if we have an open bed. Or we can say we don't have a bed now, but we will have one in a few hours."

Another unique aspect is that Sharp is the only designated facility in the entire western region equipped to handle a patient transfer when someone falls ill while travelling the high seas in the San Diego area—on a Navy ship or cruise line. Sharp uses TeleTracking's TransferCenter™ software to record and transfer these patients to one of their facilities depending on the level of care needed.

SETTING PRIORITIES AND THE CULTURE AT SHARP CHULA VISTA

Patient flow is one of the top priorities at Sharp—it's right up there with patient satisfaction scores. And, therefore, with any new initiative or improvement, the question asked is—will this truly making things better—because the focus is always on coming up with a standardized process for long-term improvement.

And for any new process or technology implementation, the starting place is always Sharp Chula Vista. They're known for their great culture—they help to set the tone for everyone else in the organization and in addition, the CNO is innovative and is always looking for the latest and greatest improvements because she knows it will make staff and patients better.

"The improvements our transport team has made is something I'm extremely proud of," says White. "They're centralized, they have a good reputation, they're helpful, and they've increased spirits and improved relationships. And, in addition to transporting patients, they're now transporting specimens to the lab, and are working with pharmacy to transport medications."

THE FUTURE AND PRIDE

Sharp is taking what they've learned and continuing to improve and refine. Patient Tracking is being rolled out at other sites, which is beneficial at the sites who don't have Transport Tracking.

Sharp is also rolling out a telehealth program and is considering using to the TransferCenter™ software to bring in patients, attach videos and documents, or even x-rays. It's pie in the sky now, but given that they've treated hundreds of patients outside the US it's becoming increasingly important.

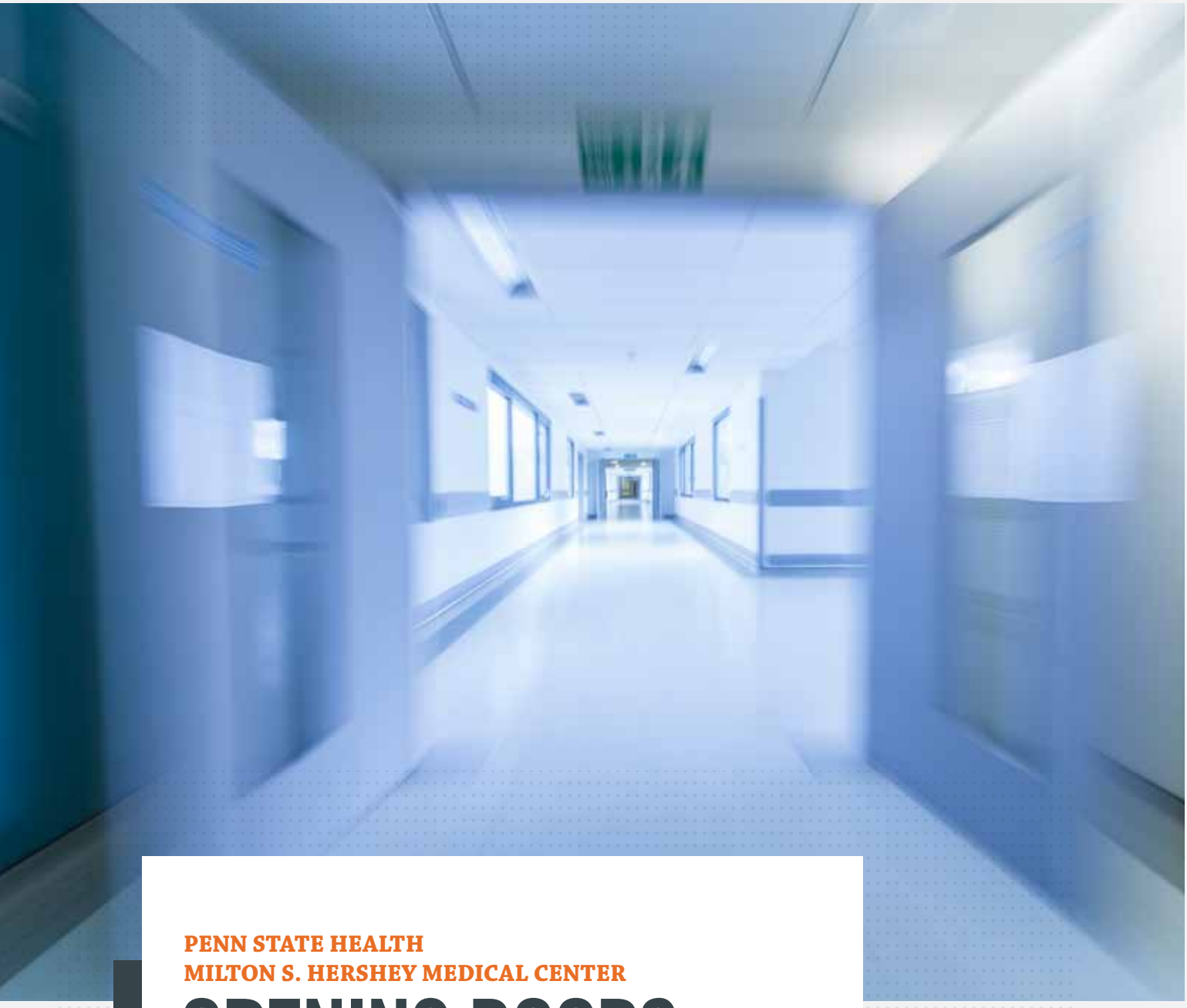
"I've been in healthcare and in many different roles for a long time," concludes Hanley. "However, I am most proud of making a difference in patients' lives. I'm also really proud of the CPPC and the people who work in the center because they interact with every hospital and most patients that come in—one way or another. And our facilities are definitely working much better together now, and that has a direct impact on patient care."

OUTCOMES

- ICU patient transfers to a lesser acute unit – a 73% reduction in transfer time (2016-2017)
- Discharge order to patient exit (2014-2016)
  - Sharp Grossmont: 290 to 246 minutes
  - Sharp Memorial: 460 to 351 minutes
  - Sharp Chula Vista: 471 to 397 minutes
- ED bypass hours – a 98% reduction (2014-2016)
- Transfer volume – an increase from 3182 to 4590 (2014-2016)
- Patient transport turnaround times – a 60% reduction (2014-2016)
- Dead bed time (the time a bed sits vacant) – a 70% reduction (2014-2016)

Janet Hanley has been with Sharp HealthCare for 29 years and is currently the Vice President of Patient Technology & Innovation where she is improving patient care through targeted technology.

Deanna White has been with Sharp HealthCare for 16 years and is the Acute Care Director at their Chula Vista location.



PENN STATE HEALTH
MILTON S. HERSHEY MEDICAL CENTER

OPENING DOORS, INCREASING ACCESS

Penn State Health Milton S. Hershey Medical Center, in Hershey, PA is a leading provider of specialized medical care in central Pennsylvania, and is the only hospital with dual adult and pediatric Level 1 trauma accreditations in the state. Before making patient flow a priority in 2012, Hershey was at critical capacity for years. As the volume of patients increased, it became more challenging to move patients through the system in order to accept new patients—especially those coming in as transfers. In addition, the system was decentralized—while calls were coming into one number, it took a series of steps to accept the patient and get them to the right place for the right care.

THE RIGHT SOLUTION WITH THE RIGHT PEOPLE

"In 2012 our Chief Administrative Officer knew something had to be done," says Heather Boyle, Director of Patient Logistics. "He knew if we wanted to maintain our leadership role in the community we needed to grow our referral network, centralize our efforts, and create efficiencies around a patient flow strategy. We enhanced our working relationship with TeleTracking in 2012 and within six months launched our Patient Logistics Center."

The Patient Logistics Center is staffed with clinical, non-clinical and IT staff, including transfer liaisons [RNs with a critical care background], clinical liaisons, a nurse manager, bed management associates [non-clinical staff responsible for registration and patient placement], a data analyst, a TeleTracking system administrator, and a medical director [physician support for clinical decision-making].

The Patient Logistics team regularly monitors ED boarding, PACU boarding, patient transport response times, EVS response times and bed request to assign times. Since the center launched, these metrics have steadily improved—positively impacting the throughput process:

EXECUTIVES AND USER ENGAGEMENT

To engage employees directly impacted by the new technology and workflows, a cross-functional capacity throughput council was launched initially to discuss barriers and obstacles to patient flow and quality care. Over time the council evolved into an update at daily safety briefings on capacity and related quality and safety issues.

A daily bed meeting is also held. "We discuss capacity issues first at these meetings—focusing on admissions and discharges, ED boarding, transfers and overall barriers to care," continues Boyle. "In addition, the charge nurses find a lot of value in the daily bed huddles—the quick, 15-minute meetings are a proactive way of keeping things on track and avoiding problems."

In addition to the team dedicated to patient flow, Hershey has an Operational Excellence department that manages Six Sigma initiatives and other organizational improvement projects. The Chief Medical Officer [CMO] is highly engaged and works closely with Patient Logistics and Operational Excellence on ongoing quality projects. The CMO, along with the Chief Nursing Officer and the hospital Managing

	2013 AVERAGE/MONTH	2017 AVERAGE/MONTH
Total Adult and Children's Hospital Admissions	2,191	2,235
Total Adult and Children's Hospital ED Volume	5,717	6,257
Total External Transfers – Average by Day	12.00	15.60
Adult Bed Request to Bed Assignment	137.64	115.30
Adult ED Boarding Hours	4.07	3.35
Adult ED Transport Average Response Time [minutes]	21.61	16.40
Adult PACU Boarding Hours [average in minutes]	185.56	163.85
Adult Transfer Center Direct Admit Request to Assign [minutes]	137.83	58.78

"We're excited for the next phase of this journey which will further enhance our ability to deliver excellent care to every member of our community."

Director are focused on capacity issues. The data provided by Patient Logistics in conjunction with the value stream mapping completed by Operational Excellence is extremely valuable in decision-making. For example, this information was shared with the board of directors when deciding whether or not to launch a capital expansion project at the Children's Hospital.

THE FUTURE

Even with these significant logistic improvements, Hershey needs more space. Over one year ago, Hershey acquired St. Joseph Hospital in Reading, and is now in the process of expanding their facilities and adding three floors to their Children's Hospital—the Patient Logistics Center played a role in making the case for both of these decisions.

"We were able to use the robust reporting capabilities to demonstrate a concrete business case for the acquisition and launching this capital project," adds Boyle. "We've also been able to improve our reputation dramatically in the community. We've lowered the number of concerns, and the number of issues related to hospital transfers and patient flow. We accept more patients, more often—and the overwhelming comment we hear from everyone is how nice the people they come in contact with in the Patient Logistics Center are!"

With the success that they've had, the team's next project is focused on taking transfer calls from St. Joseph's Hospital. They are also in the process of working on space planning for a full command center, which will incorporate all critical operational functions, including EMS.

"I am so proud of the work that has been done within our transfer center—both the increase in transfers and the speed at which we're able to accept a patient," concludes Boyle. "We're excited for the next phase of this journey which will further enhance our ability to deliver excellent care to every member of our community."

- Hospital Admissions (adult and pediatric): 28,472
- Licensed Beds: 548
- Surgical Procedures: 32,204
- Emergency Room Visits: 74,945
- Outpatient Visits: 1,097,432
- Physicians and other providers: 1,100+
- Nurses: 2,288
- Total Staff - Hospital and College of Medicine: 10,000+

HEATHER BOYLE

Heather has been the Director of Patient Logistics at Penn State Health Milton S. Hershey Medical Center since 2012. Previously, Heather worked in various leadership roles and has a clinical background as an Occupational Therapist.

We love what we do. Here's a sneak peek at the people behind the passion.

EMPLOYEE *SPOTLIGHT*

JOY AVERY //
Vice President Clinical Strategy

SAVING LIVES

Just Another Day at the Office

TeleTracking's Vice President, Clinical Strategy, Joy Avery, RN, MSN, is committed to helping clients build comprehensive command centers—centers that are designed to serve more patients by centralizing operations and combining the right mix of people, process and technology. However, with 31 years of nursing experience, Joy also knows what it's like to be on the front lines of healthcare—having worked in the emergency department, as chief flight nurse, as the architect of a trauma department, in the dialysis department and as a floor nurse.

"As a nurse, you know that when you get that call, lives are on the line and real-time decisions can be the difference between life and death," says Avery. "In addition, you know the patient is someone's mother, father, daughter or son, and so you want to know that you have resources available to provide the care they need."

Joy also knows firsthand what those resources mean when you're on the receiving end of care. Joy was working at North Mississippi Medical Center and pregnant with twin girls when she went into labor 16 weeks early.

"When this happened, my role flipped—I was no longer a nurse, I was a mother. The people who were previously my co-workers became my heroes and advocates. For example, one of my daughters had to be transferred to Birmingham, Alabama for emergency surgery and a member of my flight crew was with her every step of the way," continues Avery.

After three months in the NICU, the girls headed home healthy and happy. They graduated from high school this year as straight-A students, cross country stars and leaders in their community. For Joy, this experience further reinforced her strong desire to make a difference and do everything she could to ensure all patients get the care they need.

"After the girls came home, I was so grateful and knew it was payback time. At the same time, I was approached by the CEO of North Mississippi Medical Center who said I was the right person to build a new transfer center," says Avery. "I immediately accepted because I knew the positive impact this initiative could have on patient care."

It was TeleTracking's mission and the ability to share her experience of setting up comprehensive command centers across the country that led her to join the TeleTracking team in 2013. These centers, staffed by medical professionals, streamline the process of accepting or declining a referral, and establish a referral center as a destination of choice for many physicians in the service area. The professionals who work there are just as much on the front lines as they are when they're working on the floor.

"The nurses who work in command centers need skill, intuition, critical thinking, compassion, personality, patience, finesse and most of all, passion" added Avery. "Patients, families, and healthcare professionals all use these adjectives to routinely describe nurses in the clinical setting. However, world-class organizations have taken that same skill set and put the highest functioning nurses into a virtual setting to perform at the same level. These command centers are no longer seen as a luxury or nice to have, but as an absolute necessity. Quality, efficiency, real-time knowledge, visibility, and being able to respond to community needs are vital to providing world-class care to our patients and world-class service to our referring physicians and hospitals."

When a command center is operating at full potential, the outcomes can be amazing, including improved patient flow and overall satisfaction for internal customers, improved access to care and satisfaction for external customers, improved patient care quality, enhanced community service and increased market share.

"Each and every day it's an honor to come to work, live my lifelong goal of giving back, and help health systems deliver quality, compassionate patient care," concludes Avery.

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