RURAL + URBAN **CHALLENGES**

Carilion Clinic's Command Center provides care excellence across its communities.

STATE OF HEALTHCARE **OPERATIONS**

Understanding the issues of today and making plans to conquer tomorrow.

BAYSTATE HEALTH

How centralization is helping one dynamic health system maximize resources.

ADAPTIVE INTELLIGENCE IS HERE

How the right data can drive workflow, labor allocation, and better care.

CNBC Harvard **HOW HEALTH-CARE Business** The New York Times Review **COSTS US \$89 BILLION** FORGET TAXES, **WHAT A** A YEAR IN LOST TIME WARREN BUFFET SAYS. "HEALTH February 22, 2019 THE REAL PROBLEM By Bertha Coombs SYSTEM" IS IS HEALTHCARE. AND ISN'T May 8, 2017 January 24, 2019 By Andrew Ross Sorkin By Jeff Goldsmith **Forbes** The New York Times **U.S. HEALTH SYSTEM WASTE HITS** THE NURSING SHORTAGE \$935 BILLION A YEAR IS THREATENING OUR CARE October 7, 2019 January 22, 2020 By Bruce Japsen By Susan Gubar



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WINTER 2020

A QUARTERLY PUBLICATION FROM **Tele**Tracking

Healthcare is multi-faceted, and it is only by looking at the different facets—and finding ways to solve each piece of the prism—that we can solve the challenges that impact patient care and caregiver satisfaction. In this issue we offer in-depth stories on working collaboratively, sharing insights and pushing for a patient-centric agenda to achieve greater efficiency and better care.

INNOVATION AT WORK

We're Talking About This AI :: PAGE 8

Adaptive Intelligence [AI] and predictive technology to drive healthcare efficiency

FEATURE STORY

More Patients, Better Care :: PAGE 10

Baystate Health's innovative approaches to visibility and efficiency

FEATURE STORY

The State of Healthcare Operations :: PAGE 18

The focus should be on doing what's right for the patient both clinically and operationally

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CHALLENGE, ACTION, RESULT **CHRISTUS HEALTH :: PAGE 22**

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WHAT'S HAPPENING

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

- Health Tech Digital Feature (Issue Date December 3, 2019)
 Rebecca Boyes, TeleTracking Operational Lead at Control Centre,
 Mid and South Essex University Hospitals Group, outlines the
 transformation in nursing that is being delivered by Trusts that
 have embraced a centralized bed management model, underpinned by real-time patient flow visibility, and supported by the
 use of dedicated domestic and portering staff.
- Deb Sutton, Director of Client Support of TeleTracking, explains the importance of leveraging proven technology to transform bed management and release highly skilled and motivated clinical staff to deliver patient care, while longer-term plans for recruiting and retaining new clinical staff come to fruition.
- Pittsburgh Business Times (Issue Date November 4, 2019)
 Anita Dressel of TeleTracking was named CFO of the Year.
 The program recognizes financial professionals in western
 Pennsylvania for their outstanding achievements.
- 14. Healthcare Executive (Issue Date October 30, 2019)
 Kettering Health Network's Operational Command Center is featured as a model to effectively and efficiently coordinate patient care across its nine hospitals and more than 120 outpatient facilities.

EVENTS

Join TeleTracking at an upcoming event and learn about our solutions while sharing ideas with other professionals.

COMMAND CENTER EXECUTIVE FORUM

Roanoke, VA | April 22 - 23 Hosted by Carilion Clinic

Learn about the benefits of health system command centers, what is involved in the implementation process, how to overcome organizational obstacles, and what returns on investment you can expect. All attendees will have the opportunity to tour the Carilion Clinic Transfer & Communications Center. For more information: go.teletracking.com/executive-forum-carilion

COMMAND CENTER EXECUTIVE FORUM

Salt Lake City, UT | May 6 - 7

Hosted by Intermountain Healthcare
Learn about the benefits of health system command centers, what is involved in the implementation process, how to overcome organizational obstacles, and what returns on investment you can expect. All attendees will have the opportunity to tour Intermountain Healthcare's Virtual Hospital.

For more information: go.teletracking.com/executive-forum-intermountain

2ND ANNUAL COMMAND CENTER SUMMIT

Nashville, TN I July 13 - 14 Renaissance Nashville Hotel For more information: brinetwork.com/events

TELECON20

Henderson, NV I October 25 - 28
Green Valley Ranch Resort Spa & Casino
Join us and hundreds of your peers in healthcare
from around the globe to network, share best
practices and success stories, and learn about the
latest innovations in patient flow technology.
To register or for more information visit
conference.teletracking.com.

A NEW BRIDGE TO SHARED INTELLIGENCE

KNOWLEDGE BRIDGE HELPS YOU CONNECT, SHARE AND LEARN.

TeleTracking users asked for a more immersive community—one that grants access to information, training, experts, peers and more—and we listened! Launched in November 2019, Knowledge Bridge is a virtual, central community where TeleTracking users can connect and learn from each other while sharing best practices.

READY TO GET STARTED? EMAIL KNOWLEDGEBRIDGE@TELETRACKING.COM TO CREATE YOUR FREE ACCOUNT TODAY!





Share best practices with other clients

Get release notes and tech bulletins

Be the first to learn about webinars & events

Discuss upgrades with other clients

Get launch materials for your staff

Take eLearning courses online

Compile support material for C-Suite

elearning and the value of training

LEARN ANYTIME.
LEARN ANYPLACE.

According to the Applied Clinical Informatics Journal, "The greatest predictor of user experience was not which Electronic Health Record the provider used, nor what percent of an organization's operating budget was dedicated to IT spending. Instead, they found that ratings were related to how the users rated the quality of the EHR-specific training they'd received".

Launched at TeleCon19, TeleTracking's new eLearning program was designed to ensure that you get the most out of your TeleTracking solutions and hospital staff. Accessed via Knowledge Bridge, or through your health system's learning management system, the program provides a variety of fundamental, self-guided, role-based courses on the science of patient flow and solution- specific modules.

ON-DEMAND AND SELF-PACED

eLearning delivers the most up-to-date content. For example, no longer will

you have to rely heavily on dedicated training staff to provide high quality education. And, with staff turnover at an all-time high, self-paced, on-demand online courses allow supervisors to onboard new employees quickly and easily, saving both time and money.

Each course is built with a specific employee role in mind and focuses on how their role impacts patient flow, how TeleTracking fits into their daily workflow, and how the work they do impacts other areas of the hospital.

CLASS EXAMPLES

An environmental services employee can take the "BedTracking®: Using the Mobile App" course to unlock more meaning in their role and how Tele-Tracking is a major part of their daily workflow and overall operations.

"TransferCenterIQTM: Receiving and Fulfilling Transfer Cases" is where transfer center agents, nurses and hospitalists learn how to triage and

gather patient information quickly and easily for the admitting physician, and how to stay organized to keep multiple parties informed with documented calls, case creation and notes.

When staff understand their role in moving patients safely and efficiently from point A to point B, they derive more meaning from their work and are more eager to adopt new technology. According to a technology services industry study, 87% of employees are more self-sufficient and 68% use products more as a result of better education.

eLearning is also a more efficient way to keep staff certified on all TeleTracking tools. Staff are able to complete their certifications and recertifications without supervision or in-person demonstration—saving time and stress from employees and ensuring a better learning experience.

GET STARTED TODAY!

To access TeleTracking's new eLearning program, click the 'Learning' tab in Knowledge Bridge. If you have a subscription, available courses will be listed. If you do not, and need more information on the offerings or pricing, please contact us at: clientlearning@teletracking.com.

CONNECT WITH EASE

Courses are available via a subscription or a la cart pricing

There is free content available on a variety of topics such as new upgrade features

Subscribers can integrate classes into their own learning management system and run reports

Clients can access eLearning content 24/7 via Knowledge Bridge

Knowledge Bridge and client eLearning work seamlessly together as one platform for learning and client collaboration

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WINTER 2020 PAGE 5

TeleCon19 In Review

COMING TOGETHER TO LIVE THE MISSION









Left to Right | Top to Bottom
01: TeleTracking's Chief Solutions
Officer Jeanne Iasella
02: The Sharp HealthCare team
03: The University of Louisville
Hospital team with TeleTracking's
Kathy Menefee and Dana Wilson
04: The Northwell Health team with
TeleTracking's Maria Romano
05: TeleTracking's President
Chris Johnson
06: The Broward Health team with
TeleTracking's Mike Coen

NO PATIENT WAITS

TeleCon is a highlight each year—not only for TeleTracking, but for our clients too. It is always incredibly inspiring to come together to share, learn and collaborate on the best ways to improve care for patients and give time back to caregivers. The event is centered around TeleTracking's mission—to ensure that no one will ever have to wait for the care they need—and why Living the Mission was the theme of TeleCon19.

As Kris Kaneta, Senior Vice President of Marketing, said when he kicked off the event, "What started as a community of patient flow experts has become an empowered group of trailblazers around the command center model. From the United States and Canada to the United Kingdom and Australia, we are all in this together—working to solve patient access, care coordination and operational complexities."

The mainstage speakers brought together pre-eminent thought leaders in healthcare today:

• Martin Makary, M.D., M.P.H., surgeon and healthcare leader from The Johns Hopkins Hospital, and *New York Times* bestselling author of *The Price We Pay*, presented his thoughts on the importance of taking care of patients by exercising compassion—and that

there is nothing more frustrating than a situation where you can't accept a patient you know you can help because of capacity challenges.

• Mark Britnell, Global Chairman & Senior Partner, KPMG International, and author of In Search of the Perfect Health System and Human: Solving the Global Workforce Crisis in Healthcare, discussed the global workforce crisis—including the global shortfall of 18 million healthcare workers by 2039 and 10 solutions to combat this problem.

• William Brady, Senior Adviser to the Secretary, Chief of Staff to the Deputy Secretary at U.S. Department of Health and Human Services spoke about the agencies' mission to enhance and protect the health and well-being of all Americans.

The days also included breakout sessions and boot camps presented by TeleTracking staffers and clients from Kettering Health Network, VCU Health, Carilion Clinic, Royal Wolverhampton NHS Trust, Northwell Health, Health First, University of Louisville Hospital and Washington Regional Medical Center. In addition, three interactive experiences were offered each day:

 An expanded Command Center experience showed how the patient-facing areas of a system work together to ensure patients don't wait for the care they need.

- TeleTracking patient flow experts conducted one-on-one consultations at the TeleBar.
- The Learning Lab demonstrated how TeleTracking can reinforce the depth and breadth of user's comprehension.

TAKING CONTROL

TeleCon19 also featured the launch of Care Traffic Control Certified™ [CTCC], a program designed to foster collaboration, innovation and continuous improvement. CTCC adds additional depth to the TeleTracking's client experience by

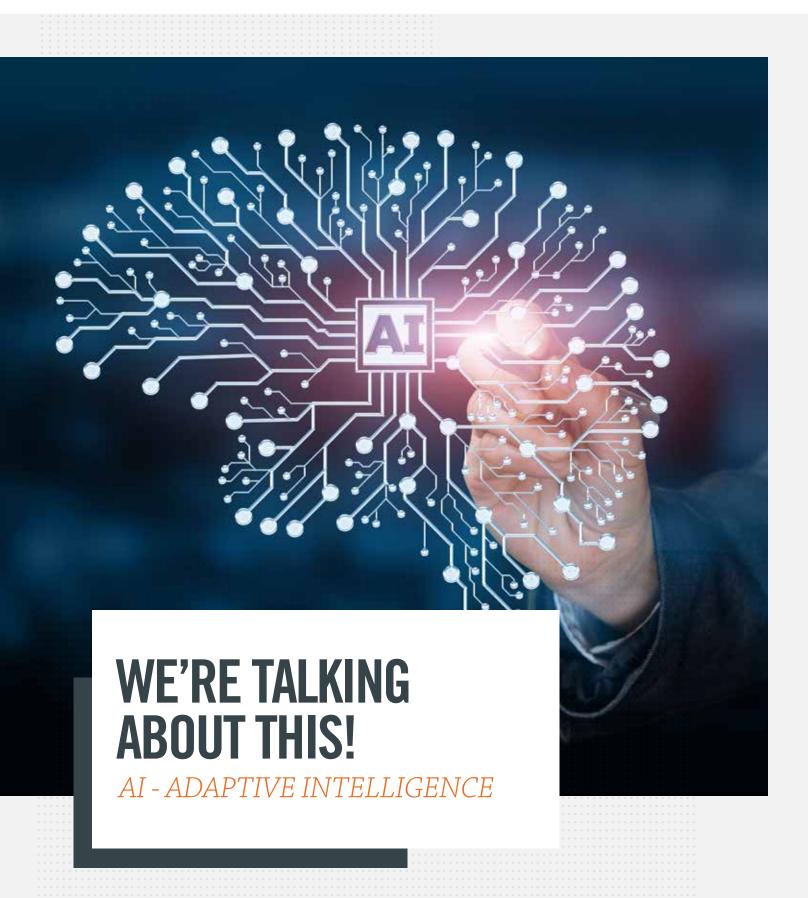
establishing standards and benchmarks to determine the operational maturity of a Health System Command Center. At the same time, CTCC creates a framework to facilitate useful knowledge-sharing. Eventually, this will be a way to recognize the industry's most advanced centers. Congratulations to the inaugural class of CTCC health systems: Baystate Health, Broward Health, Carilion Clinic, Kettering Health Network and VCU Health.

Finally, disasters—both natural and manmade—unfortunately can't be avoided and that's why having a clear disaster preparedness plan and regular drills is more important than ever. Three

clients recently had to manage three serious emergency situations—the Dayton shooting, the El Paso shooting and Hurricane Dorian. John Weimer from Kettering Health Network; Sandra Gonzalez and Arturo Villalobos from UMC El Paso; and Justin Willis from Broward Health provided emotional, first-hand accounts of how their health systems delivered incredible patient care under the most difficult circumstances.

Plans are already underway for TeleCon20. We hope you can join us October 25-28, 2020 at the Green Valley Ranch—just a few minutes from the Las Vegas Strip! For more information visit conference.teletracking.com.

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Have you ever tried to fix one problem, only to realize that it causes another? Because we're all in search of a balanced solution that will offer a comprehensive approach to success—especially in healthcare, many experts believe that the solution may lie with Artificial Intelligence [Al] and its almost 'magical' potential. And while currently, the vision exceeds the capability, it certainly won't be that way for long. Public and private sector investment in healthcare Al is expected to reach \$6.6 billion by 2021, according to some estimates¹.

To date, much of the focus regarding machine learning and Al has been clinical in nature—things like early disease detection, imaging analysis, population health determinants, and precision medicine—clinical diagnosis and treatment that we could only imagine a generation ago. And so, it's an unlimited and new frontier in medicine that will likely revolutionize patient care.

Unfortunately, the same cannot be said for the operations side of healthcare. Too often, we plan the demand for health services based on little more than historical precedent, and we marshal people, facilities and assets reactively, responding to one crisis after another, repeating the same cycle, day in and day out. We never seem to get ahead of the problem.

These capabilities will empower health systems to take a more proactive approach to forecasting patient demand and staffing needs five days in advance in order to prepare for surges, right-size staffing and avoid last-minute schedule changes leading to a significant reduction in labor costs and increase in staff satisfaction.

It's not for lack of data—we accumulate more and more each day. The exhibit hall at HIMSS is strewn with companies, from the largest acronym to the smallest start-up, designed with the sole purpose of extracting data and creating 'apps' and 'walls of numbers' on large screens to admire a problem you knew you had, in high definition.

It's time for analytics to come down off the walls. Time to be less about being interesting, and more about being useful. Time to stop admiring the problem, and time to start solving it—or better yet, avoiding it altogether.

TeleTracking is partnering with some of the leading health systems around the globe to develop what we call Adaptive Intelligence. The goal of our AI is to eliminate the distinction between the daily operations of healthcare, and the analytics surrounding those operations. Analytics should be fully integrated and indistinguishable from the daily activities of healthcare workers. Together with our partners, we are developing algorithms that present caregivers with better data and specific recommendations at the point of care, or point of decision, for a patient. We are also using Adaptive Intelligence to make workflows self-referencing—dynamically adjusting activities based on the situation in that moment to optimize the operations of the health system overall.

TeleTracking is uniquely qualified to provide Adaptive Intelligence to healthcare operations. For nearly three decades we have been perfecting similar algorithms in the management of patient transport, environmental services, and patient discharge.

Thanks to the more than 1,000 hospitals we are proud to call clients, we have the single largest repository of patient flow data globally that continues to inform the design of our solutions and services. And our partnerships with our clients are leading to new and exciting applications of Adaptive Intelligence every day.

In the coming months, you will see TeleTracking introduce a number of new capabilities under the banner of Adaptive Intelligence, including demand and staffing capabilities, workflow optimization tools, and prescriptive patient flow engines—all critical to the impending nursing shortage. For example, these capabilities will empower health systems to take a more proactive approach to forecasting patient demand and staffing needs five days in advance in order to prepare for surges, right-size staffing and avoid last-minute schedule changes that lead to a significant reduction in labor costs and increase in staff satisfaction.

Built on our legacy and singular focus of ensuring that no patient will ever have to wait for the care they need, we hope you will engage with us in the continued discovery and innovation of TeleTracking's Adaptive Intelligence platform.



JEANNE IASELLA Chief Solutions Officer at TeleTracking

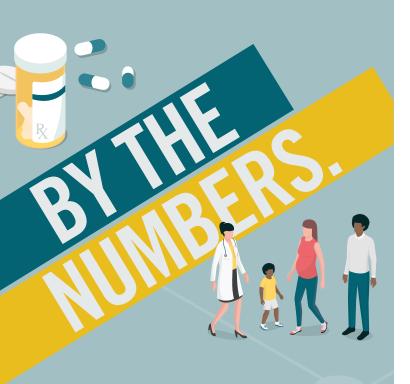
Jeanne Iasella brings broad experience in technology, strategy and management to her role as Chief Solutions Officer at TeleTracking.

Prior to TeleTracking, Jeanne worked with Aesynt / Omnicell, leading their operations in pharmacy supply chain optimization. She also spent a number of years with Bayer Healthcare, most recently as the Vice President of Mergers and Acquisitions for medical devices. Earlier roles included the medical device company MEDRAD, where she served as Chief Information Officer. Jeanne began her career with Arthur Andersen, as a CPA, management consultant, and leader of the tax software development division.

Jeanne received a bachelor's degree in Accounting from Villanova University.

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THE VOLUME IS SIGNIFICANT. WITH A WORKFORCE OF NEARLY 12,000, AND MORE THAN 980 BEDS ACROSS OUR FIVE HOSPITALS, THE **ANNUAL IMPACT INCLUDES:**

- * Over 1.8 million outpatient visits, providing comprehensive sick and preventive care
- * Over 197,000 emergency and urgent care visits
- * More than 36,600 surgeries performed
- * More than 4.000 babies born at Baystate Health hospitals

"We knew we needed to do something to maximize our resources and provide the best care possible to the greatest number of patients. That is why we decided to embark on a journey to centralize care and use all of our beds—not just those at our tertiary facility. And while we had worked on several process improvement initiatives, we were still lacking a system that could give us that one simple snapshot of volume and available beds across Baystate Health," said Alicia Meacham RN, BSN, Program Director for Transfer Center, "That's when we discovered TeleTracking and what it could do to help us move from a tedious. labor-intensive system (Microsoft® Excel to manage our transfer center, and a patient flow system that forced us to toggle between 25 units) to a streamlined system that lets us see in a couple seconds the beds we have open and available, while also giving us the ability to effectively manage our discharge process."

VISIBILITY AND WORKING AS A SYSTEM

The visibility provided by a centralized approach to care marked a turning point between the Baystate hospitals working as individual facilities to Baystate working as a comprehensive system. The evolution started with Baystate Medical Center [BMC]—the largest tertiary care center—being the first facility to implement TeleTracking in September 2017 and a new facility going live every six months after that.

"This was a significant change for our community hospitals in particular. For example, they weren't used to getting transfers. They were used to taking patients from providers, offices, but they had never really taken patients from another community hospital into their community hospital. The action was to always call the next biggest tertiary care center. We certainly experienced that at BMC, where we were consistently overburdened by volume—and yet we knew there were patients who could receive the care they needed at one of our community hospitals," explained Meacham "Visibility allowed us to start effectively load-balancing patient volume between our facilities."

The ability to do this type of load-balancing begins with a three-way phone call between patient placement, the accepting physician and an emergency department physician. Nurses in patient placement start gathering information to make the correct placement, and by being able to determine the patient's status, the provider is able to start placing orders. This call ensures that patients are booked appropriately, at the right status. 24 hours a day.

SYSTEM AND PATIENT GOALS

"Our system-wide goal is to keep patients local and provide their care as close to home as possible," continued Meacham. "BMC is our tertiary center and a level one trauma center for when a patient truly needs to come here. However, if a service can be provided elsewhere within one of our community hospitals, we want to place the patient there. This is where we engage our community hospitals to take patients more readily instead of automatically thinking they'll send them directly to Baystate Medical Center."

This approach also impacts patient satisfaction because it's always easier for a patient and their family to be closer to home. In 2020, one of the team's main goals is to continue to optimize community hospitals and place patients there whenever possible.

LOCATION. LOCATION. LOCATION

A centralized approach is a commitment and the right location is critical to success. Baystate's Command Center is in a large room within Baystate Medical Center, which includes both patient placement and transfer center functions. It is comprised of clinical, nursing staff and nonclinical staff, such as patient placement techs, environmental services managers, transport dispatch, admitting and external ambulance. Cohorting in one location has made it easier for everyone to be on the same page and work to effectively progress patients on their care journeys.

RELATIONSHIPS ARE KEY TO CHANGE

"The biggest challenge we faced with implementing our centralized approach to care was culture change," said Meacham. "And the biggest part of that was encouraging our community hospitals to give up control and not feel like something was being taken away from them. It was important to help them understand that by centralizing all of patient placement, they could focus on being a nurse versus assigning beds."

"Relationship building is an important part of cultural change and that's why I encourage my staff to participate in different committees across the health system to see people, engage in conversation, and help break down barriers," added Meacham.

One specific way Meacham works to engage the hospitals and nursing staffs is through a morning bed huddle, Monday through Friday. She also works closely with the floor staff, ensuring that their 24-hour work process is in TeleTracking and that they are consistently entering projected discharges.

Meacham also spearheads the operations committee where leaders of the different service lines and community hospitals discuss opportunities, changes and challenges. The committee pulls people together in order to think differently about what they can do to make things better for both staff and patients.

"One example that came out of the committee is our work to predict discharges and send them as close to 24 hours out as possible," shared Meacham. "We want to predict the right patients and make sure that we put that information into TeleTracking so that we have the data to continuously improve. That information gives us the ability to run reports, look at each floor, and home in on what they're doing well or what they may need to work on."

The team also recently launched an innovative approach to huddles with the implementation of a night huddle at 1:30 AM. This new tactic makes it possible to predict discharges further

in advance, and has discharges entered on the weekends as well—giving them a seven, not a five day a week, process. By encouraging people to make sure that they're updating TeleTracking predicted discharges before 1:00 AM, everyone has a better understanding of who's leaving for the day and if there are any barriers that need to be addressed.

SUCCESSFUL RESULTS LEAD TO RECOGNITION

Baystate's centralized approach to care is generating results. From 2017 through the first part of 2019, patient transfer volume increased from 327 to 540 transfer requests a month. And in September 2019 alone, the team took on ED calls, and with their community work, the number of patient transfers jumped from 540 to 829. And they continue to grow.

"TeleTracking is so much more than just an application—it is a complete program because of the way it has been incorporated here at Baystate Health," said Meacham.

CARE TRAFFIC CONTROL CERTIFIED™

The success of Baystate Health is being recognized as one of TeleTracking's inaugural Care Traffic Control Certified health systems—which was announced at TeleCon19 in October.

For close to three decades. TeleTracking has recognized the benefits of a centralized approach to care—and how much effort goes into centralizing operations and integrating people, process and technology. That work is now being honored with the opportunity to become Care Traffic Control Certified™ [CTCC]. In addition to creating a standard set of criteria to measure centralization success. the program is also designed to foster collaboration, innovation and continuous performance improvement between centers.

"We've worked hard to create our program, are proud of what we're achieving and are excited to help others achieve the same level of success as a Care Traffic Control Certified health system." concluded Meacham.



The system has four hospitals,

reference laboratories.

over 80 medical practices, and 25





Collaborating to serve the community; a commitment to doing what's right for patients; unwavering in providing exceptional quality and service; showing compassion for patients every day; and fostering creativity and innovation in the pursuit of excellence. Simple, powerful words that represent the values of Carilion Clinic, a six-hospital system in Roanoke, VA—and why the team there decided to adopt a centralized approach to care, with a health system command center, in order to provide the best possible care.

A TRUE PIONEER

The benefits of a centralized approach to care, driven by a health system command center, are clear—operational alignment, improved efficiency, enhanced patient safety and satisfaction, and growth and sustainability. And Carilion is a true pioneer in this space having been an early adopter of this model in 2004—first by centralizing patient placement and eventually integrating their transfer center functions.

Carilion initially adopted this centralized model to solve the challenges associated with patient access and throughput because they simply had more patients than beds. As part of this initiative, they were also digging into patient length of stay and determining what services could be administered on an outpatient versus an inpatient basis. In addition, they

were running at 95-98% capacity—which could be problematic for patients with time-sensitive medical issues. When the team centralized and simplified—and sent the right patient to the right facility—the result was a 40% increase in patient transfers to secondary campuses. As the center continued to grow and evolve over the last 16 years, the team has relocated to a new space—in fact they've implemented four centers since then, learning more each time.

"We've been doing bed placement and patient transfers out of our command center, known as the Carilion Transfer and Communications Center or CTaC, for two of our campuses since 2004. The CTaC also houses a communications center that provides dispatchers for the ambulance fleet, as well as three helicopters; environmental services; oversight for clinical transport operations; tight integration with utilization management nurses, and soon-to-expand operations into a satellite room for remote telemetry as well as remote TeleSitters," says Melanie Morris, Senior Director of Carilion Clinic's Transfer and Communication Center. "We're proud that we've recently expanded our bed placement capabilities to include five locations, including three rural hospitals."

THE HISTORY OF TAKING COMMAND OF CARE—ON-SITE AND OFF-SITE

While Carilion Clinic's flagship hospital is in metropolitan Roanoke, the service area is much broader with about 280 miles between the furthermost practices, so CTaC helps Carilion serve the more than 1 million residents who live in mostly rural western and southwest Virginia. The challenges patients and providers face are very different in rural areas. Patients typically have less access to doctors, hospitals and specialty care; they often must travel great distances, which means being away from support networks and incurring transportation costs; and they're often uninsured. Being able to effectively manage these patients and ensure they receive the best care in the most efficient manner is critical to delivering beneficial clinical services.

Carilion knows this firsthand and that's why they have been focused on making a positive impact in their communities. For

example, the decision was made to fully maximize the capacity of the network and "light up" additional hospitals. As a result, CTaC now has a complete view of the status and availability of beds at these sites, as well as the status of admitted patients, upcoming discharges, rooms that are being cleaned, and more. This makes it possible to effectively load-balance across the system, have more insight into patient wait and hold-times, keep patients close to home as long as they don't need a higher level of care at the flagship hospital, and improve satisfaction and overall patient flow efficiency. "It requires a sophisticated, coordinated effort between Carilion's fleet of air and ground transport vehicles, our patient placement teams and each of the hospitals," said Morris.

RURAL OUTREACH

While Carilion Clinic's flagship hospital is in metropolitan Roanoke, the service area is much broader with about 280 miles between the furthermost practices, so CTaC helps Carilion serve the more than 1 million residents who live in mostly rural western and southwest Virginia. The challenges patients and providers face are very different in rural areas. Patients typically have less access to doctors, hospitals and specialty care; they often must travel great distances, which means being away from support networks and incurring transportation costs; and they're often uninsured. Being able to effectively manage these patients and ensure they receive the best care in the most efficient manner is critical to delivering beneficial clinical services.

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GET CONNECTED

CARILION TO HOST COMMAND CENTER EXECUTIVE FORUM

Health system executives are invited to join TeleTracking and Carilion April 22-23, 2020 for a Command Center Executive Forum in Roanoke, VA. During this executive forum, you will learn about the benefits of health system command centers, what is involved in the implementation process, how to overcome organizational obstacles, and what returns on investment you can expect. All attendees will have the opportunity to tour the Carilion Clinic Transfer & Communications Center. Visit go.teletracking.com/executive-forum-carilion to learn more and reserve your spot.

sophisticated, coordinated effort between Carilion's fleet of air and ground transport vehicles, our patient placement teams and each of the hospitals," said Morris.

COLLABORATORS, COLLEAGUES— AND THE FIRST TELETRACKING CARE TRAFFIC CONTROL CERTIFIED™ SYSTEM

Carilion and TeleTracking have been long-time partners and collaborators. In fact, Carilion has been serving as a reference and a role model to other health systems that are beginning their command center journey. Recently the success at Carilion was recognized as one of the inaugural Care Traffic Control Certified health systems—which was announced at TeleTracking's Annual Client Conference last October.

For close to three decades, TeleTracking has recognized the benefits of a centralized approach to care—and how much effort goes into centralizing operations and integrating people, process and technology. That work is now being honored with the opportunity to become Care Traffic Control CertifiedTM. In addition to creating a standard set of criteria to measure centralization success, the program is also designed to foster collaboration, innovation and continuous performance improvement between centers.

"We are proud of the impact we're having in our community, are pleased our accomplishments are being recognized and are excited to help others achieve the same level of success as a Care Traffic Control Certified health system," concludes Morris.



MELANIE MORRIS, MSN, RN. NREMT-P. CMC

Senior Director, Carilion Clinic Transfer & Communications Center, Carilion Clinic

Melanie Morris, Senior Director, Carilion Clinic Transfer and Communications Center has played an instrumental role in the design and ongoing success of the centralized transfer and communications center at Carilion Clinic. She began her healthcare career as an EMT/ paramedic 30 years ago and has been a registered nurse at Carilion for the past 25 years. She worked in the emergency department, ICU and as a rotor wing flight nurse before moving into patient flow.

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Today's challenges call for action now to face the future with confidence.

There are a lot of conversations about the challenges facing healthcare, and even more about how to solve them, including investing more money. More money is not the answer. Good healthcare doesn't have to cost more. Reorienting care delivery to do what's best for the patient both clinically and operationally and finding ways to reduce complexity and improve productivity to achieve efficiencies is easier said than done—but it is possible.

EVERY MINUTE COUNTS

Forty-six minutes was just enough time to save the life of a new mother.

That's the amount of time it took for her to be transported from a regional hospital emergency department to the intensive care unit at the main medical center, after suffering cardiac arrest following an emergency Cesarean section due to fetal distress.

Specialists were able to save her life because a physician at the regional facility made one phone call to the system's command center and the team there arranged transportation, had a bed secured and contacted on-call specialists in a matter of minutes. And, the nurse who took the call stayed on the phone with the paramedic while the patient was transported.

It's the combination of people, process and technology that allows medical professionals to save lives.

IT'S ABOUT THE PATIENT

Discussions about healthcare operations often focus on specific components such as software and hardware solutions, process improvement initiatives, staffing challenges, the size and design of facilities, etc. However, the heart of healthcare is about the patient—being there to console and help, ensuring the right care, in the right place, at the right time, and being able to effectively treat them so that they can return home. It is about the patient's needs. It is about the patient's experience. Achieving these goals can be challenging in the face of today's issues facing healthcare.

ISSUE #1 The Danger Of The Wait

- The wait is certainly a major care challenge. When patients
 wait, they're exposed to additional risks. In fact, 37,000
 deaths are correlated with ED boarding each year and
 patient boarding for 6+ hours while waiting for a bed is cor
 related to a 1.7% increase in mortality rates and an
 additional 1.5 days in length of stay.
- Patients are waiting because of 20 million unnecessary bed days. If patients were discharged in a timelier manner, 3-5 million additional patients could be seen.
- Waiting also leads to 1.9 million patients leaving without being seen each year while 39% of beds remain unoccupied.
- Health systems in general are facing increased complexity due to mergers, acquisitions and declining reimbursements which can compromise the timing of care.

ISSUE #2 Choice, Culture & Cost

- A focus on the patient is natural. We live in a
 customer-focused culture—and we know that patients
 want the same choice, value and convenience they
 expect in other aspects of their life. We also know they
 want transparency around price, quality, and safety, along
 with solutions that are coordinated, convenient,
 customized, and accessible—and that they freely express
 their thoughts and opinions when that doesn't happen¹.
- Patients have a right to be vocal because it's about their care, yet of the \$19,000 (on average) that U.S. workers and their employers pay for family coverage each year, \$5,700 goes toward administrative costs. In fact, like the overall cost of the U.S. health system—U.S. administrative cost is No. 1 in the world. And as administrative costs rise, so does administrative staffing—the number of practicing physicians in the U.S. grew 150 percent between 1975 and 2010, while the number of healthcare administrators increased 3,200 percent during the same period².

ISSUE #3 The Economics

The efficiencies that drive care and the best way to deliver care are pure economics. U.S. healthcare spending grew 4.6 percent in 2018, reaching \$3.6 trillion or \$11,172 per person, and as a share of the nation's Gross Domestic Product, health spending accounted for 17.7 percent³.

We know that higher per-person spending does not always equate to higher-quality healthcare. When compared to 10 developed countries, the United States ranks last in overall healthcare performance—highlighted by per capita spending that is 50% greater.

Some of the factors that contribute to this higher spending include⁴:

- Excess supply of healthcare services, along with poorly controlled demand for those services
- The current system of reimbursement models
- Regulatory requirements
- Structural differences between the U.S. and other wealthy countries
- Patient characteristics and behaviors, including managing chronic conditions
- Productivity issues in the healthcare delivery industry between 2001 and 2016, healthcare delivery contributed 9% of the \$8.1 trillion (\$4.2 trillion in real terms) growth in the US economy—but 29% of the 14.4 million net new jobs

ISSUE #4 Workforce Challenges

A 2019 MedScape report found that 44 percent of physicians feel "burned out," potentially causing them to leave the profession⁵

On top of that trend, we are also looking at a significant nursing shortage, including the fact that half of all nurses are also considering leaving their profession.

- One of the reasons leading to this dissatisfaction is the fact that doctors and nurses go into healthcare to be healers to provide care and comfort at the bedside, not be consumed with administrative burdens. Instead, they are being pulled away from that heartfelt mission.
- The National Academy of Medicine says that on average, nurses and doctors spend 50 percent of their workday treating the screen, not the patient, and that "increased

documentation time" associated with electronic health records is one of the reasons for those feelings of burnout.

- Tasks are not consistently assigned to workers at the appropriate skill level—such as when RNs are performing activities like transporting patients that could be better delegated to nursing assistants or transporters.
- In some cases technology is taking people from the bedside, in other cases technology can be used to safely automate certain tasks, freeing up clinical staff to deliver that meaningful care at the bedside.

ISSUE #5

Complexity, Capacity And Economies Of Scale

As a way of trying to meet demand—in a cost-effective manner—health systems are consolidating facilities to create economies of scale. At the same time, many are also looking for capital, thinking they need to build new facilities because they don't have enough beds. But the beds are there. Due to operating inefficiencies there is latent capacity that could be accessed under their existing infrastructure.

The impact realized by actively improving efficiency is significant⁶.

- Cumulatively, \$1.2 trillion to \$2.3 trillion could be saved over the next decade if healthcare delivery were to move to a productivity-driven growth model.
- Savings of this magnitude would bring the rise in healthcare spending in line with—and possibly below—GDP growth.
- In addition, the increased labor productivity in healthcare delivery would boost overall U.S. economic growth at a faster rate than current projections—an incremental 20 to 40 basis points (bps) per annum.
- Technological advances, including artificial intelligence, computer-assisted coding, and natural language processing, could be used.
- Demand for inpatient services continues to drop, yet excess—and therefore unproductive— capital continues to remain in the healthcare delivery infrastructure.

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[4] McKinsey Center for US Health System Reform February 2019 Study: The productivity imperative for healthcare delivery in the United States - Page 4

[5] www.nytimes.com/2019/12/31/opinion/doctors-nurses-and-the-paperworkcrisis-that-could-unite-them.html

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imperative for healthcare delivery in the
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FACING THE ISSUES

The time is now.

Healthcare is complicated—capacity issues, mergers, acquisitions, changing reimbursement models and staffing shortages are just some of the things that need to be navigated. But there are solutions and through dedication and collaboration the needs of both patients and caregivers can be met. Below are just a few examples of how a solutions-based, centralized approach effectively tracks a patient across the care continuum—helping ensure a positive patient experience and efficiencies for everything from individual facilities to large enterprises.

SUCCESS IN ACTION

Today's Best Practices at Work

So, how do we begin to address today's issues and be ready for tomorrow? Here at TeleTracking, we have concrete client examples of the impact that increased efficiency—and a centralized approach to care—has on healthcare operations, caregivers and most importantly on patients. We hope these examples inspire ideas for where to begin.

01 ¦

KETTERING HEALTH NETWORK DAYTON, OH

Four factors served as catalysts for Kettering Health Network, located in Dayton, OH to make the decision to implement a health system command center: network growth; capacity challenges, an area hospital closure; and a goal of maximizing revenue by decreasing length of stay, left without being seen, diversion and leakage.

Kettering launched a health system command center to centralize care and currently all nine of Kettering Health

Networks are currently up and running. The first phase focused on bed placement and access—moving patients in and out of the system, including coordinating internal transports in order for lateral moves to go smoothly. The team is also working with utilization management and social services teams to ensure patients are receiving the best care and resources are being used most effectively by system attributes to prioritize the work.

The positive outcomes generated include:

- An increase in volume of 159 patients/month.
- Improvements in EVS turn times have led to improvements in patient throughput with the ability to open up capacity more quickly.
- ICU capacity has improved as a result of having visibility across the network and staff is placing patients at the right level of care the first time and not moving them.
- Emergency department holds have significantly decreased—for example, at the Fort Hamilton location it went from 5.68 hours in January 2019 to 1.35 hours in April 2019.

02

CARILION CLINIC ROANOKE, VA

Carilion Clinic, located in Roanoke, VA is a pioneer in implementing a health system command center and a centralized approach to care. They began their centralization journey in 2004 by doing bed placement and transfer functionality for two campuses. Over the years, they continued to evolve and recently expanded their bed placement capabilities to all six campuses—including three rural sites. The command center currently houses a communications center that provides dispatchers for the ambulance fleet, as well as three helicopters; environmental services; oversight for clinical transport operations; and integration with our nursing teams. The results have been impressive:

- 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 emergency department via the CTaC translates to approximately 60,000 hours saved

- per month to care for even more critically-ill patients and 720,000 hours per year.
- Real-time emergency department alerts make it
 possible to precisely place patients and free up space
 to treat more people, resulting in a 50 percent
 reduction in the time it takes to place a patient in a room.
- There are year-over-year increases in transfer volumes, including a 40-percent increase in transfer admissions to the secondary campus.
- There is a decrease of 0.3 days in intensive care length of stay.



University of Louisville Hospital in Louisville, KY is an academic teaching and research hospital with 340 beds, with the only Level I trauma center and adult burn unit in the region. Each year they admit more than 3,000 patients—including 1,500 patients who live outside Jefferson County and its surrounding communities. In July of 2017, UofL ended its relationship with its parent organization, KentuckyOne Health, and a multi-disciplinary black belt team was formed to address challenges within the organization—resulting in the decision to take a centralized approach.

Strong support from senior leadership, the dedication of the entire UofL team led by a passionate advocate for patient flow, and the combination of people, process and technology has resulted in the following outcomes in a very short period of time:

- The ability to admit and provide care for 589 additional patients January—September 2019.
- A 525-hour reduction in capacity status hours and a decrease in patient length of stay from 6.1 days to 5.3 days.
- An increase in discharge compliance from 39% to 56%.
- 169 additional OR cases.
- An increase in the number of patient transport trips from 3,604 per month to 5,135 per month and decrease in total trip time of more than 5 minutes.

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SETTING THE BAR FOR SUCCESS IN ACTION

CHRISTUS HEALTH

CHRISTUS Santa Rosa Health System is the only Catholic faith-based, nonprofit healthcare system in San Antonio and New Braunfels, TX.

CHRISTUS Santa Rosa Hospital-Westover Hills (CSRH-WH) is a 150-bed hospital serving the fastest growing area of San Antonio. Specialized care includes orthopedic and surgical services, ICU, women's services, a newborn nursery, comprehensive cardiovascular care from diagnostics to open heart surgery, vascular lab, sleep center, emergency services, the CHRISTUS Weight Loss Institute, wound care, rehabilitation and more. The campus also boasts an Outpatient Imaging Center and three medical plazas, one of which houses CHRISTUS Santa Rosa Family Medicine Residency Program and CHRISTUS Santa Rosa Family Health Center.

Santa Rosa, Westover



ABOUT CRAIG MENDOZA: Mendoza earned his MBA in Business Administration and Management and his BA in Healthcare Administration. He has held several positions throughout CHRISTUS Health during the past 10 years including Director of Radiology & Transport, Manager of Radiology, Manager of Cardiology, Transport, Lab Technician and Director of Imaging.



ABOUT JAMES PHARR: Pharr has an MS in Organizational
Development and Leadership and a BA in Human Resources from the
University of the Incarnate Word. He has been working as the Hospital
Patient Transportation Lead since 2017.



• Like many health systems across the country, CHRISTUS was experiencing high rates of turnover in its patient transport department—resulting in staffing shortages and challenges

associated with onboarding large numbers of new employees.

• Staffing challenges during peak times often meant delays across the

care continuum because patients couldn't easily and efficiently get to the next step in their care journey.

Data regarding patient transport was

difficult to obtain because the services were previously outsourced and not recorded—consequently making it difficult to identify trends and develop strategies for improvement.



ACTION

- When CHRISTUS Santa Rosa Hospital-Westover Hills became a part of CHRISTUS Health about two years ago, the once owned and outsourced patient transport department transitioned to TeleTracking.
- The leadership team at CHRISTUS Santa Rosa Hospital-Westover Hills decided to institute a development program for building a transport team, starting with the interview process—which is highly selective given the impact a transporter has on patient throughput.
- Craig Mendoza, Director Integrated Imaging-Ancillary, and James Pharr,

Hospital Patient Transportation Lead, trained current team members to interview prospective transporters as a way to ensure applicants have the right skill set, mindset, persona and spirit. Applicants appreciate being interviewed by people who are in the position because they understand every aspect of the job—and also ensuring new hires are well-prepared. The development program has been very well received. "It's an ideal approach because once a patient transporter knows how the hospital operates, they can expand their individual skills in other roles," stated Pharr.

- When a new patient transporter joins the team, they shadow several team members for three weeks before graduating from the training course. At that point, they know the expectations, understand the performance data from TeleTracking and can maximize the use of the mobile application. "This is an investment of time and money and it's well worth it to gain the results we need, and even more importantly, what our patients deserve," added Mendoza.
- Mendoza and Pharr developed daily reports to communicate to the transport team how they were/are performing. The first report ranks patient transport asso-

ciates during both the middle and end of their shift. The second report is a summary of delays that helps leadership determine if there are improvement opportunities to move patients timelier and effectively.

• As 2020 kicks off, Mendoza and Pharr have added new processes to help departments request patient transport through TeleTracking. For example, the transport team is responsible for taking deceased patients from their room to the morgue—a job that takes two transporters and sometimes up to 45 minutes to complete.



RESULTS

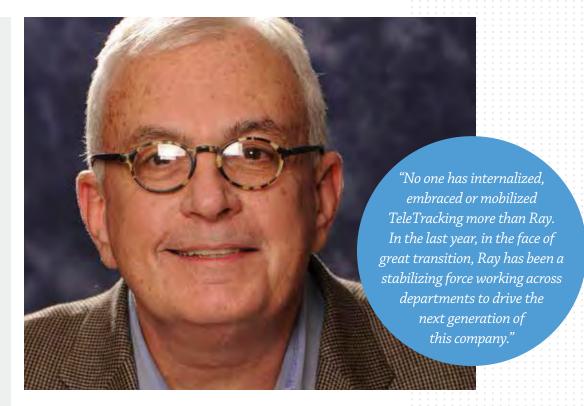
• Mendoza and Pharr know the importance of patient throughput in their organization because the 150-bed hospital is often at capacity. Mendoza shared, "The best way we know how to keep patients flowing through the hospital is to share performance data, hold members accountable and instill the importance of their work with every patient trip." This objective is achieved not by dictating expectations, but instead, leading by example to deliver on their mission as a faith-based organization of extending the healing ministry of Jesus Christ.

- Since the team started posting individual and group performance reports—and implementing mobile devices—performance has improved. "We are in high demand and receive on average 400 plus requests a day. It's safe to say our performance has improved. And, staff enjoy looking at their stats daily to see how they fared against their peers," said Pharr. The team also uses the data as a tool for continuous process improvement
- as they move toward best practice targets and goals. It's not always easy. Issues and concerns need to be addressed but, "with readily available meaningful data, feedback is always shared with honesty, respect, and guidance." added Pharr.
- The team's performance has been so successful that it is now the ideal model for all CHRISTUS facilities. Mendoza and the entire team have made this their personal quest—to do good for God, patients and

CHRISTUS Health. This is far beyond doing good work, it's doing good broadly and raising others up in the spirit of empathy and concern.

"We like to keep it simple. Our team does an outstanding job from the moment they arrive until the end of their shift. It is important as a leader to keep them motivated, and so the data is used to educate and adjust." concluded Pharr.

PAGE 22 PATIENT FLOW QUARTERLY



RAY POWELL

Honored as TeleTracking's Employee of the Year

We're always pleased to introduce you to members of the TeleTracking team. These are the dedicated, compassionate people that help bring our mission to life every day. Each year we recognize an Employee of the Year, and this year's honoree is Ray Powell, Director, Health System Command Centers. TeleTracking was founded in 1991, and Ray started in 1992, giving him a unique perspective on the organization's evolution from a bedmanagement company into the company that for the last 10 years has been responsible for the launch of more than 100 Health System Command Centers across North America and Europe.

> YEARS OF SERVICE: 28 years and counting. I was introduced to TeleTracking when Michael Zamagias, TeleTracking's Chief Executive Officer, asked if I would write the company's first business plan. Time flies when you're having fun!

> **YOUR MOTIVATION:** TeleTracking has always been—and will continue to be—the transformative force in solving the efficiency crisis facing healthcare. In 1992, when we launched the BedTracking solution, it was considered revolutionary. In 1996, when we developed a dispatcher-less solution called Transport-Tracking, our competitors and many others in the industry said it could not be done—but we did it successfully. And that success continued in 2001 with the first electronic bedboard which is now

universal; in 2006 with the first patient placement center; and in 2009 with the first enterprise-wide logistics center that combined the functions of patient access and patient placement.

From department solutions, to hospital solutions, to health system solutions, to cloud-based home-to-home solutions managed by an operational command center—it's amazing! We have successfully completed each and every innovation and transformation cycle. This time around will be no different, however, the impact will be exponentially greater.

ON A PERSONAL NOTE: I enjoy spending time with my better-half of the past 37 years—my wife Kathy. And together we enjoy spending time with our three children, Carrilee, Carter and Garrett, and our two grandkids, Hudson and Amira-Ray. In my downtime, you can find me reading, gardening, cooking, hunting, fishing or kayaking. I also have a little cabin in the woods that I love to escape to.

FINAL THOUGHTS:

Being a part of the TeleTracking story has been a pleasure and privilege. And receiving the Employee of the Year Award is an absolute honor. It's amazing to think about what TeleTracking is but even more amazing to think about what it is still becoming.

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



CARE TRAFFIC CONTROL

Certified Sites Lead The Way In Command Center Success

There's a whole new standard for measuring and achieving centralized care to optimize access and efficiency throughout today's health systems. Through best practices in centralizing operations and integrating people, process and technology, TeleTracking is now recognizing such work with a program that takes Hospital Command Centers to the next level by becoming Care Traffic Control CertifiedTM. We help with a set of criteria, standards and benchmarks all designed to help to measure Command Center success, while fostering collaboration, innovation and continuous performance improvement between centers.

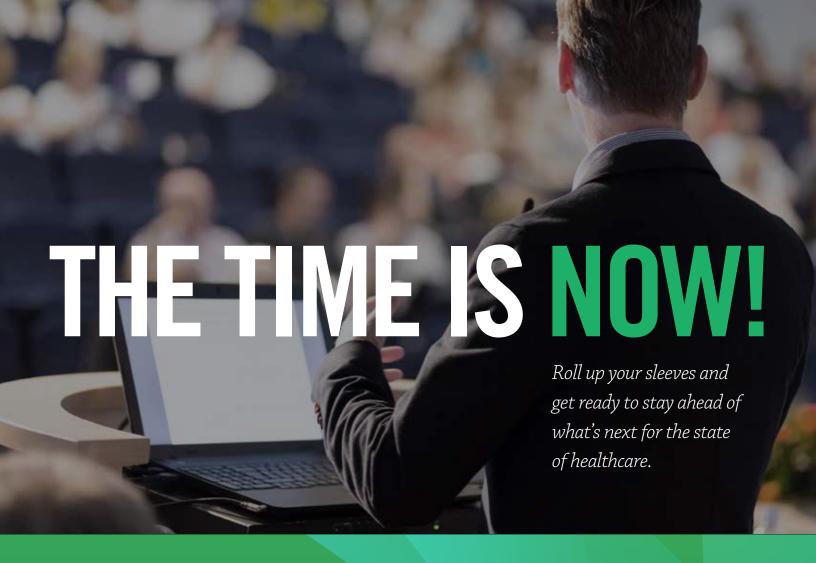
The result for your health system? Better care. Faster growth.



These five health systems are leading the way with Care Traffic Control Certification

- 01. Baystate Health
- 02. Broward Health
- 03. Carilion Clinic
- *O4*. Kettering Health Network
- 05. VCU Health

Want to be next? Learn more about becoming Care Traffic Control certified today at TeleTracking.com.



Join us for a 2020 Health System Command Center Executive Forum

You're invited to an exclusive executive opportunity to learn why Health System Command Centers play an essential role in your organizational strategy.

- Hear from leading healthcare executives about the clinical-operational quality initiatives at their systems
- Interact with healthcare leaders from across the country and take part in engaging discussions
- Learn the importance of coordinating patient care across the continuum and why centralization, operational alignment and shared situational awareness are key to navigating today's healthcare landscape
- Discuss the building blocks for a cohesive home-to-home patient experience
- Gain an understanding of how a Health System Command Center plays a critical role during a disaster
- Tour a state-of-the-art Health System Command Center

You have two chances to join the conversation.
We hope to see you there!

April 22-23, 2020 Hosted by Carilion Clinic Roanoke, VA go.teletracking.com/executiveforum-carilion

May 6-7, 2020 Hosted by Intermountain Healthcare Salt Lake City, UT go.teletracking.com/executiveforum-intermountain

*No registration fee

