
**THE RISE OF THE PATIENT
FLOW LEXICON**

How we got here, why, and
what the future holds

**CARILION CLINIC'S
MISSION CONTROL CENTER**

System-wide efficiencies through
centralized operations

HEALING HEALTHCARE

Tomorrow's answer for delivering
the right care, at the right time,
in the right place

**PATIENT FLOW
BEST PRACTICES**

Capturing success in action
through case studies that
demonstrate outstanding results



PATIENT FLOW

quarterly

25
YEARS
IN THE MAKING

Chairman and CEO
Michael Zamagias, His Vision
for What's to Come

ISSUE 1

A QUARTERLY PUBLICATION FROM **TeleTracking**

WHEN WE STARTED THIS JOURNEY
a quarter of a century ago,
THE CONCEPT OF PATIENT FLOW DIDN'T EXIST...



HOSPITAL OPERATIONS WERE LARGELY MANUAL, WITH OVER-EXTENDED EMERGENCY DEPARTMENTS, UNDER-UTILIZED BEDS AND NURSES MAKING PHONE CALL AFTER PHONE CALL TO COORDINATE CARE. IT WAS DISJOINTED, IT WAS CHAOTIC — AND MORE IMPORTANTLY, IT TOOK PHYSICIANS AND NURSES AWAY FROM DELIVERING CARE.

We started out in 1991 with a single product and a vision to transform healthcare — 25 years later, that vision endures with an integrated platform dedicated to optimizing health system operations and

DELIVERING MEASURABLE, SUSTAINABLE OUTCOMES.

And for me, continuing to deliver on that promise, now and into the future, is critical. While we are truly honored to be celebrating 25 years — which we could not do without the support of our valued client partners — we also know we are on the cusp of even greater change and opportunity.

THERE IS MORE THAN

1 TRILLION DOLLARS

of waste in the U.S. healthcare system. By 2020, healthcare spending will account for an incredible one-fifth of total GDP.

TeleTracking is committed to making it about delivering the right care, from the right provider, to the right patient, at the right time. It's about ultimately creating one crucial resource — time. Whether it's in the emergency department, at the bed side or in a procedural area, the timely coordination of care will continue to be our true north as we look to the next 25 years.

And that's the real bottom line — we can't ever forget the people we're helping — the nurses and doctors who are committed to delivering quality care, the patients who need their expertise and the family members who support them.

I invite you to continue this journey with us — the next 25 years promise to be even more extraordinary than the first.



MICHAEL ZAMAGIAS,
Chairman & CEO

WELCOME TO THE INAUGURAL ISSUE OF PATIENT FLOW QUARTERLY, *OR PFQ AS THE TEAM HERE REFERS TO IT.*

When I joined TeleTracking a little over a year ago, I thought I understood patient flow, but spending time with our clients across the U.S. and abroad has been eye-opening. I am humbled by their commitment, ingenuity and focus on delivering the best care possible to their patients. And TeleTracking, for the past 25 years, has been blessed to play a significant role in helping our clients meet and exceed their patient flow goals, resulting in more timely, purposeful care.

Inside each issue of PFQ, we will celebrate that commitment to patient flow and care coordination, as well as showcase best practices and success stories. You will find insights from thought leaders and information on upcoming events — along with the latest product developments and industry news. In this inaugural issue our president, Michael Gallup, and vice president of product management, Jason Harber, reflect on the shifting healthcare landscape and what the future holds; we detail how Carilion Clinic in Roanoke, VA created a state-of-the-art communications center; we highlight a RAND Corporation study recently published on Health First in Melbourne, FL; you'll learn how to sign up for our new online Client Community; and we recap our Annual Client Conference.

I hope that you enjoy our first issue! We also love feedback, so please reach out with comments, questions and new story ideas.



A handwritten signature in white ink, appearing to read 'Kris Kaneta', positioned to the left of his name and title.

KRIS KANETA
Editor-in-Chief & VP Marketing
PFQ@teletracking.com

THE PLACE TO BE

TeleTracking's Annual Client Conference Draws Record Numbers

The Annual TeleTracking Client Conference was held October 25-28, 2015, at the picturesque Westin Lake Las Vegas Resort & Spa. This year's event attracted a record number of clients, along with a record number of 24 client presenters.

Throughout the week, TeleTracking's president, Michael Gallup, recognized the dedication, commitment and leadership of those in attendance who are revolutionizing healthcare.

Gallup also expressed how honored the TeleTracking team is to serve with them in helping them achieve their patient care goals.

This year's keynote speakers started each day on an inspirational note. They included Scott Halford, an achievement psychology expert and the founder and principal of Complete Intelligence, LLC, and Bill Strickland, a community leader and author and the president and CEO of the Pittsburgh-based non-profit Manchester Bidwell Corporation.

Introducing new products and initiatives is a key part of the conference, and this year didn't disappoint, with the introduction of TeleTracking IQ™, a new cloud-based platform. TeleTracking IQ offers significant

advancements in user experience, with an ability to share common information and workflows that eliminate the need to navigate between products. Furthermore, TeleTracking IQ builds on existing solutions that provide better access to patient care.

Client success stories were also highlighted, with 24 clients presenting a wide range of breakout sessions around improving patient access and throughput, the transformation and centralization of patient transport departments, enterprise deployments, key integration points across health IT systems, the use of Lean methodologies to expedite patient discharges, and the list goes on.

In between sessions, clients mingled in the Product Showcase area, which featured kiosks highlighting TeleTracking's next generation solutions. There were also pods featuring TeleTracking's new Client Community, its Client Reference Program and TeleUniversity, the online learning management system.

Next year's Client Conference will mark the celebration of our 25th anniversary. We'll be in Naples, FL, October 9-12, 2016, so mark your calendar! Check out the next issue of *PFQ* for more details.



[1] Libby Caldwell & David Asherbraner, Frye Regional Medical Center, and Lesli Kennedy, McLeod Regional Medical Center, at the opening reception. **[2]** Terry Closson & Rose Cobery, City of Hope Hospital, starting the day at the general session. **[3]** TeleTracking Technologies president Michael Gallup and chairman and CEO Michael Zamagias welcoming clients to the general session. **[4]** Karen George, Wendy Trickey, Sherry Sims, Luke West, Alicia Gardner & Tonya Scarbrough, North Mississippi Medical Center. **[5]** Vicki Murante & Sheila Keller, St. Joseph's Hospital, and Jim Branka, TeleTracking Technologies client success manager, touring the Product Showcase area. **[6]** Bridget Fitzpatrick, Oschner Health System and Elvis. **[7]** Sherry Sims & Alicia Gardner, North Mississippi Medical Center, and Mike Wilcox, TeleTracking Technologies, enjoying dinner by the pool.

JOIN YOUR *COMMUNITY*

READY TO GET STARTED?
Send an email to
ClientCommunity@teletracking.com
to register.

Sign up.
Sign in.
Start a
conversation.

The all new TeleTracking Client Community is engaging, informative and collaborative so you can connect, share, learn and grow!

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.

- Get answers to your questions.
- Share best practices.

- Find the latest training and product information.

This is your community, designed exclusively for you, around your shared goals, needs, opportunities and obstacles — so join in today.

WHAT'S HAPPENING

TeleTracking clients are making headlines with their strides to optimize patient flow throughout their systems. These four industry leaders have been featured in respected healthcare publications.

01.

Nursing Administration Quarterly featured Carilion Clinic's state-of-the-art mission control center in Roanoke, VA, which provides real-time capacity updates and the status of confirmed and pending discharges.

02.

The Environmental Services Department at Seton Medical Center Williamson in Round Rock, TX was named the Environmental Services Department of the Year in the small hospital category of 150 beds or fewer. The annual competition is conducted by the Association for the Healthcare Environment and media sponsor *Health Facilities Management*.

03.

Hospitals & Health Networks featured Chicago-based Rush University Medical Center success with patient flow technology. Staff now takes 16 percent less time to place a patient from the ED than in November 2013, and ED nurses take 37 percent less time to give patient reports to inpatient unit nurses.

04.

Health Management Technology recently featured Penn State Milton S. Hershey Medical Center and its success with simplifying workflows and streamlining patient referrals.

▶ **Want to be sure you're receiving all of the latest information? Subscribe to our blog, where there are weekly conversations about optimizing hospital operations. blog.teletracking.com**

EVENTS

Make your plans now to join our team at these upcoming events. There's no better way to learn about top patient flow solutions while sharing ideas with others in the industry. We always meet new and interesting people at industry shows, so we hope to see you at one of these in 2016!

HEALTHCARE INFORMATION AND MANAGEMENT SYSTEMS SOCIETY [HIMSS] ANNUAL CONFERENCE & EXHIBITION

February 29 – March 4, 2016

Las Vegas, NV

TeleTracking booth #7410

This show brings together 40,000+ health IT professionals, clinicians, executives and vendors from around the world. Exceptional education, world-class speakers, cutting-edge health IT products and powerful networking are hallmarks of this industry-leading conference. More than 300 education programs feature keynotes, thought leader sessions, round-table discussions and e-sessions, plus preconference symposia and workshops.

AMERICAN ORGANIZATION OF NURSE EXECUTIVES [AONE] ANNUAL MEETING

March 30 – April 2, 2016

Fort Worth, TX

TeleTracking booth #305

Thousands of leaders in nursing come together at AONE for continuing education, networking and sharing of best practices.

ASSOCIATION OF PERIOPERATIVE REGISTERED NURSES [APRN] SURGICAL CONFERENCE & EXPO

April 2 – 6, 2016

Anaheim, CA

TeleTracking booth #245

Come connect with over 5,000 perioperative professionals seeking the latest industry updates, solutions and trends.

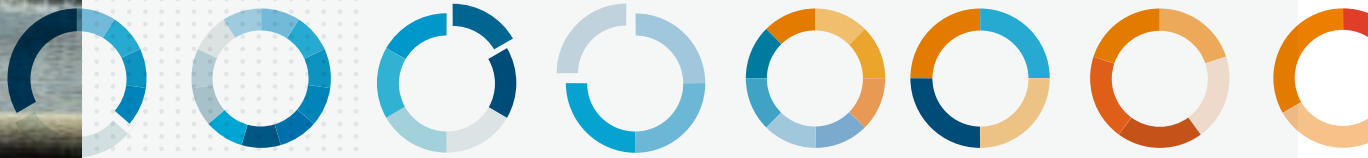


7 HOSPITALS
1,100 BEDS
44 AMBULANCES
3 HELICOPTERS



TAKING COMMAND

How a single command center introduces system-wide patient flow efficiencies.

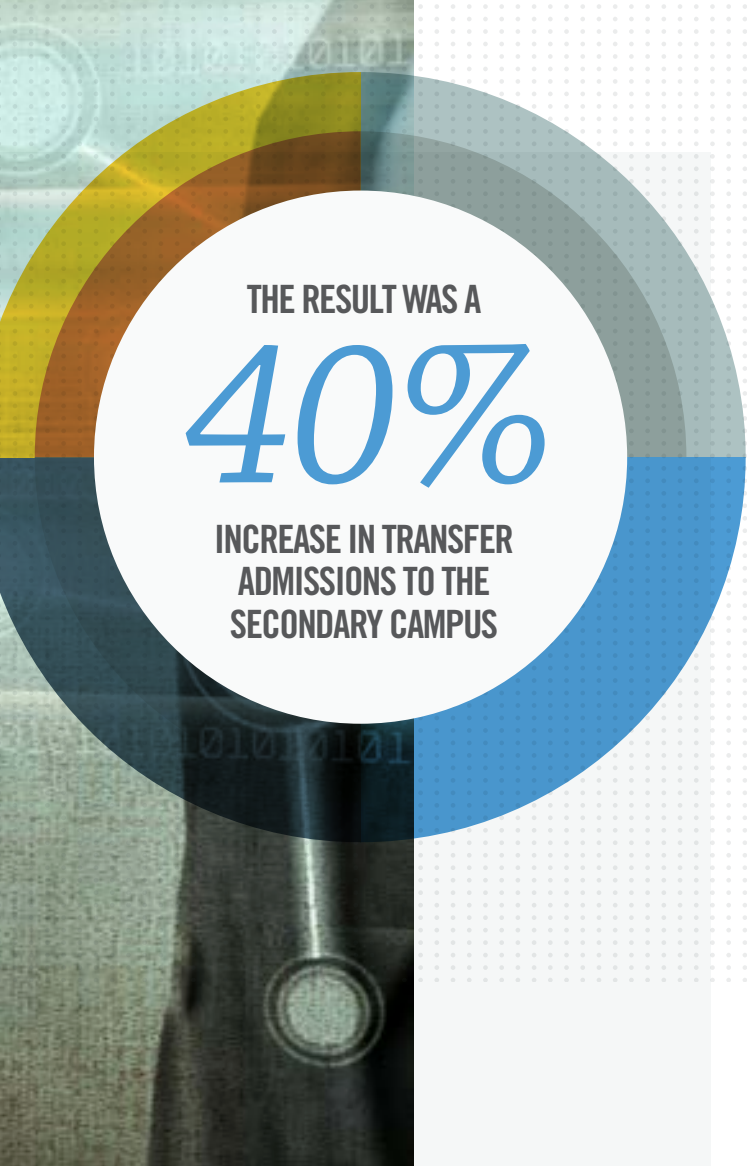
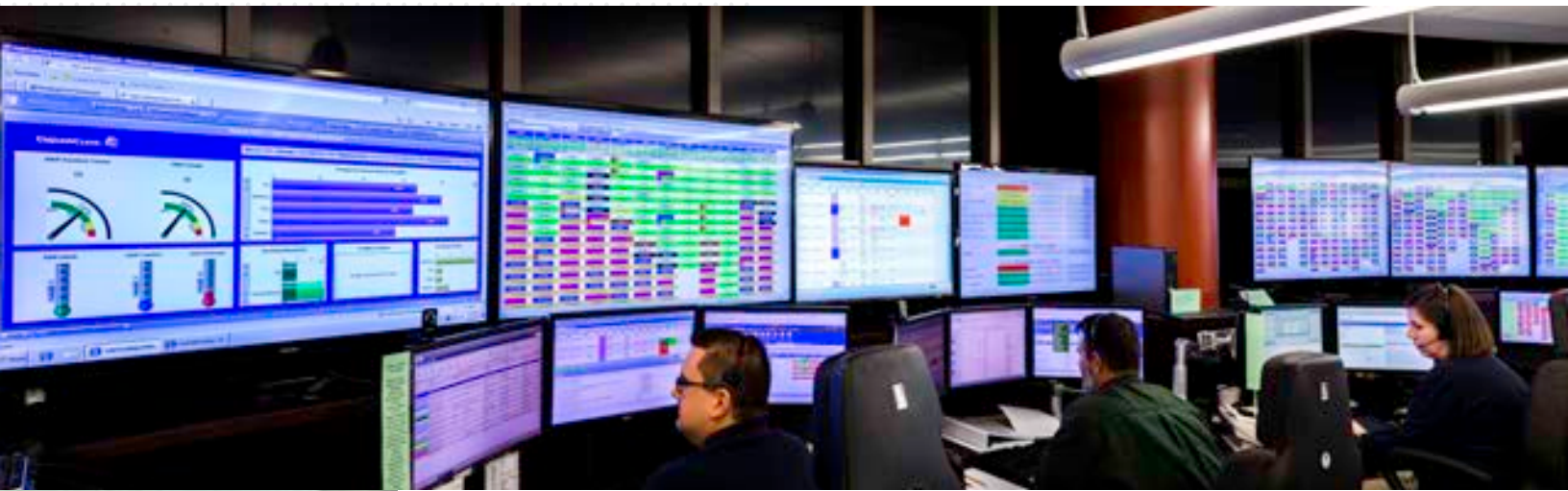


Melanie Morris, senior director, Carilion Clinic Transfer & Communications Center (CTaC), in Roanoke, VA, recently had a peer-reviewed article published in Nursing Administration Quarterly on the topic of designing a state-of-the-art mission control center. Melanie played an instrumental role in creating the centralized transfer and communications center at Carilion Clinic that allows for the seamless entry of patients into the health system, coordination of the safest, most appropriate transport of patients and the most efficient throughput as they receive care during their stay.

The CTaC is built on a strong operational foundation that includes a large, open physical space to facilitate collaboration. Its state-of-the-art technology includes TeleTracking's patient flow software, which provides real-time capacity updates. This operations center also plays a central role in emergency operations

and disaster management logistics at the local and regional level.

We had the chance to sit down with Melanie to gain her insights on everything from building consensus to the power of data and how it is best applied in practice.



Q Could you share your background and how you got involved in transfer center operations?

A I've been an RN for more than 21 years. I started my career working as a flight nurse and then transitioned into a marketing/business development role in Carilion Clinic's transportation department.

A few years ago, Carilion decided to re-evaluate how transfers came into the system. I became involved in the task force because in my business development role, I was on the front lines talking to customers, so I knew what we were doing well and where there were opportunities for improvement.

The decision was made to move the transfer center under the emergency services wing of the hospital, and I was appointed to manage the center because I was familiar with both the transfer hospitals in the area and our own internal operations.

When we started the planning process, we brought an EMS mind set—establishing clear protocols and consistent processes. This algorithmic approach is helpful because people like knowing what to expect.

Once we established the work flows, we needed to design the physical space and

determined that it made sense to put EMS dispatch and transfer center nurses in the same room — it just simplified things to have these two groups in the same place.

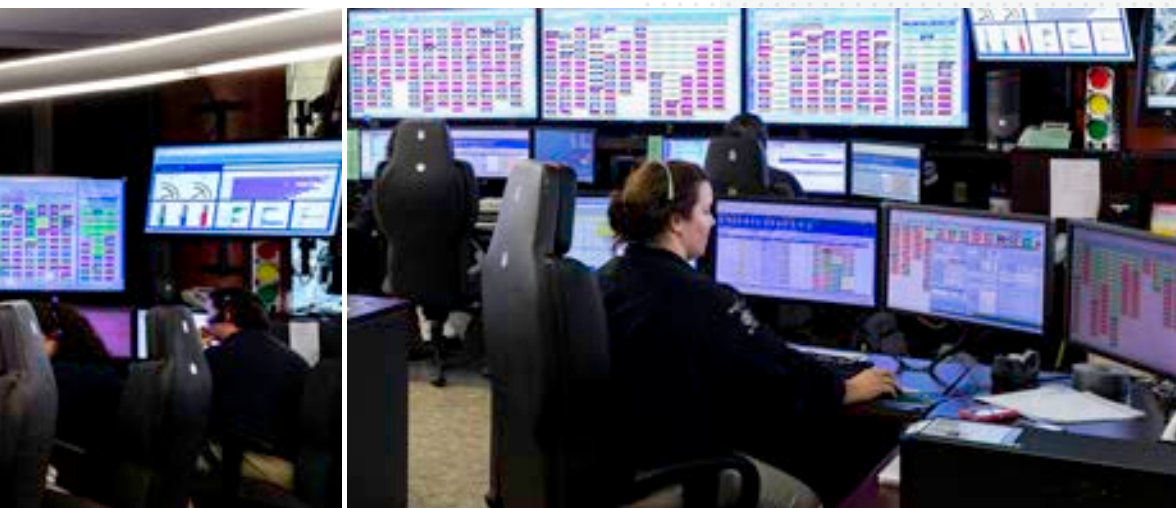
And that was just the first part of the puzzle — we also needed dispatchers to help get the discharges out and the new patients in beds. So we established processes that allowed for better prioritization and a more natural progression.

We're proud that three years later, our center is being recognized for its best practices.

Q Prior to CTaC operations development, what were the main barriers to patient access and throughput at Carilion?

A First of all, from a transfer perspective, we quite simply had more people than beds. We needed to address the length of stay issues and part of that involved determining what services could be administered on an outpatient basis versus an inpatient basis.

We owe it to our patients to make sure we're maximizing efficiencies. Previously, there were a lot of different portals into the system, and when a hospital is running at 95-98% capacity that can be



Carilion Clinic's Transfer and Communications Center, Roanoke, VA. The command center in action — keeping the the whole system flowing from a centralized information hub. For more visit: <http://go.teletracking.com/pfq-ctac>

dangerous — especially with time-sensitive medical issues.

When we moved to a TeleTracking system that was simplified and centralized, people knew what to expect and knew how to facilitate things so that the right patients were sent to the right facility — whether it was our main facility or one of our six community sites. The result was a 40% increase in transfer admissions to the secondary campus.

Q Who was involved in the design of the physical space of CTaC and the training/blending of employees to help ensure synergies with the new center?

A We were very, very blessed to get the physical space we did. We have a semi-circle layout in the space that used to be the hospital library that works perfectly from a collaboration standpoint. We worked with a wonderful space manager, as well as a project manager who helped us maximize the floor area, create good flow between the nurses and dispatchers, and allow for ample space for monitors and dashboards.

From the employee perspective, it was a big cultural change, so having open communication from the start was important. We brought everyone who was going to be involved to the table — we

wanted to know what they liked, what we needed to work on and what was on their wish lists.

We also worked closely with everyone on training and making sure they were comfortable and compliant with the software systems.

And these efforts paid off. A really strong synergy was established in the department with both the EMS and nursing staffs feeling that they were part of the bigger picture and that the entire health system was operating as a cohesive unit.

Q How did you overcome implementation challenges?

A Once everyone saw firsthand the level and timeliness of data that the software provided, the fact that operational decisions could be made based on that data and used for future planning decisions, they embraced the new way of doing things.

Q How has the CTaC impacted physician satisfaction scores — both internal and external?

A The first step was having everyone get to some level of agreement on the new patient flow process. That way, everyone knew the rules and what to expect.

Now, the feedback we've received is that physicians love having a nurse facilitating every transfer and they also love the data that's available to them. And with all of this data, bed priorities and needs can be shuffled in order to ensure patients get to where they need to be. A lot of people have said they don't know how they did this before TeleTracking. The goal is to make things as seamless and full-service as possible. When someone gets off a transfer call, we don't want there to be any unanswered questions.

At the end of the day, it's all about helping providers so they can better focus on helping their patients.

Q How have different departments/clinics/facilities within and outside your healthcare system been engaged in the process?

A The emergency room and PACU are big players. We now also hold a daily operations huddle. Basically, the leaders of all the major departments meet for 30 minutes to review throughput and provide mutual feedback.

Q What are your next steps — what is on the horizon to further enhance your operating model?

A This year, we added a clinical transporter dispatcher and an EVS

(environmental services) dispatcher to the transfer center. We're also working on integrating the hospital interpreters into TeleTracking's ServiceTracking application.

We're currently looking at how we can better utilize and integrate case management/social work. We're also looking at our emergency disaster procedures for ways of establishing greater integration.

Q How do you feel your overall quality of care has improved, especially in regard to the six dimensions outlined by the Institute of Medicine (healthcare must be safe, efficient, patient-centric, effective, timely and equitable)?

A We have definitely improved, especially regarding patient safety and efficiency.

We owe it to our patients to give them quick decisions and beds when they get here, since these can be life-or-death matters. We want to be sure the flow is occurring the way we need it to be, so that patients are moving in and out the way they should be.



GIVING BACK TO HEALERS

*revolutionary
thinking
for tomorrow*

STORY BY SUSAN MCLAUGHLIN / TELETRACKING

We're all familiar with companies that have completely revolutionized the way business is done. Netflix has changed the way we watch TV, Uber has changed transportation and Airbnb has altered the way we decide on a place to stay or use that extra room.

TELETRACKING IS CHANGING THE HEALTHCARE SYSTEM AS WE KNOW IT.

"We are committed to making things happen," says Michael Gallup, TeleTracking's president. "Over the past 25 years, we've created the foundational elements that make hospitals operate more efficiently. As we move into the next 25 years, our focus will be to make it easier for physicians to get their patients to the right place, at the right time, for the right care."

Community Access™ Portal (CAP) is just one way TeleTracking is moving in that direction. With CAP, referring physicians have the ability to request a patient admission and then track that patient's progress within the health system. Think of it as Uber for healthcare — you can see if there are cabs in the vicinity, you can request a pick-up and you can track the location and estimated pick-up and drop off times.

"The whole game is changing," says Jason Harber, vice president of product management. "Understanding the capacity of an entire region would make it possible to flex the supply of resources in real time in order to effectively meet demand."

The changing landscape also involves shifting away from a series of point solutions — discovering an issue and buying a tool, discovering another problem and buying another tool — and realizing that all needs and all solutions can be achieved with one integrated platform. And if a health system doesn't have this type of enterprise solution, it will have a difficult time being competitive.

"It comes down to process standardization and data creation," continues Harber. "Everyone believes they're different, but processes are standardized every day. The purpose of this standardization is to create a positive impact on patient care by improving communication and effectively connecting clinicians with patients and families."

This standardization ties very closely to data access and management—creating a fundamental shift in the way business is managed.

"What started as a desire to increase labor productivity has resulted in a revolutionary approach to giving time back to clinicians so they can spend more time with patients, leading to overall patient satisfaction," concludes Gallup. "It's simplifying the processes, reducing the need for over-communication and putting an end to the chaos."

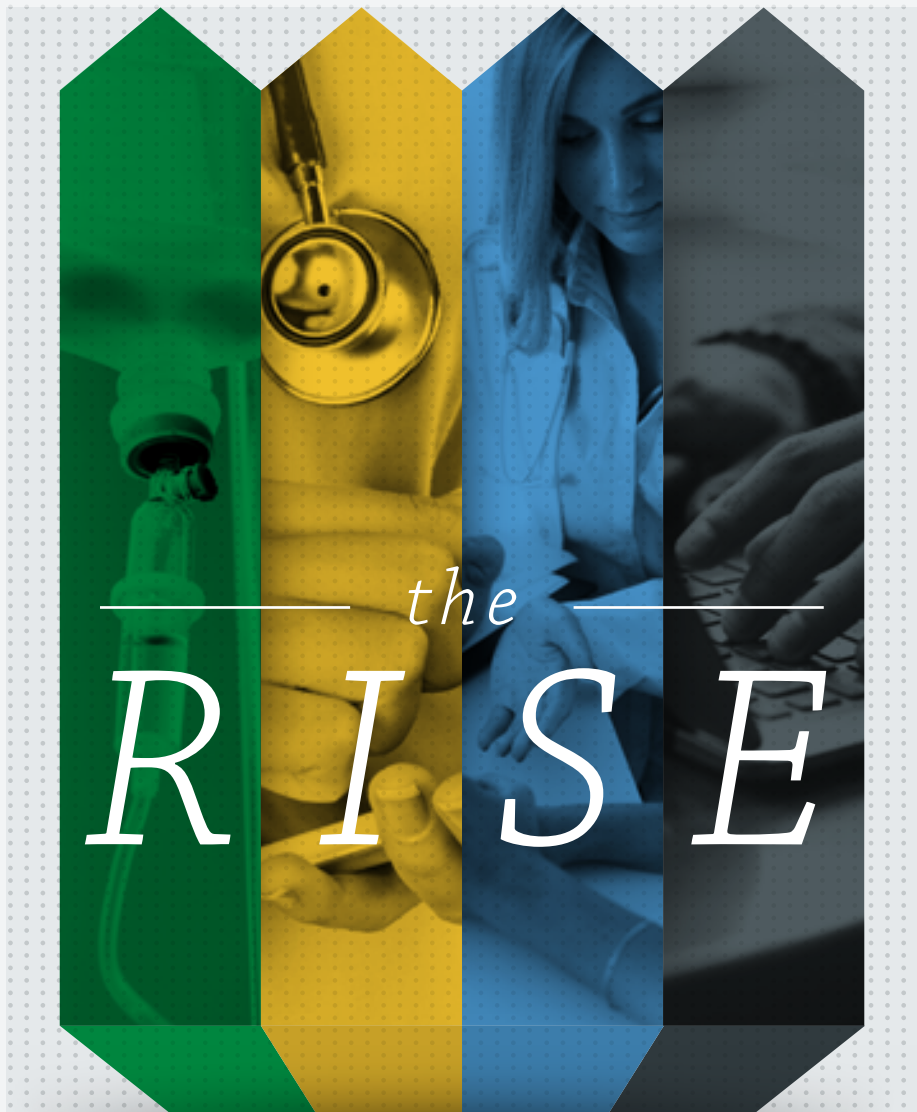
"We will always be mission-oriented and totally committed to serving the patient and the caregiver. We want to be a part of ensuring the timely delivery of care—where it's needed, when it's needed, at the right level, at the right time for every person in the world."

MICHAEL GALLUP

TeleTracking President



STORY BY SUSAN MCLAUGHLIN / TELETRACKING



OF PATIENT FLOW

A look back and the future vision for industry-changing technology

The technology that we take for granted today was in its infancy in 1991. For example, the first website came online at CERN labs; laptops were big, heavy and expensive; color scanners were just being introduced; and the very first Norton anti-virus software came out. 1991 was also the year that the concept of patient flow technology entered the healthcare marketplace, when Michael Zamagias, a real estate developer, took the reins of a start-up that became TeleTracking Technologies.


ALWAYS STAND IN FRONT OF DEMAND


Healthcare is one of the largest industries, from a dollar perspective, in the United States. Yet in 1991, it was hotels, not hospitals, that were using technology to improve operational processes — and getting the rooms that guests had checked out of quickly cleaned and ready for new occupants. Meanwhile, hospitals did not have an efficient way to keep track of dirty beds in order to turn them around for new patients — resulting in emergency department backups and patients not receiving the right care at the right time.


“Even back then, it was amazing to me how difficult it was for hospital staff to find beds and how far-reaching an impact those inefficiencies were having on patient care and satisfaction,” Michael Zamagias, TeleTracking’s chairman and chief executive officer, says. “And while there were a lot of other interesting changes going on in healthcare because of technology, there wasn’t anything when it came to patient flow.”

THE OPPRESSIVE BURDEN OF ESCALATING HEALTHCARE COSTS


Looking at the concept that hotels were using to manage the flow of guests — and the efficiencies they were realizing — TeleTracking launched its first product, BedTracking®, which dramatically reduced time lags in the bed turnover process. This initial success led to more than a business strategy — it created a passion for finding ways to contain costs and improve the patient experience, including:

 **Improving Access to Care:** By bringing real-time enterprise visibility to patient care demand and optimizing the discharge planning process, patient flow improves, which creates capacity and allows for an improved intake process.

 **Maximizing Patient Throughput:** By optimizing workflow from the time patients arrive at the hospital to the time they leave, and throughout various clinical workflows, it’s possible to provide better care, decrease overall length of stay and serve more patients.

 **Increasing Labor Productivity:** By optimizing the productivity of clinical, operational and support staff and creating a more efficient deployment of resources, everyone

is more satisfied because they’re able to do what they do best — focus on providing excellent patient care.

 **Enhancing Quality of Care:** By tracking and reporting on hygiene activities and patient-to-caregiver interactions, we are helping ensure that every patient is receiving timely, purposeful, engaged care. What that means is caregivers are fulfilling their mission and the overall quality of care is elevated to new heights.

“We’ve been able to achieve these advances because of the good people who work here, a group that is getting behind the same wheel and pushing it in the same direction,” adds Zamagias.

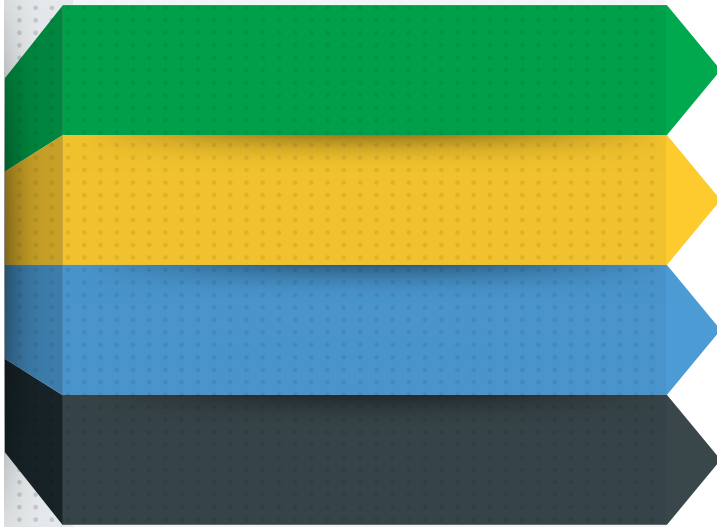
THE SEED IS JUST SPROUTING

TeleTracking’s tremendous growth over the past 25 years shows that clients are moving in this same direction. In 1993, a client event was held and only four people attended. In 2015, more than 450 clients attended the Annual Client Conference, looking to learn more about patient flow efficiencies, network and connect with what’s new. And even though 100 percent of TeleTracking clients said they would buy TeleTracking products again, according to the October 2015 KLAS report, the drive to do better, to make an impact is just as strong as ever. There’s always more to come!

This attitude resonates uniquely with TeleTracking clients. By improving operational efficiency and making sure patients are in the right bed at the right time, waste is eliminated, costs are contained and caregivers are engaged.

“Whatever we’ve done in the past pales in comparison to what is coming tomorrow,” Zamagias continues. “Problems are commensurate with opportunities. We know healthcare inefficiency is a trillion-dollar problem, and we’re just starting to scratch the surface when it comes to the \$150 billion related to inefficient operations. We planted the initial seed 25 years ago. Now we are adding sunlight and fertilizer and expecting things to fully blossom with amazing creativity, growth and development over the next 25 years.”

HOW WE GOT HERE



TeleTracking has always been committed to serving patients and caregivers by enabling the timely delivery of care. We empower clients to provide the right care, from the right provider, to the right patient, at the right time. With all of these things working in concert, systems flow more efficiently, and the patient continues to receive the best possible care. Imagine what the next 25 years will bring!

TransportTracking™ assigns jobs to the most appropriate transporter based on dispatching logic

1995



MOBILE APPLICATIONS

2004 - 2007

TeleTracking founded in Pittsburgh, Pennsylvania

1991

1991

BedTracking® - introduced flagship product to reduce lag times in the bed turnover process

2007

Release of TeleTracking's XT Platform

2002

PREADMITTRACKING® WITH THE ELECTRONIC BEDBOARD® - SHOWS CLEAN, OCCUPIED, DIRTY BED STATUS IN REAL TIME

Avanti Patient
Flow Services®
2007

BED MANAGEMENT
SUITE® RELEASED
ON XT PLATFORM

2009



80% of the hospitals named in
the 2012 "Best Hospitals" issue
of *U.S. News & World Report* -
are TeleTracking clients

2012

2009 **PatientTracking Portal™** -
provides a single view of real-time
patient information, replacing
nursing dry-erase white boards

RTLS LAUNCHED
IN THE UNITED KINGDOM

2011

2008

Patient Flow Dashboard™ -
ability to monitor real-time
status of enterprise
operations

2009

CUSTOM REPORTING
SOLUTION™ - OFFERS
EASY-TO-READ,
AUTOMATICALLY-GENERATED
REPORTING FROM
TELETRACKING SOLUTIONS

2011

2011

2nd Generation RTLS technol-
ogy makes it possible to track
assets, patients and staff

2009

Acquisition of RTLS technology,
Transfer Center software and
OR / Outpatient solution



Recognized as a Certified Support Staff
Excellence Center (CSSEC) by Technology
Services Industry Association (TSIA) and
Impact Learning Systems (ILS)



Peer Reviewed
by HFMA®
designation

2013

2014

RTLS-Enabled Automated Discharge makes it possible to speed up dirty bed notifications and improve bed turnover times

2014

RTLS-Enabled Hand Hygiene Monitoring routinely monitors caregivers' usage of sanitizer and soap dispensers, along with their entry and exit to patient care areas

RTLS-Enabled Care Interaction Monitoring measures the frequency and length of interactions between patients and staff

2014

2015

ORCHESTRATE™ FOR OUTPATIENT IMPROVES PATIENT FLOW THROUGHOUT PERIOPERATIVE AND ANCILLARY CARE AREAS

2015

Recognized for the eighth time by KLAS as the Patient Flow Category Leader



Awarded "Best Product for Improving Working Practices" from the British publication Building Better Healthcare

2015

2015

TeleTracking IQ™ Platform a commitment to enabling timely patient care



On Call Scheduling integrates with TransferCenter™ software to provide a centralized, single source of truth for on-call physician schedules

2016

Community Access™ Portal offers physicians an easy way to admit and track their patients' progress

2016

2016

Analytics on the TeleTracking IQ™ Platform offer robust analysis for better decision making

This story was originally published by RAND Corporation in October 2015 and was sponsored by TeleTracking.



TODAY'S HOSPITAL:

CHALLENGES BEYOND CARE

Using the Power of Data to Drive Efficiency at Health First

Hospital care today makes up a significant portion of healthcare spending—around \$750 billion annually. And while providing care is still the top priority, facilities are facing an array of pressures, including:

- A shift to bundled payments, which means providing better care at lower cost
- The rising costs of pharmaceuticals, supplies, medical technology and personnel
- Operational issues related to capacity management, especially emergency

department overcrowding, diverting inbound ambulances and private providers sending elective admissions to other facilities

- An aging population, the growing prevalence of chronic diseases and expanded coverage with less generous reimbursements

The bottom line is that to thrive in this new environment, hospitals will need to operate more efficiently, while maintaining or improving the quality of care and patient outcomes. That's what Health First, in Brevard County, FL achieved by using Lean thinking enabled

by information technology support from TeleTracking.


HEALTH FIRST – A SNAPSHOT

- The only not-for-profit, fully-integrated health system in central Florida
- More than 8,000 employees distributed across four hospitals, a medical group, a health plan and a number of outpatient services
- A combined total of over 900 beds across the four hospitals



19%

DECREASE IN MEAN PATIENT LENGTH OF STAY



27%

INCREASE IN TOTAL ANNUAL ADMISSIONS



ZERO

INPATIENT BEDS ADDED

- The central flagship institution is Health First's Holmes Regional Medical Center, a multispecialty hospital with 550 beds and a Level II Trauma Center. It also has three smaller community hospitals: Cape Canaveral, Palm Bay and Viera.

- Holmes accepts transfers not only from in-system community hospitals but also from external facilities.

- The payer mix is 60 percent public insurance (Medicare and Medicaid), with the remainder coming from private insurance.

HEALTH FIRST 2012 – THE CHALLENGES AND THE STRATEGY

HEALTH FIRST WAS FACED WITH THREE MAJOR CHALLENGES:

- Financial problems
- Low quality scores
- Low patient satisfaction ratings

Under the guidance of president and chief executive officer Steven Johnson and chief operations officer James Stuart Mitchell, Health First charted a new course utilizing a three-pronged strategy that matched up with these three key challenges.

Both Johnson and Mitchell had come from health systems that had used Lean process improvement methodology and had seen firsthand the impact on overall efficiency. Their first action was hiring Bill Griffith, an expert in Lean and Six Sigma,

as Health First's executive director of operational excellence.

Griffith quickly identified patient flow processes as a key opportunity for improvement. Individual hospitals within the Health First system operated as separate units, often transferring patients outside the system. Within each of the four hospitals, nurses had to manually find and assign beds and were not always motivated to take new patients. Busy times, such as shift changes, resulted in bottlenecks—and prolonged wait times for inpatient beds for patients admitted from the emergency department. And when there was a lack of clean beds and delays in patient flow, Health First sometimes lost transfers to external hospitals outside its system, negatively impacting financials.

It was also difficult to pinpoint inefficiencies because operational performance data was not attainable and most metrics had to be pulled manually.

CENTRALIZING THE PATIENT FLOW PROCESS

Centralizing operations was the first step. The heart of Health First's patient flow process is the Centralized Patient Logistics (CPL) center. The CPL is staffed by non-clinical personnel, with nurse oversight as needed, and is responsible for managing bed assignments. CPL associates have a bird's-eye view of hospital resources and processes across all four hospitals,

including available beds, incoming transfers and admissions, and the performance of key individuals and groups that are essential to patient flow.

At each workstation in the CPL, monitors display the unit-by-unit status of the health system's beds. The color-coded bedboard indicates if a bed is occupied, "dirty" (vacated and available for cleaning) or available for the next admission. On the walls of CPL and on units, flat-panel monitors display the health system's "dashboards"—summary statistics of performance in real time.

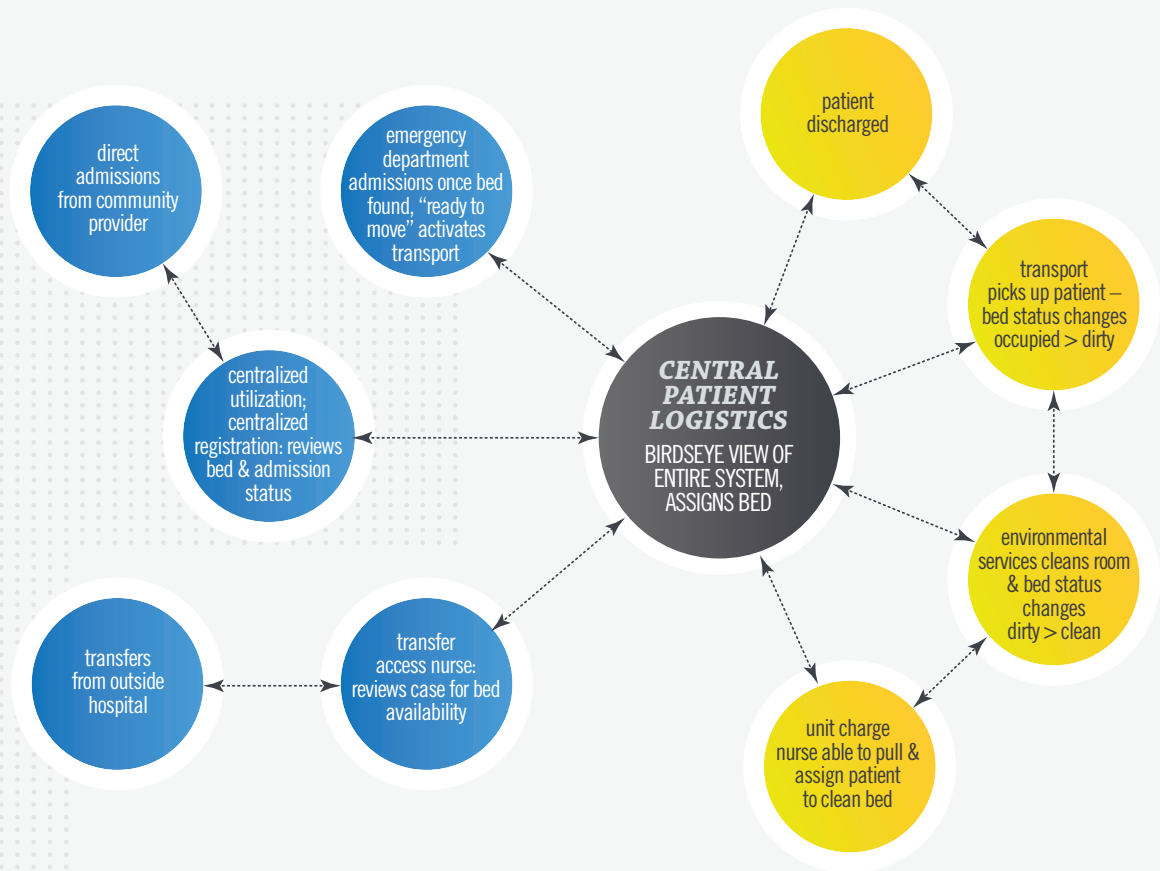
THE ADMISSIONS PROCESS

When a patient has been admitted from the emergency department, CPL is notified through the TeleTracking® software so CPL associates are aware of an upcoming bed assignment request. Emergency department associates have 30 minutes to complete all tasks until the emergency department management team receives a notification and intervenes to complete the process. Once admitting orders are in place (by the floor physician) and all essential tests have been completed in the emergency department, the nurse pushes a "Ready to Move" button, triggering CPL to assign a bed, which then automatically triggers transport to take the patient to the assigned bed.

The TeleTracking system also facilitates direct admissions and transfers. In the case of a direct admission, community

CENTRALIZED PATIENT LOGISTICS IS A BIG UMBRELLA OVER EVERYTHING THAT HAS TO DO WITH PATIENTS COMING IN, AROUND OR OUT OF THE FACILITY, SO WE PRETTY MUCH TOUCH EVERY PATIENT IN THE FACILITY.

HOW *PATIENT FLOW MANAGEMENT* WORKS AT HEALTH FIRST



physicians first call Health First's CPL to initiate the process. A centralized utilization review team of trained nurses evaluates the admission to ensure that the proper bed status and unit are assigned. Orders for pre-admit patients are written by attending physicians through an order software program, which interfaces with TeleTracking so that orders are available to the utilization review team. A centralized registration team manages registration and insurance review of direct admits (as well as transfers). Admitted patients are given printed cards stating that they are direct admits and instructed to show the card to the hospital information desk associates, who will help guide them to their rooms. Transfers within the hospital and from

the ICU are also facilitated through the same process.

Because the CPL assigns beds for all four of Health First's hospitals, when a unit is near capacity at one hospital, the CPL can assign direct admits and transfer patients to beds at other hospitals, thereby allowing Health First to distribute workloads evenly across multiple hospitals.

TRANSPORTS

Transports are automatically assigned based on dispatch logic, which computes the optimal assignment based on priority, proximity and mode of transport (e.g.,

wheelchair versus stretcher). Transport assignments are based on zones, taking into account the proximity of transporters and the most recently completed transport to minimize excess travel time between jobs and maximize efficiency.

Discharges are the number one priority for transporters to allow capacity for future admissions. When an inpatient is discharged, the transporter who arrives to escort the patient enters a numerical code to change the bed's status from "occupied" to "dirty." The moment a member from the EVS team arrives, he or she enters a numerical code on the room's telephone to indicate that cleaning is under way. When the task is finished, a second telephone entry changes the bed's status from "dirty" to "available."

COMMUNICATIONS AND ENGAGEMENT

Using Lean methods, Health First implemented changes in patient flow by identifying key opportunities for improvement and then bringing together everyone who would be impacted by the changes to describe their experiences and provide their feedback on improving the process. Involving everyone was critical to achieving buy-in from the beginning. The biggest challenge was convincing associates that there was a need for improvement in the first place. Many hospital associates were so accustomed to the way things were that they did not even realize the degree of inefficiency they were dealing with on a daily basis.

Health First encountered three additional challenges during implementation of their patient flow improvement efforts:

- Associates needed to learn to use the new system consistently. This was solved with additional training and reminders for associates.
- While there was substantial associate buy-in to shift bed assignment authority to the CPL, some nursing associates didn't want to give up the authority to determine bed assignments because of concerns over receiving admissions for which they were not prepared. However, once the processes were in place and hard data was available showing the benefits, the concerns were resolved.
- Health First hadn't previously incorporated the use of summary metrics and performance measures that would increase accountability and motivate improvements in productivity. Department managers started rewarding associates for productivity and planning activities to increase team morale. When associates did not meet productivity goals, they used tactics like formal training or pairing them with high performers.

KEY SUCCESS FACTORS

- 01. LEADERSHIP SUPPORT** — Executive management articulated clear strategic goals and support for the process improvement initiatives that focused on streamlining patient flow.
- 02. TIMELY AND USABLE DATA** — TeleTracking's software generates actionable, real-time data. This information helped drive operational decisions and allowed system managers to spot bottlenecks, held individual units and employees accountable and tracked the health system's overall performance.
- 03. PROACTIVE FRONT-LINE MANAGERS** — With managers focused on continual process improvement, they listened to suggestions from their associates and created an environment of accountability.

KEY RESULTS

- 01.** Centralized, data-driven management of regional referrals, inpatient admissions and bed turnover streamlined throughput and freed up substantial latent capacity in Health First's network of four hospitals.
- 02.** Health First substantially increased monthly admissions and improved efficiency without investing in a larger physical space or a bigger clinical workforce. For example, overall transfer volume has increased by more than 30%.
- 03.** Health First improved efficiency by employing technology and process improvement methods to streamline hospital operations. For example, hospital-acquired conditions have been reduced and sustained by more than 15%.
- 04.** Despite a 12% increase in emergency department visits, emergency department wait times have decreased by more than 70%, or 33,000 hours.
- 05.** Health First has reduced length of stay from 5.75 to 4.65 days – freeing up more than 80 beds per day.

▶ *Improving Hospital Efficiency Through Data-Driven Management, A Case Study of Health First, FL. For more, visit: <http://go.teletracking.com/pfq-rand>*



*SETTING
THE
BAR FOR
SUCCESS
IN ACTION*

At TeleTracking, we have a simple belief that our success comes from the outcomes realized by our clients. We strive for and measure those outcomes with what we call a “CAR.” The “Challenge” is uniquely defined by you. The “Actions” are what we collaboratively design and approach as trusted partners. And the “Result” is a measurable, impactful, enduring change for your health system. Each issue, we’ll share examples that highlight the vision and success of leading health systems that may very well mirror your own patient flow journey.

**SHARP
HEALTHCARE**
SAN DIEGO, CA

**HUNTSMAN
CANCER
INSTITUTE**
SALT LAKE CITY, UT



CHALLENGE

Sharp HealthCare System, a six-hospital, 1500+ bed system, was experiencing significant throughput issues because of its outdated manual patient placement processes. The impact? An overburdened emergency department, inefficient discharge processes and an absence of real-time data that made it difficult to project patient demand and staffing supply, in addition to millions of dollars in lost revenue.



ACTION

In 2013, key stakeholders in search of a solution began collaborating with TeleTracking to design a centralized patient logistics center. Utilizing existing space, a command center with a staff of 25 people was built and TeleTracking's Capacity Management Suite™, TransferCenter™ and Real-Time Location System technology were implemented to power the new centralized system. Direct admissions are handled with one phone call to registered nurses, and custom dashboards track system-wide performance regarding environmental services, patient flow, transport tracking and transfer center.



RESULTS

- The positive results include an average of 70 additional patients being admitted through the transfer center per month.
- A decrease in admit order-to-occupy of 191 minutes, ready-to-move to assignment of bed decreased by 162 minutes and bed dirty-to-clean times declined from 15 to 5 minutes.
- Bed turnover times are also less than 60 minutes. In addition, there is greater performance accountability that leads to higher staff efficiencies and better staffing practices due to improved discharge notifications.



CHALLENGE

The Huntsman Cancer Institute underwent a major expansion project in 2011 that placed significant distance between Huntsman's previously adjacent infusion center, pharmacy and patient check-in area.

The impact? The three departments that previously talked face-to-face devolved into a series of repetitive phone calls—with the right people often not connecting in a timely fashion. Pharmacy made multiple calls to determine a patient's status in order to decide when to start preparing chemotherapy infusions. Then infusion had to make calls to determine when the patients' IV medications were ready to be picked up and administered. As patient volumes increased, and consequently the staff grew, the communication and flow problems became worse.



ACTION

Searching for a solution to improve their operations, in 2012 Huntsman selected TeleTracking's Orchestrate™ application, a perioperative solution. In a highly collaborative process, key staff from nursing, the front desk, the infusion center and the pharmacy guided TeleTracking consultants in order to create custom views that made it simple and efficient for all caregivers to track a patient's progress through the complete appointment. An interface from the hospital's scheduling system populated the daily schedule in Orchestrate and timers were added for most steps, making it possible for staff to monitor patient progress.



RESULTS

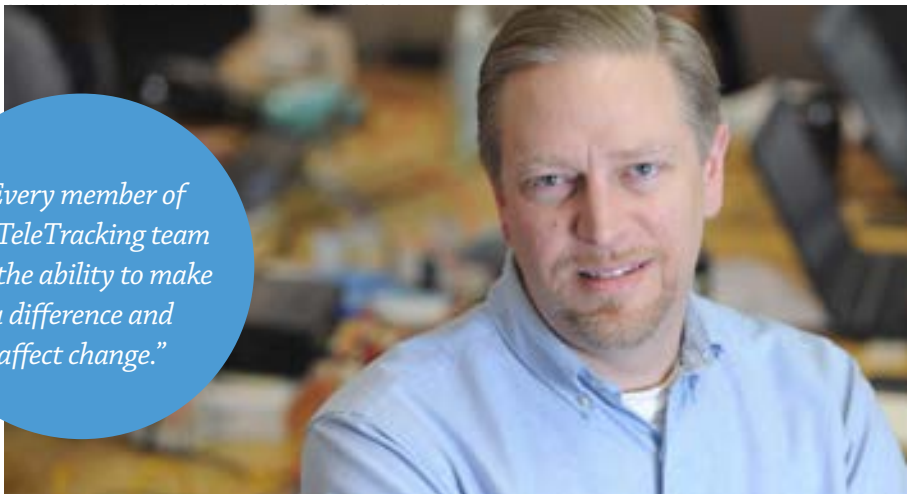
- The front desk and the nurses made 100 fewer calls a day.
- Over 200 daily patient status calls between nurses and pharmacists were eliminated, which allowed for more time for clinical calls between staff.
- Embedding timers gave all three departments transparency into the workflow so service delays could be promptly addressed, creating a positive patient experience.
- Nursing managers and supervisors were now able to easily monitor patient flow and intervene before a small bottleneck became a major problem.
- Pharmacy managers and supervisors could monitor workflow through their area and effectively assess the amount of time necessary for preparing the IVs for patients.
- Staff knew when medications were ready to be picked up and administered to the patient, eliminating delays in the infusion process.
- System-generated reports put analytics at administrators' fingertips, reducing the time-consuming manual process of collecting wait time data points and making it easier to implement additional process improvements.

The Huntsman Cancer Institute is part of the University of Utah Health Care System in Salt Lake City, UT.

EMPLOYEE SPOTLIGHT

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

“Every member of the TeleTracking team has the ability to make a difference and affect change.”



MIKE NACEY // Tech Lead Manager

YEARS OF SERVICE: 15
BIGGEST CHANGES: Growth. When I started at TeleTracking in 2000, we only occupied half of the 7th floor, and now we occupy the entire Times Building. As the market evolves, we have successfully moved beyond targeting individual hospitals, and we are now influential in shaping the business practices of the market. The adoption of Agile principles in our product teams has enabled us to reach a never-before-seen level of cooperation and productivity between technical and business resources.
MOST EXCITING PROJECT: The TeleTracking IQ™ Platform is by far the most exciting and challenging

project that I have worked on here. We have the opportunity to revolutionize the way we deliver value to our customers. By freeing customer operations and data from the confines of a single facility, we have opened up a realm of possibilities to deliver features that were never before possible.
FAVORITE PART OF TELETRACKING CULTURE: The culture is one of hard work and dedication. What I like most is that each and every member of the TeleTracking team has the ability to make a difference and affect change.
HOBBIES: Hiking, fishing, brewing adult beverages

CAROL BURLIKOWSKI // Accounting Clerk

NUMBER OF YEARS OF SERVICE: 23
THE BIGGEST CHANGES YOU'VE SEEN: The short answer is absolutely everything. When I started 23 years ago, there were just five of us working in the basement of a farmhouse. Now there are more than 350 people working across the United States and in the United Kingdom. We've gone from the one BedTracking® product to an entire suite of solutions that help hospitals run more efficiently.
WHAT YOU LIKE BEST ABOUT THE TELETRACKING CULTURE: The company means so much to me. I love working here. The people here aren't just co-workers, they're more like family. And it starts at the very top, with upper management valuing every employee as a person.
HOBBIES: Golf, bowling, baking and spending time with my grandchildren



“The people here aren't just co-workers, they're more like family.”

thank you

From **TeleTracking**

THANK YOU FOR 25 YEARS OF:

- *Believing in our mission.*
- *Sharing a commitment to healing and helping patients.*
- *Collaborating with us to change healthcare.*



Keep up with what's next at
blog.teletracking.com





I used to be
invisible

Paul, Dialysis patient.

I used to feel lost in the system for hours on end. Now I am the center of attention and can do what I need to do. Heal.

TeleTracking[®]

POWERING INTELLIGENT CARE