

The ROI to Hospital Service Robots: A White Paper

IMPROVED LABOR EFFICIENCIES, PRODUCTIVITY, AND STAFF SATISFACTION MAKE A CASE FOR RELAY ADOPTION

In today's healthcare environment, hospitals are fraught with challenges that stretch their ability to attract and retain technicians and nurses while assuring patient safety and quality care. According to the recent [American College of Healthcare Executives' annual survey](#) personnel shortages, safety and quality, and patient satisfaction rank in the top five issues confronting hospitals today.

To meet these challenges, pharmacy and laboratory directors are continually on the lookout for innovative solutions to support their healthcare workers and improve overall patient care.



One such innovation that is optimizing labor and productivity is the Relay Service Robot, an advanced, autonomous delivery solution that improves workflow, increases staff satisfaction, and helps ensure patients get the care they need, when they need it.

SECURE, TRACEABLE, SAFE DELIVERY IN DYNAMIC PUBLIC SPACES

Designed and built by Relay Robotics, a pioneer and leader in autonomous delivery robots, Relay robots work safely and efficiently with and among people in dynamic public environments to increase operational efficiency and quality of care. Relay's trackable, traceable chain-of-custody, means secure delivery of medicines (including hazardous drugs and narcotics), blood, specimens, and even snacks and documents 24 hours a day.

Relay quickly transports items throughout the hospital, freeing up nurses, pharmacists, lab techs, and other skilled workers to work at the top of their licenses and have more patient-facing time. As Relay autonomously navigates hallways and independently operates elevators, it increases productivity and job satisfaction by taking over the time-consuming, low-value task of delivery.

THE ROI ON LABOR SAVINGS

When it comes to delivery of medications and specimens in a hospital, the cost of “sneaker power” is often overlooked yet can easily exceed hundreds of thousands of dollars per year. With salaries for skilled healthcare workers reaching all-time highs, autonomous delivery by Relay Service Robots can measurably reduce labor costs while, at the same time, supplementing staff, transporting much-needed items for patients, and making mission-critical, timely deliveries of important medications, blood, lab specimens, and more.



USE CASE #1: RELAY ROBOT DELIVERY OF CHEMOTHERAPY FROM PHARMACY TO INFUSION CENTER.

A five-minute delivery from the pharmacy to the infusion center ends up taking a pharmacy technician upwards of 10 minutes round-trip, not counting stops to help visitors or check-in with co-workers. With an average of 35 trips each day, *the pharmacy tech spends six hours—almost 75% of their workday—walking back and forth between departments.* At a wage range between \$18-\$25/hour, the hospital was spending approximately \$37,440-\$52,000 in labor per year on this delivery cycle. The savings grow exponentially when Relay takes on additional delivery routes and operates around the clock, seven days per week.

USE CASE #2: RELAY ROBOT DELIVERY OF BLOOD FROM CANCER UNIT TO CENTRAL LABORATORY.

This 14-minute round-trip delivery includes autonomous operation of one elevator and three automatic doors. Prior to Relay installation, a nurse was required to walk the blood sample to the central lab for testing, which left their unit understaffed and patients unattended. With over 10 deliveries each day and nursing salaries of approximately \$40/hour, the annual labor cost of this one delivery cycle was over \$24,000.

Delivery Run (To Central Lab)	Days	Time of Day	Minutes/Delivery (RT)	Delivery Frequency	Deliveries/Hour	Deliveries/Day	Total Delivery Minutes/Day	Total Delivery Hours/Day	Total Delivery Hours/Year
Cancer Center	Mon-Fri	8am-2:30pm	13.9	Every 15-20 min	3.4	22	305.8	5.10	1,330.23
Clinical Lab (AM)	Mon-Fri	7am-8am	6	Every 10 min	6	6	36	0.60	156.60
Clinical Lab (PM)	Mon-Fri	2:30pm-7:30pm	6	Every 10 min	6	30	180	3.00	783.00
Clinical Lab (WE)	Sat-Sun	8am-7:30pm	6	Every 15-20 min (less after 1pm)	3.4	39.4	236.4	3.94	409.76
Main Lab	Mon-Sun	7:30pm-5am	6	Approx 1/hr	1	10	60	1.00	261.00
Surgical	Mon-Sun	5:30am-6:45am	5	Every 15-20 min	4.8	5.5	27.5	0.46	119.63
					24.6	112.9	845.7	14.10	3,678.80

ROI BEYOND THE NUMBERS

In healthcare, return on investment goes beyond dollars and cents to include patient care and safety, employee productivity and satisfaction, and hospital rankings and patient perceptions. With a Relay Service Robot, hospitals can improve all these factors.

PATIENT CARE & SAFETY.

Suboptimal care, increased complications, and higher mortality rates are potential problems when nurses and other healthcare workers spend less time with patients. Already short staffed, hospitals are continually seeking solutions like Relay to handle tasks that take healthcare workers away from their primary, critical responsibility of caring for patients.

“Ninety percent of nurses say they don’t have the time to provide adequate comfort and emotional support to their patients and patients’ family members, and 86 percent of nurses say they can’t spend as much time on patient education as would be ideal.”

Committee to Ensure Safe Patient Care, Patient Engagement HIT, 2018

EMPLOYEE PRODUCTIVITY AND SATISFACTION.

Adding a Relay Service Robot supplements your frontline clinical and pharmacy staff during an ongoing labor shortage, enabling them to have more quality time with patients as well as their colleagues and co-workers. In addition, Relay improves labor efficiency and staff productivity, while minimizing workloads, reducing delivery errors, and eliminating delays.



“Our robot is loved by our staff and very well received by patients. He lets us process lab tests more efficiently and discharge patients faster.”

Meriam Signo, Director, Nursing Services, El Camino Hospital, Los Gatos, CA

HOSPITAL RANKINGS AND PERCEPTION.

Enhancing the “hospitality factor” at a hospital offers many benefits for both patients and employees. Similar to the way consumers shop for hotel rooms, prospective patients are now looking to social media rankings and online reviews to select hospitals.

Relay, a leader in delivery robots for hospitals, can enhance the patient experience through its combination of functionality, personality, and reliability. Relay’s high visibility in public environments, along with a friendly personality and customizable graphics, draws positive attention from the community and local media while helping hospitals boost patient satisfaction rankings.

“Relay allowed us to assure lab technologists can work at the top of their license. They can maintain a scientific presence in the laboratory testing, analyzing, and providing results for biological specimens, versus transporting them from one area to another. The benefit to our organization is not a reduction in staff, but a better utilization of their time.”

Glen Kegley, CEO, Hutchinson Health, Minnesota

HAPPINESS. DELIVERED.

Adding a Relay Service Robot to the skilled workforce can help hospitals address the challenges of personnel shortages, safety, quality, and patient satisfaction.

ABOUT RELAY ROBOTICS

Relay Robotics is a leading supplier of simple, sophisticated, autonomous, contact-free service robots that work with humans safely, securely, and reliably. Our company has been a technology leader in robotics since 2013 and holds 10 U.S. patents. Relay’s robots supplement staff across hospitality, healthcare, and commercial real estate settings. They have completed more than 1,000,000 deliveries worldwide.

For more information on what a Relay delivery robot can do at your hospital or healthcare facility, visit relayrobotics.com/contact



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