

# Yale New Haven Health improves care delivery and reduces distractions

AI-powered diagnostic solutions from Nuance help physicians prioritize cases and communicate more efficiently.

## Challenge

- Inefficient PACS causing delayed reading of exams
- Difficulty optimizing workload distribution
- Meeting the collective needs of a major academic medical center, 40 specialty clinics, and a small practice hospital

## Solution

- PowerScribe Workflow Orchestration
- PowerConnect Communicator

## Results

- 8.7% increase in volume with only 5% increase in staff
- 50% reduction in calls and texts to the reading room
- Accelerated turnaround time for cardiac, MSK, and MRI neuroimaging

Based in New Haven, Connecticut, Yale New Haven Health System (YNHHS) is one of the top institutions in the *U.S. News & World Report 2019-2020 Best Hospitals* report. With 6,100 physicians—including a 600-member multi-specialty physician foundation—and 27,000 employees, the system experienced nearly 125,000 inpatient discharges and 2.6 million outpatient encounters in 2019.

Both YNHHS executive leadership and individual staff members are dedicated to delivering innovation and excellence in patient care, teaching, research, and service.

Yale  
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**Irena Tocino, MD, FACR**

Professor of Radiology and Biomedical Imaging and Vice Chair of Imaging Informatics  
Yale New Haven Health System

**Optimizing for growth**

Steady growth of imaging volumes, increasing complexity of studies, and rapid geographic expansion across the enterprise were challenging the legacy PACS across Yale New Haven Health System. Heavy demands hindered the system’s ability to effectively distribute workload across resources and specialties, causing the organization to drop to the 25th percentile in RVUs among academic medical centers.

“Such low productivity was not sustainable,” said Irena Tocino, MD, FACR, professor of radiology and biomedical imaging and vice chair of imaging informatics, Yale School of Medicine. “We needed to find a way to manage the higher volumes resulting from clinic and hospital acquisitions.”

The team turned to Nuance solutions to help better manage their diverse, distributed, and growing healthcare organization while laying the foundation to support future innovation. With complex subspecialty workflow requirements, detailed in-house teleradiology shift scheduling, and multiple emergency departments and clinics, they had to optimize efficiency, streamline workflow, and equalize workload.

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**Improving workflow and prioritization**

Yale New Haven Health System began using AI in the emergency department for cerebral hemorrhage imaging studies, then added cervical spine and CT pulmonary embolism algorithms. To maximize value of the AI results, the team needed worklist integration and triage capabilities.

PowerScribe Workflow Orchestration offered a holistic diagnostic experience, enabling consolidated access to patient imaging and information across multiple sources, and supported AI-integrated workflow.

“We have AI completely integrated into our workflow,” Dr. Tocino explained. “Studies are analyzed first by the AI model. Positive results are automatically prioritized on the appropriate worklist, while negative results move down the list for later review.”

Dr. Tocino further described how using AI and automation allowed the team to activate other workflow efficiencies. “Taking advantage of the high negative predictive value of the pulmonary embolism algorithm, when a technologist does an outpatient pulmonary embolism case, and the patient is still in the CT suite, we can use PowerConnect Communicator to confirm with the radiologist that the patient can go home,” she said.

This time-saving, in-context communication solution ensures all imaging and relevant data for the technologist /radiologist exchange are included with the alert. The same system speeds communication on consults among radiologists and across specialties.

**Reducing interruptions and errors**

It’s estimated that radiologists may receive a phone call or text every 10 minutes during a typical eight-hour shift. These repeated interruptions disrupt critical thinking, take up valuable time, increase errors, and contribute to radiologist burnout.

By implementing PowerConnect Communicator, YNHHS dramatically reduced these disruptors—offering radiologists more control over how and when to respond to inquiries. Messages can be answered according to urgency of requests, while increasing efficiencies by including images and relevant questions as part of the message.

“The transformation in efficiency for the reading room was amazing,” Dr. Tocino said. “The number of phone calls for the chest room dropped to 10 percent of the original volume. Technologists’ requests for protocols, checking studies and requests for consultation all come to the designated consulting radiologist via the Communicator. The remaining radiologists never get interrupted and the phone is no longer ringing and distracting the entire group.”

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**Looking ahead**

Based on performance results and clinician response, Yale New Haven Health System successfully demonstrated the value of deconstructing their PACS and future-proofing their investment in more comprehensive and proactive solutions.

“Transitioning to a more efficient environment has already paid off,” Dr. Tocino said. “Beyond measurable stats, like turnaround times, the improvements to workflow, quality, and outcomes have had a very real effect on workplace satisfaction and overall mood. The flexibility and fast

adaptability of the modules has served as well during the COVID-19 crisis, supporting our transition to home reading. For instance, our worklists identify COVID-19 status so that we can prioritize reading and better correlate with image findings. The Communicator has kept technologists, radiologists, and reading room assistants in constant touch and provides fast access to all on the clinical schedules. In fact, since this transition to remote reading, Communicator utilization has increased by 30 percent while our volumes decreased by as much as 70 percent, reflecting a full shift of communicating patterns from phone to text across all sections.”



**About Nuance Communications, Inc.**

Nuance Communications (NASDAQ: NUAN) is the pioneer and leader in conversational AI innovations that bring intelligence to everyday work and life. The company delivers solutions that understand, analyze, and respond to people—amplifying human intelligence to increase productivity and security. With decades of domain and AI expertise, Nuance works with thousands of organizations globally across healthcare, financial services, telecommunications, government, and retail—to create stronger relationships and better experiences for their customers and workforce. For more information, please visit [www.nuance.com/healthcare](http://www.nuance.com/healthcare) or call 1-877-805-5902. Connect with us via the [What's next](#) blog, [LinkedIn](#), [Facebook](#), and [Twitter](#).