Responding to COVID-19 with an **end-to-end digital workflow**

Integrated performance analytics and patient engagement allow hospitals to begin effectively recovering pre-COVID-19 radiology exam volumes

Since early 2020 radiology departments across the U.S. have been grappling with the effects of COVID-19, which have substantially impacted the ability to deliver safe and timely patient care. Imaging study volumes were drastically reduced across the nation, leaving patients without the care they needed, when they needed it. As a recognized leader in radiology innovation, Philips teamed up with a high-performing non-profit teaching hospital in New England to help restart their clinical radiology operations safely and effectively, and in a way that empowers both patients and clinicians.

Teaming up to **innovate**

In collaboration, Philips united patient engagement and analytics technologies together to help recover radiology exam volumes to pre-COVID-19 levels.

The challenge

As the novel coronavirus spread rapidly across the U.S., shutdowns and social distancing policies led to the cancellation of all non-urgent imaging procedures and imaging-based screening exams beginning in mid-March 2020. On top of this, many patients needing vital imaging cancelled their appointments out of caution and concern. This represented a reduction in the hospital's outpatient exam volumes by 63% compared to the same timeframe in 2019 and led to an overwhelming backlog of patients waiting to receive important radiology exams. As we learn more about COVID-19, its spread, and as shutdowns are lifted and containment strategies eased, healthcare institutions must develop new workflows to safely and efficiently resume clinical care.

A coordinated recovery plan

To begin building back volumes safely and effectively, the team knew that patients had to be willing to visit the facility, and that radiology department needed to complement that with appropriate staffing and resources.

Philips' PNM—a cloud-based SaaS facilitating communication between care providers and patients—and PerformanceBridge—an enterprise operational analytics platform—are central to a new radiology workflow piloted at the hospital. By integrating the two tools and syncing with scheduling information from the hospital's RIS and PACS, the team was able to access richer data that can aid in decision-making for staffing and utilization plans as the facility ramps up recovery operations during the pandemic.

"The task in front of us to reschedule all patients whose imaging exams were postponed during the COVID pandemic was enormous...the [PNM] team was very responsive and receptive to our requests for modifications and worked alongside with our EPIC Director of Ancillary Applications. They were flexible with meeting our scheduling requests and extremely professional."

Executive Director, Department of Radiology

"It was refreshing to work with a vendor who took our feedback and suggestions and made improvements."

Director, Patient Access

Phone 1 (3:05):
Hello from your radiology care team. We are contacting you about your ultrasound appointment that needs to be rescheduled. (Msg/data rates may apply. Reply STOP to stop msgs.)

The safety of our patients and caregivers is our top priority. Before we get you scheduled, we want you to know about the safety and precautions we are taking: info.clinic/0k10n01

Phone 2 (3:06):
Our safety plan

Our safety plan combines new processes, standards, and technologies to ensure your safety when you visit for routine care, consultations, screenings, procedures, surgeries, or any other medical need.

Our safety measures meet or exceed guidelines issued by the Centers for Disease

Phone 3 (3:10):
Considering our safety plan and related precautions, are you comfortable with scheduling your radiology appointment at this time?

Y Yes
N No

Have you experienced any of the following **symptoms** within the last 2 weeks?

- Fever
- Cough
- Shortness of breath

Y Yes
N No

Phone 4 (3:15):
Thank you for your responses. If you haven't already, please contact your primary care team to discuss COVID-19 concerns.

Additionally, before we can schedule your appointment, please contact your ordering provider to discuss the level of medical urgency for your visit.

Compromised safety

Safety

Phone 5 (3:16):
Great! Thank you for keeping our patients and caregivers safe. A scheduler will reach out to you in the next few days to schedule your appointment.

Alternatively, call us at your convenience at (888) 744-5477 to schedule your appointment.

It only takes a few minutes!

Encouraging patient to schedule — SMS

Safety plan

Screening survey
• Willing to schedule?
• 4 COVID screening questions

Ready to schedule

A sample from one of Patient Navigation Manager's messaging flows

Encouraging patients to reschedule and prepare for their exams

Direct integration of Philips' solutions with the hospital's scheduling workflow provided care staff with a seamless tool allowing for targeted outreach to patients in most need of radiological imaging. SMS and email messages were used to assess patients' comfort levels with coming in to receive their clinical care, guide them through a virtual COVID-19 screening process, and navigate them to their visit. The illustration above is a step-by-step example of how the hospital is utilizing Philips Patient Navigation Manager to encourage patients—identified using PerformanceBridge metrics—to reschedule their radiology exams and assist them in preparing for their visit prior to arrival.

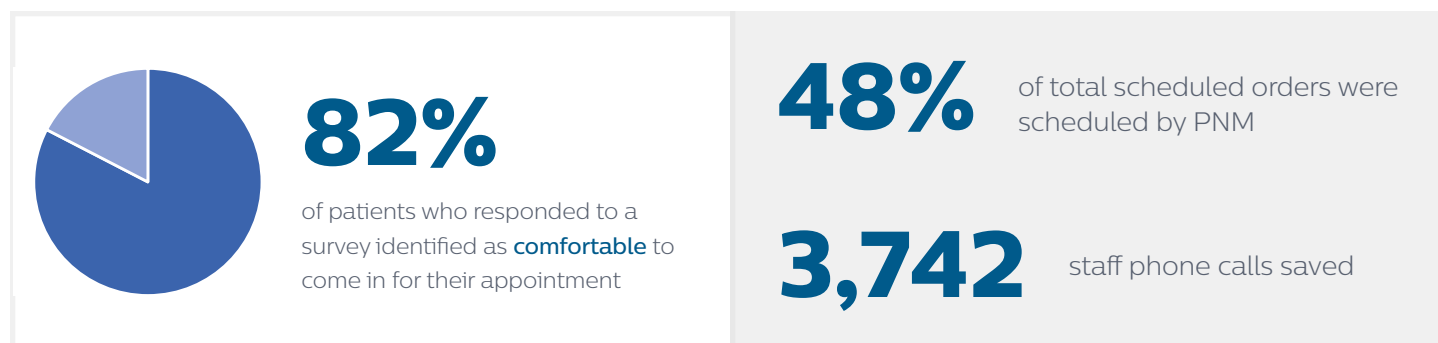## Guide decision-making and improve operations

PerformanceBridge works alongside PNM to improve the efficiency of patient-centric workflows. It allows the hospital's scheduling and access team as well as their radiology team to identify and target patient engagement based on ordering information, such as modality type, and optimize the volume of patient engagement messaging. This level of granular control empowers staff to achieve greater utilization of available appointments and to more efficiently execute imaging orders. PerformanceBridge then closes the loop by giving staff the tools to continuously monitor KPIs such as modality-specific exam volumes, resource utilization, cancellation rates, and patient engagement. These metrics help care teams understand how patient engagement is changing the demand for services, giving them a deeper understanding of their operations and ultimately allowing staff to identify the right time to trigger optional capacity measures.

MRN	Visit Number	Modality	Survey Status	Willing to Schedule	Diagnosed with COVID-19	Prior Exposure to COVID-19	Symptomatic for COVID19	Fever, Chills, Aches	Last Updated	Initially Engaged on	Program Status
1024225	468917687	MR	Ready to Schedule (Symptomatic)	Yes	Yes	Yes	Yes	Yes	5/25/20 9:15 AM	5/25/20 9:00 AM	Enrolled
2306886	294844750	MR	Ready to Schedule (Symptomatic)	Yes	Yes	Yes	No	No	5/26/20 9:25 AM	5/26/20 9:00 AM	Enrolled
3542426	877744792	MR	Ready to Schedule (Symptomatic)	Yes	No	Yes	No	No	5/27/20 9:55 AM	5/27/20 9:30 AM	Enrolled
3803420	551229935	CT	Ready to Schedule	Yes	No	No	No	No	5/28/20 6:05 PM	5/28/20 9:45 AM	Enrolled
4648100	535336913	Nuc Med	Ready to Schedule (Incomplete)	Yes	No				5/30/20 2:40 AM	5/29/20 10:00 AM	Enrolled
5126587	473395561	PET	Not Ready to Schedule	No	No	No	No	No	5/30/20 2:30 PM	5/30/20 10:20 AM	Enrolled
5763689	392618091	MR	Not Ready to Schedule	No	-	-	-	-	6/2/20 2:00 PM	6/2/20 11:50 AM	Enrolled
5913649	805996450	MR	Not Ready to Schedule	No	-	-	-	-	6/7/20 12:00 PM	6/5/20 12:00 PM	Enrolled
7633347	488931291	CT	Not Ready to Schedule	No	-	-	-	-	6/8/20 11:20 PM	6/5/20 12:00 PM	Enrolled
7782033	860080589	US	Not Ready to Schedule	No	-	-	-	-	6/6/20 12:30 PM	6/5/20 12:30 PM	Enrolled
8009906	410740444	US	Not Ready to Schedule	No	-	-	-	-	6/6/20 9:40 AM	6/5/20 1:00 PM	Enrolled

A sample from the PerformanceBridge COVID-19 questionnaire dashboard

The bidirectional messaging from PNM captures responses to COVID-19 screening questionnaires, allowing staff to efficiently identify which patients are healthy and willing to receive care while minimizing risk for staff and patients alike. Personalized messaging and information help to ease patients' anxiety by guiding them through steps designed to promote safety, set expectations for their appointment, and help them to prepare. Preliminary results are promising, with almost half of total scheduled orders scheduled digitally by PNM (see Figure 1). Further research will seek to elucidate the overall impact of PNM on the hospital access team's ability to increase exam volumes.

Figure 1 – Preliminary results*

82% of patients who responded to a survey identified as **comfortable** to come in for their appointment

48% of total scheduled orders were scheduled by PNM

3,742 staff phone calls saved

Learn more about Patient Navigation Manager at philips.com/pem and PerformanceBridge at philips.com/performancebridge.

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