PHILIPS

Patient engagement

Advancing key performance indicators with **pre-visit navigation**

A case study with Boston Medical Center

Philips teamed up with Boston Medical Center (BMC) to launch a comprehensive digital patient engagement strategy designed to help improve communication and outreach to BMC's patient population. This automated pre-visit navigation program leverages Philips Patient Engagement Manager (PEM, formerly Medumo) solution **across 33 ambulatory departments** and is part of BMC's initiative to improve operational and patient experience key performance indicators.

19%
Reduction in overall no-show rates

14%
Reduction in late cancellations within 72 hours of an appointment (relative to the four-year average)

4.4/5
Patient satisfaction

Improving access to quality care

Serving over 1,200,000 outpatient visits per year, BMC is the largest safety net hospital in New England. It has an extremely diverse patient population — 57% of patients come from under-served areas and 32% have a primary language other than English. With such a unique demographic, BMC needed a solution that could reach as many patients as possible.

The challenge

In early 2019, BMC faced a difficult conundrum, not uncommon to safety net hospitals across the country. A highly data-driven institution, BMC determined that over the past three years their rate of lost outpatient appointment slots[1] had crept up to 34%. This meant that patients were missing out on important time with their physicians — important time to ensure that they were receiving high quality diagnosis, treatment and preventative measures. Every unfilled slot was leading to downstream impacts affecting hospital operations and financial sustainability. Patients were confused and uninformed of important institution-wide and department-level protocols. Amidst these challenges, BMC's ambulatory leadership recognized that their current outreach systems were inadequate. These systems were limited to only phone and paper appointment reminders and lacked the ability to communicate with patients in their preferred means. They needed to establish a new standard for using mobile technologies to streamline and automate patient communications to achieve an activated and empowered patient population. Leadership targeted the development of a digital patient engagement strategy to address hospital-wide priorities ranging from improving revenue capture and more efficiently allocating staff resources, to consolidating vendors and improving physician and patient satisfaction.

The solution

BMC released a request for proposals and cast a wide net as they ventured to partner with industry leaders to streamline and enhance their ambulatory operations. They focused on vendors with a track record of collaborative partnerships and the ability to develop comprehensive solutions through quick iteration. The ambulatory operations team looked to Philips' Patient Engagement Manager, which was being used in the Gastroenterology Department with great success to provide step-by-step guidance to patients before and after their endoscopy appointments. Ambulatory leadership recognized PEM's flexible, configurable, and outcomes-driven approach and valued its ability to reach patients in their preferred languages and communication modalities, beyond text messaging. BMC and PEM came together in August of 2019 to design a platform from the ground-up to address the root causes of missed appointments – language barriers, anxiety, transportation barriers, and gaps in medical literacy. They launched a new Ambulatory Services Platform, consisting of PEM's (i) automated pre-visit navigational program, (ii) paper mailers, (iii) broadcast messaging, and (iv) a no-show predictive model.

"[PEM] has been extremely helpful accelerating our requests as we navigate this difficult time. BMC has been able to successfully and quickly communicate with our patients on essential COVID-19 updates. Providing timely and updated information has been critical in our efforts to keep both our staff and patients safe during this pandemic."

-Kathleen Masters, former Senior Manager of Ambulatory Analytics at Boston Medical Center

An automated, pre-visit navigational program

Before partnering with Philips, BMC reached their patients through a combination of centrally delivered paper appointment reminders and manual phone calls coordinated and conducted by each ambulatory department's administrative staff. In collaborating with Philips, BMC sought to institute consistency in their patient communications across departments and elevate the patient experience by creating a centrally managed digital pre-visit navigational program not only to remind but to *guide* patients from the point of scheduling all the way to their visits. Philips worked hand-in-hand with department heads, call center staff, patient navigators, patient experience leadership, and BMC's Patient Family Advisory Council to analyze workflows and staff and patient satisfaction across these disparate departments. The result was a program specifically tailored to BMC's diverse patient population — a standardized set of step-by-step educational and instructional touchpoints automatically delivered to patients with precise timing. The platform was built and delivered to patients in English, Spanish, Haitian Creole, and Brazilian Portuguese across 33 ambulatory departments. This experience is supplemented by formula-driven messaging sent to each individual patient conditional on their unique circumstances and visit-specific needs. The program utilizes four communication modalities — SMS text message, email, interactive voice response, and paper mailer — to deliver the following information to patients:

An introduction to BMC and a link to the PEM homepage where patients have the option to view the appropriate clinic contact information, change communication preferences, and enroll a caregiver or loved one to concurrently receive the program.

> Hello from your care team! Your CT scan is on 12/12 at 10AM. See your task timeline, how to contact us, and how to share these messages with a loved one, here: info.clinic/14v9ma

An appointment reminder and confirmation survey, the results of which are fed back to the patient's chart and the clinic schedule.

> Your care team needs to know if you are coming on 12/12 to your CT scan at 10AM. Visit this link to let us know: info.clinic/7v9p9a

Pre-visit education including appointment specific preparation instructions, information on what to bring to the appointment, and what to expect upon arrival.

> Your care team would like you to learn about your upcoming visit. Learn more, here: info.clinic/3v9lna

'Last mile' navigational instructions and a guide to the transportation resources available at BMC.

> For your CT scan tomorrow at 10AM, make sure you bring your photo ID & medication list. Leave valuables at home. Directions and parking info available here: info.clinic/1k9lna

Instructions to sign up for and use BMC's online patient portal.

> Thanks for coming in for your procedure. We noticed you have not signed up for our patient portal. Register or login here: info.clinic/kdl098

No-show predictive model

As part of BMC's digital transformation, ambulatory leadership highlighted the need to be able to uncover data-driven insights to enable effective interventions. Which patients might struggle to show up to their appointments and how could staff meaningfully act? PEM designed a predictive model combining past appointment show-rate data and multi-dimensional patient demographics to pinpoint patients at highest risk of no-showing or cancelling their appointments. BMC then designed workflows to redirect frontline staff resources toward targeted manual outreach directed at these high-risk patients. As part of an upcoming program expansion, PEM will leverage the outputs from this predictive model to trigger the delivery of adaptative content to high-risk patients designed to improve adherence to care plans and scheduled appointments. The adaptive content will initially be deployed in the radiology

department where patients deemed at high-risk of not showing up for their mammography screenings will be sent additional educational content intended to improve healthcare literacy. Additional interventions will provide education on the transportation and financial support resources available at BMC.

Paper mailers

Before partnering with PEM, BMC delivered paper mailers with detailed instructions and a map of BMC's campus to all patients with a scheduled visit. Paper mailers can be a helpful navigational resource for some patients, however, with communications migrating to the digital realm, mass mailings present a costly endeavor for health systems.

By working with a multi-modality vendor, BMC and Philips selectively deployed paper mailers using PEM to only those patients at the highest risk of appointment absenteeism, thus ensuring their access to important pre-visit information. This is expected to lead to a 67% reduction in overall paper mailer costs.

Broadcast messaging

BMC has also deployed PEM's broadcast messaging functionality in order to supplement their automated pre-visit navigational program with custom notifications that can be delivered to thousands of patients within minutes. BMC administrators use this feature to craft and deliver on-demand messages to select patient populations, informing them of sudden changes to clinic schedules, announcing emergency closures, and delivering other crucial announcements that could impact access to care.
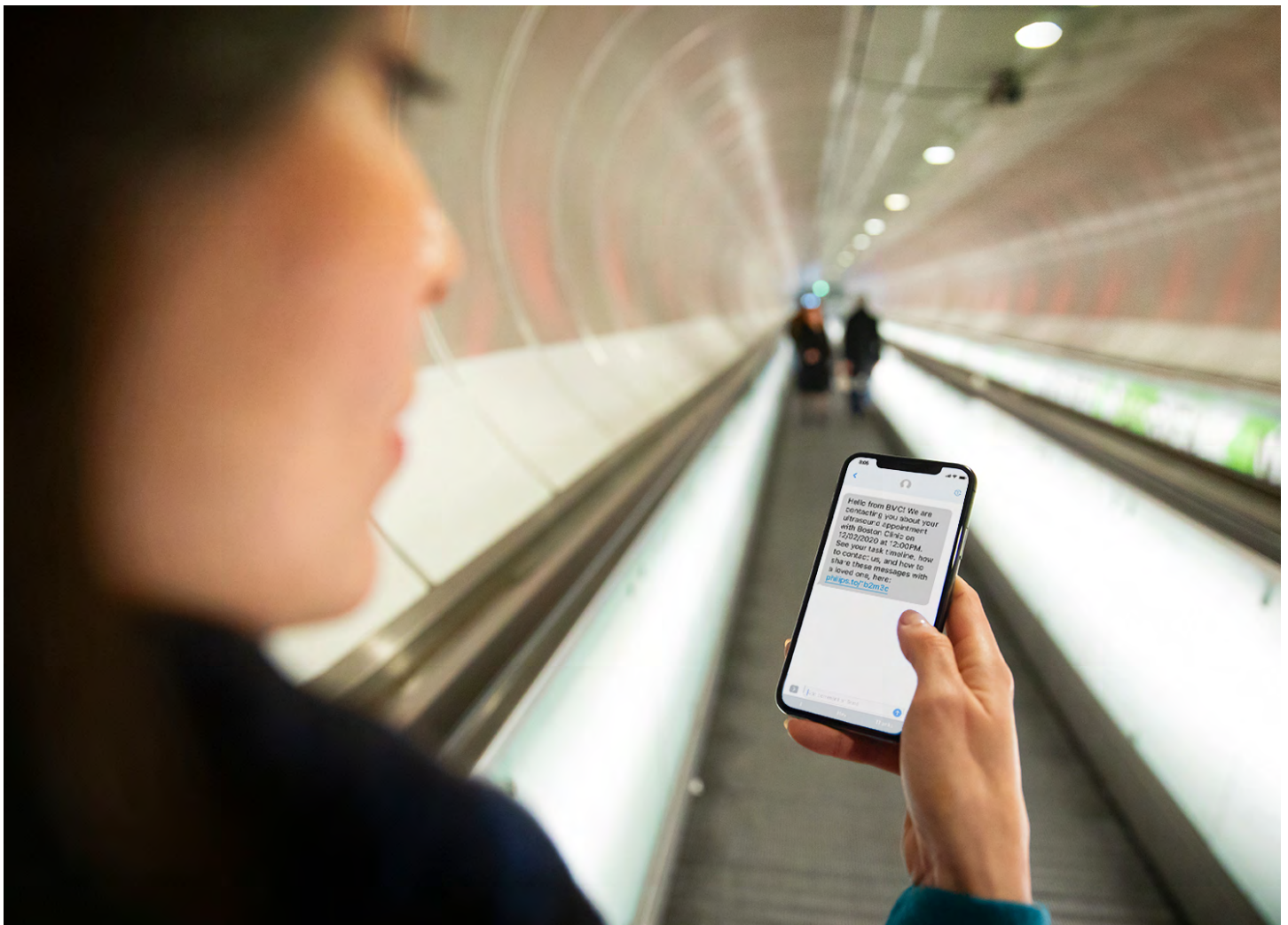
Results

Philips' novel Ambulatory pre-visit navigation program is a departure from the traditional appointment reminder system deployed at an enterprise level. Philips utilizes patient specific preparation and educational content in combination with location-specific navigational guidance to create a more personalized healthcare experience at scale. The automated outreach program was delivered to 282,662 patients from December 2019 through February 2020. Overall, no-show rates across ambulatory departments were reduced by 19% and late cancellations by 14% relative to BMC's four-year average when using a standard appointment reminder program delivered via SMS and paper mailer. The combined reduction in the no-show and late cancellation rate was 16%. The largest reduction in the combined no-show and late cancellation rate was experienced in the urology (34%), surgery (21%), neurosurgery (20%), and OB/GYN (20%) departments.

Improvements across ambulatory

19% Reduction in overall no-show rates

14% Reduction in late cancellations within 72 hours of an appointment (relative to the four-year average)

4.4/5 Patient satisfaction

No-show rate reductions by department[2]

34% in urology

21% in surgery

20% in neurosurgery

20% in OB/GYN

Working together for better health outcomes

Boston Medical Center (BMC) is committed to the values and needs of its community. Both BMC and Philips are looking forward to the continuing partnership to keep our community at the forefront of exceptional care in an exceptionally healing environment.