

MetroHealth System



The following customer spotlight is based on an interview conducted by Merck with Dr. David Kaelber, MetroHealth System's Chief Medical Informatics Officer.



The MetroHealth System in Cleveland, Ohio, has been extensively recognized for its achievement in using HIT to substantially improve patient outcomes. According to Dr. David Kaelber, Chief Medical Informatics Officer, MetroHealth has implemented culture and process changes regarding EHRs and HIT that have resulted in increased vaccination rates. These innovations have allowed MetroHealth to achieve a better patient experience with enhanced provider/patient communication, allowing for an efficient clinical workflow. This has freed up time to concentrate on value-based care delivery. Since the original adoption and integration of these HIT innovations, MetroHealth has sustained these positive changes in vaccination rates, even during changing and challenging times.

EHR, electronic health record; HCP, health care professional; HIT, health information technology.



Ongoing Evolution of HIT Interventions to Sustain Improvements in Vaccination Rates

MetroHealth has sustained improvements in vaccination rates by evolving existing HIT interventions, as well as developing and implementing new HIT interventions in accordance with changes in the health care landscape.

Infrastructure Development to Assist With Vaccination Improvement

One of the most influential HIT interventions implemented at MetroHealth has been building all ACIP vaccination recommendations into EHR-based **health maintenance reminders** and **best practice alerts**. The benefits of this include:

- **Provider alerts** when patients are due for vaccinations at the time of the visit
- **Simplified ordering** of all patient vaccinations
- **Continuous monitoring** of patients who are due for vaccinations
- **Patient notifications** through the personal health record or via automated messaging when overdue for vaccinations



Actor portrayals



Actor portrayal

Changes in Response to External Factors

MetroHealth regularly updates their EHR based on external changes, such as changes to ACIP recommendations or CDC-recommended vaccination schedules. For example, if the recommended number of doses for a given vaccination was altered, or if the minimum age required for administration of a vaccination was updated, these changes are immediately reflected in the EHR alerts.

ACIP, Advisory Committee on Immunization Practices; CDC, Centers for Disease Control and Prevention; EHR, electronic health record; HCP, health care professional; HIT, health information technology.

(continued)



Internal Alignment of Performance Metrics

MetroHealth has aligned some of their **vaccination performance metrics** to other quality performance metrics, allowing providers to prioritize vaccinations during patient visits.

Standing Order Implementation to Increase Vaccination Efficiency

Implementation of standing orders is another process that has allowed MetroHealth to increase the efficiency with which vaccinations are given to patients. MetroHealth's Chief Medical Officer has authorized the following:

- **Pharmacists** at associated pharmacies can give vaccinations if the patient meets predefined criteria, such as a certain minimum age or type of vaccination prescribed
- **Nurses** can administer certain vaccines if the orders are cosigned by a physician
 - An ongoing evolution of these protocols is to remove this requirement and allow nurses to activate standing orders without physician sign-off

MetroHealth is currently exploring having medically trained assistants involved in ordering vaccines in an effort to increase vaccination rates.



Actor portrayals

Collaboration With Other Organizations

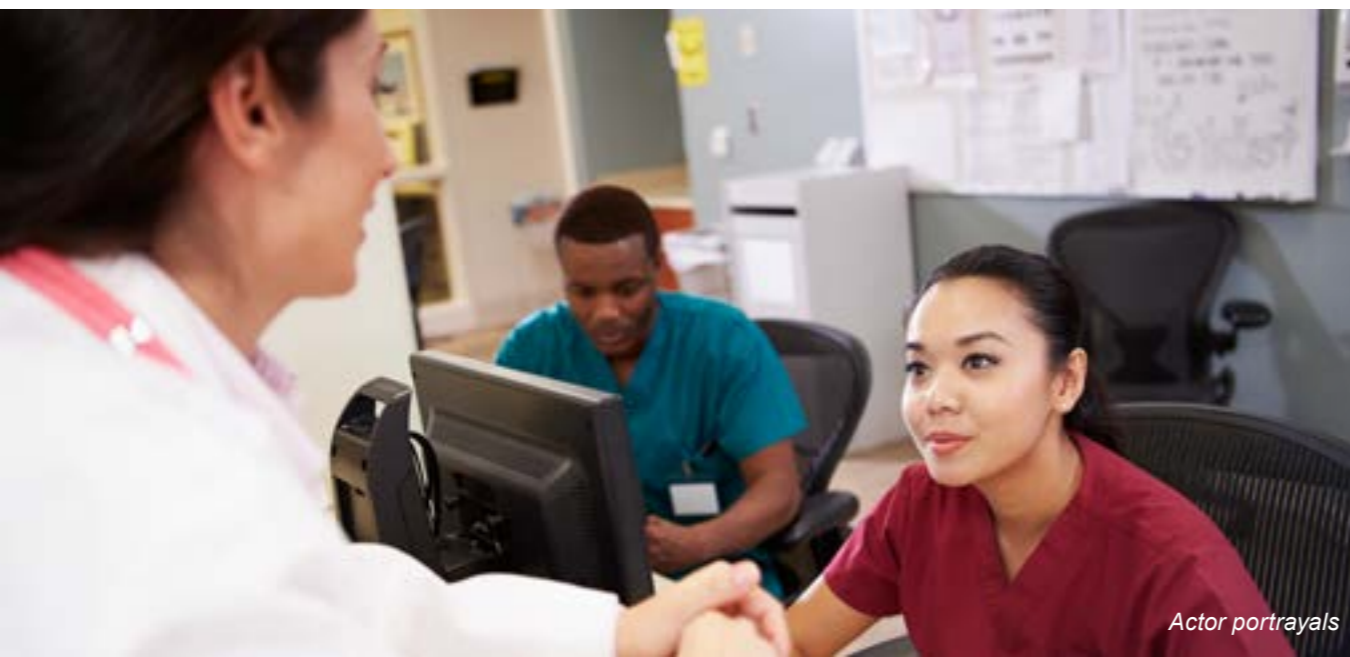
Patients were often unable to recall when or if they received certain vaccinations. MetroHealth sought to solve this by aggressively **pulling vaccination information from other databases**, such as vaccination registries or other health care systems. This allowed for a more complete vaccination record for each patient and helped patients receive all necessary vaccinations.

Vaccinations in a Virtual Environment

As with many health care systems, the number of virtual and telehealth visits has recently increased, which has required MetroHealth to determine how to ensure that patients are receiving necessary vaccinations. In response to this, MetroHealth implemented:

- **Drive-up vaccination clinics** to reduce the number of individuals who need to enter the clinic for vaccinations
- **Referrals to associated pharmacies** for vaccinations

MetroHealth is currently exploring at-home nurse visits for vaccination administration following a telehealth visit with a physician.



Actor portrayals

HCP/Staff-Focused Interventions to Help Sustain Improvement in Vaccination Rates

Using Health Maintenance Reminders During Patient Visits

According to Dr. Kaelber, individual health maintenance reminders programmed into the EHR are one of the vaccine-specific HIT interventions that have been most helpful in improving vaccination rates at MetroHealth. **Health maintenance reminders alert providers at every visit** whether or not each patient is due for vaccinations, which helps providers keep vaccination top of mind.



Actor portrayals



Actor portrayals

Staff Training and Education

Given the regular changes to vaccination recommendations in the EHR system, staff training and education are important components of the success of HIT interventions at MetroHealth. Staff are offered vaccination education by the following mechanisms:

- **Embedded links** within best-practice advisories that contain additional details about each specific vaccination
- **Traditional education** for all staff when vaccination updates are implemented
- **Additional training** for individual providers who may need additional support to reach vaccination rate goals

Using EHR Reports and Provider Dashboards

MetroHealth utilizes EHR dashboards to maintain transparency among providers regarding vaccination quality metrics. These dashboards update weekly and **all providers can see their own data and the data of other providers** at MetroHealth, which may help **increase accountability**. Vaccination quality metrics can be examined across an individual department or an entire health care system.

Patient-Focused Interventions to Help Sustain Improvement in Vaccination Rates

Patient Portal

According to Dr. Kaelber, the most impactful HIT intervention for patients has been the patient personal health record, or patient portal. At MetroHealth, most current patients have an account. The portal allows patients to:

- **Receive portal-generated reminders** to schedule an appointment for preventive services
- **View visit history** and summaries
- **Access education** about vaccines and vaccine-preventable diseases



Actor portrayal



Actor portrayal

Proactive, Automated Patient Messaging and Education

MetroHealth uses **automated calling and texting** to reach out to patients before a patient visit, when a patient is due for vaccinations, and after a patient visit to assist with follow-up vaccinations.

Dr. Kaelber credits proactive patient messaging as a HIT intervention that has been helpful in creating and sustaining changes in vaccination rates at MetroHealth. Automated messaging in the form of birthday letters is a new initiative used to educate patients about important vaccines and other preventive services for their age group.

HCP, health care professional; HIT, health information technology.

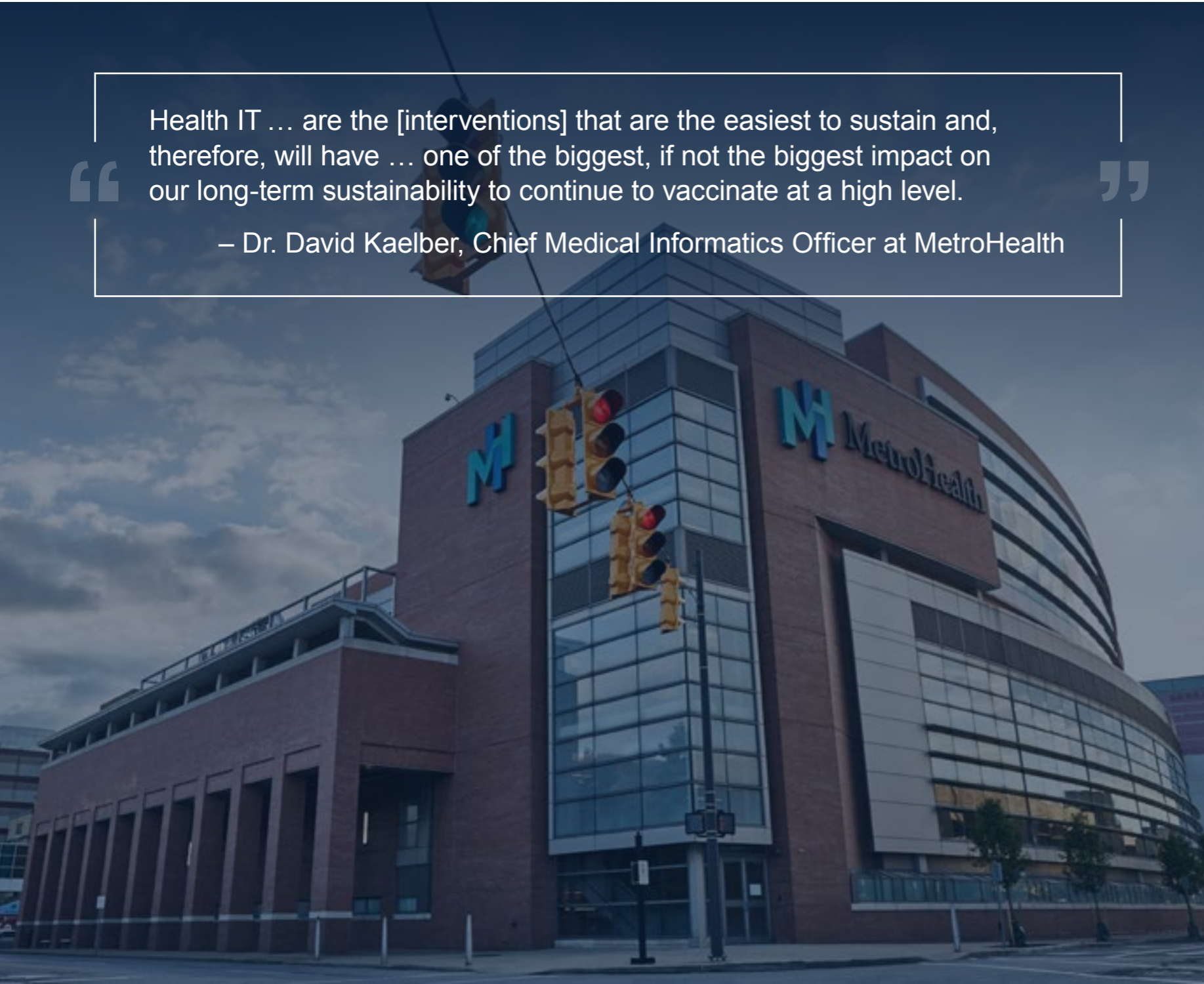
Impact

According to Dr. Kaelber, HIT has been one of the major reasons for sustainability regarding vaccination at MetroHealth.

HCP, health care professional; HIT, health information technology.

Health IT ... are the [interventions] that are the easiest to sustain and, therefore, will have ... one of the biggest, if not the biggest impact on our long-term sustainability to continue to vaccinate at a high level.

– Dr. David Kaelber, Chief Medical Informatics Officer at MetroHealth



Summary: Key Factors Influencing and Sustaining Success at MetroHealth



LEADERSHIP VISION OF HIT

- MetroHealth's HIT organizational culture starts with a leadership vision of HIT and a structured investment strategy



IMPLEMENTATION AND UPKEEP OF HIT INFRASTRUCTURE

- This is crucial for providing accurate vaccination information



PARTNERING WITH OTHER ORGANIZATIONS

- Bidirectional communication with vaccination registries



STAFF TRAINING AND EDUCATION

- A precision educational approach to specifically focus on staff who may need additional support
- Evolution of existing protocols to increase vaccination rates and increase efficiency in vaccination administration by involving additional team members



TRANSPARENCY WITH BOTH PATIENTS AND STAFF

- The patient portal allows patients to review information from previous visits and informs patients of all future preventive services, with the goal of increased patient engagement
- Provider and executive dashboards allow providers and departments to view and compare their vaccination metrics with those of their colleagues



INNOVATIONS THAT BUILD ON EXISTING SUCCESSES AND EVOLVE BASED ON MARKET EVENTS

- Includes updates to ACIP recommendations, COVID-19/ other changes in the health care landscape or environment
- Interventions to assist with vaccinations in an increasingly virtual environment, such as drive-up vaccination clinics for all ACIP-recommended vaccinations

ACIP, Advisory Committee on Immunization Practices;
HCP, health care professional; HIT, health information technology.

Merck does not guarantee that your use of this information will help you achieve your vaccination goals.

This monograph has been provided and paid for by Merck Sharp & Dohme Corp., a subsidiary of **Merck & Co., Inc.**

David Kaelber, MD, Chief Medical Informatics Officer at MetroHealth, was compensated for his involvement in the development of this case study by Merck Sharp & Dohme Corp., a subsidiary of **Merck & Co., Inc.**