

# Annual Report 2021



**Weill Cornell  
Medicine**  
ITS



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*Front Cover:*

*On July 7, 2021, New York City held its first parade in almost two years to honor essential workers who helped New York navigate the COVID-19 pandemic. Service Desk Senior Manager Steven Leser represented the department, joining WCM's Sharon Brooks, Student Life Manager, on the healthcare workers float. Image courtesy of Studio Brooke.*



## Message from the CIO

2021 has certainly been a complicated year, a roller coaster of renewal, still with sad echoes of 2020. Like all departments at WCM, ITS is forever changed – for better and for worse. As we take stock, we can celebrate finding “a new normal” that balances productive work with safety and flexibility. ITS has fully embraced remote and hybrid work and still proudly meets new and old challenges to support WCM’s mission.

While 2020 was about crisis management and cost cutting, 2021 has been about making up lost time and developing a new sense of excitement as we restarted stalled projects and actively started news ones. But we must also acknowledge the reality of what – and whom – we have lost.

The personal tragedies COVID has left can be honored, in part, by celebrating the heroic work our faculty, students, and staff have



done to fight this scourge. Perhaps the most positive thing COVID has brought is concrete knowledge of our potential – the awesome things we can do when we work together.

2022 can be our best year ever if we keep top of mind how we did this. Our C3X program, focusing all we do through the lens of customer, collaborator, and colleague experience, was unknowingly built for COVID. Next year, we must use it to find innovative ways to thrive in the face of our new challenges, like PASC, scientific realignment, front door to care, and so much more.

We have more technical tools and resources than ever to face these challenges. And we have proven we have the people and the process to use them to full advantage. For 2022, we want to find “the new exceptional.”

**Curtis L. Cole, MD, FACP**  
Assistant Vice Provost, Information Services  
and Chief Information Officer

# Senior Leadership



**Curtis Cole**  
Chief Information Officer



**Vipin Kamath**  
Deputy CIO



**Daniel Splitgerber**  
Department Administrator



**Vanessa Blau**  
Director, Research Administration



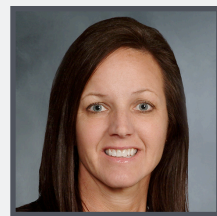
**Thomas Campion**  
Director, Research Informatics



**Harish Chava**  
Director, Administrative Computing



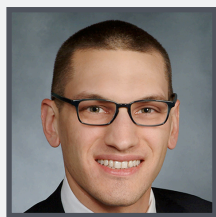
**Douglas Cohen**  
Director, Education Computing



**Paula Herber**  
Director, Service Operations



**Maria Joseph**  
Chief Privacy &  
Clinical Compliance Officer



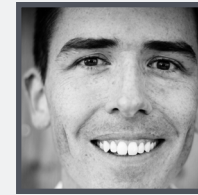
**Brian Tschinkel**  
Chief Information Security Officer



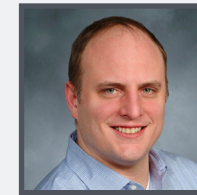
**Vinay Varughese**  
Senior Technology Officer



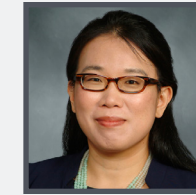
**Terrie Wheeler**  
Director, Library



**Justin Barber**  
Asst. Dir., Security & Identity



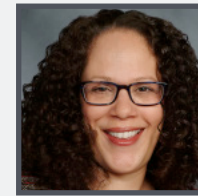
**Scott Brown**  
Asst. Dir., Research Administration



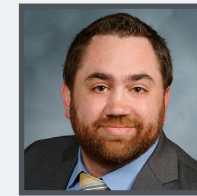
**Cindy Chen**  
Asst. Dir., RI Clinical &  
Translational Services



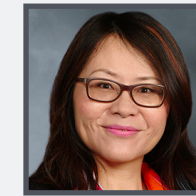
**Eugene Chen**  
Assoc. Dir., Network &  
Communication Services



**Diana Delgado**  
Assoc. Dir., Library User Support,  
Research & Education



**Victor Farrell**  
Assoc. Dir., Office of Service  
Portfolio Management



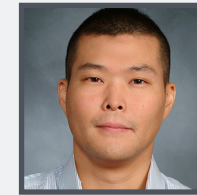
**Bo Fuld**  
Asst. Dir., RI Data &  
Software Engineering



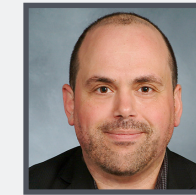
**Meghana Futnani**  
Asst. Dir., Business Intelligence



**Richard Hu**  
Assoc. Dir., Service Strategy &  
Systems Architecture



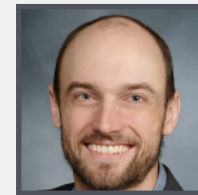
**Christopher Huang**  
Assoc. Dir., Software Development  
Services



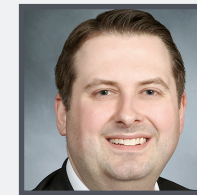
**Mohammad Mansour**  
Asst. Dir., App. Development  
Services



**Nicole Milano**  
Head, Medical Archives



**Peter Oxley**  
Assoc. Dir., Research Services



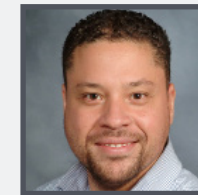
**Kyle Pelletier**  
Asst. Dir., Research Administrative  
Computing



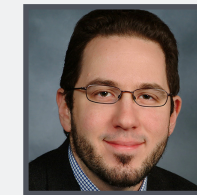
**Jerry Philip**  
Asst. Dir., Business Analysis



**John Ruffing**  
Assoc. Dir., Advanced Technology  
Integration Services



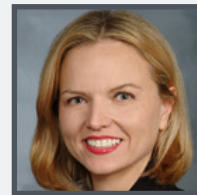
**Ramon Segarra**  
Assoc. Dir., Infrastructure &  
Operations



**Evan Sholle**  
Asst. Dir., RI Data Science  
Services



**Brian Uriarte**  
Assoc. Dir., Digital Engagement  
Services



**Lidiya Walsh**  
Asst. Dir., ITS Operations



**John Young**  
Asst. Dir., Unified Comm/Events Services

## FY22 Goals

Each year, ITS works with stakeholders to set the major priorities for the department and ensures each division is working towards accomplishing these goals for the fiscal year.

### Enhance services for clinical staff and patients

- Improve patient experience and access with website redesign, new mobile services and digital communication tools.
- Expand online scheduling for all physicians with open scheduling.
- Improve physician experience with simplified login to Epic and other applications.
- Transition the Physician Organization to centralized unified reporting to improve practice efficiencies and optimize digital health.

### Enrich student learning and support teaching

- Expand use of medical education data warehouse for management decisions.
- Improve academic progress tracking for Graduate School students.
- Streamline administrative operations for remote interviews and application review for MD-PhD program.
- Support and enhance online, hybrid or in-person learning to adapt to changing needs.
- Upgrade Jenzabar to a cloud-based student information system.
- Create unified alumni database across WCM programs.

### Enhance technology solutions and services

- Expand 24/7 user support services.
- Expand digital workflows for managing academic staff.
- Enhance website search functionality to provide more intuitive and accurate search results.
- Simplify website administration with modern content management tools.
- Enhance user experience and security with improved software upgrade processes.
- Develop curriculum to support hybrid and remote workforce.
- Help departments keep hardware current with centrally-leased computers.

### Streamline the administration of research

- Improve workflows within IRB, conflicts, and grants applications to support regulatory changes.
- Help communicate metrics and trends with new report visualizations for funding, protocols, and space.
- Expand visibility into the status of grant and protocol submissions.

### Protect institutional data and people

- Implement network access control to prevent insecure devices from accessing Weill Cornell resources and enable self-service registration to expedite connections.
- Enable easier access to shared applications by allowing our partners to login with their own credentials.
- Extend security tools to the cloud to expand research compute options.
- Reduce our response time to security incidents by introducing automation and workflows.

### Support scientific innovation and research

- Provide new affordable research storage services.
- Expand cloud support (Amazon & Google) for faster and deeper support of WCM researchers and collaborators.
- Support the Meyer Cancer Center and other strategic grants (e.g., long COVID) with custom research data repositories and dashboard visualizations.
- Support NYP/Brooklyn Methodist with new Epic and legacy clinical data for research.
- Develop comprehensive consent process to support future studies using biospecimens, genomics, clinical data, and external sharing.
- Deliver clinical data support to new investigator groups by establishing research repositories.
- Modernize and consolidate scientific computing infrastructure to provide a sustainable ecological environment.
- Utilize scientific computing and storage resources across the NYC, Qatar, Ithaca and Tech campuses.
- Create more affordable and sustainable financial model for scientific computing.

### Advance the experience of IT services

- Provide new self-service IT capabilities, such as website content management.
- Improve ITS efficiency with new asset tracking.
- Expand use of next generation telephony systems (e.g., softphones, Teams)
- Explore unified communications strategy with NYP, Columbia, Ithaca, and Qatar.
- Optimize, secure, and stabilize remote access to support the remote workforce.

### Enable efficient and effective administrative operations

- Transition human resources and payroll systems to a new cloud-based application.
- Support HR expansion of out-of-state workforce services.
- Launch cloud-based travel and expense system on the Qatar campus.
- Streamline procurement by transitioning to a new cloud-based purchasing system.
- Participate in pilot for innovative physician credentialing data exchange.
- Enhance self-service data analysis and visualization tools and services.
- Expand cloud-based portal for administrative reporting.
- Optimize the standard conference room for hybrid remote/local meetings

## Responding to the Pandemic

The COVID-19 pandemic reshaped life at WCM, touching nearly all aspects of our operations. ITS helped support a range of new and existing projects, shifting priorities to accommodate the challenging new landscape of working safely on campus, and having the necessary tools for remote work.

### Staying safe on campus

In November 2020, the college identified the need for a COVID testing surveillance program for students that would allow them to return to campus in January. ITS joined forces with administrators across the Medical College to implement a COVID testing program in less than six weeks. The site opened in Olin Gym on January 3, and for seven months students were given bi-weekly COVID tests that were then shipped to Ithaca for processing. The overall vigilance resulted in there being only nine positive test results in the course of the program.

### Move to remote work

ITS made every effort to accommodate working from home and patients who could not meet with their physicians in person. With a higher influx of calls and tickets related to remote work, many ITS teams banded together to assist our Service Desk technicians with helping users resolve issues or answer questions. We have continued to evolve our services in step with the pandemic, including longer hours, expanded self-service options, enhanced telehealth support, and new online scheduling workflows to improve WCM's Video Visit service. Improvements to weillcornell.org helped patients find information on telehealth and schedule Video visits with their doctors, and we enhanced doctors' Google My Business listings to display links directly to their online scheduling time slot availability.

### Looking forward

Although the pandemic continues, ITS is still making strides to support research, educational, and clinical initiatives across WCM. Our Disaster Recovery team is ensuring that our institution can handle another large scale event. We have updated emergency plans with departments to incorporate what we have learned from COVID in order to improve our future emergency preparedness.

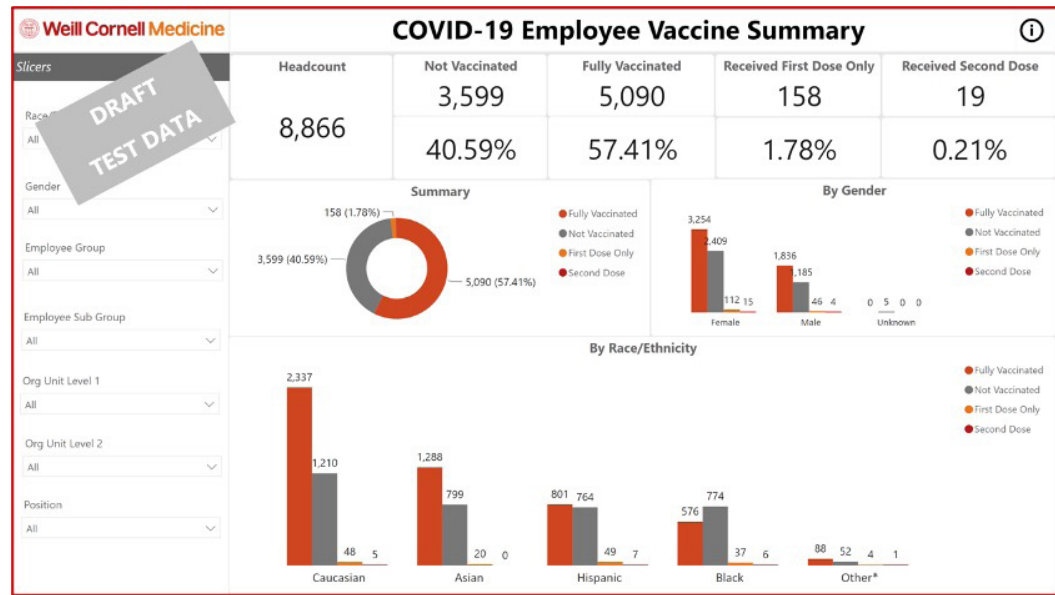
### Surveillance Program



ITS staff participate in a trial run of the surveillance program at the Olin Gym to test logistics.

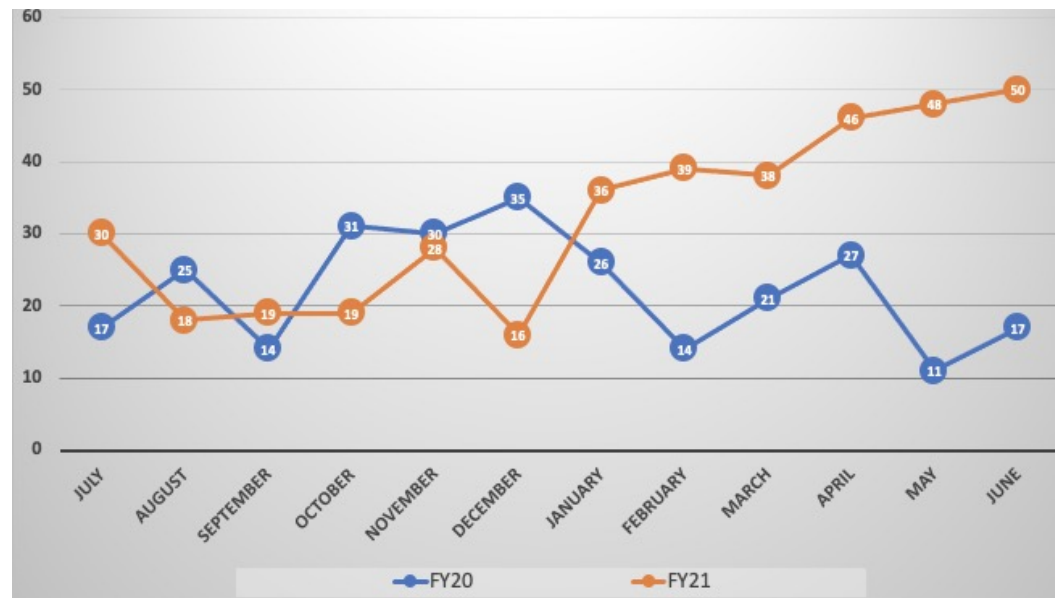


## COVID-19 Vaccination Dashboard



The Power BI team collaborated with HR and the PO to build the COVID-19 Vaccination Dashboard for employees. This dashboard helped administration track the employee vaccination program on an ongoing basis. A similar dashboard was also created to track patient vaccine progress.

## Increase in Study Monitors & Auditors in ORB



The volume of COVID-related eConsent projects created in 2020 vs 2021 by month.

## Other Accomplishments

- The Business Intelligence (BI) Reporting team added a COVID-19 indicator to grant statements and effort reports. One indicator allows Research Accounting to identify research projects funded by the CARES Act. Effort tracking during the pandemic helps OSRA monitor submissions and awards with COVID-related budgets.
- Our Research Administrative Computing team utilized REDCap to provide researchers with a remote consent and signature capture to enroll subjects in COVID-related studies. This minimized the risk of COVID transmission while expanding research to understand the virus. We successfully implemented 11 new COVID-related projects REDCap since July 2020.
- Our Online Research Binder (ORB) proved essential for clinical trial monitoring remotely when sponsors could not travel to WCM.
- With the huge increase in remote access, ITS improved security to reduce the risk of unknown or personal devices on the WCM network. We are working towards an even better system that will simplify access for trusted devices while lowering risks from unknown users.



## Testing eConsent with DocuSign

ITS implemented the use of DocuSign as a new electronic consent process for COVID-related clinical trials, ensuring compliance with FDA regulations including a signature validation process.

- Our Event Services Office saw marked demand for events and classroom moderation and technical support due to the surge in online learning and meetings. We are modifying classrooms and conference rooms to better support hybrid meetings going forward.
- Unified Communications group is updating our existing communications technology to support the changing workflow as business groups shifted from remote to hybrid, or hybrid to remote. We have expanded Zoom, Teams, O365, and Avaya added new features and capacity at a record rate.

# Research Initiatives

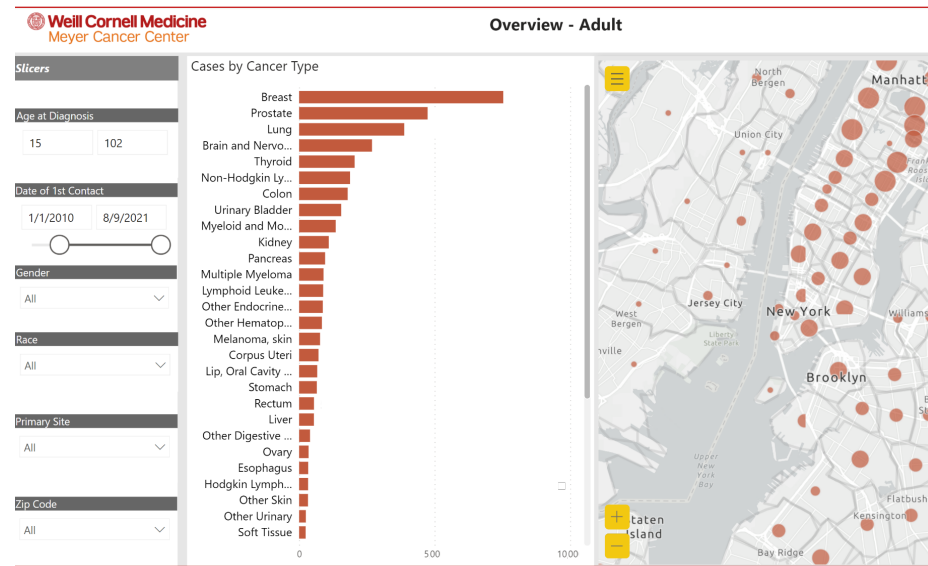
While we continued to support COVID-related research efforts this year, we also juggled other projects to improve both access to research data and administration tools.

## At a Glance

Supported the Meyer Cancer Center with geo-visualization of NYP/WCM tumor registry patient data using a Microsoft Power BI dashboard.

Launched biobank query and request process using OpenSpecimen, i2b2, and REDCap.

Enhanced WRG to support a number of new features to streamline Human Subjects and Clinical Trials administrative processes.



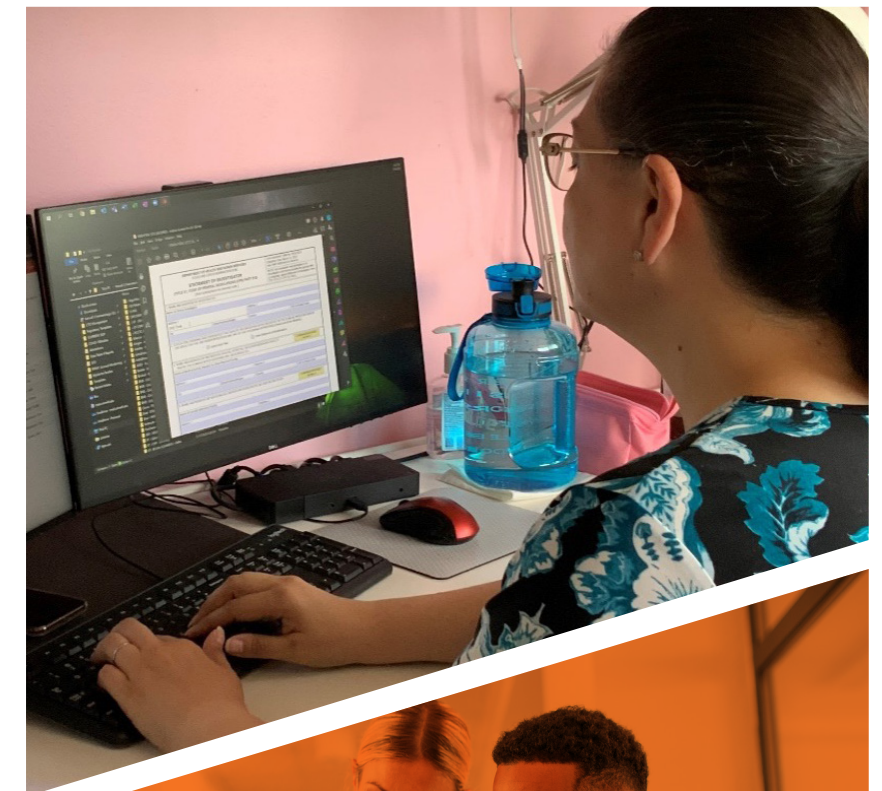
Cases of cancer filtered by type are visually mapped out throughout NYC with the NYP tumor registry.

ITS helped develop geo-visualization of NYP tumor registry patient data for the Meyer Cancer Center using Microsoft's Power BI. With it, researchers can easily find information on where cases are located across NYC based on parameters like cancer type, and the patient's age, sex, and race. We were also able to launch a biobank query and request process using OpenSpecimen, i2b2, and REDCap. For Epic, we integrated outpatient, inpatient, and emergency data for NYP/WCMC and NYP/Queens with data from legacy Allscripts and Athenahealth systems across all ARCH applications to support research across the continuum of care. Furthermore, our Informatics team supported Protocol Review & Monitoring Committee (PRMC) with informatics reviews and consults of new study submissions without delaying approval timeline.

On the research administration front, we implemented dozens of enhancements to the Weill Research Gateway (WRG). We developed a data warehouse of key metrics from the Human Subjects (WRG-HS) and Clinical Trials (WRG-CT) modules, which serves as an analytical tool for research administrators to better capture, review, and understand their workflow over the course of any given time. WRG-CT also received other enhancements, like a Protocol Calendar for study teams to track subject visits and clinical procedures, Coverage Analysis console to assign billing designations for clinical procedures, and Financials console, which provides the Joint Clinical Trials Office (JCTO) with the ability to build the budget for proposed research, generate invoices for completed clinical procedures, and track payments received.

## ORB changes study team experience

With staff working remotely during the pandemic, our Online Research Binder (ORB) service allowed study teams to electronically file FDA paperwork rather than use the previous method of three-hole punching copies for the physical binders. Cristina García-Miller (pictured below) in the Cancer Clinical Trials Office was able to utilize ORB to conveniently submit and store appropriate documentation.



# 100K+

The number of WCM patients who opted into Consent to be Contacted for Research (CCR) which allows researchers to inform them of research opportunities through Epic.



**Other Accomplishments**

- Expanded natural language processing (NLP) to Rutgeerts and Mayo scores from endoscopy and radiology reports to support inflammatory bowel disease research.
- Streamlined TRAC data request process by implementing a unified ServiceNow form across WCM, NYP, and CUIMC.
- Implemented a new Subject Tracking Component in WRG-CT, which allows study teams to enter subject visit information, and identify which clinical procedures need to be rescheduled to remain compliant with the approved protocol and report deviations.
- Added a new section within the Radiation Safety Committee (RSC) - Human Subjects Application, which designates one place for study teams to list the Standard of Care/ Non-Standard of Care procedures. RSC board members can more easily review procedures to determine the need for extra safety precautions when research involves radiation not normally indicated for a particular treatment. Also implemented a new method of communication for the RSC by optimizing the use of the Comments Panel feature, allowing for centralized and efficient review of applications.
- Ported website to support the research study for Healthcare Workers Suffering from Psychological Distress.
- Added the Generate Preview Application feature for all grants and contracts applications in WRG-Sponsored Programs (WRG-SP), allowing users to preview the consolidated application PDF before all sections are finalized.
- Ported website to support the research study for Healthcare Workers Suffering from Psychological Distress.
- Improved the IRB's review of reportable events in WRG-HS by updating the language in the application, and creating new documents for internal review and communications with the study team.
- Developed new STAR App, which measures user behavior against social rewards. The data is analyzed over time to observe participants' habits and reactions to positive feedback.
- Developed new *Making Numbers Meaningful* website to help healthcare providers improve their ability to write understandable information to patients.
- Implemented the Tri-Institutional Report Request (Clinical/Research/Rev Cycle/ Practice Ops), allowing a more consistent intake, routing, and fulfillment of report requests across the three institutions.
- Rebuilt the Drukier Institute's website.
- Launched the Substance Use and Stigma of Addiction website.

Requirements	Status	Next Step
- CITI Training: Biomedical Research Doe, John	✓ Completed	Next Step
- CITI Training: Good Clinical Practice Doe, John	✓ Completed	Next Step
ClinicalTrials.gov	⦿ Not Started	Next Step
Coverage Analysis	⦿ Not Started	Next Step
EpicTogether Readiness	⦿ Not Started	Next Step
Institutional Review Board	⚙ In Progress	Next Step
Protocol Review & Monitoring Committee - Cancer	✓ Completed	Next Step
- CITI Training: Conflicts of Interest Doe, John	⦿ Not Started	Next Step

**SASP updates**

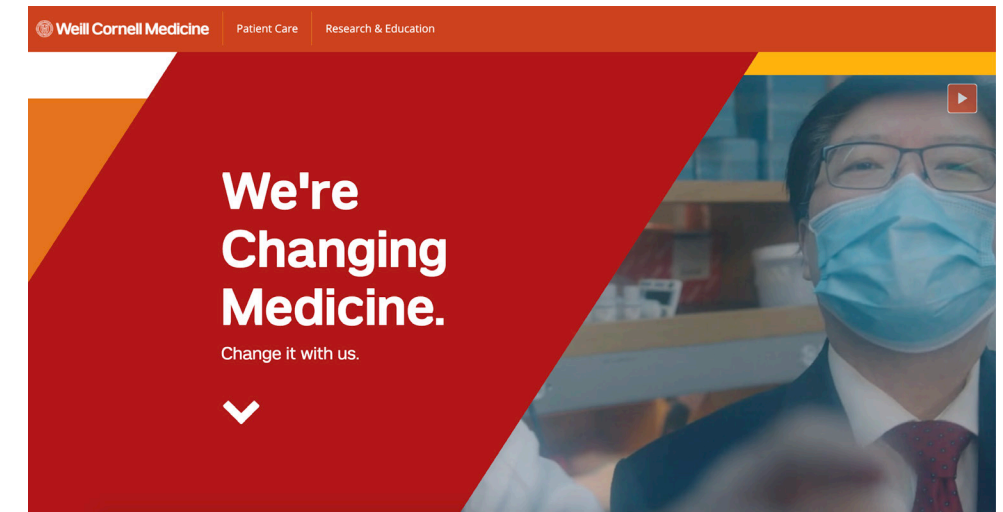
Two new requirements were added to the Study Activation Status Page that provide necessary details to get research started sooner. EpicTogether Readiness ensures efficient billing operations, while CITI Training is an extra training requirement study teams must complete for federally-funded research.



The number of new clinical trial requests from pharmaceutical sponsors via TriNetX, a research network where WCM shares de-identified EHR data. This brings the total of requests to 277 since 2018.



The amount of Personal Protective Equipment (PPE) sold to WCM research labs and core facilities this year in the iLab store, which has been in operation since mid-2020.



**Join the Change**

With the launch of the *We're Changing Medicine* campaign, ITS built the *Join the Change* site ([jointhechange.weill.cornell.edu](http://jointhechange.weill.cornell.edu)) to highlight the work we do at WCM and garner support.

**Upcoming Projects for FY22**

- Expand ARCH further to NYP/ Brooklyn Methodist through integration of legacy Cerner and new Epic EHR data.
- Launch Google Cloud Platform to support digital pathology.
- Collaborate to develop an institutional comprehensive consent to support research involving biospecimens, genomics, EHR data, and other systems.
- Establish custom research data repositories for Obstetrics and Gynecology and the Medicine Quality Improvement Academy.
- Continue optimizing WRG-HS applications, workflows, and reporting metrics to help the IRB obtain AAHRPP accreditation.
- Improve workflows and applications in WRG-RS to find efficiencies.
- Streamline the Calendar, Coverage Analysis and Budget build processes for study team members in WRG-CT.
- Expand ORB functionality to accommodate network sites at NYP-Q and Brooklyn Methodist Hospitals, and external study site subject binders.
- Operationalize a process for the new NIH Biosketch and Other Support documents by editing the Conflicts of Interest (COI) Survey and creating reporting.
- Replace the current Effort Tracking System (ETS) with a new module in WRG.
- Update the WRG-SP intake process to expedite grants and contracts processing.
- Establish a Network Access Initiative specifically catered to Research.



ITS plans to improve the digital presence of research sites in FY22.

Aside from enhancing several research websites, we will maintain a central lab website repository to decrease the launch time from months to weeks. Our Research website will become more web accessible, and we'll be integrating external relationship COI data on VIVO/Research profiles.



# Clinical Enhancements

This year tested the limits of our clinical operations, and ITS proudly supported the mission.

## At a Glance

Assisted our NY Consortium partners with online scheduling launch so WCM providers represented on NYP.org can showcase online scheduling.

Updated virtual chat bot user interface to improve online scheduling.

Patched and secured the WCM App for Video Visit support.



As the demand for at-home doctor's appointments persisted, ITS enhanced our digital tools to improve patient access. We built Video Visit online scheduling workflows for *Find a Doctor* and doctor profiles to help steer patients to Video Visits. We also enhanced physician's Google My Business listings to display links to their online scheduling time-slot availability. To simplify the patient experience of online scheduling, we enhanced Clinical Services to provide links to *Find a Doctor* search results that were specialty-filtered to display video visit availability, improved error handling for patients who encountered a "Time No Longer Available" message when a slot was booked in the midst of scheduling, and improved online scheduling reporting to identify doctors whose schedules no longer showed timeslot availability.

Last October, we played a key role in the EpicTogether East Campus Go Live, a major milestone in the EpicTogether initiative to have a single electronic health record across Weill Cornell Medicine, Columbia, and NewYork-Presbyterian. In support of the Go live, ITS extended SMARTDesk hours, set up a mobile device support hub in NYP, and stood up a research hub to help users with OnCore and EpicTogether for Research applications. Our efforts helped ensure users were able to continue to work throughout the launch.



# 216

The number of new physician profiles created this year on our weillcornell.org site.

# 148

The number of patient care events posted this year on our weillcornell.org site.

## A central source for COVID-19 info

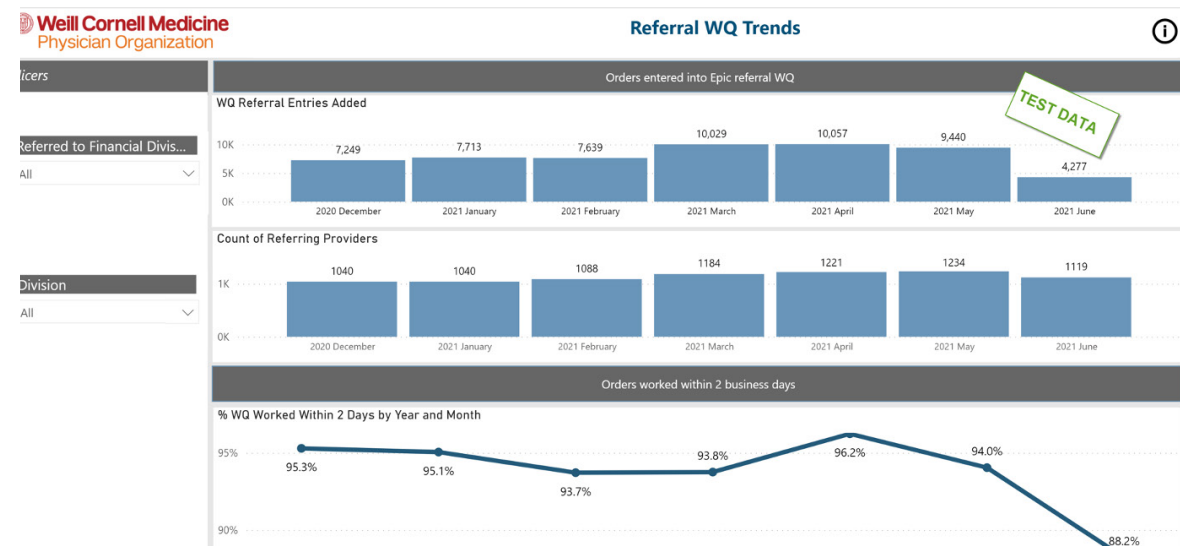
ITS managed and updated our COVID-19 hub on WCM Central ([wcmcentral.weill.cornell.edu/covid19](https://wcmcentral.weill.cornell.edu/covid19)) as information evolved surrounding the virus, its effects, and vaccination availability, making it a valuable source of real-time COVID-19 updates for the WCM community.



### Other Accomplishments

- Built and updated seven new websites for clinical partners, including the Compliance & Privacy Office, the Department of Emergency Medicine, the Program for Substance Use and Stigma of Addiction, Labor and Delivery, Women’s Heart Program, the Department of Neurology, and Comprehensive Spine for Neurosurgery department.
- Published 219 news articles, 19 new practice locations, and 115 new condition and treatment pages on our weillcornell.org site.
- Improved navigation across all WCM Drupal-based web sites.
- Built checks and processes to ensure availability of latest Epic software releases.
- Improved WCM physician web profiles with a POPS-to-Symplr (aka Phynd) interface.
- Created analytics dashboards to track and understand website performance.
- Simplified clinical and non-clinical grant expense reporting.
- Deployed additional clinical apps through the WCM App store, including: Epic Haiku and Limerick, Epic Canto, Epic Rover, SafeSide Mobile App, UptoDate, Cisco Jabber.
- Expanded our Front Door to Care efforts to bring us closer to NY Consortium partners, including updating the homepage to support a unified presentation of services between WCM, NYP, and ColumbiaDoctors, aligning Primary Specialty vocabulary that will be standard, and auditing practice profiles on weillcornell.org site to ensure accuracy in preparation for transition to Yext business listings management.
- Implemented live agent chat functionality so patients can interact with call center agents via text chat through the websites.
- Lead Disaster Recovery testing for tri-institutional hosted Epic service including ongoing data center rotations, expanding connectivity, and conducting tripartite emergency preparedness exercises to ensure teams trained to respond in the event of an interruption.

## New Power BI Dashboards for the PO

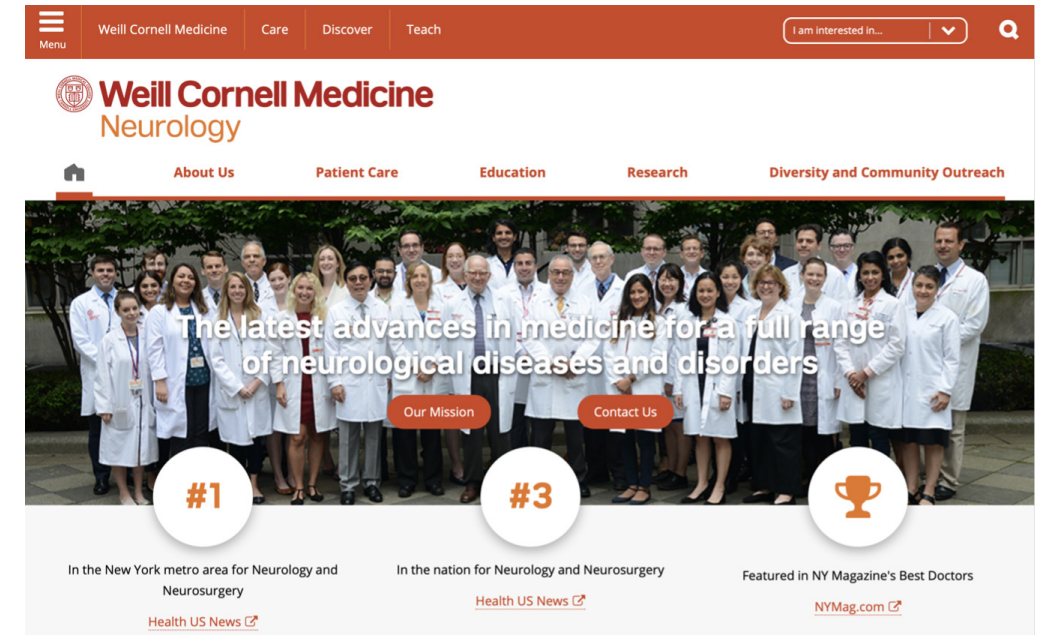


ITS collaborated with Physician Organization Financial Services to help them adopt Power BI as a primary reporting and data visualization tool. The Power BI Dashboards developed include the Epic Referral Dashboard (above), the Call Center Dashboard, and the PO Monthly Revenue Dashboard that shows key revenue KPIs and depicts performance of financial divisions. The Power BI dashboard above, **Epic Referral Work Queue Dashboard**, is designed for clinical practice managers to monitor the effectiveness of practices processing referral orders in Epic and converting them to scheduled appointments.



## New and improved clinical websites

We built or enhanced websites for seven practices this year, including the Department of Neurology. The new site features an improved residency presence including resident research, and information to assist in recruitment. It pulls in automated content from the WCM Events Calendar, News Room, and JCTO clinical trials, and offers an optimized patient user experience, content editing, and more.



### Upcoming Projects for FY22

- Convert PO Executive Dashboard from Tableau to Power BI, providing monthly trending of various clinical and financial metrics such as practice efficiency, productivity, and digital health, as well as tracking patient demographics, encounters, and revenue.
- Streamline Power BI intake for the PO, including building the Culbert Template Optimization Dashboard, the PO Leadership Dashboard (Phase 2), and the Surgical Provider Revenue Snapshot.
- Mature Disaster Recovery efforts around Epic.
- Integrate Avaya Epic for Screen Pop to improve call center efficiency by allowing patients to self-identify rather than identify with call center agents, eliminating 20-30 seconds per call.
- Launch redesigned weillcornell.org to give all PO practices a standardized yet fully-featured set of templates for all patient-facing content.
- Improve online scheduling functionality to be in sync with clinical scripting and Epic-supported questionnaire workflows to better direct patients to correct visit types.
- Consolidate .edu sites with patient-facing content into weillcornell.org to improve patient experience and reduce duplicate content.
- Migrate business listings management to Yext platform.
- Begin content audit of provider data with a focus on Specialty/ Expertise alignment for improved and consistent Find A Doctor search results.
- In alignment with our Front Door to Care initiative, implement standardizations for provider profiles, Find-a-Doctor, and online scheduling.
- Build patient feedback program for websites and *Find a Doctor*.
- Redesign Weill Cornell Brain and Spine site.
- Ensure POPS data is feeding WCM doctors on NYP.org via Phynd/Sympler integration.

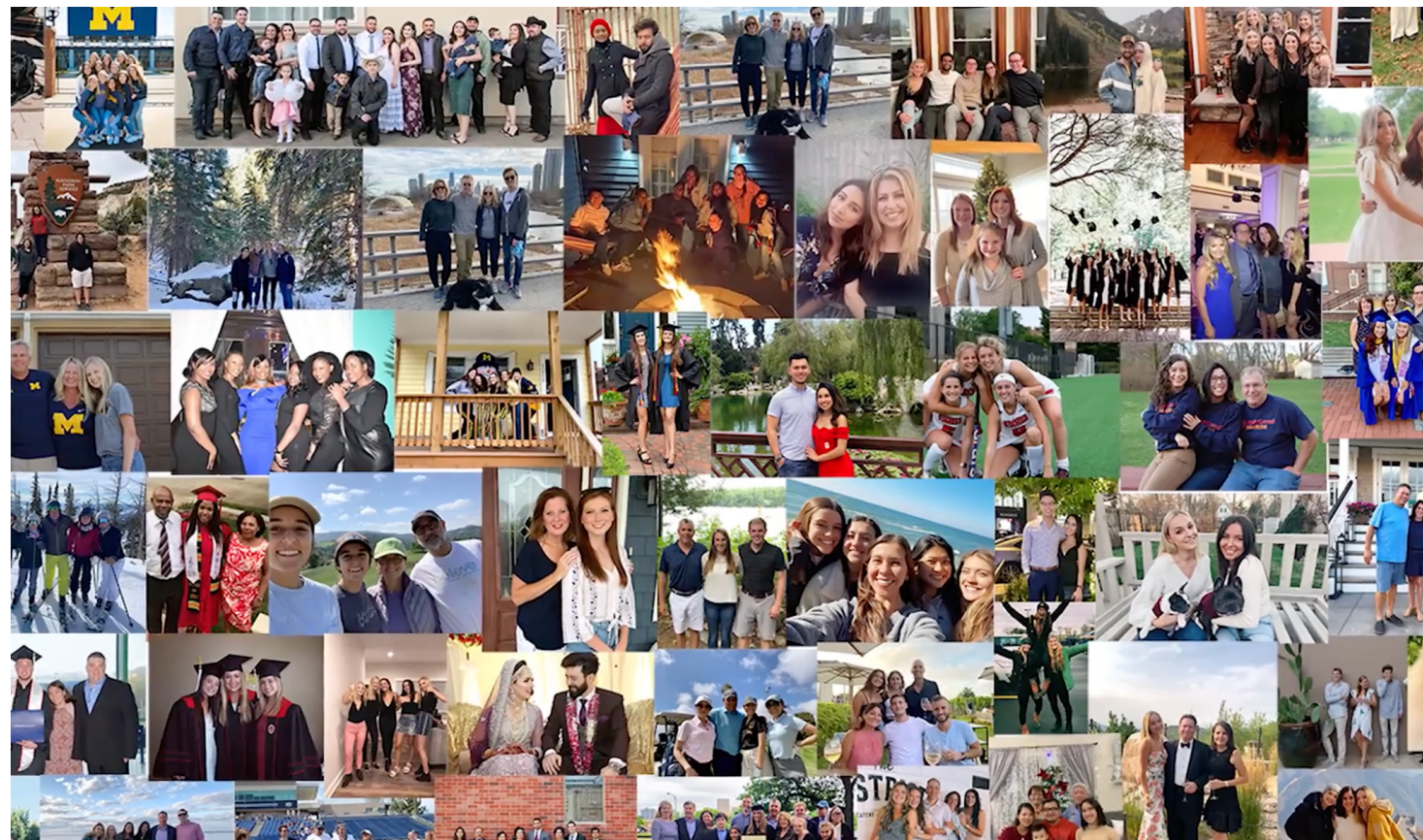


## Virtual Callback Assist

We deployed VHT Virtual Callback Assist this year to improve our patient’s telephone experience. This system allows the caller to reserve their spot in a wait queue and hang up. Then they receive a callback instead of waiting on-hold.

# Education Initiatives

In a year where every facet of life seemed to go virtual, education at WCM was no exception. Following the shift to online remote learning, the Educational Technologies Group (ETG) was instrumental in transforming the student experience.

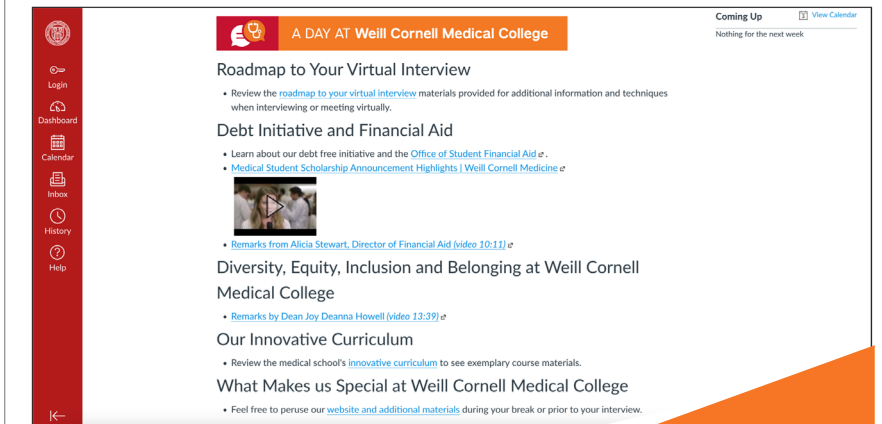


The PA Program Matriculation Ceremony was one of many student events that went virtual this year with the help of ETG.

ETG supported a myriad of virtual events by creating videos, building interactive web pages, and providing livestreaming services. These events included the PA Program Matriculation Ceremony, the PA Program Certificate Ceremony, Weill Cornell Graduate School Convocation, Excellence in Medical Education Awards, and the AOC (Area of Concentration) virtual fair.

## Interviewing for med school, virtually

The shift to remote learning required the institution to shift towards a completely online recruitment and admissions cycle. ITS, Educational Technologies and Event Services supported remote admissions, virtual interviews, and revisit activities for the medical school, tri-institutional MD-PhD program, and the graduate school by creating topic-focused web resources, providing training on Zoom best practices as well as managing hundreds of Zoom meetings that used complex Breakout Rooms configurations.



### Online Interview Custom Reporting Application

We created a custom application for interview scheduling, evaluation and reporting for the tri-institutional MD-PhD program. It serves as a centralized location where faculty can complete interview reports, and it generates a single file consolidating all reports completed per applicant.



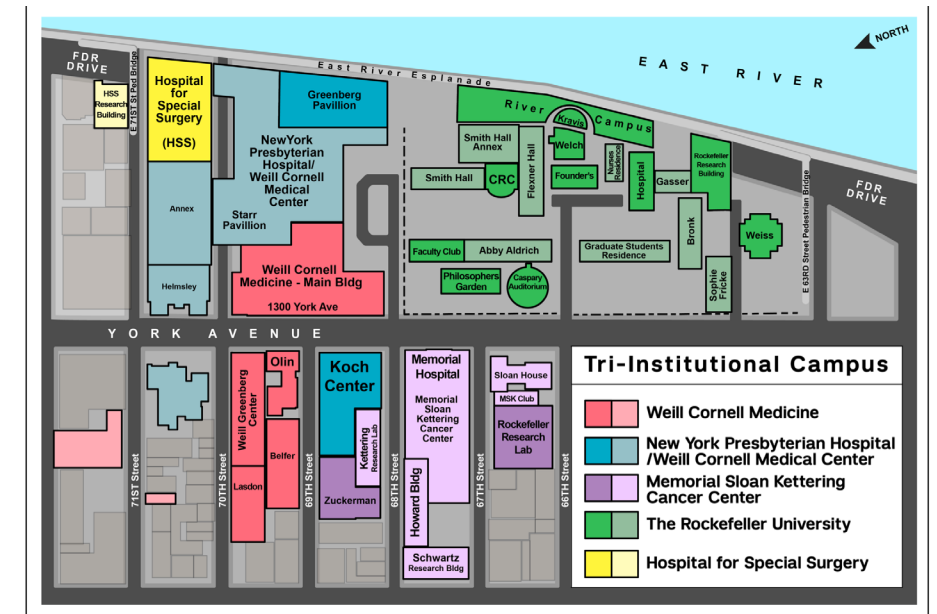
**Other Accomplishments**

- Introduced the Wonder social engagement platform (wonder.me) for WCM meetings or online events where Low Risk (Public) data will be shared or discussed.
- Completed proof of concept of a centrally-supported curriculum system, One45 Analytics. The medical school will implement the tool to meet their Continuous Quality Improvement (CQI) data analysis and other reporting needs.
- Updated student information system (Jenzabar) to integrate data for students in the Weill Cornell Graduate School PBSB program at Houston Methodist to ensure proper data integrity and reporting.
- Planned for the renovation of the LC-504 classroom to provide the best hybrid learning experience for WCGS PBSB students, who will be in New York, Houston, or anywhere in the world.
- Built website for the Office of International Affairs, improving visibility for what serves as the front door of WCM's international initiatives.
- Migrated the Area of Concentration (AOC) Program Scholarly Project Review System to a new administrative system, allowing the program to successfully launch its next round.
- Completed Phase 1 of the Student and Alumni Tracking System by developing a Student and Alumni database for academic programs to easily request reports and data extracts for accreditation, grants, and more. When complete, the Tracking System will help capture and report alumni data not currently captured by External Affairs.



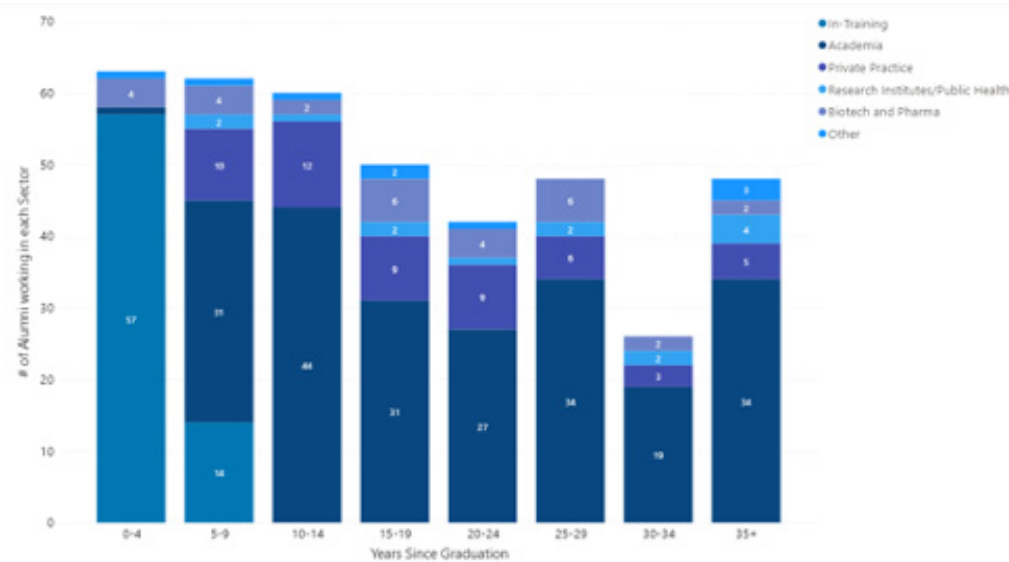
**Interactive campus map**

ETG built an interactive campus map for the MD-PhD program to help students who can't make it to campus learn more about buildings and landmarks.



**Upcoming Projects for FY22**

- Complete annual upgrade of Jenzabar, including the implementation of Jenzabar One (J1) Web, a step toward moving to a web-based and cloud-native student information system.
- Complete Phase 2 of the Student and Alumni Tracking System, an analysis of authoritative data sources across a variety of systems and stakeholder groups, with the goal of ensuring the most accurate data set is available to the appropriate persons.
- Complete proof of concept of ProCredEx, a secure marketplace for credential exchange with the goal of decreasing the time and money WCM spends on credentialing and recertifying our physicians.
- Enhance knowledge management efforts to ensure WCM user community has better access to ITS support materials. core services.
- Complete Phase 2 of One45 Analytics by incorporating medical school admissions and evaluation data. This will allow the medical school to have true learner profile data that includes their pre-matriculation information through graduation, and will reduce manual efforts needed to create Medical School Performance Evaluations (MSPE).
- Enhance the WCGS Student Portfolios custom application to ensure that additional content types can be added to the student portfolio and appear in the desired order in relation to academic progress.
- Enhance the MD-PhD Online Interview Reporting Custom Application to provide the program with additional functionality and continue to streamline the interview and reporting process.
- Build Residency Matches Dashboard in Power BI for the Tri-Institutional MD-PhD program to show an interactive visualization of the institutions and specialties in which alumni have matched since 2001 as well as the alumni of Weill Cornell Medical College MD-only graduates.
- Continue to revamp educational tools to support more hybrid, remote and onsite learning, including improved online authoring tools and automated digital credentials.
- Help determine overall best practices for a hybrid/remote curriculum and develop training materials and AV solutions to meet the needs of a hybrid workplace across the WCM mission.



**Three new Power BI Dashboards**

ITS collaborated with the tri-institutional MD-PhD program to create three new Power BI Dashboards with interactive data visualizations to help the program's outreach to prospective students. The dashboards include Tri-I Faculty by Research Area, Academic Career Progression, and Career Paths of our Graduates. The Career Paths of Our Graduates dashboard (above), shows how many alumni work in which of six major employment sectors, arranged in years since their graduation.

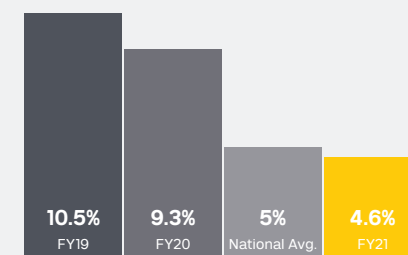
# Supporting our services throughout the pandemic presented a number of challenges.

While several projects stalled at the beginning of the pandemic, we were able to manage some COVID-related initiatives, like remote assistance hubs and the Student Surveillance Program. The Service Desk also expanded their hours to be 24/7 (with the exception of holidays) to ensure our faculty, staff and students have support around the clock. Despite the difficulties the year presented, we continued to provide exceptional service.

These numbers give a brief glimpse of how efficiently we were able to manage both IT support and project requests throughout FY22.

### Call Abandonment Rate

We've improved our call hold time so we can help users before they hang up.

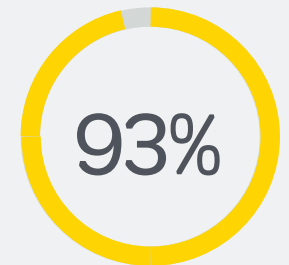


### Average Speed to Answer

57.4

The number of seconds it takes for our techs to answer your call. Although this is improved from 120 seconds last year, our goal is under 35 seconds.

### Customer Satisfaction Rate



The national average for our industry is 90%. We're aiming for 95% in FY22.

### Ticket Volume

292

The number of tickets each technician resolves per month. We continue to improve our knowledge base for self-help and faster assistance.

### Cost Per Contact

\$11

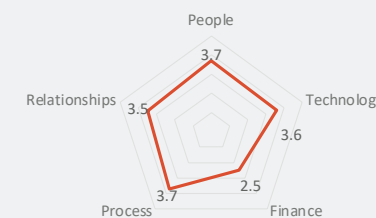
This represents the total cost of operating the Service Desk, divided by the number of calls we handled this year. The national average is \$16 per contact, putting us well in line with our goal.

### Office 365 Upgrade

12,000+

The number of users we helped upgrade to Microsoft's Office 365, which includes improved features and collaboration across WCM.

### Gartner PPM Score



Our Project & Portfolio Management Maturity score stayed stable at 3.4. This score identifies improvements ITS needs for our project management processes.

### Project Efficiency



About 44% of our large-scale projects can be completed in less than three months.

### PM Lite Management



55% of our 334 FY21 projects were managed by non-PMO staff with PMO guidance, allowing us to help kickstart more projects to benefit WCM.

## New Tools & Services

ITS introduced a number of new applications and services this year. Take a look and try some of these services yourself!

### Business Intelligence Gateway

ITS launched the all-new BI Gateway this summer. The BI Gateway will eventually replace our current reporting functions, specifically Analysis for Excel, Web Intelligence (Webi), and BI Portal reports. Under the umbrella of the BI Gateway, users will be able to look up various reports about their department in one convenient place.

The Gateway provides some interactive features, like being able to create visualizations or stories, as well customize stories and share them with colleagues. Access the Gateway at [bi.weill.cornell.edu](https://bi.weill.cornell.edu) or select the **Business Intelligence Gateway** tile when you're logged into WBG.

### Learn with Liaisons

Our ITS Liaisons developed a monthly webinar to provide information about ITS services and applications. While generally intended for faculty, anyone can attend. Contact [liaisons@med.cornell.edu](mailto:liaisons@med.cornell.edu) for more information.

### Apollo Wireless Network

Students have a new dedicated Wi-Fi network for their personal, non-tagged devices. The network works similarly to a guest network at a coffee shop, and is available in several locations across campus, including dorms, 1300 York, and the Student Midtown Center. Access is available at [apollo.weill.cornell.edu](https://apollo.weill.cornell.edu).

### Smartphone Self-Service Registration

Got a new smartphone? You no longer need an in-person appointment to tag your phone in order to access your WCM email account, campus Wi-Fi, or WCM apps. ITS has made the entire smartphone registration process self-service, even including personal devices

into the mix. Registering your smartphone with ITS remains a free service. Visit our website at [its.weill.cornell.edu](https://its.weill.cornell.edu) for more information.

### Offboarding Website

The Offboarding tool allows departments to simplify the process of offboarding someone from their staff, saving time and ensuring that all aspects of offboarding have been completed. Departments can now track various parts of the process online, such as expiring someone's role and appointments, deprovisioning tagged devices, removing access to services, and more. This app is available at [offboarding.weill.cornell.edu](https://offboarding.weill.cornell.edu) for select users.

### Clock-In App

As part of our eTime application in the Weill Business Gateway, select users are easily able to clock in and out of work using a special app. eTime will be introduced to more departments in FY22.

### LabArchives



LabArchives is a secure, cloud-based electronic lab notebook (ELN) designed to capture, manage, store, and share research protocols, information, and data. Only four months after going live, there are already 403 registered users, and 439 electronic lab notebooks created for WCM research. Access LabArchives by visiting [labarchives.com](https://labarchives.com), selecting **Weill Cornell Medicine**, and logging in with your CWID.



# Samuel J. Wood Library

With the pandemic temporarily shutting down in-person services, our Library staff had to get creative to continue to support our users.



The "From Snake Oil to Social Media" workshop is available at [library.weill.cornell.edu/snakeoil](http://library.weill.cornell.edu/snakeoil). Image courtesy of the Medical Center Archives.

## At a Glance

Hit 10-year mark of our successful Systematic Review service.

Tremendous Data Core growth, with 142% increase in users and 237% increase exports performed.

Supported nearly 1 million COVID-related print jobs, including vaccination cards, signs, and more.

To safely accommodate the WCM community, many of our services moved to a virtual format. The Library's annual Treasure Hunt for student orientation was adapted to a Zoom competition focused on a vaccination hesitation clinical scenario. The Samuel J. Wood Library and the Medical Center Archives were able to launch a grant funded website called "From Snake Oil to Social Media: Drug Advertising

and Your Health," which included a free asynchronous online workshop on pharmaceutical advertising, issues in regulation and safety, and medication literacy (see image above). Additionally, our Heberden Society History of Medicine lecture series became fully virtual, leading to an over four-fold increase in attendance. Our four lectures garnered 493 attendees, with another 700+ views on our YouTube channel.

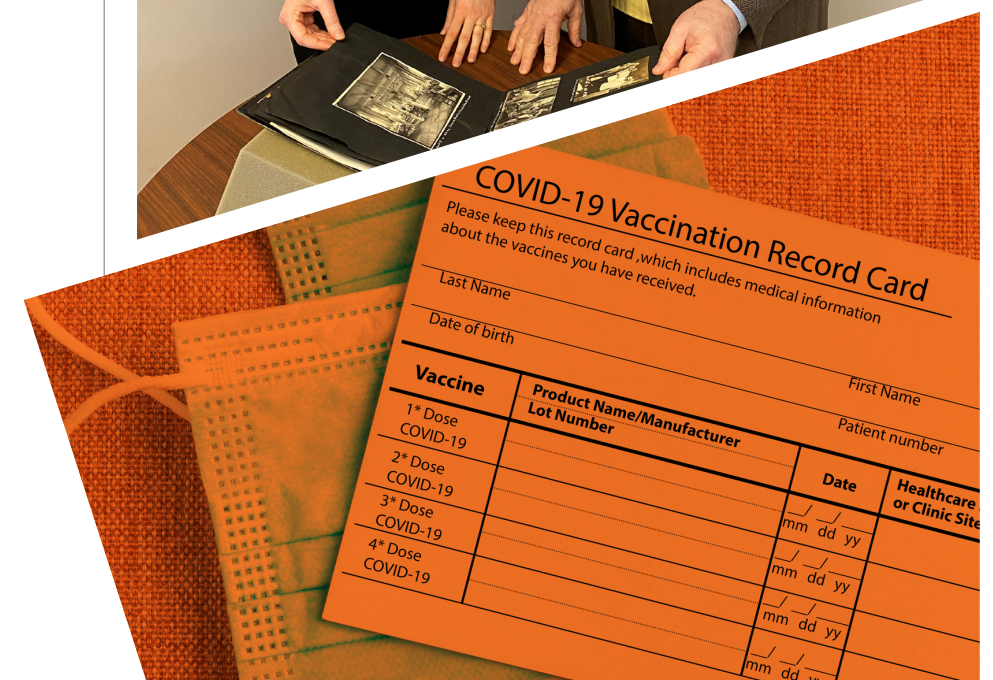
In our tenth year of the service, we published 20 systematic reviews, one of which was the Transfusion and Anemia EXpert Initiative – Control/Avoidance of Bleeding (TAXI-CAB) Consensus Statement. With the support of NIH R13 grant, our librarians collaborated with 27 international clinicians from 21 institutions and five countries to complete the review. The systematic review was the basis for the main manuscript, and submitted to Pediatric Critical Care Medicine, as well as six additional manuscripts based off of subgroup analyses. Our Grant Editing service was also busy, handling several large-scale, institutional applications this year. One of those was the first phase in the Meyer Cancer Center's P30 application to the National Cancer Institute (NCI) to support the research infrastructure necessary for NCI-designated cancer centers to advance scientific goals.



Our Duplicating team provided a wealth of support during the pandemic, working with WCM departments and NYP to provide a flow of nearly 1 million printed materials, including 1,000 signs, 44,000 vaccine cards, 180,000 information handouts, and 594,000 vaccination screening forms.

## Establishing the David J. Wolf, MD Endowment Fund

In honor of his retirement and over 41 years of service, the friends, patients, and family of Dr. David J. Wolf (right) created this fund to support preservation and accessibility of the significant historical records which support archival research in the historic Medical Center Archives. Pictured with Dr. Wolf is our Head of the Medical Archives, Nicole Milano (left).

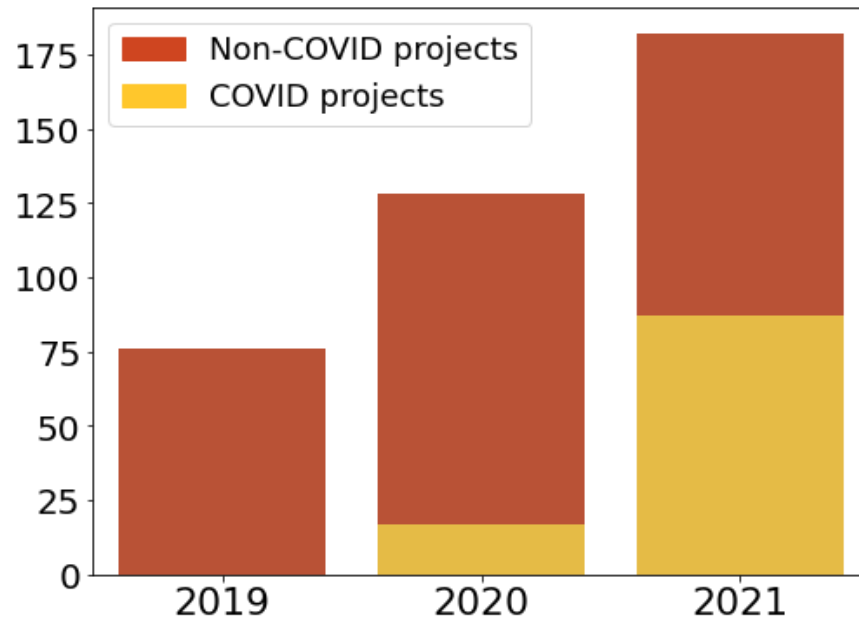




### Other Accomplishments

- Introduced Decision Navigation with the Meyer Cancer Center. This intervention tool supports the decision-making needs of patients, their families, and caregivers. It encourages patient participation and collaboration between patient and provider, while facilitating standard clinical care principles like shared decision-making, patient-centered care, and improved communication to instill confidence and reduce feelings of regret in patients at a time when they need to make a critical treatment choice.
- Implemented LibCal, a calendar booking tool that allows users to view real-time availability and directly book rooms, equipment, services, and faculty. This removes time-consuming back-and-forth when booking and provides a near-seamless reservation experience for Library users.
- Migrated our VIVO instance to the cloud. This reduced page load time by 44% and improved the system's reliability. In addition, we updated the method for importing publications such that new publications are shown in VIVO within days of appearing in PubMed.
- Upgraded our customized e-Resources A-Z of available databases on the Library's website and other content to offer a more robust search engine, showcase new and popular databases, highlight "Best Bets" in every subject area, share database links, and offer a better sidebar with Live Chat, popular database links, and more.
- Created a subject guide for WCM alumni and retirees to help facilitate lifelong learning and research through free and Open Access resources.

### Users added to Data Core



### Data Core

We added 182 users to Data Core projects, a 142% increase over the previous year. Eighty-seven of those users were added to COVID-related projects. Altogether, we set up 22 new projects, and performed 235 exports (a 237% increase over the previous year). We also completed eight security attestations, allowing projects to gain access to third-party datasets.



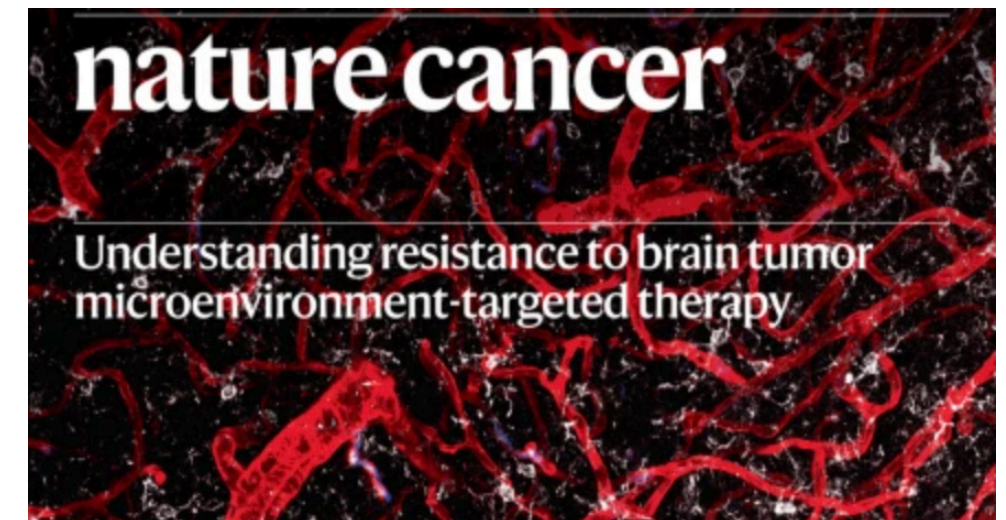
### Diversity & Inclusion

The Library and Archives played a role in WCM's annual Diversity Week, hosting a book club with Dr. Deirdre Cooper Owens on her book *Medical Bondage: Race, Gender, and the Origins of American Gynecology*. We also created a new Antiracism, Diversity, and Inclusion in Medicine subject guide with resources and curricula at [med.cornell.libguides.com/ADI](http://med.cornell.libguides.com/ADI).



### Open Access Discovery

OneSearch, the library's catalog and discovery platform, now offers access to all open access content that are accessible to all users including alumni and retirees. Visit [library.weill.cornell.edu](http://library.weill.cornell.edu) and use the "Open Access" filter in OneSearch.



### New *Nature* titles available

The Wood Library collaborated with the Cornell University Library to negotiate 11 new titles from *Nature* for the entire Cornell Community, such as *Nature Aging*, *Nature Cancer*, *Nature Food*, *Nature Metabolism*, and others.

### Upcoming Projects for FY22

- Build a research reproducibility program to support researchers improve data management, data retention, and research transparency. This includes the creation of the Forensic Image and Data Evaluation (FIDE) portal – a tool to help evaluate manuscripts for image duplications and inappropriate manipulations.
- Enhance the Data Catalog ([datacatalog.weill.cornell.edu](http://datacatalog.weill.cornell.edu)) to help manage data retention associated with grants and publications.
- Reimagine SMARTFest to include a virtual event.
- Launch the new David J. Wolf, MD Visiting Research Scholar Program.
- Identify and begin implementing a new collection management tool in the Archives, which will ultimately enable staff and researchers to better learn about and use the historic archival collections with greater ease.
- Build a Publication Manager Tool, which will enable faculty and various proxies to curate their publication output. The tool will also be used for publication reporting and analyzing the impact of a faculty member's publications.

# Infrastructure Enhancements

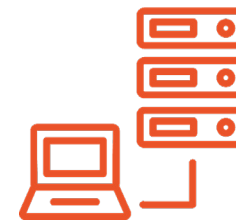
The infrastructure team provides the technology backbone to deliver the applications and services we all use at WCM.



Sunsetting aging technology is just as important as implementing new systems.

This year brought a renewed focus on reinforcing existing infrastructure, tightening security, and sunseting aging or misaligned technology. ITS successfully decommissioned all Oracle systems this year, a complex project that we took on due to the increasing cost and decreased demand.

Oracle was one of many redundant database technologies that ITS supported to run applications. As we embrace a cloud-first strategy, it was time to part ways with this legacy platform. The project took about two-and-a-half years to complete and involved the migration of 50 Oracle-based systems.



We successfully piloted Starfish Storage Systems file storage framework to manage large and complex data sets stored across various WCM systems. This tool will be installed for ITS and Scientific Computing staff, and for our colleagues at WCM-Qatar.

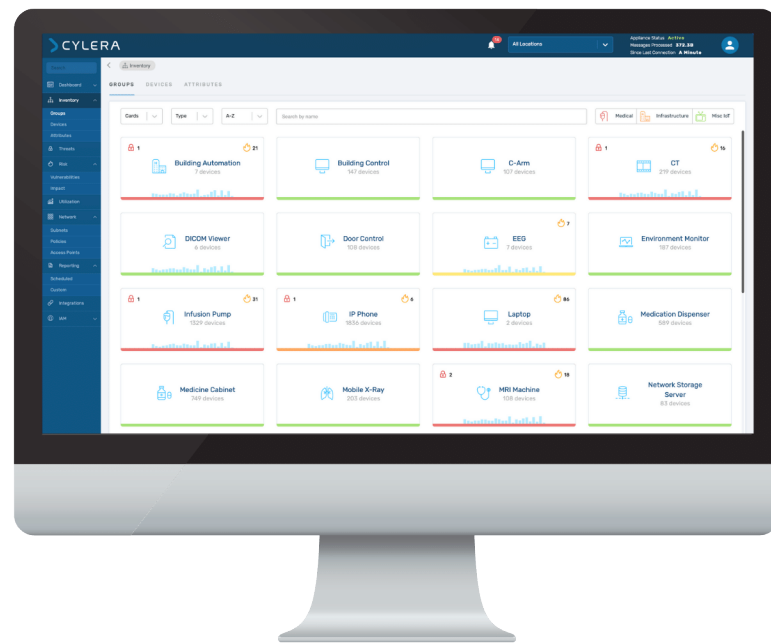
## Better backup for the BRB

Our infrastructure team upgraded the Uninterruptible Power Supply (UPS) servicing the Belfer Research Building data center to lithium ion-based batteries. This eliminates less reliable lead acid-based batteries, lowers long-term operational costs, and decreases our energy consumption.



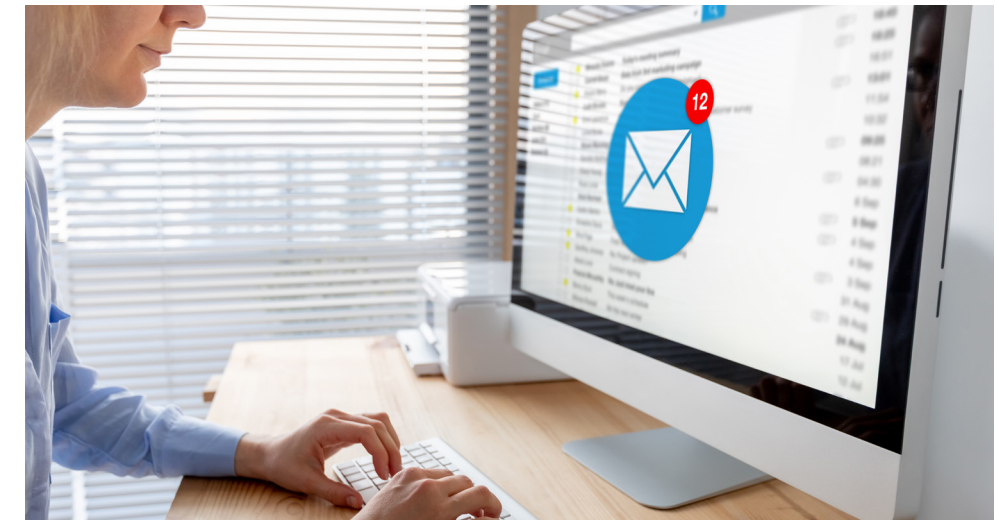
**Other Accomplishments**

- Improved Isilon file sharing service with real-time file auditing and improved ransomware defense.
- Upgraded Citrix Workspace application delivery via the WCM App Store, aligning more closely with NYP for critical applications like Epic.
- Improved resiliency of our Amazon Web Services (AWS)-hosted services.
- Migrated on-prem infrastructure to AWS to improve reliability of applications.
- Upgraded Windows 2008 and MS SQL 2008 servers.
- Migrated RightFax to the cloud.
- Moved legacy web sites to AWS allowing us to decommission on-prem servers.
- Migrated MDAudit to the cloud.
- Upgraded and hardened virtual machine infrastructure to simplify management and enhance performance and security.
- Upgraded internal email servers to latest version of Microsoft Exchange.
- Upgraded backup service to decrease time needed to restore customer data.
- Upgraded Avaya Core System to be able to support Avaya softphones for remote users, and for future Epic and ServiceNow integration.
- Upgraded IP address and DNS management systems servicing all WCM network-connected endpoints. This project was critical for future service enhancements and better asset tracking.



**Watching over the Internet of Things**

This year, we launched Cylera in order to better detect, manage, and monitor Internet of Things (IoT) devices on the WCM network.



**Keeping your inbox in check**

ITS deployed a mailbox management policy in Outlook that automatically deletes items older than one year to free up valuable space in users' accounts and WCM's email system.

**Upcoming Projects for FY22**

- Upgrade fiber channel network and storage network with new switches to increase speed and improve reliability.
- Upgrade file share hardware to Isilon Firmware/OneFS 8.2.2 to fix bugs and improve user experience.
- Upgrade virtual infrastructure to VMware vSphere 7.0 to increase security and reliability.
- Perform BRB data center desktop exercise testing our shutdown and startup capabilities with a select list of critical services.
- Standardize and enhance AWS recovery procedures.
- Upgrade Microsoft and SQL server from 2012 to 2019 for ease of service and security enhancements.
- Migrate additional WCM applications to NYP's Citrix platform, and transfer applications currently hosted on myApps to Remote Apps (RDP).
- With the goal of centralizing reporting data for the Physician's Organization, test proof of concept to consolidate multiple PC database platforms to a consolidated secure SQL infrastructure.
- Implement Windstream Carrier SD-Wan to increase resiliency to our carrier network on voice calls. Apply revamped infrastructure to all of WCM's inbound and outbound call functionality.
- Develop network resiliency solutions for cloud-based hosting providers, including AWS, Azure, and SAP, including direct peer-to-peer connections and internet-based VPN tunnel setups.



We expanded our telemedicine system to accommodate the influx of video visits due to the pandemic, and migrated the video visit system from Vidyo to Zoom.

# System and Service Enhancements

ITS continually strives to enhance our systems and services to better serve the college. This year we took a few key steps toward improving the user experience where it counts the most: your device.

## At a Glance

Expanded support services by keeping Service Desk open 24/7 to ensure faculty, staff, and students have support around the clock.

Improved our JAMF Mac Management software so users no longer need to connect to VPN to download apps. Apps also install more quickly.

Launched Apollo, a new wireless service that allows WCM students, faculty, and staff to self-register personal devices for internet-only access while on campus. Apollo is broadcast across campus locations predominantly occupied by students, including Lasdon and Olin dorms, the education center, and the student midtown center at 570 Lex. Ave.



We made the entire smartphone registration process self-service. Users no longer need to submit a request and schedule an in-person appointment to “tag” their smartphone to access their WCM email account, campus Wi-Fi, or WCM apps. This is a particular benefit to our clinical users. As soon as their device is registered with MobileIron, our mobile device management system, they have immediate access to download and configure Epic mobile apps via the WCM App Store.

We also launched the Evergreen PC service, which allows ITS to ship computers directly to our users within two days of ordering. When the device needs warranty repairs or ages out, ITS quickly swaps or replaces the device. Evergreen is provided through a simple monthly subscription fee for the device, helping departments operationalize their equipment expenses. With Evergreen, users receive their computer, log on, and start work immediately without having to come to campus, cutting down on weeks of purchasing lead time and logistical headaches.

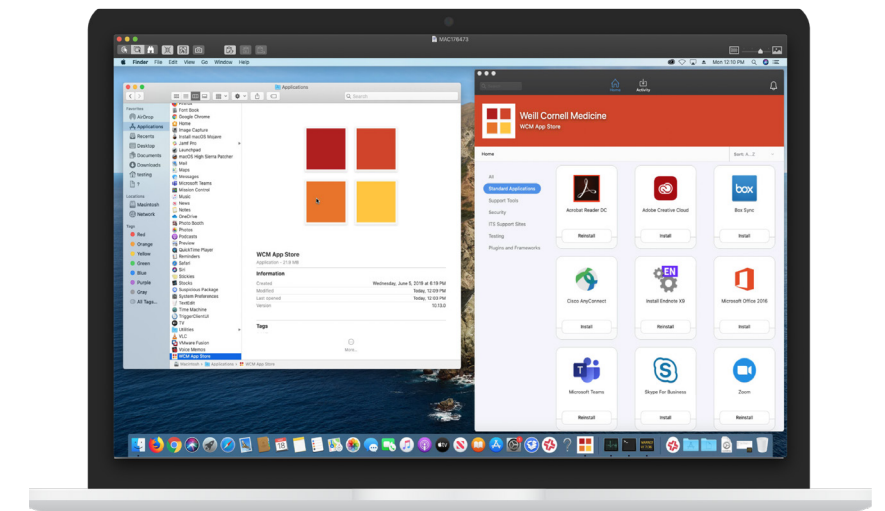


# 88%

Of survey respondents said their experience with the new Evergreen PC program was great and everything went smoothly.

## Keeping our users up-to-date

ITS made safe and secure computing easier by improving our OS update and patching program for Macs and Windows PCs. We enhanced the WCM App store itself as well, unifying the self-service download process to a single name and shared icon across Windows, Mac, smartphones, and tablets.



**Other Accomplishments**

- Implemented automated solution to process new hires from SuccessFactors Onboarding into SAP, increasing efficiency by eliminating current manual data creation efforts, and accelerating process of CWID creation and timely compensation.
- Improved the Learning Management System (LMS) in WBG to make it easier for users to take courses and track progress by adding in-line media display and presenting course content in an itemized list to reduce the amount of navigation required.
- As part of EHS shipping database conversion initiative we created new reports Qatar Metrics and Sidra Metrics to help them track crucial metrics.
- Completed successful budget system (SBP) upgrade and rolled New York budget over to new fiscal year, including creation of budget forms for FY2022.
- Created new Grant Financial Report for Qatar that automatically combines data from Sponsored Program Statement and Employee Planned Funding by WBS (Qatar).
- Added a new fund attribute to financial statements to identify whether a fund is clinical, non-clinical, or research, meeting an urgent need for the Finance department.
- As a part of the American Rescue Plan Act (ARPA) for 2021, a special ongoing benefits enrollment option was opened to allow eligible employees to enroll into relevant benefit plans and/or make changes to their existing benefits.
- Set up new benefits plans and new integration with our new vendor for administering non-exempt retirement plans. The interface automatically sends retiree information to vendor every week, increasing efficiency by freeing up HR resources and eliminating current manual efforts.
- Set up a new interface to our new vendor for administering life insurance, leave, and disability, which will automatically send employee demographic and payroll information to the vendor every week.
- Executed Space Inventory Enhancement project to allow Research Administration, Capital Planning and ITS departments to enter space changes for the current year while the IDC 2020 external survey is in progress.

**eTime expansion**

ITS rolled out the eTime solution to External Affairs, Budget, Primary Care, and Medicine Administration. We also launched a homegrown app called Clock-In for non-exempt eTime users. Available on desktops and mobile devices, users can clock in and out even when they're not online. Recorded times sync to WBG when the user logs into the app while connected to the Internet.



**SAP Concur for Qatar**

We implemented SAP Concur travel and expense solution to 100 pilot users in WCM-Qatar, streamlining the process of managing travel pre-commitments, advance payments for trip expenses, and capturing electronic attachments.

**Other accomplishments**

- Extended eForm Payment Requisition application to WCM Qatar to help optimize the Qatar payables processes by reducing paper workflow and automating the approval process.
- Implemented check formatting changes to Accounts Payable and Payroll checks in order to bring WCM into compliance with the latest banking standards.
- Implemented lease management and accounting processes for Qatar real estate and equipment leases, in accordance with FASB (Financial Accounting Standards Board) regulation.
- Implemented email filtering plugin to ServiceNow to automate the removal of false junk email records.
- Implemented ACH payment file generation for Qatar, allowing them to upload payment files twice a week to HSBC bank.
- Enhanced Human Resources (HR) dashboards and reports in ServiceNow to help HR leadership monitor performance of HR Service Center activities.
- Reduced planned and unplanned downtimes of applications like ASMS and the Faculty Review System.
- Enhanced the Service/Alerts feature on the ITS website to include more automated messaging.



100

We released our 100th BI Quick Tip, a successful video series produced by the BI Training and Communications team to help educate the BI Report user community in the various tips and tricks they can apply in their daily work.



## Diversity and Equity Dashboard

This new Power BI dashboard enables staff in the Office of Institutional Equity to view diversity information against compensation, merits, and promotions.



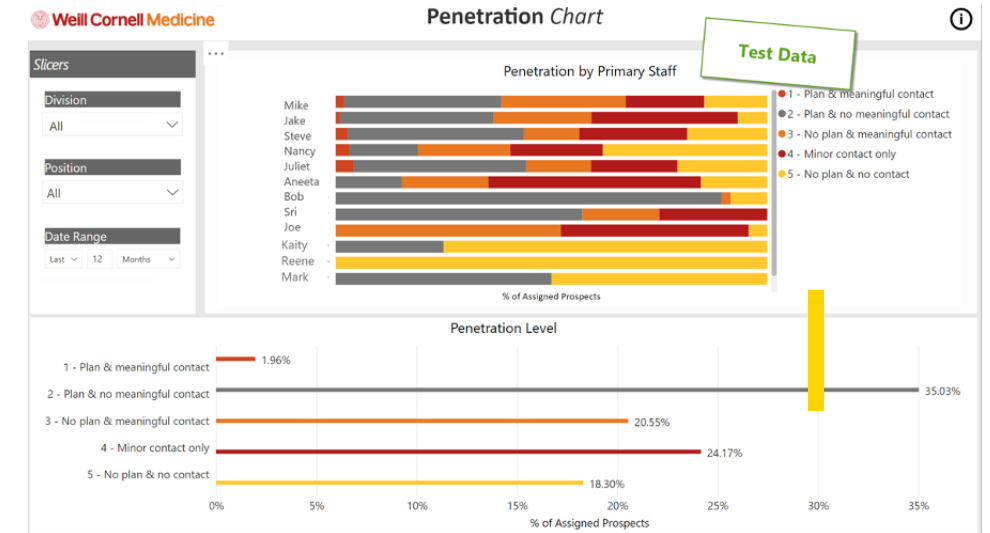
## Academic and Non-Academic Overview Dashboards

We collaborated with the Institutional Reporting Office to roll out the Academic and Non-Academic Staff Overview Dashboards in Power BI that help monitor demographic information.



## Recruiting Talent Acquisition Metrics Dashboard

This new dashboard provides tabular and graphical recruiting metrics for HR leadership and recruiters, enabling them to track and monitor recruitment activity for individual recruiters and measure their progress toward meeting institutional recruitment and talent targets.



## Three new dashboards for External Affairs

We rolled out three new Power BI Dashboards for External Affairs. **Penetration Chart (above)** helps gift officers visualize the pace at which they are moving prospects. **Prospect Plan Aging Report** allows them to identify inefficiency through plan stages, and **Alumni Dashboard** ensures they have valid contact info for alumni, and highlights trends in alumni giving.

### Upcoming Projects for FY22

- Migrate traditional Reports (Financial, HR, Research Administration, ITS, Attestation-relevant) to BI Gateway and Power BI.
- Build and extend institutional reporting environment and create one data bank repository encompassing external survey collection, internal management reporting needs, and development of business metrics that IR Office continues to provide to WCM senior leadership.
- Replace WCM Search with vendor-based solution on the weillcornell.org website.
- Implement enterprise security controls for central git-hosting solution, Bitbucket.
- Simplify Weill Business Gateway authentication for WCM-Q users.
- Migrate RightFax off-premises for improved vendor support.
- Deploy Online Archive mailbox feature in O365 giving every user another 99GB of email storage, and allowing them to archive older items to the Online Archive.
- Perform system upgrades on Events calendar
- Strive for 100% compliance for all faculty to have portraits on weillcornell.org site.

# Security, Identity & IT Business Continuity

Cornell2020! Presbyterian@1047. P@ssw0rd!

These were just a few of the passwords our Security team was able to crack during an experiment to test the effectiveness of our previous password policy. In just 24 hours, our security engineer cracked 41% of users' passwords using a 7-year-old computer.

## At a Glance

Implemented a new password policy.

Launched a new digital Offboarding application.

Improved our information security program's overall maturity by a full point.

## Is your password secure?

Number of Characters	Numbers Only	Lowercase Letters	Upper and Lowercase Letters	Numbers, Upper and Lowercase Letters	Numbers, Upper and Lowercase Letters, Symbols
4	Instantly	Instantly	Instantly	Instantly	Instantly
5	Instantly	Instantly	Instantly	Instantly	Instantly
6	Instantly	Instantly	Instantly	1 sec	5 secs
7	Instantly	Instantly	25 secs	1 min	6 mins
8	Instantly	5 secs	22 mins	1 hour	8 hours
9	Instantly	2 mins	19 hours	3 days	3 weeks
10	Instantly	58 mins	1 month	7 months	5 years
11	2 secs	1 day	5 years	41 years	400 years
12	25 secs	3 weeks	300 years	2k years	34k years
13	4 mins	1 year	16k years	100k years	2m years
14	41 mins	51 years	800k years	9m years	200m years
15	6 hours	1k years	43m years	600m years	15 bn years
16	2 days	34k years	2bn years	37bn years	1tn years
17	4 weeks	800k years	100bn years	2tn years	93tn years
18	9 months	23m years	6tn years	100 in years	7qd years

Although times vary by computer, this table provides a general estimate of how long it would take a hacker to crack your password based on the number of characters your password has. *Image courtesy of Hive Systems.*

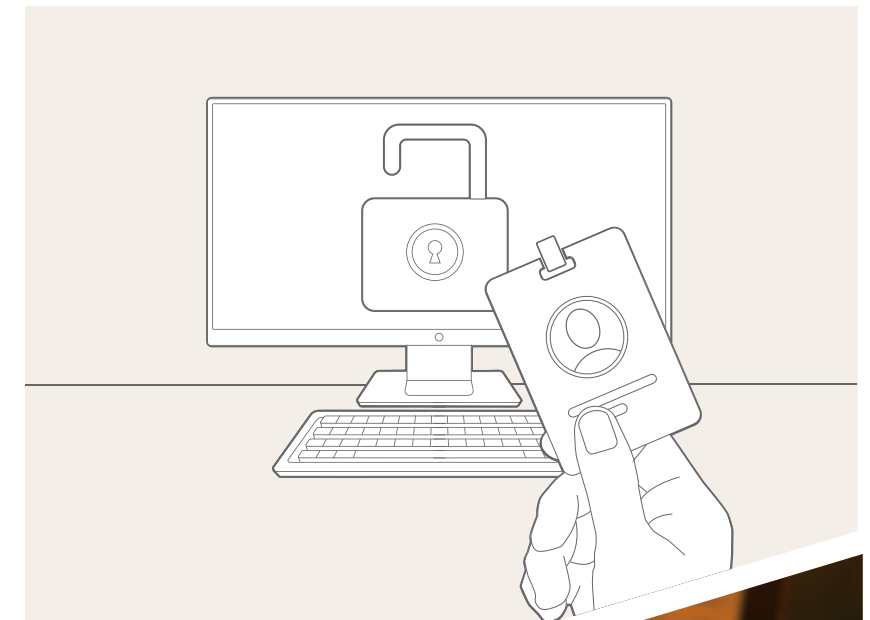
Due to these findings, ITS introduced a new password policy in May 2021, launching one of our largest security initiatives of the year. Nearly all WCM users were required create a passphrase that was at least 16 characters. Doing so significantly increases the amount of time it may take an unauthorized user to discover your password. Thanks to educational efforts from our team, we were able to achieve 100% compliance, effectively maximizing account security.

ITS developed a new online Offboarding ([offboarding.weill.cornell.edu](https://offboarding.weill.cornell.edu)) application, doing away with the static checklist departments had been using for years. Now, when a person is leaving the department or institution, managers can utilize the Offboarding site to track the entire process and make sure they haven't missed a step.

The team also worked with Verizon to complete a National Institute of Standards and Technology (NIST) Cybersecurity Framework (CSF) maturity assessment. The assessment evaluates all aspects of our information security program to ensure we are aligning with industry best practices. Our overall program maturity improved one whole level to a 3.6 out of 5.0 – a remarkable accomplishment in a relatively short period of time since the previous assessment was completed.

## Coming soon: Tap & Go access

Users typically have to sign into WCM services multiple times a day, sometimes within the same application, like Epic. With longer passwords now the standard at Weill Cornell, logging in so often at various clinical workstations can be cumbersome. To alleviate this, ITS will begin introducing a new "Tap & Go" technology that allows clinical staff to access workstations with just a tap of their ID badges. Additionally, some workstations will have OneSign technology installed, which makes it faster to sign into multiple devices so staff don't have to type in their password every time. A rollout of these services is expected in FY22.

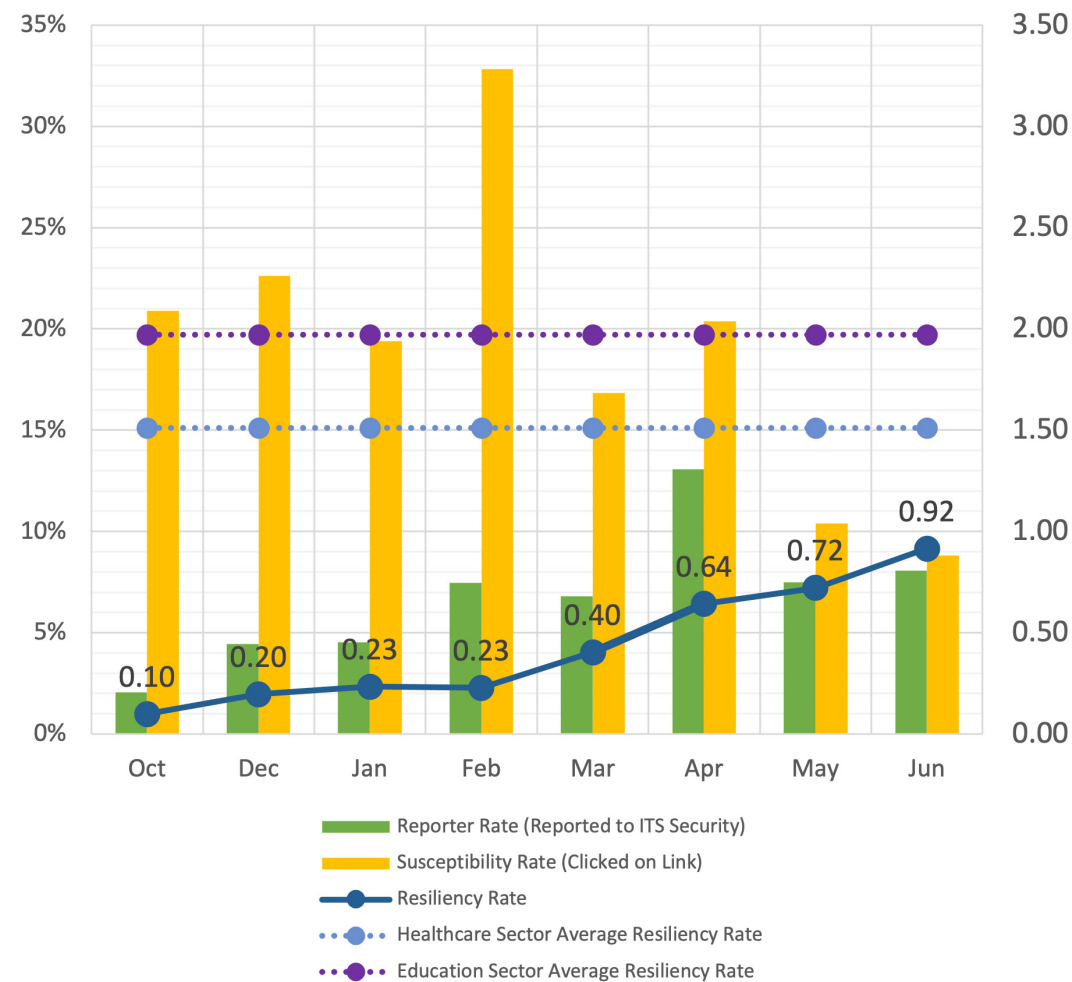


# 50%

The percentage of internet-based attacks against our network that are adversaries attempting to brute force passwords or map out our network topology.



### Phishing campaign results



ITS has been conducting monthly phishing campaigns since October 2020 to measure our institution’s Resiliency Rate, or the ratio of the number of individuals who report the email to ITS (using the Phish Alarm button in Outlook) to the number of individuals who are susceptible and clicked on the malicious link. According to the *COFENSE 2021 Annual State of Phishing Report*, the healthcare sector average Resiliency Rate is around 1.50. **At the end of the fiscal year, WCM had a Resiliency Rate of 0.92.** However, users seem to be recognizing phishing more accurately with each campaign. Over time, 26% of the population fell for just one campaign, 20% of the population fell for two, and less than 1% of the population fell for every campaign.

### Other Accomplishments

- Improved our email reputation policies to ensure we are able to communicate with government agencies and outside regulators. The policies we implemented help others trust and validate the email that originates from WCM.
- Tightened our firewall rules in light of recent ransomware outbreaks by preventing unauthorized access into our network without the use of secure VPN or Duo.
- Launched Cylera to better detect, manage, and monitor Internet of Things (IoT) devices on the WCM network.
- Achieved 95% Disaster Recovery (DR) FY21 compliance of critical ITS services while coping with a global pandemic. Our DR plans allow us to respond during emergency situations and minimize any interruptions to our core services.
- Collaborated with Finance and HR to create a comprehensive continuity plan for each of their functional areas. Adequate preparedness and readiness are essential for WCM’s welfare, particularly with our Finance department, which performs billions of dollars in vital business transactions per year.



### Secure AWS computing

In FY22, ITS plans to release a secure computing environment in Amazon Web Services (AWS) to support highly regulated data, like datasets researchers receive from government agencies. This environment will be independently audited and certified to meet the latest regulatory standards for storing and working with Controlled Unclassified Information (CUI).

### Upcoming Projects for FY22

- Evaluate tools that can be used to scan custom software and applications for security vulnerabilities. This will provide assurances that custom-developed software is safe for the WCM network and is approved to handle our most sensitive data.
- Tighten our remote access policies to reduce the risk of unknown or personal devices on the WCM network. In the future, we anticipate only permitting trusted and WCM-managed devices to connect to VPN.
- Test network access control solutions to provide a faster and self-service means of connecting devices to the WCM network. We are working closely with our peers at NYP to ensure compatibility between our systems and networks.
- Integrate WBG with authentication for Qatar campus users so that they can use their native WCM-Q credentials to login instead of their WCM-NY IDs.





**Weill Cornell Medicine**  
Physician Organization

# 2021 Annual Report



**Physician Organization  
Information Services**

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# From the Chief Medical Information Officer

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***“The past fiscal year included a significant milestone when the Weill Cornell campus went live with the enterprise Epic system in October (a full month ahead of schedule).”***

Health information technology is foundational to the success of Weill Cornell Medicine. The Physician Organization Information Services Division (POIS) provides sophisticated health information systems and services to support the clinical operations of the Weill Cornell Physician Organization. Clinician led, we implement technology to improve the quality and safety of care, enhance both the patient and caregiver experience, and achieve greater efficiency and cost effectiveness.

The past fiscal year included a significant milestone when the Weill Cornell campus went live with the enterprise Epic system in October (a full month ahead of schedule). Despite the need to virtualize much of the system training and support, the transition went very smoothly with no harm to productivity or revenue cycle efficiency. In June, NYP Queens and its associated medical groups were also successfully brought live on enterprise Epic.

Our information systems have continued to play a pivotal role in supporting our patients and staff throughout the pandemic. We were able to rapidly deploy our clinical systems to operate our COVID-19 mass vaccination centers. Our analytic tools allowed us to closely monitor important trends in COVID case rates and hospitalizations.

During this fiscal year, we will complete our multi-year enterprise Epic implementation. Despite the inherent complexity of this project and the unforeseen complications of the pandemic, all campus go-lives have occurred on-time and well under the projected budget. In the upcoming year, we will focus on a smooth transition to operations via the creation of a new tri-institutional clinical shared services team.

Our ongoing emphasis will be on promoting digital transformations that improve the patient experience and clinician productivity. We will continue to refine our analytic tools that support strategic decision making. We will use data to help us streamline operations and more cost-effectively manage patient populations, while promoting new scientific discovery.

This annual report summarizes the activities of POIS in Fiscal 2021. It serves as an inventory of key accomplishments and provides statistics that depict the scope and scale of our efforts. It also outlines the key clinical information technology objectives for the coming year in support of the mission and goals of our physician organization.

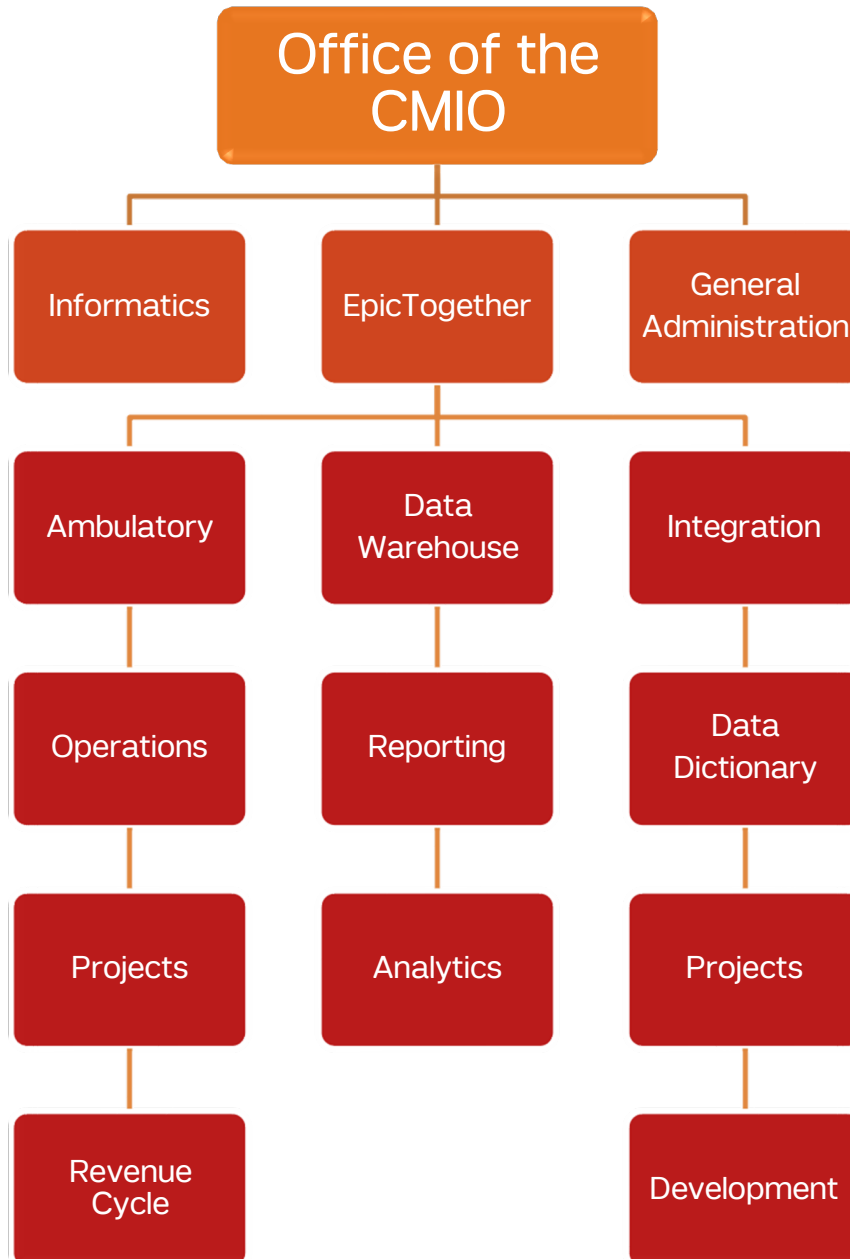
A handwritten signature in black ink, appearing to read 'Adam D. Cheriff, MD'.

**Adam D. Cheriff, MD**

Associate Professor of Clinical Medicine  
and Healthcare Policy and Research  
Chief Medical Information Officer  
Chief of Clinical Operations

# POIS: Structure and Administration

The information services team that supports the PO is a dynamic group of individuals that combine deep technical expertise with significant domain and institutional knowledge. POIS collaborates closely with other administrative and clinical business units within the Medical College to support Weill Cornell's clinical operations. Our IT staff are also key contributors to the EpicTogether initiative.



# Key Personnel

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**Aurelio Gracia**  
Senior Director, Enterprise Epic



**Mark Israel**  
Director, Systems Integration



**Travis Gossey, MD**  
Associate CMIO



**Maggie Qiu**  
Director, Data Warehouse & Analytics



**Jean Scofi, MD**  
Assistant Medical Director of Information Services



**John Parry**  
Director, Cross Application Support

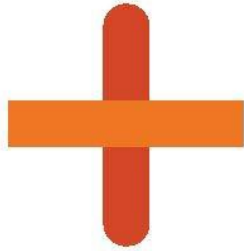


**Jonathan Elias, MD**  
Assistant Medical Director of Information Services



**Jenny Budd-Grivainis**  
Division Administrator, POIS

# Key Statistical Snapshot: Division Resources



**114**  
Total POIS staff

**30**  
EpicTogether staff

**8**  
Total current vacancies

**6**  
New Hires

**12**  
Departed staff

**\$22.8M**

Total '20 – '21  
allocated budget

**\$9.7M**

Total revenue and  
recoveries (expected)

**Annual staff  
attrition rate**

**9.6%**

**23**

**Total ITS FTEs funded by  
Physician organization**

## Executive Summary: FY2021

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**Each year, the Information Services division prioritizes its efforts to improve operational efficiency and support the strategic objectives of the Weill Cornell Physician Organization. The following executive summary highlights the key accomplishments for each objective and outlines the goals for the current fiscal year.**

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**■ Goal Assessment Key:**      **✓ Completed goal**      **✗ Unachieved goal**  
**± Partially completed goal**

# PO Information Services: Goals and Objectives

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## Objective 1: Build and implement the shared enterprise Epic system (EpicTogether)

The EpicTogether project will result in a shared enterprise EHR for Weill Cornell, Columbia, and New York Presbyterian. With a guiding principle of putting patients first, the EpicTogether project aims to standardize care processes and improve system integration.

### Fiscal 2021 Goal Assessment:

- ✓ Complete all go-live ready assessments for East campus go-live
- ✓ Successful East Campus go-live event with minimal disruption to clinical and revenue cycle operations
- ✓ Successful transition to new Epic Bill Area structure for revenue recognition
- ✓ Broad adoption of Epic mobile platforms with high volume utilization of instant messaging

### Fiscal 2022 Goals:

- Successful go-live at the Brooklyn Methodist campus and associated NYP Medical Group
- Successful transition to a new shared Clinical IT Service Organization with a unified staff employment model
- Development of an Epic Community Connect business and implementation plan for affiliated non-employed physicians
- Outsourcing of off-hours tier 1 application support to enhance service levels and incident management

## Objective 2: Use information technology to promote Weill Cornell Physician Organization growth and automate point-of-care operations

A primary activity of POIS is to deploy systems to support PO growth and to continually optimize our systems to increase efficiency. There will be ongoing focus on automation of processes to achieve better cost effectiveness.

### Fiscal 2021 Goal Assessment:

- ✓ Expand use of kiosks and touchless mobile work-flows for patient arrival to all PO practice locations
- ± Integrate phone technologies and potential new CRM system with Epic to improve efficiency of contact centers
- ✓ Automate appointment confirmation and visit preparation instructions
- ± Adopt broad suite of digital engagement solutions to prompt payment of patient self-pay balances

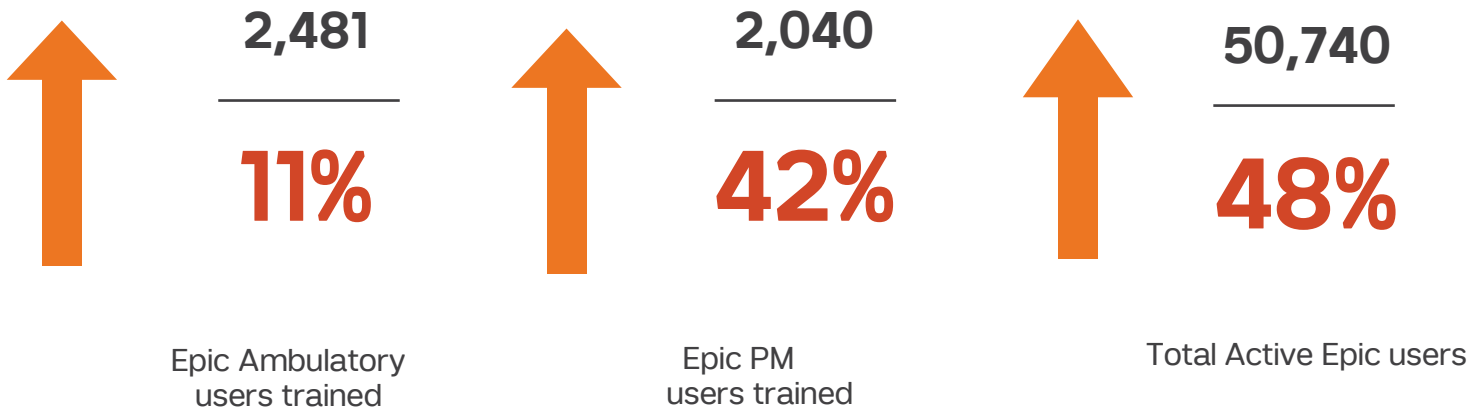
### Fiscal 2022 Goals:

- Re-vamp specialty referral management work-flows via scheduling workqueue automation and implementation of Epic self-scheduling of referrals
- Increase use of appointment wait-lists and FastPass automation for expedited appointments
- Implement more automation for self-service re-scheduling of cancelled appointments
- Go-live with integration between Epic and the telephone system to speed contact center agents' patient record access



# Key Statistical Snapshot: Enterprise System Activity

Annual Trend | FY 2021 Figures



## Electronic Clinical Transactions (enterprise)

Metric	FY 2021	FY 2020
Prescriptions transmitted electronically:	<b>2,241,836</b>	1,840,856
Electronic pharmacy benefit queries:	<b>3,767,308</b>	3,561,066
Real-time insurance eligibility queries:	<b>36,035,685</b>	2,180,525
Electronic lab orders	<b>9,343,487</b>	3,411,648
Electronic radiology orders	<b>2,117,354</b>	523,663

# PO Information Services: Goals and Objectives

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## Objective 3: Improve patient access and engagement

Improving patient access and overall patient satisfaction remains a top priority for the physician organization. Information technology is a key tool to improve our service accessibility and patient self-service functions.

### Fiscal 2021 Goal Assessment

- ✓ Activate open and direct online scheduling for all appropriate PO providers
- ✓ Implement scheduling template academy and train departmental managers to standardize and optimize provider ambulatory schedules
- ± Achieve cross-departmental appointment scheduling to better coordinate multi-specialty care
- ± Partner with NYP on website and digital clinical directories including evaluation and possible implementation of *Phynd* provider repository and *Yext* listing management

### Fiscal 2022 Goals:

- Implement Epic scheduling questionnaires to improve scheduling efficiency for both contact center agents and patients via self-scheduling
- Expand ticket-based online scheduling for procedural and diagnostic scheduling
- Activate text-to-pay notifications to accelerate patient payment of self-balances and reduce statement generation
- Implement point of care estimates to achieve more pricing transparency

## Objective 4: Enhance support for population health and value-based care via decision support and increased system interoperability

The shift to value-based reimbursement continues with the support of several critical IT projects focused on improving decision support and care management tools.

### Fiscal 2021 Goal Assessment

- ✓ Improve interoperability with payers via enhanced integration of claims data within Epic and our data warehouse
- ✓ Enhance patient engagement and care transparency by eliminating result release embargos and participating broadly with OpenNote initiative
- ✓ Transition to Epic-based on-demand virtual urgent care to reduce costly in-person emergency room utilization
- ✓ Re-activate and expand decision support for imaging appropriateness

### Fiscal 2022 Goals:

- Pilot integration of MDCalc within Epic to facilitate use of point-of-care clinical risk calculators
- Achieve integration between Epic and New York State's prescription monitoring program for more seamless detection of potential opioid abuse
- Implement additional decision support tools for CDI programs that will assist with enhanced risk-adjustment coding
- Pilot point-of-care integration between Epic and one or more commercial payers to surface patient benefit information and automate prior authorizations

# Key Statistical Snapshot: Patient Digital Engagement

Google Analytics: weillcornell.org traffic

FY 2021	Metric	FY 2020
6,668,153	Total Sessions	4,239,919
4,214,464	Total Visitors	2,404,68
11,520,919	Total Page Views	7,755,447
18,269	Average Visits Per Day	11,616
7.03%	International Visits	5.93%

## Patient Portal Utilization

Metric	FY 2021	FY 2020
Total patients enrolled in Weill Cornell Connect:	1,076,046	439,422
Average monthly enrollment of new WCC patients:	115,339	11,017
Total online appointments made:	89,327	37,953
Total appointment e-check-ins	160,862	237,631

# Key Statistical Snapshot: Clinical Information Exchange

FY 2021		Document Types	FY 2020	
Received	Sent		Received	Sent
4,761,837	3,378,217	Clinical Summary	1,297,673	2,235,942
2,170,043	2,456,710	Continuity of Care Document	1,604,071	588,616
3,017,145	3,533,109	Encounter Summary	1,053,162	1,630,260
4,757,966	3,389,101	Lab Results	1,293,941	2,253,829
4,746,644	3,368,527	Other Results	1,287,157	2,235,376
8,489	1,374	Referral Summary	192,782	921

## Interoperability Exchange Statistics

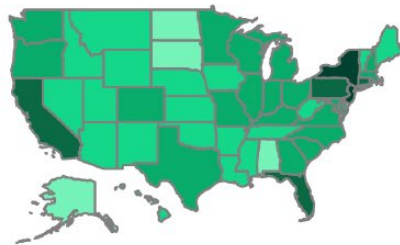
Standards-based Exchange of Full Patient Records 

### Patient Records Exchanged

You've exchanged patient records with organizations spanning

**50 STATES**

*Darker shading indicates higher exchange volume*



Exchanges in 2021 YTD	<b>5,418,796</b>
Exchanges in 2020	<b>8,500,231</b>
Since Care Everywhere Go-Live in 2012	<b>20,396,423</b>
Hospitals Exchanged with	<b>2,114</b>
EDs Exchanged with	<b>1,704</b>
Clinics Exchanged with	<b>43,017</b>

# PO Information Services: Goals and Objectives

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## Objective 5: Develop analytic tools and models to support data-driven decision-making

Given the competitive pressures within our health care environment, actionable data will be necessary to support growth and process improvement efforts.

### Fiscal 2021 Goal Assessment

- ✓ Adopt new executive Radar dashboards within Epic to monitor operational KPIs
- ✓ Deploy new analytic tools to monitor surgical case volume and OR utilization
- ✓ Add several inpatient volume and productivity metrics to WCM executive dashboards
- ✓ Improve referral intelligence and care retention analytic tools and reporting

### Fiscal 2022 Goals:

- Go-live with Power BI and Epic Executive dashboards for Clinical Chiefs and CAOs to track operational metrics
- Transition Inside Practice metrics to the WCM Executive Dashboard
- Expand capacity analytics to include ORs and labor and delivery
- Validate one or more Epic published predictive analytic models for either clinical care or practice management

## Objective 6: Enhance faculty and staff well-being by improving EHR work-flow and efficiency

Our faculty and staff are being asked to work harder than ever. To prevent burn-out and to increase satisfaction, EHR use should become less burdensome and time-consuming.

### Fiscal 2021 Goal Assessment

- ✓ Achieve high degree of system personalization via concierge training sessions for Epic enterprise go-live
- ✓ Implement faster note-writing work-flows by incorporating shared care-team member documentation and patient-entered data
- ± Broaden pilot of in-person and virtual scribes
- ✓ Implement Zoom as Epic-integrated video-visit platform to improve ease of use

### Fiscal 2022 Goals:

- Re-vamp electronic referral entry to make it easier to find information about providers' specialties, clinical interests, availability, and insurance participation
- Improve organization and readability of clinical reports within Epic chart review
- Add integration to a third-party provider directory to import outside referring provider information into Epic
- Pilot a more Epic-integrated virtual scribe function to reduce documentation burden

# PO Information Services: Goals and Objectives

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## Objective 7: Support Weill Cornell Medicine and its patient community during the COVID-19 pandemic

COVID-19 continues to somewhat unpredictably affect our business processes. We continue to refine our information systems to support the ongoing care of COVID patients as well as our “new normal” for delivering safe and high-quality routine and elective care.

### Fiscal 2021 Accomplishments

- ✓ Rapidly deployed mass vaccination centers with patient self-scheduling
- ✓ Achieved integration with city and state registries to exchange patient vaccination status
- ✓ Created electronic COVID-19 vaccination and testing status functions in the Connect patient portal
- ✓ Developed employee registries to track vaccination status in order to support institutional vaccination requirements

### Fiscal 2022 Goals

- Implement fully decentralized, practice-based COVID vaccination workflows for boosters and/or annual vaccine requirements
- Integrate Epic vaccine records with emerging standards for electronic COVID vaccine passports
- Refine institutional COVID analytics to better report on post-vaccination, breakthrough infection incidence
- Explore options for integration of at-home COVID testing with the Connect patient portal

## Appendix:

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**The Information Services strives to be maximally productive in order to execute on hundreds of projects each year. The following appendix is a detailed inventory of the projects completed in the last fiscal year.**

# EHR and Practice Management System: Accomplishments

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The Electronic Health Record and Practice Management System (Epic) are the key workflow engines for all of our clinical practices. These systems automate virtually every aspect of the patient-provider interaction including patient registration and scheduling, visit documentation, order and review of diagnostic tests and procedures, referrals and provider communication and revenue cycle management.

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## Enterprise Epic Implementations

- System cutover and data extraction plans created
- 2882 Orion system build tasks completed
- 350+ standardized order sets built or updated
- 100+ oncology protocols built or updated
- 3700+ devices deployed for Lawrence and Queens Hospitals go lives
- 7272 charges tested
- 7011 mapped records tested
- 20 integrated test scripts completed
- 1405 custom report requests completed
- 40,000+ appointments and cases converted
- 24,000+ users trained for the East Campus, Lawrence and Queens Hospitals go lives
- 9000+ go-live related incidents resolved

## Ambulatory Epic Operations

A total of **87** projects were completed

### 1 New Epic Implementation

**Project highlights:** Dr Jacqueline Jones, 1175 Park Ave (ENT)

### 43 Practice Optimizations

**Project highlights:** E-consults for Hem Onc, Toxicology and Geriatrics; LMH student (WiSH) clinic workflows; OBGYN: Connect Care Companion pilot; WCM Sleep Center order/workflow review; 37 Epic department move or expansion projects (including 15 COVID-related clinical practice moves)

### 20 Practice Operations/Management Projects

**Project highlights:** Evolve weight management workflows in Epic; Welcome training for ASG, Neurology Vyeptri infusion build, Psychiatry smartform translations to Spanish, Multiple WCM to Enterprise workflow projects including: switch to enterprise erroneous encounter workflow, Transition to enterprise lab collection workflows, Smarttool go-live readiness, Orderables (EAP) readiness, Parachute (DME) readiness, Clinic administered meds (CAM) transition; WCM post go-live orderable review; LOS calculator updates for 2021; Form filler: M11Q; Annual wellness visit workflows; New enterprise profile for chemical dependency; In-basket clean-up: Chart copy/CC'd chart review

### 15 Revenue Cycle Projects

**Project highlights:** Saved patient credit card Implementation; Recondo (Waystar) claim status follow-up automation; Behavioral Health's move to automated statement processing; Guarantor collection agency communication via MyChart; Implementation of Trust Commerce Premier page with Connect for seamless PCI compliant credit card integration.

### 1 MACRA/MIPS Related Projects

**Project highlights** 2020 HSS MACRA Reporting

### 7 Online Scheduling/Portal Projects

**Project highlights:** Post-COVID Direct Online Scheduling Projects for a series of WCM Epic departments



# System Integration and Data Content Management: Accomplishments

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Our systems only achieve their maximum potential when they are connected via seamless information flow. The Integration Team implements and supports hundreds of interfaces between a myriad of institutional systems. The EHR must send and receive a wide variety of clinical and administrative data in order to support workflow. As health information exchange standards have matured, we have achieved more sophisticated integration with our partners. The latest integration projects have begun to make use of new modern APIs and web services for data exchange.

---

## Integrations

### 208 EpicTogether Implementation Integration Projects

- Development/Testing/Deployment of interfaces to support the 2nd, 3rd and Rogosin EpicTogether go-lives.
  - 61 New Interfaces
  - 82 modifications to existing interfaces
- Historical clinical data conversions from legacy systems in support of 2nd, 3rd and Rogosin EpicTogether go-lives.
  - Patient demographics
  - Laboratory/Pathology Results
  - Radiology results
  - Discrete mammography results/MQSA
  - Future scheduling/appointments
  - Problems
  - Medications
  - Immunizations
  - Allergies
  - Vitals
  - EKG Results
  - In-House Charges
  - CCDA
  - Primary Care Physician (PCP)

### 17 Newly Implemented Clinical Integrations

- Organ donor/transplant referral to LiveOnNY
- Referral to Intellihealth Evolve
- COVID-19 - label patients with employee ID
- COVID-19 - vaccine administration reporting to CIR and NYSIS
- Epic vaccination data to Jupiter (COVID-19)
- Epic COVID-19 and flu point of care results to NY state
- Epic operative notes to WCM CRMI
- Medication administration data to Qventus
- Cerner inpatient and emergency department Lab Results to Qventus
- Bayer MedRad injectors results to Epic
- Results from Ascend to Epic (Rogosin)
- Documents from Epic to Darwin (Rogosin)

### 5 Operational/Development Integrations

- Outlook integration for CU and NYPMG.
- FHIR R4/USCDI readiness and implementation (Info Blocking)
- SCM east allergy CCD import into Epic
- Epic on-call provider team to Infonet
- Columbia College of Dental Medicine student grading web application.

### 3 Newly Implemented Research Integrations

- Backload of patient photos from legacy systems
- Concern score to patient list
- Concern web application

# System Integration and Data Content Management: Accomplishments

---

## Clinical Content Management

### TruData (Data Dictionary)

- Maintained and sustained mappings and data dynamics for 20+ diagnostic resulting agencies:
  - Added 3,852 new procedures; committed 3,454 new local mappings
  - Added 10,541 new result components; committed 3,506 LOINC assignments
  - Maintained most recent controlled vocabularies – LOINC, SNOMED, CPT/HCPSC/CDT/CVX/MVX, RXNORM, NDC, with continual COVID-19 response
  - Added and mapped new clinical data sources:
    - NYP Lawrence Hospital Laboratory
    - NYP Queens Hospital Laboratory
    - Ascend Clinical
  - Expanded gene marker disease-based classification in results hierarchy, covering ~1,627 gene/LOINC concepts
  - Expanded results hierarchy to 290,473 nodes: 73,509 conceptual nodes, covering 62,420 LOINC nodes, and 143,957 local result components, 54,522 local procedures
  - Expanded SNOMED assignments to 16,192 for local organisms
  - Developed model/matrix for management of clinical orderable and restriction complexities for Enterprise Epic sites
  - Consolidated cross-campus compendium mappings, organisms and antibiotics to include NYP Lawrence and NYP Queens sites for EpicTogether Go-Live 3
  - Maintained and supported tripartite Results Review displays for various disciplines/domains
  - Performed clinical content analyses and mappings for historical conversion of the Lawrence Hospital MediTech Lab system

## Epic Master File Management

- Performed various aspects of master file configuration, maintenance, and modeling for Epic Enterprise builds/Go-Lives
- Maintained reference terminologies (CPT/HCPSC/CCD/ICD/CVX/MVX/SNOMED/Medisp) critical to Epic functionalities and decision support
- Extended clinical, configuration, and content support, including:
  - Optime/GI order code sets
  - Ambulatory build referrals
  - Genomics project implementation
  - Billing (PB/HB) RVU, custom and status billing code sets
  - IP and OP Lab Facility/Preference lists

## Provider Management and Credentialing

- Added 74,623 new records to the MPI – exported 8,828 to Epic
- Developed a daily automated process for gathering, managing, and importing of NYPMG Credentialing and Finder data into Epic
- Added 24,765 new provider records and 2 new plans - 1199 and Worldwide Medical - to the Managed Care system
- Developed a credentialing content delivery feature in the MPI to sustain and deliver contents to ProCredEx

## Data Quality

- 5,017 Service Now cases closed by the Data Quality Team
- 16,089 patient merges performed
- 352 guarantor merges performed
- Collaborated with HIM to work through co-mingled charts, merges, and overlay issues

# Web Presence and Portal: Accomplishments

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**As is the case with most other sectors, consumers look to the web to access health information and services. POIS maintains our web-based directory of clinical services and physician profile system. Over a million patients have enrolled in Weill Cornell Connect. Our patients are accessing personalized clinical information and self-service tools that allow for appointment scheduling, secure messaging, referral and prescription requests, and bill payment.**

---

## **weillcornell.org**

- Made continual updates to our COVID-19 hub as information regularly evolved, including vaccination availability
- Built Video Visit online scheduling workflows for Find a Doctor and doctor profiles as well as improved calls to action to assist with driving patients to Video Visits
- Enhanced doctors' Google My Business listings to display links directly to applicable online scheduling time slot availability
- Enhanced Clinical Services to provide links to specialty-filtered Find A Doctor search results, with callouts for online scheduling
- Improved online scheduling error handling for patients encountering "Time No Longer Available" issues
- Improved online scheduling reporting to identify doctors whose schedules no longer show timeslot availability on the website for faster remediation
- Updated the comprehensive web information architecture to allow for quick and consistent updates to conditions, treatments, locations/practices for our website redesign
- Updated virtual chat bot user interface to improve online scheduling workflows
- Implemented live agent chat functionality which allows patients to interact directly and

asynchronously with call center agents via text chat through the website (in beta with Primary Care)

- Created analytics dashboards to better track and understand website performance
- *Front Door to Care* web/digital enhancement efforts:
  - A homepage update to support a unified presentation of services across consortium
  - Analyzed and aligned on Primary Specialty vocabulary that will be utilized as a standard for the NY Consortium partners moving forward
  - Audited and verified all practice profiles on the website in preparation for possible transition to Yext for business listings management

## **Web Content Production**

- 216 new physician profiles created
- 148 patient care events posted
- 219 news articles posted
- 19 new practice locations published
- 115 new conditions and treatment pages published
- 3 new program sections published
  - Labor and Delivery
  - Substance Use & Stigma of Addiction
  - Women's Heart Program

## **Mobile App Development**

- Patched and secured performance of the WCM App for Video Visit support
- Build checks and processes to ensure the latest Epic software releases are always available to patients

## **Weill Cornell Connect Patient Portal**

- Launched the OB Care Companion module for better patient engagement during pregnancy episode
- Implemented broad self-scheduling functions for institutional COVID mass vaccination centers
- Created a dedicated COVID portal section to display patient vaccination and testing status
- Activated real-time portal result and provider note release to comply with information blocking regulations

# **Analytics, Quality and Decision Support: Accomplishments**

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The majority of our core IT systems have been implemented and are being used effectively to capture vast amounts of data. We now need to effectively use our data to deliver the highest quality care in the most cost-effective manner. Clinical data from the EHR is a critical resource for ongoing scientific discovery. The Reporting Team manages our data warehouses and business intelligence tools.

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## **Enterprise Epic (EpicTogether)**

- Completed/closed 1388 custom reports/dashboards request and 1367 incident tickets since Columbia go-live
- Implemented a new tri-institutional report request process using Service Now
- Developed urgent COVID vaccine dashboards
- Optimized downstream Epic data transfer process to manage daily data extractions for WCM, Columbia, and NYP DataMarts
- Standardized quality & regulatory reporting to successfully support Joint Commission and DOH Surveys
- Collected baseline performance metrics for the WCM and NYPMG Go-live
- Trained ~2343 users as the Cogito Power Users since Columbia go-live
- Established 10 cross-enterprise analytics workgroups involving reporting, application teams, and operations
- Implemented a digital acceleration dashboard
- Implemented WCM/NYPMG executive dashboard In Epic, which covers access, practice efficiency, productivity, revenue cycle, & digital health

## **Analytics Operations**

### **Data Warehousing**

- Created customized Epic clinical data extracts for all major commercial payers to meet supplement data requirements for pay-for-performance programs, risk adjustment, and transition of care.
- Implemented COVID immunization registries and data marts for all population and WCM Employees
- Updated commercial payer registries per latest ACO specifications
- Implemented CUIMC UHC commercial and Oxford attribution data integration with Epic

### **Research Reporting**

- Delivered 43 data extracts/reports to support clinical research projects

### **Business Intelligence Tools: Dashboards and Reports**

#### **Clinical Care Delivery:**

- Created several self-service medication recall& bulk communication reports
- Created 351 additional custom departmental/divisional clinical and practice operations reports
- Created reports to support enterprise provider off-boarding/in-basket compliance

#### **Practice Management Reporting:**

- Developed new extracts for Enterprise MDAudit implementation for WCM

### **Clinical Decision Support (CDS) and Population Management Tools**

- Addressed care gaps for our patients by integrating with Cologuard to increase colorectal cancer screening
- To help with medication adherence, changed all long-term medications to 90-day supply with three refills
- Used a new technology called Campaigns to outreach to patients as they became eligible for the COVID-19 Vaccine

# Academic Productivity: Accomplishments

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At Weill Cornell, we do not make a distinction between information technology and informatics. Four physician informaticians lead the information services division. In addition to rendering clinical care, the physicians contribute to the research and education missions of the Medical College.

## 1. Policy and Extramural roles

- CMIO serves on United Health Care's Healthcare Technology Advisory Council (HTAC)
- CMIO is a member of the Da Vinci Operating Committee. Da Vinci is an initiative to accelerate interoperability standards to support and integrate value-based care (VBC) data exchange
- aCMIO serves on SOGI and Mobile Apps "Brain Trusts" for Epic and on the Diversity Committee for NYP
- An Assistant Medical Director serves as the Chair of the Didactics Committee for the Society of Academic Emergency Medicine (SAEM)
- An Assistant Medical Director is a Co-lead for WCM's QPLE (Qualified Provider Lead Entity), designated to implement appropriate use criteria for advanced imaging
- Medical Director served on the steering board for Genetics and Genomics Integration and development for Epic Systems Corporation
- Medical Director was a contributor and voting member of the HI7 organizations FHIR Genomics subgroup

## 2. POIS Co-authorships and Presentations

- Ancker, J.S., Gossey, *et al.* Effect of an Electronic Health Record "Nudge" on Opioid Prescribing and Electronic Health Record Keystrokes in Ambulatory Care. *J GEN INTERN MED* **36**, 430–437 (2021).
- Moy AJ, Schwartz JM, Elias J, Imran S, Lucas E, Cato KD, *et al.* Time-motion examination of electronic health record utilization and clinician workflows indicate frequent task switching and documentation burden. Vol. 2020, AMIA Annual Symposium proceedings. AMIA Symposium. 2020.

## 3. Ongoing Informatics Faculty Research Projects

- Optimization of Order Sets in the EHR (collaboration with Dept. Population Health Sciences)
- Imaging Decision Support research-multi-institutional analysis of clinician imaging ordering behavior associated with decision support systems
- Epic pre- and post-implementation usability analysis of clinical documentation and information retrieval
- Using Informatics to better understand pediatric adverse drug events in the context of childhood biologic development
- Mobile alert and telecommunication management using the EHR
- Analysis of inpatient consultation service efficiency using mobile device alert management and EHR systems
- Survey of Emergency Medicine physician perceptions and attitudes about information blocking and open notes
- Utilization review method using a visual analytics dashboard for COVID diagnostic testing (in collaboration with Laboratory Medicine)

## 4. Education/Teaching

- Faculty and staff participated in Weill Cornell HIT Masters program curriculum
- One of our faculty members is Co-Director of the Healthcare Leadership & Management Elective for medical students
- One of our faculty members is Assistant Director of the Healthcare Leadership & Management Fellowship (through the Dept of Emergency Medicine)
- One of our faculty members was the Course Director for the "Clinical Informatics" course that is part of the curriculum of the Masters in Health Informatics program at Weill Cornell



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# **Weill Cornell Medicine**

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#### ONLINE

[its.weill.cornell.edu](http://its.weill.cornell.edu)  
[myhelpdesk.weill.cornell.edu](http://myhelpdesk.weill.cornell.edu)

#### TELEPHONE

(212) 746-4878

#### ADDRESS

1300 York Avenue, Box 12  
New York, NY 10065