

ANNUAL REPORT 2020

Information Technologies & Services
Weill Cornell Medicine
its.weill.cornell.edu

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CIO's Message

Wow, what a year. During the past decade of unparalleled growth and change, I often struggled as I wrote this letter to find new superlatives to describe our accomplishments relative to the past. But this year really was like no other, in both horrible and wonderful ways. I don't need to repeat the horrible things that happened as we are all still living them today. But there were good things too, most notably, a renewed sense of purpose.

ITS is privileged to serve the whole college and as such we got to witness and participate in the incredible, diverse responses to the pandemic. Yes, we lost a lot of momentum on important projects. Yes, we had to cut certain services. And worst of all, we lost people we loved and a sense of security we may never restore.

But we also had moments of magic. ITS came together in the spring in a way it has never done before. Everyone was focused, ready, and eager to help the college react however we needed to. Programs like telemedicine and remote work that we had been slowly evolving for years had to mature overnight. Every aspect of program delivery for our students had to be rethought. We were ready, able, and willing to provide research-ready data services to support rapid expansion in COVID-19 research, biobanking, and analytics through our ARCH program. Our security, desktop computing, help desk, and administrative systems were all reworked in days to weeks to support remote work, PPE distribution, safety attestations, and a host of changes that evolved as fast as we could develop solutions.

Curtis L. Cole, MD, FACP
Chief Information Officer

In 2016, ITS kicked off a customer experience program we call C₃X to focus on service transformation, employee engagement, and a complete rethinking of how we serve WCM. This year, NYP announced *Imagine*, a very similar program to rethink how they service patients. COVID-19 put this idea of "transformation" in a radically new context making it more urgent than ever.

Like everyone at WCM, in FY21, ITS is committed to doing more with less. At the peak of the crisis, we proved to ourselves it could be done. With shared purpose, personal engagement, and clear communication we can move mountains. In broad strokes, our goals are the same. We will replace and upgrade systems. We will provide faster, more efficient services. We will continue our migration to the cloud; grow our repository of Real World Data; migrate to next generation analytics; add new tools for research, care, and education; simplify administration; and respond to whatever new regulation, technology, or crisis that comes our way.

Capturing this sense of mission will newly inform – and transform – everything we do so that every call, every upgrade, every email will help us help you Care, Discover, and Teach.



Senior Leadership



Curtis Cole
CIO



Vipin Kamath
Deputy CIO



Mark Weiner
Deputy CIO



Daniel Splitgerber
Department Administrator



Thomas Campion
Director, Research Informatics



Harish Chava
Director, Administrative Computing



Douglas Cohen
Director, Education Computing



Paula Herber
Director, Service Operations



Vinay Varughese
Sr. Technology Officer



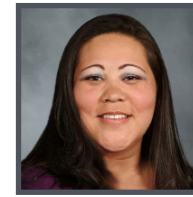
Tanisha Raiford
Chief Privacy & Clinical Compliance Officer



Brian Tschinkel
Chief Information Security Officer



Terrie Wheeler
Director, Library



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*Assoc. Director,
Research Administration*



Eugene Chen
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Diana Delgado
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*Assoc. Director,
Experience Office*



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



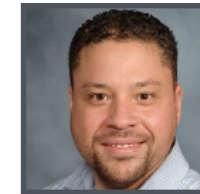
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Library Research*



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Lidiya Walsh
*Asst. Director,
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*Asst. Director,
Communication & Event Services*



EpicTogether meets milestone

After years of careful planning and work, ITS assisted with the official launch of Epic at NYP's East, Lower Manhattan, and Westchester campuses. For the first time, Cornell, Columbia, and NYP are unified onto the same electronic medical record system, making the patient experience in accessing records at all institutions more seamless.

FY20 Score Card

Every year, we lay out a series of goals for the coming year. This section reviews how well we did against those goals. A + means the goal was completed, a +/- means it was partially completed, and a - means it was not completed in FY20.

Enhance services for clinical staff and patients

Support Columbia and NYP EpicTogether go-live.

+ Epic Systems reported that the Columbia go-live was one of most successful in the company's history.

Create new tri-institutional Epic post-live application support model.

+/- The EpicTogether team is working well to support all three institutions, passing tickets successfully between help desks. There has been a drop off in responsiveness this year which needs improvement in FY21.

Implement voice-driven patient chat for Find a Physician and appointment scheduling on weillcornell.org.

+ The Hyro chatbot was very successful, conducting over 50,000 conversations with patients, mostly about finding a physician, with 1 in 4 taking an action toward scheduling.

Roll out Epic Rover app for mobile users.

+ This was achieved in time for the Epic go-live. ITS also helped NYP roll out their mobile apps.

Expand functionality on WCM Mobile App, including better Find a Physician, MD and Practice Profiles, and Guest Bill Pay.

+ Mobile app provides a link to Find A Physician, where a patient can use a mobile-friendly version to navigate all of weillcornell.org

- Guest Bill Pay was not implemented natively into the app, but is available in the mobile website

Implement a new POPS editor to improve the mobile experience.

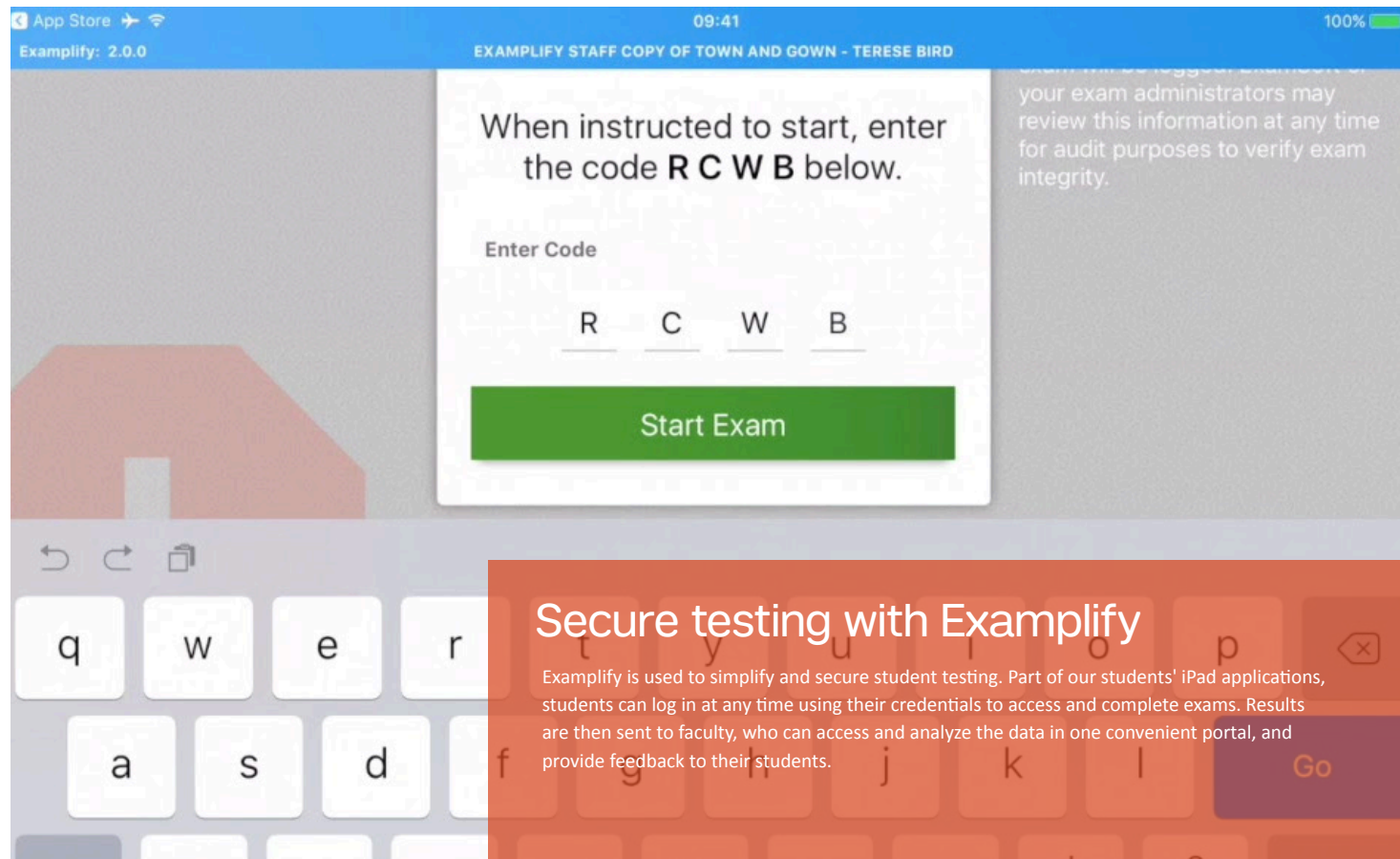
+/- POPS v7 was successfully enhanced; POIS started working with NYP on Phynd which may someday replace POPS once it meets our requirements

Develop a new back-end for weillcornell.org to improve patient experience.

+ The POPS API which powers a majority of the website has been expanded to include Epic APIs, which powers online scheduling. It also includes integration with Healthwise's dictionary and taxonomy, which now powers our Find A Physician (previously IMO).

Expand and upgrade current telehealth program with new technology for video visits.

+ This was a great success proven by readiness to handle the massive, sudden expansion in use during COVID. In FY21, we are changing vendors to Zoom to improve usability and functionality. A new video Breast Cancer Concierge was also deployed.



Secure testing with Exemplify

Exemplify is used to simplify and secure student testing. Part of our students' iPad applications, students can log in at any time using their credentials to access and complete exams. Results are then sent to faculty, who can access and analyze the data in one convenient portal, and provide feedback to their students.

Enrich student learning & support teaching

Implement new systems, such as Jenzabar reporting module, WCM Here! attendance system, new Alumni system, automation for the CME office and Financial Aid, and AAMC WebAdmit.

+ Most major new functions were delivered except the Alumni module and some Financial Aid automation. Due to new budget pressures a new, cheaper, in-house approach to Alumni management is being pursued.

Provide new services for students, such as Teams, OneDrive, and VIVO pages.

+/- Teams and OneDrive have had excellent adoption and use continues to grow. VIVO pages for students was deferred, but should be done for doctoral students next year.

Redesign curricular services such as the Functional Neuroanatomy (FNA) online resource and the graduate student lab rotation forms.

+ An all new FNA application was delivered on a new, more stable platform as were new lab rotation forms and also created the myCME platform to track Maintenance of Certification points.

Transition to a unified support experience for students and faculty.

+ Student support services have been consolidated with improved efficiency and new remote options post COVID.

Develop plan to support virtual and augmented Reality tools.

- While some progress has been made, this needs more attention. Instead, new Introduction to Telemedicine and Cohen Hospital opening courses were created along with multiple other urgent initiatives to support post-COVID education.

Expand existing services, such as Canvas, Poll Everywhere, OASIS, Qualtrics, Panopto, and Exemplify.

+ ITS expanded all these services, and we also deployed Verizon cell signal support for the Olin and Lasdon dormitories.

Create and enhance technology solutions & services

Deploy Teams collaboration suite to pilot users and students, and develop full institutional rollout plan.

+ Teams pilot was successful and the service was rolled out WCM-wide. We are also now piloting Teams phones.

Roll out Power BI data visualization across WCM.

+ Power BI is now successfully being used throughout the college for powerful reporting, dashboards, and data visualizations.

Upgrade auto-syncing cloud-based storage options (Box Drive and OneDrive) with improved security.

+ ITS installed improved security on OneDrive making it the default personal cloud storage solution for secure data. Box is still supported, but will likely go away in FY21 due to rapidly rising costs.

Develop cloud conversion plan for the majority of remaining on-premise ITS systems.

+/- ITS continues to incrementally migrate most of our largest systems to the cloud. This year, we focused on eliminating aging software and entire vendors, like Oracle. Our ongoing plan will proceed, but more slowly due to COVID budget constraints.

Double the number of cloud-certified staff.

+/- We came very close, moving from 10 to 18. The coming year we will focus on specific skill sets in specific teams.

Convert all major websites to Drupal 8 with a new search engine to improve accessibility and mobile experience across .org and .edu sites.

+/- Proof of concept completed, but changed the goal to skip to Drupal 9. Phase one accessibility goals were achieved. Search project is behind schedule, but a prototype is planned for this year.

Create a PC and Mac parity program to normalize support and policies across platforms.

+ First phase of parity completed. Additional project work will be required in the coming year to achieve parity.

Explore potential support for an additional Linux desktop with SCU.

+ New Linux desktop service planned for FY21.

Streamline research administration workflows

Launch Phase 2 of the WRG/OnCore clinical trials system with financial tools and Epic integration.

+/- Preparatory work was done, but launch had to be deferred due to COVID. Planned go-live in October.

Update WRG Human Subjects module with new questionnaires to support change to the Common Rule.

+ New post approval monitoring was added to support the Common Rule changes.

Design WRG Proposal Tracking workflows and dashboards for departmental grant administrators.

+ We released a Submission Progress tool as well as a MyProtocols widget to simplify tracking proposals throughout the process. We also added automated notification to the IRB and JCTO when all activation requirements are met.

Update WRG Conflicts Module to meet expanding regulatory requirements.

+ A new COI update supports foreign disclosures while also improving usability. We also released new support for the Open Payments program.

Expand the number of laboratories supported by the Open Specimen/Core Laboratories Center Biorepository.

+ OpenSpecimen was expanded to support the COVID Biobank, WELCOME, and the Mason Lab's LAMP study. 17,500 samples were collected on more than 6,500 patients. We also expanded iLab to support 30 core facilities, including one to support PPE distribution to labs.

Evaluate options for institutional lab notebook, research data retention service, and image manipulation detection software.

+ LabArchives was selected as the new institutional electronic lab notebook in collaboration with Ithaca. It will be released in FY21. The Library developed an image manipulation detection tool that students at CornellTech are elaborating this year. The new data retention service was defined for development in FY21.

Add support for Subject Binders to Online Research Binder (ORB) system.

+ ORB now supports both study and subject binders, dramatically simplifying trials monitoring.

Support scientific innovation & research

Launch unified Cybercommons with Ithaca and Qatar for improved access to GPU and CPU clusters, tiered storage, cloud provisioning, and a data catalog.

+ Cybercommons initiative started with a pilot of StarFish, a software system that will give each campus and faculty users visibility into storage across campuses.

Release DataCore 2.0 with a new data catalog, expanded software services, and multiple shared data sets including NY Medicaid and ARCH RDRs.

+ New data catalog, expanded software, and new data sets all deployed. Migration to AWS in FY21 will further enhance DataCore capabilities.

Expanded ARCH services such as large-scale de-identified EHR data resources, enhanced REDCap integration with Epic and CFR 21 Part 11 compliance, multiple new RDRs, and extensive new data content including genomic variants of unknown significance (VUS).

+ ARCH exceeded expectations, especially with critical new COVID related data services, new biospecimen support, expanded Epic inpatient support, extension to regional hospitals. We also published 9 academic articles.

Develop roadmap for Real World Evidence support at WCM.

+/- The formal roadmap was interrupted by the real-world need for COVID data, which ARCH provided through the COVID Institutional Data Repository (IDR). The COVID IDR will become a model for improved data access.

Provide faculty access to ReCiter publication management and de-duplication tool.

- This goal was missed, but we hope to achieve it in FY21.

Expand grant editing service to include multi-institutional grants.

- This was not achieved due to a change in funding.

Develop boilerplate for grants regarding institutional IT and library services with OSRA.

- Modest progress was made on upgrading existing boilerplate.

Double the number of lab sites on the standard Drupal distribution.

+/- We started the year with 18 live. We ended the year with 10 new live lab sites, but 14 more in progress.

Protect institutional infrastructure & data

Implement a laptop and phone loaner program to protect visitors to China and other high-risk countries.

+ A loaner program was implemented through the library though adoption by users has been below targets.

Create a road map to password-less logins within two years.

+/- Vendor review completed. None are ready within two years without major customization. Will look for intermediate wins while the market matures.

Facilitate easier access to the campus network with improved federation, unified sign-on, AnyConnect VPN rollout, and network access control.

+/- Significant improvements were made including upgrade of AnyConnect and 19 new applications enabled with federation. Network Access Control was deferred due to COVID, but we hope to make some progress in FY21.

Enhance attack detection from outside and within our network, vulnerability management, scanning of departmental and cloud-based systems, and automated alert response.

+ Despite a major increase in the "attack surface" caused by workers moving remote due to COVID, ITS expanded its attack detection systems to monitor remotely connected computers and developed a new attestation to help educate users.

Exploit high-quality identity data and risk profiles to simplify user experiences, such as improved single sign-on, badge-based services, faster onboarding, and easier software provisioning.

+ ITS deployed new self-service password reset with dual factor authentication.

Eliminate old, unsupported operating systems and deploy improved monitoring to keep systems and software up to date.

+ Old, unsupported versions of Windows were eliminated and more robust systems for keeping systems current were instantiated. We also decommissioned our 15-year-old LDAP directory system.

Re-evaluate security software stack for potential vendor consolidation and service expansion.

+ Several systems were consolidated with significant budget savings while concurrently expanding the types of protection we offer.



SMARTDesk reservations

The SMARTDesk became even more accessible this year, thanks to online reservations. You can request help with your laptop or mobile device, get a device tagged, register a smartphone, pick up a device, or remote work assistance all with a few clicks. Visit wcm.simplybook.me to make an appointment that works with your schedule.

Advance IT capabilities through customer-centric service

Implement Service Dashboards for Department Administrator to track ITS service levels.

+/- We made progress developing monthly dashboards summarize utilization, service metrics, assets, costs, and turnaround times but the automation needed to scale these was put on hold with COVID. We are not yet sure when we will be able to revisit this.

Offer 1:1 IT consultations to 100% of new faculty and 50% of existing faculty.

+/- 100% of new faculty were offered consultations and about half accepted. We fell far short with existing faculty reaching only 10%.

Add online and mobile scheduling options for SMARTDesk.

+ Users can now make appointments at the SMARTDesk using our new SimplyBook application.

Double the number of standard request types on myHelpdesk and triple the number of knowledgebase articles.

+/- Request types went from 33 to 53 and we doubled the knowledgebase articles from 308 to 610.

Update device management systems to improve application updates, distribution, self-service, configuration tracking, and security monitoring.

+ Migrated from smartphone tagging to self-service registration and unified the new WCM App Store experience across device types to simplify software distribution.

Streamline communication to the ITS user community, including better audience targeting, more education tools, improved satisfaction metrics, and enhancement requests.

+/- ITS now targets more of its communications just to those impacted reducing the use of broad lists. Tech Tuesday was moved online and saw a >100% increase in attendance. New satisfaction metrics and enhancement request processes were deferred due to COVID-19.

Implement Service Portfolio Management through the PMO.

+/- Improved portfolio management process implemented including new goal prioritization, clearer roadmaps, quality reviews of in-flight projects and tighter resources alignment. Project intake process also improved with better resource validation, sequencing, and up-front architectural reviews shorten overall project timelines. Little progress was made on new service management program.

Convert internal customized case management system (ServiceNow) to standard new release.

- This project proved vastly more complicated than initially estimated. Some progress was made but it will continue well into FY21.

Train all ITS staff in unconscious bias awareness.

+ ITS completed unconscious bias training before it became a universal assignment at WCM and is working hard to continuously examine this persistent problem.

Enable efficient & effective administrative operations

Launch integrated annual training with road map to unify across WCM and create reciprocity with NYP.
- Little progress was made on this initiative.

Update Academic Staff Management System cloud architecture to integrate Faculty Review, add postdoc tracking, and support Centers and Institutes.

+/- Post-doc support is now live as are several other enhancements, but we fell short in some planned functions.

Complete selection of new purchasing system to replace SciQuest.

+ Ariba was selected, but implementation has been put on hold due to COVID.

Convert legacy SharePoint sites to O365.

+/- Migrated multiple on-prem SharePoint sites to much improved O365 Cloud version, though some remain for FY21.

Expand eTime to other departments.

+ In FY20, we expanded eTime to multiple administrative departments in Qatar.

Complete enhancements for Space and Lease Management, EHS Shipping, and EHR/HR ServiceNow implementations.

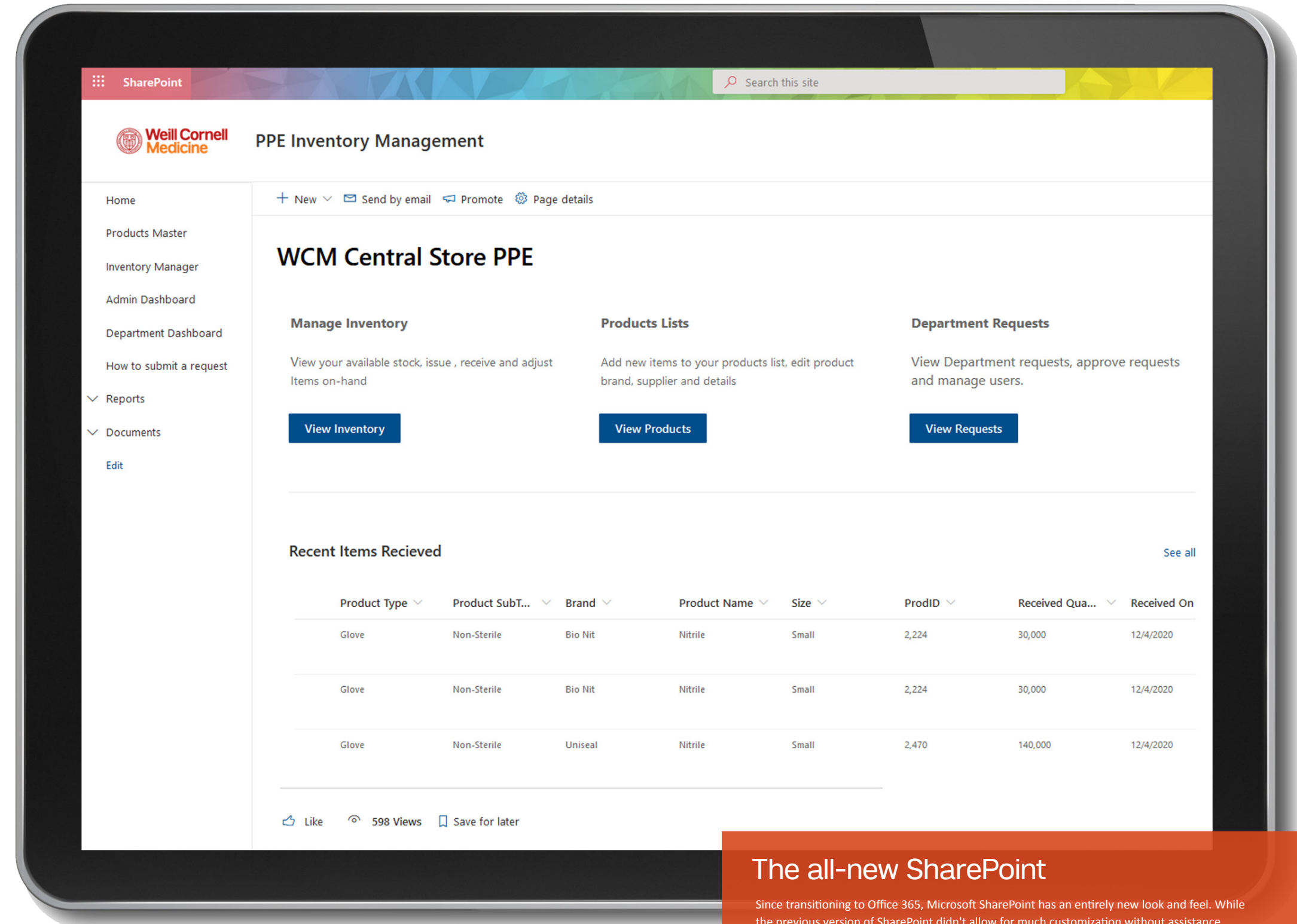
+ All these major enhancements or new systems were implemented, and more.

Complete Journal Voucher eForm and Direct Deposit rollouts.

+ Both were completed last year with additional enhancements in early FY21.

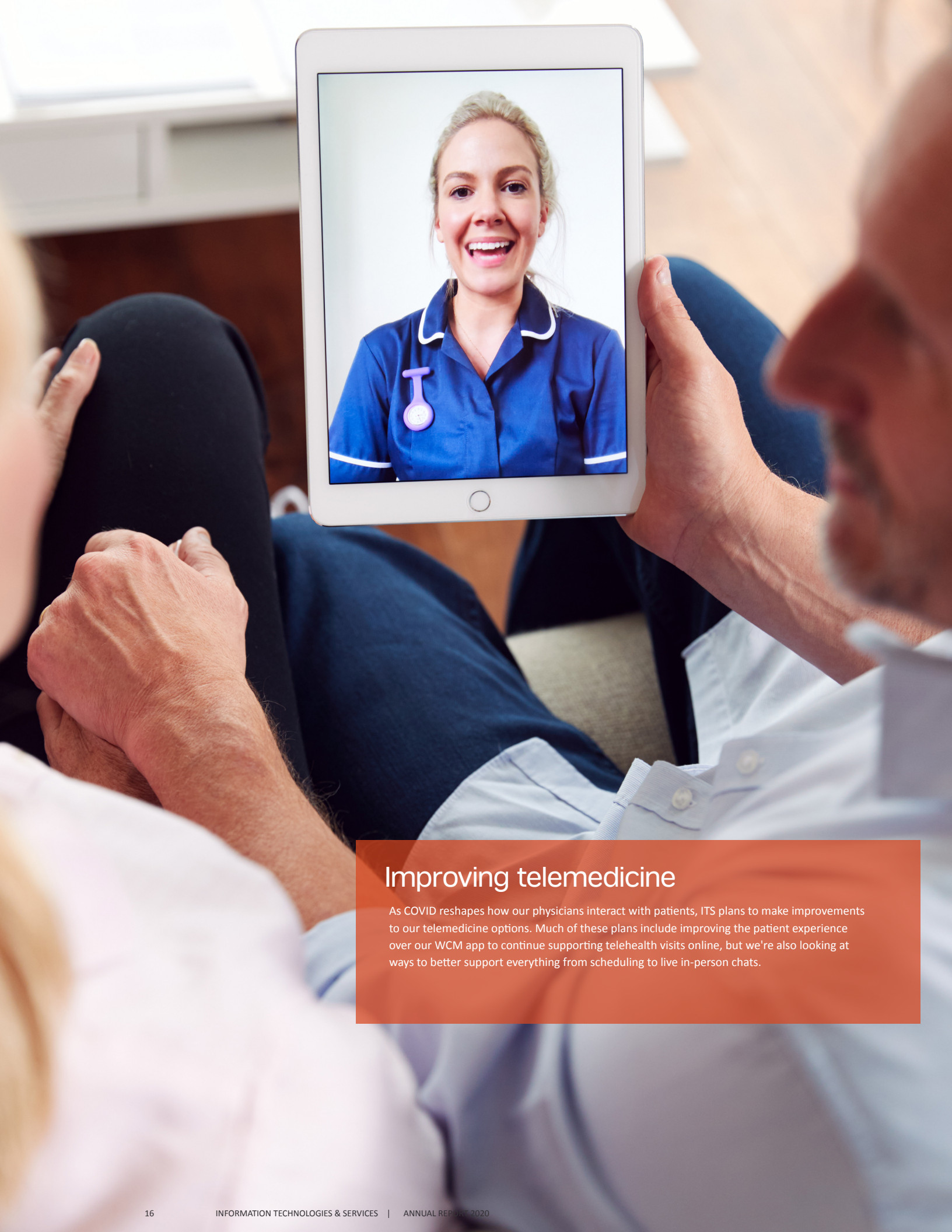
Implement Budget Module for Qatar.

+ Budget module successfully implemented meeting new Qatar Foundation requirements.



The all-new SharePoint

Since transitioning to Office 365, Microsoft SharePoint has an entirely new look and feel. While the previous version of SharePoint didn't allow for much customization without assistance from ITS, users can now easily create internal sites to share information and collaborate with their colleagues, all while working seamlessly with our other Office apps, like Teams.



Improving telemedicine

As COVID reshapes how our physicians interact with patients, ITS plans to make improvements to our telemedicine options. Much of these plans include improving the patient experience over our WCM app to continue supporting telehealth visits online, but we're also looking at ways to better support everything from scheduling to live in-person chats.

FY21 Goals

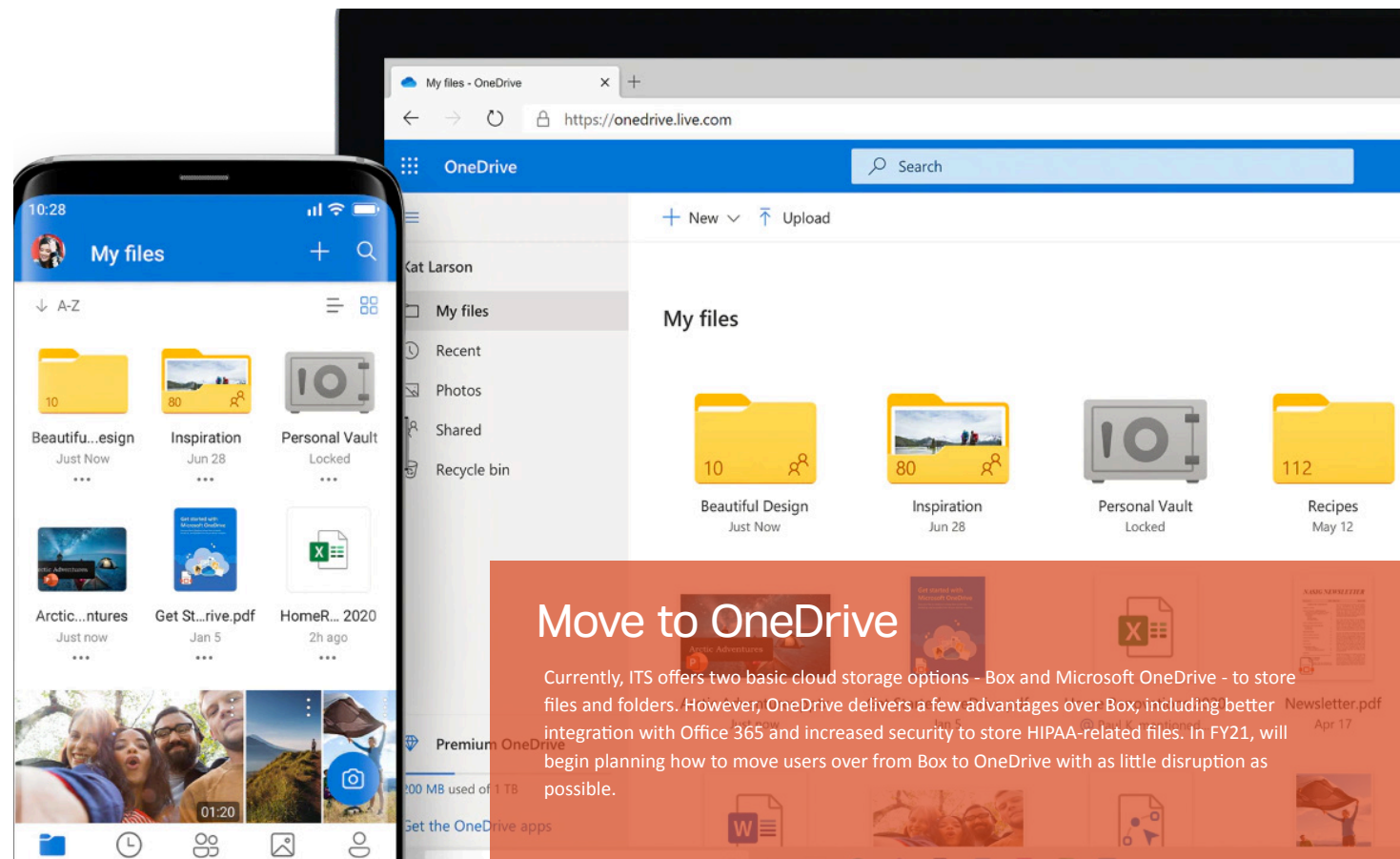
Each year, ITS works with stakeholders to set the major priorities for the department and ensures each division is working towards accomplishing these goals for the fiscal year.

Post-COVID Renewal & Recovery

- Expand support services for remote workers with:
 - Self-service smartphone registration
 - Best practices, new tools, and security training
 - Evergreen PC leasing service to speed deployments on site or by mail
- Promote recovery with new leadership dashboards and reporting tools.
- Consolidate ITS space requirements with shift to ongoing remote work.
- Expand hardware leasing to reduce cash demands.
- System consolidations and decommissioning to reduce operational costs (e.g. Oracle).
- Expand Grant Financial reporting for the CARES Act COVID funding.
- Expand COVID-19 research services including Data and Biospecimen Repository, national data consortia.
- Adapt to new demands as the pandemic evolve.

Enhance services for clinical staff & patients

- Support NYP/WCM accelerated EpicTogether go-live.
- Update departmental clinical systems such as in OB, ophthalmology, neurology, burn, & IVF.
- Optimize tri-institutional Epic application support model post-live for faster, better service.
- Improve patient access features through WCM Mobile App and weillcornell.org, including better scheduling, improved video visit support, live-person chat, SMS, and improved *Find A Physician* search results.
- Expand and improve mobile care tools for providers.
- Upgrade phone system with Epic integration for faster call answering and virtual hold/call back.
- Upgrade site search and editorial management for weillcornell.org.
- Upgrade telehealth system for best in class video visits and remote care.
- Improve provider profiles through integration of identity systems, patient reviews, and industry relationship disclosures.
- Deploy upgraded credit card terminals for PCI compliance.
- Support NYP's *Imagine* initiative.



Move to OneDrive

Currently, ITS offers two basic cloud storage options – Box and Microsoft OneDrive – to store files and folders. However, OneDrive delivers a few advantages over Box, including better integration with Office 365 and increased security to store HIPAA-related files. In FY21, will begin planning how to move users over from Box to OneDrive with as little disruption as possible.

Enrich student learning & support teaching

- Revamp educational tools to support more hybrid remote and onsite learning.
- Upgrade to Jenzabar One for improved automation and reporting capabilities.
- Create new virtual recruitment tools such as virtual tours and an interview reporting solution.
- Expand online forms for grad school administration.
- Implement a centrally-supported curriculum database to track learner and program performance.
- Replace legacy platform to support MD Areas of Concentrations
- Launch new Functional Neuroanatomy resource and other similar new curricular tools
- Deploy new alumni reporting and tracking tools.
- Develop plan to support virtual and augmented reality tools.

- New/upgraded tools for CME, Financial Aid, Registrar, and academic programs.
- Design and Implement stand-alone course on information literacy in CANVAS.
- Assist MD-PhD program in outreach to prospective students using interactive data visualizations.

Enhance technology solutions & services

- Complete pilot of Microsoft Teams Voice services and begin institutional deployment.
- Upgrade core phone system and expand features.
- Begin full conversion from Box to OneDrive for personal cloud storage and create roadmap for departmental use of OneDrive.
- Expand cloud conversions for mid-tier applications such as VIVO, Perceptive, Data Core, and ARCH. Develop road map for future conversions.

- Prepare baseline Drupal 9 distribution to upgrade all major websites to Drupal 9 in FY22.
- Enhance website search results to provide more meaningful and intuitive results.
- Enforce security compliance on Macs and PCs across the Institution and ensure applications are deployed consistently across both platforms.
- Define and pilot initial Linux desktop support service with SCU.
- Increase file transfer size limit from 100GB to 1TB.
- Roll out a new service to manage digital signage in lobbies and waiting rooms.

Advance the experience of IT

- Expand and automate Service Dashboards for Department Administrators to track ITS service levels.
- Create a standard user experience design system to standardized application experiences.
- Begin new service satisfaction measurement method.
- Update the ITS website for improved usability and content. Pilot Hyro chatbot for simple support questions.
- Offer 1:1 IT consultations to 100% of new faculty and at least 50% of existing faculty.
- Streamline communication to the ITS user community, including better audience targeting, more education tools, improved satisfaction metrics, and enhancement requests.
- Correct device and software inventories for more accurate asset management, improved security, and faster support.
- Maintain top 10 service metrics within 10% of benchmark.
- Pilot Service Portfolio Management for Workplace Productivity services.
- Convert our service management system (ServiceNow) to standard new release by Summer 2021.
- Launch ITS anti-racism program and expand diversity and inclusion activities.

Streamline research administration

- Create Research Front Door strategy for data access, consultation, and regulatory review.
- Launch WRG/OnCore clinical trials system financial tools, subject visit tracking, protocol calendars, and Epic integration.
- Release major efficiency improvements to WRG Human Subjects (WRG-HS) module.
- Revamp WRG-HS Reportable Events.
- Implement Human Subjects/Clinical Trials administrative data warehouse for cross functional reporting.
- Build and deploy clinical research dashboards with visualizations for cross system and COVID-19 specific data.
- Add funding status to Study Activation Status Page.
- Integrate Salute Lab Safety system into WRG upgrades and enhancements for Radiation Safety and Environmental Health & Safety.
- Expand electronic consent for research through REDCap, DocuSign, and Epic and create a self-service model.
- Support SCU with iLab to simplify billing.
- Create transparency by adding conflicts data to faculty VIVO and POPS profiles.
- Deploy Biorepository search tools to make it easier for researchers to query available specimens.
- Deploy institutional lab notebook with research data retention service.
- Expand library data catalog to improve data sharing.
- Develop beta version of manuscript integrity checking software.
- Deploy patient attribution logic and new data sharing agreement to simplify clinical research collaboration with Columbia.

The screenshot shows a timesheet interface with a calendar view for the period from February 24 to March 8, 2020. The calendar grid highlights the current day (Wednesday, Feb 26) in green. Below the calendar, the pay period is summarized as 'Feb 24 - Mar 1' and 'Mar 2 - Mar 8' with a total of '07:00 hours'. The interface also displays a list of time entries, including 'Unscheduled Sick' and 'Scheduled Sick Leave Emp'. A legend at the bottom identifies 'Workday' (light blue), 'Non-Working Day' (hatched), and 'Current Day' (purple).

Digitizing timesheets

ITS has been the technical partner in HR's rollout of eTime to departments as a way for staff to digitally manage their timesheets and leave requests. Our ultimate goal is to do away completely with paper or PDF timesheets, and have staff submit their hours in WBG, where managers can review and approve both timesheets and leave requests in a central location. Stay tuned in FY21 to see more information on our eTime launch.

Protect institutional data & people

- Upgrade core identity and access management systems to enhance onboarding/offboarding procedures, account provisioning, emergency contact coverage, self-service portals, system and application timeouts, and collaboration with NYP & WCMC-Q.
- Introduce device security posturing to isolate untrusted devices on the WCM network.
- Introduce user and device certificates to reduce the reliance on passwords.
- Enhance protections for AWS and other cloud hosted systems with best practice definition and deployment.
- Consolidate and simplify annual security attestations with compliance reporting for departments.
- Expand detection and elimination of outdated, unsupported, or un-managed software to reduce institutional risk profile.
- Introduce automation to speed up response to security alerts.
- Select Network Access Control vendor and begin implementation to deliver an improved access experience regardless of location.
- Expand Privileged Access Management to service accounts and non-ITS system administrators to reduce risk.
- Evaluate privileged escalation management to reduce the risk of local administrator privileges.
- Expand detection and protection capabilities of Internet of Things (IoT) devices on the WCM network.
- Implement email reputation improvement to reduce impersonations and improve secure communications.
- Conduct maturity assessments against industry standards and regulations to ensure continued compliance.
- Improve remote access services for common server management protocols like SSH and SFTP.

Support scientific innovation & research

- Release DataCore GPU service with an expanded data catalog, and pilot cloud-based DataCore.
- Develop Linux desktop support options.
- Launch StarFish storage management tools across campuses via Cybercommons.
- Develop research roadmap for de-identified EHR data using modern NLP tools.
- Expand research support for Brooklyn and Queens faculty and data.
- Assist SCU in deploying new storage and major upgrade to CPU and GPU clusters.
- Simplify access to scientific systems and improve security.
- Update RedHat systems to eliminate end of life risks.
- Migrate INSIGHT CRN, WCMC-Q research, and other scientific systems to WCM-protected public cloud.
- Improve content and self-management of online faculty profiles.
- Expand library scientific software access (especially STATA, Graphpad, and SAS).
- Support access to NYS Medicaid Data for research through the Data Core.
- VIVO profiles for PhD and MD-PhD students.
- Develop boilerplate for grants regarding institutional IT and library services with OSRA.
- Add 20 more lab sites on the standard Drupal distribution to the current 28.

Enable efficient & effective administrative operations

- Design consolidated annual training program across WCM administrative units to streamline annual compliance activities.
- Implement electronic bank statements, electronic reimbursement, and affiliate billing.
- Implement Concur Travel system for Qatar.
- Launch eTime Clock application and add new departments.
- Enhance interfaces for pension administration, retiree medical insurance, life and disability insurance.
- Add new features to Academic Staff Management System for faculty self-service and departmental access.
- Sunset old reporting tools and migrate to current generation. Develop and deploy Power BI data visualizations and dashboards for PO and WCM Finance, Research Visibility and Administration, External Affairs, Human Resources, and ITS itself.
- Collaborate with Institutional Reporting Office to build dashboards for external reporting (e.g. USNWR).



Navigating Through the Pandemic

Since March, when New York City became the epicenter of the COVID-19 pandemic, ITS has been helping our Weill Cornell Medicine respond. As workers faced a devastating illness made worse by supply shortages, hospital crowding, and misinformation, ITS found novel ways to support our physicians, scientists, and students, and keep our offices up and running.

Helping physicians and patients

ITS enhanced both weillcornell.org and POPS content management to support COVID-19 messaging and patient education. This included expanding and promoting telehealth options so patients would not have to travel to appointments, and supporting online scheduling for those video visits. The WCM mobile app was also updated to support COVID-19 messaging and a 1,000% spike in video visits.

As PPE shortages affected medical centers around the country, ITS assisted by enhancing PO and Research Inventory Management and Requisition Systems to support the acquisition and distribution of PPE.

Additionally, isolation in hospitals required providers to new find ways to meet with patients and for patients to see their families who could not visit. WCM and NYP received donations of thousands of iPads. Working with External Affairs, we imaged and deployed the iPads for telemedicine and clinical usage. A team of ITS volunteers also helped NYP image and package their iPads so patients could communicate with their families using FaceTime.

Tracking COVID data

As COVID patients began flooding hospitals, researchers needed ways to track data to find out more about the disease and how to fight it. ITS set up the COVID Institutional Data Repository (IDR), which aggregated EHR and research data from disparate source systems for WCM patients using existing institutional infrastructure. The IDR enabled more than 36,000 queries since its April 2020 launch.

We also collaborated with the Englander Institute of Precision Medicine (EIPM) to launch a COVID-19 Risk Survey in March. EIPM created the anonymous survey to collect information about a person's location, age, gender, symptoms, and other health and lifestyle characteristics. The goal of the survey was to rapidly identify areas where COVID-19 symptoms may arise, and thus anticipate a surge in cases. Using Power BI, we were able to help EIPM publish the data online (covid19.eipm-research.org).

Special Delivery

At the height of the pandemic, ITS ordered, imaged, and deployed 1,000 laptops for the WCM community. Our field techs worked diligently through evenings and weekends to ensure the laptops were set up and delivered during special pick-up days at 575 Lexington, as service that continues today at the Library SMARTDesk. Thousands of additional staff were helped by phone, zoom, or in person with setting up personal computers to use at home for WCM activities.

COVID Story: Analyzing ICU data

On Friday, March 13 at 3:30 p.m., Dr. Ed Schenck, a WCM pulmonologist, emailed ITS with an urgent request. He needed extensive changes to CEDAR and MBOSS, the ICU data marts he created for his ARCH Research Data Repository (RDR), which had been hastily repurposed to support COVID patient care.

At 4 p.m., Dr. Schenck dashed from the ER to join a Zoom call, still wearing his surgical gown, cap, and mask. He explained the modification he needed: change the start time of the data mart's calculations from time of patient arrival in the ICU to time of patient being intubated. ICUs were overrun with COVID patients, forcing clinicians to put them on ventilators in non-ICU settings. Making this change required transforming Allscripts flowsheet data where ventilator status is documented by nurses. Inpatient flowsheet data is the wild west of the EHR.

Our team led the engineering effort, meeting every 30-60 minutes to run code, compare data mart values versus the Allscripts EHR front end data, re-run code, and generate output. At midnight, the team delivered CEDAR to Dr. Schenck and biostatistician Katherine Hoffman as large CSV files. Two hours later, the team delivered MBOSS. Dr. Schenck and his team downloaded the files and imported them into R where they could begin analyzing ventilator settings, inflammatory markers and vital signs, and use the data to make critical decisions about the care and treatment of their most vulnerable patients.



Getting WCM connected

ITS staff spent weeks ensuring the WCM community could work safely from home. This included ordering additional laptops for department, and helping users connect to colleagues and services using Zoom, VPN, and other tools. Within the two weeks prior to hitting NYC hard in March, people using VPN shot from 5,500 to 8,300. We went from hosting about 450 Zoom meetings a day to over 1,200. Duo connections spiked from 1,500 to 4,700 a day. ITS staff worked on site and online to ensure we could support this massive new load of users.

Transitioning to remote work

ITS has offered virtual communication tools, like Zoom and Microsoft Teams, for years, but the nature of onsite work meant that many employees at WCM were new to the software they would come to rely on when operations shifted off-campus. Our training specialists delivered over a dozen live webinars on these tools for the WCM community, assisting more than 1,100 people. We also worked with departmental leadership to provide comprehensive instructions on the implications of remote work arrangements as they planned how their staff would continue working during the pandemic.

To keep everyone informed, ITS supported the launch of a dedicated COVID-19 microsite on WCM Central. The site serves as a centralized hub for

information related to our institutional pandemic response. Web enhancements were also made to WCM's Giving page in support of the institution's efforts to express gratitude to frontline workers.

As WCM moved into Phase 2 of reopening in July, the institution needed comply with state safety requirements as more staff and students returned to campus. ITS helped develop the COVID-19 Daily Attestation (pictured at right), a quick daily survey for faculty, staff, and students to confirm they are adhering to safety protocols before coming to campus. The attestation can be accessed with a custom icon that was pushed to tagged devices in July, or via web browser, making easier for WCM clinicians and researchers to return to work with increased peace of mind.



WCM COVID-19 Daily Attestation

Completing as Vanessa Puig (vap2008) to work on November 25, 2020

I am a:

Faculty/Staff Member

Student

My primary location today will be:

1300 York Ave.

Floor or room number:



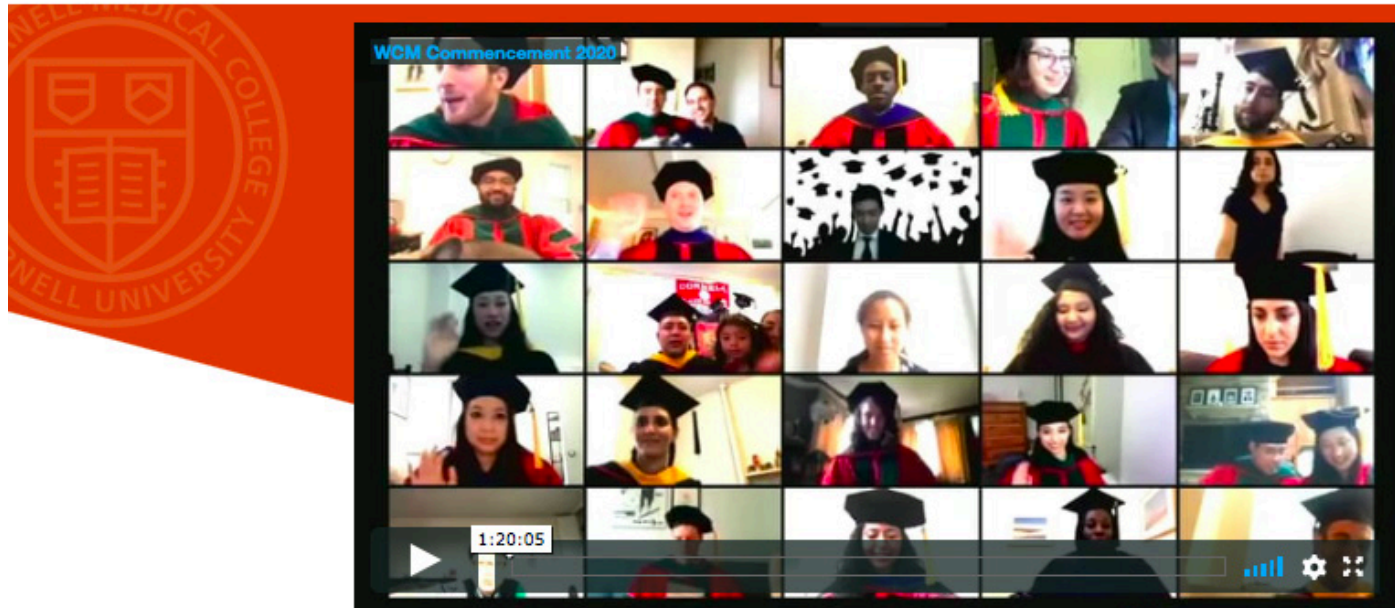
Education behind the screens

Within about a week, WCM shifted all academic programs to remote instruction. This included its own unique set of challenges outside of implementing remote work for staff. With the shift to remote work, utilization of Panopto, WCM’s lecture capture and video solution, exploded. The peak utilization of Panopto in a one-week timeframe included nearly 7,500 video views and downloads, delivering nearly 150,000 minutes of video, increase of over 3,000 views and 60,000 minutes from highs recorded earlier this year.

The increased usage of the service brought additional light to the need to meet accessibility requirements. To speed up this labor-intensive process we used

Panopto’s Automated Speech Recognition (ASR) functionality that creates relatively accurate closed captioning (CC) when viewing the video. These ASR captions are then edited for greater accuracy.

Regarding accessibility, we worked with Counsel and Cornell University to develop instructional materials on creating accessible content for academic programs. Our team consulted with staff to review these materials and ensure guidelines were being followed.



Weill Cornell Medicine honors the Class of 2020 and the exceptional education students received at the medical college and graduate school. This dedicated landing page will feature all of our graduation activities, including the livestream of our Commencement 2020 ceremony, stories, videos and photos of graduating students in New York and Qatar. Check back for continuing coverage.

[Download the Program](#)

Join the Conversation #WCM2020



The future of COVID at WCM

There is still uncertainty over how long this pandemic will last, but ITS continues to push for technical solutions that support our faculty, staff, and students.

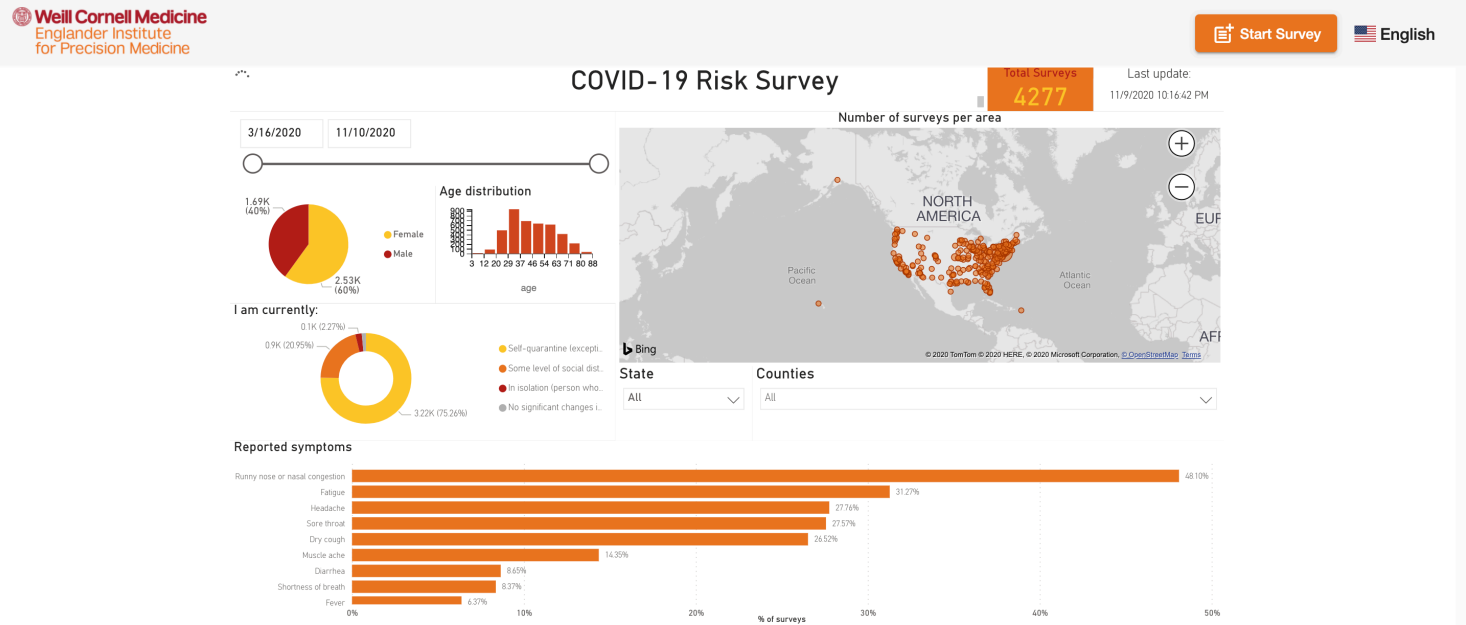
Our technicians continue to remain available onsite and online to provide assistance where needed, even helping offices rearrange their computers and laptops so staff can safely social distance. Our teams constantly look for and analyze our services for new solutions to allow you to get your work done from anywhere. And, we are actively researching ways we can help the institution now and post-recovery, providing as much support for clinical, research, and educational needs.

We encourage you to visit the institution's COVID microsite at wcmcentral.weill.cornell.edu/covid19 to stay up-to-date on WCM's announcements related to the pandemic.

Reimagining Commencement

Perhaps one of the biggest questions during the pandemic was “What will commencement look like?” ITS came up big for the class of 2020, helping with all aspects of virtual commencement, WCGS Convocation, and the Physicians Assistant (PA) Program Awards Ceremony. For the WCGS Convocation ceremony, ITS completed all of the imagery, video editing, and website updates.

The awards ceremony for the PA Program reaped the rewards of the lessons learned in the WCGS Convocation and commencement. With two virtual ceremonies under their belt, ITS completed this entire virtual program in-house by creating all imagery, completing all video editing, and running the livestream.



Visualizing COVID data

As we get more and more data from COVID patients and how the disease impacts them, ITS continues to build dashboard, like the one above, to help researchers and physicians better understand the virus. The COVID-19 Risk Survey, Patient Status, and PO Daily Visits Dashboards all offer insight into huge amounts of data using Microsoft Power BI. ITS has been instrumental in setting up these visualizations for physicians and researchers to make better, more informed decisions about patient care and how to address COVID-19.

New Tools & Services

Last year, ITS launched Microsoft Teams, which allows users across WCM to chat and share with their colleagues outside of traditional email. This year, we will further enhance Teams, piloting integrated phones, new video features, and other tools. The Windows 10 operating system was pushed to over 9,000 devices across campus, ensuring each machine was updated from the now unsupported Windows 7.

In FY21, we will upgrade everyone to Office 365 applications providing enhanced features and improved integration for the applications that most people use on a daily basis. We will continue to expand use of OneDrive, our free, HIPAA compliant cloud storage solution.

Another major initiative this year was the new WCM App Store, making it easier for users to access software they need to do their work. The WCM App Store works on or off campus.

As we continue to introduce new services, we have also added TipUp, fast, fun animated videos to help users learn about our new tools. TipUp uses crowdsourced suggestions to deliver bite-sized tutorials on how to better use ITS services.

In June, ITS launched the new WCM App Store (at right), replacing BigFix on Windows and Self Service on Macs, to provide a consistent experience across all tagged devices. Users can access WCM Apps on tagged computers or mobile devices to download supported software, like AnyConnect, Microsoft Office, and more!



Other Accomplishments

- Revamped the Hardware Purchasing service page for faster advice on the best desktops, laptops, and accessories to use at WCM.
- Developed Children Tuition Scholarship (CTS) eForm to streamline application and approvals for this benefit. This expedites the payment to the applicable higher education institution and reduces manual data entry.
- Automated bank reconciliation with daily JP Morgan bank files, eliminating a complex manual system.
- Implemented a new tool in WBG for managing real estate, equipment leases, and accounting, to meet new Financial Accounting Standards Board (FASB) guidelines.

Quick tech tips made easy

Technology changes at lightning speed and keeping up with the latest tricks isn't always easy. Throughout FY20, ITS began developing an idea for TipUp, a series of animated videos that show WCM faculty, staff, and students easy ways to navigate through our services that they may not have known about.

You can view our archive of our TipUp videos and make topic suggestions at its.weill.cornell.edu/tipup.



FY21 Projects

- Developing Offboarding, a new home-grown application to track the tasks when an employee or affiliate leaves the organization.
- Integrate Epic and ServiceNow into Avaya Phone system to use caller ID to open a patient or user record, speeding up and improving service.
- Implement network access control to ensure devices that present an inherent security risk are limited from accessing some of our most sensitive systems.

Cloud-based calling with Microsoft Teams Voice

With more staff working remotely, new solutions, like cloud-based phone systems, make more sense. ITS is testing Microsoft Teams Voice, which replaces the need for a standard desk phone and allows you to call colleagues directly from your Teams app.

Switching to Teams Voice would not only allow our users to make calls from anywhere they are using their Teams app, but it would also be more cost-effective than a phone line and desk phone.

Teams Voice will be available for both desktop and mobile devices. Expect to see a college-wide launch of this service in FY21.

Research Initiatives

2020 was a turning point for our Research Informatics program. Researchers were already on track to shatter prior year utilization of our ARCH services when COVID hit and demand skyrocketed. Investigators quickly focused on studying COVID-19 cases flooding NYC hospitals. ITS was able to facilitate clinical data access and create new data sets to support this research.

Utilizing REDCap, an electronic research data capturing system, we rapidly enabled curation of complex COVID patient data from the electronic health record, which extended ARCH to support new clinical and research purposes. We also used REDCap to provide a new remote electronic consent and signature capture process for researchers with subjects enrolling in COVID-related

studies. We were able to successfully implement 13 new remote eConsent projects in REDCap since the start of the COVID-19 pandemic. ITS also promptly added drugs and devices to allow submissions of COVID-related studies in the Weill Research Gateway-Human Subjects (WRG-HS).

As labs began reopening, ITS helped design and launch the Personal Protective Equipment Facility in iLab to support staff coming back to campus, and tracking tools that will be a model for future onsite inventory controls.

Before COVID, our WRG team was already making significant enhancements.

During the year, ITS replaced our outdated financial tracking system, OCTATrax, with a new component in WRG-Clinical Trials (CT). This new system allows the Joint Clinical Trials Office (JCTO) to create invoices and track checks. We also developed a new workflow to include enrolling subjects in WCM studies at NYP-Queens and Brooklyn Methodist

Hospital within WRG-CT. Additionally, ITS created a new process to enroll subjects in WCM multisite non-cancer Investigator Initiated Trials and non-WCM patient study participants to help provide accurate reporting of subjects out of WRG-CT OnCore, and builds its relationships with investigators, partners and customers for years with

COVID studies skyrocket

With a rapid increase in COVID-related cases, ITS supported researchers as quickly as possible, providing assistance with eConsent forms to study COVID patients. In March 2020, there were 13 COVID-related eConsent projects on record, which reached 100 projects two months later.

Other Accomplishments Improvements & Upgrades

- Expanded custom research data repositories (RDRs) from 15 investigator groups to 20, including initiatives in inflammatory bowel disease (IBD), pediatric behavioral health, and beta thalassemia.
- Published nine papers in academic journals describing novel informatics methods to support the clinical research enterprise as well as analysis of data using ARCH tools and services.
- Implemented Submission Progress in WRG-HS, which is a visual that provides study teams with the ability to determine where submissions are in the overall application process as well as view any next steps.
- Implemented the My Protocols widget in WRG-HS, which provides study personnel with a central location to find all the protocols they are listed on.
- Implemented the Approved Docs tab for study teams to have easy access to their IRB-approved documents in WRG-HS.
- Released subject binders in the Online Research Binder (ORB) for research coordinators to store, manage, and track subject-related documents. In addition, full remote monitor or auditor visit capability has been achieved through this release.
- Redesigned the WRG-Conflicts of Interest (WRG-COI) survey to improve usability, allow for foreign funding disclosure, and enhance accuracy in disclosed information within WRG-COI.
- Released IBC and EHS workflows to the Qatar campus in WRG-ResearchSafety (WRG-RS). Qatar users now have the ability to submit IBC and EHS laboratory safety applications.
- Released the Post-Approval Monitoring Annual Report (PAMAR) submission type in anticipation for the Common Rule changes in WRG-HS.
- Implemented new reporting capabilities for the federal Open Payments program, allowing for the comparison of disclosed data between the COI survey and Open Payments.
- Launched new BI reports, including the Data Safety Monitoring Board (DSMB) Review Report, the Pre-Award Dashboard, and the HS ClinicalTrials.gov Report.
- Piloted Consent to be Contacted for Research (CCR), an Epic eCheck-In visit feature enabling patients to opt-in to research other than their physicians'. The NIH All of Us Research Program piloted use of the CCR to enroll new participants.
- Supported 60 cohort discovery requests containing protected health information (PHI) for researchers using i2b2, which provides de-identified search of EHR data and release of sensitive data with IRB approval.
- Received 80 clinical trial requests from pharmaceutical sponsors using de-identified EHR data through TriNetX, an increase from 77 in FY19. In three years, WCM has received 200 clinical trial requests.
- Upgraded WRG-CT to Version 16, which enhanced data collection and data integrity by streamlining and improving automation processes.
- Upgraded WRG to Version 15.812.03, which streamlined the review process in WRG-HS and WRG-RS.
- Enhanced the document upload process in WRG-HS, which now: defaults the document name of an upload to the file name, displays the file name and upload date in the IRB application in lieu of the glasses icon, and carries forward all documents between submissions.
- Enhanced iLab to support 23 core facilities in order for WCM research groups to purchase laboratory equipment and services using internal fund accounts.
- Upgraded WRG-Sponsored Programs (SP) to utilize Forms F, which enhanced the grants.gov forms including Human Subjects and Clinical Trials forms.
- Created a new automated communication process in the Study Activation Status Page (SASP) in which an automatic email notifies the IRB and JCTO that all requirements for study activation are met.



Supporting All of Us research

In FY20, ITS supported the NIH's All of Us Research Program (AoU) in expanding enrollment from 6,000 to more than 10,000 participants. We also contributed EHR data to the NIH on a quarterly basis for consented participants, and enabled the NIH to launch Researcher Workbench (www.researchallofus.org/workbench), a secure data enclave for scientists to analyze data contributed by WCM and other AoU sites.

FY21 Projects

- Continue migration of ARCH and CTSC informatics resources to the cloud, including the ARCH SUPER data warehouse, to enable next generation cloud-native data transformation capabilities.
- Pilot large-scale de-identification of EHR data and enable comparison of de-identification methods to support informatics and computer science research.
- Ensure clinical researchers follow best practices for data and informatics by reviewing scientific protocols without delaying approval timelines.
- Implement WRG-CT (OnCore) Financials and Subject Visit Tracking.
- Integrate protocol calendars and research billing in WRG-CT (OnCore) with Epic.
- Plan optimization project to enhance WRG-RS, including the RSC review process.
- Integrate WRG-RS with Salute, a system that allows principal investigators, lab managers, and other staff to manage their lab safety needs in a single, easy-to-use web portal.
- Update WRG's Study Activation Status Page (SASP) to include the study sponsor, as well as other research agreement types that are not currently included.
- Release WRG-HS Optimization Project to help streamline the back-end IRB process.
- Overhaul WRG-HS Reportable Events (Immediate Reports) submission type to enhance the application process.
- Upgrade WRG to the next version of InfoEd.
- Launch Research as a Service, a self-service offering of cloud systems.



Research IT by the Numbers

While Weill Cornell Medicine always strives to be at the forefront of medical research, the pandemic increased the number of studies and queries we typically support through our various systems, like WRG, i2b2, and others. Here's a glimpse of how our ITS research teams processed your important research:

1,211

Number of research staff using new WRG-CT Study Activation, up 43% from last year.

1,949

Highest monthly volume of submitted ORB subject files (and that was just May 2020!).

427

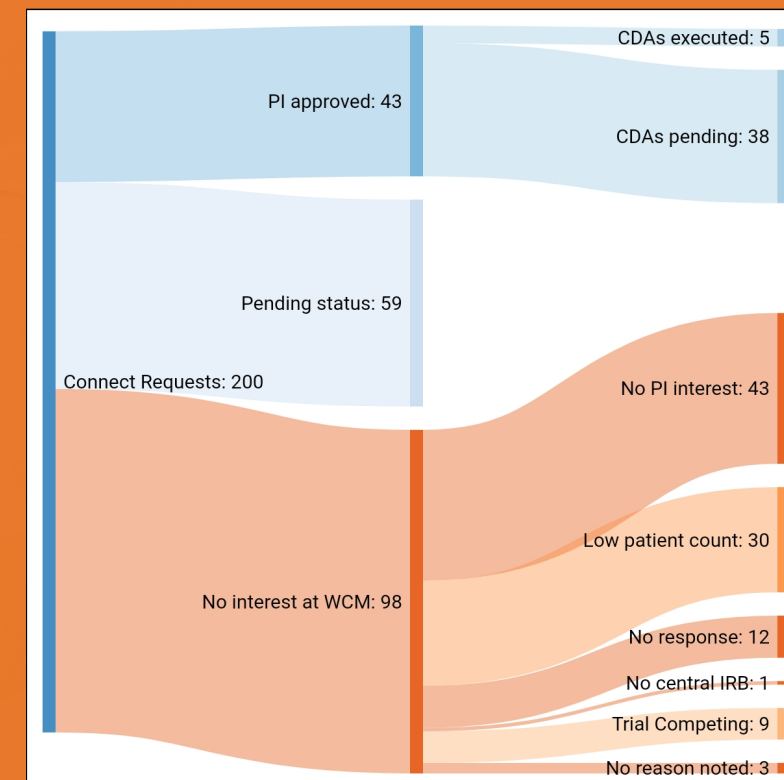
Number of PRMC submissions reviewed from January to July 2020, up 25% from 2019.

1,959

Number of i2b2 queries in FY20 for de-identified patient data.

60

Number of requests in FY20 to re-identify patient data with IRB approval.



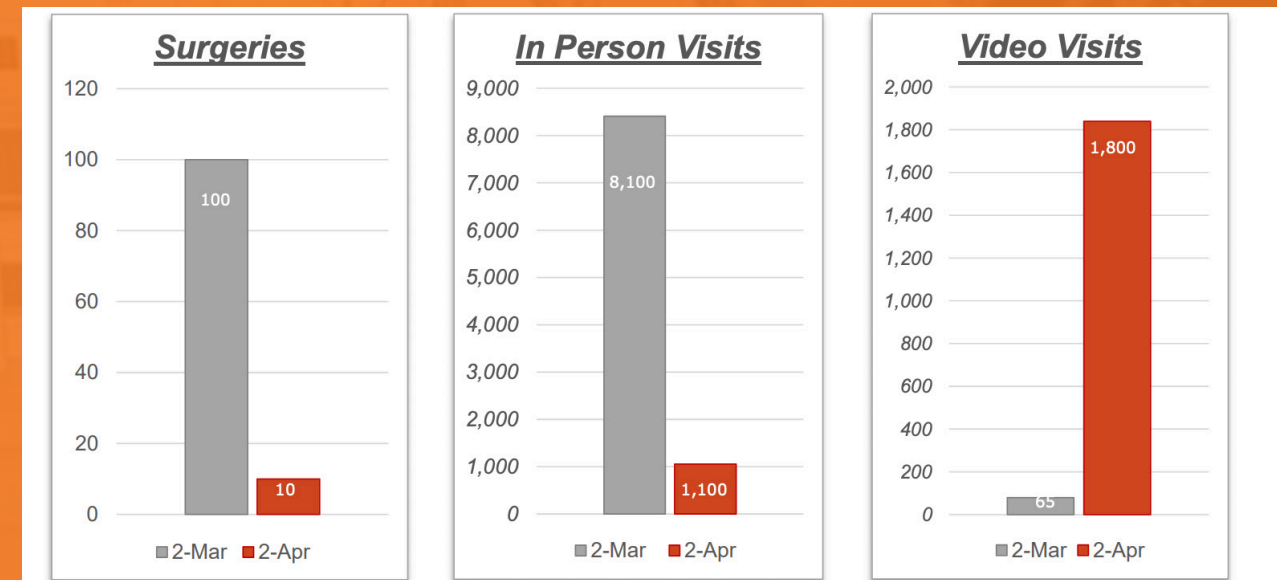
TriNetX Research Network

TriNetX is a global research data network with data from thousands of health care providers across the globe for hundreds of millions of patients. Using TriNetX, clinical trial sponsors can query de-identified electronic health record data from participating sites based on structured inclusion and exclusion criteria to determine whether or not each site has patients who may be eligible for a trial.

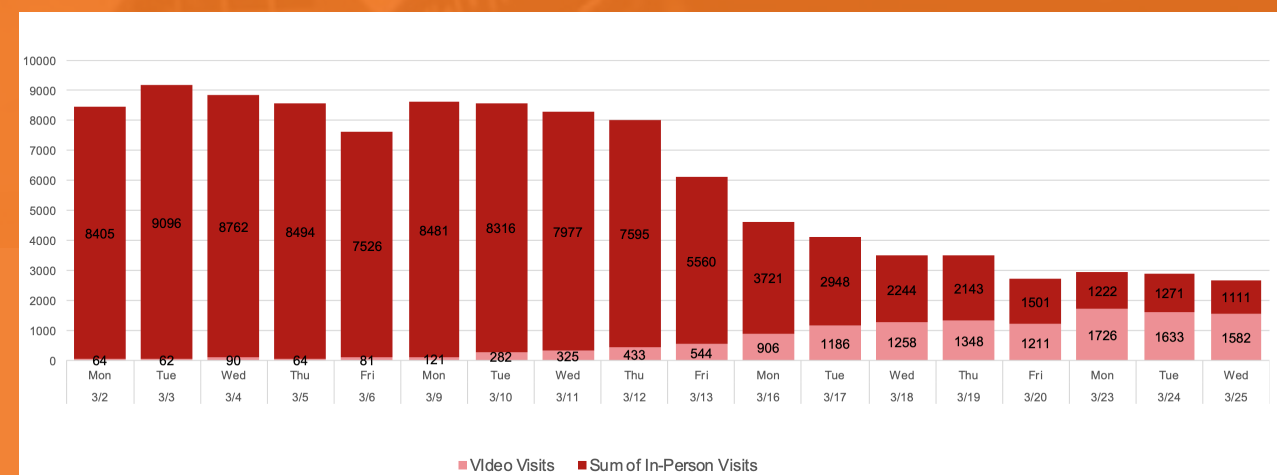
The diagram at left shows a breakdown of how 200 requests clinical trial requests have been processed through TriNetX from 2018 to 2020. Researchers interested in using TriNetX can visit arch.weill.cornell.edu or contact our Research Informatics team at arch-support@med.cornell.edu.

Clinical Initiatives

Change in Daily Patient Encounters



WCM Daily Visit Volumes



Patients can access video visits via a custom WCM app available for Apple and Android devices. More information on video visits is available at: weillcornell.org/digital-health-services/video-visits.

2020 was the year of the video visit. The PO and ITS have long promoted the obvious benefits of telemedicine, but the necessity of remote care combined with the reimbursement and regulatory changes brought by COVID forced an explosion of use. Prior to March, telemedicine was limited to a few physicians taking a financial loss or providing care that was globally billed, such as surgical follow-

up. In March we went from 64 video visits a day to 1,100. And that number continued to rise in April and May. This was technically possible because of the work POIS had done, with ITS's help, to build a future-focused infrastructure.

This increased demand for technology to bridge the gap between clinical care and the community hit POIS and ITS from all directions. Our web

teams made enhancements to weillcornell.org, POPS, and the WCM mobile app to support COVID-19 messaging and patient education, and to support promotion of telehealth and the online scheduling it requires.

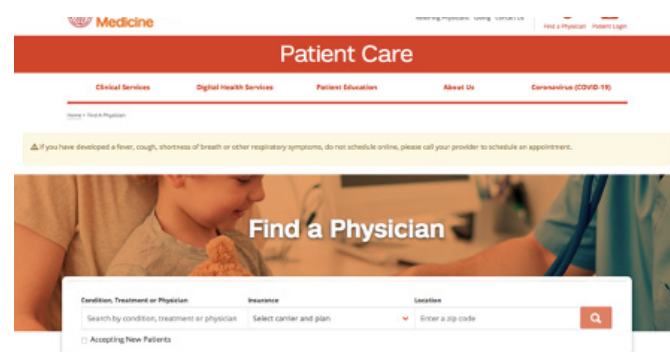
Improvements & Upgrades

- Enhanced search filters for Find-A-Physician on weillcornell.org to include categories like Distance sorting, Visit Type, and Accepting New Patients.
- Aligned MyChart integrations to support the EpicTogether tri-institutional re-branding of Connect.

FY21 Projects

- Implement Find-A-Physician and Open Scheduling on the WCM mobile app.
- Complete information re-architecture of Clinical Services content in weillcornell.org to improve navigation.
- Complete integrations with tri-institutional provider identity management systems to improve data quality of provider profiles.
- In support of EpicTogether, perform data center and networking failover test to confirm business resiliency.
- Assist with the go-live and EpicTogether migration activities of the East Campus.

Find-A-Physician gets more patient friendly



This year, we migrated our Find-A-Physician tool from a deprecated product to an actively-supported knowledge graph. The new search is more patient friendly, and has more comprehensive support for synonyms that the average patient uses. For example, a search for “skin cancer” returns results for doctors specializing in “melanoma.”

Other Accomplishments

- Launched Breast Cancer Video Concierge service on weillcornell.org that lets patients schedule a free, personalized video visit with a breast cancer nurse to learn about treatment options at WCM.
- Consolidated Service Desk ticketing system to enable teams to transfer and manage tickets with NYP through the click of a button in support of EpicTogether.
- Deployed over 100 zebra label printers, and performed manual validation of over 3,000 systems and printers to ensure seamless execution of ambulatory go live workflows in preparation for EpicTogether go live technical dress rehearsal.
- Helped launch hosted service Enterprise EpicTogether, which supports both inpatient and ambulatory care.
- Coordinated tri-institutional Disaster Recovery workgroup effort for EpicTogether.
- Created interim telemedicine continuity plans to support the increase in video visits.
- Released Avaya Agent for Desktop to allow call center agents to answer calls remotely.
- Performed web accessibility remediation and compliance for weillcornell.org.
- Tagged and deployed 150 Credit Card Readers together with Application Support Group (ASG).
- Deployed a new version of Cadwell acquisition software to the Adult Sleep Center to replace their previous system which was no longer supported.
- Enabled AS-Software application over Citrix for OBGYN to simplify access from home and DHK hospital.



When COVID transformed the way medical care was administered, with visitors prohibited from entering the hospital, we assisted in deploying technology to clinical space that could help ease this difficult new reality. A team of ITS volunteers helped New York Presbyterian hospital configure and deploy 500 iPads donated by the Tapper Charitable Foundation. The iPads were then handed over to patients, who can use FaceTime to see their families while they are in the hospital.

This work will continue through 2021 as we renew clinical operations with COVID as a backdrop. We will continue to expand remote services, improvements to patient access, support for touchless encounters, and new digitally-supported care wherever it is needed.



Education Initiatives

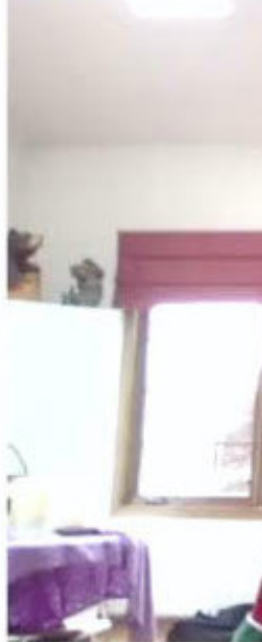
The Educational Technologies Group (ETG) began the fiscal year with a focus on enriching student learning and supporting teaching by implementing a variety of systems and services. Come March, COVID added a new priority.

ETG responded swiftly, moving academic departments to remote learning in a week, and implementing online proctoring for quizzes and NBME exams. Revisit weekend, traditionally hosted on campus for students accepted to the MD and MD-PhD programs, was conducted virtually in mid-April via nearly 100 Zoom sessions that were created and moderated by ETG and Event Services staff.

Then came graduation, and the decision was made to celebrate the class of 2020 with WCM's first ever virtual commencement. ITS groups pitched in tirelessly to help pull it off, along with a virtual convocation for the Weill Cornell Graduate School, and a virtual PA Program Awards Ceremony.

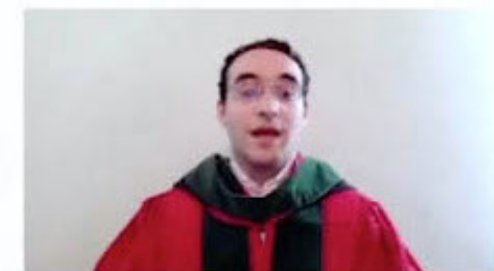
Similarly, for the Graduate School Convocation ceremony, ITS worked nights and weekends to complete all of the imagery and video editing, and update the website.

Virtual commencement took place the following day, and ITS partnered with External Affairs to design and implement the ceremony's site: weill.cornell.edu/graduation-2020. Our teams worked on designing and implementing the overall layout, configuring a Kudos board, and embedding the livestream. On the big day, ITS teams moderated the Zoom session to keep an eye on security. They also provided students with the cues they needed to be camera ready, including the final gesture of flipping the tassels on their graduation caps, marking the conclusion of a uniquely challenging year of medical education.



Dr. Fauci congratulates students

Esteemed Weill Cornell Medicine alumnus Dr. Anthony Fauci, M.D. '66, joined the Class of 2020 at their virtual commencement to deliver an important message: "Now more than ever, we need your talent, your energy, your resolve, and your character," he said.



Other Accomplishments

- Rebuilt Graduate School Jenzabar Laboratory Rotation online forms to allow for data entry validations, complex workflows, and advanced reporting. The new solution provides a much-improved user experience for students and faculty.
- Developed and launched myCME, a platform for the Continuing Medical Education (CME) administrative system to track Maintenance of Certification (MOC) points for individual learners, as well as streamline the submission of data for the AACME accreditation.
- Created the data schema for the new Student and Alumni Tracking and Engagement Project and imported and validated pilot data into Jenzabar environment.
- Implemented AAMC-WebAdMIT for medical school admissions and developed an in-house integration solution to exchange data with the Jenzabar environment, providing a path to scale this solution for the Graduate School.
- Disaster Recovery team vetted new data center solution that supports the Jenzabar service to ensure high availability to user community and 99.25% uptime per Jenzabar as a service agreement (JaaS).
- Introduced Power BI to the Johnson Graduate School of Management Executive MBA/MS Healthcare Leadership Program as part of a Displaying Data for Decision-Making Course. Students learned how to create and analyze data using visualizations.
- Replaced laptops used by students for National Board of Medical Examiners (NBME). The replaced Macbook Pros will have additional life as part of the ITS and Library Laptop Loaner program.

Measuring user experience in real-time

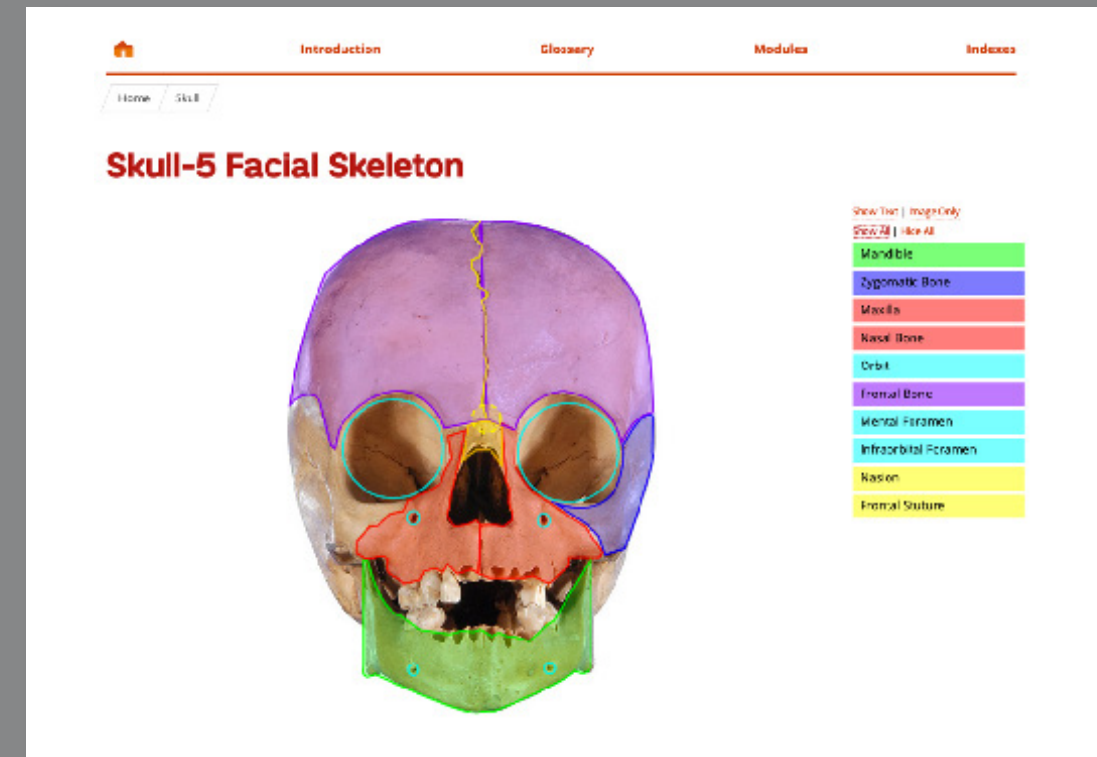
At this year's SMARTFest, we wanted to collect in-the-moment feedback from guests to make sure they were having a good time. So, we rigged five iPads with a special configuration of our interactive polling tool Poll Everywhere that allowed us to use each device to collect hundreds of poll submissions throughout the event.

Of the 234 respondents who answered the Poll Everywhere question "How was your SMARTFest experience?", 178 chimed in with the happiest green smiley face. This polling system is available to all ITS users for free at polleverywhere.com.



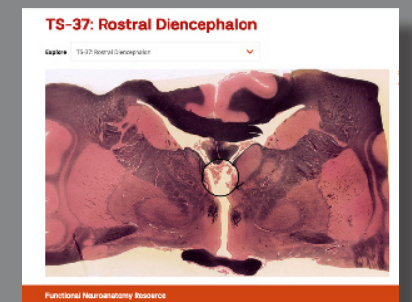
Improvements & Upgrades

- Created an Introduction to Telemedicine course in cooperation with the Weill Cornell Medicine Center for Virtual Care (CVC) that provides education on administering telemedicine, and has over 300 students enrolled.
- Moved Open Enrollment for Electives from the Learn (Jenzabar) web portal to the OASIS platform, which is specifically designed for medical schools, providing students with a better user experience.
- Successfully completed annual upgrade of Jenzabar Student Information System (SIS) EX solution and LEARN portal, resulting in a more stable environment for NY and Qatar.
- Migrated our hosted Jenzabar environment to Jenzabar's new data center provider in conjunction with Jenzabar, Qatar, and our stakeholders.
- Expanded the data set within the Jenzabar Izenda self-service reporting tool, providing additional options to the Registrar's Office, Student Accounting, and Financial Aid.
- Worked with the Emergency Medicine department to create a Preparatory Guide for the OB Transition to Cohen. This online module provides education to providers, and has nearly 200 students enrolled.
- Enhanced the iPad package distributed to each medical student and Physician Assistant student upon their arrival, in person or remote, to Weill Cornell Medicine.
- Expanded the list of applications provided to students by default to include all relevant core applications.



New and improved Functional Neuroanatomy Resource (FNAr)

ITS rebuilt the aging Functional Neuroanatomy Resource on a new, more sustainable technology platform. The new FNAr allows students to navigate content modules, review textbook information, navigate series of interactive images, and more. Each interactive image lets students view the image, mouseover sections to highlight details, and show slide text. Some images even have a feature that allows users to zoom in with a magnifying glass that doubles the size of the contents within the circle, as shown in the image to the right.



FY21 Projects

- Upgrade to the Jenzabar One desktop application with expanded data collection, automation, and reporting.
- Add alumni tracking and engagement features for MD-PhD, MS/MBA, medical school, and graduate school programs.
- Develop an online admissions interview scheduling system for the MD-PhD program. Support the entire online interview process, including strategy, logistics, and video creation/editing.
- Expand features, functionality, and compliance reporting of the Graduate School's online forms.
- Implement a centrally-supported curriculum data store for Continuous Quality Improvement to increase operational redundancies for medical education compliance.
- Rebuild and enhance integrations across Jenzabar, OASIS, and Canvas to move data throughout the systems without error.
- Migrate the Areas of Concentration (AOC) to a new platform due to the end-of-life of the FluidReview platform.
- Enhance student orientations to ensure the best experience for incoming students, whether onsite or remote due to COVID-19 pandemic.
- Expand support for online learning, accessibility, and student engagement.

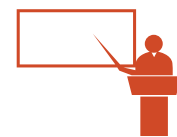
Did you know the Library can help you with:



- Searching for resources for your business start up
- Grant funding and external collaborations



- One-on-one bioinformatics consultations
- Accessing WCM clinical and research data sets
- Finding free and discounted scientific software



- Analyzing your publications and research impact
- Identifying tools for courses you are teaching

What our patrons are saying:

“Whenever I have a concern or a challenge with my research data, I contact the **Data Core staff**. They bring the library’s warm, efficient, and effective customer service to the project, and remedy any technical issues. My colleagues and I depend on this dedicated team. This is a service never before provided by our library, but the unique collaboration with ITS is a highly successful partnership that **has significantly advanced my science**, and the science of my colleagues.”

- **Zach Grinspan, Associate Professor of Population Health Sciences**

“The systematic review [Evidence-based Communication of Numbers in Health] has been a heavy lift. The Wood Library librarians made it possible, and helped every step of the way.”

- **Jessica Ancker, Associate Professor of Population Health Sciences**

Samuel J. Wood Library

The Wood Library received the prestigious Medical Library Association (MLA) Research Advancement in Health Sciences Librarianship Award in 2020. This award is given to a library that significantly advances health information research and evidence-based practice.

When the pandemic forced the Wood Library to close its doors in March, we shifted our services online, focusing on COVID-related information. Librarians set up feeds from PubMed and pre-print servers into a COVID-19 literature Teams channel, which aided researchers in discovering the latest COVID-related research.

Additionally, the Data Core team set up secure remote access to COVID-related patient data for our population health researchers. Working with Research Informatics, we created a COVID research data repository from our EPIC and Allscripts hospital patient data. The repository was up and running in three days, and in the weeks that followed we serviced as many projects as we had in entire years previous.

Throughout the pandemic, we continued improving our core services. We now produce a monthly NewPubs report that captures all new WCM-authored publications in the prior month. We also negotiated a “read and publish” agreement with Karger Publishers, which allows any WCM faculty member or student to submit journal articles to any Karger journal that will be published open access at no cost to the author, if the paper is accepted. This agreement is good through December 2021.



FY20 Accomplishments

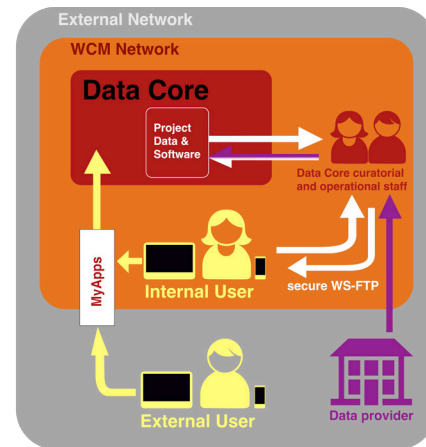
Systematic Review Service

The Library published 19 systematic reviews in FY20, and is ranked the 7th most productive in publishing systematic reviews in the nation, 11th in all of North America, and 15th worldwide.



Data Core Upgrade

This year, Data Core began to move into the cloud, as it seeks to provide greater resource flexibility on projects, while maintaining the security required for working with PHI. Data Core also saw its first project to utilize GPU resources for secure high-performance computing.



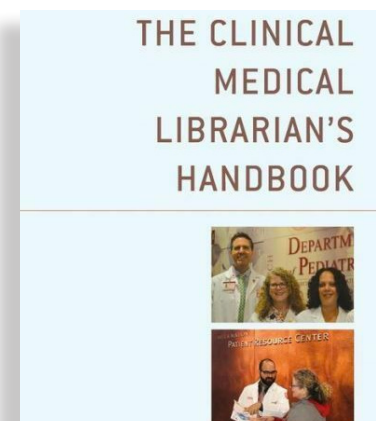
Collaboration with Brooklyn Public Library

The Wood Library was awarded a grant to provide clinical and consumer health literacy training for the Brooklyn Public Library's staff.



The Clinical Medical Librarian's Handbook

Wood Librarians published *The Clinical Medical Librarian's Handbook* to assist clinical medical librarians around the country.



SMARTFest 2020

The 7th Annual SMARTFest on February 20, 2020 was our largest and most successful yet. Every year, we showcase new and popular products and services the library and ITS provide to support education and research.

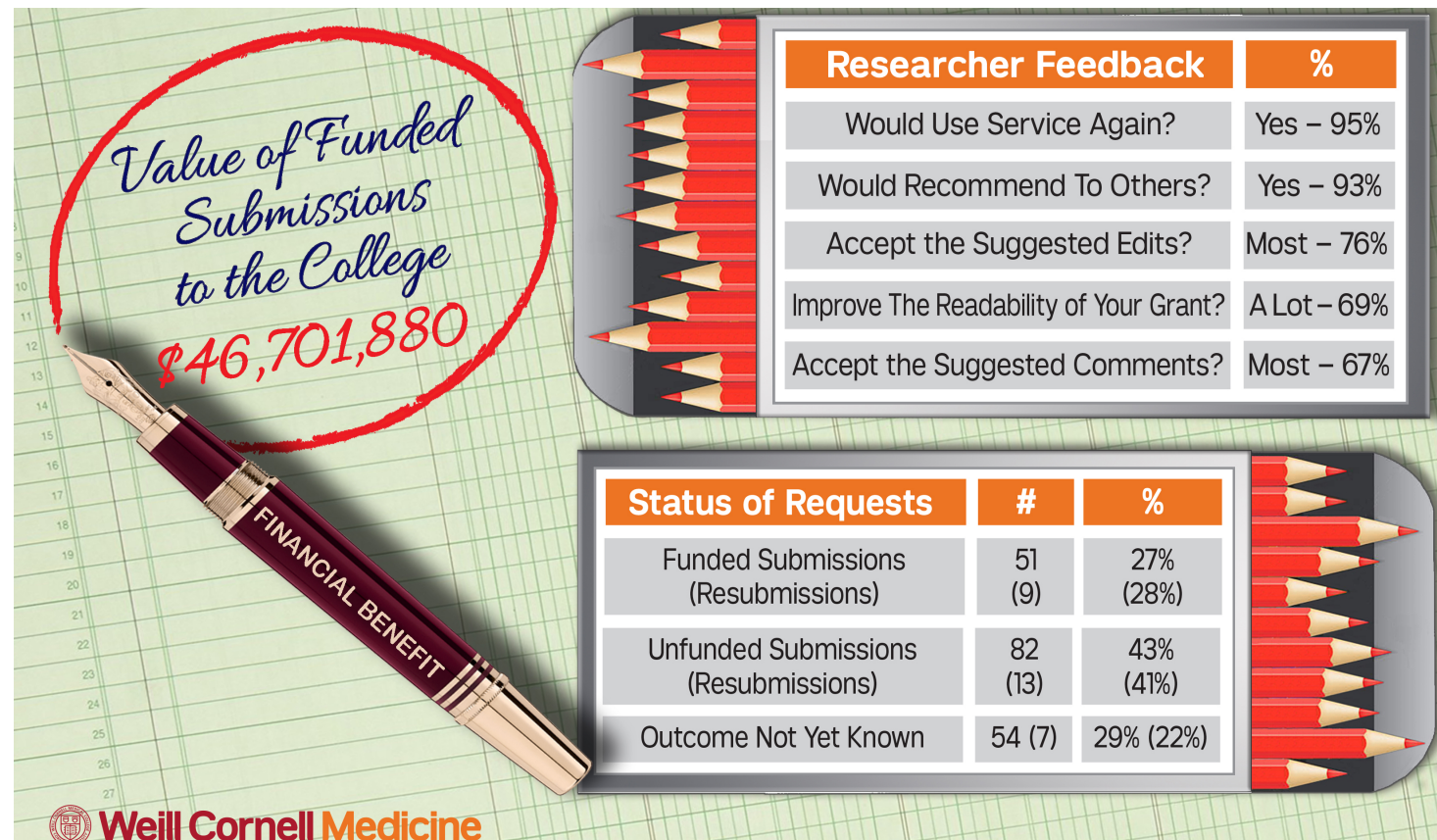
More information is available at its.weill.cornell.edu/smartfest.

	2015	2016	2017	2018	2019	2020
Number of Vendors	7	16	18	21	25	25
Sponsor Donations	<\$2,000	\$13,500	\$14,800	\$15,500	\$25,400	\$23,400
Number of WCM Booths	16	21	25	26	30	27
Number of Attendees	610	1,118	1,030	1,151	1,587	1,608

FY21 Projects

- Add NY State Medicaid data to Data Core 2.0.
- Expand the data catalog with new archive service for all WCM researchers.
- Include VIVO profiles for PhD, MD-PhD, and MD students.
- Launch faculty publication management tool, Reciter, to simplify claiming and publicizing their academic output.
- The Scientific Software Hub will add shared STATA licenses for Mac, in addition to its current PC offering, and make multi-core licenses available.
- Migrate VIVO Dashboard to AWS Cloud with several new features.
- Launch Research Reproducibility Service (if funded) to help faculty avoid false accusations of data manipulation.
- Expose students to Medical Archive as part of the Essential Principles of Medicine curriculum.
- Create workshop on historical and modern pharmaceutical advertising, medication regulation and safety, and medication literacy.
- Provide more real-time updates to eResources database.
- Implement online calendaring system for patrons to book library space, resources and consultations.
- Begin planning Archives activities to commemorate hospital's 250th anniversary.
- Implement recent National Endowment for the Humanities Preservation Assistance Grant Award.

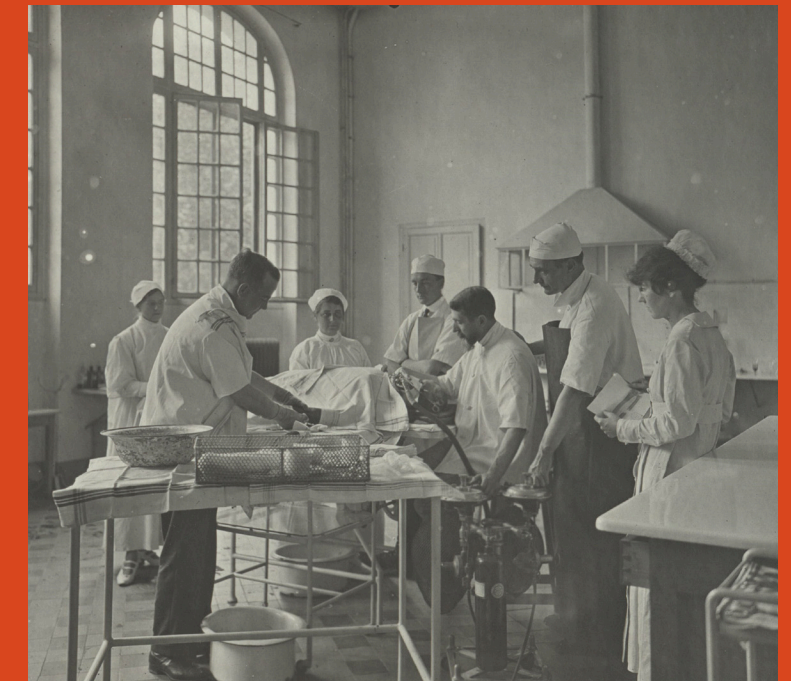
Grant Editing Service: 2016-2020 Four-Year Summary



Courage Under Crisis

The Medical Center Archives has been responding to the pandemic by providing our staff and students with historical context. The team created *Courage Under Crisis*, a series of blog posts that explore how New York Hospital and Cornell Medical College responded to prior wars and pandemics.

The Archives is also actively preserving the medical center's ongoing response to COVID-19 for future generations. You can read the blog at library.weill.cornell.edu/archives.

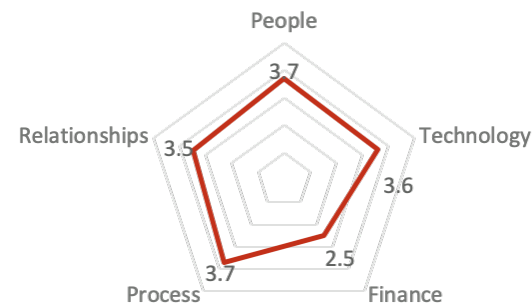


Supporting Our Services

ITS has made some great strides in supporting our users to become more knowledgeable and empowered about our services. This year, we introduced online SMARTDesk appointments so users can conveniently resolve IT issues around their schedules. Users can now register their own smartphones to access WCM services, and don't have to tag them. We also continue to enhance myHelpdesk so users can request specific services, find self-service knowledge articles, and contact techs for help at myhelpdesk.weill.cornell.edu.

Among the hundred of projects we managed this year, our staff assisted with launching Epic at NYP and Columbia locations, managing the tech side of our Clinical Genomics Program, and quickly launching critical databases and tools for COVID-related research.

Improving Project Management



The Gartner Project & Portfolio Management Maturity (PPM) Model helps ITS identify and decide which improvements we should make to enhance our project management processes. The model uses five levels of maturity on a scale of 1-5, with 5 being the most innovative. For the fourth year in a row, we've seen our overall score increase, reaching 3.4 this year. We've made considerable improvements all around, but especially with our project processes and how we work with people across the institution to develop successful projects.



ITS received **291 new project requests** in FY20. 54% became projects after careful evaluation to review chance of success.



It only takes about **20 days** to charter a project, which is down about 23% from four years ago when it took almost a month to charter.



The PM Lite program has taken off to help others oversee their projects, which accounts for **48% of our portfolio**.



Support tickets now take an average of **25 minutes** for ITS to resolve. That's down from three hours in October 2019!



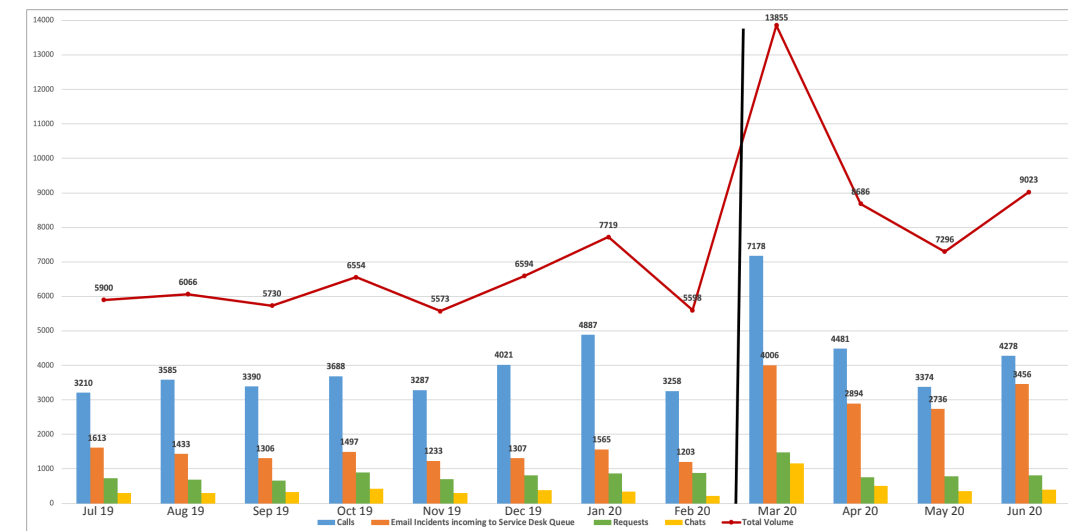
ITS fulfilled **over 90% of requests** by the expected date in the last five months of FY20. Last year, the rate was 71%.



The Service Desk and SMARTDesk received an **89% combined customer satisfaction rate** from our users in FY20.

Going above & beyond

Our Service Desk reached an unprecedented 14,000 tickets as COVID peaked in March. The chart below details the number of tickets received in FY20, which a sharp spike in March. Despite this increase, our team worked quickly to accommodate users with longer hours, added service locations around NYC, and more staff to drop help requests by about 37% in April.



Cloud First Case Studies



Insight Clinical Research Network

ITS recently helped the Insight Clinical Research Network relocate their databases and analytics tools from a third party-managed hosting facility to an ITS-supported Amazon Web Services account.

ITS and the Insight team work together to modernize the existing data analytics systems, add new capabilities, and decrease cost using cloud-native tools.



Cluster workloads at WCM-Qatar

ITS has been piloting cloud research pipelines for the Qatar campus.

More than just migrating old processes to the cloud, some cluster workloads were run at a scale that was impossible to achieve on-premise.

The ability to provide scale in the cloud faster and cheaper is a natural extension of what we can accomplish on premise.

Infrastructure Enhancements

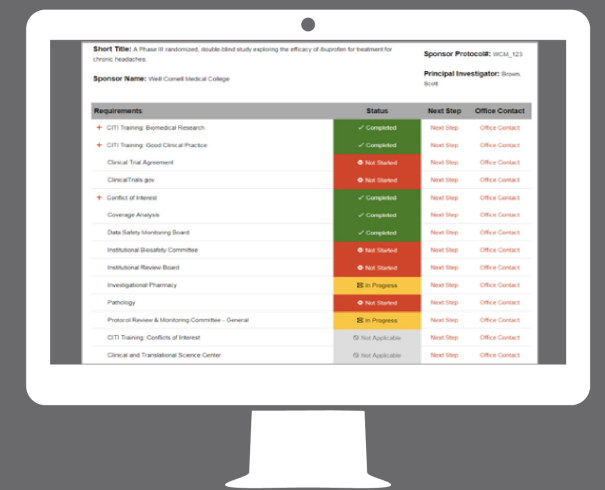
The infrastructure team provides the technology backbone to deliver the applications and services we all use at WCM. Even infrastructure provided by big companies like Verizon, Amazon, and Microsoft, is managed, shaped, and delivered by ITS engineers to make it fit WCM's specific needs.

Since adopting a "cloud first" approach to infrastructure, ITS has successfully migrated our largest and most visible systems off premises. This increases our agility and geographic resiliency, and reduces operational overhead. The program is now focused on the constant stream of new systems, and the long list of smaller and more embedded "backend" systems that still fill our data center.

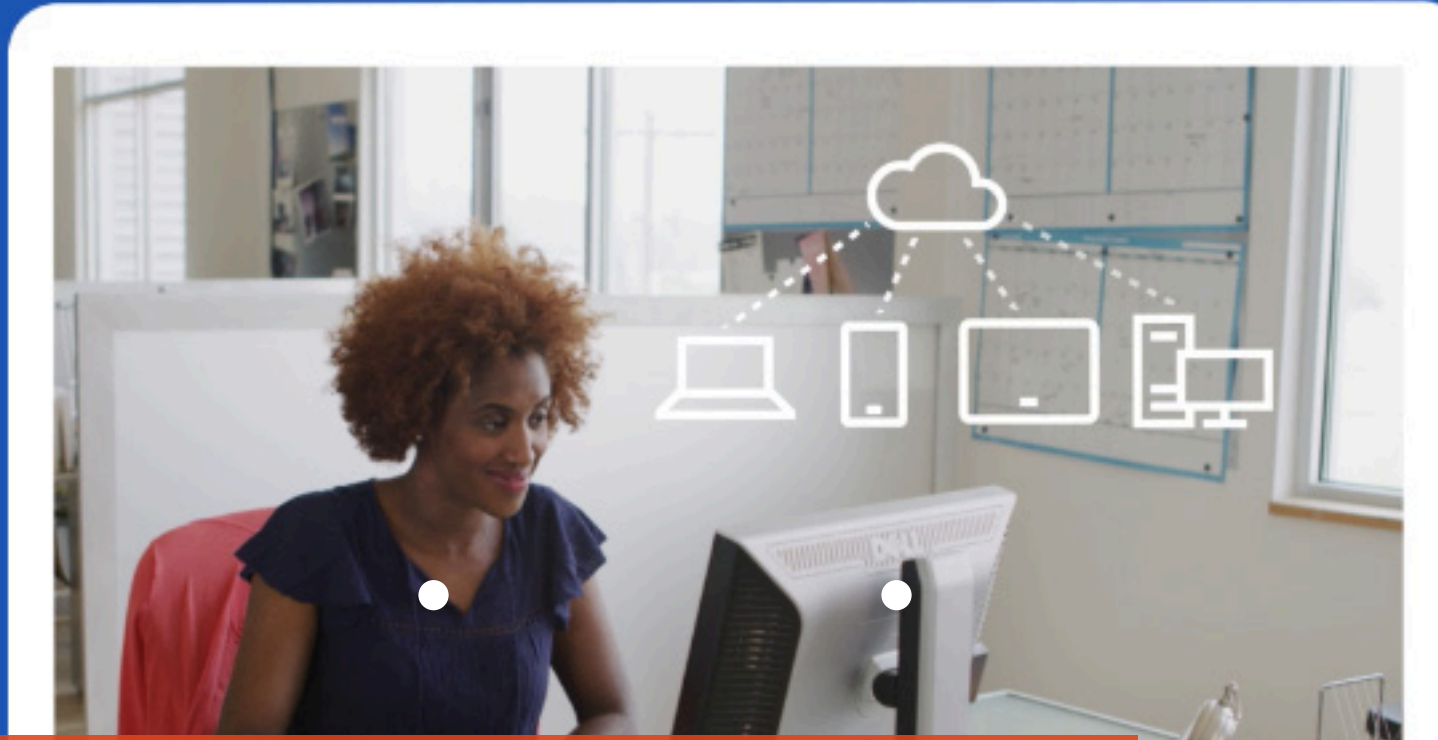


This year we migrated several key clinical departmental services to cloud hosting, such as the Department of Medicine Portal, and the Maya app, a cognitive behavior therapy application assisting young adults struggling with anxiety disorders. We also moved some of our primary research services to cloud hosting, like the Study Activation Status Page (SASP) dashboard for research proposals, and the Online Research Binder (ORB).

Turning legacy systems off can be just as important as turning new systems on. Notably, we have decommissioned over 90% of our on-premise Oracle Database systems. Most applications were migrated to Microsoft SQL or AWS Relational, saving money and reducing the complexity of services we need to support.



The Study Activation Status Page (SASP) is one of the services we moved to the cloud this year.

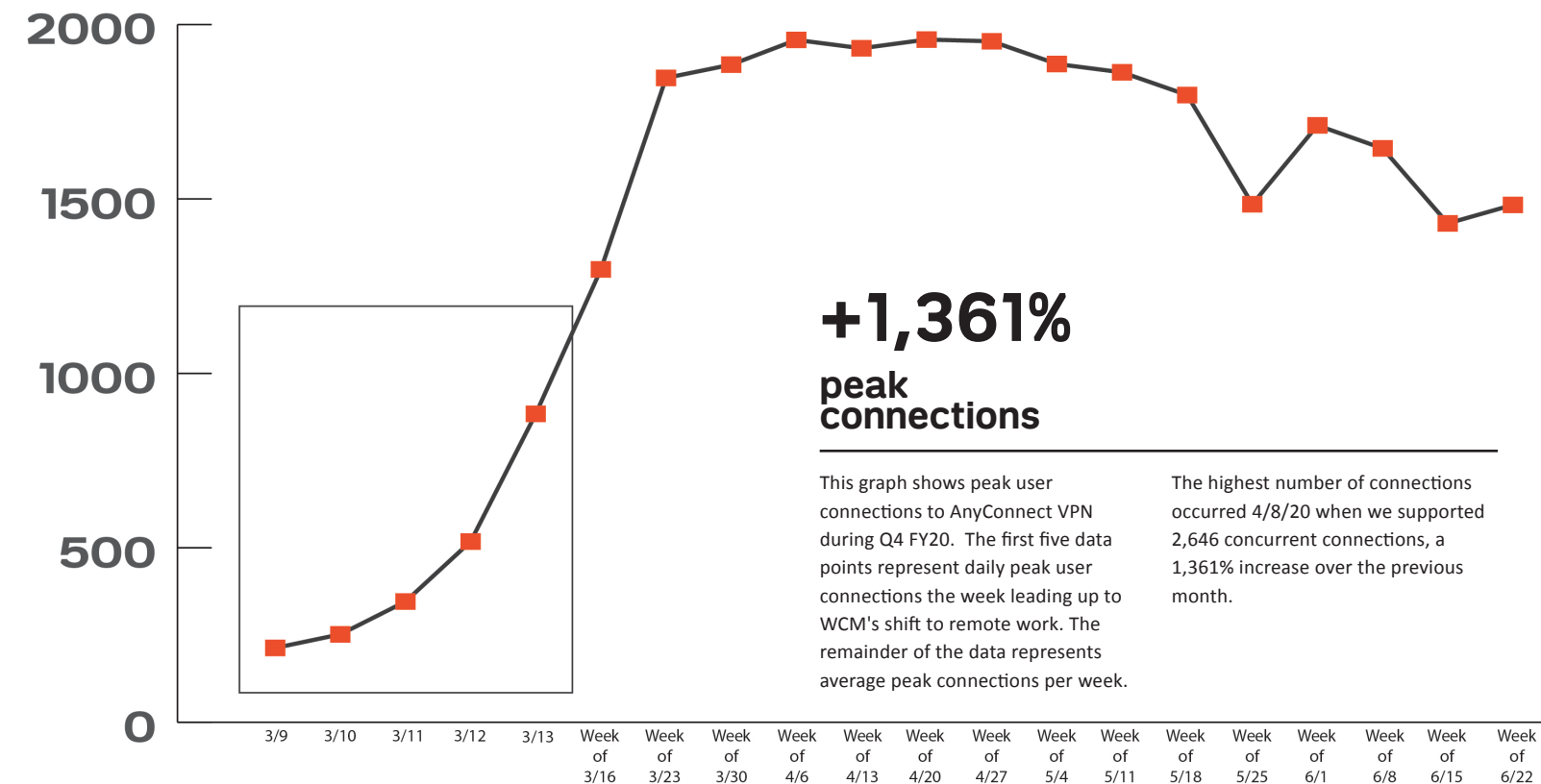


Microsoft OneDrive deployed for cloud storage

Last fall, we released Microsoft OneDrive as a new cloud-based storage solution that integrates with Microsoft Office services, like Outlook, SharePoint, and Teams. OneDrive offers users up to 1TB of personal storage and lets you organize work files securely, share files with co-workers, and sync files with your computer or phone to access from anywhere. Unlike Box, our OneDrive solution lets users share high-risk content, such as HIPAA protected data. More than half of the college already uses OneDrive, and we are working to shift Box and departmental file share users to this solution over the next few years.

Adoption soars for new AnyConnect VPN client

In the fall, we upgraded our Virtual Private Network (VPN) client to Cisco AnyConnect to let users connect securely to WCM sites from outside the network. The new client offers added security with stronger encryption and multi-factor authentication. Adoption soared in March, when the WCM workforce shifted to a remote model practically overnight in reaction to the pandemic. ITS is enormously proud to have worked nights and weekends to support this need, answering thousands of questions via phone, chat, zoom, and our self-service videos and articles.

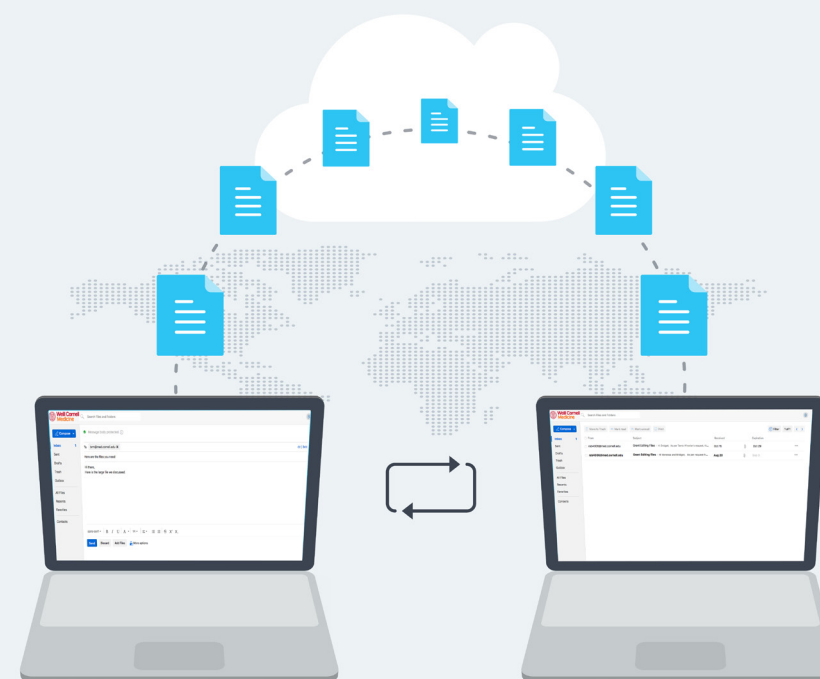


Other Accomplishments

- Increased speed and resiliency of network connections to cloud providers.
- Migrated Insight/Data Research Network to AWS.
- Released Microsoft Teams chat and collaboration software to replace Skype for Business, which is being sunset in 2021. Usage spiked in Q4, with average messages climbing from around 2K per day to nearly 6K in the first three weeks of March.
- Decommissioned legacy systems, such as PeopleDB and WOFA.
- Decommissioned SharePoint 2010 servers by migrating to O365.
- Updated the BRB datacenter uninterruptible power supply to a lithium ion battery solution. This will lower energy consumption, improve reliability, and reduce our carbon footprint.
- Migrated to newer hardware for our web application delivery controller infrastructure.
- Migrated Reciter publication management system to AWS.
- Released Rightfax electronic faxing Web Client.

FY21 Projects

- Upgrade underlying wireless network infrastructure to improve coverage and data transfer speeds.



Send large files securely with our new file transfer site

We upgraded our secure file transfer site at transfer.weill.cornell.edu to offer users a fresh and clean interface, an enhanced experience, and the capacity to share larger files. Users can now securely send files up to 35GB. Adoption of this service increased by over 100% since the launch in September through June.

System & Service Enhancements



A few highlights



Transitioned from in-person smartphone tagging to self-registration, so users can gain access to WCM Wi-Fi and applications on their devices.



Achieved uptime of 99.999% for file sharing and managed hosting.



Updated our business continuity plans to prepare actionable strategies to recover from new and different disasters.



Created space inventory reports to help identify vacant spaces on campus and improve allocations.



Introduced campus "Internet of Things" Wi-Fi network, giving devices needing only internet connectivity (like cameras) network access.

The Qatar Foundation asked us to convert to a calendar year rather than Cornell's usual fiscal year. To support this and several other features, we extended the SAP Budget & Planning module (SBP) to our Qatar campus. SBP was first introduced to WCM New York in April 2018 as a way to move finance from an Excel-based manual budgeting process to an electronic form-based process that is integrated into the backend SAP financial system.

The solution developed for WCM-Q was uniquely customized through close collaboration with New York and Doha Finance. Learn more at its.weill.cornell.edu/SBPQatar.



Other Accomplishments

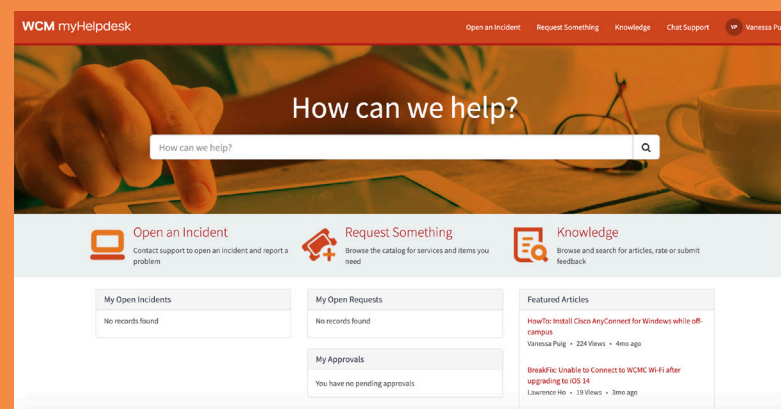
- Enhanced cellular signal services with Verizon within both Olin and Lasdon Hall dormitory buildings.
- Migrated on-prem SharePoint users to the cloud-based SharePoint O365, which offers an enhanced user experience and updated interface.
- Enhanced the Academic Staff Management System to include a new Post-Docs Module, new enhanced Faculty Review Tool, and the integration of Power BI reporting.
- Transitioned management of vendor invoices for Weill Cornell Imaging NY to eForms streamlining approvals and eliminating manual processing by Accounts Payable.
- Released Web Intelligence (Webi) versions of Accounts Payable, Asset, Inventory Management, and Payroll reports. Webi Reports have interactive features, can update data quickly using cached data, and offer options for customized formatting.
- Improved eForm approval comments tracking for better visibility and more efficient communications.
- Extended the Institutional Reporting Data Warehouse to include more student, employee, and faculty data to support US News and other external agency reporting.
- Released a new and improved BI Foundations training course for all new users who need access to Business Intelligence applications.
- Added almost 2PB of storage capacity on our central file sharing service to meet demand.
- Enhanced complex BI Reports such as Personnel and Grant Finance, merging different data sources and providing new drill-down features. This improves analytic insights and eliminates manual work maintaining old reports.



We love data. Including data about ourselves. This year, we launched the **ITS Scorecard** to give departments a centralized view of all ITS-related data that impacts their day-to-day operations.

Building our knowledge library — one article at a time

ITS has put a high priority on expanding and simplifying self-service options. One key effort is our institutional knowledge base, which helps you find service, answer questions, or solve problems 24 hours a day. ITS now features over 500 user-centric guides and over 800 pieces of technician-focused documentation, all housed in our myHelpdesk portal.



FY21 Projects

- Launch Faculty Profiles and Promotions Dashboard and integration the Department of Medicine Portal into the Academic Staff Management System.
- Launch eTime mobile clock-in and web applications, for fast, easy non-exempt employee time management, even offline.
- Create new Drupal 9 distribution and plan for upgrade of all WCM sites in FY22.
- Overhaul end-user communication strategy to allow for better targeting and less noise, pending the launch of additional email services.
- Implement Evergreen, a new lease-like service for PCs and Macs. This will speed up deployments, simplify orders and repairs, support remote workers, and save cash for the college.
- Further enhance our identity management system, MARIA, for improved stability, better identity matching, and faster provisioning.
- Release more Webi BI Reports, including: Funds Management, Benefits Management, Grants Management, Supplier Relationship Management, General Ledger, Personnel Administration, Organizational Management.
- Upgrade Business Objects to deliver a modernized, simplified web intelligence user experience.
- Release O365 email archiving to improve mailbox performance and enable users with large mailboxes to reclaim valuable space by moving or archiving older mail items into a secondary mailbox that will be always accessible.
- Upgrade Avaya phone system with new integrations to Epic, softphone features, and virtual hold call-back.
- Release new archival storage options locally, in the cloud, and through the Data Core.
- Increase per person email storage capacity to above current limit of 100GB.
- Help users adopt Microsoft OneDrive for personal cloud storage including assistance with migration from Box.
- Develop roadmap for departmental migration from File Servers to OneDrive.
- Enable multi-region business continuity and disaster recovery for all cloud services.
- Migrate RightFax e-faxing system to hosted solution for lower cost, more resiliency, and unification of clinical users.
- Create a new Requisitions Metrics Dashboard for HR Leadership to provide visibility on the talent acquisition process and efficiency.
- Deliver dozens of new Power BI reports and dashboards to help individual departments, including External Affairs, the Center for Aging and Behavioral Research (CABR), the Lorenzo Radiation Oncology laboratory, security compliance, and PO Finance.



WBG moves to the cloud

This year, we moved WBG to the cloud, helping us adapt to future evolutions in technology introduced by our vendor, SAP. With modules for Financials, Purchasing, Human Resources, Payroll, and Business Intelligence reporting, WBG is touched by thousands of staff, researchers and clinicians. This migration enabled access to WBG from outside the network without going through Citrix or using a VPN connection, saving multiple logins and key clicks every time you use WBG, while preserving security.

Quick Tips



Interested in learning how to use our BI services, but pressed for time? Try watching our BI Quick Tips!

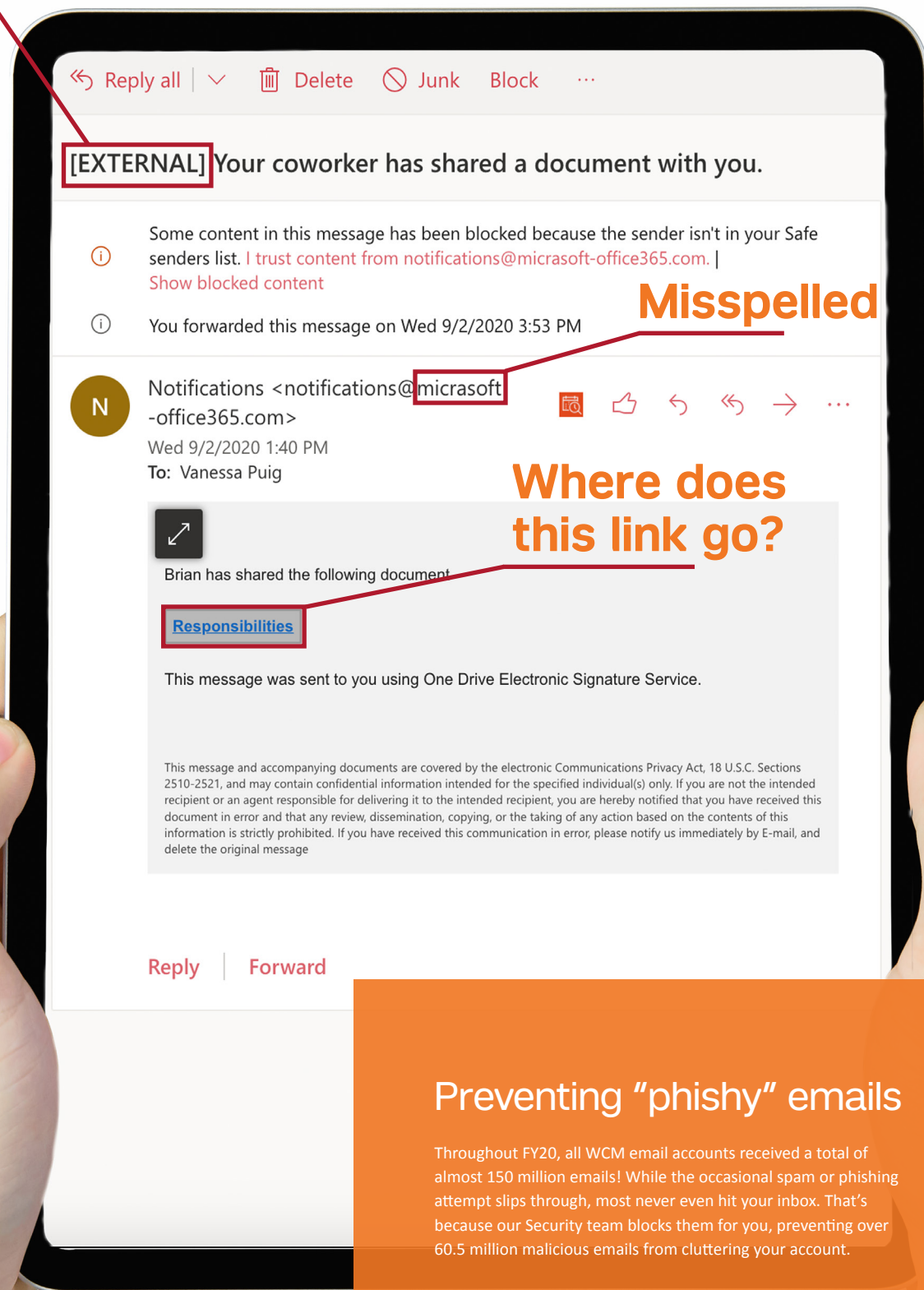
Since 2014, the Business Intelligence and Training teams have been making short videos on BI tools and reports.

This year, we published 32 new BI Quick Tips to support the release of new BI tools, including:

- 6 on the new BI Launch Pad
- 8 on Webi reports
- 10 on Power BI
- 8 on specific reporting functionalities

You can view our complete list of BI Quick Tips on our official YouTube channel at youtube.com/wcmits.

Where is this coming from?



Security, Identity & IT Business Continuity

ITS has an array of tools and systems running in the background of your day to ensure the data you are creating and sharing isn't compromised. At a medical institution, the volume of sensitive data that exists makes security a top priority. Healthcare companies continue to be the preferred target of cybercriminals as evidenced by massive breaches at companies like Quest Diagnostics and Barnes-Jewish Hospital. But the pandemic added new complications to our security protocols.

With so many employees and students suddenly working from home, ITS needed to find quick solutions to get more personal devices on our WCM network, without compromising its security. Our Security team worked diligently to increase visibility into devices connecting to WCM from off-campus, especially personal devices not tagged and protected by ITS. We instituted a remote work attestation with updated guidance about securing personal computers and strengthened our AnyConnect VPN tool so more people could connect from home. With most of our services moving to the cloud we are close to making remote work as safe and easy as working on site.

Outside of the pandemic, we upgraded our cloud Data Loss Prevention (DLP) tool, which constantly monitors our data for potential breaches even when it is not hosted on site. By integrating this new solution with our existing DLP system for campus email, we can now manage incidents – like phishing attempts – much easier (especially when we processed about 150 million emails over the past year!). And now users can report suspicious email with one click from desktops, web browsers, or smartphones.

On the identity front, we simplified how we activate CWIDs for new hires. The entire activation is now electronic, with new hires receiving automated email notifications that include instructions on how to “turn on” their accounts. ITS helped create, update, and assign 4,131 CWIDs this year.

As we face new challenges and malicious cyberattacks, ITS continues to implement the latest technology to ensure your data remains secure.

Preventing “phishy” emails

Throughout FY20, all WCM email accounts received a total of almost 150 million emails! While the occasional spam or phishing attempt slips through, most never even hit your inbox. That's because our Security team blocks them for you, preventing over 60.5 million malicious emails from cluttering your account.



Not sure if an email is spam? Visit phish.weill.cornell.edu to learn how you can confirm its authenticity with Phish Alarm.

Other Accomplishments

- Enhanced our password reset system by removing security questions and introducing personal email addresses and multi-factor authentication for better self-service.
- Decommissioned a legacy identity directory system (LDAP) that was running for over 15 years. This has simplified our identity management program and allows us to offer new features for managing people, identities, groups, and authorizations with a more modern system.
- Ensured high-visibility IT services have a documented Disaster Recovery (DR) test within each fiscal year. ITS achieved 97% DR compliance of critical ITS services.

What is the Internet of Things (IoT)?

You may have heard the term "Internet of Things" (IoT) to describe tools you normally use, from everything to smart watches to Alexa. Think of IoT as a system of interrelated devices that can transfer data over a network without requiring interaction from people. It's how you can automate your smart coffee maker to brew you a cup in the morning after syncing it to your calendar.

We use IoT devices in research too, which means it's vital to protect them from hackers. To do this, ITS deployed a tool called Cylera (founded by Cornell alumni) in the Belfer Research Building to detect vulnerabilities on research and biomedical IoT devices, like freezers, PACS machines, clinical imaging devices, MRIs, and more.

Learn more about how to protect your data on IoT devices by visiting its.weill.cornell.edu/iot.



ITS – myAccount

Overview

Home

Account Management

Activate CWID

Change Password

Forgot Password

Multi-Factor Authentication (MFA)
(requires authentication)

Profile Management

For Individuals
(requires authentication)

Other Services

Personal Password Manager (PPM)
(requires authentication)

Federated ID Registration

Activate CWID

CWID

Verify Eligibility

Please be patient. Once submitted, it can take up to a minute to process your request.

The new myAccount

For users who have been with WCM for a few years, myPassword had been the go-to place to reset your institutional password for any reason. In September 2019, ITS introduced the new myAccount site (identity.weill.cornell.edu) as the official place for password changes and more. myAccount allows users to manage their identity in one place, including CWID activation and directory updates. Since its release, there have been 2,256 password resets using the new system.

Enter your Center-
"seaweed"), in the
status, and if you a
an email address
more than one, each
must verify one of t


Upon verification, v
to this email address
this email in order t
account.

If you do not know
supervisor, manage
CWID by searching

If you have any iss
contact the ITS Ser
Fri. 7 AM - 7 PM), c

FY21 Projects

- Further secure systems using Secure Shell (SSH) protocol by requiring VPN to access them.
- Optimize Amazon Web Services (AWS) security best practices. AWS is used by many researchers to store and compute large amounts of data.
- Introduce additional automation and orchestration for faster response to security alerts.
- Perform a joint readiness continuity assessment with Human Resources. This involves performing a business impact assessment on critical functional areas and publishing a continuity runbook.
- Provide a faster means to connect devices to the WCM network still ensuring they meet minimum security requirements with the implementation of network access control (NAC).
- Consolidate High Risk and Remote Attestation into one annual review.

 **33,000**
Number of MARIA logins in FY20

 **2 mil**
Number of Duo authentications in FY20

 **5.8 mil**
Number of Web Logins in FY20



Appendix:

**POIS Annual
Report**



Weill Cornell Medicine
Physician Organization

2020 Annual Report



**Physician Organization
Information Services**

Contents

3	From the Chief Medical Information Officer
4	POIS Structure and Administration
7	Executive Summary: FY2020
15	Appendix: Project Inventory
16	EHR and Practice Management System
17	System Integration
19	Web Presence and Portal
21	Analytics, Quality and Decision Support
23	Academic Productivity

From the Chief Medical Information Officer



“Our information systems have played a pivotal role in our ability to provide outstanding care for our communities both during the surge of COVID-19 infections and in our “new normal” business operations.”

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 presented many unique challenges. The EpicTogether team supported a very successful enterprise Epic go-live on the Columbia campus. Almost certainly, this was the most complex system implementation in the history of our institutions and the excellent outcome provides a strong foundation for our Weill Cornell campus go-live.

The COVID-19 pandemic obviously presented unprecedented challenges for our institutions. Our information systems have played a pivotal role in our ability to provide outstanding care for our communities both during the surge of COVID-19 infections and in our “new normal” business operations.

In October of 2020, we will support the enterprise Epic go-live for the Weill Cornell campus. This will bring long-awaited integration between ambulatory and acute care. Our goal will be to improve efficiency and to focus on the satisfaction and well-being of our faculty and staff via specialty-based configuration and user-specific system personalization.

Emphasis will remain on improving the 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 2019. 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.

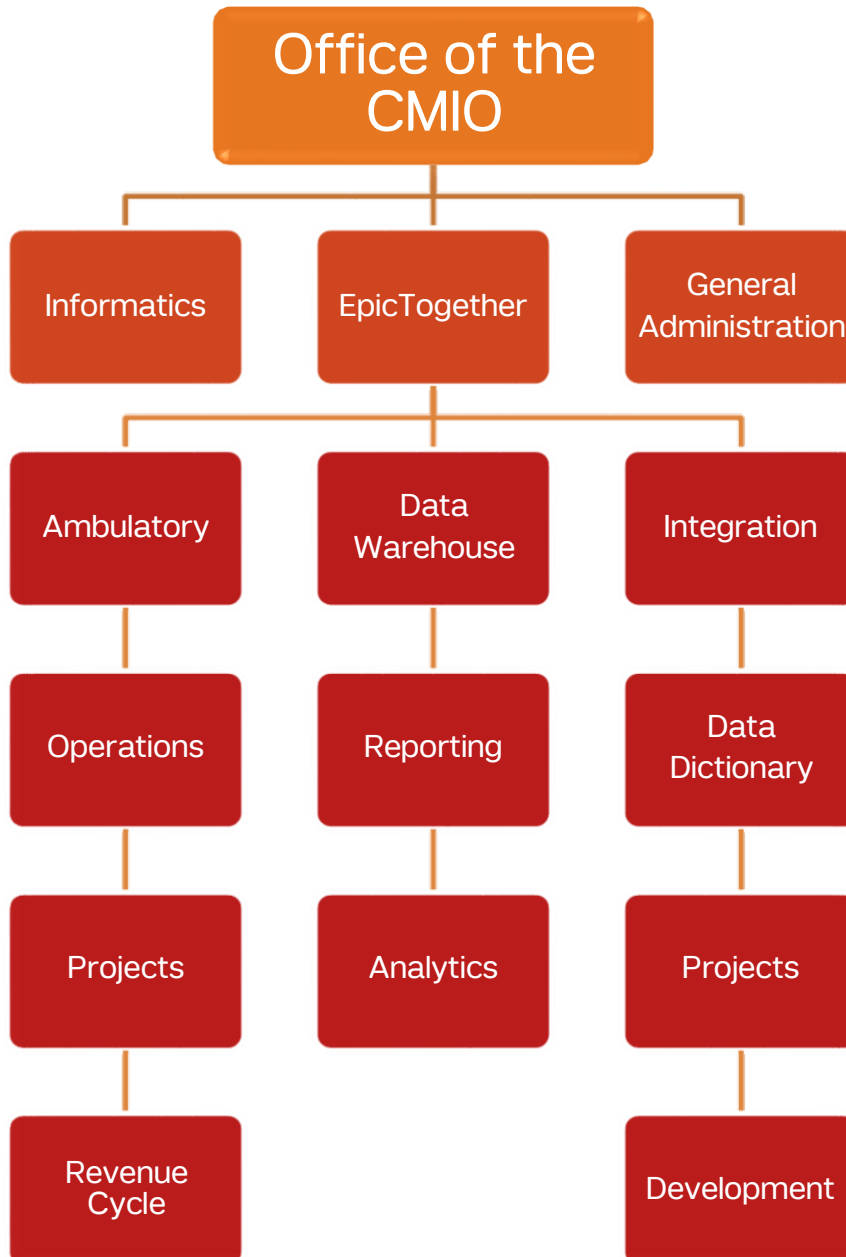
A handwritten signature in black ink that reads "Adam D. Cheriff, MD". The signature is fluid and cursive, with a small arrow-like flourish at the end.

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



Travis Gossey, MD
Associate CMIO



Aurelio Gracia
Senior Director, Enterprise Epic



Mark Israel
Director, Systems Integration



John Parry
Director, Cross Application Support

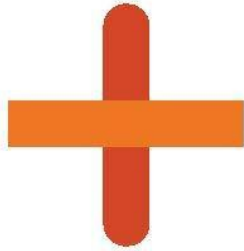


Maggie Qui
Director, Data Warehouse & Analytics



Sameer Malhotra, MD, MA
Medical Director of Informatics

Key Statistical Snapshot: Division Resources



114
Total POIS staff

30
EpicTogether staff

4
Total current vacancies

7
New Hires

14
Departed staff

\$23.8M

Total '19 – '20
allocated budget

\$8.4M

Total revenue and
recoveries (expected)

**Annual staff
attrition rate**

12.2%

23

**Total ITS FTEs funded by
Physician organization**

Executive Summary: FY2020

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.

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

PO Information Services: Goals and Objectives

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 2020 Goal Assessment:

- ✓ Complete Weill Cornell enterprise Epic training curriculum
- ✓ Complete all enterprise Epic procedure master-file changes to support new order-entry and charge capture work-flows
- ✓ Complete all go-live ready assessments for West campus go-live
- ✓ Successful West Campus go-live event with minimal disruption to clinical and revenue cycle operations

Fiscal 2021 Goals:

- 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

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 2019 Goal Assessment:

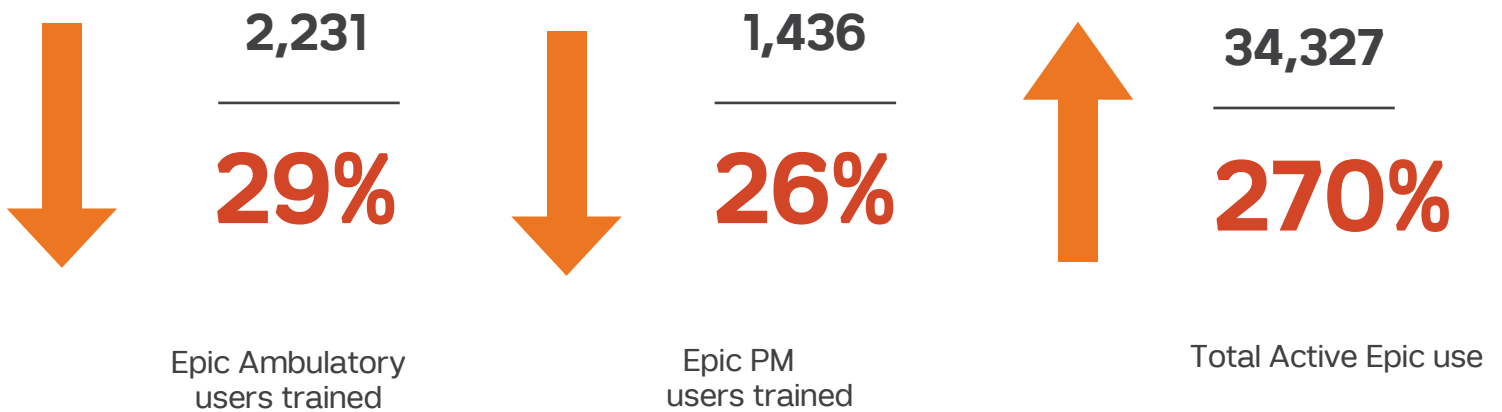
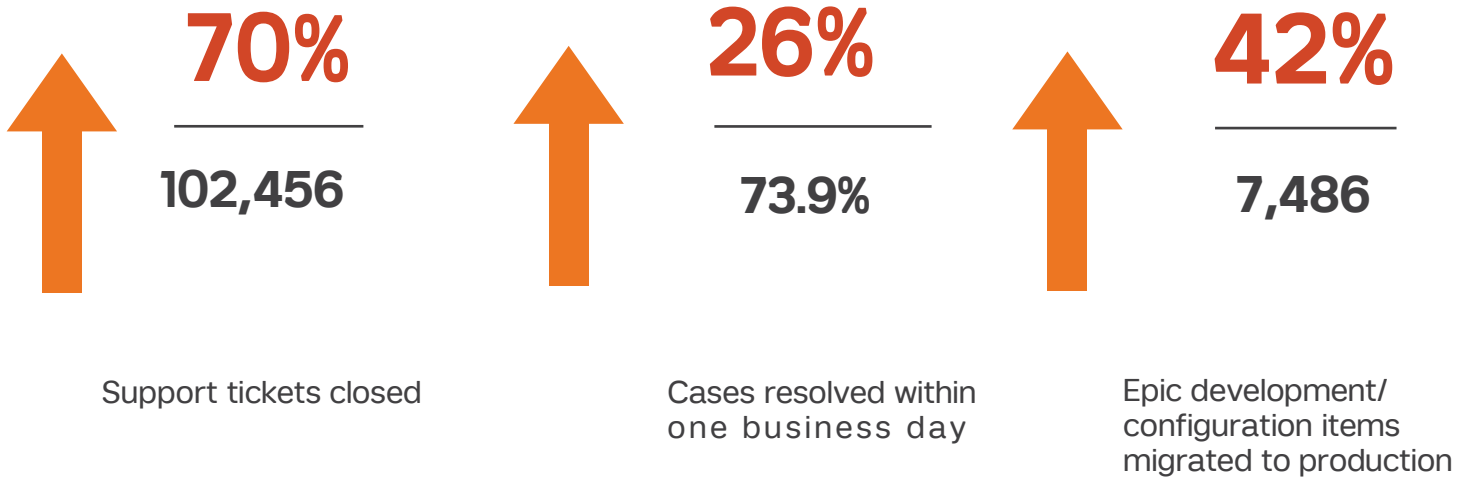
- ✓ Expand e-visits via Weill Cornell Connect for additional clinical conditions and symptoms
- ✓ Expand e-consults for all interested specialties
- ± Deploy kiosk and tablet patient check-in functions (Epic Welcome) in all new Primary Care locations
- ✓ Support process improvement efforts in the central PO Business Office including AR work queue re-design and AR follow-up automation

Fiscal 2020 Goals:

- 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

Key Statistical Snapshot: System Activity

Annual Trend | FY 2020 Figures



Electronic Clinical Transactions

Metric	FY 2020	FY 2019
Prescriptions transmitted electronically:	1,840,856	1,358,363
Electronic pharmacy benefit queries:	3,561,066	2,515,412
Real-time insurance eligibility queries:	2,180,525	2,162,129
Electronic lab orders	3,411,648	1,730,809
Electronic radiology orders	523,663	202,181

PO Information Services: Goals and Objectives

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 2019 Goal Assessment

- ✗ Re-design the clinical services directory within WeillCornell.org
- ± Improve the online-appointment interface to support additional visit-types, including on-demand urgent care tele-access visits
- ✓ Add Find-a-Physician and open scheduling functionality into the WCM-branded mobile application
- ✓ Re-design patient check-in and practice waiting room experience using Epic's Welcome platform*

*Re-designed check-in achieved via Connect Portal

Fiscal 2020 Goals:

- 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

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 2019 Goal Assessment

- ✓ Implement problem-based charting to improve clinical documentation
- ✓ Improve pharmacy formulary decision support and prior authorization work-flows at the point of care
- ✗ Complete full Healthix integration with the enterprise Epic system
- ✓ Implement new tools for care managers that track social determinants of health

Fiscal 2020 Goals:

- 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

Key Statistical Snapshot: Patient Digital Engagement

Google Analytics: weillcornell.org traffic

FY 2020	Metric	FY 2019
4,239,919	Total Sessions	3,706,527
2,404,6	Total Visitors	2,042,29
7,766,447	Total Page Views	7,517,694
11,616	Average Visits Per Day	10,155
5.93%	International Visits	5.23 %

Patient Portal Utilization

Metric	FY 2020	FY 2019
Total patients enrolled in Weill Cornell Connect:	439,422	347,728
Average monthly enrollment of new WCC patients:	11,017	7,272
Total online appointments made:	37,953	60,873
Total appointment e-check-ins	237,631	65,175

Key Statistical Snapshot: Clinical Information Exchange

FY 2020		Document Types	FY 2019	
Received	Sent		Received	Sent
1,297,673	2,238,942	Clinical Summary	815,866	1,338,911
1,604,071	588,616	Continuity of Care Document	274,022	110,100
1,053,162	1,630,260	Encounter Summary	1,195,856	1,393,009
1,293,941	2,253,829	Lab Results	808,412	1,346,985
1,287,157	2,235,376	Other Results	807,042	1,337,713
192,782	921	Referral Summary	6,905	413

Interoperability Exchange Statistics

Standards-based Exchange of Full Patient Records 

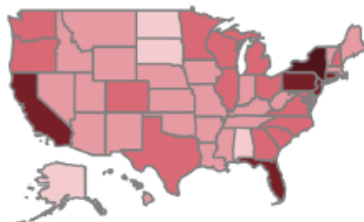
PEERS: All Epic | DATA: 12 months ending March 2020

Patient Records Exchanged

You've exchanged patient records with organizations spanning

50 STATES

Darker shading indicates higher exchange volume



Exchanges in 2020 YTD	817,524	Hospitals Exchanged with	1,966
Exchanges in 2019	2,586,597	EDs Exchanged with	1,703
Since Care Everywhere Go-Live in 2012	7,004,714	Clinics Exchanged with	40,778

PO Information Services: Goals and Objectives

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 2019 Goal Assessment

- ✓ Publish new Tableau-based executive dashboard to manage access, productivity, revenue cycle management, and digital engagement
- ± Pilot new analytic platforms that highlight care variation and opportunity for episodic care optimization
- ✓ Enhance referral intelligence analytic tools
- ✓ Develop new web analytic tools for tracking activity and searches within WCM web sites

Fiscal 2020 Goals:

- 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

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 2019 Goal Assessment

- ✓ Review results of WCM crowd-sourcing survey and develop plans/projects to remediate identified areas of clinician frustration
- ✓ Implement a new (M*Modal) integrated speech-to-text system into Epic
- ✓ Re-design and standardize order-entry functions to create more consistency and reduce data entry
- ✓ Implement specialty-specific clinical questionnaires that can be completed by patients in the portal, eliminating data entry and/or abstraction

Fiscal 2020 Goals:

- 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

PO Information Services: Goals and Objectives

Objective 8*: Support Weill Cornell Medicine and its patient community during the COVID-19 pandemic

Nobody could have anticipated the challenge presented by this year's COVID-19 crisis. The pandemic forced us to radically change our information systems to handle the surge of affected patients. As we have slowly resumed routine and elective care, we have had to continue to support very different business requirements to resume safe and high quality care.

Fiscal 2020 Accomplishments

- ✓ Rapidly deployed systems in new care models, including "Cold and Fever" clinics and expanded intensive care settings
- ✓ Introduced new purpose-built structured documentation tools to care for COVID-19 care and screening to reduce clinician documentation burden and capture discrete clinical data
- ✓ Created new alerts and decision support tools to care for COVID-19 in both the acute and ambulatory settings
- ✓ Deployed mechanism for tracking COVID infection status within the EHR
- ✓ Rapidly expanded virtual visit capabilities to quickly support thousands of daily telehealth visits
- ✓ Created high volume employee and patient testing centers with automation of results release
- ✓ Created automatic COVID registries for patients under suspicion of infection and PCR-confirmed infections
- ✓ Built data marts and data extractions to support COVID-19 dashboards used for operational monitoring and capacity planning, as well as clinical research
- ✓ Implemented remote monitoring tools into EHR to allow patients to monitor ambulatory pulse oximetry
- ✓ Re-engineered the patient pre-visit experience via a new e-check-in process, converting hundreds of paper intake forms into electronic questionnaires
- ✓ Re-configured billing rules within the practice management system to prevent inappropriate billing of COVID-related testing and to capture telephone-based care
- ✓ Supported many updates to institutional web-sites to describe new ambulatory patient care processes and safety protocols and promote various digital health services

*There were no fiscal 2020 year goals identified given the unanticipated nature of the pandemic

Appendix:

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

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.

Enterprise Epic (EpicTogether)

- Complete overhaul of East Campus Bill Area structure across all provider and departments
- System cutover and data extraction plans created
- 2186 Orion system build tasks completed
- 340+ standardized order sets built and tested
- 500+ oncology protocols built and tested
- 7000+ devices deployed for East campus go-live
- 955 charges tested
- 6824 mapped records tested
- 315 application testing scripts completed
- 25 integrated test scripts completed
- 3000+ epic released reports, 1500+ existing WCM reports and 1000+ dashboards were reviewed and/or updated
- 25,000+ appointments and cases converted
- 14,000+ users scheduled to be trained

Ambulatory Epic Operations

A total of **147** projects were completed

45 New Epic Implementations

Project highlights: HSS at NYP Orthopedic Program Expansion to Surgical Sports, Metabolic Bone, Trauma and Tumor Specialties; OnBase Implementation; Epic Storyboard; MModal Fluency Direct; Customer Relationship Module (CRM) for Dermatology, Neurology, Neurosurgery, WCM Breast Program and Weight Management

60 Practice Optimizations

Project highlights: E-consults with Pain Management, Cardiology, Neurology; Endocrinology and Weight Management; Wide Screen Navigator for Primary Care; EPCS Direct DUO Implementation; Charge Automation for Immunization workflows; Facility Administered Medication (FAM) workflows for Dermatology and Neurology; 38 Epic department move or expansion projects (including 4 COVID related clinical practice moves)

30 Practice Operations/Management Projects

Project highlights: Problem-Oriented Charting; Form Filler for CH-205 (Child Health Exam); Cardiology Scheduling Template Optimization; Research Recruitment via MyChart; Consent Collection for Research; Enterprise Epic Break-the-Glass (BTG) Workflow Review; CONNECT Email sign-up messages to patients; COVID Testing Center Departments; Scheduled Phone Visit and MyChart Encounter Workflows

(19) Revenue Cycle Projects

Project highlights: Project highlights: Payer/Plan Conversion; Conversion of Account Workqueues to Epic's Extensible Workqueue Framework (WQF); Co-payment added to the e-Check In process; COVID-19 updates for Telemedicine, Enterprise Epic including Bill Area modifications

7 MACRA/MIPS Related Projects

Project highlights 2019 MACRA attestation

5 Online Scheduling/Portal Projects

Project highlights Breast Multi-Disciplinary Intake Workflow for Video Visits; Interventional Radiology and Pain Management PROMIS e-Check in questionnaires

System Integration and Data Content Management: Accomplishments

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.

130 EpicTogether Projects/Development Enhancements:

- Development/Testing/Deployment of 241 interfaces to support the 1st EpicTogether go-live
- Covid-19 Orders interface to NYP Data warehouse (Jupiter)
 - Updates for Covid-19 to state mandated syndromic response interface
- Patient level interface to Welch Allyn Continuous Vitals deployed during Covid-19
- Tele-health notes from Radiation Oncology (Aria) to Epic
- Post Coding charge interface to 3M Computer Assisted Coding
- Surgical Case Transcription interface from M-Modal to Epic

Interfaces

4 Newly Implemented Clinical Interfaces

- Implemented orders interface with Quest Diagnostics
- Pulmonary Function Test Discrete results enabled for additional 61st and 68th street offices
- Single Sign On Link to iNYP
- Added departments to state required lead result reporting interface

3 Newly Implemented Practice Management Interfaces

- Enabling providers and departments for video-visits/telehealth scheduled in Sorian
- Interface patient level information to new sleep center software (Cadwell)
- Transition to direct integration between ZocDoc and Epic for online scheduling

2 Operational/Development Enhancements

- Created end user facing integration project request on NYP's ServiceNow instance
 - Corepoint Integration Engine Archive logs migrated to AWS storage
-

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 3,207 new procedures; committed 3,573 new local mappings
 - Added 24,829 new result components; committed 6,213 LOINC assignments
 - Maintained most recent controlled vocabularies – LOINC, SNOMED, CPT/HCPSC/CDT/CVX/MVX, RXNORM, NDC, with response to COVID-19
- Added new clinical data sources
 - IGT Lab (Immogenetics and Transplantation Center)
 - Spectra Laboratories
 - Presidio (Transplant)
 - MGC Diagnostics
- Expanded gene marker disease-based classification in results hierarchy, covering ~1,5905 gene/LOINC concepts
- Developed model to manage Lab dynamics relevant to Genomic initiatives: Genetic tests/results and Genomic indicators
- Expanded results hierarchy to 263,593 nodes: 72,246 conceptual nodes, covering 62,011 LOINC nodes, and 127,274 local result components, 51,936 local procedures
- Played a central role for clinical mappings and an assortment of clinical content analyses for Enterprise builds/Go-Live and COVID-19 response
- Developed model and automation routines for management of clinical orderables for Enterprise Epic
- Consolidated cross-campus compendium mappings to include NYP Columbia, Lower Manhattan and Westchester sites
- Maintained and supported tripartite Results Review displays for various disciplines/domains

Epic Master File Management

- Performed various aspects of master file configuration, maintenance, and modeling for Epic Enterprise builds/Go-Live
- Maintained reference terminologies (CPT/HCPSC/CCD/ICD/CVX/MVX/SNOMED / Medispan) critical to Epic functionalities and decision support
- Completed Order Composer optimization project
- Completed immunization project for automatic administration charge
- Built and configured master file entries for:
 - VFC and Interface Program projects to improve provider reimbursement
 - Phillips remote data monitoring
 - RVU reporting for pro-fee billing
- Performed order and indication builds for GI orderable optimization project

Provider Management and Credentialing

- Added 74,037 new provider records into the Master Provider Index
- 22,716 new providers exported and incorporated into Epic
- Developed an automated processes to maintain Enterprise provider PAR, Non-PAR, PIN, Insurance Network, and Claims Hold data into Epic
- Enhanced provider validation feature based on NPI, License, and CWID to improve provider onboarding into credentialing system
- Developed interoperability with Phynd database

Data Quality

- 3002 ServiceNow cases closed by the Data Quality Team

Web Presence and Portal: Accomplishments

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. Hundreds of thousands of 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

- Expanded the web site to support the COVID-19 effort to keep our patients informed about the virus and how our business adapted and responded to continue to provide care throughout the pandemic
- Additional COVID-19 response included:
 - Changes to online scheduling for patients and eventual, temporary deactivation of online scheduling
 - Triageing Video Visit connection issues, responding to patient technical complaints, collaborating with Epic to patch the WCM app to patch Video Visit performance
 - Alerting patients throughout the website and mobile app of changes to our practice's operations and patient experience
 - Updating the homepage to support a campaign which housed a series of callouts for virus information and educational materials
 - Published a new section titled "Digital Health Services" that focused on all of the online ways patients can interact with their WCM provider
 - Updated the chatbot to provide answers based on new COVID-19 FAQs and information on the virus pulled directly from the Center for Disease Control website
- Redesigned our homepage to support marketing focus on any active campaign(s) and highlight the WCM PO's performance and numbers, at-a-glance
- Completed a full audit and remediation to ensure that all content on the website meets [Cornell University's web accessibility policy](#) to ensure the website provides equal access to all patients, especially those with disabilities; the website is currently at 95% compliance (previously at 88%)
- Launched the [Breast Cancer Video Concierge](#) service that connects patients with a breast cancer nurse to schedule you with the right specialist(s)
- Enhanced online scheduling by:
 - Supporting a Reason for Visit selection to clarify the specific visit types available (sick/problem visit or well visit) to patients
 - Providing online scheduling support through the chat bot
- Designed online scheduling support for Video Visits, scheduled to launch in August 2020
- Built reporting dashboard for analytics insights on google search activity, online scheduling performance, Find A Physician search usage, and overall traffic to various landing pages
- Replaced the Find A Physician taxonomy with a new terminology service from Healthwise
- Supported the tri-institutional Connect rebranding initiative by posting notifications of upcoming changes on both the website and mobile app, while updating the new branding

Web Content Production

- 266 new physician profiles created
- 97 patient care events posted
- 68 news articles posted
- 23 new practice locations published
- 22 new conditions and treatment pages published
- 19 new program sections published
 - Adolescent & Young Adult (AYA) Lymphoma
 - Bladder Cancer
 - COVID-19 Recovery Clinic
 - Emergency Medicine Virtual Care
 - Emergency Medicine Virtual Care
 - Family Planning
 - Fibroids
 - General Surgery and Hernia
 - GI Metabolic & Bariatric Surgery
 - Gynecologic Oncology
 - Interventional Radiology
 - Liver Cancer & Tumor
 - Lung Cancer & Thoracic Oncology
 - Obstetric Cardiology
 - Post Part Pelvic Floor
 - Prenatal Education
 - Stop the Bleed
 - Substance Use & Stigma of Addiction
 - Surgical Treatment of Obesity
- One site consolidation into WeillCornell.org:
 - Cornell Weight Loss Surgery (WLS)

Mobile App Development

- Built links to mobile Find A Physician search and provider profile functionality for patients not logged into the WCM app
- Built in checks that would prompt patients if their app version is out of date and needed to be upgraded via the app store

Weill Cornell Connect Patient Portal

- Completely rebranded Connect for tri-institutional purposes
- Overhauled Connect sign up to allow texting/emailing of access codes directly to patients after identity verification
- Added the ability for providers to share scanned documents and letters written in Epic to patients via the portal
- Started research notifications for patients who are eligible for clinical trials if they meet the inclusion criteria and they've opted in to being contacted

Analytics, Quality and Decision Support: Accomplishments

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.

Enterprise Epic (EpicTogether)

- Go live for west campus with ~3,000 enterprise reports/dashboards
- Update 1,500 existing operational reports
- Implemented a new Tri-Institutional Report Request Process using Service Now
- Successfully implemented ~100 extracts for west campus go-live
- Developed 100+ Urgent COVID Reports
- Finalized downstream Epic data transfer process to manage daily ETL for independent WCM, Columbia, and NYP DataMarts
- Standardized quality & regulatory reporting for inpatient campuses
- Collected baseline performance metrics for the west campus
- Trained ~1000 users as the Cogito Power Users
- Implemented future state EpicTogether Analytics Team

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
- Extracted Epic data for ACO quality metric performance attestation
- Created 4 COVID-19 related registries
- Created COVID-19 Datamart in Epic

Research Reporting

- Delivered 12 data extracts/reports to support clinical research projects

Business Intelligence Tools: Dashboards and Reports

Clinical Care Delivery:

- Implemented WCM executive dashboard on Tableau, which covers Patient Characteristics, Access, Practice Efficiency, Productivity, Revenue Cycle, Finance & Digital Health
- Setup order tracking / evaluation processes to monitor enterprise order-entry configuration changes
- Created several self-service medication recall & Bulk communication reports
- Tracked usage and reimbursement related to telehealth/telemedicine/video visits
- Created 155 additional custom departmental/ divisional clinical and practice operations reports
- Flagged payer attributed patients and providers within EHR for CMS and major commercial payers
- Import Mammogram, Colorectal, Retinal eye exam, Flu vaccine & A1C claims data to EHR to satisfy gaps in preventative care

Practice Management Reporting:

- Developed CIGNA Non Par Providers report
- Developed report of UHC high dollar medical necessity denials
- Developed COVID Redeployed providers credit report
- Completed staff and project transition from POFS to POIS reporting team

Clinical Decision Support (CDS) and Population Management Tools

- As part of EpicTogether, optimized decision support tools for a variety of quality and safety measures including ones to facilitate patient care pertaining to COVID-19
- In collaboration with the Department of Radiology, created appropriateness use criteria for Head, Shoulder, hip and neck imaging that will be deployed internally for imaging decision support as well as made publicly available for use by Medical Centers across the nation.
- Provided access for Care Management team to PCP schedules
- Oversaw design and deployment of dozens of specialty intake and screening questionnaires
- Created outreach work-flows in Connect for smokers who had not yet been counseled on cessation

Academic Productivity: Accomplishments

At Weill Cornell, we do not make a distinction between information technology and informatics. Three 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)
- aCMIO serves on SOGI and Mobile Apps "Brain Trusts" for Epic as well as external Physicians' Advisory Council board
- Weill Cornell is one of four organizations in the country selected for the Sync4Genes Phase II Pilot study sponsored the National Institute of Health (NIH) and Office of the National Coordinator (ONC)
- Medical Director is a contributor and voting member of the HI7 organizations FHIR Genomics subgroup
- Medical Director is the Co-lead for Weill Cornell Medicine's QPLE (Qualified Provider Led Entity), designated to implement Appropriateness use Criteria for advanced imaging decisions
- Medical Director serves on the steering board for Genetics and Genomics Integration and development for Epic Systems Corporation
- Medical Director serves as Jury & Mentor for Business France, Next healthcare entrepreneurship program

2. POIS Co-authorships and Presentations

- Sync4Gene II Final report: Published by the ONC describes WCM's efforts towards furthering the development and scaling of standards for sharing genomic data for healthcare and research. HealthIT.gov/topic/sync-genes
- Wright A et al [Malhotra S co-author]. Structured override reasons for drug-drug interaction alerts in electronic health records. J Am Med Inform Assoc. 2019 Oct 1;26(10):934-942. doi: 10.1093/jamia/ocz033. PMID: 31329891

- Weiner, Mark (Cheriff A co-author) Overcoming Bias in Length of Stay Calculation During an Emerging Pandemic. Manuscript under Review by Medical Care
- POIS faculty co-authored book chapter on Ambulatory Systems for *Medical Informatics: An Executive Primer* (Manuscript under review)

3. Ongoing Informatics

Faculty Research Projects

- Key Personnel for NYC Consortium of Precision Medicine Initiative: All of US
- Optimization of Order Sets in the Electronic Health Record System (In collaboration with Dept. Healthcare Policy and Research)
- Imaging Decision Support research-multi- institutional analysis of clinician imaging ordering behavior associated with decision support systems

4. Education/Teaching

- Faculty and staff participated in Weill Cornell HIT Certificate Program and Masters program curriculum
- Our faculty members are mentoring students for Masters level theses on clinical informatics projects
- One of our faculty members is the Course Director for the "Clinical Informatics" course that is part of the curriculum of the Masters in Health Informatics program at Weill Cornell Medicine
- One of our faculty members is the Course Director for the "Health Informatics" course that is part of the Executive MBA program curriculum at Johnson's School of Management
- One of our faculty members is the Course Director for Health Tech, Data, and Systems, for Technion-Cornell Dual Master's Degree Program



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