



The Technology Challenges of COVID-19 & Lessons Learned: Steward Health Care System



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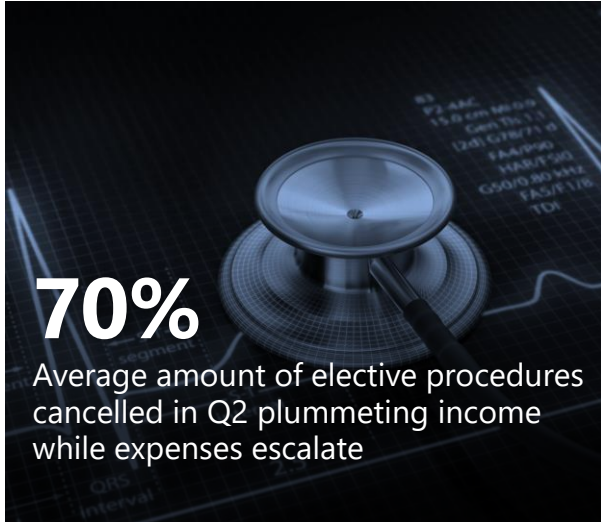


Enabling Healthcare with Virtual Health

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Healthcare in transition

COVID-19 disruption and challenges



70%
Average amount of elective procedures cancelled in Q2 plummeting income while expenses escalate



20-75%
Provider layoffs amid hospital & health system-wide disruption, layoffs, reassignments, and pay cuts

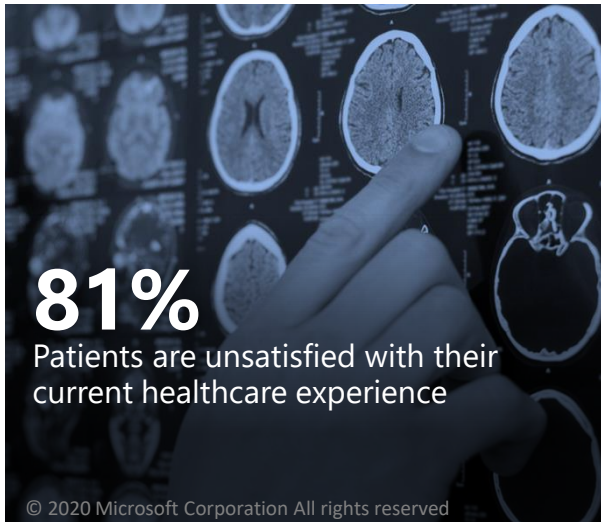


↓ Margins
And low cash flow forcing partnerships and M&A to survive with depleted reserves



Crisis  **Reinvent**
Role of healthcare leaders to move from managing the crisis to reinvent a successful future

Ongoing Healthcare system impacts



81%
Patients are unsatisfied with their current healthcare experience



\$6.2B
Loss per year to data breaches, amid growing pressures in security and compliance




41%
Providers say data and analytics challenges is preventing them from succeeding in value-based care models



14 million
By 2030, providers will suffer from a projected shortage of healthcare workers worldwide

Virtual Health

connects clinicians, patients, families, care teams and health professionals to provide health services, promote professional collaboration, support self-management, and coordinate care across the care continuum



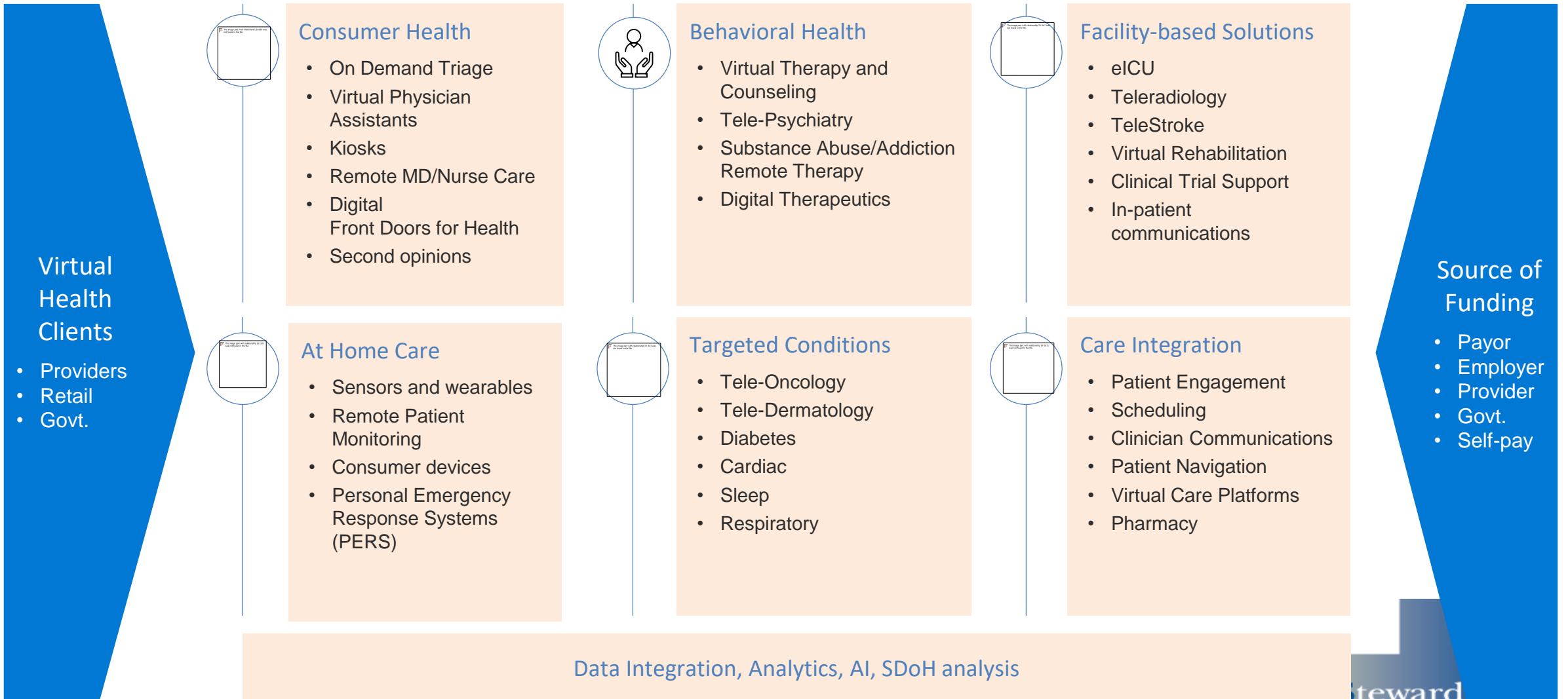
"I think it's fair to say that the advent of telehealth has been just completely accelerated, that it's taken this crisis [COVID-19] to push us to a new frontier, but there's absolutely no going back...(it's) the most clear example of untapped innovation."

— Seema Verma, Administrator
Centers for Medicare and Medicaid Services

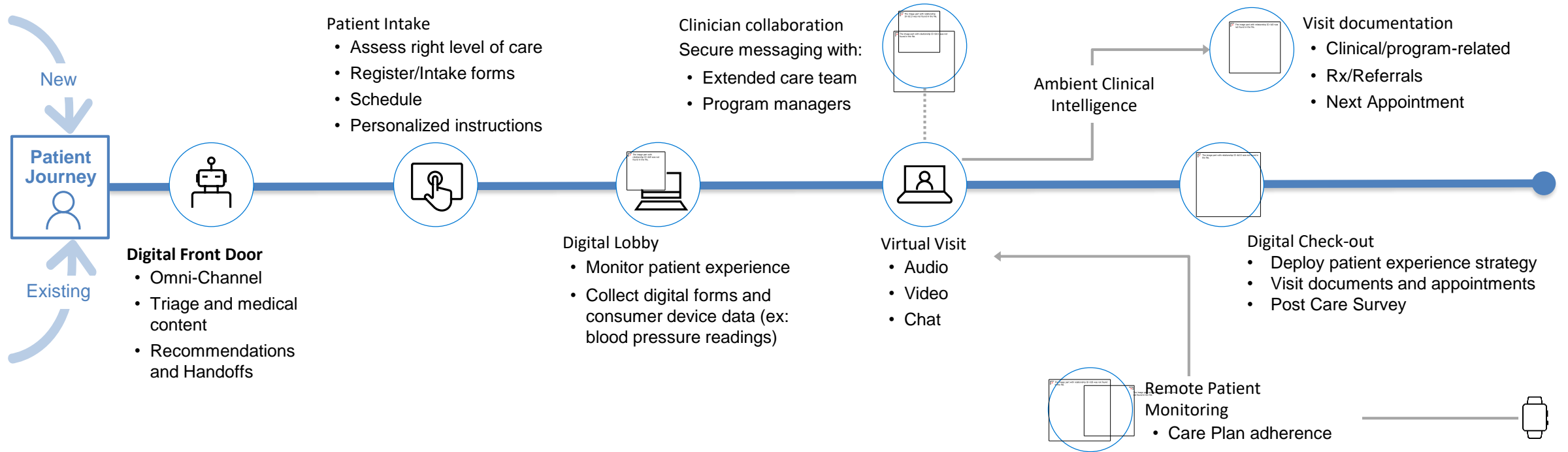
The Editorial Board, "The Doctor Will Zoom You Now", Wall St Journal , April 26, 2020

What does virtual health mean to your organization?

Virtual Health Delivery Methods



Health organizations want a more connected, data-driven and seamless virtual health experience for both patients and clinicians



Foundational

Foundational

Clinical and Operational Analytics Intelligence and insights
CRM – a unified platform for data, people and processes
Interoperability FHIR
Your existing systems and data sources – EHR Patient preferences External data Remote Patient Monitoring data Social determinants
Security Identity Management (enterprise and consumer)
Equitable access for isolated and vulnerable communities

Better Care with Teams



Unified and Integrated System of Engagement



Improve Quality & Care Outcomes



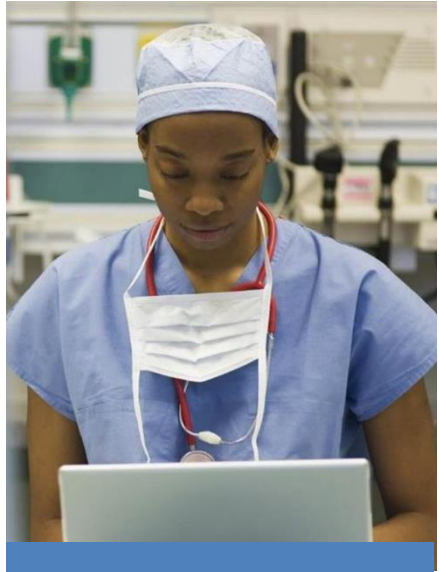
Optimize patient care management



Share knowledge across research teams



Support remote care providers



Simplify IT Management



Responding to Challenge of COVID-19

Internal – Employee/Contractor Facing

Virtual and Remote Working

Safety & Communications

FAQ & Self-Service

- **Teams & Meetings** – enable virtual work and collaboration from anywhere
- **Company Communicator** – BOT to reach every employee in Teams - distributed comms.
- **Crisis Mgmt. PowerApp** – App to enable information, fill out forms, continue virtual activities
- **SPO Template** – Provide news & updates, enable access to key capabilities within your organization

External – Public/Patient Facing

Inbound Requests

Scheduled Consults



- Ad-Hoc, On Demand
- Large Volume
- Prioritize Cases

- Follow up
- Quarantines
- Clinic Hours

Provider/Hospital/Health System



Future Trends

- Greater consumer demand – expanding direct to consumer models
- Embracing ‘digital first’ care model
- More services, wider reach
- Growth of telehealth to adjacent industries
- Greater AI integration
- Remote patient monitoring
- Hospital to Home
- Increased due diligence for cyber security and data diligence
- Market consolidation

Steward Health Care Systems Covid-19

Dr. Kelly Hoye-Chief Medical Information Officer
Mary Buonanno-Chief Technology Officer



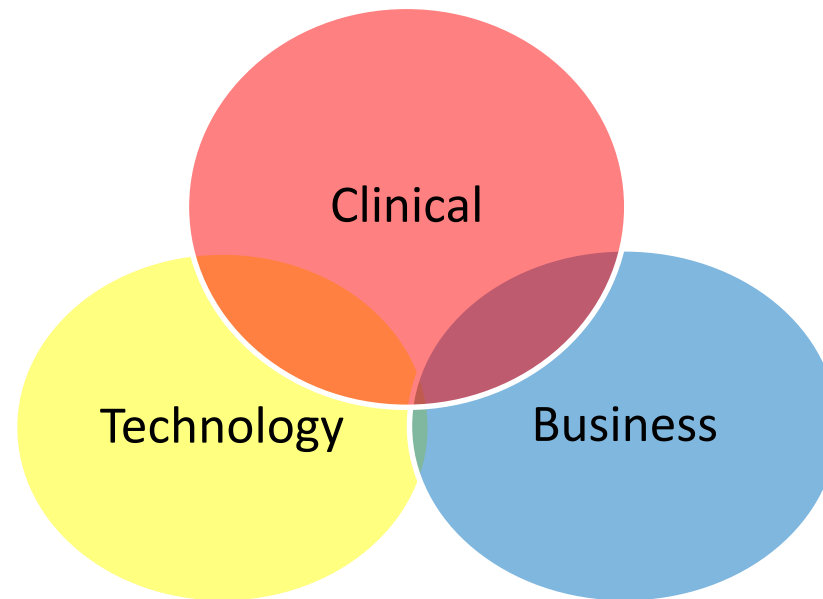
Who we are

- Physician owned organization
- We have 35 community hospitals across nine states and the country of Malta serving over 800 communities, with more than 42,000 employees
- Steward Medical Group, our employed physician group, provides more than 6 million patient encounters per year.
- Steward's Health Care Network is made up of physicians who care for approximately 2.2 million patients annually and provides more than 12 million patient encounters per year.
- With a passionate focus on high-quality care, innovative services, and community commitment—a mission to keep patients healthy and out of the hospital—Steward is not only transforming health care in the cities and towns where it operates but is also building a new industry model for the rest of the country.



Covid-19

- Covid-19 has had an unparalleled impact on the world and healthcare
- Steward responded on several fronts
 - Clinical
 - Business
 - Technology



March-April

- By the end of March, Massachusetts was facing a potentially catastrophic surge in Covid-19 illness
 - Designated some of our hospitals as Covid-19 centers
 - Added surge capacity for all levels of care at many of our hospitals
 - Expansion of critical care beds required need for additional monitoring
 - Worked with Axis Communications on the solution
 - Went from idea, to pilot to production in 7 days
 - Deployed additional WOW's to sites
 - Added 60 WOW's running Teams at Massachusetts hospitals
- Given our national footprint we were able to respond quickly to clinical staffing
 - Nurses from Florida and Arizona came to help out in Mass during our surge
 - Due to Steward being a National system, they already knew the technology and workflow standards
- Established processes in critical care and IT prepared Steward for clinical responses to rapid changes in policy and protocols
 - As the science evolved, changes were made in the EHR to support emerging recommendations as quickly as 72 hours across three or more platforms.

Lessons learned and shared

- Once we made clinical, business or technology changes in Massachusetts we had a repeatable process for all other Steward hospitals
 - Repeatable process to send onsite staff home as Covid-19 escalated in other areas
 - New onboarding processes for traveling staff/surge staff
 - Clinical staff that came to NE from Florida and Arizona gained clinical experience that helped them deal with the surge in Florida and Arizona
 - Evaluated hardware requirements and needs for a remote work environment
 - Deployed additional WOW's across the system in anticipation of other surge areas
- New projects escalated due to change in business
 - New desktop model relying more on cloud technologies
 - Onboarding process review due to many users working remotely and not near any hospital sites
 - New Security requirements for a remote workforce

Business

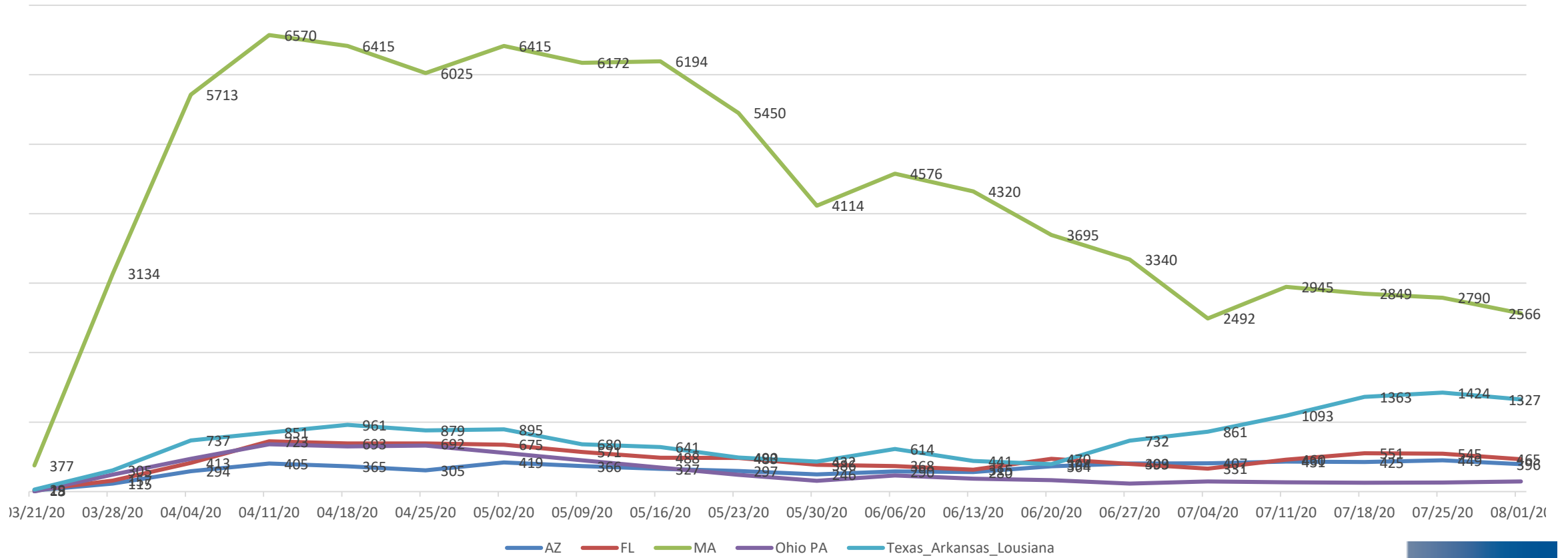
- We had an onslaught of requests to send business staff home
- We sent home approximately 2500 users in the first 2 weeks
 - CBO, Patient Access, HIM, Quality Team, Help Desk, IT, Radiology
 - 95% of the users didn't typically work from home (desktops, not laptops)
 - Cameras were not traditionally used
 - High demand to quickly procure cameras, which was and continues to be a challenge
 - Traditional desktop design required users be on network to logon we needed to design a new solution (hardware and software)
 - Had PC's in stock for a refresh project, diverted supply to handle work from home demands
 - Wireless PC's, Dual monitors
- VPN capacity had to be increased to handle additional demand
 - Had older VPN technology that couldn't handle the capacity of new users
 - Implemented new Citrix Gateway VPN solution
 - Challenge was still user had to be on network to install
 - Currently working on options to remediate challenge

Telemedicine implementation-hospitals and physician practices

- Steward deployed Microsoft Teams to respond to the sudden and explosive need for telemedicine
 - Initially deployed for use with physicians and patients
 - Implementation expanded to use for inpatient physician consult
 - Both within a hospital and across the country
 - Safety of staff
 - Reduced need for PPE
 - Ability for staff to work through quarantine
 - Initial rollout took 10 days from implementation to training and deployment
 - Twice daily leadership calls
 - Focused effort across disciplines
 - COVID related projects took priority
 - Devices
 - Challenge getting cameras/speakers due to influx of people working from home
 - Tried several options-including baby monitors
 - Training
 - Since most folks weren't used to video other than video phones, needed to ensure staff were up to speed quickly, while they tried to navigate a pandemic
 - Needed to be very careful to not overwhelm an already stressed out staff

SMG visits

Appointments Seen by Market



View from one Physician Practice

- Small private family medicine practice
 - No staff forced to furlough
 - Two opted to stay home with children
 - Productivity
 - Impacted, of course
 - Near normal within eight weeks
 - Patient care
 - Some surgeries delayed
 - Continue work on catching up
 - Challenges
 - CARES and PPP kept things going
 - PPE
 - Testing
 - Separate houses
 - Deaths
 - Recommendations



Telemedicine implementation-Observations

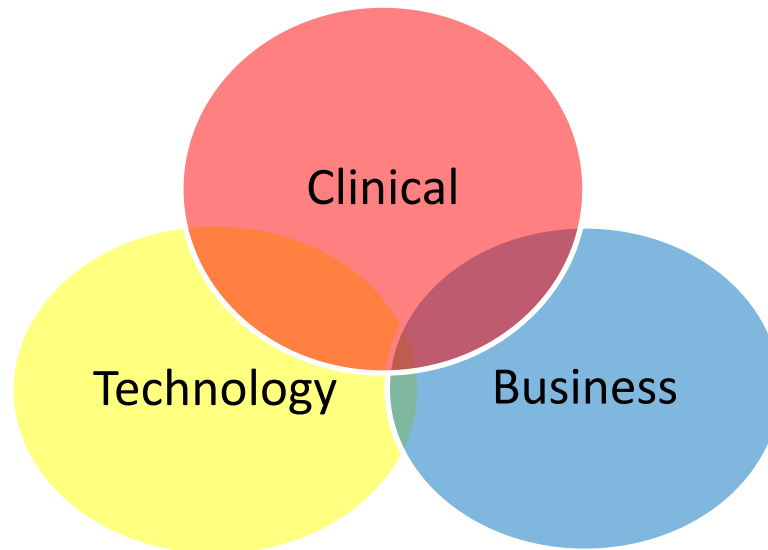
- Rapid deployment wouldn't have been possible 2 years ago
 - Limited to no adoption for video
 - Cameras were not part of the standard device
 - Technology was here and ready for deployment which sped up adoption
- Flexibility/relaxation of Federal, State rules encouraged adoption
 - Payment
 - Permissions
- Future
 - What happens with the regulations
 - TEAMS not the long term solution for patient interaction outside the hospital
 - Need to download the application
 - Usually outside of the network

Telemedicine implementation-Observations

- While the initial implementation was expected to be a best worst option to maintain patient care, we perhaps should have been able to predict some of the benefits.
 - Pre COVID focus in telemedicine had been convenience over continuity for acute needs
 - In contrast, the use of video communication has allowed face to face interaction otherwise limited by the situation
- The benefit of face to face, social interaction can not be underestimated.
 - For our hospitalized patients, every person who comes in the room in full PPE is a reminder of the situation and a dehumanizing experience
 - For our at-risk patients isolated at home, social interaction in a safe environment improves health and wellness in addition to the medical care provided
- Telemedicine has similarities to the time honored home visit as it provides a perspective on the person's life not possible in the office setting
- Telemedicine should be seen as a tool with its own benefits, not as a lesser way to provide care
 - Some patients will prefer telehealth visits when appropriate
 - Some situations will be best managed with telehealth

Conclusion

- It took a partnership between clinical leadership and IT to allow effective response to Covid-19
- Quick and innovative solutions were imperative as things changed daily
- Strong individuals and leadership allowed for better and lifesaving patient care
- It takes a village to make patient care better





Q&A

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