



ACP

PRISMA
HEALTH®

THE FUTURE OF VIRTUAL HEALTH

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CHIEF DIGITAL OFFICER & VICE CHAIR FOR CLINICAL AFFAIRS

Prisma Health

18 Hospitals

30K Team members

330 Physician practice sites

S.C.'s Largest health employer

45% of S.C. within 15 minutes of us



2,984 licensed beds



201 NICU bassinets



2 Level 1 Trauma Centers



2 Comprehensive Stroke Centers



2 affiliated medical schools



2 affiliated nursing schools



50 residency & fellowship programs



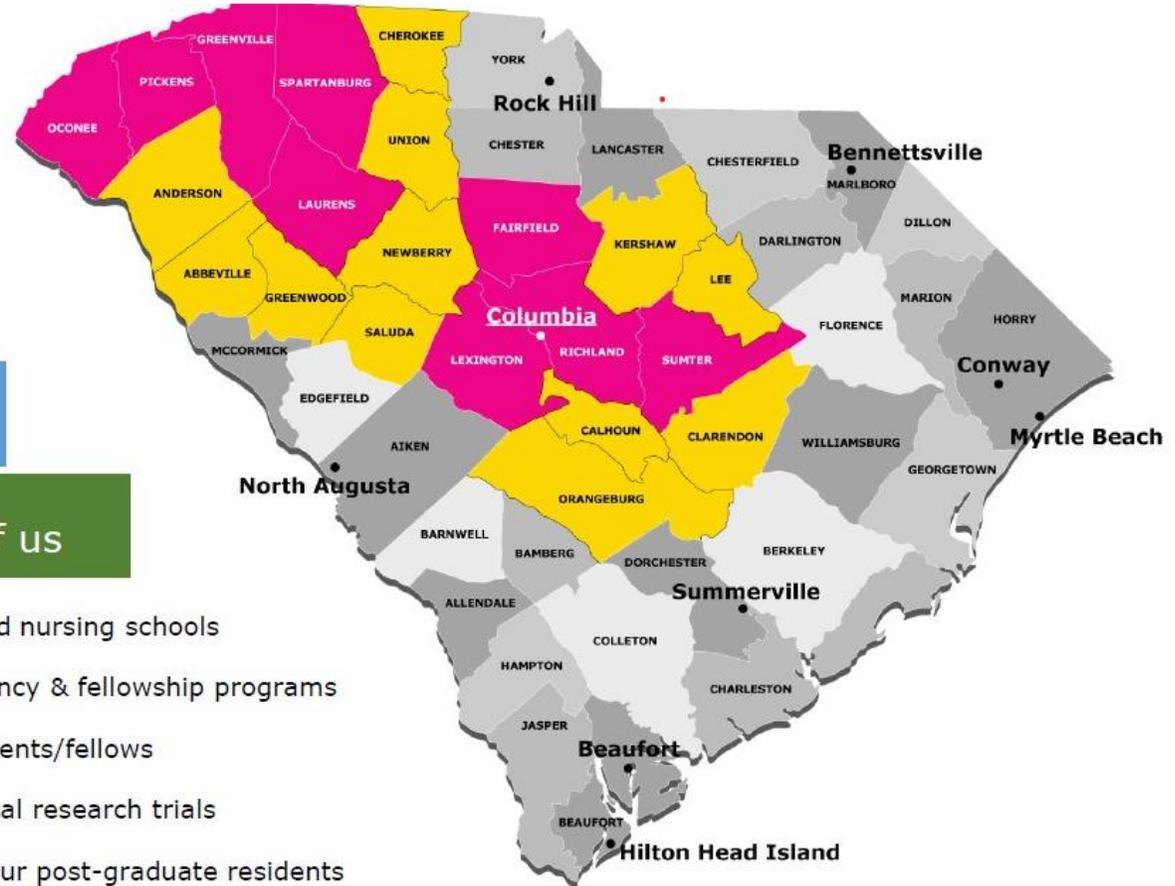
560 residents/fellows



800 clinical research trials

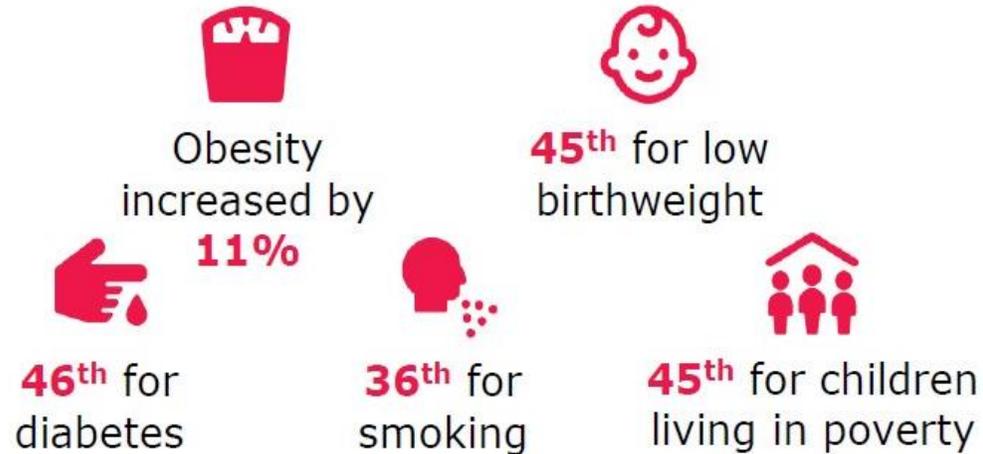


70% of our post-graduate residents stay in S.C. to practice

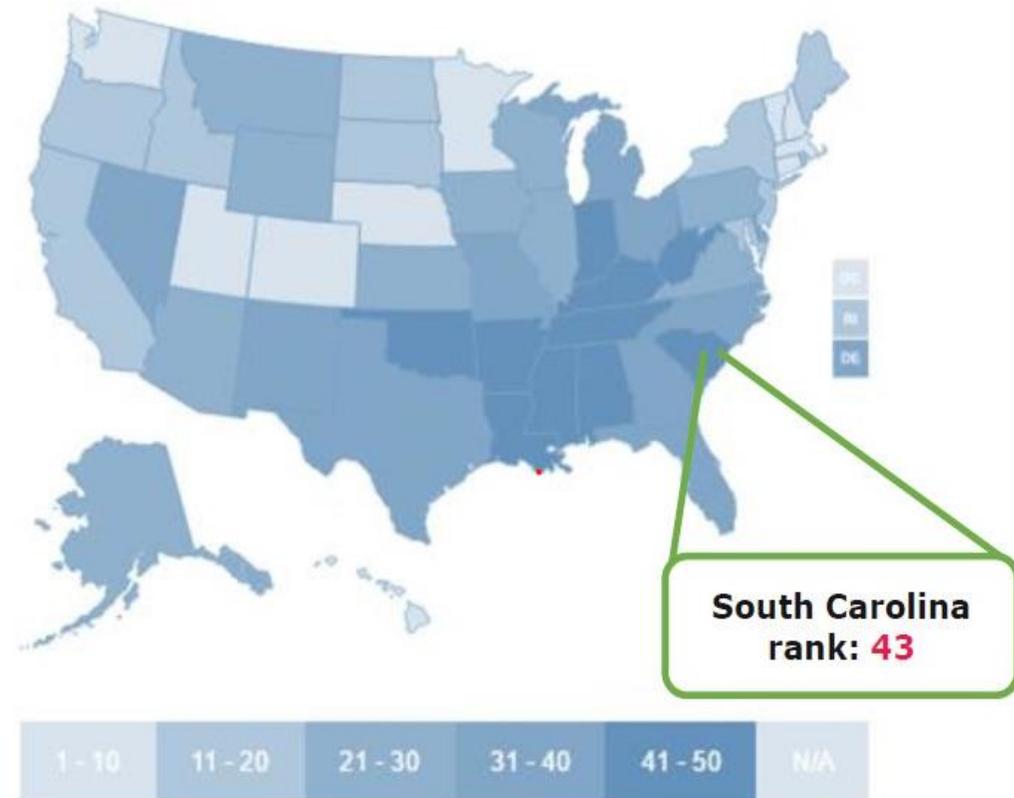


The Big Opportunity: Transform Healthcare in SC

Challenges to health status in South Carolina



Consumers in Upstate and Midlands spend **\$19 Billion*** per year on health care

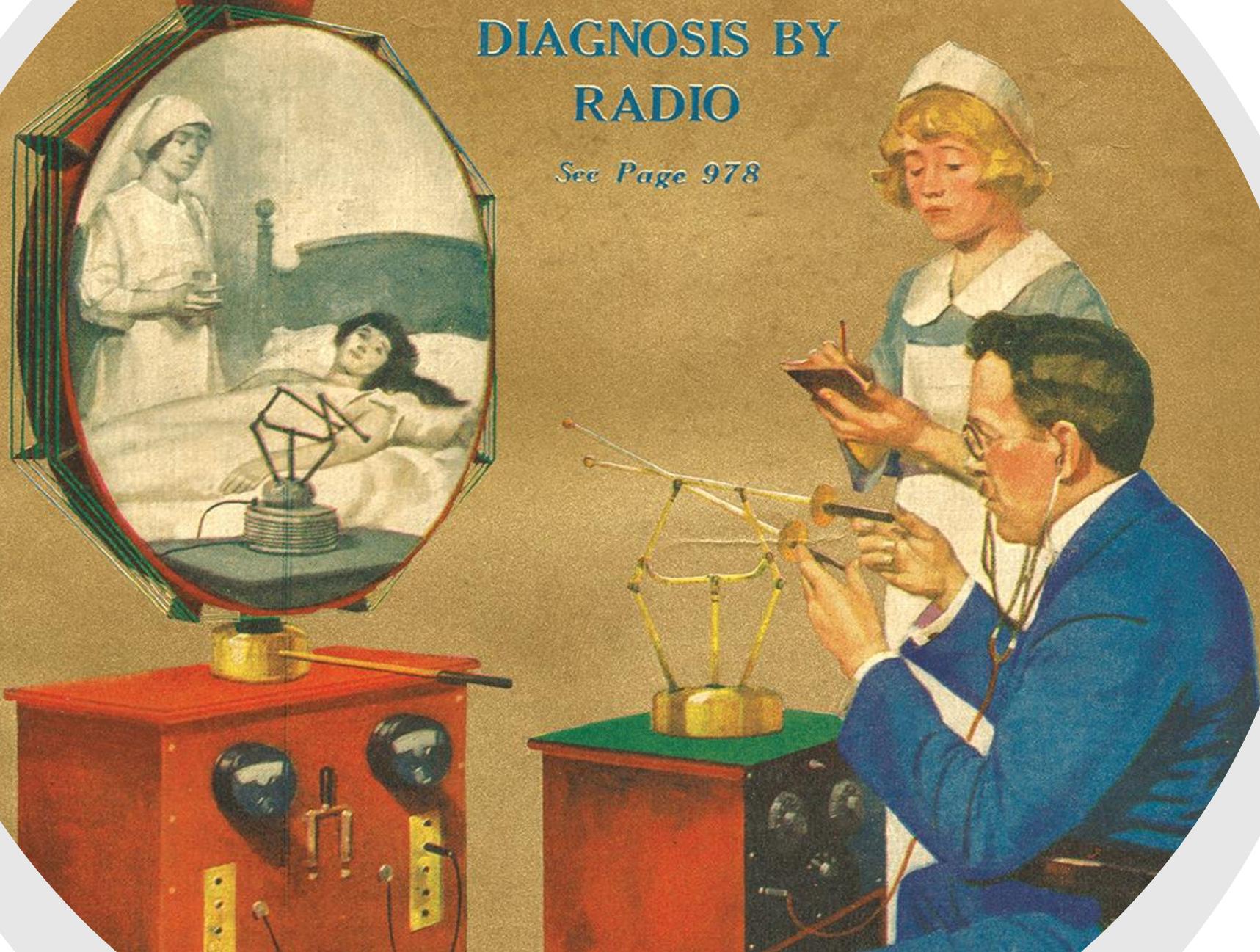


Updated Numbers based on America's Health Ranking 2018 Annual Report.

*[Kaiser Family Foundation](#) estimate of SC per capita spend on health care is \$7,311. There are 2.6 million people in the Upstate and Midlands of SC (51% of the state's population).

DIAGNOSIS BY RADIO

See Page 978



Science and Invention Magazine, February 1925



Healthcare Maturity Model

- *The evolution of Healthcare will NOT occur overnight !!*

- Healthcare 1.0

Volume-based reimbursement. Paper RULES. Manual auditing. Handwritten notes >90%. Pagers. House call. Verbal orders >50%. Doctors are abundant, APP's are rare. Lack of diversity in the profession. Closed one-way system. No resident work hour limits. Reimbursements are high. High cost of care centers grow.

- Healthcare 2.0

Digital transformation begins. Building infrastructure. EHRs take over. CPOE & documentation workflow disruption. Population growth, access declines. Lack of docs. APPs rise. Decreasing reimbursement. Transition to Value based care. ACOs grow. IT becomes the biggest and quickest growing expenditure.
HIE 1.0

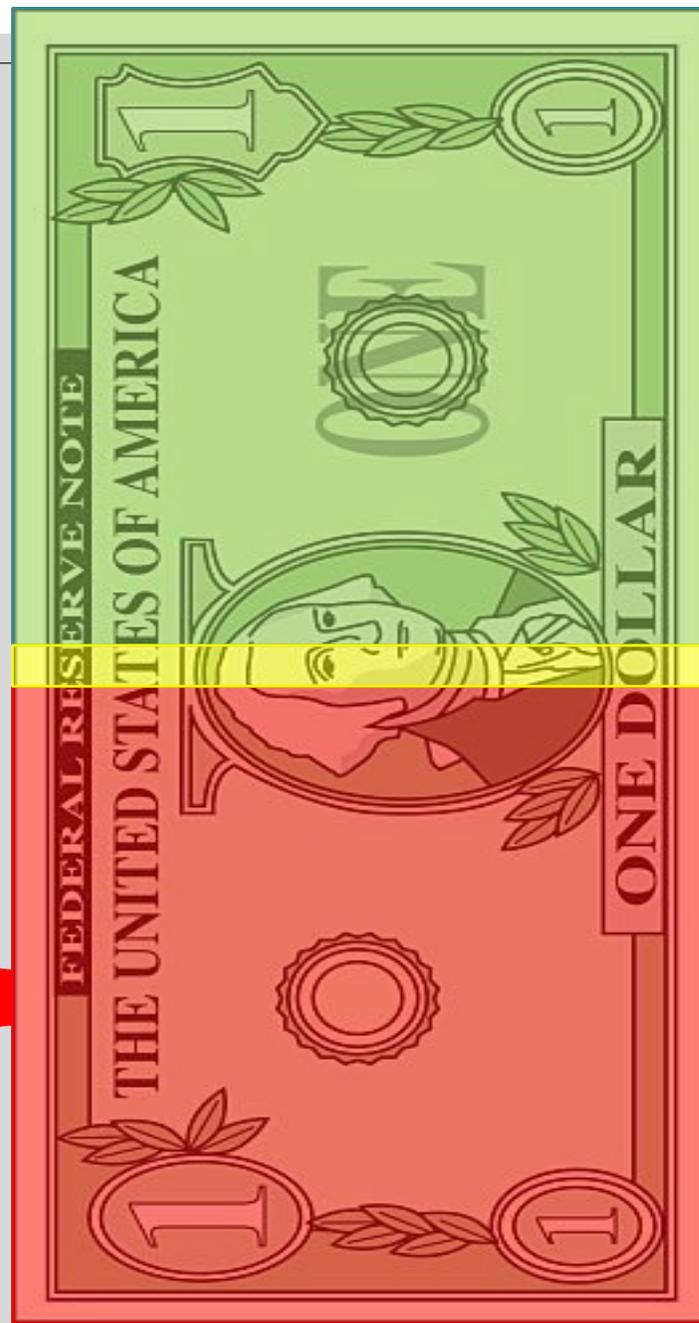
- Healthcare 3.0

Consumer focused. Consolidated healthcare systems with integrated next-gen EHRs. Open HIE. Patient facing apps. 100% Value Based Care, and Virtual Health >50% of visits. Hospital shrink, ambulatory care RULES. Automated clinical pathways. APP's scope of practice increases. Data/AI for predictive modeling and precision medicine. RPA!!

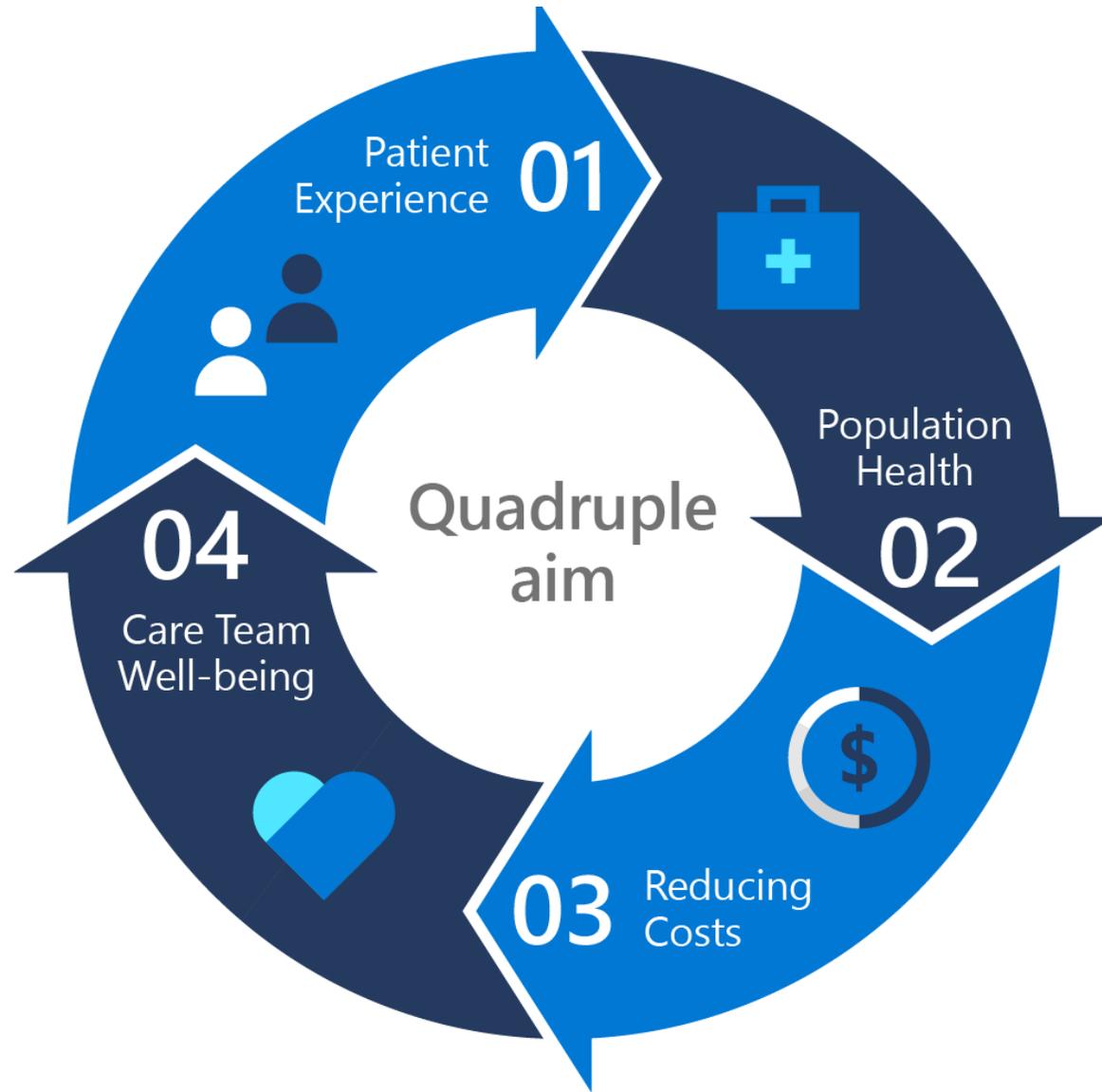
The Anatomy of a Healthcare Dollar

Ave. 2-2.5% Margin

- Staffing
- Supply Chain
- Overhead: Office space/leases
- No shows/Volume
- Reduced reimbursement/Payor Mix



- Procedures
- CCM
- HCC/AWV
- Quality/ Care Gaps
- Volume
- Coding
- HAI's/HCAPs
- Shared Risk



Healthcare by the numbers

- 2015 : 990 Million Encounters
 - 61% had one or more chronic conditions
 - 125.7 Million hospital visits
- 51% were in Primary Care
 - 204,000 PCPs
 - 37% Solo practices
- Healthcare expenditure in U.S. \$3.5 Trillion Dollars
 - \$10,739 per person
 - 18% GDP
 - 4% year over year growth

*“Healthcare costs have become a ‘tapeworm’ on the US economy.”
–Warren Buffet*

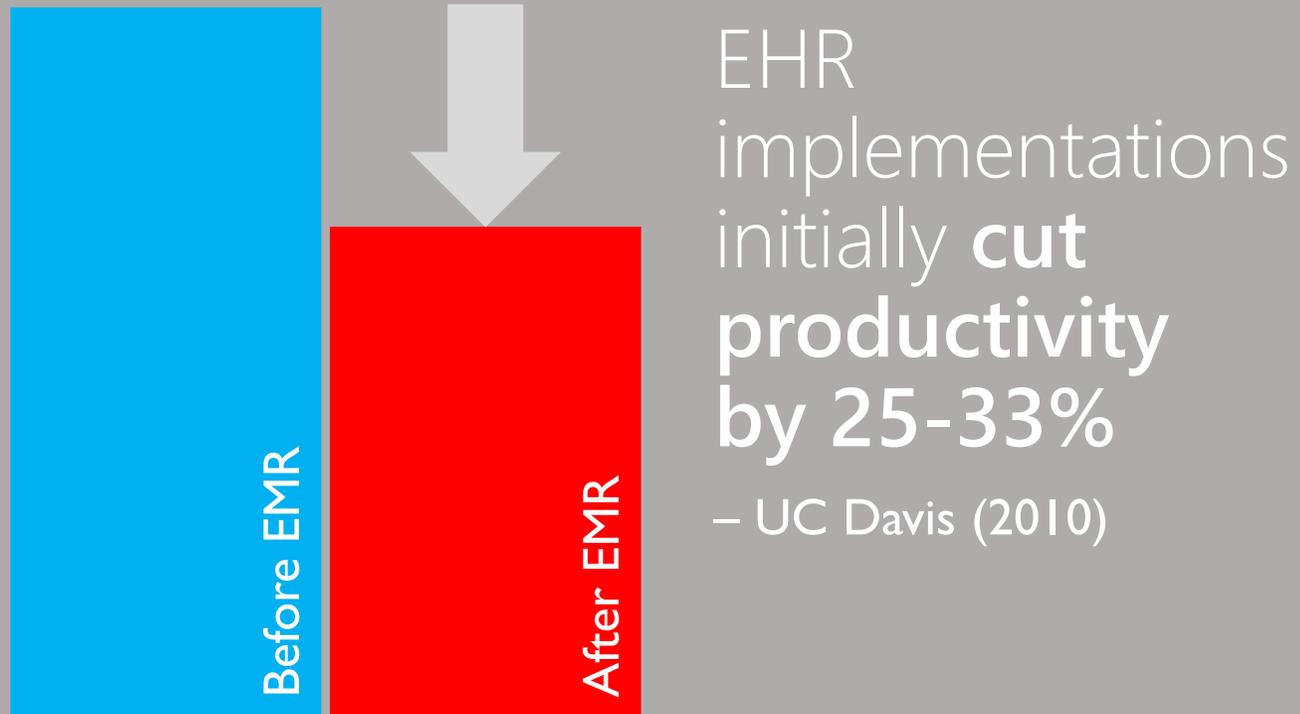
Primary care and Population health

- 2005-2016
 - Total number of primary care increased to 196K to 204K
 - Overall density decreased from 4.6/100,000 to 4.1/100,000
 - Largest decline was in rural counties
- 10 additional PCPs/100,000 showed an increase in 52-day life expectancy
 - Reduce mortality in respiratory, cardiovascular, and cancer by 0.9%
- 10 additional specialty/100,000 showed only increase of 19 days in life expectancy

Business challenges and tech benefits

Business challenges	Projected EHR benefits
Growing population	Improving access – web portals, e-visits, online scheduling Population health management
Rising costs, errors	Reduce duplicate labs/imaging by having access to real-time information E-visits Health information exchange (HIE) Eliminates handwriting errors Built in fail safes (med interaction alert)
Lower reimbursements	Better documentation/Quality/Leapfrog/HEDIS Patient-centered medical home certification Value Based Care / At-risk contracts NCQA certification – Diabetes, stroke, etc.

HIT productivity paradox



Physician productivity

Top reasons for productivity drop from adopting EHRs

1. More time documenting (85%)
2. Less time for patient care (66%)

IDC Health Insights Physician Survey

Unintended EHR consequences



Decline in productivity

- Loss of revenue
- Staff dissatisfaction
- Longer work hours
- Reduced access to care

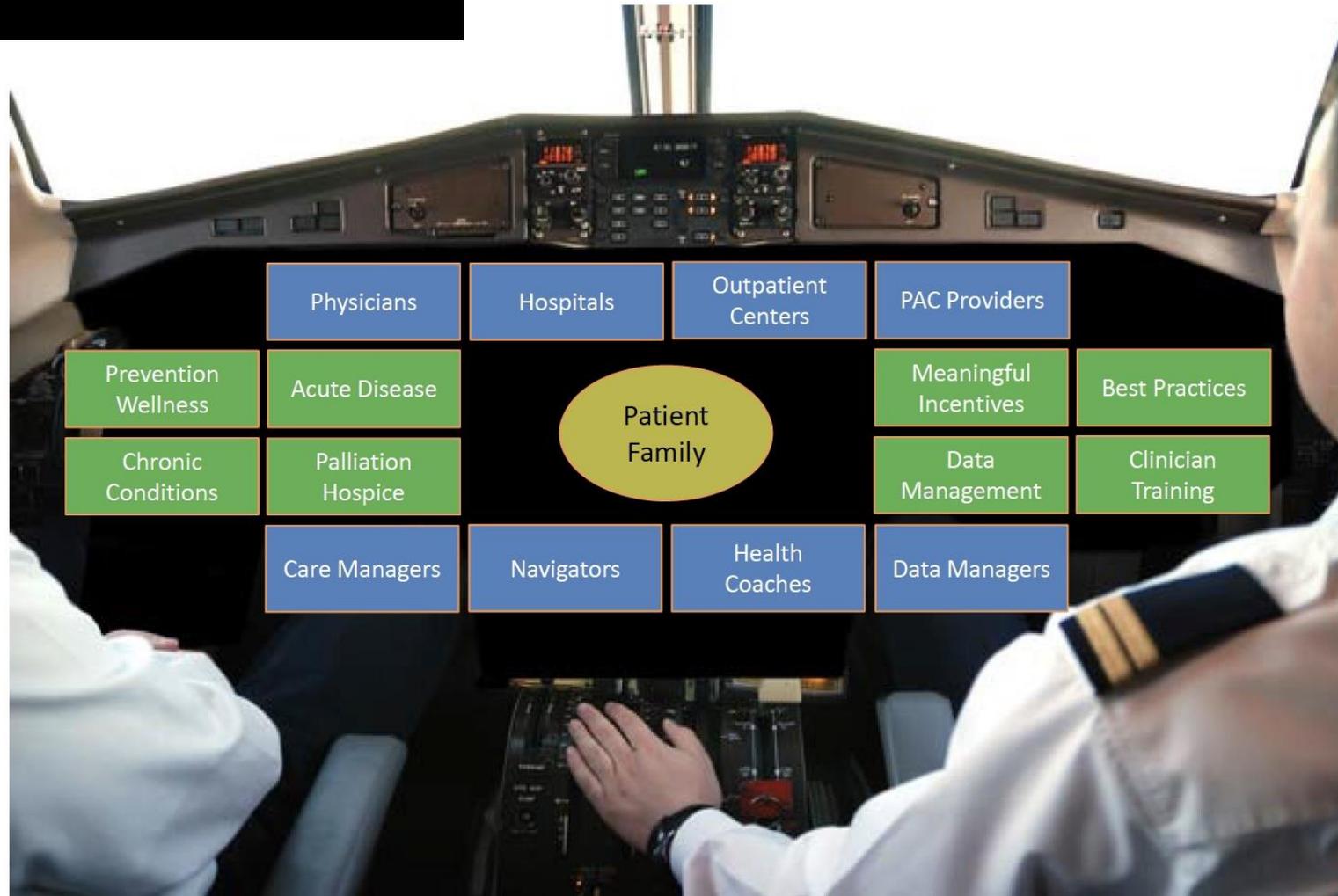
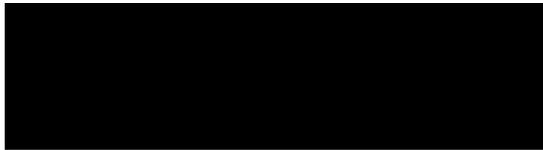
Patient dissatisfaction

- Worsening survey scores (CGCAPS/HCAPS)
- Loss of patients
- More ER visits

Higher expense

- IT support
- Hardware/software upgrades
- Less innovation
- Practice/hospital closures





The Disruptors

Carbon Health banks another \$350M to become 'largest primary care provider in the U.S.'

Carbon Health has doubled its full-time staff from 800 to 1,600 employees, opened over 80 clinics in 12 states and expanded its virtual care services to 23 states, the startup said.

While Carbon Health services are currently available to more than three-quarters of those living in the U.S., the company said it's looking ahead toward a goal line of 1,500 clinics by 2025 "to become the largest primary care provider in the U.S."

Crossover Health focused its initial efforts on the west coast and then expanded to the Northeast, and throughout Texas but has now expanded across the country with over 50 physical locations. As a result, Crossover Health now has 400k+ eligible lives (110k from Amazon) across the country with ~40% engagement, 25% actively engaged, and for those who have engaged for a service, 67% are saying this will be their medical home.

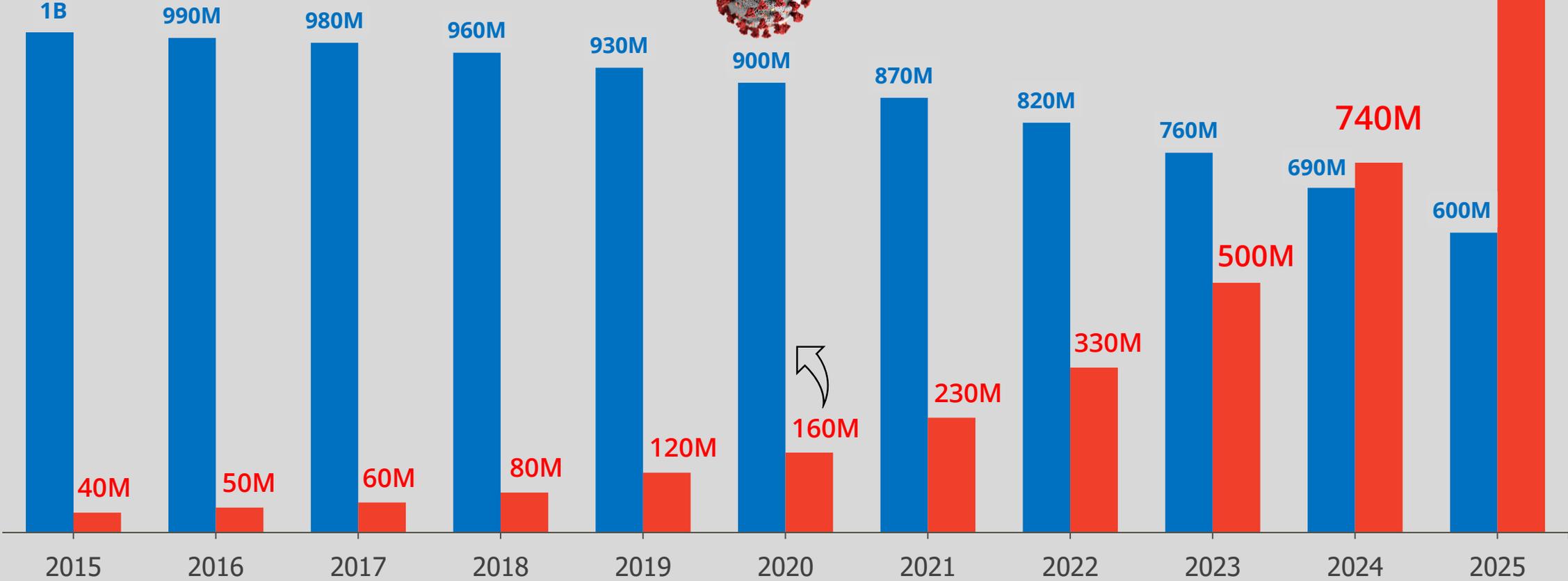
Dispatch Health is the largest and most complete platform that enables delivery of high acuity medical care (typically delivered in a hospital setting) to the home with an on-demand team that has all the tools to substitute for an emergency room visit which includes ancillary services such as lab services, X-rays, and ultrasounds



The Digital Health Revolution

Projected number of office visits

Office



Fortune Magazine, "Here's What Your Future Doctor Visits Could Look Like" - May 2, 2017

Overall Trends in Digital Health 2020-current

- Telehealth visits were up 154% in the last week of March 2020 compared with the same period the previous year. ([CDC](#))
- 46% of patients now say they use telehealth for some visits, compared to 11% in 2019. ([McKinsey](#))
- 48% of physicians now say they are treating patients via telemedicine. ([Merritt Hawkins](#))
- More than 20% of U.S. medical visits are expected to be conducted virtually this year. ([Doximity](#))
- Telehealth use by rural health centers increased during the pandemic, peaking at 54% in the last week of April. Use declined to 26.7% by October — still well above the 0.4% reported in 2019. ([RCHN](#))

The Business of Digital Health

- The financial value of telemedicine visits is expected to reach at least \$29.3 billion in 2020 and experts project that it will hit \$106 billion by 2023. ([Doximity](#))
- Investors poured \$9.4 billion into digital health startups through Q3 of 2020, with an estimated \$12 billion in total investment by the end of the year. That's a 46% investment increase over the previous record of \$8.2 billion for 2018. ([Rock Health](#))
- Deals are getting larger, with an average deal size of \$30.2 million in 2020, up from \$19.7 million in 2019 — a whopping 53% increase. ([Rock Health](#))
- Non-healthcare companies, including big tech, are entering the virtual care space with Google investing \$100 million in telehealth provider, Amwell ([CNBC](#)), and Microsoft launching a \$40 million initiative AI for Health ([Microsoft](#)).
- Up to \$250 billion of the current U.S. healthcare spending could eventually shift to virtual. ([McKinsey](#))
- In the biggest telehealth business deal in history, Teladoc announced the acquisition of diabetes management provider, Livongo, for \$18.5 billion. ([Fierce Healthcare](#))

Patient Adoption

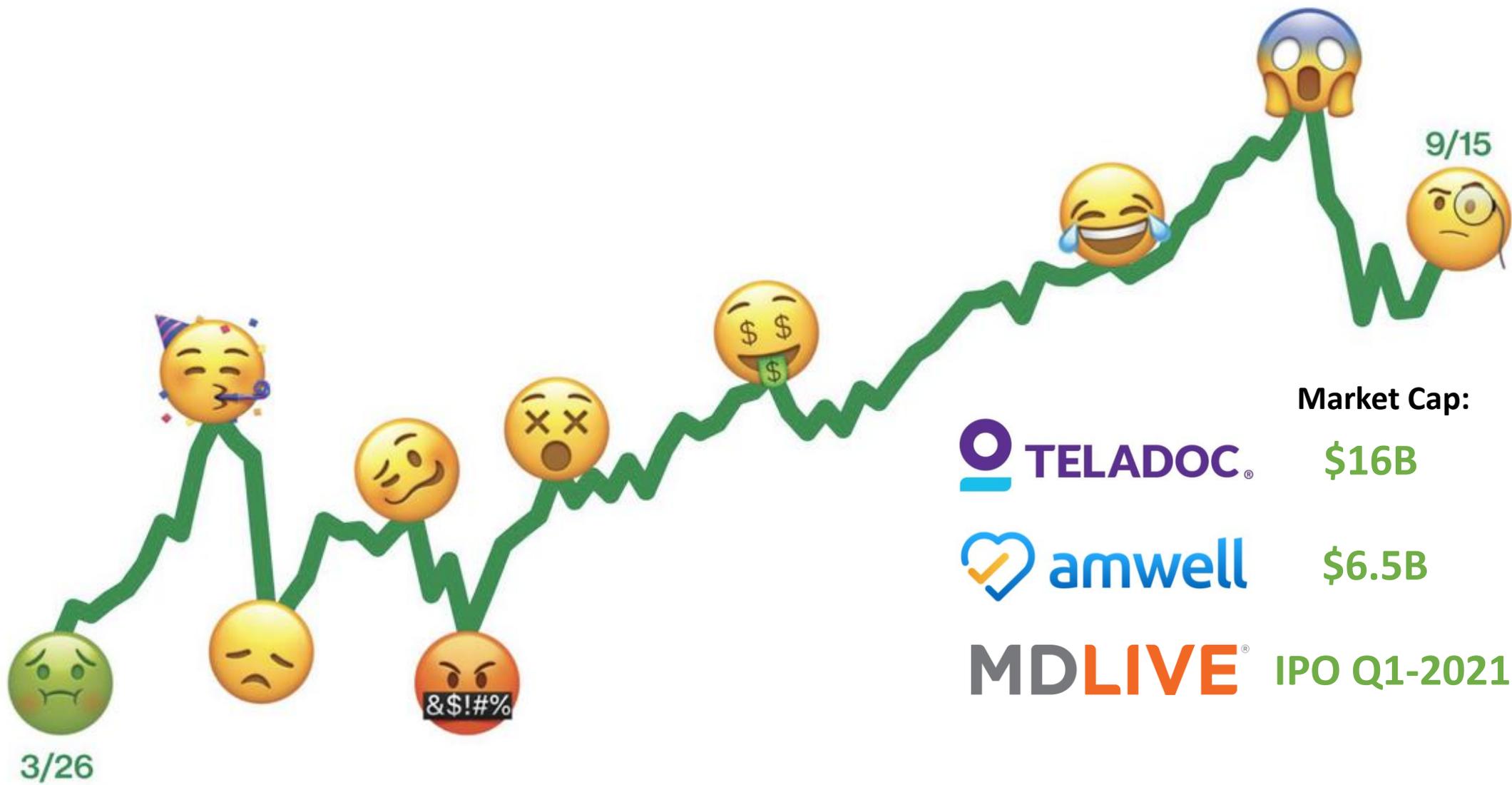
- The number of patients reporting at least one telehealth visit has increased by 57% since the start of the pandemic. Patients with chronic illnesses report a 77% increase in the use of telehealth. ([Doximity](#))
- Nearly half (43.5%) of Medicare beneficiaries' primary care visits were provided via telehealth in April of 2020. Compare that to the 0.1% utilization before the public health emergency. ([HHS.gov](#))
- During the pandemic, most telehealth patients were adults between the ages of 18 and 49 (69%), and female (63%). ([CDC](#))
- 93% of patients say they would be likely to use telemedicine to manage prescriptions. ([Doctor.com](#))
- 83% of patients say they are likely to continue using telemedicine after COVID-19. ([Doctor.com](#))
- 28% of patients surveyed said they would like to access telehealth whenever possible, even if their insurance did not cover it. ([Kyruus](#))
- In a survey of more than 1 million patients, 89% would recommend their provider after having had a telemedicine visit. ([Harvard Business Review / Press Ganey](#))

Provider Adoption

- The number of physicians reporting telehealth as a skill increased by 38% in 2020, up from a 20% increase each year between 2015 and 2018. ([Doximity](#))
- Female physicians are adopting telehealth at a faster rate than men. Women were 10% more likely than men to use telemedicine in their medical practice in 2019 and 24% more likely in 2020. ([Doximity](#))
- More than three-quarters of physicians surveyed said telemedicine helped them provide better care for patients. ([COVID-19 Healthcare Coalition](#))
- Providers are now seeing 50 to 175 times the number of patients via telehealth than they did before COVID. ([McKinsey](#))
- Among physicians who provide telehealth services, 64% say they conduct visits from home. ([COVID-19 Healthcare Coalition](#))
- 57% of providers say they now view telemedicine more favorably than before the pandemic, and 64% say they are more comfortable using telemedicine. ([McKinsey](#))

Service Line Utilization

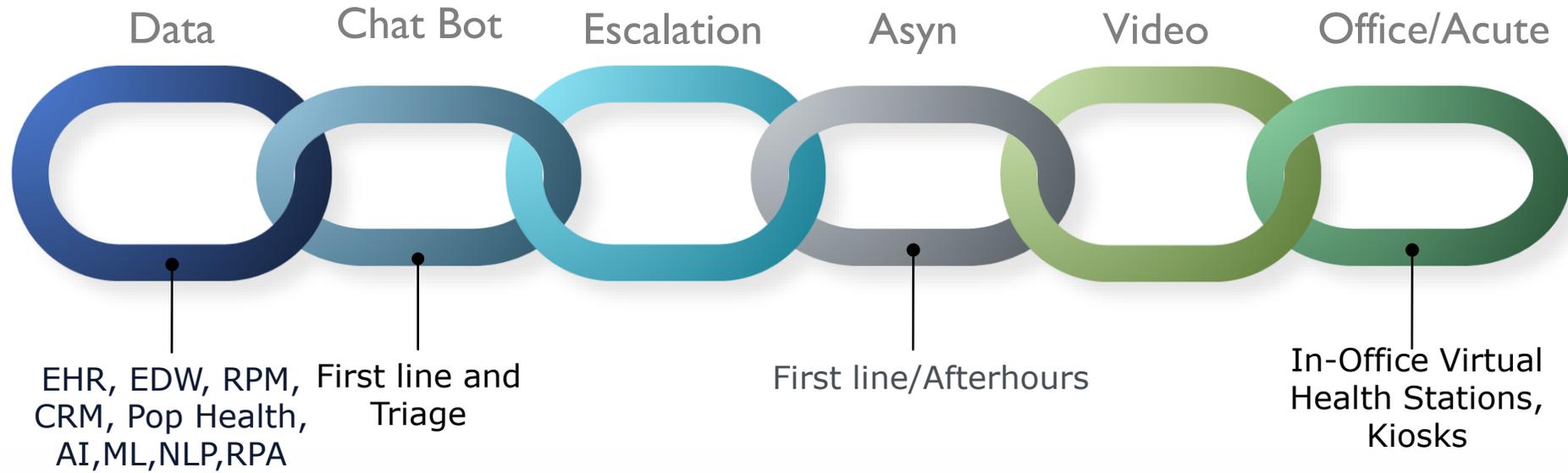
- By April of 2020, nearly all primary care physicians (97%) were using telemedicine to treat patients. ([Bain & Company](#))
- 75% of cardiology outpatient encounters shifted to telehealth within just two weeks. ([Journal of the American College of Cardiology](#))
- Outside of behavioral health, endocrinology and rheumatology were the top two specialties using telemedicine this year. ([Doximity](#))
- Among behavioral and mental health clinicians, 94% said they would like to continue offering these services virtually after the pandemic. ([COVID-19 Healthcare Coalition](#))
- Among patients, 48% said they would use telemedicine to seek care for allergy, ear, nose, or throat conditions, 45% for routine preventive care, and 45% for mental or behavioral health care or counseling. ([Doctor.com](#))
- 73% of physicians said they would like to continue offering chronic disease management visits to patients via telehealth after COVID-19. Other virtual services they planned to continue included medical management (64%), care coordination (60%), and preventive care (53%). ([COVID-19 Healthcare Coalition](#))



WHAT'S NEXT? *BEYOND VIDEO*

- Artificial Intelligence
- Next Gen Kiosks
- Robotic Process Automation
- Virtual Reality
- Wearables/Smart Home





Digital Health Continuum

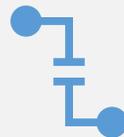
Key Components



Patient-centered
360 Experience
24 by 7 access
Linkage to Value and Outcomes



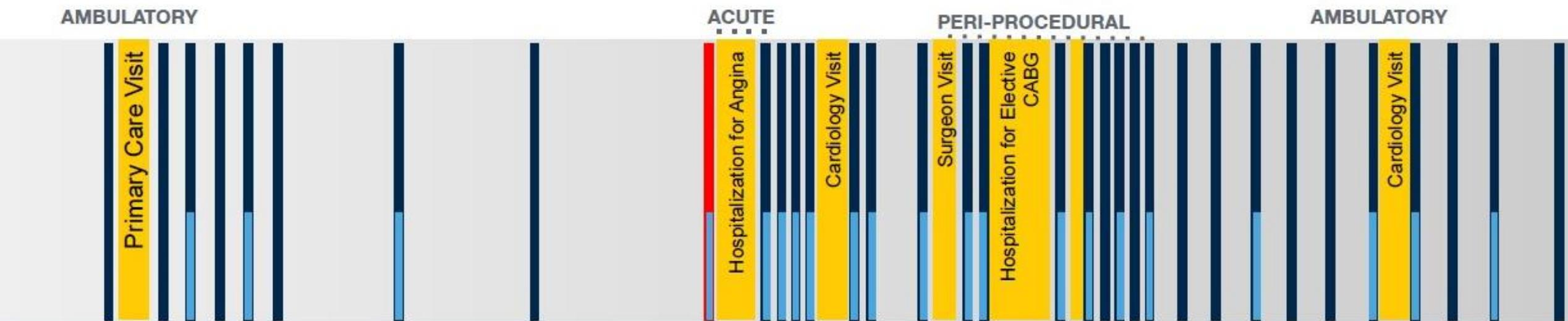
Hardware agnostic
Cloud-based
Broadband
Mobile App-based



Seamless workflows
Key system integration
Clean Data
Affordable



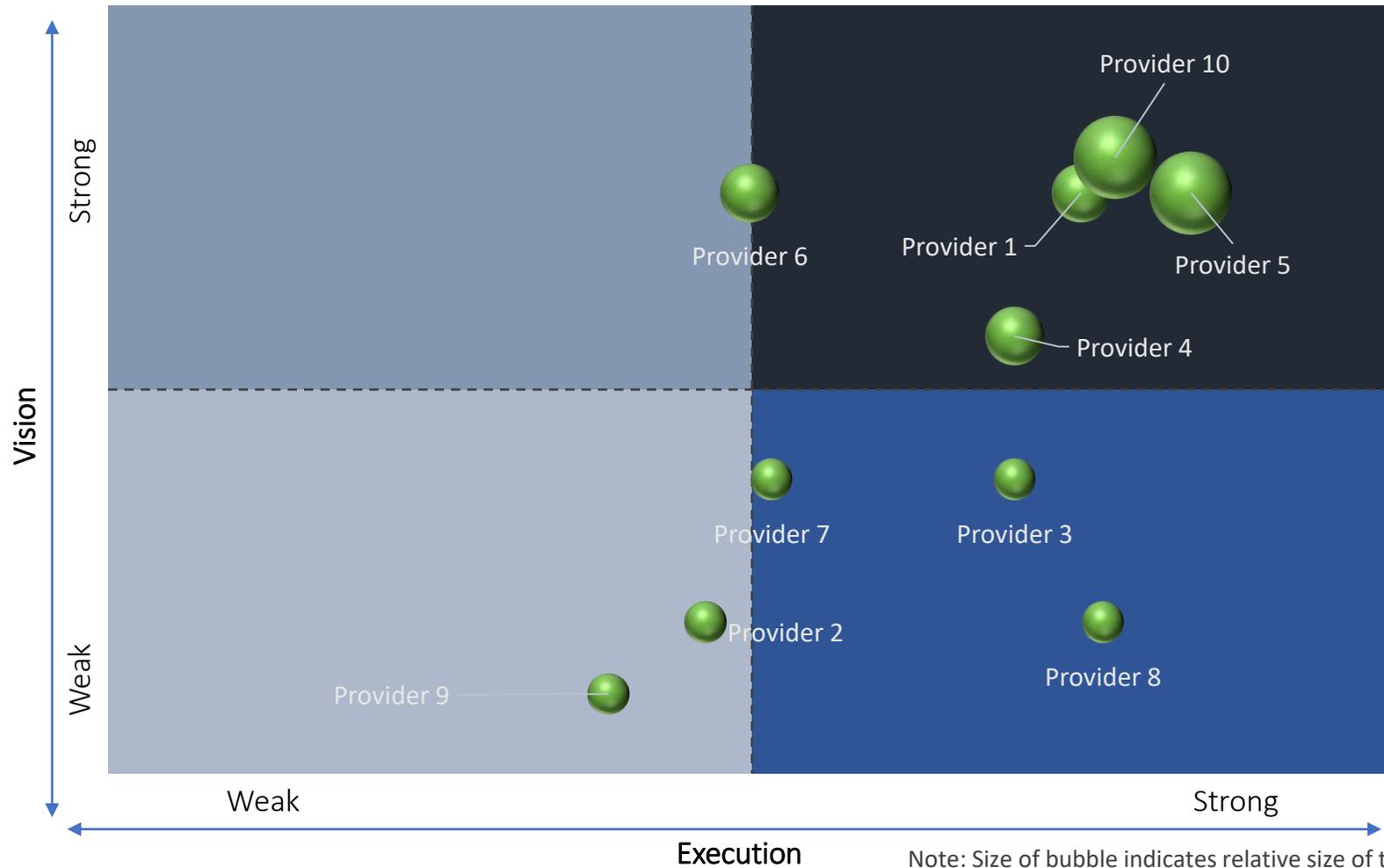
The patient journey: Traditional v. Traditional + Digital



- Traditional Encounter
- Digital Encounter with Red Alert
- Digital Encounter
- Caregiver Digital Interaction

DigiM Maturity Momentum™ – Select Providers (National)

Relative maturity levels based on strength of vision and strength of execution



Note: Size of bubble indicates relative size of the organization in the sample

DigiM – Maturity Momentum™ – Digital Initiatives (Select Providers)

Section	Digital Initiative	Provider 1	Provider 2	Provider 3	Provider 4	Provider 5	Provider 6	Provider 7	Provider 8	Provider 9	Provider 10
Digital Front Door	Online scheduling	Blue	Blue	Blue	Green	Blue	Blue	Green	Grey	Green	Green
	Chatbot	Blue	Red	Yellow	Blue	Blue	Yellow	Green	Red	Red	Yellow
	Find-a-doc	Blue	Blue	Blue	Blue	Blue	Yellow	Yellow	Grey	Red	Yellow
	Symptom triage	Green	Green	Red	Blue	Blue	Yellow	Red	Red	Green	Yellow
	Online payment tool	Green	Blue	Blue	Yellow	Blue	Green	Green	Green	Green	Blue
	Online registration	Green	Red	Green	Green	Green	Red	Green	Green	Green	Green
	Online check-in	Green									
	Wait-time estimator	Red	Red	Red	Red	Blue	Green	Red	Red	Red	Red
	Slot management	Green	Red	Green	Red	Blue	Red	Red	Green	Red	Red
	Mobile app	Blue	Blue	Blue	Green	Yellow	Blue	Blue	Grey	Green	Blue
	Video visits	Blue	Green	Green	Blue	Green	Green	Green	Grey	Green	Blue
	Second Opinion	Red	Red	Red	Red	Red	Red	Yellow	Grey	Red	Blue

Not implemented

Implemented with EHR

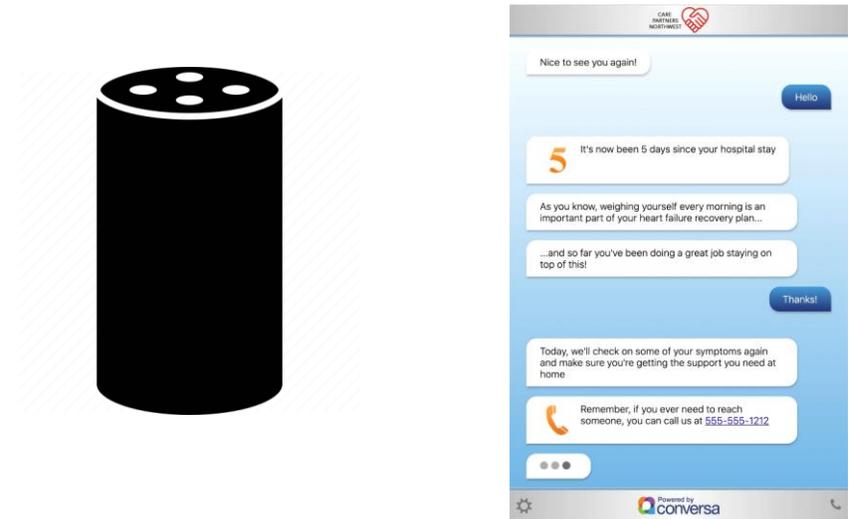
Stand-alone tool with FHIR/HL7 integration

Stand-alone tool with no integration

CONFIDENTIAL

BEYOND JUST VIDEO

- Artificial Intelligence
 - Digital Assistants
 - Voice
 - Chatbots
 - Robotic Process Automation
- Remote Patient Monitoring
 - Sensors
 - Ingestible
 - Wearable devices or in clothing
 - Implantable



- HTN
- DM
- CHF



RPM *Pilot phase*

- Inclusion criteria
- Wearables/Setup
- Monitoring
- Escalation
- Monthly CCM

REMOTE
PATIENT
MONITORING

RPM MEDICARE REIMBURSEMENT

CPT codes for 2019 to support RPM

99453

- \$17.62 one-time practice expense
- Set up and patient education on use of RPM equipment

99454

- \$58.38 monthly practice expense
- Cost of devices and tools that supply transmission of daily readings or programmed alerts

99457

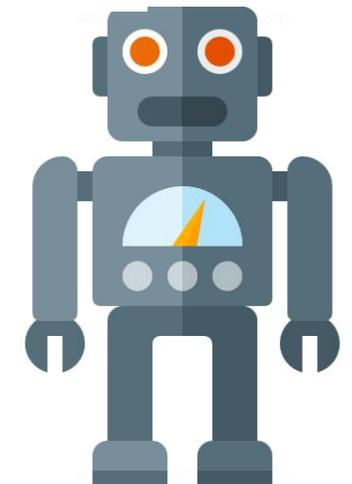
- \$48.42 monthly direct expense
- At least 20 mins/month of remote physiologic monitoring treatment management services
 - Can be billed by qualified professional OR clinical staff

AMA 2020 Telehealth CPT Codes

- 6 CPT Codes for patient-initiated digital communications & online evaluation services
- 2 CPT Codes supporting home blood pressure monitoring

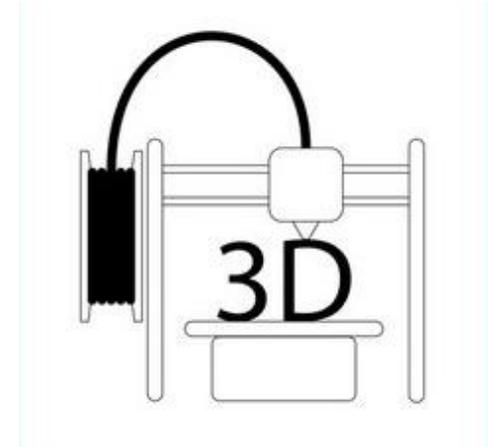
BEYOND JUST VIDEO

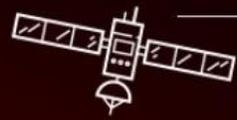
- Nextgen Kiosks
 - Full Diagnostics – Lab/Xray
 - Self Cleaning
 - Full Automation
 - Self-Driving Kiosks
- Virtual Reality
 - Holodeck experience
 - Tackle/sensory i/o with wearables
- Robots
 - Companionship
 - Healthcare assistant



NEXT-GEN TECHNOLOGY

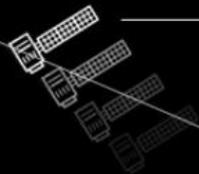
- 3D printing
 - Sports equipment
 - Orthotics
 - Artificial body parts
 - Shoe inserts
 - Dental/Vision/Hearing
 - Bioprinting
- Personal Systems
 - Telehealth ready
 - Sanitizable
 - Easy to use





SATELLITES 1000km +

STARLINK



STARLINK 550km



XR-1 Technology Highlights

- Deep learning capabilities using cloud brain (HARIX)
- NLP, CV for face/object/posture/emotion recognition, Visual Simultaneous Location and Mapping (VSLAM)
- Visual feedback manipulation for precise grasping/motion/pressing movements
- 3D semantic map for grasping/motion
- Vertical domain knowledge & AI services
- Accesses cloud brain technology via RCU (Robot Control Unit)



Compliance Control

- Smart Compliant Actuator (SCA) on each Joint
- Total of 34 Actuators in XR-1
- Auto Balancing and Anti-Collision capabilities

Speak

- Mic Array for precise voice recognition
- Multiple language and multiple accent support
- Advanced Semantics with Emotional Intelligence

Move

- Lidar, 2D/3D camera, and multiple sensors
- Cloud-Based SLAM/VSLAM technologies
- Self navigation and obstacle avoidance

See

- Multi-Layer 2D/3D Visual Perception
- 2D recognition technology
- 3D depth sensing, environment sensing



Nick Patel M.D.

Chief Digital Officer at Prisma Health



THANK YOU