



Virtual Care: Business vs Primary Care Model

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Disclosures

**No relevant financial relationship to disclose
for this accredited CME activity.**



But I have opinions.

The opinions expressed are my own and do not reflect the view of UNC Health Care, the state of North Carolina or the United States government.

Objectives

- Discuss Telemedicine use cases
- Discuss the current state of consumer telemedicine demand
- Review the barriers to telemedicine adoption
- Discuss current disruptive market forces changing the delivery of care
- Understand the business model for commercial telemedicine market and partnerships
- Understand the opportunities for Primary Care Providers to provide continuity of care, increase access and improve care



Definition of Telemedicine

Digital Health (Virtual Care)

The use of information and communication technologies to address the health needs, and challenges, facing patients to improve accessibility and affordability across the continuum of care.
Includes mHealth

Telehealth

The use of digital technologies to deliver medical services, health education, and public health services by connecting users in separate locations. Encompasses a broader definition, not always involving clinical services: registration, questionnaires, patient or provider education

- Synchronous (real time) or asynchronous (store and forward).

Telemedicine

The use of medical information exchanged from one site to another via electronic communications to provide clinical care and improve a patient's health status.

History of Telemedicine

Timeline of Telemedicine Advancement



1959-1964
The first interactive video link.

1960's
NASA Takes on Telemedicine.
The 1960's Space Age pushed money

1974

1989
Invention of the World Wide Web expands the capabilities of telemedicine.
...And changes the world as we know it! While it would take a few more years for the Internet to become a commonplace thing, 1989 saw English scientist Tim Berners-Lee write the first web browser and help bring the beginnings of our modern Internet to life.

1989
First International Telemedicine Project.

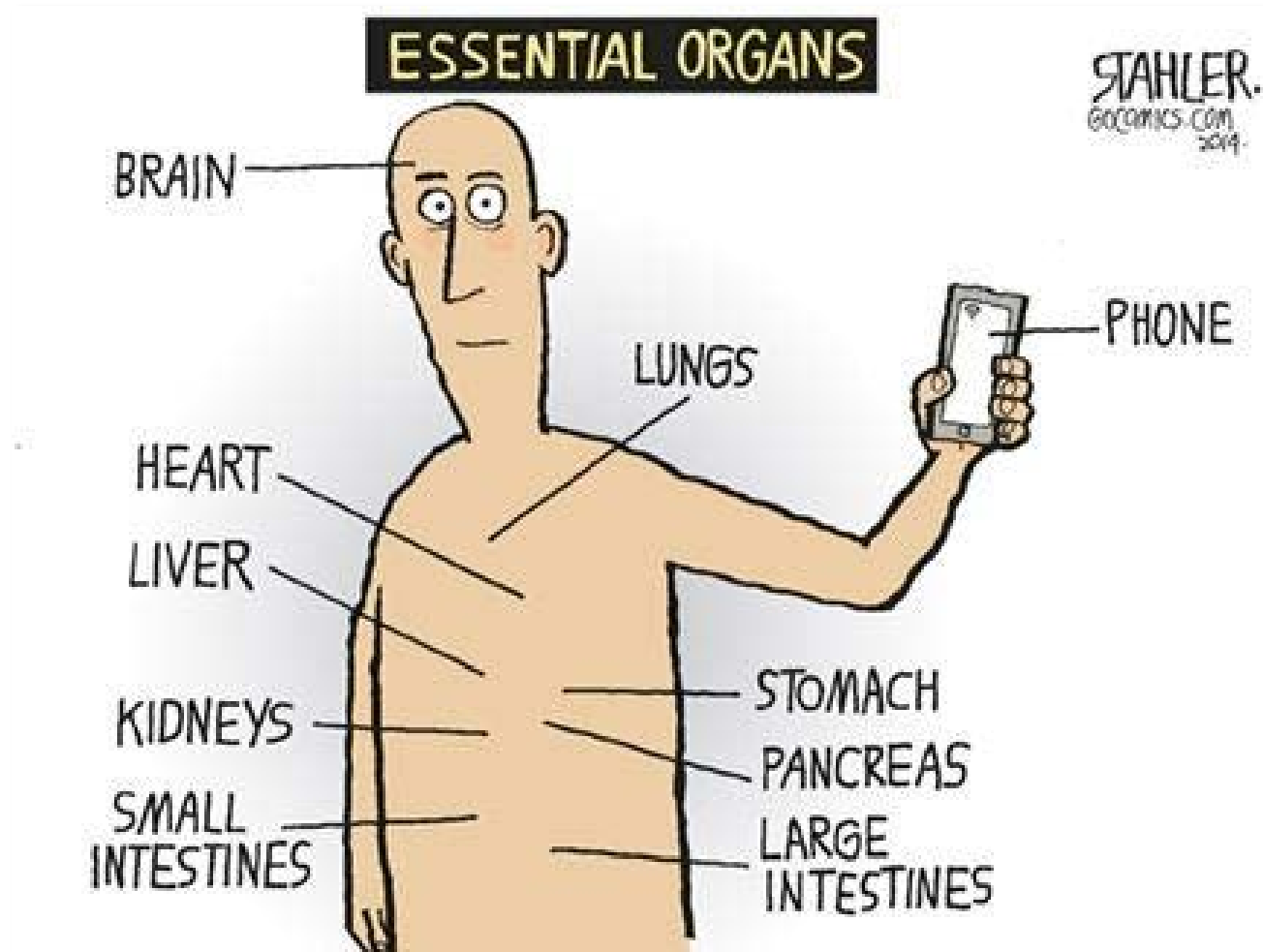
1999
Medicare gets In the Telemedicine Game.

2000's

2009

2015
Healthcare goes mobile. Pew Research Center reports that in 2015, 2/3 of Americans own a smartphone, and many are using smartphones to research medical information or access health tools and resources.

Human Evolution

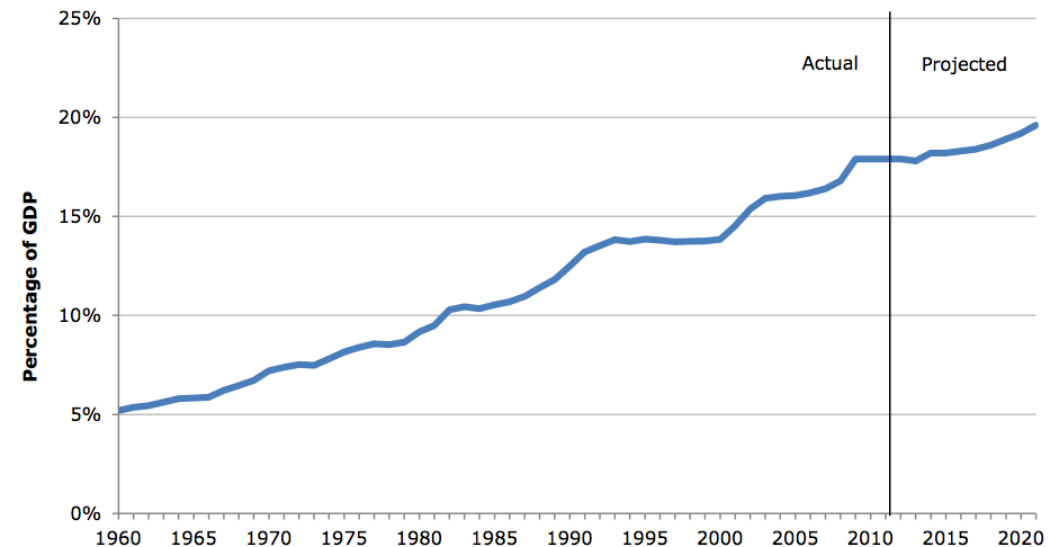


The Value Transition

Rising Health Care Costs are Unsustainable

- **Deductibles up 256%** since 2006 (employer-provided health coverage)
- Nationally: **Premiums up ~ 200%** since 2000
- North Carolina up **7%** in 2015 alone
- Medicaid is now **30%** of the NC state budget.
- US will spend over **\$10,000** per person on health care this year.

U.S. National Health Expenditures as a Share of GDP, 1960-2021

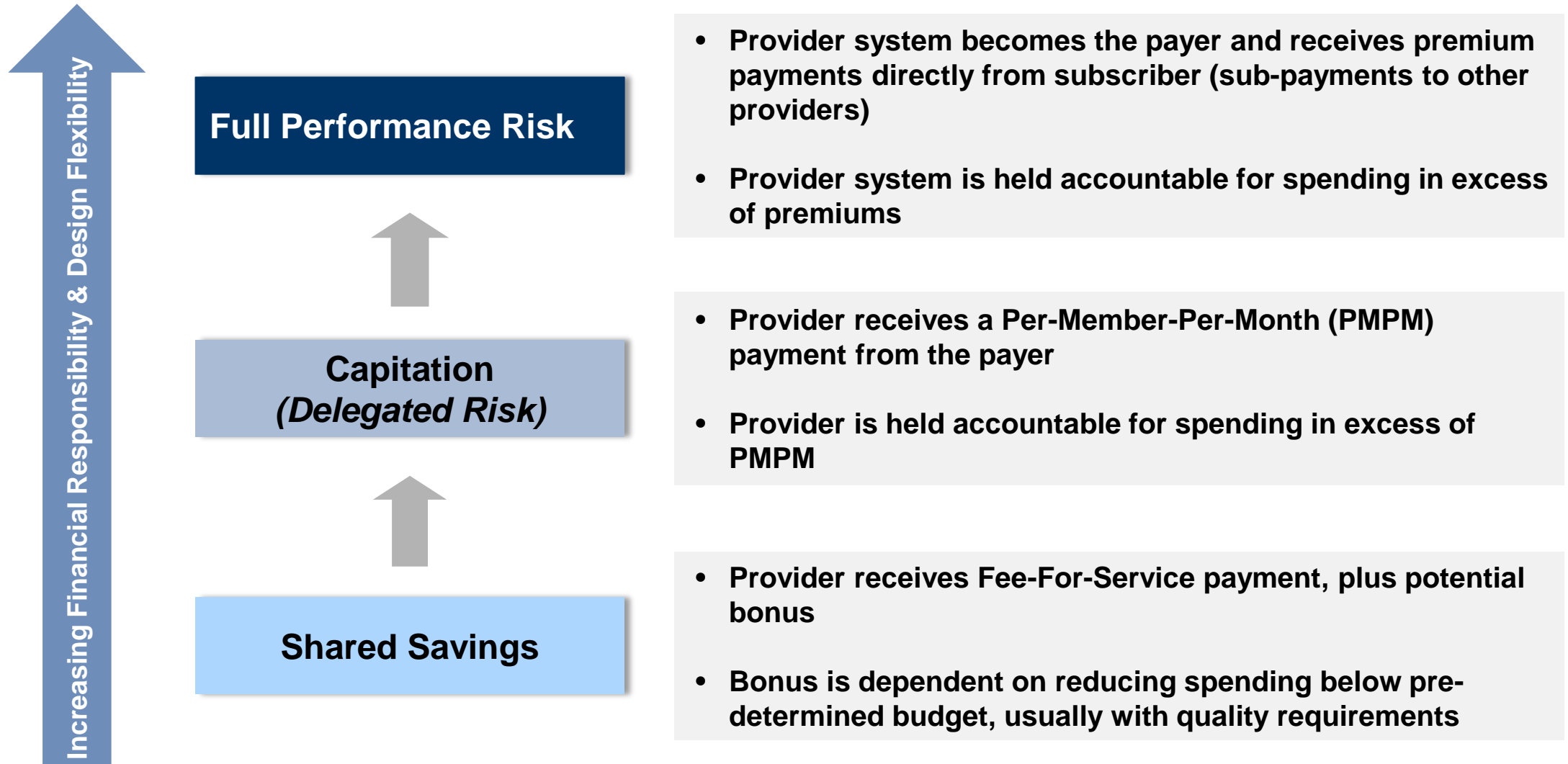


Source: Centers for Medicare and Medicaid Services.

- Total Medicare expenditures will increase from **\$632 billion** in 2015 to **\$1.1 trillion** in 2024. OMB projects that the Medicare Part A Trust Fund will be insolvent by 2028.

Payers and employers are demanding change and the transition from Fee-For-Service (FFS) to Alternative Payment Models (APMs)

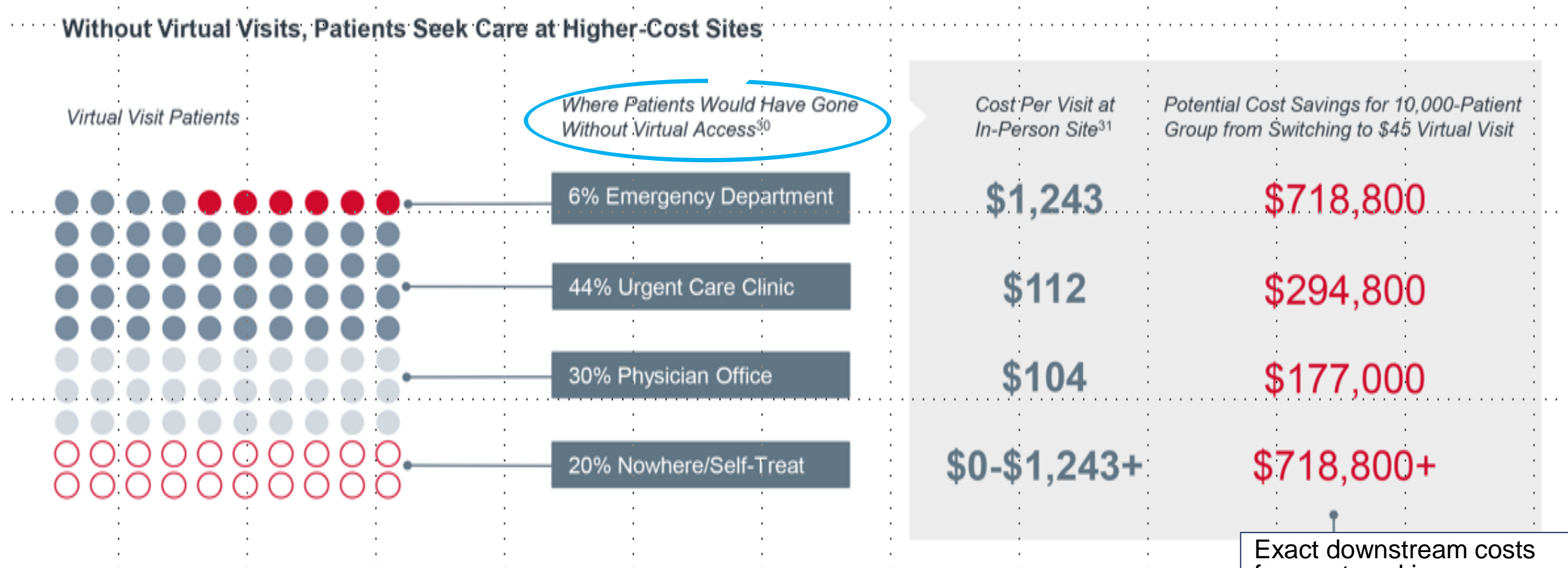
Alternative Payment Models (APMs)



“Our goal is to have 85% of all Medicare FFS payments tied to quality or value by 2016, and 90% by 2018.” – Sylvia Burwell, HHS Director, March 2016

Virtual Visits Can Save Payers/ACOs Costs

Providing patients with timely access to care at the highest quality, lowest cost setting



Exact downstream costs from not seeking care cannot be calculated, but 6% of ED visits could have been prevented with timely outpatient care

Telemedicine Helps Meet Growth and Value-Based Goals

...Value is quantified beyond direct revenue

GROWTH

- Enhance patient access and convenience
- Attract and retain new patients
- Differentiate from competitors
- Align with consumer interest in technology
- Reduce wait time to next appointment and no-show rates
- Achieve office operational efficiencies

VALUE BASED CARE

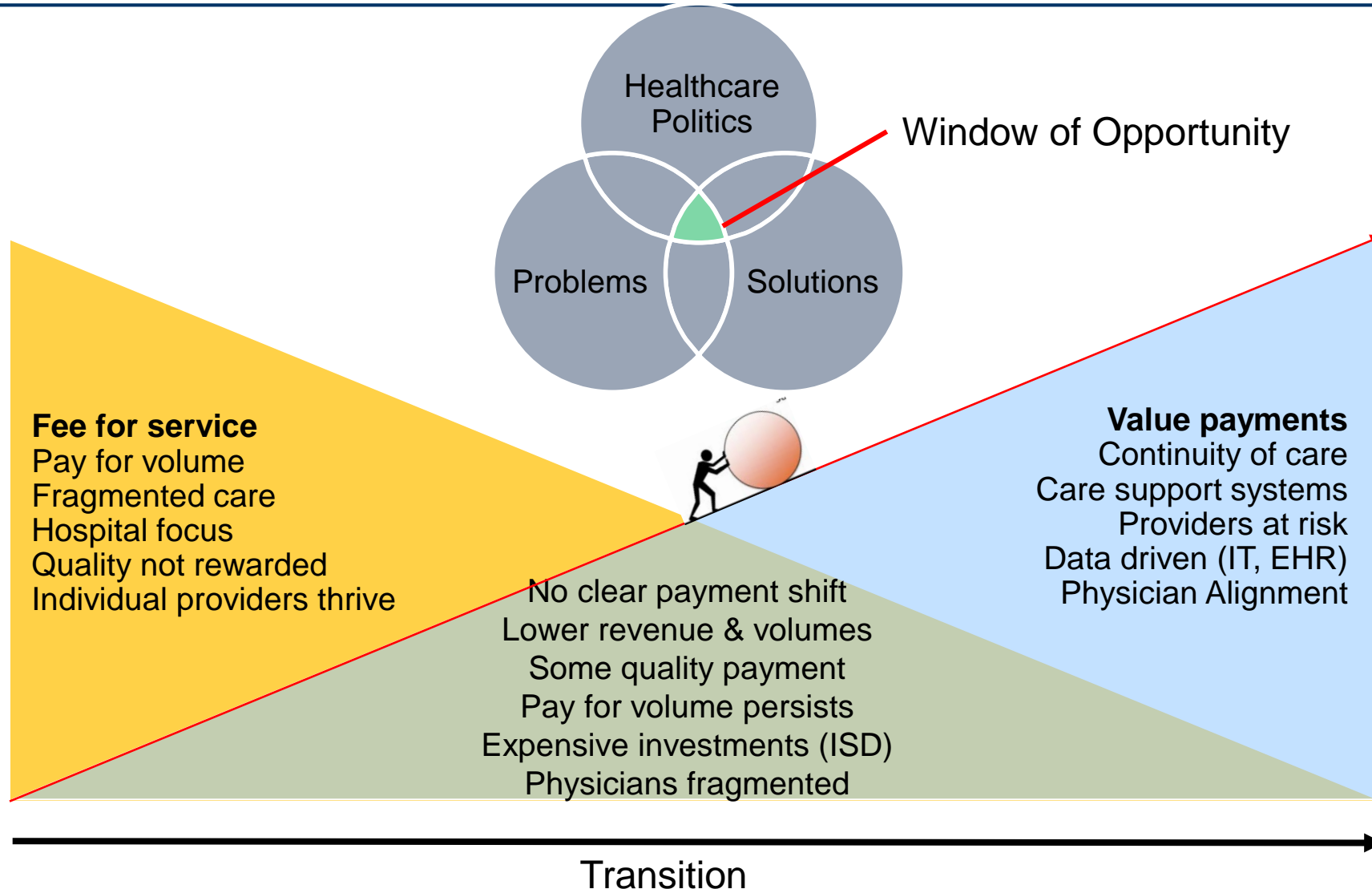
- Reduce costs by shifting patients to lower cost settings
- Cut patient/provider travel time
- Reduce avoidable ED utilization and 30-day readmissions
- Increase patient activation and engagement in their health care
- Expand specialist coverage

Data Supports Business Case

Improves		Growth	Value
Care adherence	<ul style="list-style-type: none"> 65% of new mothers reported BP data for 5-7 days post discharge, compared to <5 % of new mothers nationally 		<input checked="" type="checkbox"/>
Readmissions, cost-savings	<ul style="list-style-type: none"> Geisinger lowered odds of CHF readmission at 30 days by 44% when patients enrolled in RPM vs not enrolled; (ROI is 3.3, or 11% cost savings) 		<input checked="" type="checkbox"/>
Unplanned hospitalizations	<ul style="list-style-type: none"> VA oncology pilot group had 57% fewer unplanned hospitalizations and 97% fewer unplanned clinic visits vs control group 		<input checked="" type="checkbox"/>
Business case			
Cost savings	<ul style="list-style-type: none"> Plan with teledermatology reduced costs by ~\$82 PMPY 24.2% decrease in psych hospitalizations (VA study) for patients using on-demand video visits 		<input checked="" type="checkbox"/>
Capacity/ Access gains	<ul style="list-style-type: none"> eConsult to a specialist avoided face-to-face referrals by about 50% (specialty dependent) improving access for new or higher acuity patients 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Downstream revenue	<ul style="list-style-type: none"> 34% of non-system patients who used e-visit program sought in-person care within 12 months A 500-bed NE rural health system served 50 new bariatrics patients/year, est annual revenue of \$700,000 from new system patients 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Patient satisfaction	<ul style="list-style-type: none"> AveraNow program gets average 4.71/5 star score In HBR study, 97% patient satisfaction after first visit; 74% of patients felt that the virtual visit improved their relationship with their provider 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Source: [Pregnancy Care Telehealth Primer](#), Service Line Strategy Advisor, Advisory [Board \(2018\)](#); [AHRQ Health Care Innovations Exchange](#), “[Daily Remote Monitoring, As-Needed Nurse Contacts Reduce Unexpected Clinic Visits, Hospitalizations for Chemotherapy Patients](#)” (2010); [Service Line Strategy Advisor research and analysis](#).

Opportunity for Whom?

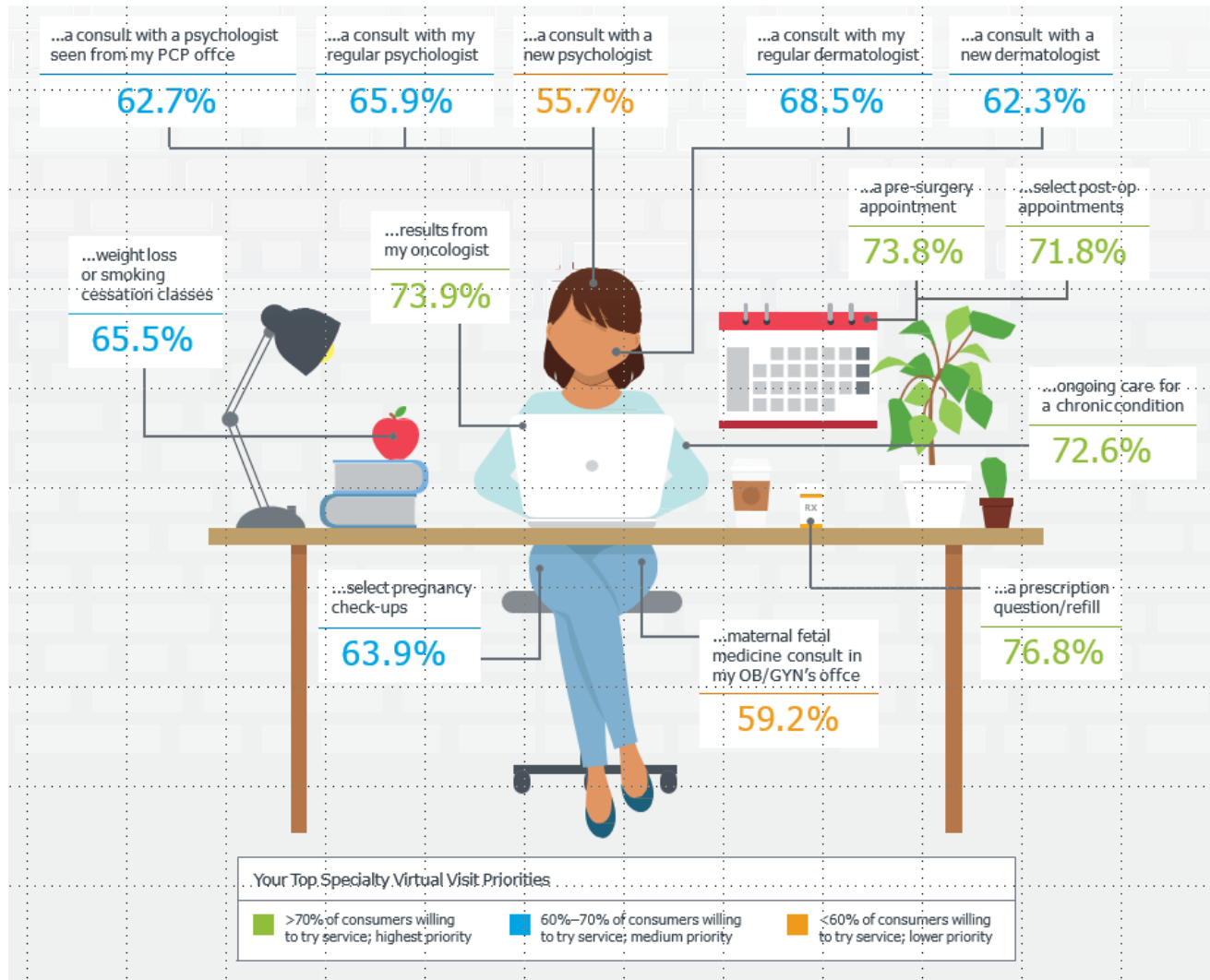


Patient Demand

Consumers are Ready for Virtual Visits

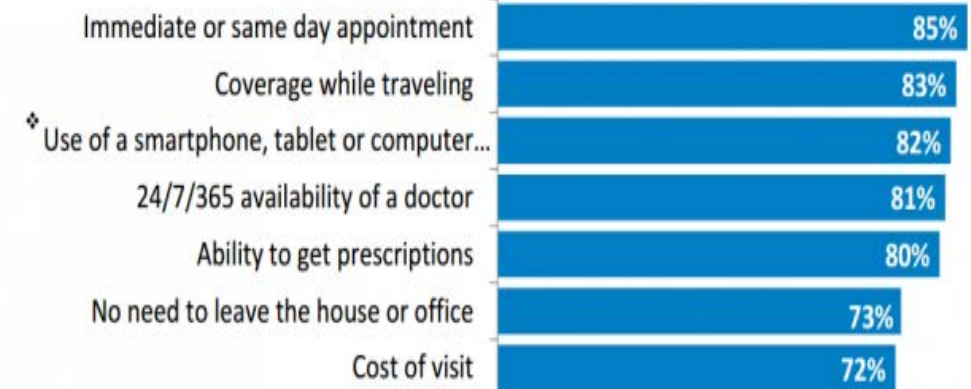
Percentage of respondents who would consider using a virtual visit for...

N=5,000



Why...?

Importance of Feature when Considering Telemedicine (Very and Extremely Important)




❖ Full feature described is "Use of smartphone, tablet or computer to make a video or telephone call"


Patient Demand: What Type of Visit Would a Patient Want?

Consumers’ top 10 virtual visit use cases *n=4,879*


Drivers for consumer utilization




Long wait times to next appointment



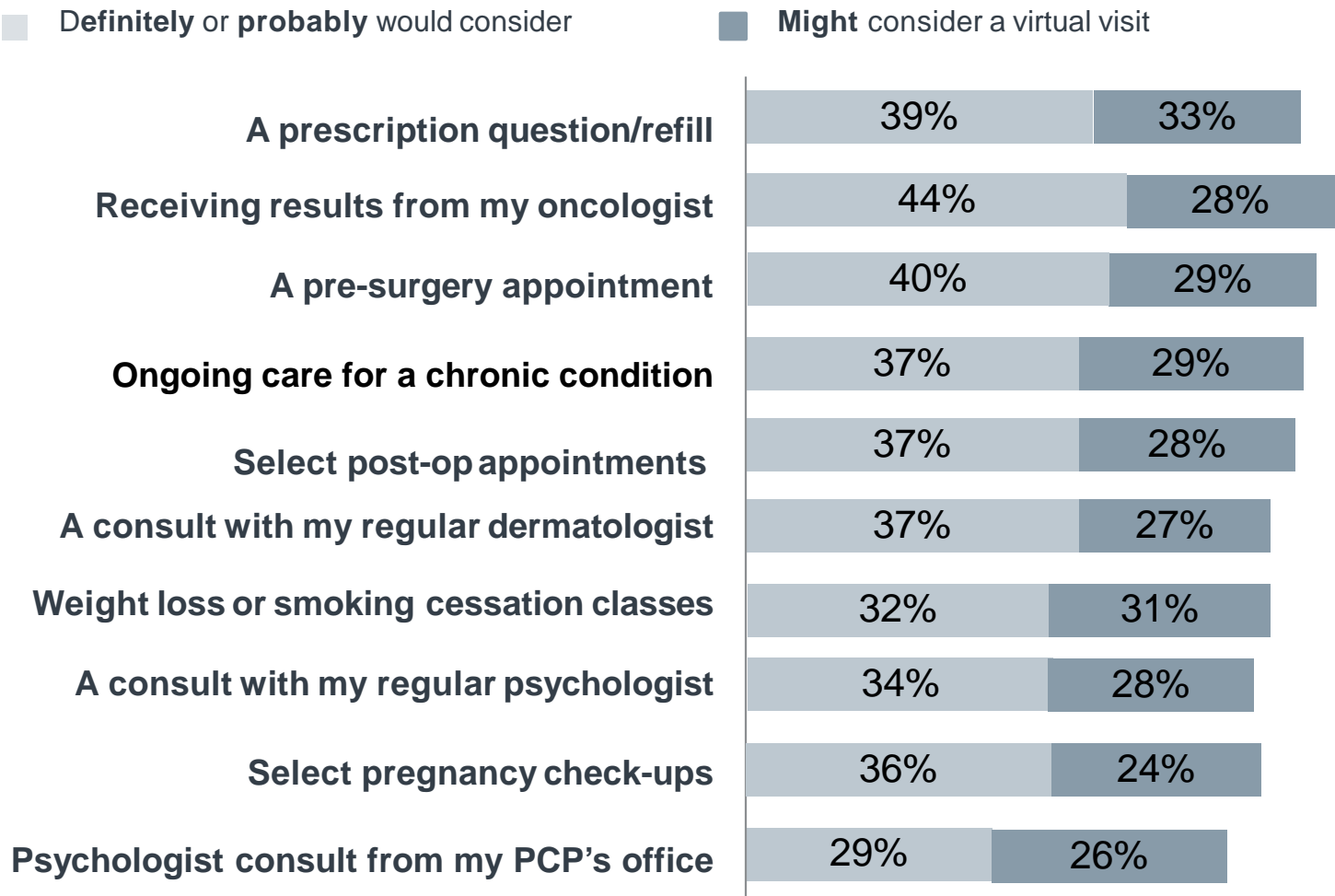
Transportation constraints; convenience



Privacy concerns



Multiple follow-up visits



Patient Demand: Who uses Virtual Visits?

Early adopters are young, urban, wealthier, and privately insured

Who has used a virtual visit before?

19%

Have used at least one virtual visit before

39%

Of parents have used a virtual visit for their child

Virtual visit user characteristics



Young

34%

Of 30-49 y/o have used a virtual visit at least once



Urban

63%

Of urban respondents have used a virtual visit for their child



Higher income

52%

Annual income >\$71,000 have used a virtual visit



Privately insured

14-18%

Have used a virtual visit, but > 4% of publicly and uninsured

Patient Demand: Consumers Still Have Their Doubts

Adoption will require shift in both attitude and access to technology



Top 5 concerns among consumers

Market Innovation Center Consumer Choice Survey n=4,879

- 1 “**Quality of the care** I will receive”
- 2 “Possibility that the provider **cannot diagnose me or treat** me virtually and I will have to go into a physical clinic anyway”
- 3 “**Security of my health information**”
- 4 “**Lack of personal connection** with the provider”
- 5 “**Cost** of the virtual visit is too high”

Seniors disproportionately impacted by technology requirements



Adults 65+ are

3 times less likely

to have the technology they need to do a virtual visit

Quality, efficacy, and security must be assured

Barriers to Telemedicine Adoption

PCPs Just Hanging On...



Fee-for-Service

Fee-for-Value

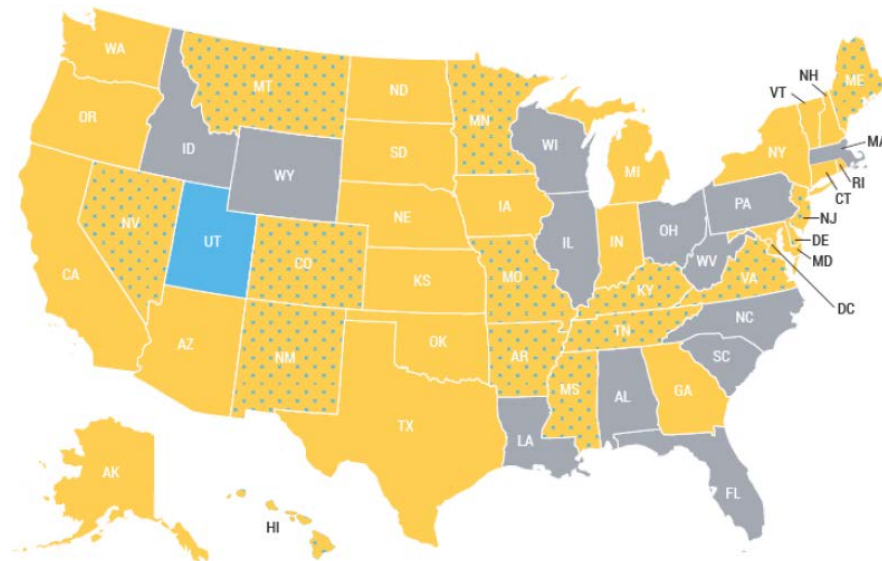


**Telemedicine:
Is the juice worth the
squeeze?**

Barriers To Telemedicine Adoption: Parity & Providers

Telemedicine Parity: Commercial Payers

- 36 states and D.C. have coverage parity
- 16 states have payment parity
- 13 states still have not adopted private payer parity policies: AL, FL, ID, IL, LA, MA, **NC**, OH, PA, SC, WV, WI, WY

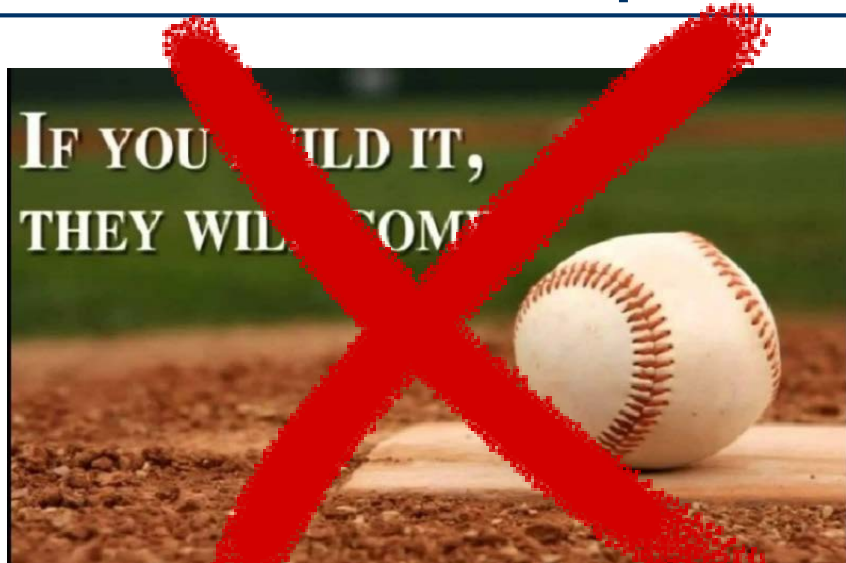


COVERAGE
REIMBURSEMENT
BOTH
NO PARITY POLICY

Provider Concerns



Barrier: Access Perspective



ACCESS TO THE DOCTOR



ACCESS TO THE PATIENT

Any setting becomes a care setting

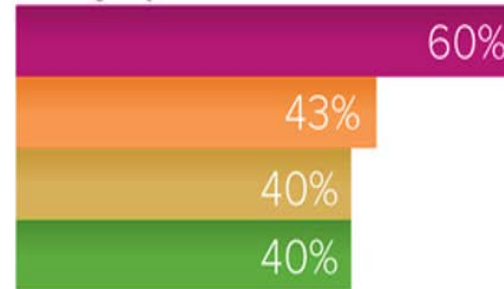


Barrier: Perceptions

PHYSICIAN



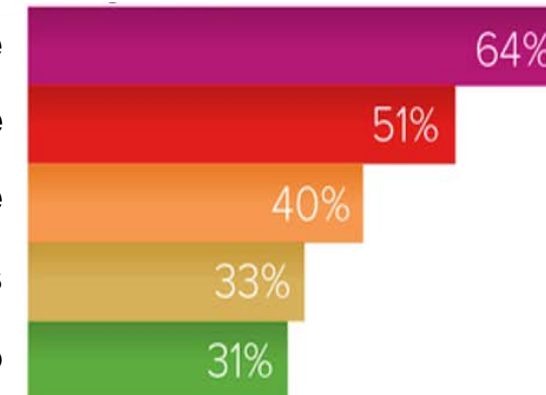
Malpractice/liability concerns
Reimbursement concerns
Technical problems
Privacy/security issues



PATIENT



Not sure diagnosis via telemedicine are as accurate
My physicians don't offer telemedicine
Concerned about insurance coverage
Privacy/security issues
Technical problems connecting via phone or video



Barrier: Patient Satisfaction



Risk

Confirmation Bias

Looking for evidence to support a pre-conceived notion, rather than looking for information that proves them wrong

“I know I have **Martian Malaria, but my doctor is not listening to me!”**

- **Unrealistic expectations** may lead to “bad review” on social media (i.e. antibiotic prescribing)
- **Decreases provider interest in participation**



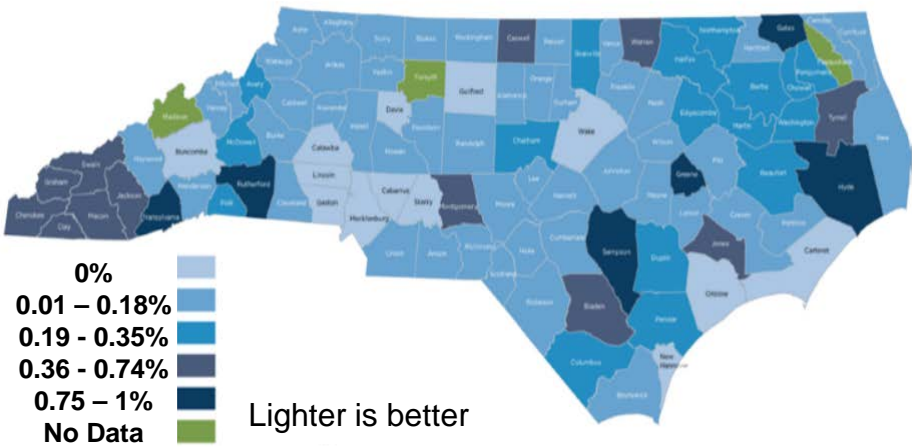
Association Between Antibiotic Prescribing for Respiratory Tract Infections and Patient Satisfaction in Direct-to-Consumer Telemedicine
JAMA Internal Medicine November 2018 Volume 178, Number 11



I'M GLAD YOU TOOK THE TROUBLE TO DIAGNOSE YOUR
OWN SYMPTOMS USING THE INTERNET...AND YOU'D BE
100% ACCURATE...IF YOU WERE A GOAT!

Barrier: NC Rural Broadband Access

% of Population without Broadband Access by County



Progress Report, data current as of December 31, 2014

And 99 percent—8,910 people—in NC's tribal lands lack broadband access at the FCC threshold.^{xx}

STATS & FACTS

93.7%

OF N.C. HOUSEHOLDS THAT HAVE ACCESS TO HIGH-SPEED INTERNET

49.8%

OF N.C. HOUSEHOLDS WHO HAVE ADOPTED HIGH-SPEED INTERNET

100+

OF BROADBAND PROVIDERS ACROSS N.C. INCLUDING MULTIPLE TECHNOLOGY TYPES

High-Speed Internet = download > 25 Mb/sec

Good quality video = > 3 Mb/sec

County Boundary



Upper Range Speed

Broadband above 100 mbps



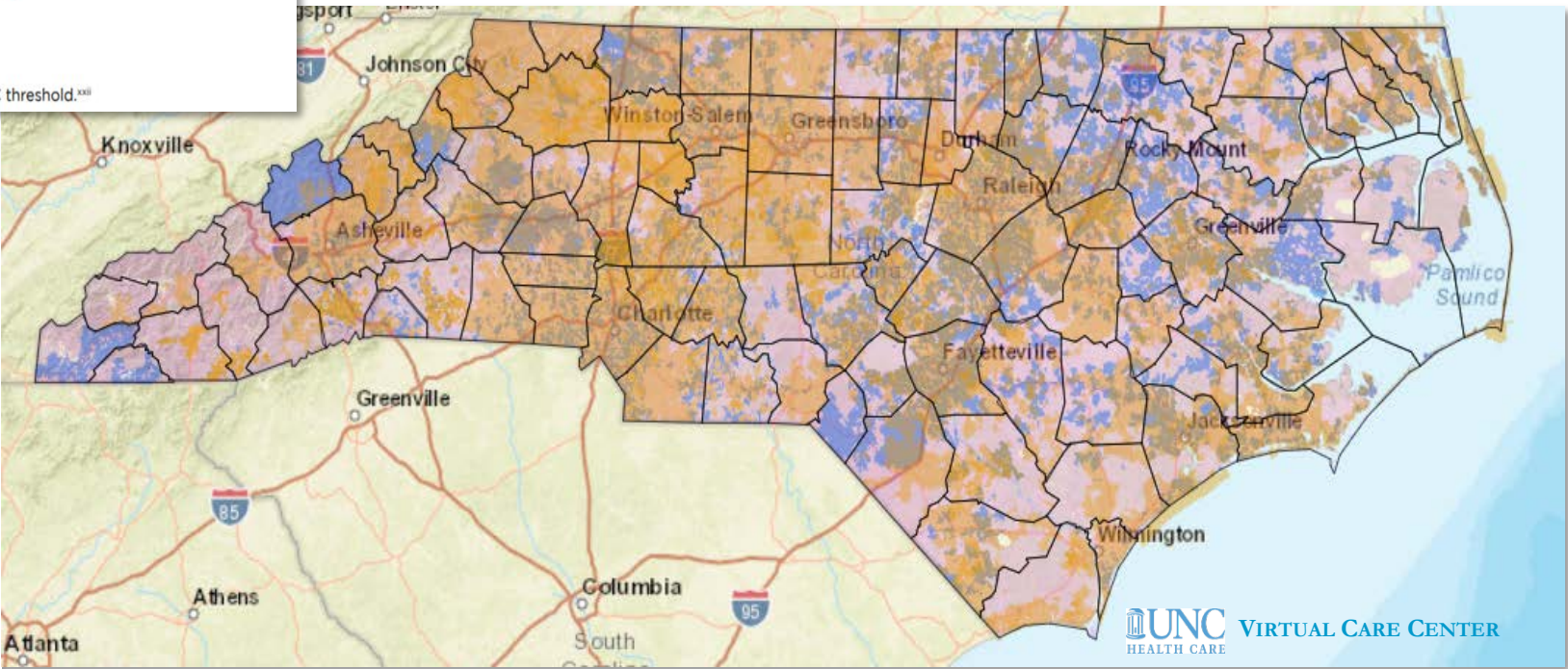
Medium Range Speed

Broadband between 25 and 100 mbps







Low Range Speed

Broadband between 1 and 24 mbps



Barrier: ROI - Requires Different Thinking

WHY use telehealth? ROI		
Attract & Keep Patients		Enhance patient convenience and access to timely diagnosis and treatment
Expand Reach		Increase provider access to specialist expertise for patient consultations across large geographic areas
Reduce Cost		Improve clinical quality and right-site utilization in avoidable admissions, readmissions for populations under risk- or value-based payments
Increase Access		Expand provider capacity through improved operational efficiencies

Other ROI proxies:

- Travel time
- Travel cost (mileage, gas)
- Lost time away from productive work/school
- Provider efficiency
- No-shows due to transportation barriers

Value based ROI = Avoided healthcare cost

Right patient, Right time, Right cost of care

Barrier: Established Quality and Outcomes

- Is it Value Added or Added Cost?
- Sacrificing quality for convenience?
- Consulting a random doctor who will never be met fragments care
- Can minor issues (i.e. URI) be thoroughly evaluated without an exam
- Few head to head studies (telemedicine vs FTF outcomes)
- Many studies sponsored by the national telemedicine companies

Variation in Quality of Urgent Health Care Provided During Commercial Virtual Visits

JAMA Intern Med. 2016;176(5):635-642. Published online 4/4/2016

Results:

- correct diagnosis between 65-94% of the time
- standard care protocols followed in 34 – 66% pts
- completed PMH & thorough exams 52–82% pts
- whether phone or video, didn't affect the outcome.

To Date: Business Model

Vs

Clinical Outcomes

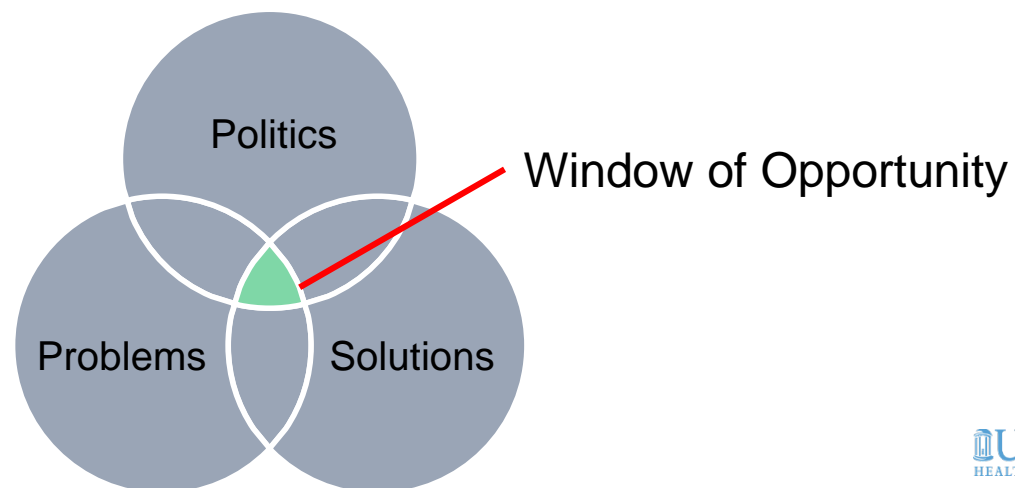
MORE CLINICAL RESEARCH IS NEEDED!

Choice, Transparency, Coordination, and Quality Among Direct-to-Consumer Telemedicine Websites and Apps Treating Skin Disease

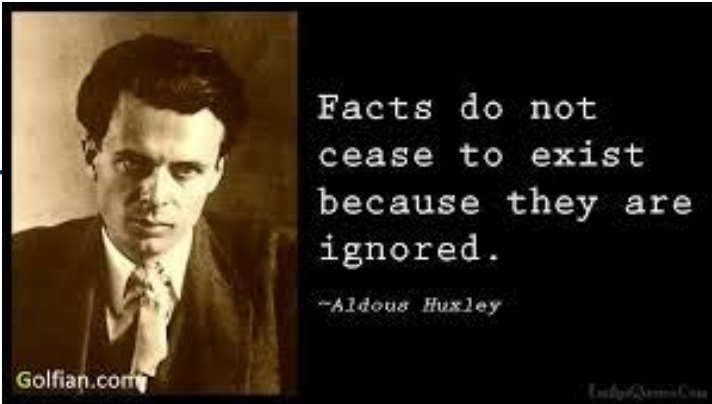
JAMA Dermatology 2016;152(7):768-775. Published online 5/15/2016

- 62 encounters, < 30% disclosed MD credentials;
- only 32% discussed potential side effects of Rx'd meds.
- Several sites misdiagnosed serious conditions, largely because they failed to ask basic follow-up questions

“Disruptive” Business Models



External: Disruptive Competition



J.P.Morgan
BERKSHIRE HATHAWAY INC.
amazon

MDLIVE®
Virtual Care, Anywhere.

BlueCross BlueShield
of North Carolina



Uber Health
BEST BUY

Wake Forest™
Health

CONE HEALTH

NOVANT
HEALTH

DukeHealth

WakeMed

VIDANT HEALTH

MISSION
HEALTH

Atrium Health



MAYO CLINIC
HEALTH SYSTEM

Cleveland Clinic

Penn Medicine

TELADOC™

amwell

Humana®

Walmart Health

Within the Last Month...



Amazon launches Amazon Care, a virtual medical clinic for employees

PUBLISHED TUE, SEP 24 2019 3:43 PM EDT | UPDATED WED, SEP 25 2019 10:22 AM EDT



Christina Farr
@CHRISSYFARR

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- virtual primary care clinic w/option for RN home visits
- offers “the best of both virtual and in-person care.”
- pilot for employees in the Seattle
- Oasis Medical is a subsidiary of Amazon
- Health care is a \$3.5 trillion sector for Amazon

BECKER'S

HOSPITAL REVIEW 9/26/19

Sam's Club launches healthcare pilot program for members: 5 things to know

Ayla Ellison (Twitter) - 2 hours ago [Print](#) | [Email](#)

[SHARE](#) [Tweet](#) [Share 1](#)

Walmart's Sam's Club is teaming up with healthcare companies to offer members bundles of healthcare services ranging from \$50 to \$240 per year.

- ...pilot with Humana in NC, discount on services, including primary care and dental services, to expand to all members if successful.
- ...unlimited telehealth for \$1 per visit through on-demand primary care app 98point6.

Bloomberg

GoodRx Buys HeyDoctor in Expansion Into Telemedicine

By [Kristen V Brown](#)

September 26, 2019, 9:35 AM EDT *Corrected September 26, 2019, 11:56 AM EDT*

- On-line pharmacy buys telemedicine company

Telehealth Vendors Undergo Series of M&As

Telehealth draws attention of newcomers from financial services

Major M&A activity 2017-2018

- **Teladoc acquired Best Doctors** in 2017 (\$440M)
 - Advances goal of building a “virtual medicine dashboard”
- **AmWell acquired Avizia** in 2018
 - Brings tele-behavioral and chronic condition management capability
- **InTouch acquired Reach Health** in 2018
 - Access to Reach’s 200 health system customers

Investment in key telehealth vendors

- **Doctor on Demand** in 2018:
\$75 million from Goldman Sachs and Princeville Capital
 - Building out ability to order lab tests
 - **Represents first telehealth** investment by Goldman Sachs
- **MDLive** in 2018:
\$50 million from Cigna, Health Velocity Capital, and Health Care Systems Capital

“We are shifting away from simply virtualizing consults to both **automating and virtualizing MDLIVE’s services**, enhancing efficiency and quality of care...” Rich Berner, CEO of MDLive

Retailers: Enter Direct-to-Consumer Telehealth Market

2018-2019 saw retailers linking consumers to major vendor platforms

▶	CVS	Teladoc	<ul style="list-style-type: none">• MinuteClinic Video Visits available through CVS Pharmacy App• Pilot saw 95% patient satisfaction with a video visit
▶	Rite Aid	InTouch	<ul style="list-style-type: none">• Letter of intent to partner on a telehealth project• Kiosks located in RiteAid pharmacies• Rite Aid owns kiosks, InTouch provides software
▶	Walgreens	MD Live	<ul style="list-style-type: none">• “Find care now” marketplace helps Walgreens pharmacy members locate convenient care through a mobile app• Includes MDLive for tele-mental health urgent care, and dermatology
▶	Walmart	Doctors on Demand	<ul style="list-style-type: none">• \$4 virtual visits for employees, others \$40• offer a wide range of services conveniently and at a much cheaper price than its rivals• plans for home services and mobile units with specialty services (dermatology, womens health)• Rumors of Humana purchase

Source: CVS Health's MinuteClinic Introduces New Virtual Care Offering CVS Press Release (2018); InTouch Health & Rite Aid Collaboration, InTouch Health Press Release (2018); Wicklund, E., Walgreens Launches an Online Marketplace for Telehealth, mHealth Intelligence (2018); Service Line Strategy Advisor research and analysis.

External Competition: Insurers

Others providing in home urgent care and primary care services



Competition is Not Local: Large Systems Grow Across State Lines

Systems use brand differentiation to attract patients, build share

Partnership drivers



Competitive brand differentiation

Achieve national prominence to build market share and scale services



Untapped geographies

Target regional markets with access barriers or provider shortages



Education and collaboration

Share knowledge, gain insights with new groups of providers



Clinical research

Advance cost and clinical efficacy research



New York Presbyterian

Offers 2nd opinion services for most specialties and subspecialties to patients in most states via Walgreens Find Care Now online marketplace¹



Cleveland Clinic

Telemedicine services, including second opinion services, pediatric adoption, and nutritional consults, to facilities in Toronto, Abu Dhabi



Mercy Health, Intermountain



Mercy Virtual, a stand-alone tele-hospital provides remote support to hospitals



Mayo Clinic

Telemedicine in 9 states

1) NYP second opinion services are not available to patients who live in IA, LA, ME, MD, MI, NM, ND, NV, or WY.

Employers: Seek Options to Lower Costs

Telehealth interest grows with desire to curb costs, absenteeism

Employee absence, demonstrable loss



\$226B

Cost of absenteeism to U.S. employers¹

The case for savings



\$6B

Estimated savings among US employers with at least 1,000 employees with virtual consults versus escalated care options²

Embracing telehealth to contain costs³



51%

Large employers that identify virtual health solutions as their top health care initiative in 2019



26%

Large employers that financially incentivize telehealth utilization



1) Cost measured annually. Data from the CDC

2) Towers Watson.

3) National Business Group on Health.

Source: Greenwell, C, [Worker Illness and Injury Costs US Employers \\$225.8 Billion Annually](#), CDC [Foundation](#) (2015); Emerman, E, [Large U.S. Employers Project Health Benefit Cost Increases to Hold Steady at 6% in 2017](#), National Business Group on Health (2018); [Current Telemedicine Technology Could Mean Big Savings](#) Towers Watson (2014); Service Line Strategy Advisor research and analysis.

As a Business Model

Positive

- Filling the gap
- Nimble to market with cash model & 24/7 coverage
- Meeting patient demand for lower cost, timely access
- Not impacted by parity laws
- Venture capital backing (profits)
- Drives patients to company resources/services (profits)
- Contracts with insurers with lower rates (profits)
- Offering synchronous & asynchronous:
 - On-demand & scheduled PCP & specialists
 - eVisits, eConsults, Second opinions
 - Starting “virtual Primary Care”

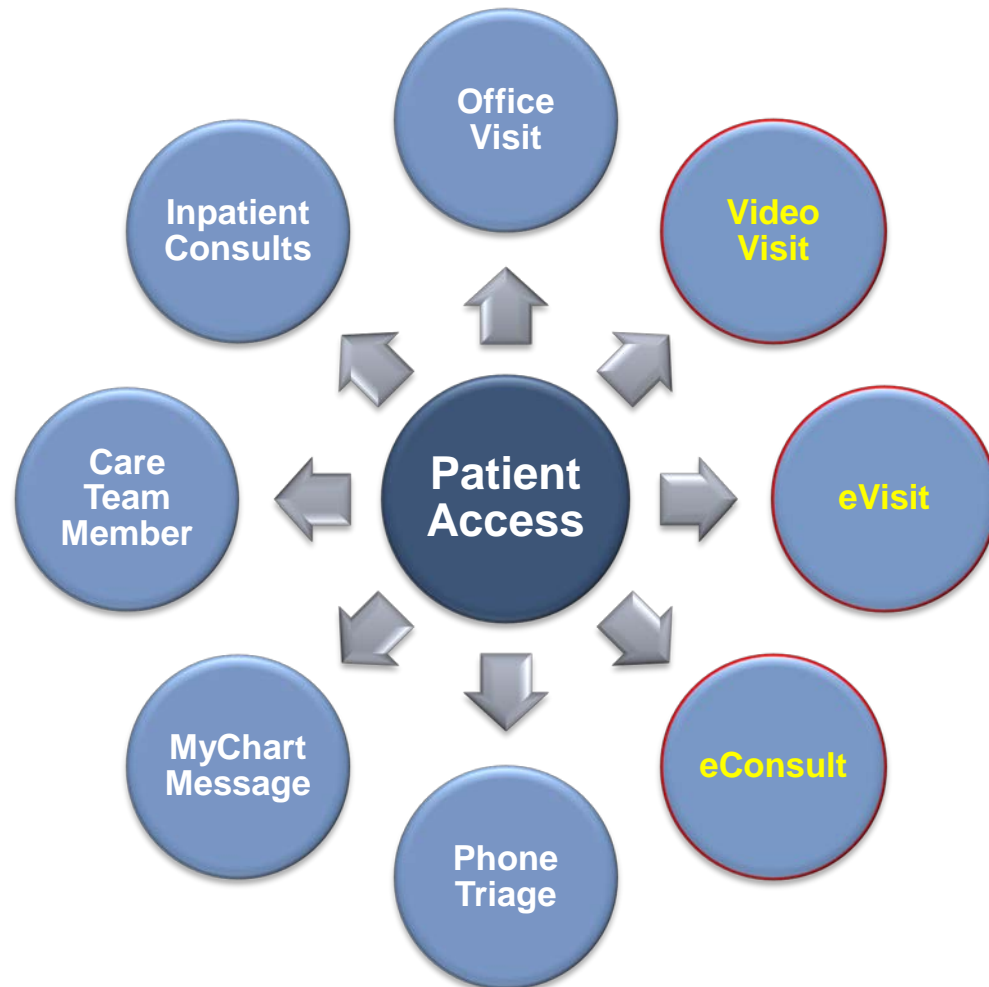
Negative

- Continues to fragment care (PCMH?)
- Directly competes with PCPs
- No true clinical data integration (CCD or MDM only)
- No clear quality performance metrics (yet)
- Added value or added cost?
- Success driven by volume, not quality of visits

Primary Care Model

Suite of Patient Access Points

Provide Patient Choice




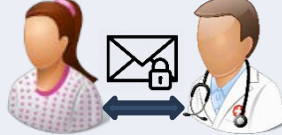
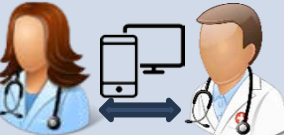


Patients:

- Timely access to care
- Convenience of care
- Engagement in their health
- Integrated care delivery across the continuum
- Lower cost of care setting

Providers:

- **Not MORE work, rather tool to provide access**
- Alternatives for low acuity care
- Better practice efficiency
- Balanced work load
- Avoid over-booking
- Recognition for care delivered

Telehealth Use Case Opportunities

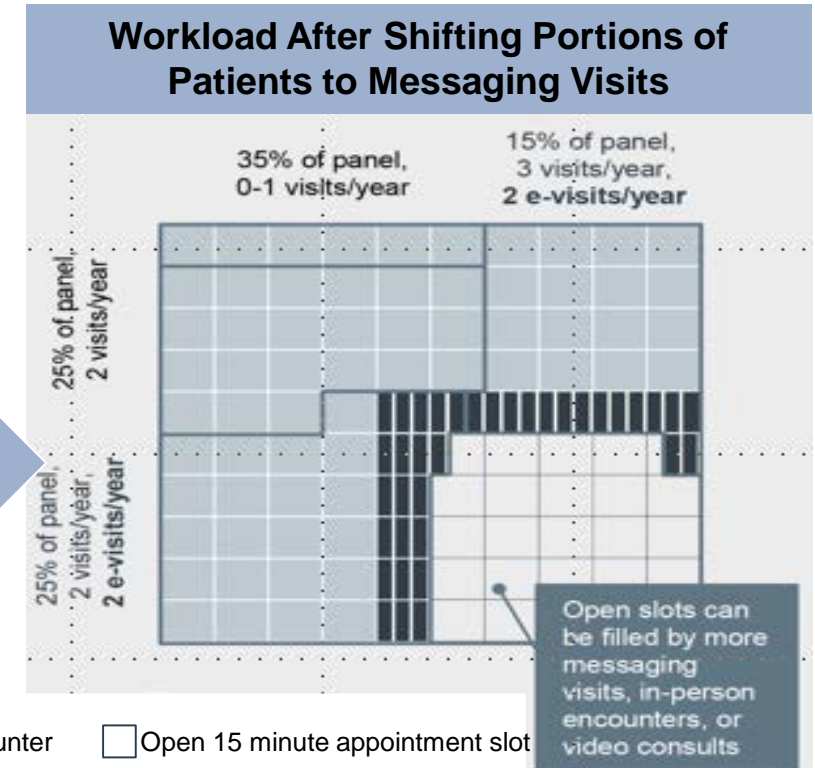
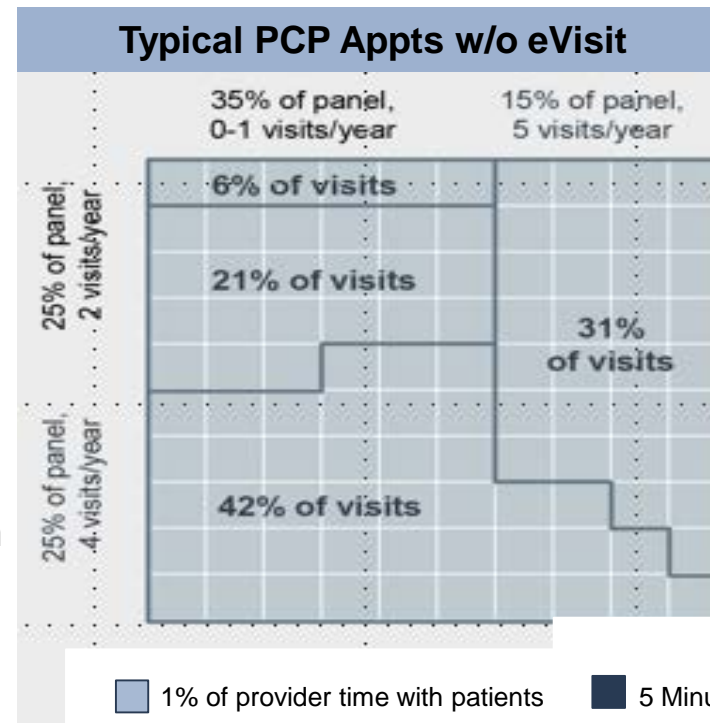
	Real-time = "Synchronous"	Store and Forward = "Asynchronous"
Visits (Provider to Patient)	<p>Virtual Visits</p> <p><i>Real-time video interaction between provider and patient</i></p> <p>Follow-up visits to patient in a home or outpatient setting</p> 	<p>eVisits</p> <p><i>Online exchange of medical information between provider & patient</i></p> <p>MyUNCChart structured questionnaire generally used for low acuity symptoms, chronic care management and medication adjustments</p> 
	<p>Virtual Consults</p> <p><i>Real-time interaction between specialist and patient's provider</i></p> <p>New or follow up specialist consult with a treating provider for a patient located in a facility (ED, ICU, post-acute care) or in an ambulatory setting.</p> 	<p>eConsults</p> <p><i>Online exchange of medical information between providers</i></p> <ul style="list-style-type: none"> Lower complexity medical opinion <p>Second Opinions</p> <p><i>Online exchange of medical information between providers</i></p> <ul style="list-style-type: none"> High complexity medical opinion with extensive record review  

eVisits Can Expand Capacity and Appointment Availability

- FTF visits are generally 15 minute
- Provider access improved by shifting a % of FTF visits to 5 minute messaging encounters
- eVisit questionnaires via My UNC Chart sent to provider and replies directly
- Newly available appointments then utilized for patients seeking appointments with no or low wait times
- Example 40% of patients are frequent office visitors for medication advice, check-ins, and symptom questions (i.e. cold and flu) and could easily and appropriately managed online.

Visits Eligible for Shifting to Online

- Medication questions
- Routine chronic disease check-in
- Low-acuity symptom review/questions



PCPs: Reasons to Adopt Video Visits & eVisits

- **Not more work, but another alternative tool for delivering care**
- Avoid the “**N of 1**”
 - Start with a defined scope: low acuity visits and routine follow up
- Expand your access with continuity of care
 - Access for New/Est patients for lower acuity visits that don't rely heavily on PE
 - Increase appointment availability for new or established higher acuity patients
 - Increase practice efficiency, avoid over-booking with low acuity problems
 - Routine follow up or monitoring for chronic disease management
- Meet your patient demand, increase patient satisfaction and retention
 - Compete with commercial/insurance programs attracting your patients
 - Decrease patient expense, travel, missed work, parking
- Offers convenience, flexibility and a lower cost alternative for care (value based TCOC)
 - No brainer for value based care
 - Maintain panel attribution for younger and healthier patients in value based contracts/capitation

Teleporting Doctors



Silver Chain Group (AU)
application for the MS HoloLens

- Enables Enhanced Medical Mixed Reality (EMMR)
- Empowers home care RN with hands-free data and
- Access to MD advice and assessment

<https://www.youtube.com/watch?v=8LFbsWRpcfk>

Silver Chain Group (Oct 1, 2017)

Not-for-profit organization delivering community health and care services across Australia.



Questions & Discussion

Resources:

2019 STATE OF THE STATES: Coverage & Reimbursement July 18, 2019
American Telemedicine Association www.americantelemed.org

CONNECTING NC State Broadband Plan www.ncbroadband.gov

The Virtual Care Reimbursement Parity Puzzle: What Everyone Should Know, Becki Hafner-Fogarty
<https://www.zipnosis.com/blog/industry/the-virtual-care-reimbursement-parity-puzzle/>

Advisory Board www.advisory.com

- What Do Consumers Want from Virtual Visits?
- Expanding Telehealth Across the Care Continuum
- Telehealth: Driving Adoption of Virtual Visits
- Prepare for Adoption of Virtual Visits for Primary Care
- 2017,2018, 2019 Telehealth Industry Trends
- How Consumers' Health Care Preferences Vary by Age
- Telehealth: Scaling Remote Patient Monitoring Programs