MINI MED SCHOOL · VIRTUAL HEALTH

Telehealth: From Ambulance Radios to Long Commutes to Zoom

A (not exactly boring) history of virtual health care — and why the tech has been ready decades longer than the law and payment system have.

Jonathan Kaufmann, D.O.

Type your answers in the Q&A all lecture long — I'll look at them live.

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Dr. Kaufmann Introduction Slide

- Background – Who is Dr. Kaufmann?
- Journey to Medicine and Medical Informatics
- Dr. Kaufmann and Telehealth

Our Patients. Our Community. Our Commitment.

Bayhealth is a non-profit health system serving Delawareans with a mission to strengthen the health of our community, one life at a time.

5,000+

team members

1,000+

physicians and clinicians

400+

volunteers

2

hospitals

70+

primary and specialty care locations

$198M+

annual community benefit

$1B+

annual revenue

Bayhealth®

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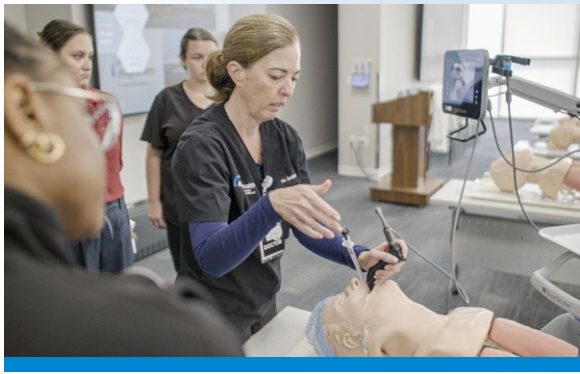
THE NEXT GENERATION

Bayhealth's Graduate Medical Education programs are shaping the future of healthcare by training the next generation of clinicians through hands-on clinical experience, mentorship and academic excellence to strengthen Delaware's physician workforce for years to come.

- ACGME-accredited residency programs
- Focused on patient-centered care, quality improvement and interdisciplinary collaboration
- 100+ graduates
- Recruitment and retention pipeline supporting long-term access to care in Delaware
- 26K+ patients seen by residents last year



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HERE'S THE PLAN

4 parts

History -> wild use cases you've never heard of -> why adoption was held back -> 2020 (when everything changed)

Discussion breaks

I'll ask a question, you type your answer in the chat — no raised hands, no wrong answers

Questions welcome anytime

Drop them in chat as we go, not just at the end

The goal

Leave here knowing more about how virtual health actually works than most adults do

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DISCUSSION

Before we start — have you ever had a telehealth visit with a doctor, therapist, or nurse?

Type YES or NO in the chat — and if yes when was it and you are comfortable sharing, what was it for?

WHAT IS TELEHEALTH, ACTUALLY?

Using technology — phone, video, apps, sensors — to deliver health care when the patient and the provider aren't in the same room.

It's a lot older — and weirder — than most people think.

TELEHEALTH COMES IN 4 FLAVORS

Live communication – Audio only or Audio/Video

A real-time visit — basically a FaceTime or telephone call with you're a clinician.

Store-and-Forward

Send a photo or scan now, get an expert's answer later.

Remote Patient Monitoring

A device tracks you at home and sends data to your care team.

mHealth / Apps

Health apps, wearables, and text-based coaching on your phone.

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DISCUSSION

Now that you know more about what telehealth is does your answer change to the question: Have you ever had a telehealth visit?

PART 1

The Surprisingly Old History

1

It doesn't start with COVID. It doesn't even start with the internet.

EARLY USES

Civil war

The Union Army

Used the telegraph to send battlefield reports which included injuries, the order medical suppiles

Remote Care

Australia

A newly installed telegraph line to central Australia enabled instructions to be given to help care for an injured man

https://curogram.com/blog/history-of-telemedicine

https://pubmed.ncbi.nlm.nih.gov/23138081/

LONG BEFORE ZOOM EXISTED PEOPLE WERE THINKING ABOUT DIFFERENT WAYS OF DELIVERING INFORMATION

1924

The "radio doctor"

Radio News Magazine imagined patients describing symptoms over the radio — and even seeing a doctor on a screen — decades before either was technically possible.

DISCUSSION #2

Guess: what year did doctors FIRST actually use live video for a real medical exam — not just imagine it?

THE ANSWER...

1959: THE REAL FIRST

1959

University of Nebraska

Doctors used closed-circuit television to conduct neurological exams on patients miles away — the first real two-way telemedicine link.

1964

Nebraska Psychiatric Institute

Linked live to a state hospital 112 miles away for the first large-scale test of TV as a medical tool. Telehealth's first specialty wasn't urgent care — it was mental health.

Sources: NEH Humanities, "When Television Was a Medical Device" (2017); UNMC Newsroom (2015)

TELEHEALTH MEETS THE AMBULANCE

1967: YOUR HEART RHYTHM ARRIVES BEFORE YOU DO

1967

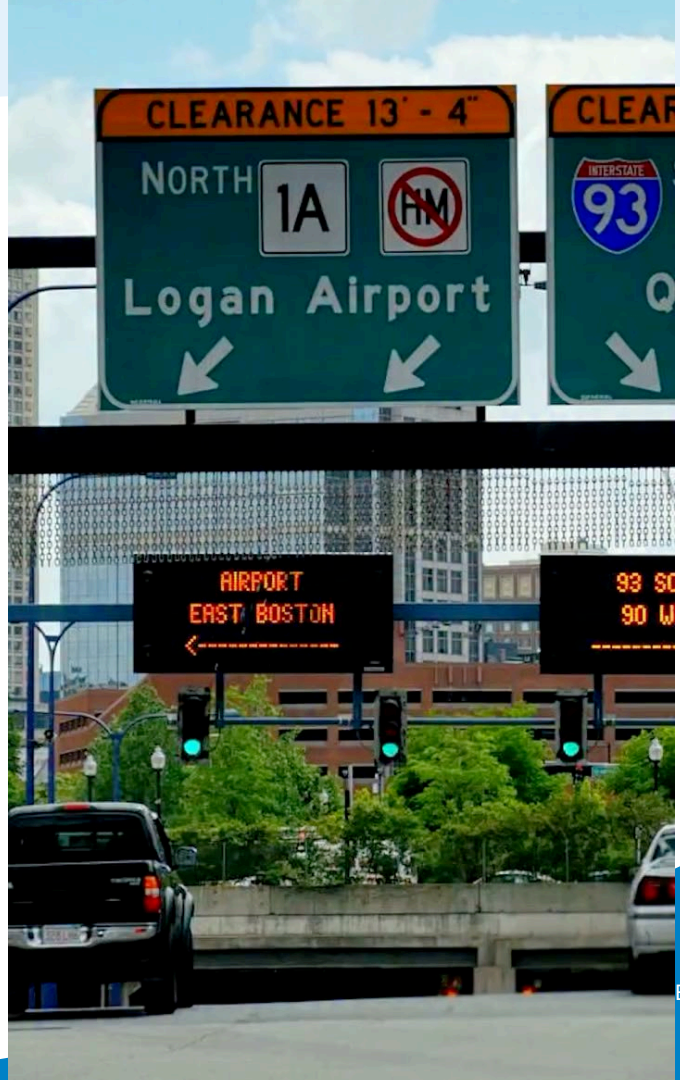
The University of Miami partnered with the local fire department to transmit EKG heart-rhythm readings by radio — straight from the ambulance to the emergency room at Jackson Memorial Hospital, before the patient ever arrived.

This is the ancestor of every "the hospital already knows you're coming" system in use today.

Source: NCBI Bookshelf, "Evolution & Current Applications of Telemedicine"; UF College of Medicine (Dr. Eugene Nagel)

1960: TRAFFIC LEADS TO INOVATION

https://www.facebook.com/reel/1554331766091877



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THE INFRASTRUCTURE CATCHES UP

1983

The internet is standardized

TCP/IP becomes the universal standard — suddenly there's a real network to move medical data over, not just phone and radio lines.

1993

American Telemedicine Association founded

Telehealth becomes a real professional field with standards and research behind it — not just scattered experiments.

Sources: Internet Society, "Final Report on TCP/IP Migration in 1983"; American Telemedicine Association, About Us

2001–TODAY: SICK CALL, 250 MILES UP

2001

Since the ISS's first long-duration crew in 2001, NASA has run continuous telemedicine for astronauts. In one real case, an astronaut two months into a six-month mission developed a blood clot. There's no ER in space — so flight surgeons on Earth walked the crew through an ultrasound over video, confirmed the diagnosis, and managed treatment (with medication shipped up on the next resupply flight) until he landed safely and made a full recovery.

Everything you'd do on a video call with your own doctor — NASA was already doing it in orbit.

Sources: UNC School of Medicine news (2020); Harvard Business Review, "How NASA Uses Telemedicine" (2017)

PART 2

Use Cases You've Never Heard Of

2

LOCKED UP AND FROZEN OUT

Corrections

Prisons & jails

Correctional facilities use telehealth so incarcerated patients can see specialists without the cost, security risk, and staff time of transporting someone across the state under guard.

Antarctica

Polar research stations

Winter-over crews at stations like the South Pole are cut off from evacuation for months. Station medics lean on remote specialists for everything from dental emergencies to psychiatric support.

Sources: National Institute of Justice/DOJ, correctional telehealth research (1999); ScienceDaily, "Telemedicine Link With South Pole" (2002)

AT SEA AND IN CLASS

At sea

Cruise ships & offshore rigs

Ship physicians use telehealth to bring specialists to patients who are hundreds of miles from the nearest land-based hospital.

At school

School-based telehealth

A school nurse puts a student in front of a camera; a pediatrician on video can diagnose an ear infection or send a prescription before a parent even leaves work.

Sources: AJR, cruise-ship teleradiology pilot study; U.S. Dept. of Health & Human Services, telehealth.hhs.gov

EVEN THE DOG GETS A VIDEO VISIT

Veterinary

Telehealth for pets

Yes — your dog or cat can have a video visit too. Especially useful in rural areas where one vet covers a huge territory of farms and ranches.

Disaster response

Mobile crisis & disaster care

After hurricanes, wildfires, or a mass-casualty event, telehealth lets mental-health crisis teams reach survivors when local providers are overwhelmed or roads are impassable.

Sources: AVMA Journal (2025); SAMHSA, Disaster Distress Helpline program

DISCUSSION #3

Which of these use cases surprised you most — or where else do you think telehealth could go that we haven't mentioned?

Type it in chat — most creative idea gets a shoutout

Pre-COVID-19: ~100 video visits per week

WHY????

Sources: AVMA Journal (2025); SAMHSA, Disaster Distress Helpline program

PART 3

Adoption challenges

3


Hospital And Clinics
Hospitals
Clinics
Wahiawa
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Made with Felt

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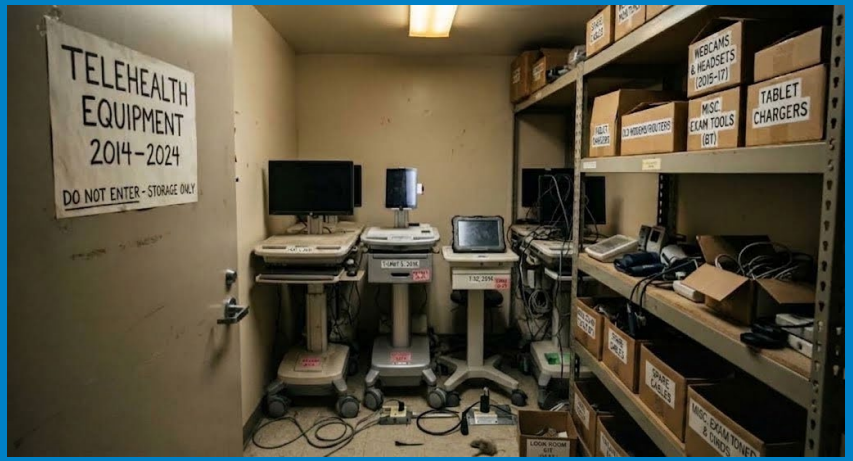
DISCUSSION

Why do you think all of these projects failed and the equipment was gathering dust?



DOCTORS DIDN'T WANT IT

Impact to relationship

Doctors worried it would impact their ability to connect with their patients during a visit

Cost and workflow burden

Equipment costs money and making sure a visit was able to be completed created new work.

Liability

The fear of getting sued for missing something

Only about 25% of physicians used telehealth weekly before 2020

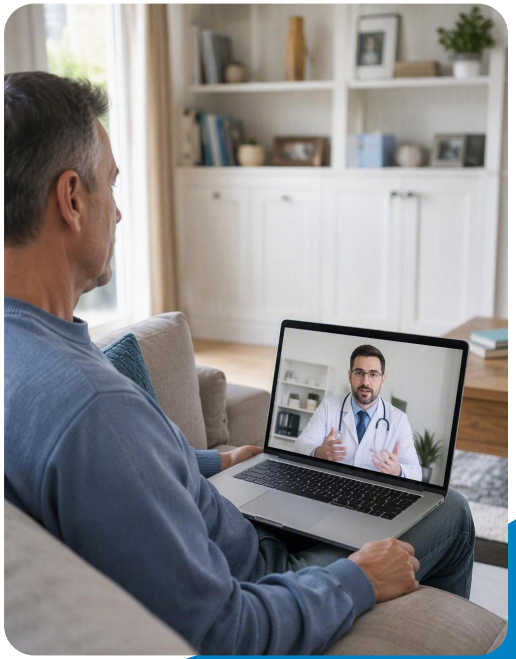
PATIENTS WERE INDIFFERENT

Positives

- Convenience
- Easier access

Concerns

- No physical exam
- Doctor patient relationship
- Insurance issues



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EVERY TELEHEALTH VISIT DEPENDS ON 5 THINGS

Get the provider, the patient, and the technology all lined up — and the visit can still fall apart because of the last two: who's allowed to pay for it, and whether the law allows it across a state line.

THE RULES BEFORE MARCH 2020

TELEHEALTH WAS LEGAL. IT WAS JUST... BLOCKED.

Medicare

Covered telehealth only in RURAL areas, and only if the patient traveled to an approved medical site. You could not do a visit from home.

Commercial insurance

Coverage varied wildly — state to state, plan to plan. There was no consistent national rule.

The technology works fine. It was the PARTICIPANTS and RULES that kept it from being used.

Sources: KFF, "What to Know About Medicare Coverage of Telehealth"; Congressional Research Service (R47424)

MARCH 6, 2020

2020

When the federal Public Health Emergency was declared, nearly every one of those restrictions was waived almost overnight — the rural-only rule, the “must travel to a clinic” rule, cross-state licensing requirements, even the rule that visits had to include video, not just audio. Health systems like Bayhealth stood up full video urgent care programs in a matter of weeks.

COVID-19 Peak: ~20,000 video visits per week

What used to take years of policy debate happened in about eight weeks.

Source: CMS, “Medicare Telemedicine Health Care Provider Fact Sheet” (March 17, 2020)

PART 4

Why It's Still Being Held Back

4

The technology is ready. The law and the payment system aren't — not fully, not yet.

5 Months Later: ~8,000 video visits per week

WHERE IS THE DOCTOR “STANDING”?

A doctor generally must be licensed in the STATE WHERE THE PATIENT IS LOCATED — not where the doctor is sitting. A Delaware doctor on a video call with a patient who's visiting family in Florida may not legally be allowed to treat them.

Fix in progress: the Interstate Medical Licensure Compact lets physicians get licensed faster across the 44 states, D.C., and Guam that have joined — but it's not all 50 states, and it doesn't erase the underlying requirement.

Source: Weatherby Healthcare, “IMLC providing expedited licensure in 44 states” (2026)

PRESCRIBING OVER VIDEO

The Ryan Haight Act (2008) normally requires an in-person exam before a doctor can prescribe a controlled substance — think ADHD medication or certain pain medication — through telehealth. COVID-era flexibilities suspended that rule, and the DEA has extended the exception repeatedly, most recently through the end of 2026.

Every one of those extensions is temporary. There is still no permanent federal rule — providers and patients are re-checking the calendar every year.

Sources: DEA, "DEA Extends Telemedicine Flexibilities…" (Dec. 31, 2025 rule); Federal Register

MEDICARE'S CLIFFHANGER

Congress hasn't permanently fixed Medicare telehealth payment. Instead it keeps passing short-term extensions — sometimes for only weeks — often tied to unrelated government funding bills. In late 2025 a government shutdown briefly let telehealth coverage lapse; Congress then passed a two-year extension in February 2026, securing payment through December 31, 2027.

That's the longest runway telehealth payment has had yet — but it's still an extension, not a permanent fix. The countdown clock just got reset, not removed.

Sources: APTA, "Medicare Telehealth Flexibilities Extended Through Dec. 31, 2027" (Feb. 2026); Forbes (Feb. 2026)

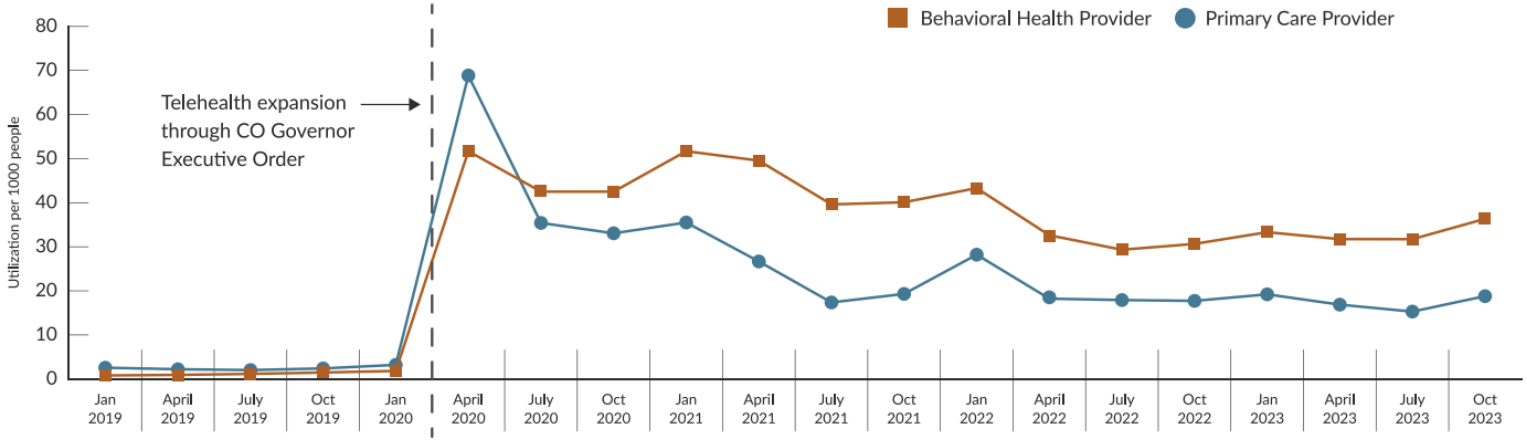
DISCUSSION

If you were a doctor would you keep seeing patients via video with all of the payment uncertainty? Why or why not?

Type your vote — YES or NO — and your reasoning

Utilization Trends

Telehealth visits with behavioral health providers have remained high while visits with primary care providers have dropped more significantly.



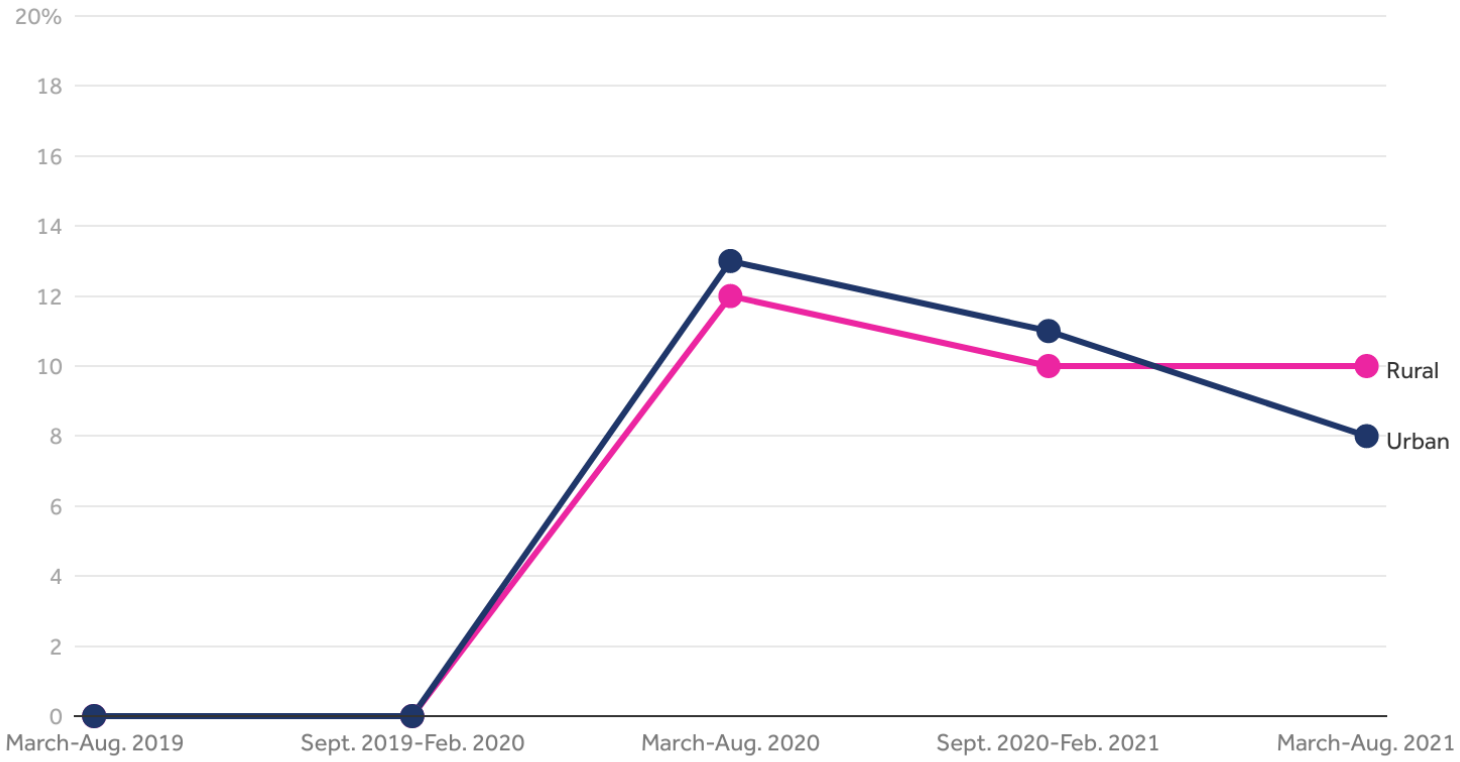
https://www.ama-assn.org/system/files/2024-prp-telehealth.pdf

DISCUSSION

Before COVID, insurance mostly paid for telehealth only in rural areas. Was that a fair rule? What would you change about it?

Chat your take — there's no wrong answer here

Share of outpatient visits by telehealth, by area type



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Source: KFF and Epic Research analysis of Cosmos Data

Peterson-KFF Health System Tracker

EPIC RESEARCH

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THE STATE OF PLAY IN 2026

- 44 states, D.C., and Guam have joined the licensure compact, easing (not solving) the cross-state problem.
- The DEA's telemedicine prescribing flexibility is extended through Dec. 31, 2026 — still temporary, not yet a permanent rule.
- Medicare telehealth payment was extended again in Feb. 2026, now secured through Dec. 31, 2027 — the longest runway yet, but still not permanent law.
- The next big breakthrough in virtual health may be political, not technological.

Sources: Weatherby Healthcare (2026); DEA Federal Register notice (Dec. 2025); APTA / Forbes (Feb. 2026)

3 THINGS TO REMEMBER

1. Telehealth isn't new — it’s 100+ years old, and it started in psychiatry, NASA, and rural medicine, not COVID.

2. COVID didn't invent the technology — it knocked down the legal and payment walls that were already standing, almost overnight.

3. Most of those walls are back up, or on a countdown clock. The biggest obstacle to virtual health today isn't the Wi-Fi. It's the Government and Insurance.

DISCUSSION

Last one: what's ONE thing from today that surprised you — or one question you still have?

Type it in chat as we wrap up — I'll answer as many as I can

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Jonathan Kaufmann, D.O.

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Go tell your parents something about telehealth they didn't know.