

Primary Care is Deteriorating One “Fragment” at a Time

Reorienting from Transactions to Relationships

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Agenda

- A patient case
- Primary care in crisis: fragmented into transactions
 - Tech
 - Team
 - Time
- What is the ideal?
 - Two examples of relationship-based clinics

The case of Devon

- 36-year-old with history of congenital kidney disease
- Moved to California from out of state, came to primary care as a new patient...



First visit

- 30 minute appointment; took ~10 minutes to get patient in room, fill out forms, change into gown, obtain vital signs
- No medical records in computer
- Patient brings stack of papers



Next steps

- Ordered new set of blood tests, returned after hours with anemia

Hemoglobin	13.5 - 17.7 g/dL	10.1 ▼
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- Flipped through outside records, couldn't find prior blood tests
- Messaged patient (after hours) – per brief message exchange, he wasn't sure if he had anemia before, had no symptoms, no signs of bleeding
- Had appointment with nephrologist, who reviewed anemia and started erythropoiesis-stimulating agent (ESA)
- Neither primary care doctor or kidney doctor pursued additional testing

Hospitalized

- Primary care doctor gets computer notification that patient in hospital for syncope
- Blood pressure low, lightheadedness improved with IV fluids
- Worsening anemia, deferred to primary care doctor / nephrologist
- Primary placed outpatient referral to GI – “consider colonoscopy”

Hemoglobin	13.5 - 17.7 g/dL	9.4 ▼
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Follow Up

- Primary doctor messaged medical assistant to set up post-hospitalization follow-up appointment within 1 week
- Message sent to patient, but next available appointment with primary doctor not for 1 month...
- Choice to see someone else, or wait 1 month
- Chose to wait
- Deferred colonoscopy – ordered as screening instead of diagnostic, insurance told patient would be >\$3000

Thanks, I was able to get scheduled for [REDACTED], that was the first available appointment.

Hospitalized again

- Didn't make appointment; hospitalized a second time, tachycardia and syncope, blood tests showed worsening anemia (not responsive to ESA) and new liver enzyme elevation
- CT scan done, showed primary colon cancer with metastases to liver



A perfect storm

Why was the primary doctor set up to fail?

Unshared medical records

Long wait to see primary doctor

Disorganized medical records

Insurance barriers

No time for follow-up

Visits too short

Many doctors, starting from scratch

The ideal

- A primary care doctor should be the **quarterback** of your overall health
- Health is a story – it **changes over time**
- Ideally, primary care doctor is **first point of contact** who knows you, can react to changes, put them in context, and act accordingly
- Requires **continuity** – access to data, access to communication

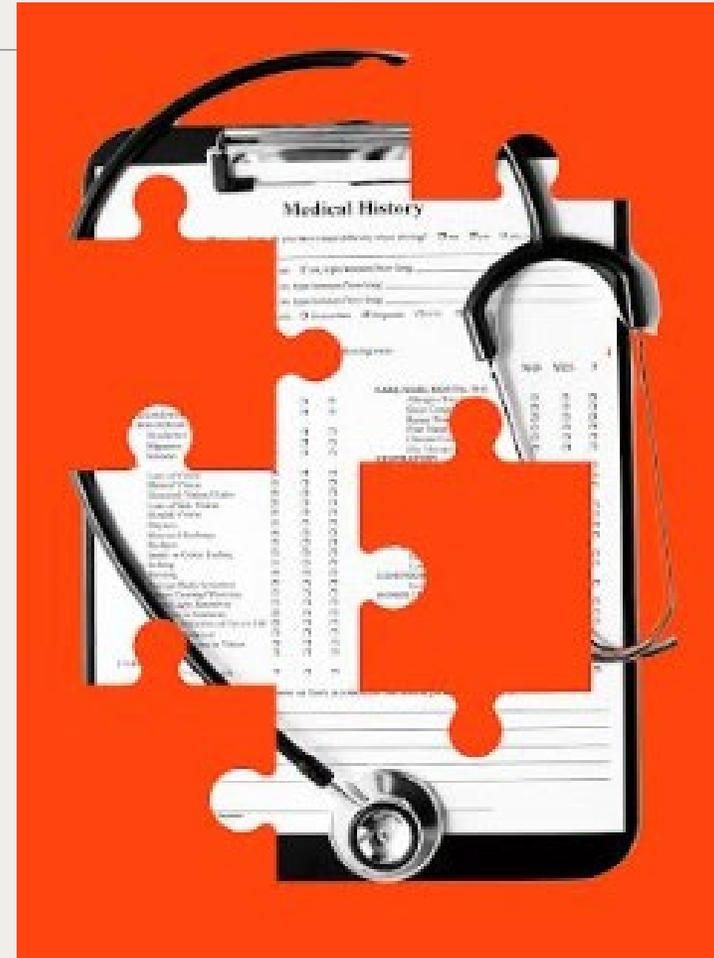


Primary care lacks continuity; it's fragmented

Tech

Team

Time



Part 1: Fragmented Tech

- In 2009, paper records converted to electronic medical charts
- Major step up from handwritten, illegible notes lost in filing cabinets
- Potential to connect large amounts of patient data seamlessly

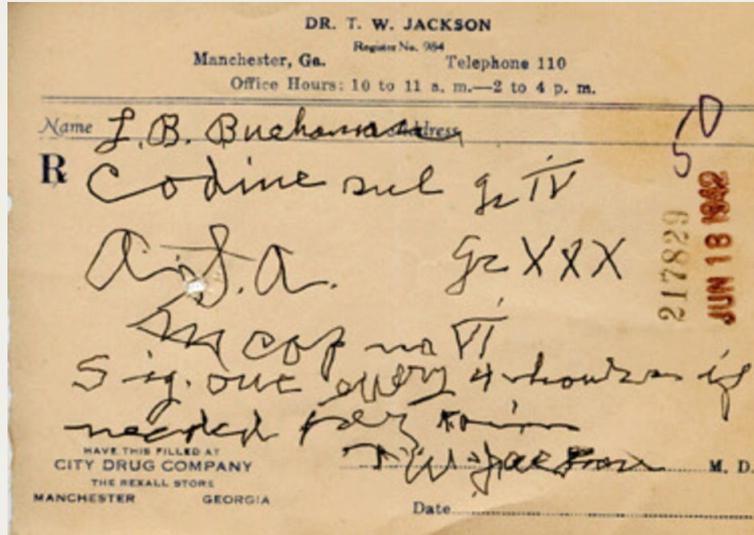


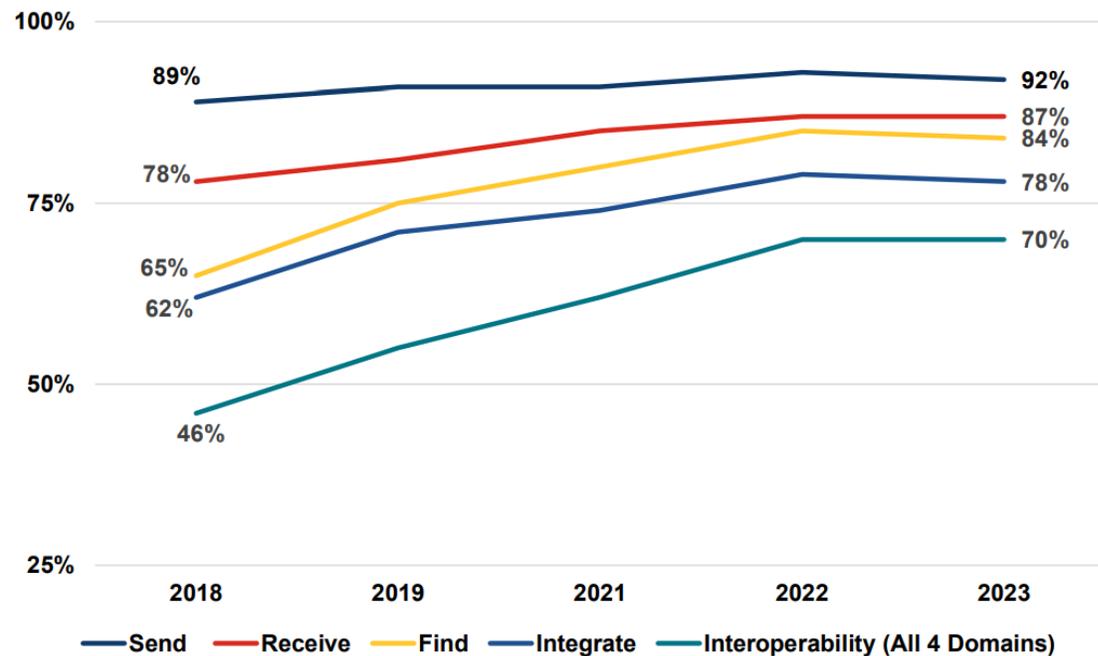
Image source: A doctor's prescription from 1942. Dr. T.W. Jackson. From Sandlin J, Google tries to decipher doctors' bad handwriting, 2022.



Image source: <https://www.shrednations.com/articles/steps-to-take-before-shredding-medical-files/>

Vanishing Records

Figure 1: Percent of U.S. Non-Federal Acute Care Hospitals Engaged in Interoperable Exchange of Electronic Health Information: 2018-2023.



ONC Data Brief | No. 71 | May 2024.



90% of health care facilities use faxes

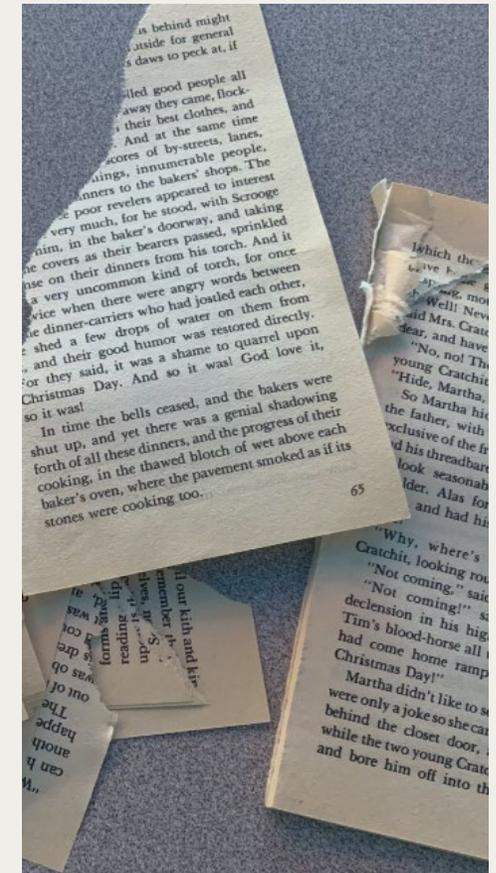
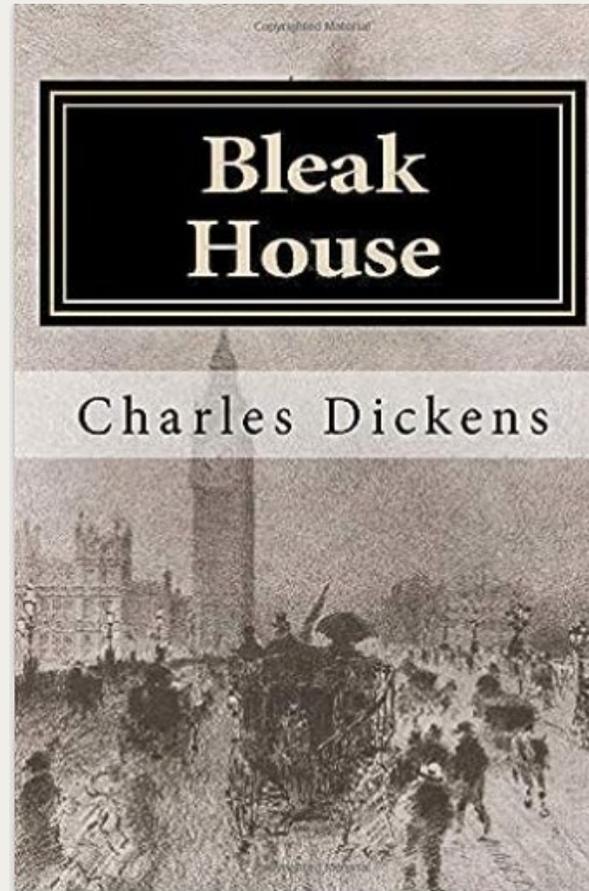
Big Data is BIG

Devon's story by the numbers:

- **>10,000** words
- Scattered in **dozens** of disparate tabs
- **60%** of words are repeated
- **0** electronically shared records

Other relevant numbers:

- **1000+** other patients
- **15+** visits per day
- **50+** messages and notifications
- **0** hours to sift



Needle in the haystack

Chart Review | History | Notes | Rooming | Wrap-Up | Communications | Plan | Results Review

Encounters | **Notes/Trans** | Letters | Proc | Card | Labs | Rad | Meds | Referrals | Media | Other Orders | Episodes | LDAs | Consents | Misc Rpts

Preview | Refresh (5:34 PM) | Select All | Deselect All | Review Selected | Route | Tag | Load Remaining | Image Archive | Edit Note

Filters | Hide Other Enc | Me | Internal Medicine | Stanford Internal Me... | Hide Deleted | Procedures | H&P | DC Summary | More

Department Specialty	Author	Encounter Date	Author Type	Encounter Department	Service	Encounter Type	Tags	Type	Location	Episode	Author Specialty	Status	Author or Note Action
Recent Notes													
		08/25/2023	08/25/2023 1...			Office Visit		Patient Instructio...					
		08/25/2023	08/25/2023 1...			Office Visit		Progress Notes					
		08/24/2023	08/24/2023 1...			Office Visit		Clinic Support N...					
		08/24/2023	08/24/2023 1...			Office Visit		Progress Notes					
		08/24/2023	08/24/2023 1...			Office Visit		Patient Instructio...					
		08/16/2023	08/16/2023 0...			Telephone		Telephone Enco...					

Lab Reports		AUTOMATED BLOOD ...	
Search		WBC	6.0
LABORATORY		Hemoglobin	7.4 ▼
HEMATOLOGY		Hematocrit	24.2 ▼
COAGULATION		Platelet count	64 ▼
CHEMISTRY		MCV	88.6
GENERAL CHEMISTRY		RDW	15.0 ▲
LIPIDS & CARDIAC RISK		RBC	2.73 ▼
POINT OF CARE		MCH	27.1
LYSOZYME		MCHC	30.6 ▼
VITAMINS			
VIT D 25 HYDROXY			
LIPASE			
CHROMIUM, SERUM			

Source: Epic, 2024.

Inputting data is manual, onerous, and clerical

ct abdomen

Browse Preference List Facility List Database

Panels (No results found) Search panels by user

Medications (No results found)

Procedures

Px Code	Name	Type	Resulting Agencies	Pref List
IMGCT0128	CT Abdomen Pelvis wo IV Contrast	Imagi...		AMB PR...
IMGCT0092	CT Abdomen Pelvis w IV Contrast	Imagi...		AMB PR...
IMGCT0127	CT Abdomen Pelvis w and wo IV Contrast	Imagi...		AMB PR...
IMGCT0092	CT ABDOMEN PELVIS W IV CONTRAST	Imagi...		SHC RIS...
IMGIL0001	CT ABDOMEN PELVIS REFERENCE ONLY	IMAG...		SHC RIS...
IMGCT0018	CT ABDOMEN ANGIOGRAPHY W AND WO IV CONTRAST	Imagi...		SHC RIS ...
IMGCT0021	CT ABDOMEN AORTA PELVIS RUNOFF LOWER EXTREMITIES BILATERAL ...	Imagi...		SHC RIS ...
IMGCT0125	CT ABDOMEN KIDNEY ANGIOGRAPHY W IV CONTRAST LIVING RELATE...	Imagi...		SHC RIS ...
IMGCT0126	CT ABDOMEN LIVER ANGIOGRAPHY W IV CONTRAST LIVING RELATED ...	Imagi...		SHC RIS ...
IMGCT0112	CT ABDOMEN LIVER PELVIS W IV CONTRAST TRIPHASIC	Imagi...		SHC RIS ...
IMGCT0106	CT ABDOMEN LIVER PERFUSION W AND WO IV CONTRAST	Imagi...		SHC RIS ...

62 clicks to order Tylenol

EHR functions	Usability and safety metrics	Site 1A Mean (SD)	Site 2A Mean (SD)	Site 3B Mean (SD)	Site 4B Mean (SD)
Tylenol (500 mg PO, 4-6 hours)	Task duration (sec)	51.4 (15.3)	70.4 (32)	69.3 (38.2)	45.6 (15.9)
	Clicks	14 (4.1)	23.5 (15.8)	61.6 (94)	25.8 (11.2)
	Error rate	8.3%	0	7.1%	30%
	Types of errors: - Wrong dose, frequency, route, and rate				

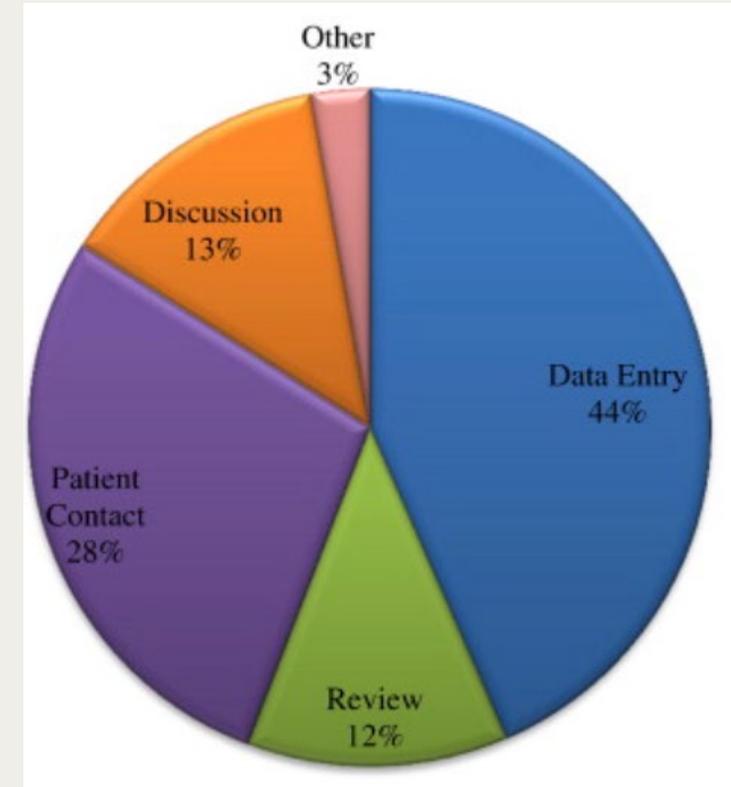


Ratwani RM, et al. A usability and safety analysis of electronic health records: a multi-center study. J Am Med Inform Assoc. 2018

4,000 clicks to get through 10 hour shift

Table 1. Quantity of mouse clicks for selected EMR tasks

Order a 325-mg aspirin	6
Order a chest x-ray PA and lateral	8
View a test result in old records	11
View and interpret a chest x-ray post anterior and lateral	13
Write and print a single prescription	15
Create and print discharge instructions	20
Document physical examination of a hand-and-wrist injury	40
Document physical examination of back pain	47
Completed EMR right upper quadrant abdominal pain (discharged)	227
Completed EMR palpitations (discharged)	181
Completed EMR chest pain (admitted)	187
Average over selected cases and chief complaints	160



Hill RG Jr, et al. 4000 clicks: a productivity analysis of electronic medical records in a community hospital ED. Am J Emerg Med. 2013.

The fallout

- The same technology **intended to reduce** doctors' workload by gluing patients' data together has **drastically increased** it.
- Primary doctors spend **5 hours on EMRs** for an **8 hour day seeing patients**.



Holmgren AJ, Thombley R, Sinsky CA, Adler-Milstein J. Changes in Physician Electronic Health Record Use With the Expansion of Telemedicine. *JAMA Intern Med.* 2023.

Errors and Near-Misses

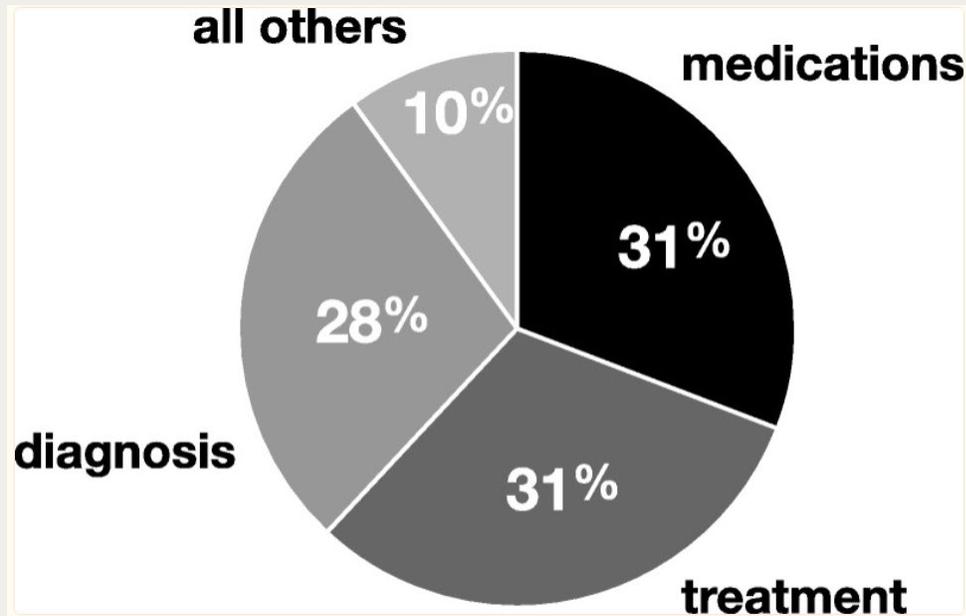


FIGURE 2

The Major Allegations in 248 Cases Involving EHR-Related Safety Issues.

30% of primary care doctors reported missing abnormal findings

Graber ML, et al. Electronic Health Record-Related Events in Medical Malpractice Claims. J Patient Saf. 2019.

Singh H, et al. Information overload and missed test results in electronic health record -based settings. JAMA Intern Med. 2013.

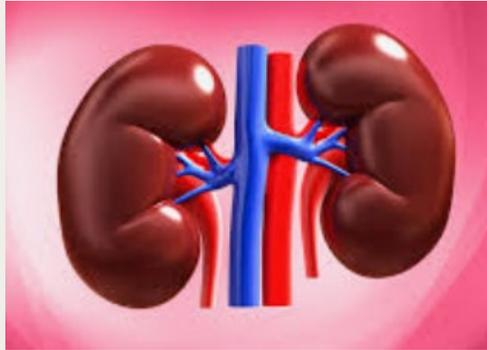
Part 2: Fragmented Teams



“Hmm, so the foot guy sent you here. I’m strictly a knee-and-upper-shin guy—you’re going to have to see a lower-shin-upper-ankle guy.”

Teresa Burns Parkhurst,
New Yorker Cartoons, 2019

Who looks for the big picture?



Anemia
from
CKD



Anemia is
not an
inpatient
issue

Treat the
colon
cancer



Daily work of a primary care doctor

EMR
legwork

Insurance
paperwork

Test
results
follow-up

Sending
messages

**Primary care doctors now
squeeze **26.7 hours** of
work into a day...**

Getting work to right level of care

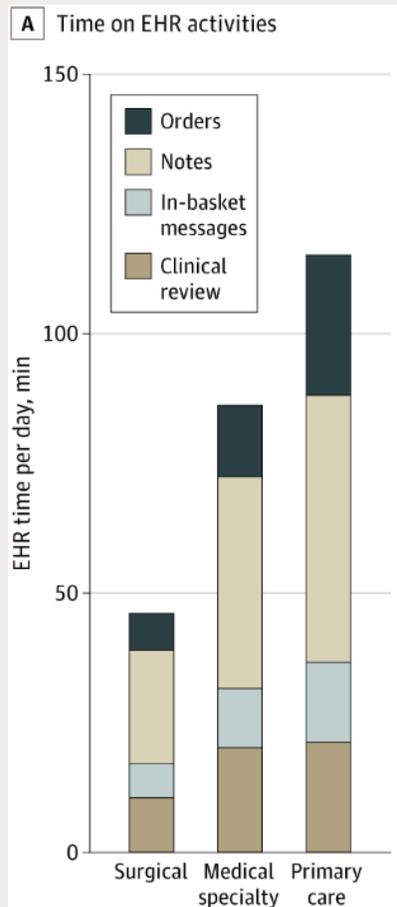


~ 2/3 of primary care doctor's work doesn't need to be done by MD

Doctors function as doctor, nurse, social worker, dietician, pharmacist, and medical assistant all in 1

Sinsky C, et al. Allocation of Physician Time in Ambulatory Practice: A Time and Motion Study in 4 Specialties. *Ann Intern Med.* 2016

Team-based delegation lags in primary care where it is needed most



Oncology:

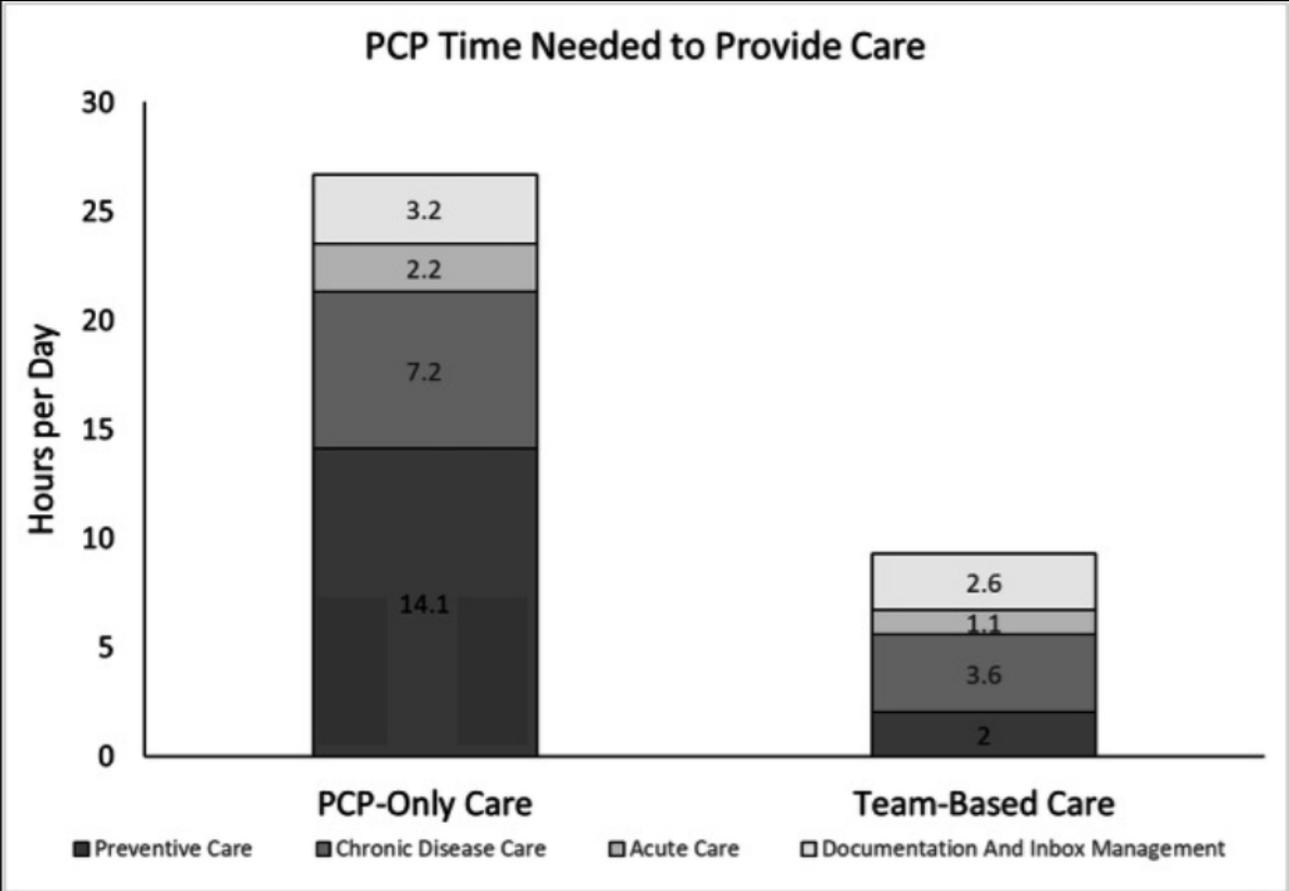
- ✓ Medical assistant schedules
- ✓ Scribe write notes, searches EMR
- ✓ Nurse triages and answers messages, deals with insurance
- ✓ Nurse practitioners and physician assistants see patients for symptom follow-up

Primary Care

- ✓ A medical assistant shared among multiple doctors; minimal other support staff

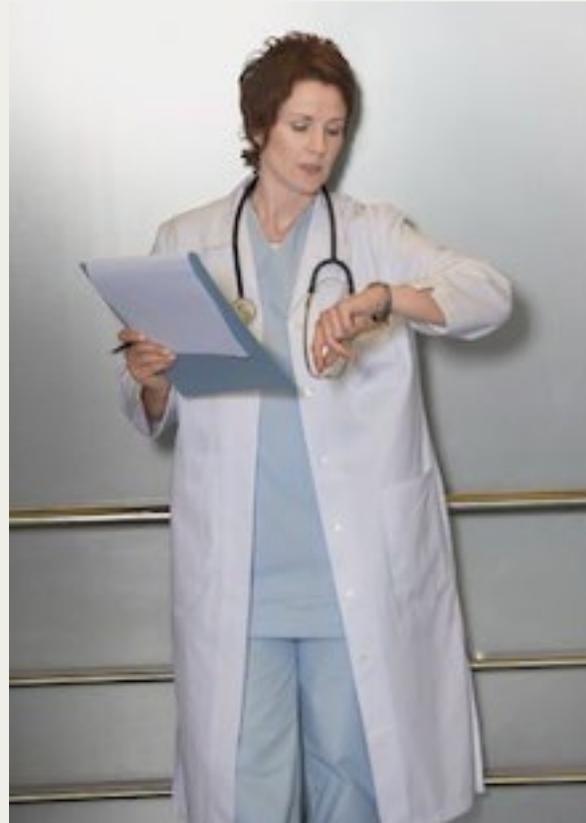
Primary care doctors now squeeze **26.7 hours** of work into a day...

...But that number is **9.3 hours** with team-based care



Porter J, et al. Revisiting the Time Needed to Provide Adult Primary Care. J Gen Intern Med. 2023 Jan;38(1):147-155.

Part 3: Fragmented Time



Reimbursement models rewards transactions

- 88% of medical facilities operate according to fee-for-service
- What is a “service”?
 - a round of chemotherapy
 - a joint injection
 - **in primary care → office visit**



Follow-up is financially dis-incentivized

Directly compensated:

- ✓ The office visit

Generally uncompensated:

- ✗ Sending patients messages
- ✗ Reviewing test results, ordering new tests
- ✗ Conferring with other doctors / team members
- ✗ Reading medical charts and writing notes

Follow-up is reimbursed less than one-and-done

Patient	Complexity Level*	2018 MAR	2021 MAR	2021 MAR With Primary or Specialized Care Add-On
New	2	\$76		
	3	\$110	\$130	\$143
	4	\$167		
	5	\$211	\$212	N/A
Established	2	\$45		
	3	\$74	\$90	\$103
	4	\$109		
	5	\$148	\$149	N/A

Primary care is fragmented into brief transactions

*With financial incentives stacked to see **more new patients in face to face visits:***

A primary care doctor's panel swells to **>2,000** patients →

The 8 AM to 5 PM is filled with visits; visits get shorter to accommodate →

All the other work spills into off hours →

Each patient struggles to access the doctor → Waitlists grow (average is 26 days) →

Patients try to connect in other ways
e.g. messaging →

As yet another uncompensated channel,
practices dissuade by tacking
on a charge →

Patients hoard a year's worth
problems for coveted visits →

MAKE APPOINTMENT

When would you like to schedule your appointment?

Providers

Filter

Chosen Provider(s) 1

Ilana Rachel Yurkiewicz

Chosen Provider(s) 1

Only show providers that are covered by your insurance

Sorry, we couldn't find any appointments in the next 3 months. Would you like to continue searching?

Lose-lose options

Primary Care Doc's Dilemma:

- overbook appointments
- take hours of work home on nights and weekends
- go part-time to create time
- burn out, leave primary care entirely
- medical students don't enter primary care

Patient's Dilemma:

- self-manage medical issues because no appointments
- turn to urgent care or ER for non-emergency issues
- message doctor, get billed
- see "somebody" rather than regular doctor

Back to the ideal

The opposite of fragments is continuity

Primary care is relationship-based



3-month
waits



Doctors know their patients, and
patients can access their doctor



Unnecessary
clicks



Available
appointments



MDs
doing
admin



Work gets to right
level of care

There is another way...

No fee-for-service, asked for lump sum from insurance



Used \$ to invest in a **team**: physical therapist, nurse, social worker, pharmacist, dietician, four care coordinators, two doctors



Care coordinators helped with EMR **tech** tasks and admin tasks



Without fee-for-service, capped at several hundred instead of several thousand patients



<https://medicine.stanford.edu/2017-report/stanford-coordinated-care-illustrates-what-comes-from-collaborat.html>



With fewer patients and team support, doctors had **time** for 2 hours on new patient visits and 1 hour on follow-ups

My clinic

Stanford Primary Care Doctor Establishes Clinic for Cancer Survivors

*“The lack of guidelines and providers who understand the very-long-term needs of cancer survivors is an unmet need.... I have not found a provider who understands both sides of my current needs. **Internists do not understand my cancer and oncologists do not understand my non-cancer health maintenance needs**, such as monitoring cholesterol and blood pressure.”*



One Team

Be on the lookout for non-solutions

- Solutions ***address root causes*** of tech, team, or time
- Non-solutions – ***“Just squeeze it in” – exacerbate existing mismatches***

POLITICO PRO



Gift article 

NYC Health + Hospitals to slash appointment times

Starting this fall, appointment times for new patients will be slashed from 40 minutes to 20 minutes.



BY: MAYA KAUFMAN | 08/22/2024 05:37 PM EDT

NEW YORK — NYC Health + Hospitals is halving appointment times for adult and pediatric primary care visits to expand availability and meet the system’s own growth goals, according to internal records reviewed by POLITICO.

Details: Starting this fall, appointment times for new patients will be slashed from 40 minutes to 20 minutes. The change will enable Health + Hospitals to tackle long waitlists by having doctors see more patients, officials said in internal presentations to staff.

Back to Devon

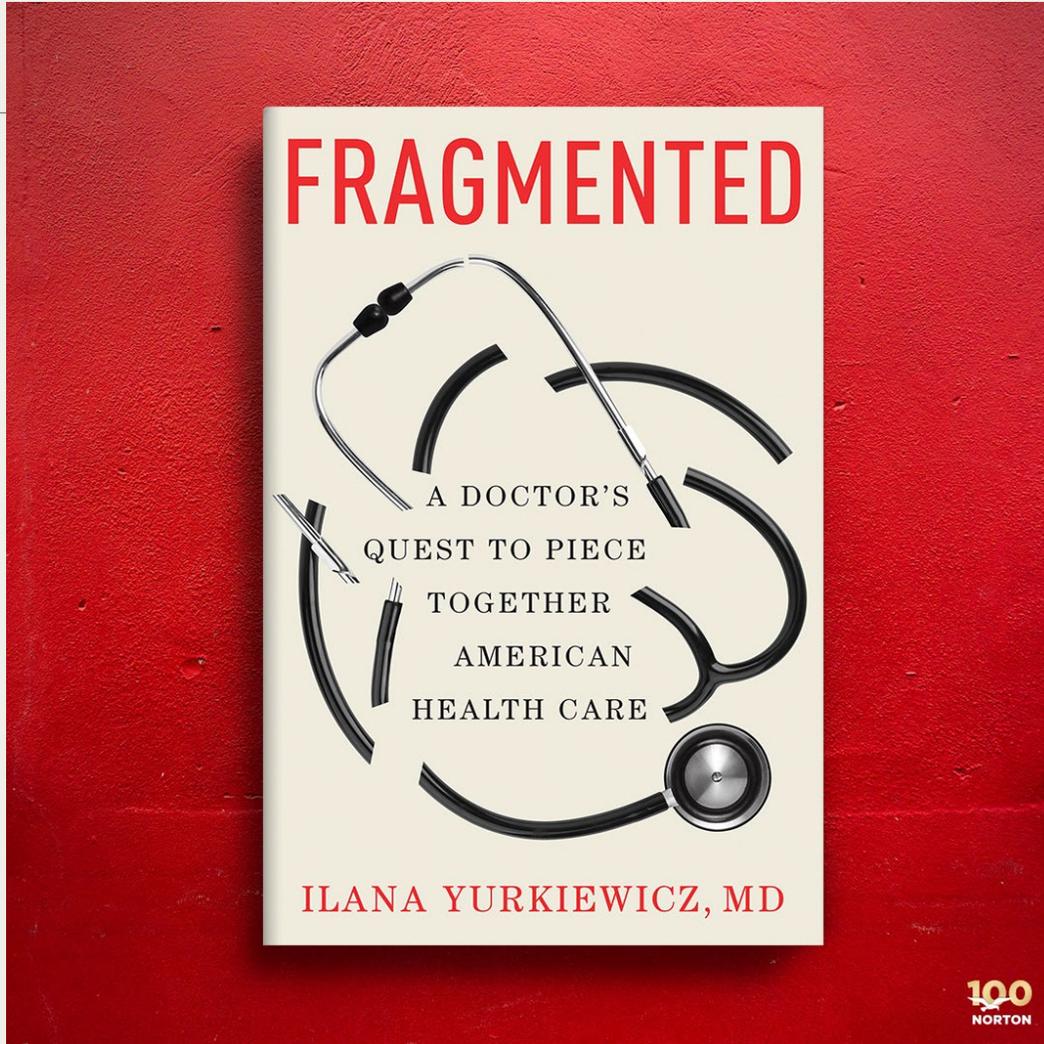
- ✓ Cancer history and all other general internal medicine issues addressed in one place
- ❑ Monthly visits – scheduled in advance
 - ❑ Messages – “Please send directly to Dr. Y”
- ❑ Overrode same-day appointment slots
 - ❑ Called at lunch or after hours

These were **workarounds** to cultivate continuity

The onus is on **systemic change**, **not individual** primary care doctors and patients



FragmentedMedicine.com



As seen in *The New York Times*, *NPR*,
National Review, and elsewhere

"A bravura feat of synthesis, showing how so many failings of America's health care system are actually facets of the same horrible problem."

—Ed Yong

New York Times best-selling
author and winner of the
Pulitzer Prize