

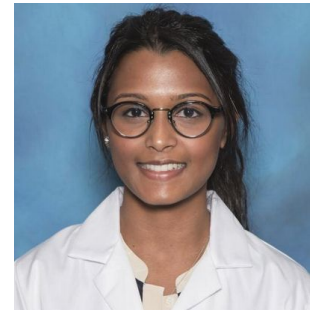
Information: Commodity or Differentiator

Retrieving and building medical knowledge for clinical care

Travis Zack, MD, PhD
Chief Medical Officer



Samuel Finlayson, MD
SVP of Clinical AI



Mondira Ray, MD
SVP of Clinical Informatics

Disclosures

- Chief Medical Officer at OpenEvidence

Roadmap



Who am I and what do I do?



Use of OpenEvidence for clinical practice

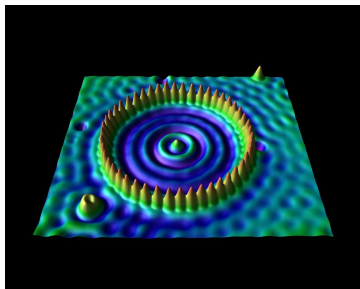


Learning from clinical knowledge requirements across the country

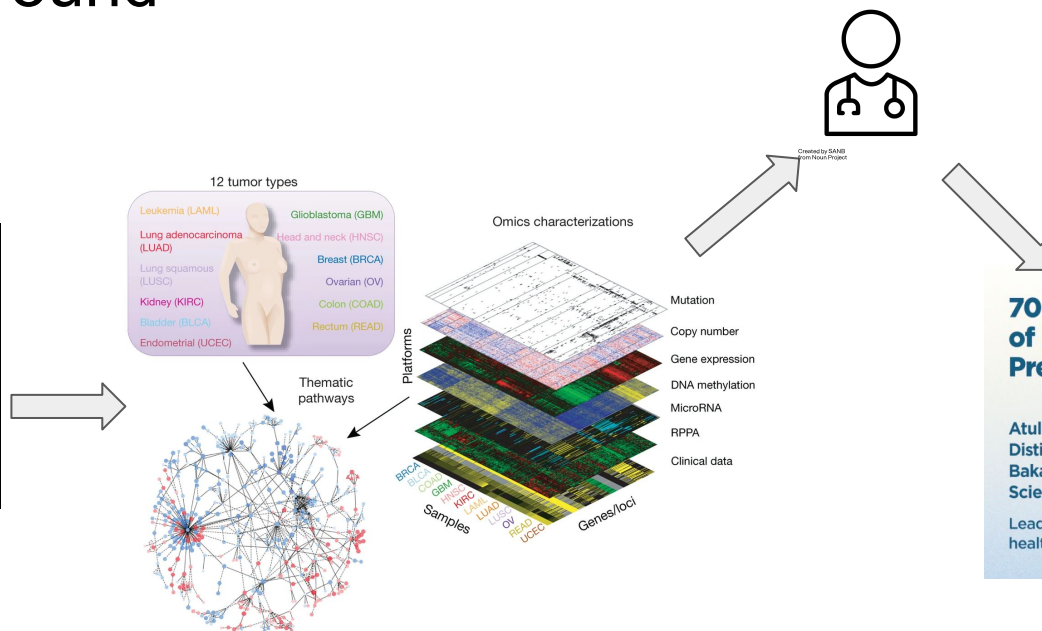


The future of Medical Information in medical decision making

My Background



www.nisenet.org/catalog/scientific-image-quantum-corral-top-view



<https://www.cancer.gov/ccg/research/genome-sequencing/tcga>

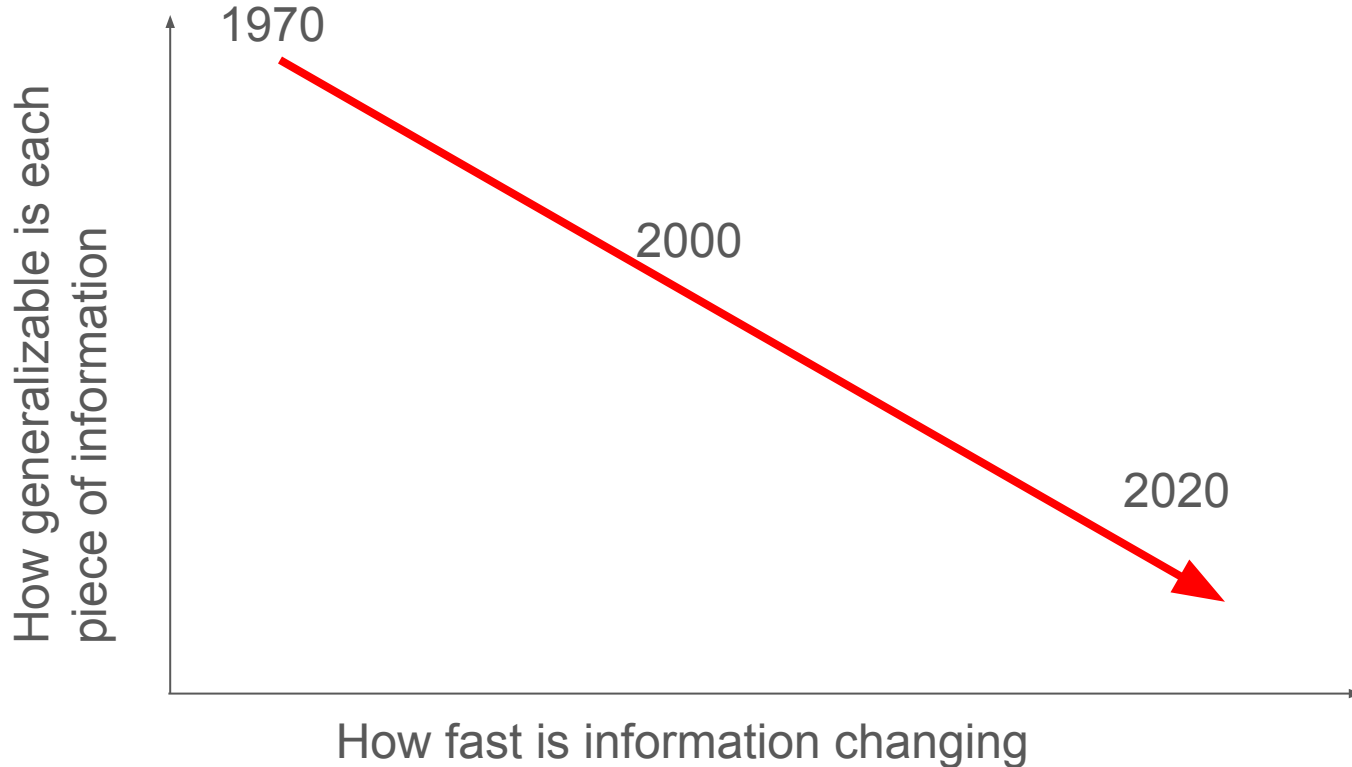
700 Trillion Points of Data for AI In Precision Medicine

Atul Butte, MD, PhD,
Distinguished Professor; Director,
Bakar Computational Health
Sciences Institute, UCSF

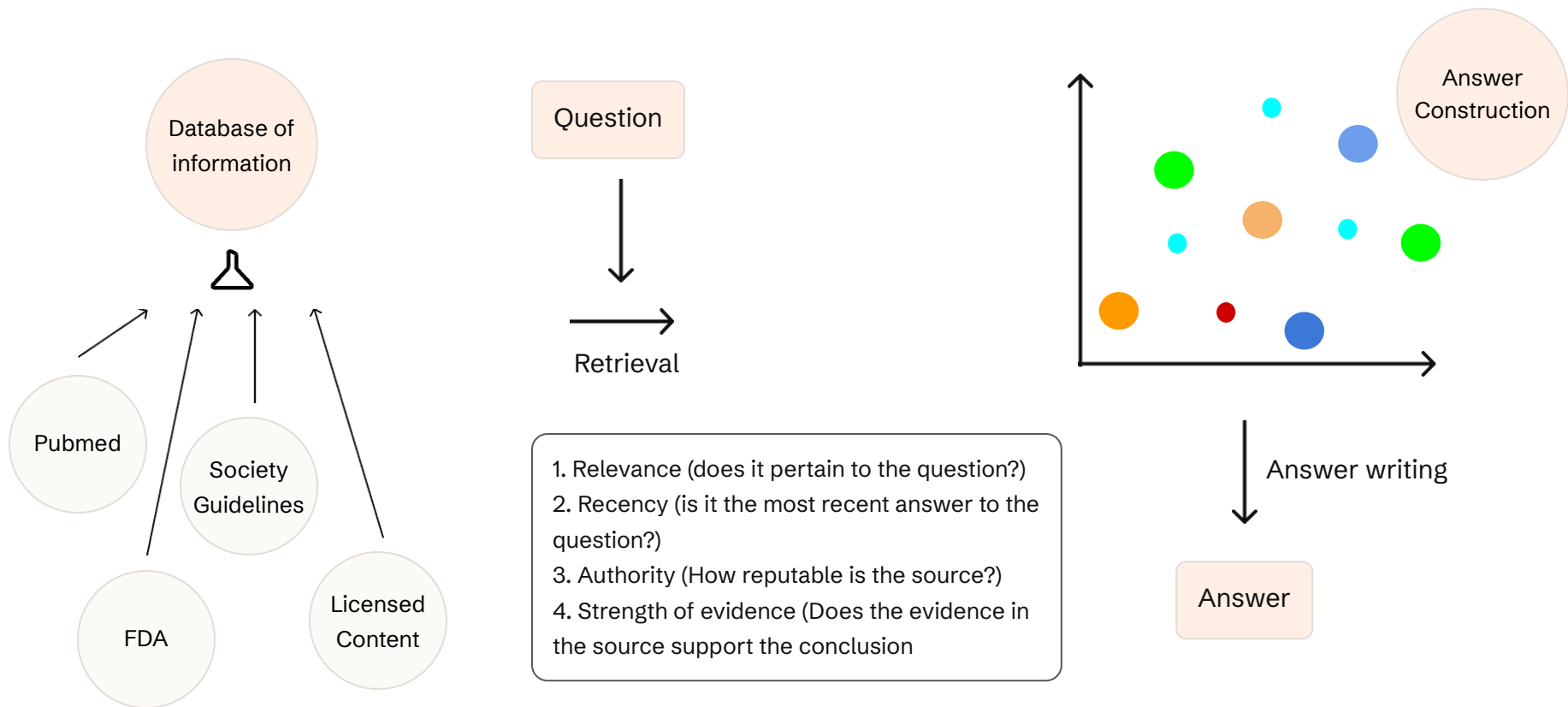
Leading the charge in AI-driven
healthcare innovation.



The problem: Each quanta of information can be used in fewer situations, and for a shorter period of time.



OpenEvidence: “Garbage in/ Garbage out” only half the solution in medical information



OpenEvidence: How to sift through the entirety of published medical information



The NEW ENGLAND
JOURNAL of MEDICINE

JAMA[®]
The Journal of the American Medical Association



American College of
Emergency Physicians[®]



National Comprehensive
Cancer Network[®]



AMERICAN ACADEMY OF
OTOLARYNGOLOGY-
HEAD AND NECK SURGERY



AAOS
AMERICAN ACADEMY OF
ORTHOPAEDIC SURGEONS



how does the efficacy of semaglutide compare to tirzepatide?

The efficacy of semaglutide compared to tirzepatide has been evaluated in several clinical studies. According to a study published in The New England Journal of Medicine, tirzepatide demonstrated superior efficacy in reducing glycated hemoglobin (HbA1c) levels compared to semaglutide in patients with type 2 diabetes.



⁴⁴ All tirzepatide doses were found to be superior to semaglutide, with estimated treatment differences of -0.15 percentage points (95% confidence interval [CI], -0.28 to -0.03; $P=0.02$) with tirzepatide 5 mg, -0.39 percentage points (95% CI, -0.51 to -0.26; $P<0.001$) with tirzepatide 10 mg, and -0.45 percentage points (95% CI, -0.57 to -0.32; $P<0.001$) with tirzepatide 15 mg.¹¹

— Juan P. Frias, M.D., et al., National Research Institute and other institutions

Tirzepatide versus Semaglutide Once Weekly in Patients with Type 2 Diabetes, N Engl J Med. August 4, 2021.

Used under license from The New England Journal of Medicine.

This study showed that all doses of tirzepatide (5 mg, 10 mg, and 15 mg) were superior to semaglutide 1 mg in reducing HbA1c levels. The estimated treatment differences were -0.15 percentage points for tirzepatide 5 mg, -0.39 percentage points for tirzepatide 10 mg, and -0.45 percentage points for tirzepatide 15 mg, all statistically significant.

Additionally, a systematic review and network meta-analysis published in Diabetologia found that tirzepatide was more effective than semaglutide in reducing both HbA1c and body weight. Tirzepatide 15 mg showed the most significant reductions in HbA1c and body weight compared to semaglutide 2.0 mg, 1.0 mg, and 0.5 mg.¹²

The following figure from the NEJM illustrates the changes in HbA1c levels at 40 weeks for both tirzepatide and semaglutide:

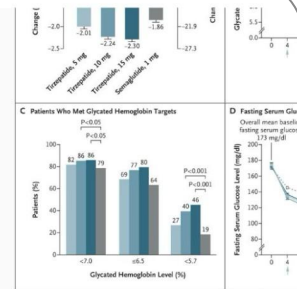
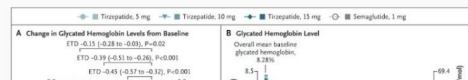


Figure 1. Effect of Once-Weekly Tirzepatide, as Compared with Semaglutide, on Glycated Hemoglobin Levels.

Tirzepatide versus Semaglutide Once Weekly in Patients with Type 2 Diabetes, N Engl J Med. August 4, 2021.

In summary, **tirzepatide is more efficacious than semaglutide** in patients with type 2 diabetes, with the highest dose of tirzepatide. Both medications are associated with gastrointestinal adverse moderate in severity. ■

Share Helpful Not Helpful

References

1. *Tirzepatide versus Semaglutide Once Weekly in Patients with Type 2 Diabetes*, Frias JP, Davies MJ, Rosenstock J, et al. The New England Journal of Medicine. 2021;385(6):503-515. doi:10.1056/NEJMoa2102082. [Leading Journal](#)
2. *Subcutaneously Administered Tirzepatide vs Semaglutide for a Systematic Review and Network Meta-Analysis of Randomised Clinical Trials*, Karagiannis T, Malandris K, Avgerinos I, et al.

How to perform a kidney transplant

anastomoses to the iliac vessels, and establishing urinary continuity through ureteroneocystostomy. The procedure has evolved into a standardized technique with excellent outcomes when performed with meticulous surgical technique and appropriate perioperative management.

The following surgical video demonstrates the key steps of living donor kidney transplantation:



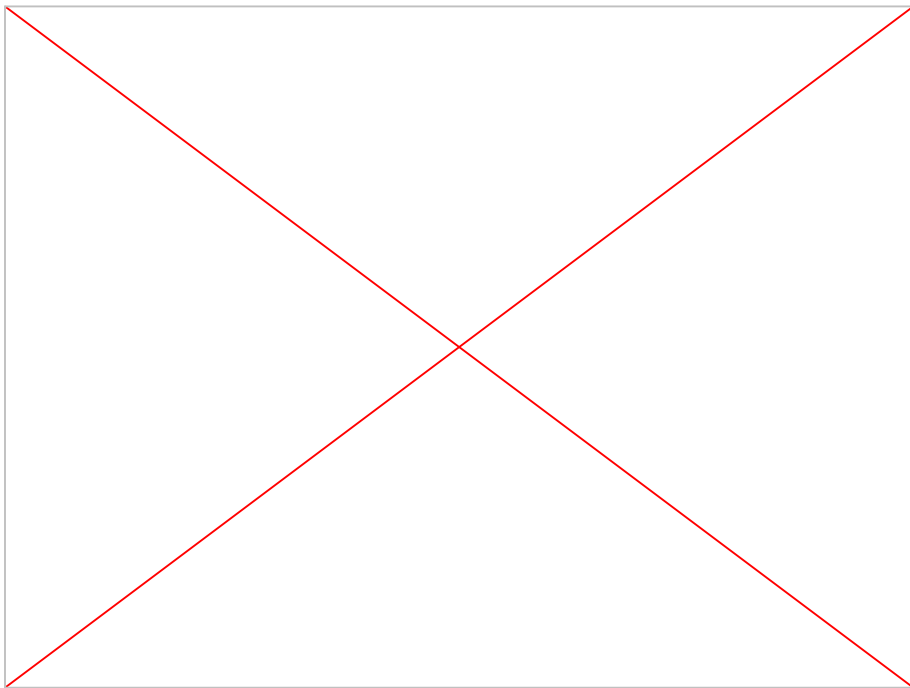
Journal of Medical Insight

jomi



OpenEvidence: Moving beyond text walls

Confidential and proprietary



Below are example radiographs showing typical S-shaped scoliotic curves with measured Cobb angles:



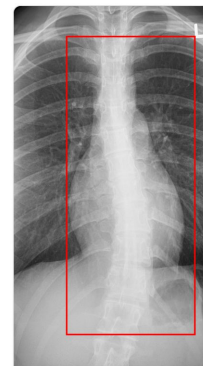
21-degree levoscoliosis of the lumbar spine and 14-degree...

Voio



21-degree levoscoliosis of the lumbar spine and 14-degree...

Voio



Scoliosis of the thoracic and lumbar spine with 25-degree...

Voio



Scor lurr

Vt

Red Flags on Imaging

An atypical curve pattern (e.g., left thoracic convexity), congenital vertebral anomalies (hemivertebrae, block vertebrae), or associated findings should prompt further workup for non-idiopathic causes such as neuromuscular disorders, neurofibromatosis, or congenital malformations. Radiographics +1 Progression is most likely during periods of rapid growth, and skeletally immature patients may need follow-up imaging as frequently as every 4–6 months. Radiographics

Roadmap



Who am I and what do I do?



Use of OpenEvidence for clinical practice



Learning from clinical knowledge requirements across the country

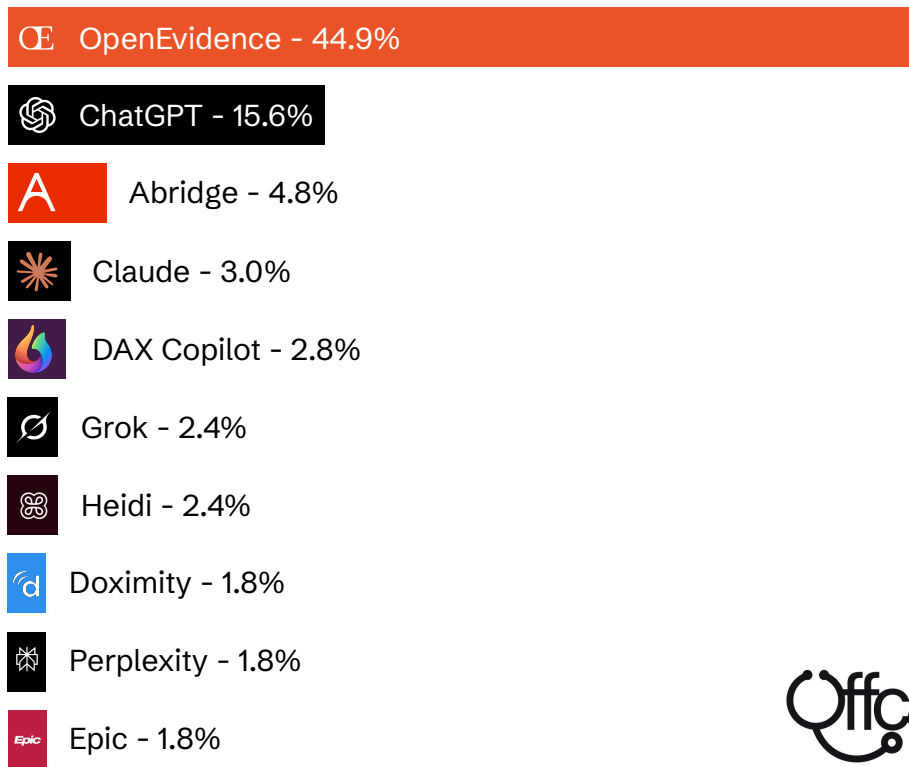


The future of Medical Information in medical decision making



OE Rounds pilot at Mt. Sinai

Top 10 Most Used AI Tools by U.S. Physicians



Bars scaled to proportion of respondents using the platforms.

The #1 AI for Doctors in the U.S.

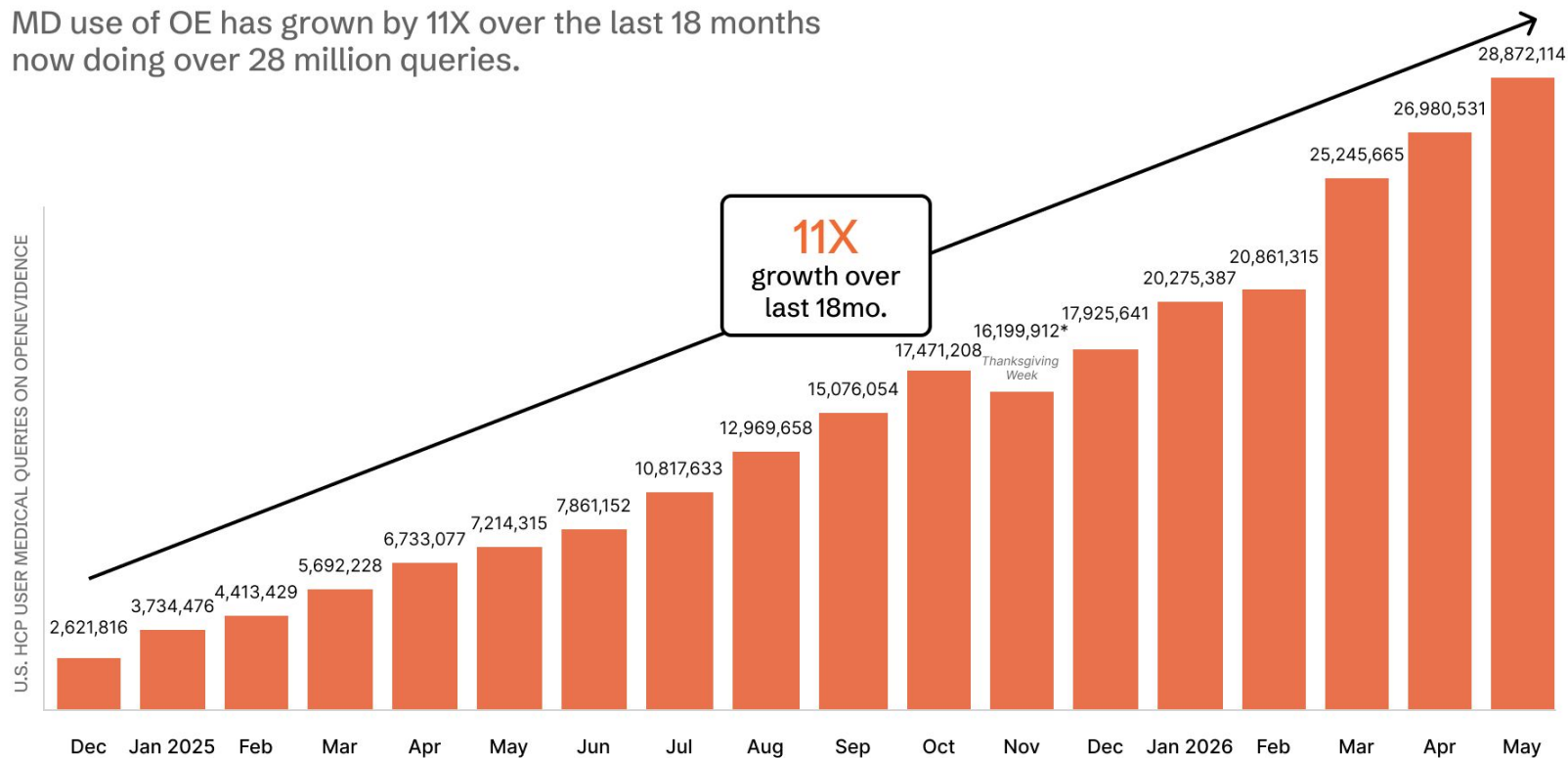
At 44.9%, OpenEvidence is **used by more** American physicians **than all other AI tools combined**—including ChatGPT.

The 2025 Physician AI Report was published by Dr. Graham Walker's *Offcall*. The Report surveyed over 1,000 practicing U.S. physicians across specialties, ages, and career stages.

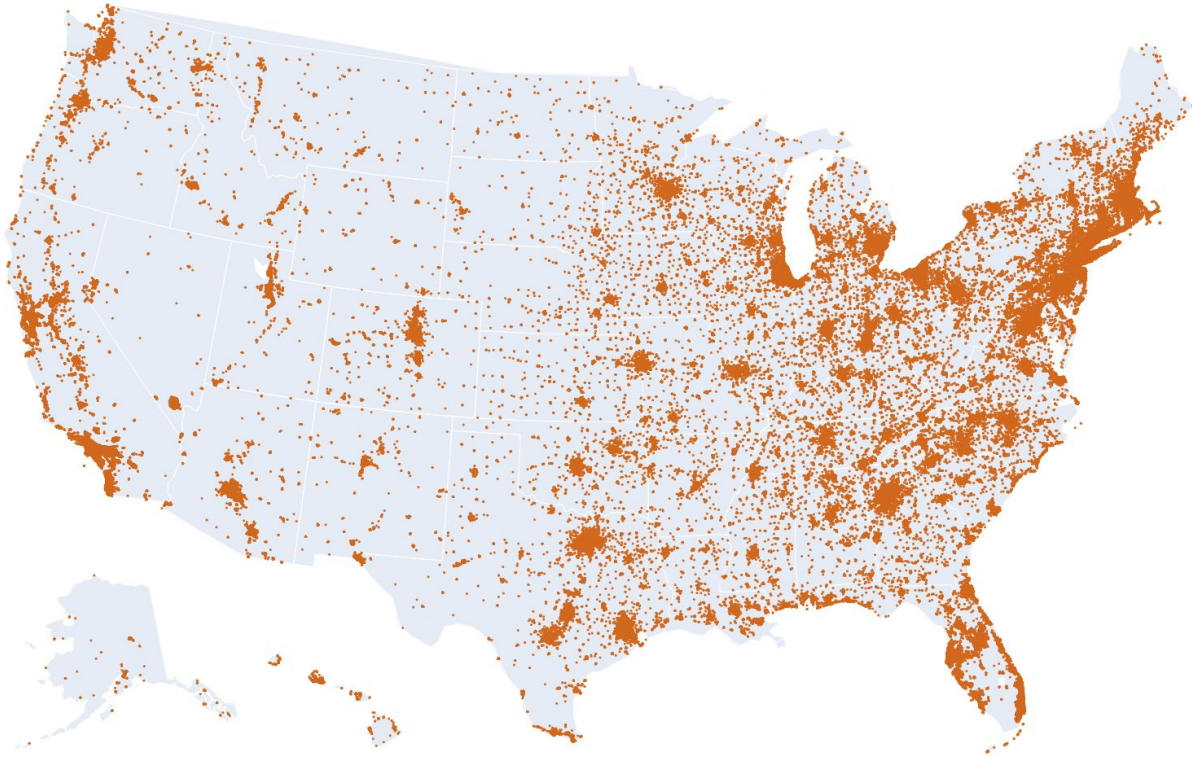
Confidential and proprietary

Word of Mouth Growth

MD use of OE has grown by 11X over the last 18 months
now doing over 28 million queries.



Where in the US are OpenEvidence users?



Quantifying utilization of OpenEvidence across Query “intent”

Categories of OE use by intent

Clinical Decision Making (Blue · 6 categories)

- | | |
|---|---------------------------|
| 1 | Diagnosis/diagnosis |
| 2 | Medication management |
| 3 | Treatment/management |
| 4 | Diagnostic workup |
| 5 | Screening/prevention |
| 6 | Risk assessment/prognosis |

Clinical Knowledge (Magenta · 6 categories)

- | | |
|---|------------------------|
| 1 | Medication info |
| 2 | Disease/condition info |
| 3 | Clinical findings |
| 4 | Procedure techniques |
| 5 | Tests/imaging info |
| 6 | Anatomy/physiology |

Evidence Base (Orange/Gold · 3 categories)

- | | |
|---|-------------------------|
| 1 | Clinical guidelines |
| 2 | Specific studies/trials |
| 3 | Literature search |

Clinical Documentation (Red · 3 categories)

- | | |
|---|-------------------|
| 1 | Documentation |
| 2 | Patient education |
| 3 | Medical coding |

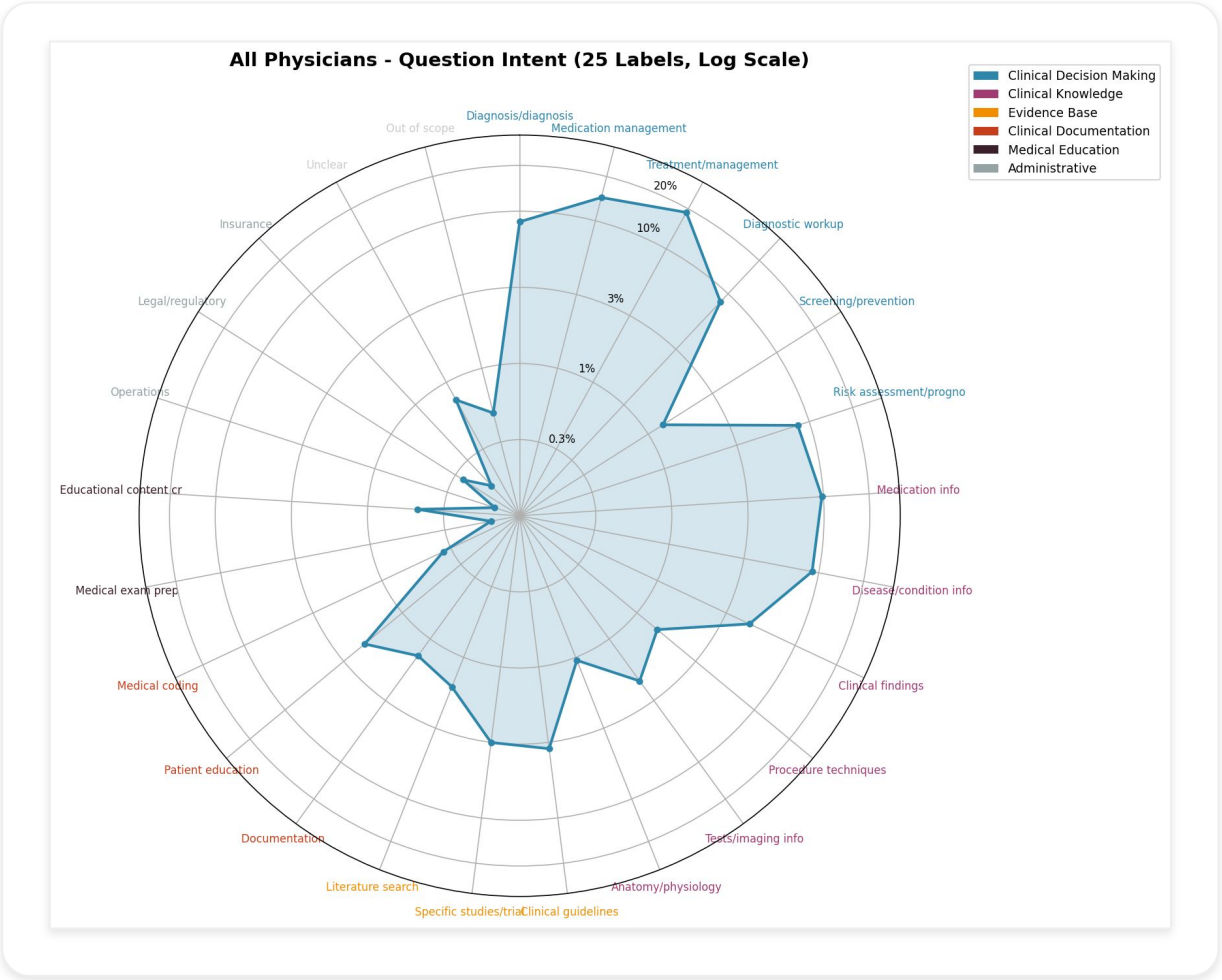
Medical Education (Dark Purple/Black · 2 categories)

- | | |
|---|------------------------------|
| 1 | Medical exam prep |
| 2 | Educational content creation |

Administrative (Gray · 5 categories)

- | | |
|---|------------------|
| 1 | Operations |
| 2 | Legal/regulatory |
| 3 | Insurance |
| 4 | Unclear |
| 5 | Out of scope |

How are clinicians using OpenEvidence?



How

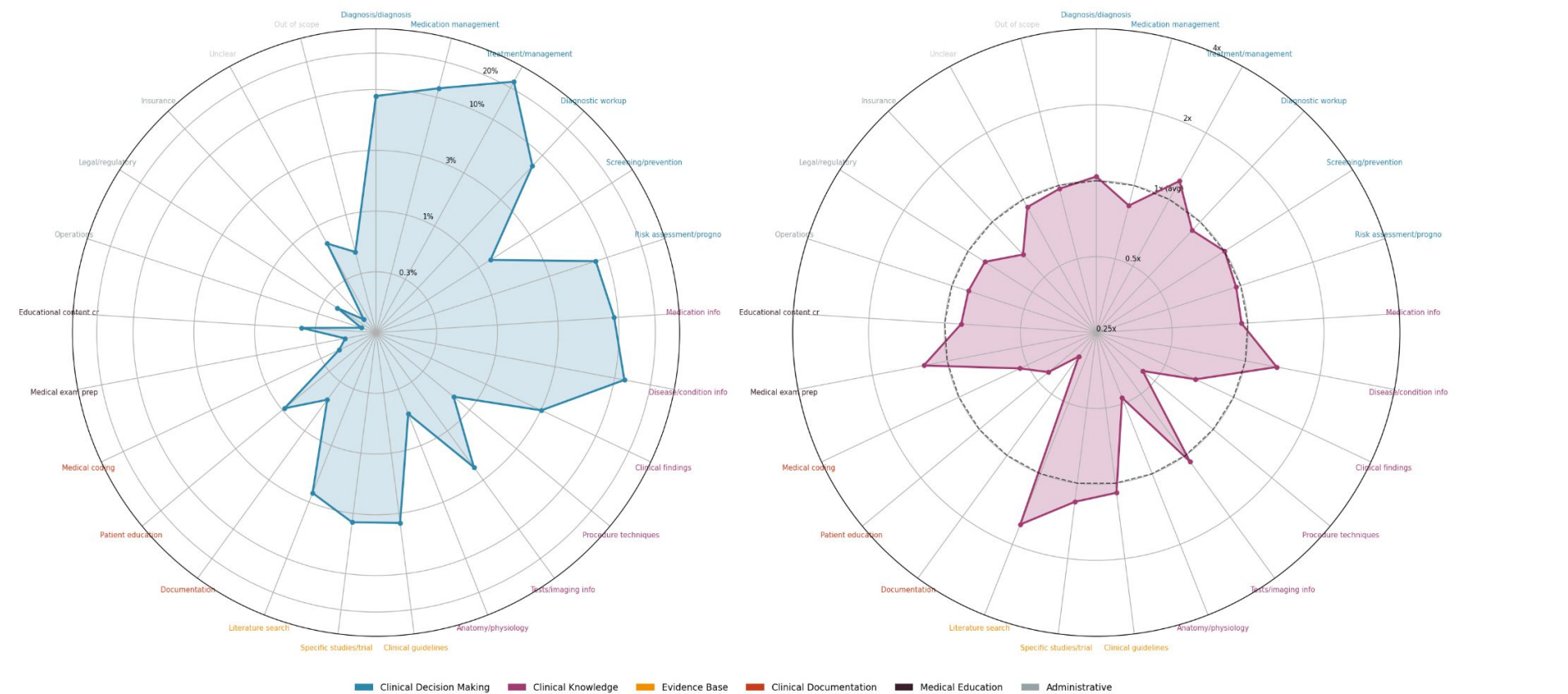
are ID MD using OpenEvidence?

Confidential and proprietary

Infectious Disease Physicians - Question Intent (25 Labels)

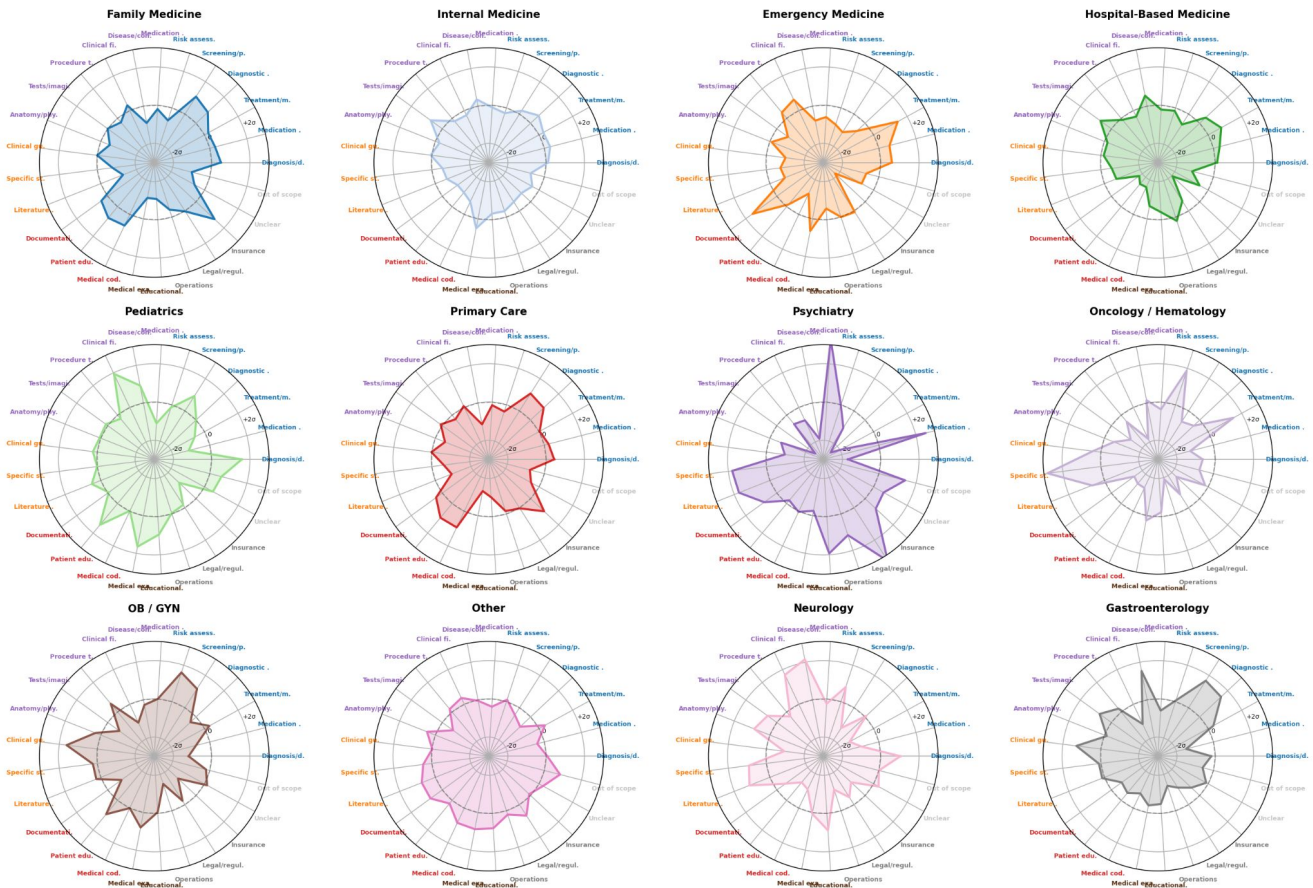
Absolute Intent Distribution (Log Scale)
n=456,256 questions

Relative to All Physicians (Log2 Fold Change)
Dashed = 1x (same as average; All Physicians n=46,408,634)



How are clinicians using OpenEvidence?

Relative Radar: Z-Score (Standard Deviations from Mean)
Dashed line = average across specialties



Intent Categories



Roadmap



Who am I and what do I do?



Use of OpenEvidence for clinical practice

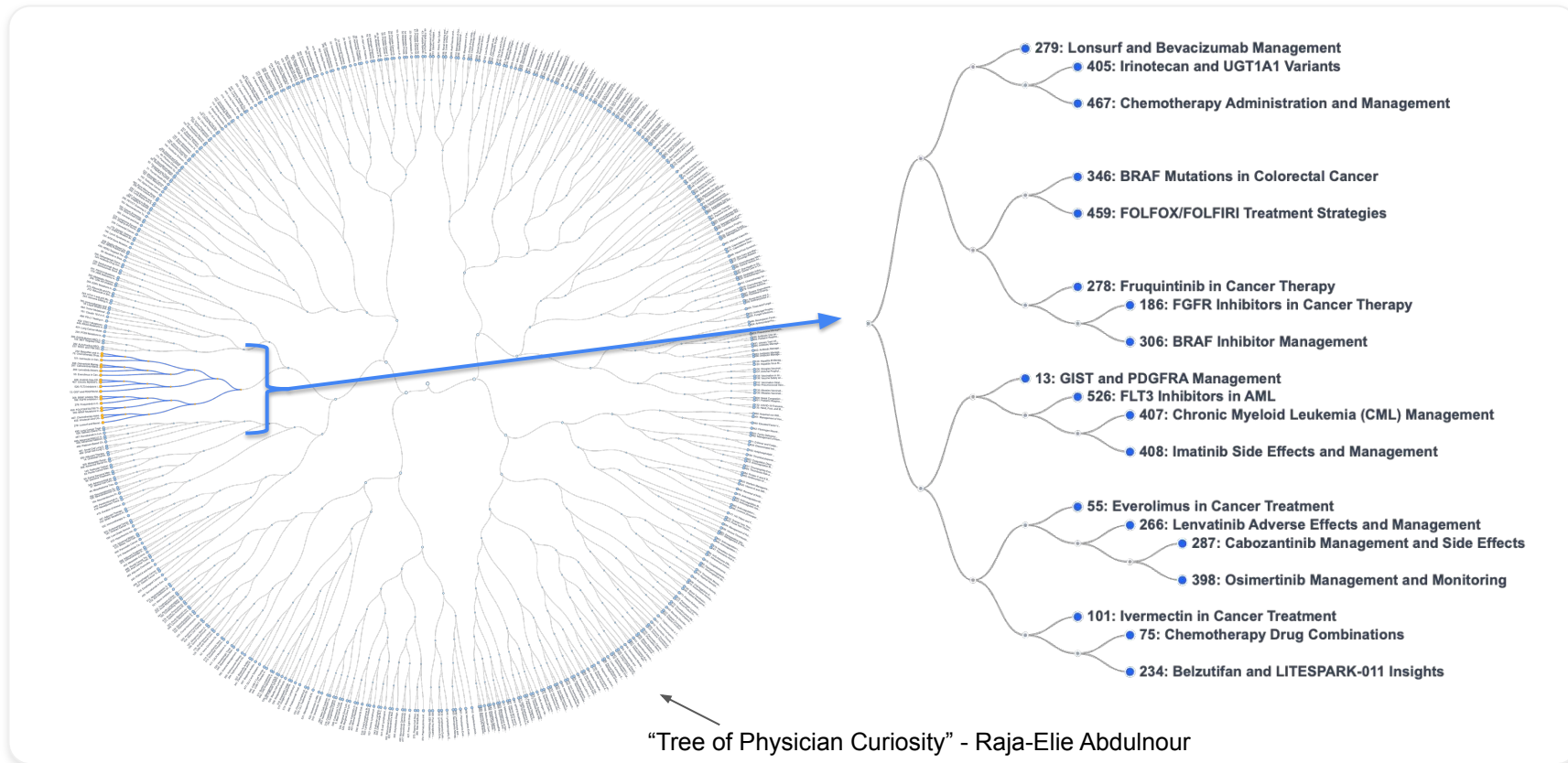


Learning from clinical knowledge requirements across the country



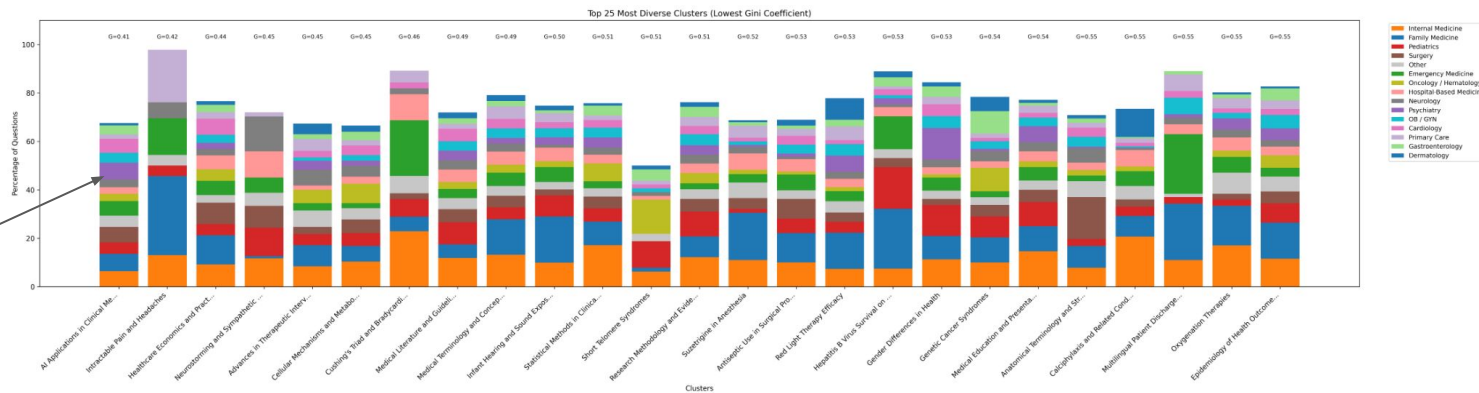
The future of Medical Information in medical decision making

A roadmap of clinician questions: *Emergent Structure*

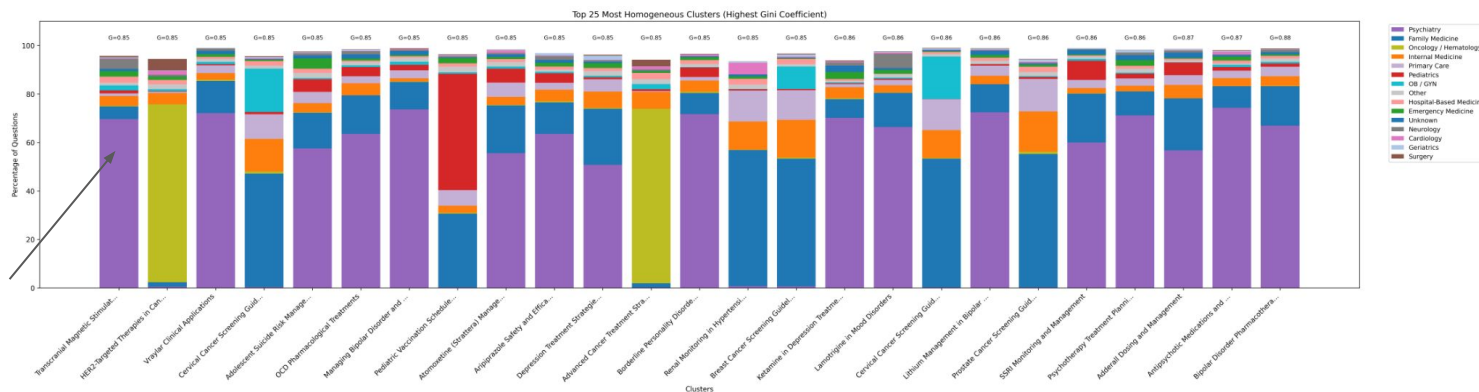


Which clinical topics are of broad interest versus interest to individual specialties?

“AI in medicine”



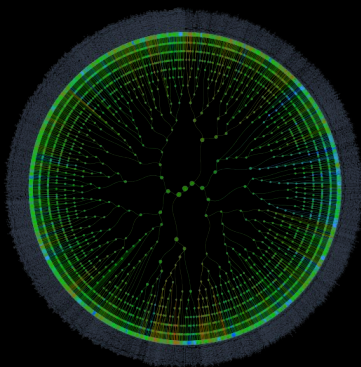
“Transcranial Magnetic Stimulation”



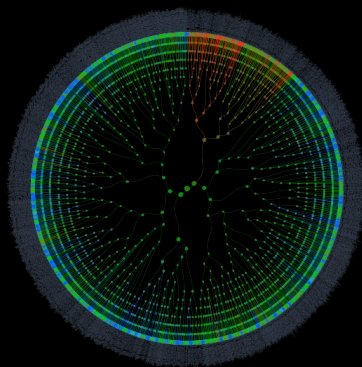
A “retinal scan” of specialty knowledge requirements

Confidential and proprietary

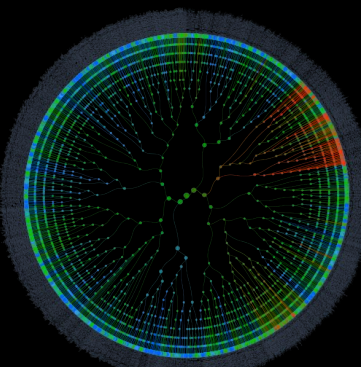
Hospital Medicine



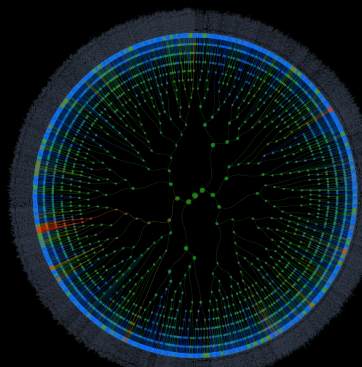
Cardiology



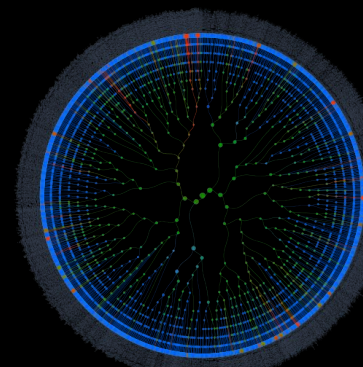
Psychiatry



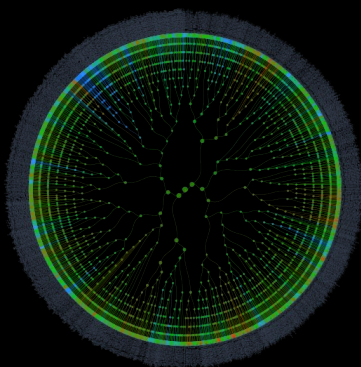
Ophtho



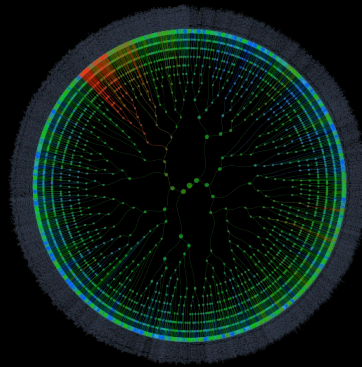
Genetics



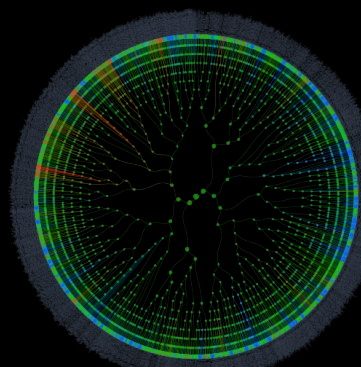
Family Medicine



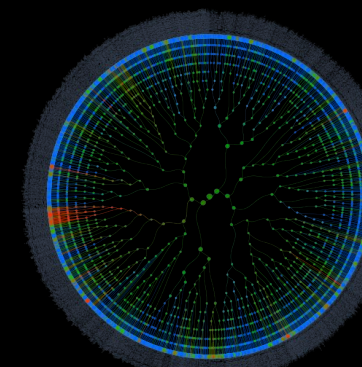
Heme-Onc



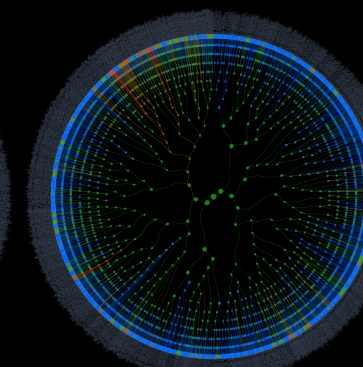
Gen Surg



ENT

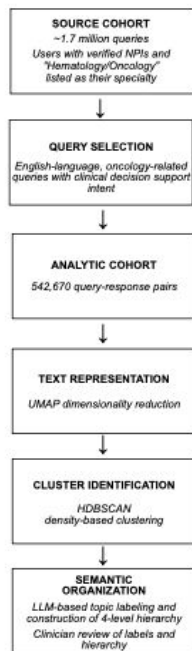


Pathology

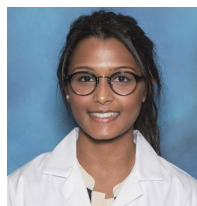


Knowledge Requirements in Oncology

A.



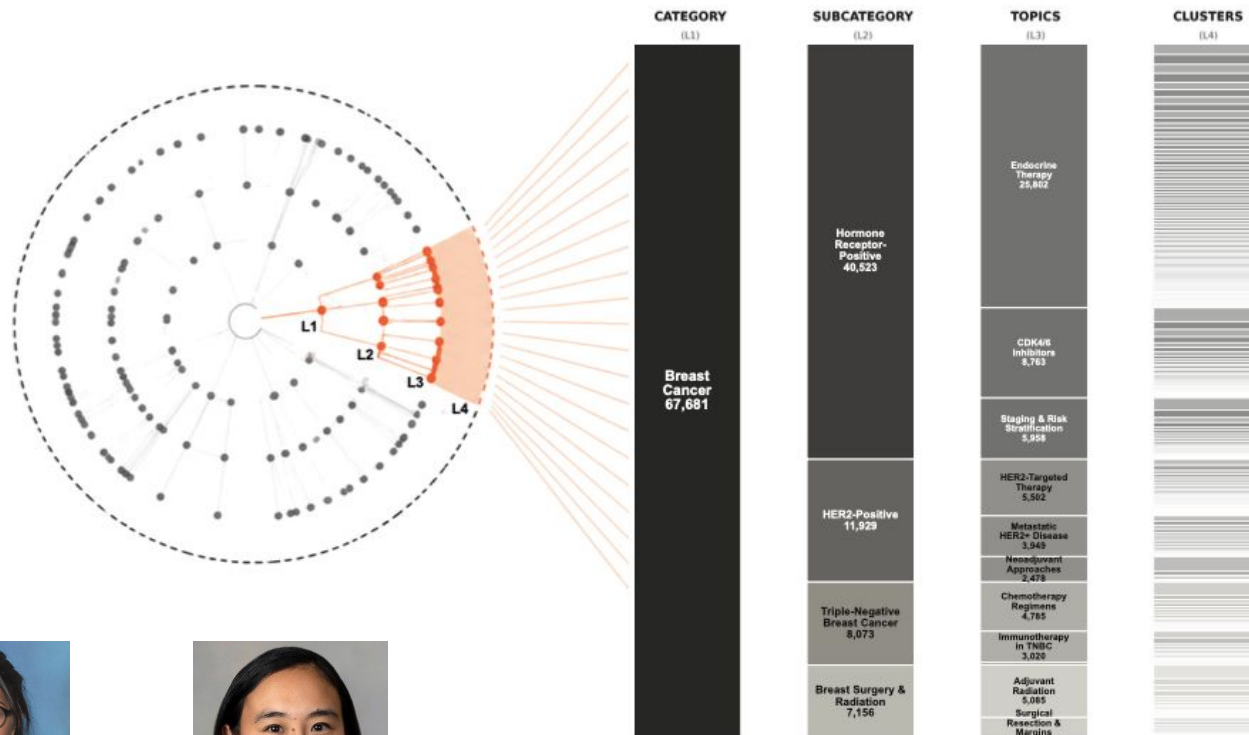
B.



Mondira Ray



Margaret Guo



Knowledge Requirements in Oncology

C.

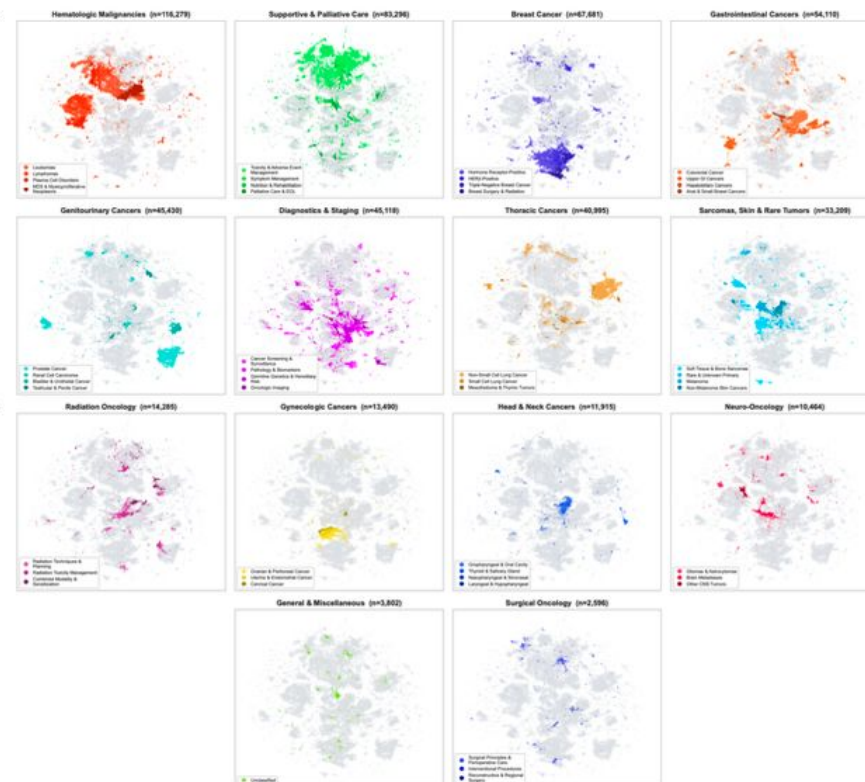
UMAP-2



UMAP-1

- Categories
- Hematologic Malignancies
 - Supportive & Palliative Care
 - Breast Cancer
 - Gastrointestinal Cancers
 - Genitourinary Cancers
 - Diagnostics & Staging
 - Thoracic Cancers
 - Sarcomas, Skin & Rare Tumors
 - Radiation Oncology
 - Gynecologic Cancers
 - Head & Neck Cancers
 - Neuro-Oncology
 - General & Miscellaneous
 - Surgical Oncology

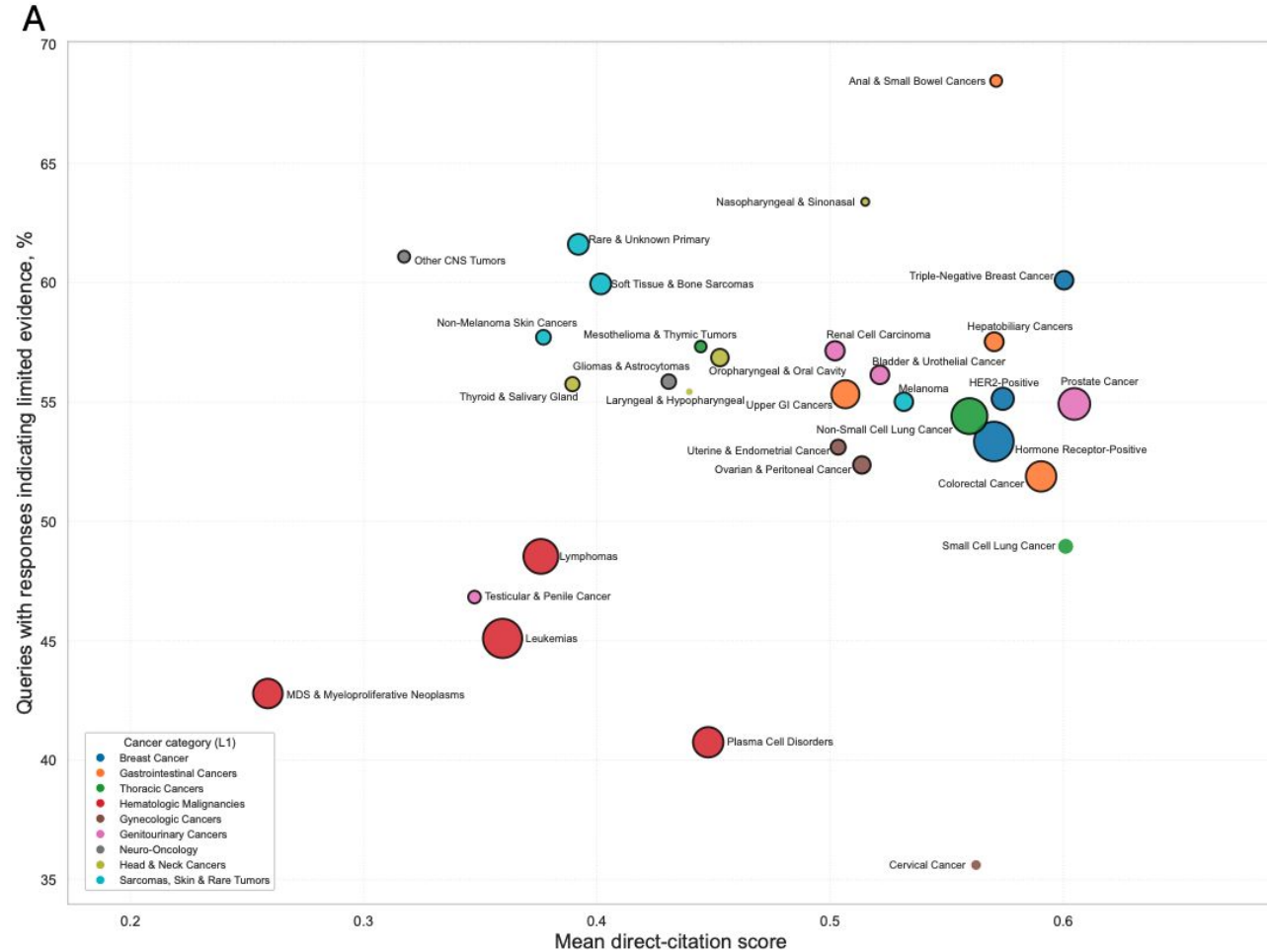
D.



Finding the intersect between “need to know” and “unknown”

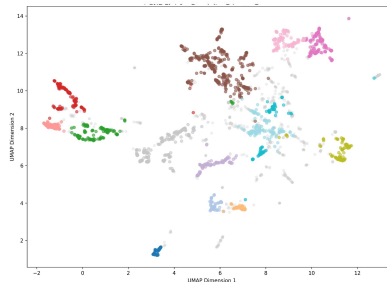
Most answers in medicine are
not backed by the perfect trial

Confidential and proprietary



Driving knowledge creation through quantification of knowledge requirements?

Analysis of OpenEvidence queries



Society determines areas for guideline development



Guideline committee synthesizes existing information with assistance from OpenEvidence



Clinical Policies

ACEP's clinical policies are developed by the Clinical Policies Committee, guided by processes in accordance with national guideline-development standards. The policies are approved by the ACEP Board of Directors to provide guidance on the clinical management of emergency department patients. These ACEP Board-approved documents describe ACEP's policies on the clinical management of emergency department patients. These clinical policies are not intended to represent a legal standard of care for emergency physicians. ACEP recognizes the importance of the individual physician's judgment and patient preferences.

- Acute Blunt Trauma
- Acute Heart Failure Syndromes
- Acute Ischemic Stroke
- Acute Venous Thromboembolic Disease

Roadmap



Who am I and what do I do?



Use of OpenEvidence for clinical practice

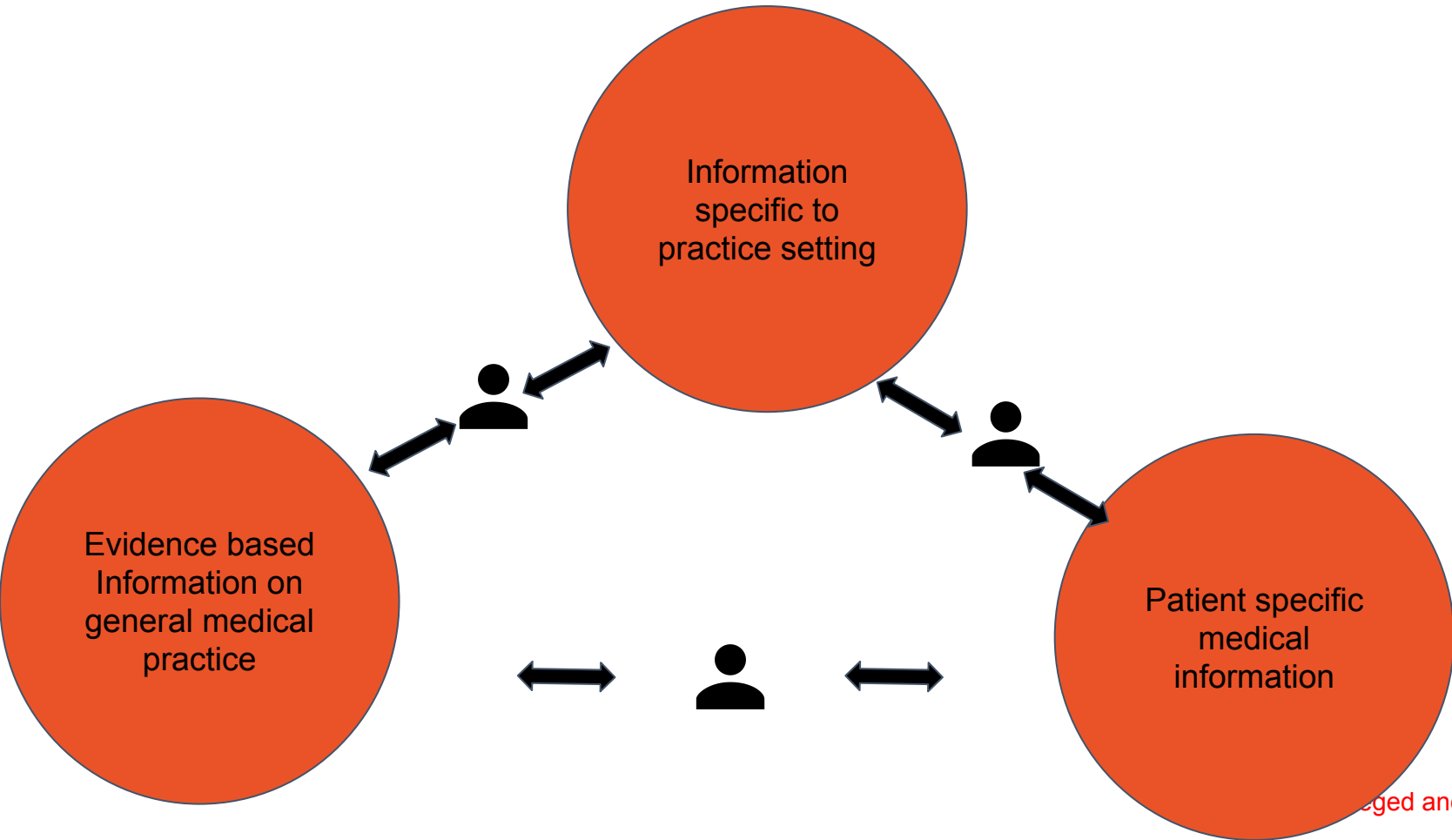


Learning from clinical knowledge requirements across the country

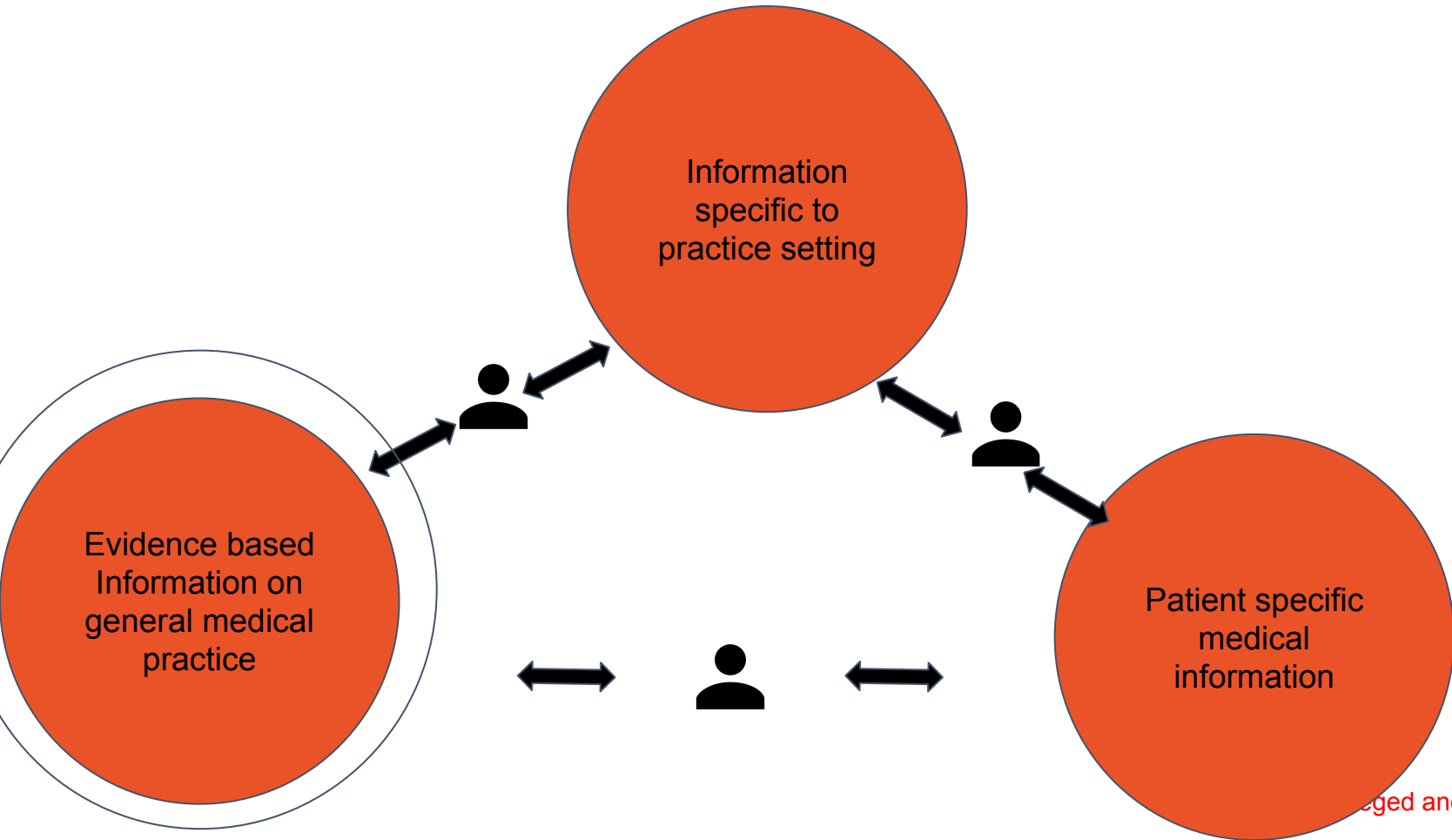


The future of Medical Information in medical decision making

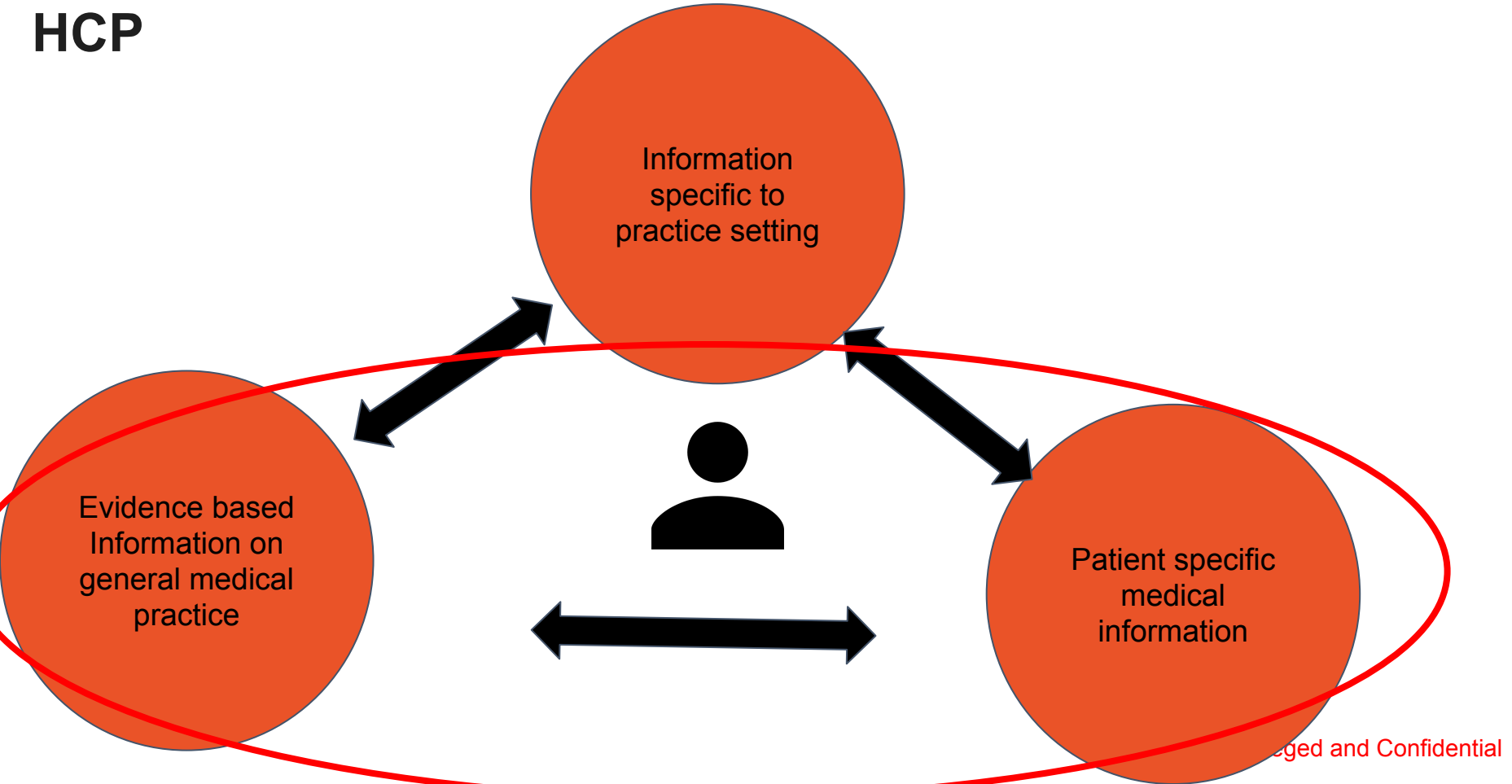
The Present state of Medical information



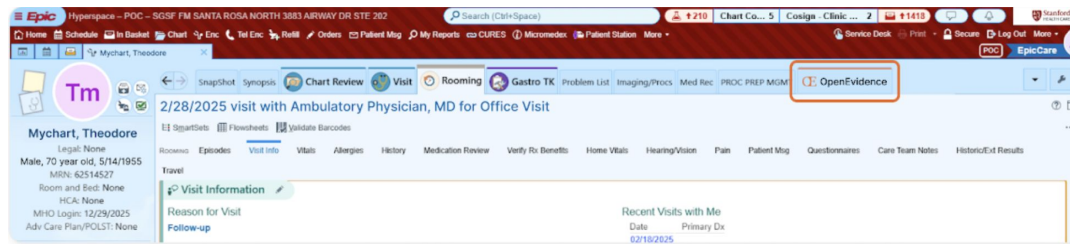
The Present state of Medical information



Centering information on the patient, rather than the HCP



2. Bring full **EHR patient context real-time** into your OpenEvidence conversation



Tell me about my patient. Given their age, what lab tests should I run?

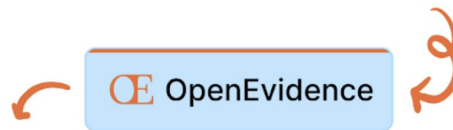
▼ Finished Thinking

Patient is a 70-year-old male, and his age warrants consideration of age-specific reference intervals and targeted screening for conditions that increase in prevalence with aging. Older adults exhibit altered biochemical parameters and face heightened risk for metabolic, cardiovascular, and endocrine disorders. [1-3]

Age-related changes in laboratory values include wider reference intervals for sodium, potassium, calcium, and C-reactive protein, as well as higher creatinine and lower total cholesterol and serum albumin levels compared to younger adults. [2] Even mild abnormalities in these parameters—such as hyponatremia, hypernatremia, or low albumin—are associated with increased mortality, disability, and frailty in the elderly. [2] Additionally, hormonal changes are prominent in aging males, with significant declines in total testosterone, free testosterone, DHEAS, estradiol, IGF-1, and TSH, alongside increases in SHBG, LH, FSH, and cortisol [1-2]

Recommended baseline laboratory tests for this patient include:

- Complete blood count
- Serum sodium, potassium, and calcium
- Serum creatinine with estimated glomerular filtration rate (using the 2021 CKD-EPI Creatinine Equation)
- Lipid profile (total cholesterol, LDL, HDL, triglycerides)
- Fasting blood glucose or hemoglobin A1c
- Thyroid-stimulating hormone



Bring patient context into your
OpenEvidence conversation

Patient data is only stored during conversation

Privileged and Confidential

Roadmap



Who am I and what do I do?



Use of OpenEvidence for clinical practice



Learning from clinical knowledge requirements across the country



OpenEvidence and rapid information dissemination in the setting of outbreaks



Confidential and proprietary



OpenEvidence®

Collaborating to Build the
Future of Medical Information

