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# Bridging Research and Clinical Practice:

Spreading Medical Best  
Practice and Patient  
Education

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 Wolters Kluwer



# Medical literature access challenges

- Limited availability of evidence and best practices materials
- Regional guidelines unavailable, unclear, or not followed
- Volume of medical information increasing faster than ever



Scientific publications grow on average 4% per year, doubling approximately every 17 years<sup>1</sup>

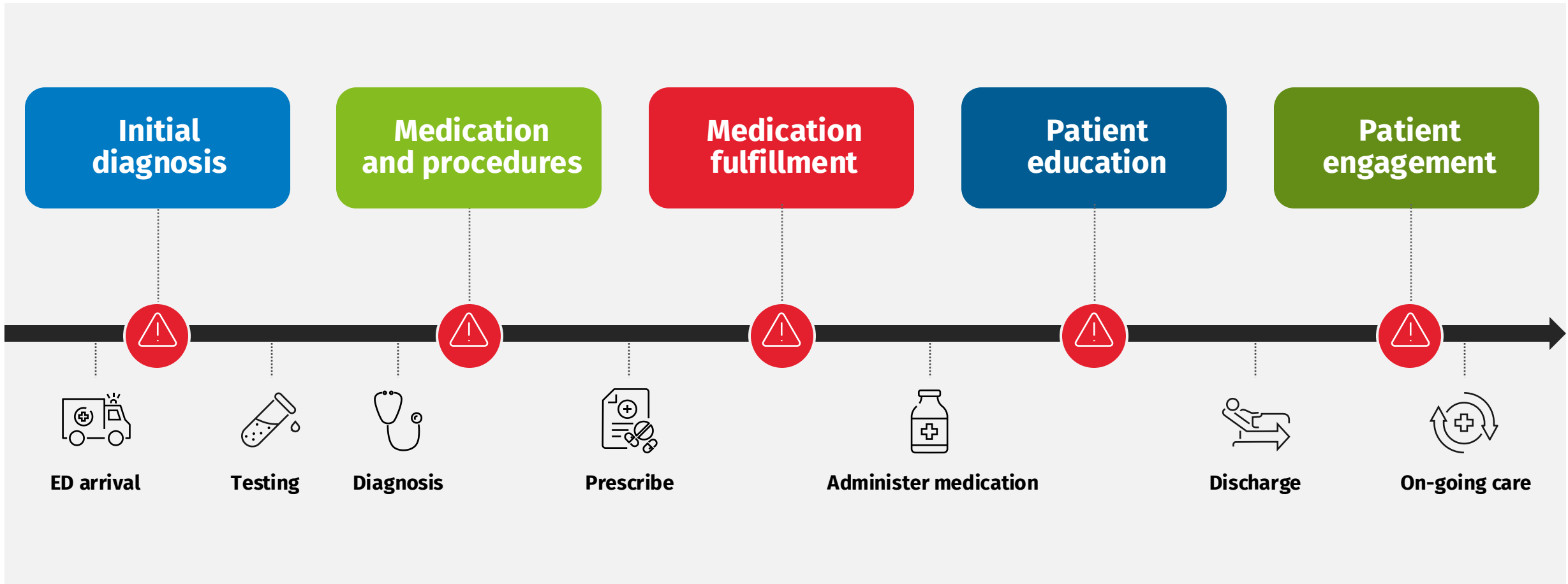


More than 1.8m clinical articles are published every year<sup>2</sup>

<sup>1</sup> Nane, G.F., Robinson-Garcia, N., van Schalkwyk, F. et al. COVID-19 and the scientific publishing system: growth, open access and scientific fields. *Scientometrics* 128, 345–362 (2023). <https://doi.org/10.1007/s11192-022-04536-x>

<sup>2</sup> Dai N, Xu D, Zhong X, Li L, Ling Q, Bu Z. Build infrastructure in publishing scientific journals to benefit medical scientists. *Chin J Cancer Res.* 2014 Feb;26(1):119-23. doi: 10.3978/j.issn.1000-9604.2014.02.10. PMID: 24653634; PMCID: PMC3937756.

# Potential error points during patient care



# Impact to patients



- ✓ Patient safety concerns
- ✓ Deficiencies in service quality
- ✓ Poor patient outcomes due to inconsistent care and interventions

Sources: <https://www.who.int/news-room/facts-in-pictures/detail/patient-safety> New England Journal of Medicine, McGlynn EA, et al. N Engl J Med. 2003;348:2635

# Cost to healthcare systems



Global cost associated with medication errors



of health spending wasted dealing with adverse events

- ✓ Variation in clinical practices and decision making
- ✓ Wasted spending
- ✓ Prolonged treatment and suboptimal care

Source: <https://www.who.int/news-room/facts-in-pictures/detail/patient-safety>

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# Challenges for Medical Librarians in Modern Healthcare

- **Information Overload:** Balancing vast amounts of medical data and misinformation.
- **Technology Demands:** Keeping up with digital transformation and data security.
- **Clinician Burnout:** Limited time for research amid increasing pressures.
- **Patient Education Inequities:** Ensuring accessible and representative resources.





# Clinical Decision Support

An evidence-based, clinician-authored resource serving as a trusted source to help doctors, nurses and pharmacists make the right diagnosis and treatment decisions.

# Clinical Decision Support



Equips healthcare professionals with the latest evidence-based information & recommendations to help make the right clinical decisions first time.



Supports clinical decision making to improve quality, safety and cost effectiveness.



Gives clinicians the information they need quickly - whenever and wherever they need it: on desktop, mobile or in the EMR.



Includes links to local guidelines and patient information materials.



# How does CDS improve care decisions?



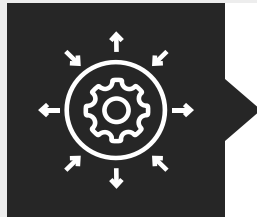
Navigate volumes of vast and complex literature and provide suggestions when no evidence is available



Answer 15 to 20 questions per day



Help address 60% of questions that go unanswered



Change 5 to 8 management decisions per day, substantially impacting choices made



Deliver consistent, measurably-improved clinical effectiveness and improve overall patient care

Covell, DG. *Ann Intern Med* 1985; 103:596; Green, ML. *AM J Med* 2002; 109:218; Osheroff, JA. *Ann Intern Med* 1991:575; Ely, JW. *J Am Med Inform Assoc* 2005; 12:217; Gorman, PN. *Med Decis Making* 1995; 15:113., Patient-Care Questions that Physicians Are Unable to Answer July/August 2017, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2244897>

# Clinical Decision Support benefits



Evidence-based digital tool at the point of care – where and when clinicians need it to make diagnosis and treatment decisions

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**Latest evidence and best practice recommendations from global experts**

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Easy to access and use via computer, mobile device or electronic medical record (EMR)

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Consistent source of information for all clinical teams: doctors, nurses, pharmacists

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**Supports medical education & CPD**

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Engages the patient in their own care with patient education materials

# Warning signs of an inadequate Clinical Decision Support Solution



Editorial content written by non-experts



Limited clinician trust and familiarity



Low adoption and usage



Inadequate evidence of impact on care quality & outcomes



Unable to show impact on efficiency and productivity



Clinical questions not answered due to limited content



Conflicting information

# Introducing UpToDate® from Wolters Kluwer



98% clinicians say they trust  
UpToDate as a point of care  
clinical information source



95% say UpToDate improves the  
quality of care they provide



90% clinicians say UpToDate saves  
them time

Source: UpToDate Individual Subscriber Survey,  
October 2022 N=9,878

# UpToDate® in numbers



>2  
million users



190  
countries



>44,900  
organisations



>664  
million content  
views a year

# Uniquely positioned to lead



**12,400+**  
topics



**9,800+**  
Graded  
recommendations



**7,400+**  
expert contributors



**50+**  
MDs on staff



**100+**  
studies show patient  
outcome improvements



Trusted by over  
**2 million**  
clinicians



**664+**  
Million content views  
per year



**420+**  
journals hand-  
searched



**7,600+**  
unique drug entries



**9M+**  
CME and MOC  
credits earned



**200+**  
calculators

## ✓ Who uses UpToDate

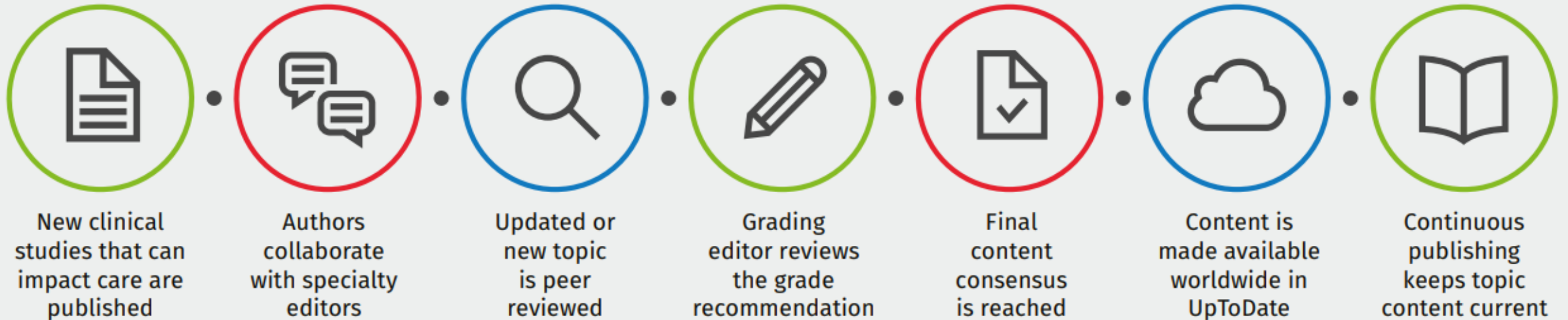
- Physicians
- Pharmacist
- Residents
- Nurses
- Medical Students
- Lab Technicians
- Librarians



# Creating actionable information clinicians trust

## Our Editorial Process

UpToDate has a rigorous editorial process, which has been carefully and methodically developed to promote consistency and transparency. Some core benefits of our editorial process include:



# The ROI from Clinical Decision Support



Source: peer reviewed studies at [www.wolterskluwer.com/en/solutions/uptodate/about/research](http://www.wolterskluwer.com/en/solutions/uptodate/about/research)

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# CDS: an answer to the challenges faced by future clinicians

## Medical Knowledge Growth:

- 1950s: Medical knowledge doubled every 50 years.
- 2010: Doubling every 5 years.
- Today: Medical knowledge is estimated to double every few months.

## The Role of Evidence-Based Resources:

- Clinical decision support tools will be critical in synthesizing this vast data.
- They will help clinicians make informed decisions, enhancing patient care outcomes.

## Impact on Medical Students:

- Students are facing a rapidly evolving medical landscape.
- Clinicians need to efficiently manage and apply vast amounts of new information at the point of care.

# UpToDate Enterprise Suite: Unifying the care continuum

## UpToDate | Medi-Span Unifying the care continuum and health ecosystem

Our mission is to create a unified solution to improve health, safety, and satisfaction today and tomorrow so that you can achieve what matters most



Clinical  
Decision Support



Drug  
Reference

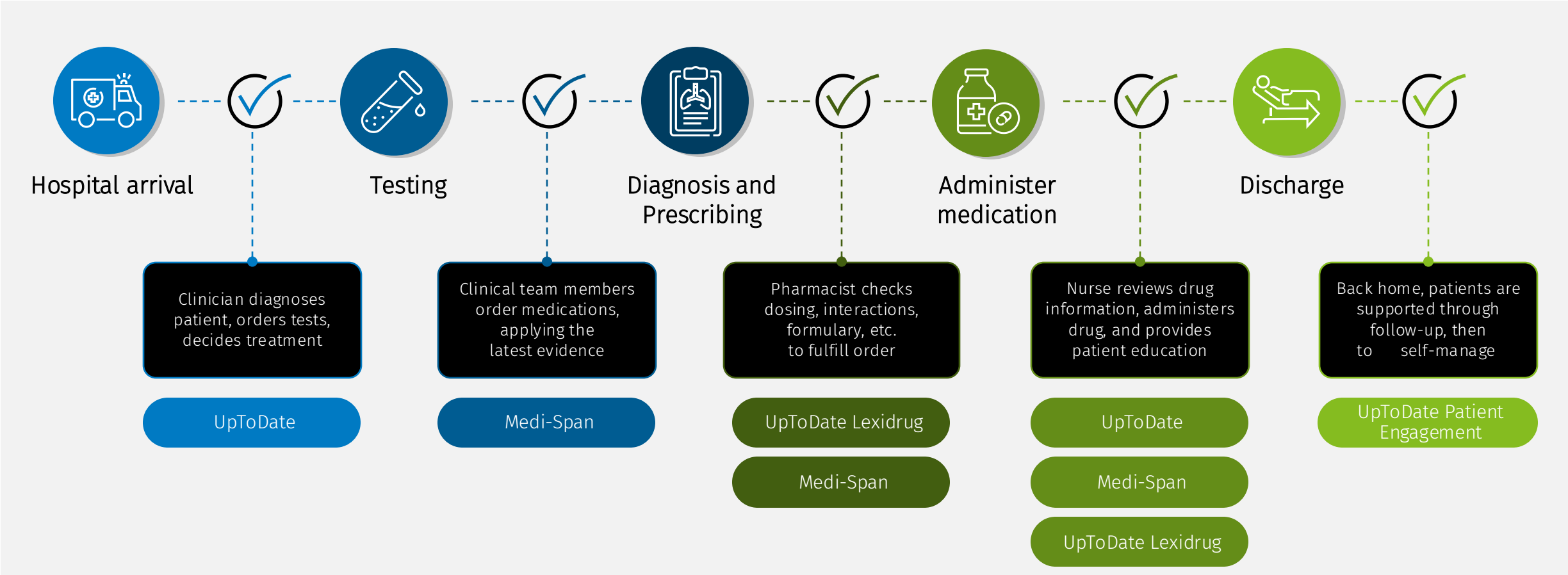


Patient  
Engagement



Drug Data  
Solutions

Each care decision along the patient journey determines cost, quality and efficiency of care received.



# The future of Clinical Decision Support

- CDS revolutionizing patient and chronic disease management in four areas: therapeutic pathways, precision medicine, diagnostic imaging, and personalized healthcare
- New uses for CDS include data-driven patient management, learning healthcare systems, remote patient monitoring, sensor-based systems, and value-based healthcare
- Advances in AI driving even faster decision-making – but it must be done responsibly



*“The adoption of artificial intelligence in the clinical setting will continue to evolve, particularly with generative AI for clinical decision support, as healthcare organizations begin piloting and evaluating these solutions for responsible and safe patient care applications. Generative AI has the potential to help clinicians make decisions more accurately and efficiently at the point of care.”*

– Dr. Peter Bonis, chief medical officer at Wolters Kluwer Health, in [“Where AI will impact healthcare in 2024”](#)

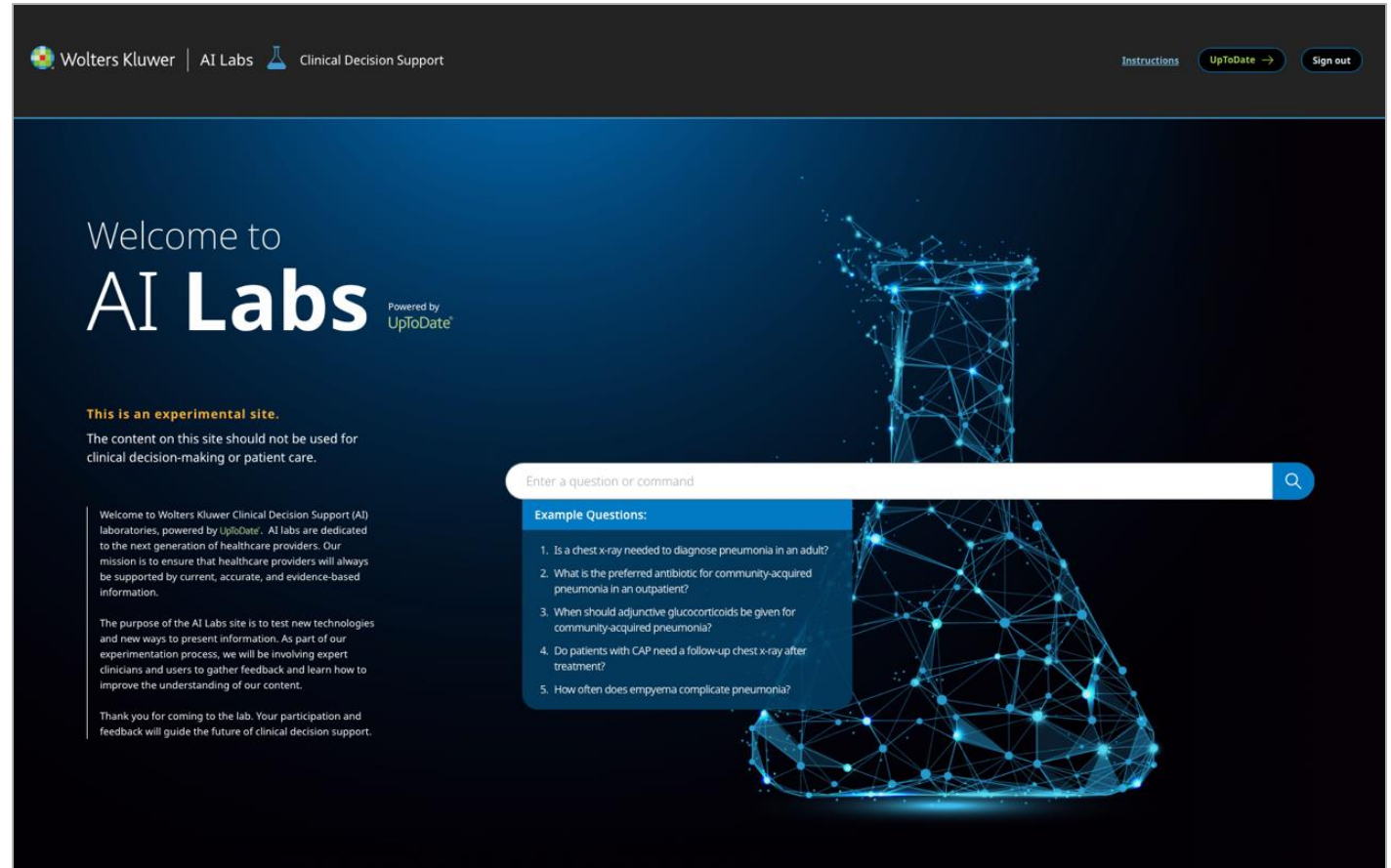


# The future of CDS

UpToDate® set the standard for evidence-based clinical decision support...

...Now we are setting the standard for the responsible development of **Clinical Generative AI**

Prioritizing **reliability**, **quality**, and **transparency** within our **AI Labs** development environment







# AI Labs: Trusted Clinical Generative AI

## Powered by UpToDate

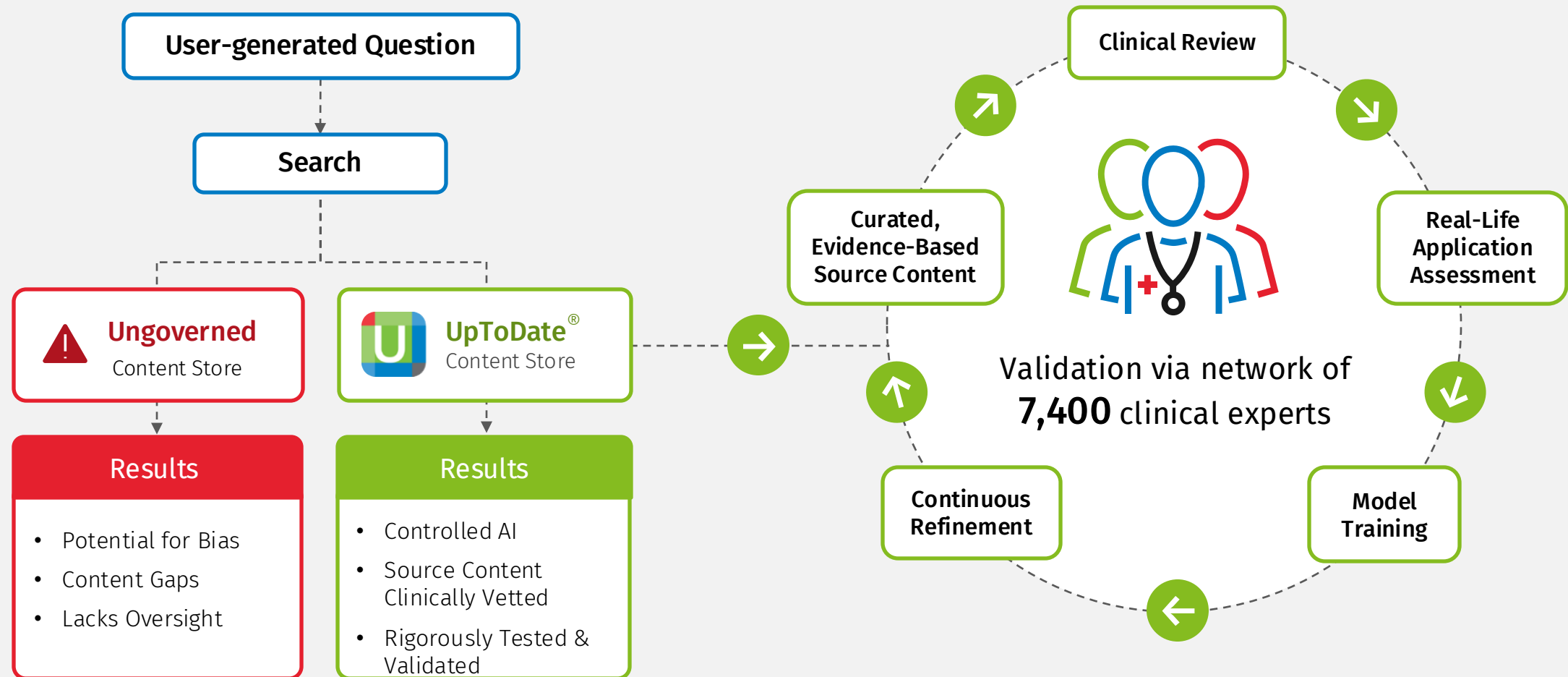
As the market leader in innovation and clinician use, UpToDate is committed to providing clinicians with trusted answers

- Large language model trained on UpToDate Content in an experimental space
- Aligned with our patient-specific content strategy
- Both verbatim and AI responses are based on UpToDate content
- Underlying expert-validated UpToDate content for an unparalleled combination of best-in-class expertise and technology

## AI Labs Potential Value

-  Ability to cite sources directly within the application
-  Proactively share contextually relevant information
-  Improve patient engagement & literacy with AI translations
-  Predict a provider's next question
-  Enhances the workflow through integrations
-  Trust and credibility of content powered by UpToDate

# Not all Clinical Generative AI answers are created equal



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# Thank you!

