

# UpToDate®

## Clinical decision support: impact on quality, education and outcomes

Dezsó Nagy  
Regional Channel Partner Manager, Europe  
UpToDate

# Today's Agenda

1

UpToDate overview

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2

UpToDate Anywhere

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3

Integration

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4

Clinical Studies and User Surveys

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Questions

# What Is UpToDate?



UpToDate® is an evidence-based clinical decision support system authored by physicians to help clinicians make the right decisions at the point of care.

# Doctors Have Clinical Questions

*Unanswered clinical questions  
impact patient management decisions*

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*Approximately 2 out of 3 clinical  
encounters generate a question*

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*Physicians have approximately  
11 clinical questions a day*

**60%** of questions  
go unanswered

Answering all clinical  
questions could change

**5 to 8**

patient management  
decisions each day

# A New Way to Practice Medicine



## What's New/

## Practice Changing UpDates

**10 500+**  
Clinical topics

**5 600+**  
Drug entries

**1500+**  
Patient topics

**6 300+**  
Physician authors

## CME/CPD

**30 000+**  
Graphics

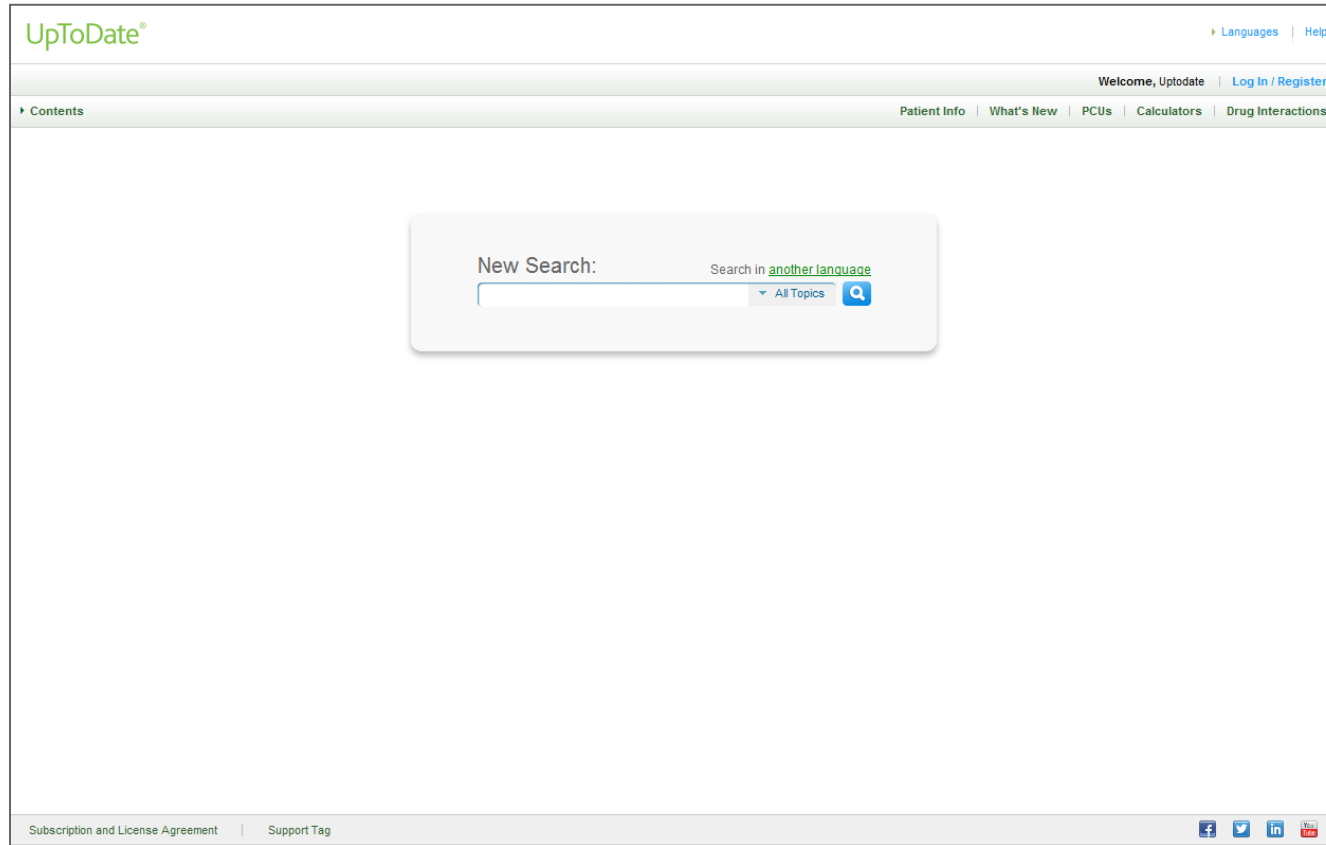
**165**  
Medical calculators

**425 000+**  
Evidence links

**23**  
Specialties



# Live Demo



[www.uptodate.com/demo](http://www.uptodate.com/demo)

# UpToDate<sup>®</sup>

Embedding UpToDate  
in EHR Overview -  
what's the UpToDate  
offering?

# UpToDate - Anytime, Anywhere



## Access UpToDate

- Directly from any internet browser
- Through the UpToDate Mobile Apps for iOS, Android™ and Windows 8 devices
- Through your EHR and clinical systems

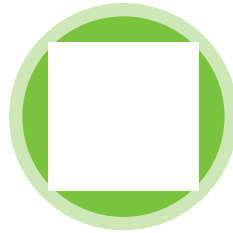


# UpToDate Anywhere

Direct access to UpToDate from any internet browser



MOBILE



OFFICE



HOSPITAL



HOME

- UpToDate mobile app for *iOS®*, *Android™* & *Windows 8 devices*
- CME credits where available

# UpToDate Anywhere Delivers Mobility

*UpToDate Offers Two Modes of Access:*

| UpToDate Access Comparison:                         | UpToDate Anywhere | UpToDate Onsite |
|---|-------------------|-----------------|
| Access within Facility                              | ✓                 | ✓               |
| Access outside Facility<br>(office, home, mobile)   | ✓                 | -               |
| UpToDate Mobile Apps<br>(iOS, Android™ & Windows 8) | ✓                 | -               |
| CME/CE/CPD Credits                                  | ✓                 | -               |
| Integration within EHR<br>& Other Clinical Portal   | ✓                 | -               |
| Basic Usage Reports                                 | ✓                 | ✓               |
| Enhanced Usage Reports                              | ✓                 | -               |

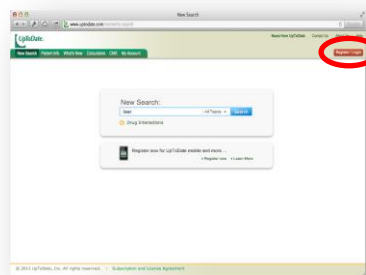
*“Our use of UpToDate Anywhere is a direct outgrowth of our advanced mobility strategy and mission to equip clinicians with the tools they need to answer questions quickly at the point of care.”*

Glen Geiger, MD  
Chief Medical Information Officer  
The Ottawa Hospital

# Subscriber Self-Registration

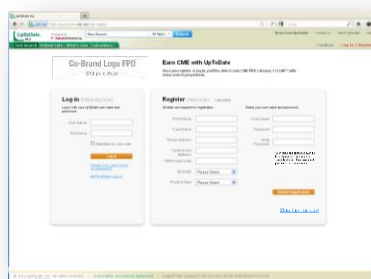
## End-user process

### Registration promoted



- Configured at UTD
- Easy to find links to registration

### Registration



- User registers and create own credentials
- Email confirmation sent to user

### User Access



- Log in directly to UTD
- Mobile On-Demand app access

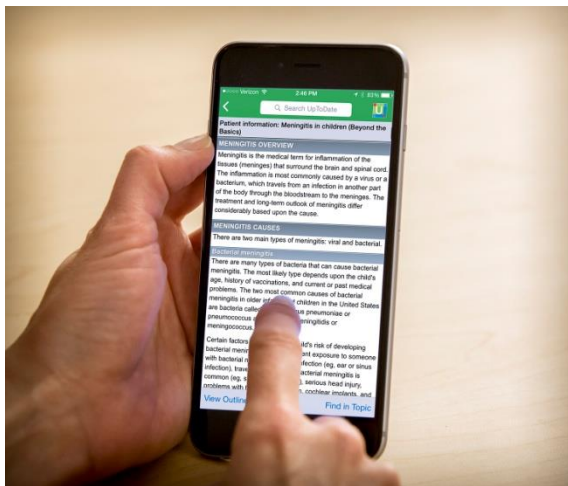
### User Verification



- 90 days to verify affiliation
- If user “verifies” their affiliation, time resets
- In app/email message after 25 days reminds users
- Remote access disabled if user doesn’t re-verify

# UpToDate Anywhere Mobile Applications:

- Available for On Demand Mobile Apps (iOS, Android and Windows 8)



# UpToDate Mobile App Awards

- *Best Medical Information Solution*

SIIA CODiE Finalist (February 2013)

**//CODiE//**

2012 SIIA CODiE FINALIST

- *Best Solution Integrating Content into Workflow*

SIIA CODiE Finalist (February 2012)

THE WALL STREET JOURNAL.

**WSJ**

- *Best Apps in Publishing*

EContent Magazine (April 2012)

**EContent**  
Digital Content, Media, and Publishing Strategies

- *Voted one of the Top 10 Medical Apps*

Modern Healthcare (December 2013)

**Modern  
Healthcare**

- *Featured in National Newspapers*

The Wall Street Journal (November 2013)

The Daily Telegraph (UK, December 2013)

**The Telegraph**

# Clinician Workflow



EHR integrated with UpToDate

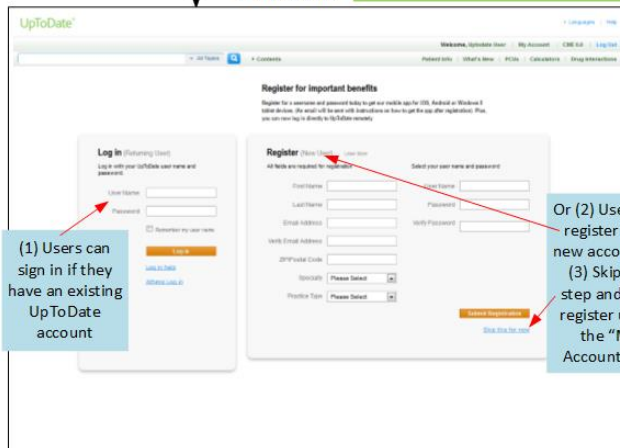
User selects Search Box, Targeted Search, or Link

First time from this EHR site -or- Unregistered user every 15 days

UpToDate Login/Registration

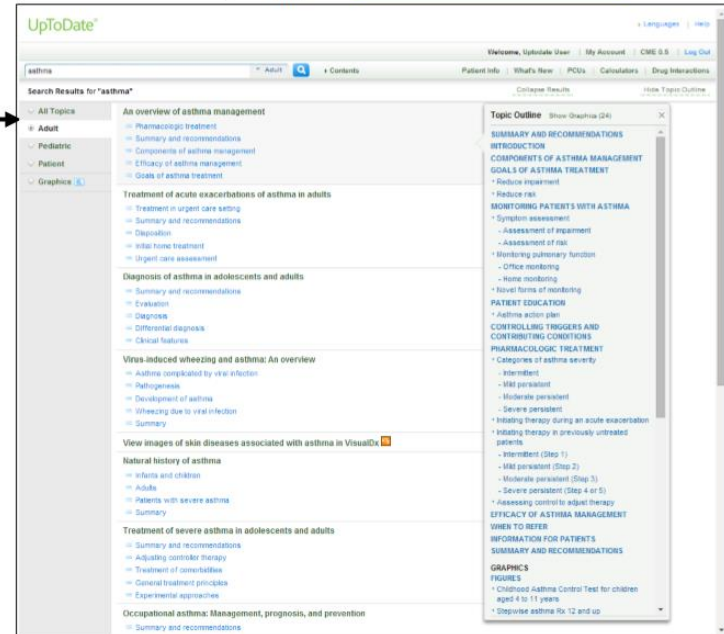
Not first time from this EHR site

UpToDate Search Results



(1) Users can sign in if they have an existing UpToDate account

Or (2) Users can register for a new account Or (3) Skip this step and later register under the "My Account" tab



# Benefits of Embedding UpToDate

Improved quality of patient care

Increased utilization of your EHR

Saved physician time

**Benefits**

Increased use of UpToDate evidence-based medicine

Increased clinician satisfaction

Accrued CME credit



# Increased Clinician Satisfaction with the EHR

Users said that having UpToDate embedded in their EHR

Is important  
to **patient care**

91%

Enhances  
**satisfaction**  
with their EHR

89%

Encourages  
**utilization**  
of their EHR

40%

Source: June 2011 Clinicians Survey N=1228



# UpToDate<sup>®</sup>

## Impact of UpToDate

# Research Demonstrates UpToDate Impacts Outcomes



**Over 60**  
*research studies*

**UpToDate** is the most widely studied point of care clinical decision support tool. To date there have been over 60 studies that have looked at UpToDate as a tool to:

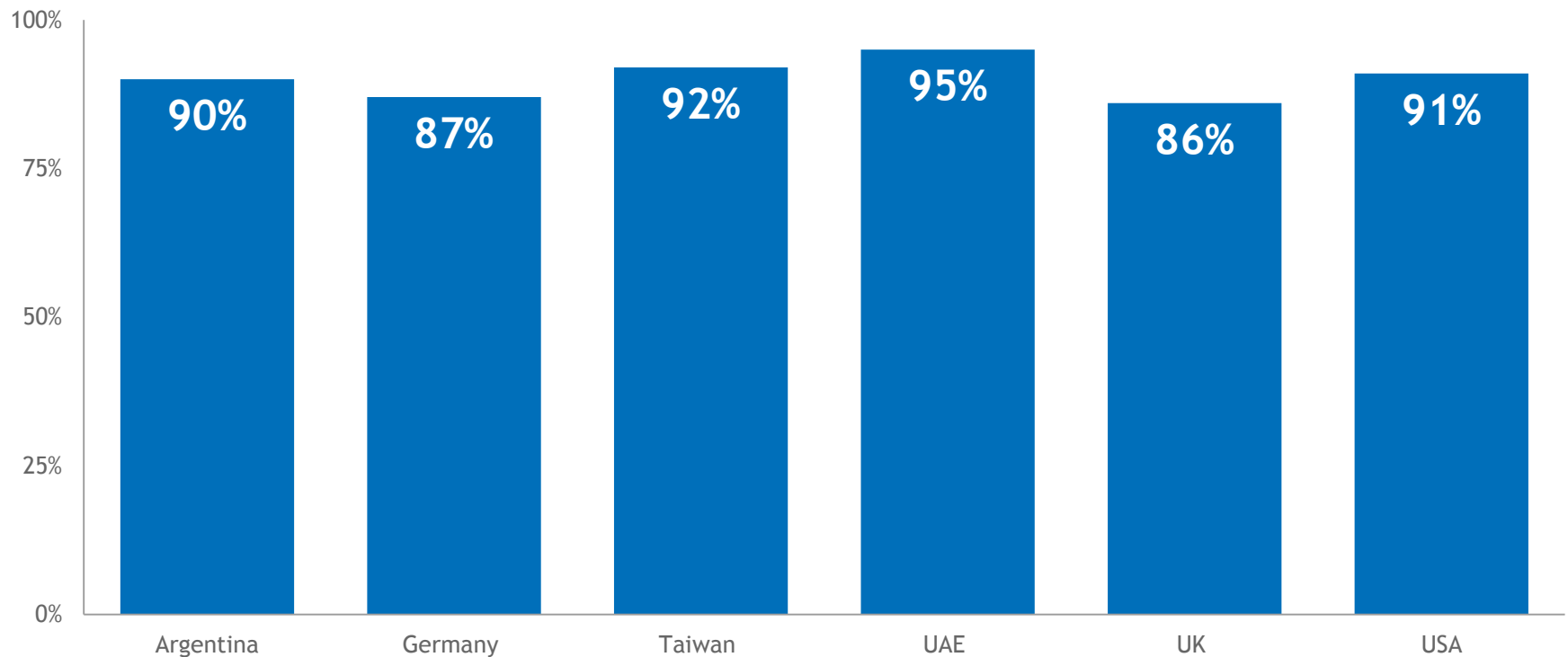
- Allow more questions to be answered faster
- Change decisions
- Improve outcomes



# Clinicians Save Time with UpToDate



Percentage of users who report that *UpToDate* saves them time in answering clinical questions



# Using UpToDate Increases Medical Knowledge

20 Minutes a day



Equals an Entire  
Year of Residency



# Clinicians Need Help Making Better Decisions

## Cook County Hospital

*Cook County Hospital, Chicago, IL*

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**Test:** Critical decisions assessed before and after providing clinical knowledge support on a random sample of **146 inpatients**

**Result:** Attending physicians changed treatment decisions for **18% of patients**

**Insight:** UpToDate drove most decision changes<sup>1</sup>



<sup>1</sup>Lucas, BP. The impact of evidence on Physicians' inpatient treatment decisions J Gen Intern Med 2004; 19:402.

# Better Decisions Improve Quality and Efficiency



**Most** changed decisions were felt to have improved patient care



**Many** of these decisions would likely shorten LOS



**Some** may have prevented an adverse event



| Problem                                       | Original decision                   | New decision                   | Possible impact   |
|---|-------------------------------------|--------------------------------|---|
| Nonfunction-ing AV graft                      | Place temporary vascular access     | Fibrinolytic therapy           | <ul style="list-style-type: none"> <li>Restore graft function</li> <li>Avoid new procedure</li> </ul>                             |
| Severe labile HTN                             | Diltiazem                           | Stop diltiazem add atenolol    | Improved blood pressure control   |
| Community acquired pneumonia                  | IV antibiotics                      | Oral antibiotics               | Inpatient stay avoided  |
| Diastolic heart failure                       | Furosemide, isosorbide, hydralazine | Stop hydralazine, add atenolol | Improved symptom control  |
| Inoperable hepatocellular cancer with ascites | Transarterialchemo-embolization     | Palliative care only           | <ul style="list-style-type: none"> <li>Complications avoided</li> <li>Decreased cost</li> <li>Improved symptom control</li> </ul> |



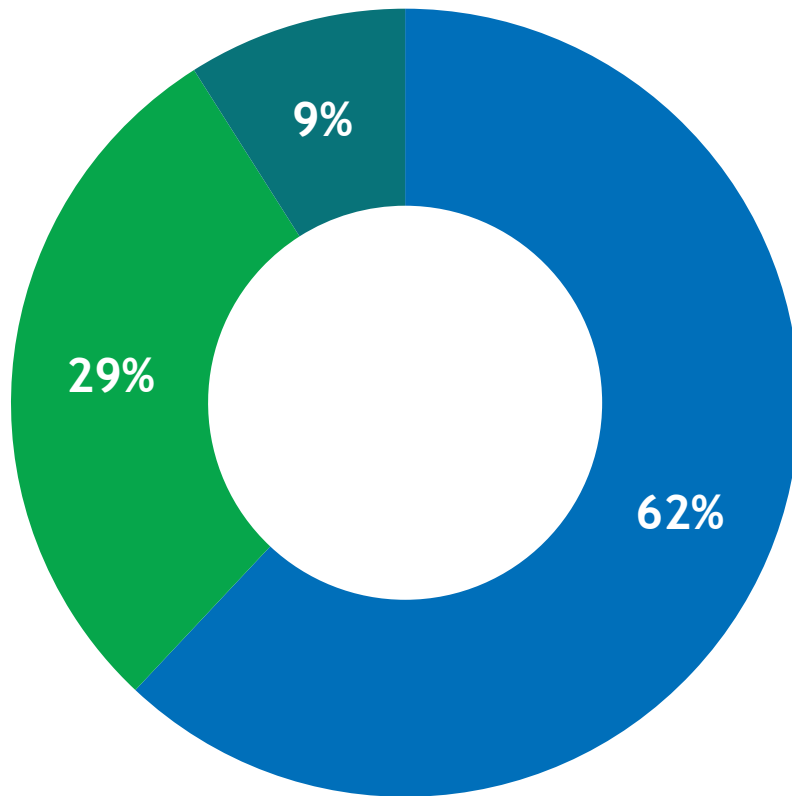
# UpToDate Changes Clinical Decisions



Researchers at *Singapore's National University Hospital* report that bedside use of UpToDate led to changes in patient care decisions...

**37%**  
of the time

# What Effect Did the Information from UpToDate Have on My Plan...

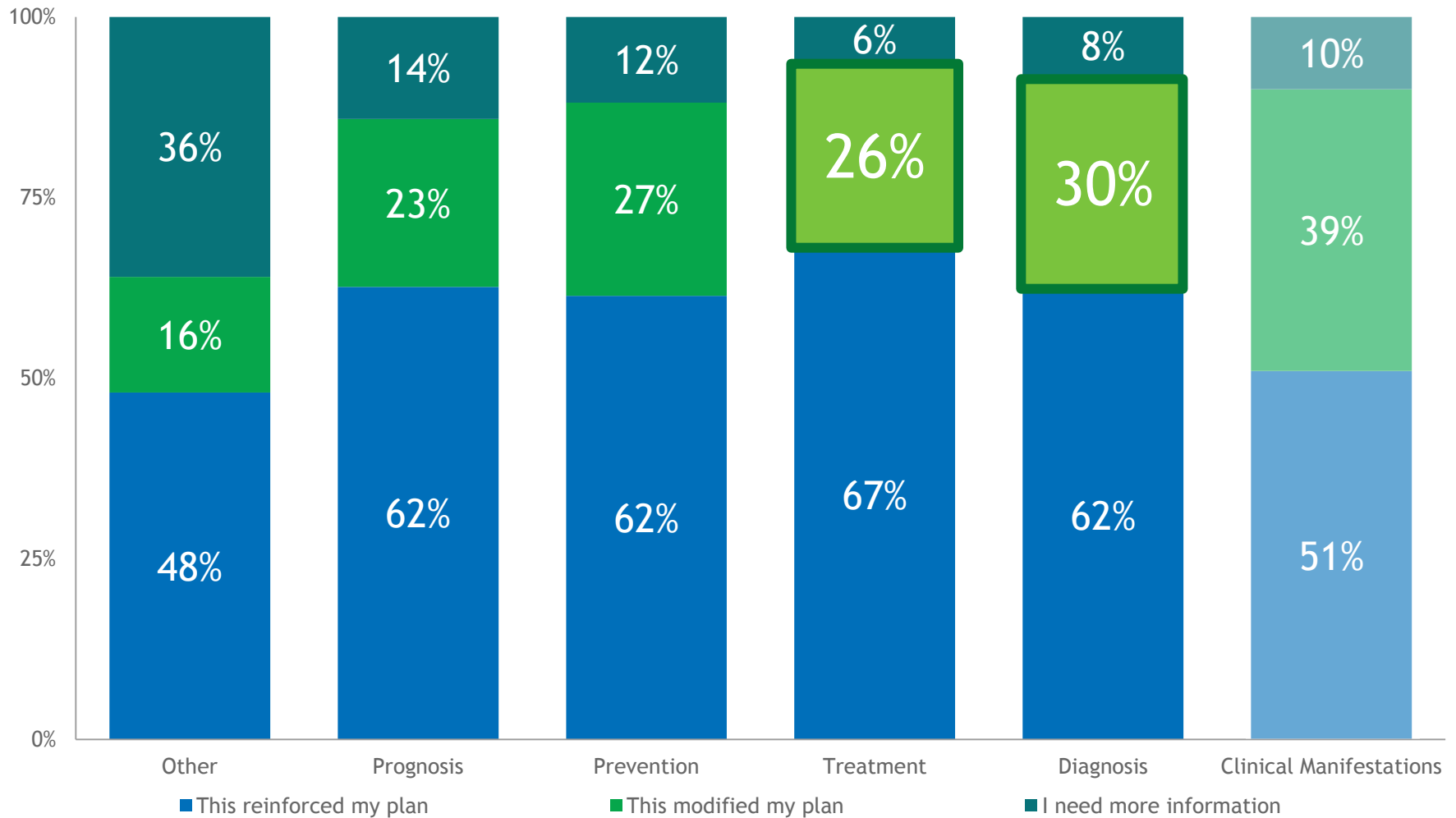


- This reinforced my plan (*n* = 2,575,145)
- This modified my plan (*n* = 1,187,150)
- I need more information (*n* = 388,305)



# UpToDate Impact by Clinician Query Type

(n= 4.1 Million CME Responses)



# Use of UpToDate Associated with Improved Outcomes



Solucient<sup>1</sup> studied the *impact* of UpToDate on length of stay, patient complications and patient safety<sup>2</sup>

Significantly shortens lengths of stay



Significantly lowers adverse outcome rates



Significantly lowers complication rates

1. Solucient maintains the nation's largest healthcare database, comprised of more than 26 million discharges per year from 2,900 hospitals.
2. Bonis PA. Association of a clinical knowledge support system with improved patient safety, reduced complications and shorter length of stay among Medicare beneficiaries in acute care hospitals in the US. *Int J Med Inform* 2008; 77:745.

# Researchers at Harvard University Find UpToDate Associated with Improved Outcomes



Use of **UpToDate** Associated with...

## Improved Quality

- *Every condition on Hospital Quality Alliance Metrics*

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## Shorter Lengths of Stay

- *372 000 days over 1 year*

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## Lower Mortality Rates

- *11 500 lives over 3 years*



# Economic Impact of UpToDate at Salford Royal NHF Foundation



Forrester Research found Salford Royal NHS Foundation Trust (SRFT)  
recovered the costs of UpToDate in 90 days

## Benefits Included:

- Staff productivity
- Diagnostic test efficiencies
- Improvements in the quality of care



Salford Royal **NHS**  
NHS Foundation Trust

University Teaching Trust



# Conclusion

- Clinicians have questions every day in the course of routine patient care
- Evidence based CDS - like UpToDate - provides answers to those questions, impacting decisions
- Changing decisions improves patient outcomes
- Answering clinical questions using UpToDate has a direct, proven impact on the outcome of the user healthcare institutions and systems.
- This impact can generate a significant cost saving in the institutions and in case of national/system level usage in the healthcare systems also.



# For More Information [Presenter to customize for particular audience]



Thank You for your attention

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