

# New year, new webinar platform!

The screenshot displays a webinar interface for 3M Science. Applied to Life.™. The main content area features a title slide with the text: "A great company is showing what interesting applications a fantastic product\* can bring for motivated users".

Annotations with arrows point to various interface elements:

- Media player:** Points to the "Live Stream" window, which displays a placeholder "320X240 (4:3)".
- Resources:** Points to the "Resources" window, which is currently empty.
- Have a question? Let us know here!:** Points to the "Q&A" window, which includes a text input field labeled "Enter your question \*" and a "Submit" button.
- Meet our speaker!:** Points to the "Speaker Bio" window, which features a profile picture of John Doe, a "Technical expert", and the text "Best company in the world".
- We want to hear from you survey!:** Points to the "Survey" window, which contains two questions: "1. How would you rate the subject" and "2. How would you rate the speaker", each with a "Select a Choice" dropdown menu and a "Submit" button.

At the bottom of the interface is a **Menu Bar** containing icons for video, help, chat, participants, link, slides, notes, questions, and a globe.

# Maximizing CDI Opportunities in Community Hospitals

September 2022

# On24 Webinar Platform for a better user experience!

- On24 Webinar Platform for a better user experience!
- Use Google Chrome and close out of VPN/multiple tabs
- Check speaker settings and refresh if you are having audio issues
- Ability to move engagement sections
- Ask questions!
- Certificate of Attendance available to download for live webinar sessions
- Engagement tools and CC available
- Check the resources section
- Complete the survey

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# Meet the speaker



**Kathy Harkness, RN, BSN, CCDS**  
3M HIS CDI client engagement executive

# Community hospital challenges

1 in 5

Americans receive care in community and rural hospitals

81%

High-risk hospitals considered *highly essential* to their communities

25%

US rural hospitals at high risk of closing

60%

Health Professional Shortage regions are in community and rural areas

*Source: 2020 Rural Hospital Sustainability Index: Trends in Rural Hospital Financial Viability, Community Essentiality, and Patient Outmigration*



# Why clinical documentation integrity?

Accuracy leads to an appropriate representation of:

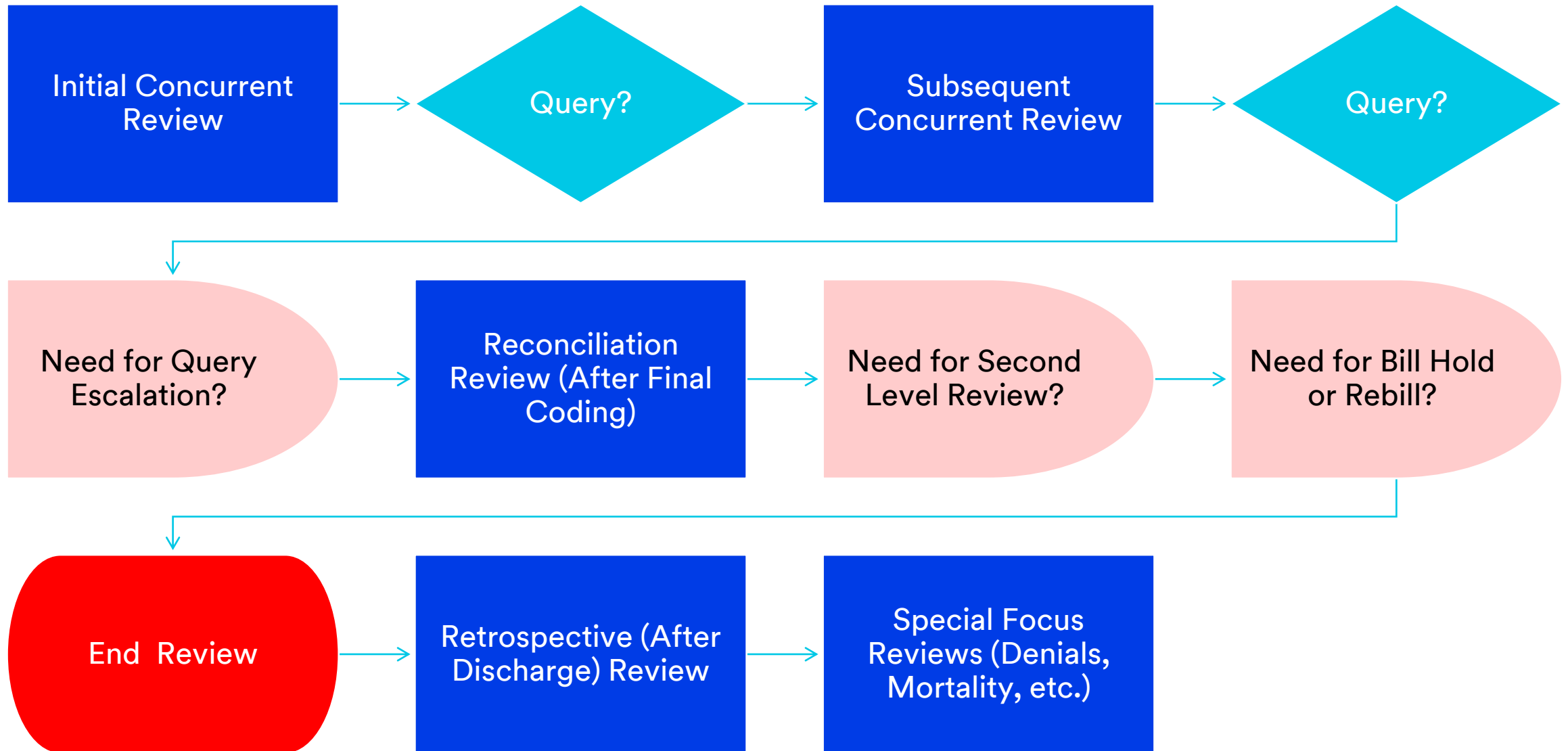
- Quality scores
- Reimbursement
- Physician Score cards
- Public Health Data
  - Disease Tracking
  - Medical Research

**"Meaningful, clear, concise, consistent, complete, reliable, timely, and legible documentation to accurately reflect the patient's disease burden and scope of services provided."**

**- AHIMA**



# Typical CDI workflow focus



# Our strategic imperatives



## Unburden Physicians and Nurses

Reducing physician burn out by dramatically reducing time spent on clinical documentation and by addressing administrative requirements and best practices proactively and within the natural workflow.



## Improve Patient Experience

Transforming the patient-physician relationship by allowing physicians to focus on patients instead of technology and drive towards documentation becoming an automatic by-product of the patient-physician engagement.



## Enhance Quality of Care and Clinical Documentation

Dramatically improving clinical documentation and capturing a more complete assessment of the patient while proactively identifying and closing gaps in care.



# How technology can help



**Prioritized  
Worklist**



**Automated Chart  
Abstraction**



**Encoder  
Integration**



**Query Automation  
and Integration**



**CDS Workflow  
Tracking**



**CDI Program  
Reporting**

**CDI product that centralizes your program and provides a single access to encounter documentation.**

**Enables CDI to streamline fragmented processes, standardize practices, and gives visibility into productivity and documentation trends.**

**Provides data for ongoing performance improvement initiatives.**

**Technology:**  
**3M™ M\*Modal CDI Collaborate**

# Prioritized workflow

Worklist Config						
You modified your worklist. Save changes Undo						
Patient	Working MS	Working RW	Working GLOS	Pend...	Potentia	
gett, Vivien	070	1.6729	4.5	0	Malnutrition (Oppor	
hek, Claire	871	1.8663	4.8	1	Pneumonia (Oppor	
lder, Gwen X	280	1.6571	4.2	2	Neurology (Oppor	
lora, Claire X	982	2.4381	4.6	0	Altered Mental Statu	
mon, Claire X	190	1.1440	3.6	0	Anemia (Opportunit	
ek, Ernest	853	5.0986	9.8	0	Pneumonia (Oppor	
ff, Minh	293	0.6553	2.3	0	Anemia (Opportunit	
llier, Willie	812	0.8707	2.7	0	Heart Failure (Oppor	
asley, Willie X	981	4.4907	8.4	0	Electrolytes (Oppor	
son, Ginger	291	1.3454	4.1	1	Anemia (Opportunit	
hugh, Pearle X	291	1.3458	4.1	0	COPD (Opportunity)	
					Arrhythmia (Oppor	

- Prioritization based on real-time encounter information
- Highly configurable and customizable
- Web-based for easy access
- Very wide variety of worklist options available

# The foundation: Natural Language Understanding

**Aggregates and reasons over clinical information** from various sources, such as narrative documents and discrete data.

**Relies on standard ontologies**, such as SNOMED, to establish relationships between medical terms.

**Establishes clinical value sets** for related treatment, findings, procedures, manifestations, etc.

Uses a combination of **artificial intelligence**, **machine learning (core)** and **rules engines (application)**.



# NLU application

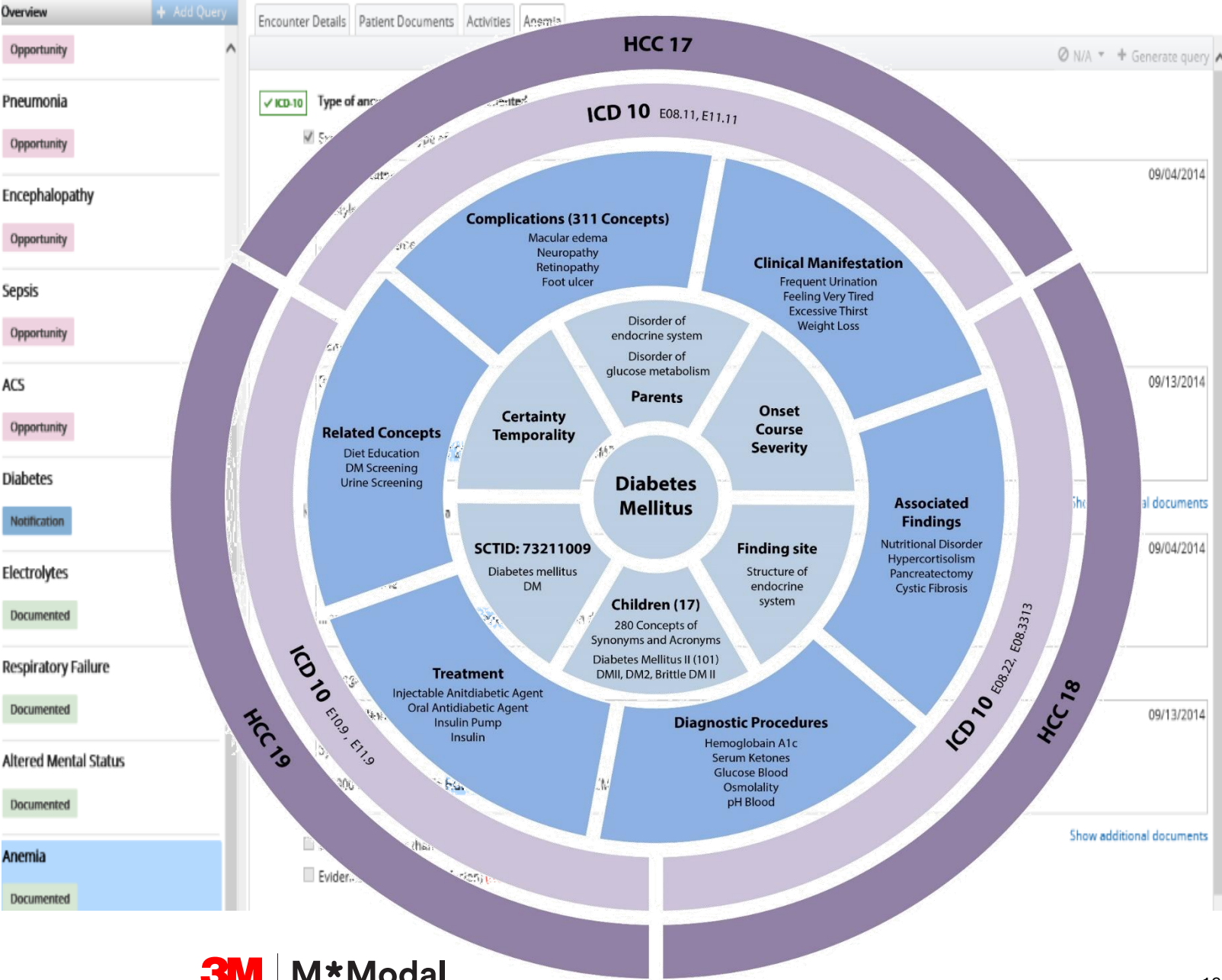
## Natural Language Understanding (NLU)

The queries tab works in conjunction with potential conditions. This column is populated with potential queries that could be relevant to the patient.

They are categorized by:

- Opportunity
- Notification
- Documented

In addition to documented evidence, the NLU system has the ability to identify evidence that has not been found.



# NLU evidence sheets

The screenshot displays the 'Evidence for Anemia' interface. On the left, a sidebar lists various conditions: Anemia (highlighted), COPD, Heart Failure, Malnutrition, Obesity, and Pneumonia. Each condition has an 'Opportunity' button, except for Obesity which is 'Documented'. The main panel shows the 'Anemia' tab selected, with a 'Generate query' button. Below this, a list of evidence items is shown:

- ✗ There is evidence or explicit mention of anemia, if true please specify the type.**
  - Required Evidence Not Found by M\*Modal**
    - ✗ Explicit mention of type of anemia
  - Evidence Found by M\*Modal**
    - ✓ Evidence of anemia (Transfusion)
      - (PAST MEDICAL HISTORY :)  
by  
... Arthritis • Sleep apnea • Blood transfusion without reported diagnosis ...
- ✓ Hematocrit less than 32
  - (Skin :)  
by  
... 0045 WBC 16.2\* RBC 4.33 HCT 31\* HGB 9.8\* MVC 71.6\* MCH ...

At the bottom, there is a red button labeled 'Scroll to missing evidence' and a 'Comments(1)' section with an 'Add a comment' button.

Evidence sheets for different conditions show the rules and evidence identified via Natural Language Understanding (NLU).

Rules run across all documents from the encounter - labs, radiology, clinical notes, etc. to identify pertinent documentation for different conditions.

Users can click on evidence snippets to launch the full document.

These pieces of documentation and evidence are summarized on the evidence sheet along with an indicator detailing if the condition was fully documented or is a documentation opportunity that could potentially require a query.



# Integrated queries



3M brings all the facility's approved query forms into 3M CDI Collaborate for easy launching and editing



Query forms are auto-populated with all patient demographic information as well as clinical indicators that were identified as evidence on the evidence sheet



Customers can utilize the library of 3M queries or have their custom query forms imported into the application



The CDI Specialist can then resolve the query once it has been marked as sent, to indicate whether or not they received a response from the physician

# Queries from evidence sheets

<

Pitt, Jonas

M 62 y/o (01/22/1959)

Enc: 1000267301

Admit: 06/03/2021

LOS: 98

DRG: 293

Location: 494 B

Attending:

Details

Overview

+ Add Query

Harkness - 71405429K - General Medicine on 08/20/2021

Pending (Delivered)

Cardiomyopathy2

Breanne Goodman sent a response from Engage on 08/25/2021

Pending Response

Clarification

Crowther, Kaitlyn sent a response from Engage on 09/07/2021

Pending Response

Potential conditions (2)

Heart Failure

Opportunity

Cerebrovascular

Documented

Encounter Details

Patient Documents

Activities

CDI Engage Activity

Heart Failure

Evidence for Heart Failure

[Mark as not applicable](#)

+ Generate query

🔔 CDI Engage automatically notified providers about this diagnosis

📄 Heart Failure

Please specify **acuity** (acute, chronic, acute-on-chronic) and **type** (systolic, diastolic, combined systolic-diastolic).

Notified 123 times.

❌ Heart failure was explicitly mentioned, but type (systolic, diastolic or both) and/or acuity (acute vs.chronic vs. acute on top of chronic) were not documented.

Required Evidence Not Found

❌ Explicit mention of acute or chronic heart failure

❌ Explicit mention of systolic or diastolic heart failure

❌ Explicit mention of grade

Evidence Found

✅ Evidence of diastolic heart failure (disorders)

Progress Notes(Active Problems):05/08/2019 at 12:00 AM by Kaitlyn Crowther

... Coronary atherosclerosis Chest pain Benign essential hypertension Epigastric pain Dehydration ...

📄 Scroll to missing evidence

Comments (0)

Add a comment

Worksheet

Reconciliation

Follow-up date:

Not set

📅

📄

🕒

🖨

📄

💬

Saved 06/15/2021 11:50 AM by kaitlyn.crowther

B

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Size

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📄

📄

🕒

📄

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≡

Font

CC/HPI:

PMH:

Progress Notes(Active Problems:) by Kaitlyn CrowtherWed, May 08 2019, 12:00 am

essential hypertension

Progress Notes(Service:) by David BowersWed, May 08 2019, 12:00 am

coronary disease

# Queries from NLU evidence

<

Hendrik, Matthew  
M 68 y/o (02/24/1952)

Enc: 2022479233  
MRN: 782560

Admit: 11/28/2018  
Discharge:

LOS: 454  
DRG: 292

Location:  
Attending: Martinez, Oscar FC:

Payer:

Details

CKD9

SavePDFPrint

FontSize

Date: February 26, 2020  
Queried Physician: Oscar Martinez  
Patient Name: Hendrik, Matthew  
Encounter Number: 2022479233  
Admission Date: 11/28/2018

**Physician Documentation Request**  
**Chronic Kidney Disease**

Dear Dr.

In an effort to adequately document the patient's clinical management and severity of risk, can you please assist us by clarifying the following information?  
Review of the medical record shows a diagnosis of Chronic Kidney Disease, Failure or Insufficiency has been recorded.

Based on the following Clinical Indicators:  
  
cholesterol • Acid reflux • Chronic kidney disease • Pulmonary embolism • Thyroid

Oct 8 2015 BUN 38\* CREATININE 2.68 Oct 8 2015 CALCIUM 9.0

CHF exacerbation CKD (chronic kidney disease) Atrial fibrillation with controlled ventricular

DeleteMark as sentDetails

Encounter DetailsPatient DocumentsActivities

Kidney Disease

Evidence for Kidney Disease Mar + Generate query

✖ Kidney disease was explicitly mentioned, please document stage if appropriate.

--Required Evidence Not Found by M\*Modal

✖ Stage

--Evidence Found by M\*Modal

✔ - Presence of CKD

(ACTIVE PROBLEMS:)  
by  
... CHF exacerbation CKD (chronic kidney disease)  
Atrial fibrillation with controlled ventricular ...

(Active Problems:)  
by  
... CHF exacerbation CKD (chronic kidney disease)  
Atrial fibrillation with controlled ventricular  
response Diabetes mellitus type 2 in obese  
Cardiomyopathy, nonischemic OSA (obstructive

⬇ Scroll to missing evidence

The query form can be delivered in several ways:

- Printed from the 3M CDI Collaborate application
- Converted to a PDF from the application for email delivery
- Copied into an EHR inbox
- Directly integrated into an EHR inbox

# Reporting

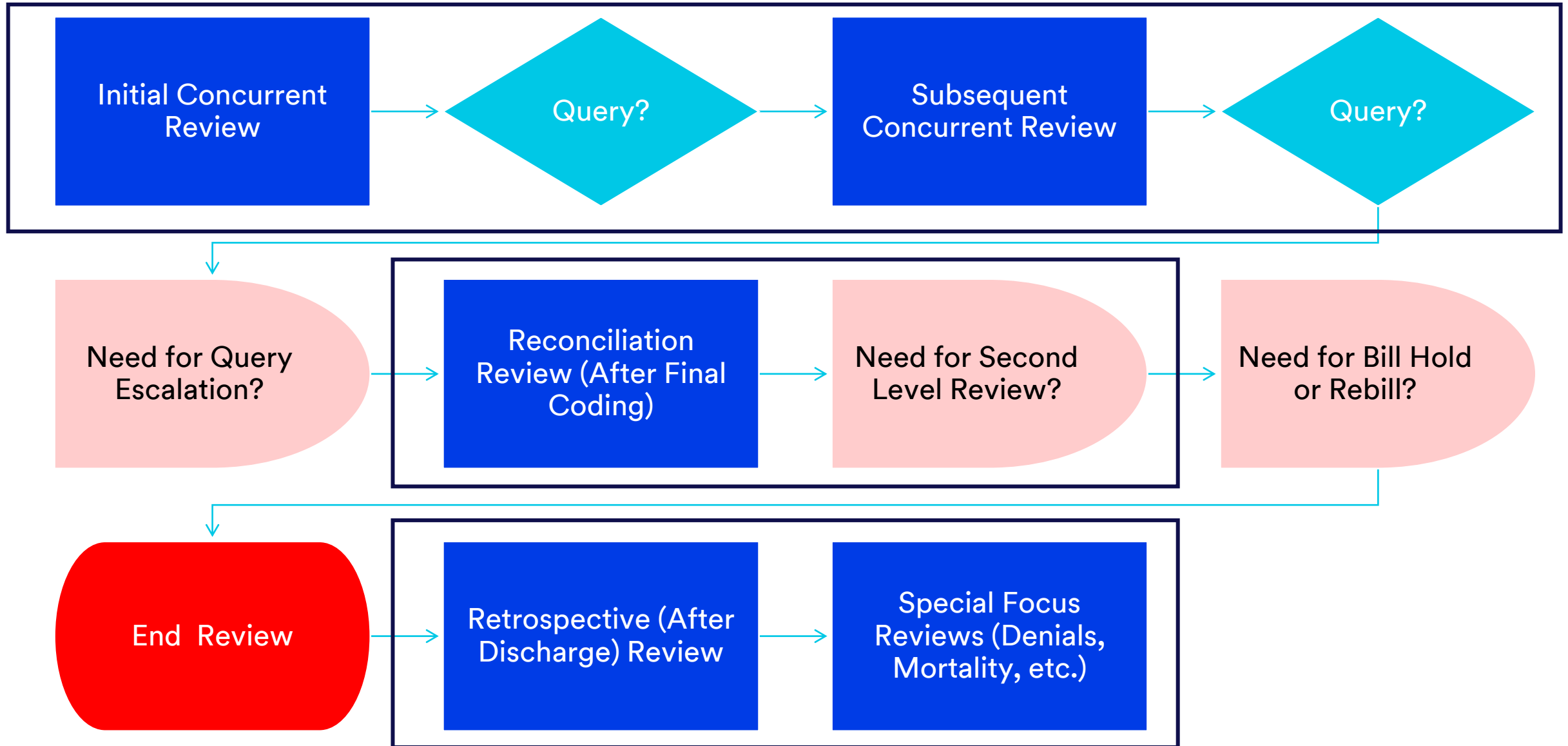
## Financial Outcomes - Summary

Encounters Discharged Between:

Run Date: 11-28-2016 13:03:09

Discharge Month	Inpatient Encounters	Encounters Reviewed	Coverage Rate	Total Reviews	Total Queries	Actual RW Impact	Actual Financial Impact	CMI	CMI due to CDI	% CMI due to CDI
05	1612	751	46.59%	2903	199	32.0994	\$212,237.83	1.0458	0.0199	1.9%
06	1572	694	44.15%	3082	166	25.1429	\$162,170.81	1.1248	0.016	1.42%
07	1540	559	36.30%	2362	103	7.0575	\$166,418.45	1.0991	0.0046	0.42%
08	1688	629	37.26%	2903	128	14.6912	\$166,251.8	1.0595	0.0087	0.82%
09	1494	524	35.07%	1932	126	9.7581	\$83,796.89	1.1368	0.0065	0.57%
10	1467	587	40.01%	2067	154	13.3634	\$127,547.23	1.1896	0.0091	0.77%
Monthly Average	1,562.2	624.	39.94%	2,541.	146.	17.0188	\$153,070.5	1.1092	0.0108	0.98%

# Impact to the workflow



# Case study

## Real results

Randolph Health uses **3M CDI Collaborate** to enhance chart review and query workflow, using advanced artificial intelligence (AI) and NLU to identify missing specificity and query opportunities and improve documentation accuracy. The results to date:



### Financial:

- Average **1.49%** medical case mix index (CMI) increase per year due to CDI
- Associated revenue improvement of **\$567,716** per year on average



### Clinical:

- Additional **2.13%** MCC/CC capture on average per year due to CDI
- Additional **\$325,833** in protected billing from clinical validation queries



### Operational:

- Productivity increase equal to **1 CDI FTE**, avoiding additional staff



# Adoption

# Adoption services

## Integral part of any technology solution

### 1. Clinical documentation experts

The 3M adoption services team comprises health information management experts, many with registered health information administration credentials, and a deep understanding of 3M solutions and clinical documentation workflows.


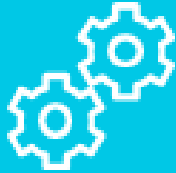







### 2. Optimize adoption and outcomes

3M adoption specialists partner with customers to understand user needs and clinical documentation goals, using a data-driven approach to drive optimization and ensure the best outcomes.

### 3. For the life of the contract

We provide life-of-the-contract adoption support because successful adoption and use of technology are only in part due to the technology itself. We believe strongly that it's the human touch that ensures broad adoption.

# Stakeholders and roles

 <b>Executive sponsor</b>	 <b>Project manager</b>	 <b>Physician champions</b>
 <b>Department heads</b>	 <b>CDI</b>	 <b>Coding</b>
 <b>Rev Cycle</b>	 <b>Professional</b>	 <b>IT</b>

# Examples of customization and tuning

## Customization

- Ability to define clinical evidence for prioritization, evidence sheets, and other functions in line with the health system's current CDI/clinical practice
  - Ability to submit new content requests for development in addition to or instead of “out of the box” content
- 

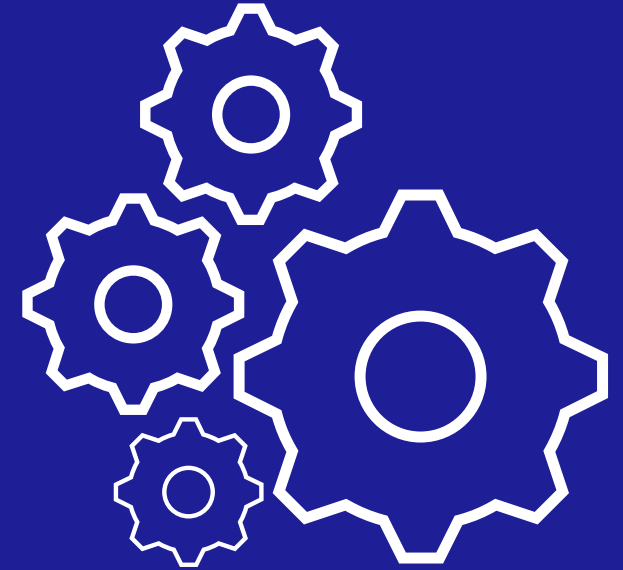
## Tuning

Natural Language Understanding (NLU) review during implementation and ongoing as needed to ensure appropriate documentation capture. Examples include:

- Appropriate capture of abbreviations/acronyms
- Appropriate capture of punctuation, especially as it relates to lab results.
- Ensuring that clinical concepts that were documented correctly, are also appropriately captured from an NLU perspective.

# 5 strategies for successful adoption in community hospitals

- **Clinical reasoning** – Understand the clinical reasoning engine, including what conditions are covered out of the box and how you can customize those
- **Prioritization** – Align on clear prioritization criteria that support your goals, and ensure technology can adapt to support these now and in the future
- **Compliance** – Ensure you can create query templates that align with compliance requirements
- **Technology** – Consider how the technology works with your current footprint, and what support is available
- **Post-implementation resources** – Understand the resources available post-implementation to promote adoption and continuous improvement



**Questions?**



**Interested in learning more about  
our products and solutions?  
Let us know!**

**Thank you!**