Using AI to Improve Physician Documentation and Quality

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Today’s speakers

Ehab Hanna, MD, FHM, MBA
Chief Medical Information Officer
Universal Health Services

Dr. Hanna is the Chief Medical Information officer at Universal Health Services, a Fortune 500 corporation with $10 billion in annual revenue, 83,000 employees serving 2.6 million patients at more than 350 facilities in 2017.

Dr. Hanna leads the clinical transformation at UHS acute care facilities. His office is responsible for the development and implementation of clinical systems across all 27 acute care sites. In pursuit of clinical optimization, Dr. Hanna's team developed many award winning clinical apps to optimize the EMR. His work led to the creation of a subsidiary of UHS called Crossings Healthcare solutions, charged to market these applications to other healthcare organizations.

Dr. Hanna has 14 years of executive informatics experiences. His work has won awards including the Davies Award in 2008. Dr Hanna is double board certified in Internal Medicine/Hospital medicine and Clinical Informatics and recently completed his MBA.

Michael Clark
SVP & General Manager
Nuance Healthcare

Michael Clark is a results-driven accountable leader who through transparency and engagement builds trust with investors, employees and clients delivering enterprise value growth.

Over twenty years of experience operating within a turbulent healthcare market, Michael is a leader in a range of organizations, from start-up and early stage firms, to large public companies.

He has a breadth of experience driving results, transforming and re-inventing people, products and services in a range of business settings.

As the SVP, General Manager for Nuance Provider Solutions line of business he’s responsible for the technology and tech-enabled services within clinical documentation creation, improvement and Nuance EHR optimization professional services defining the vision, producing the roadmap, defining the customer experience and aligning the organization to execute against the stated vision.

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Agenda

I. What today's healthcare systems are up against
II. Key challenge areas
III. Role of documentation in quality
IV. Focus on getting it right the first time with AI
V. Universal Health Service (UHS) case study
VI. Q&A

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What healthcare systems are up against

Weak documentation misrepresents the efficacy of the quality of the care provided and underserves patients, providers, payers. What we see now…

Appropriate reimbursement

- 4-8% of net patient revenue (NPR) missed
- 26% of surgical cases are delayed up to 30 days

Physician productivity

- Physicians spend 15 minutes reviewing every retrospective query

Physician burnout

- 200% increase in medical errors as a result of burnout

Penalties

- 6% of NPR going to 8%
- Based on **quality** and other measures
- Applies to Acute

Denials

- 65% due to **insufficient documentation**
- 2-5% NPR impact
- 1 in 5 may be denied
- 65%+ of denials never resubmitted
- Applies to Acute & Ambulatory

Shrinking margins

- Dropped from 9.5% to 8.1% in 2017
- Lowest in a decade

Why it matters:

- Physician retention
- Quality ratings are affected
- Executives are struggling to capture appropriate revenue for services rendered

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Common problem areas

Where weaknesses exist and getting to “first time right” begins to reduce rework, a true end-to-end ‘in workflow’ physician and CDS engagement demands a contemporary focus

Inefficient work practices are contributing to increased **burnout**

Expanding CDI program to meet organizational goals considering your current staffing/hiring need

Transparency in quality performance metrics is used by consumers and payers

There isn’t always enough time to address every problem or interventional opportunity in one visit

Rules around documentation are constantly evolving – it’s hard for physicians to provide consistent information

Achieving appropriate reimbursement is difficult when documentation lacks sufficient details

Identifying **key intervention opportunities** and **risk factors** requires sifting through large volumes of data

Most physicians do not know **what to document for proper** coding and reimbursement

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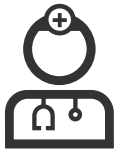
Focus on getting it right the first time

Documentation guidance for physicians and CDI teams drive outcomes



For physicians

Point of care advice

Specialty workflows

HCC/risk adjustment

Coding assistance

Clinical Strategies

Peer Group Benchmarking

Analytics

Shared Insight

For CDI teams

Workflow management

Automated encounter prioritization

Clarification management

Compliant documentation management approach

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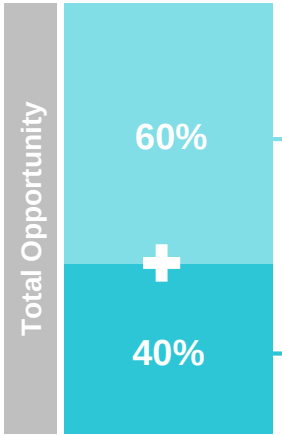
Consider the financial and productivity impacts

AI delivers real improvements in revenue, cost, provider satisfaction along the spectrum of CDI program disciplines

CMI Opportunity



Traditional CDI program
- Diagnosis sequencing
- Principal diagnosis
- Final coding reconciliation

AI-powered physician guidance
- Undocumented diagnoses
- CC/MCC capture

Productivity

40% fewer retrospective queries means:

- Less disruption to physicians
- Physicians spend on average 15 mins per retrospective query
- More time for CDS teams to focus on complex cases quality improvement areas
- CDS teams can expand program coverage

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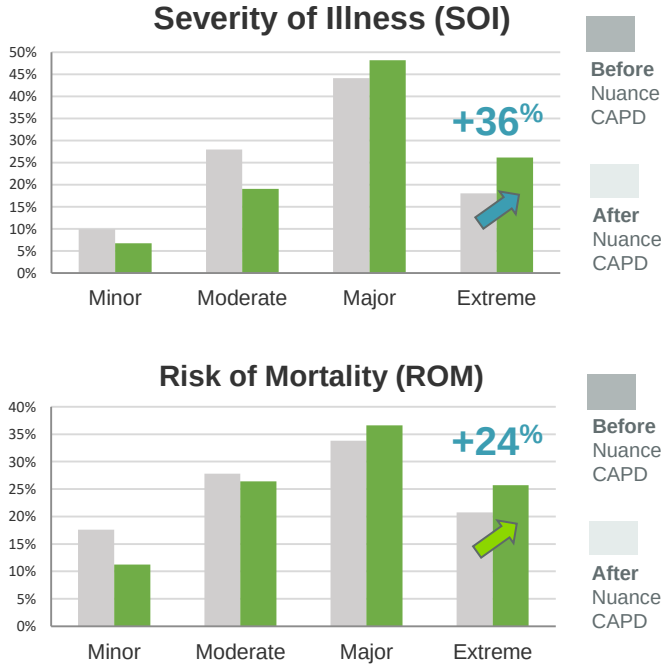
Adoption leads to better quality outcomes

Computer-Assisted Physician Documentation (CAPD)— by definition brings a first time right result that appropriately captures SOI, ROM and quality measures



- Volume-to-value- MDs quality scores are based on their documentation
- Once the MDs are engaged for their daily documentation (not just orders or results) it becomes easier to “interact” with them electronically
  [NOTE: If an MD is using speech recognition there’s further opportunity to engage early in the workflow]
- Ability to leverage CAPD at the point of care
- Reviews the MD “notes” as they are being saved into the system
- Creates the ability to assist in complete and accurate documentation

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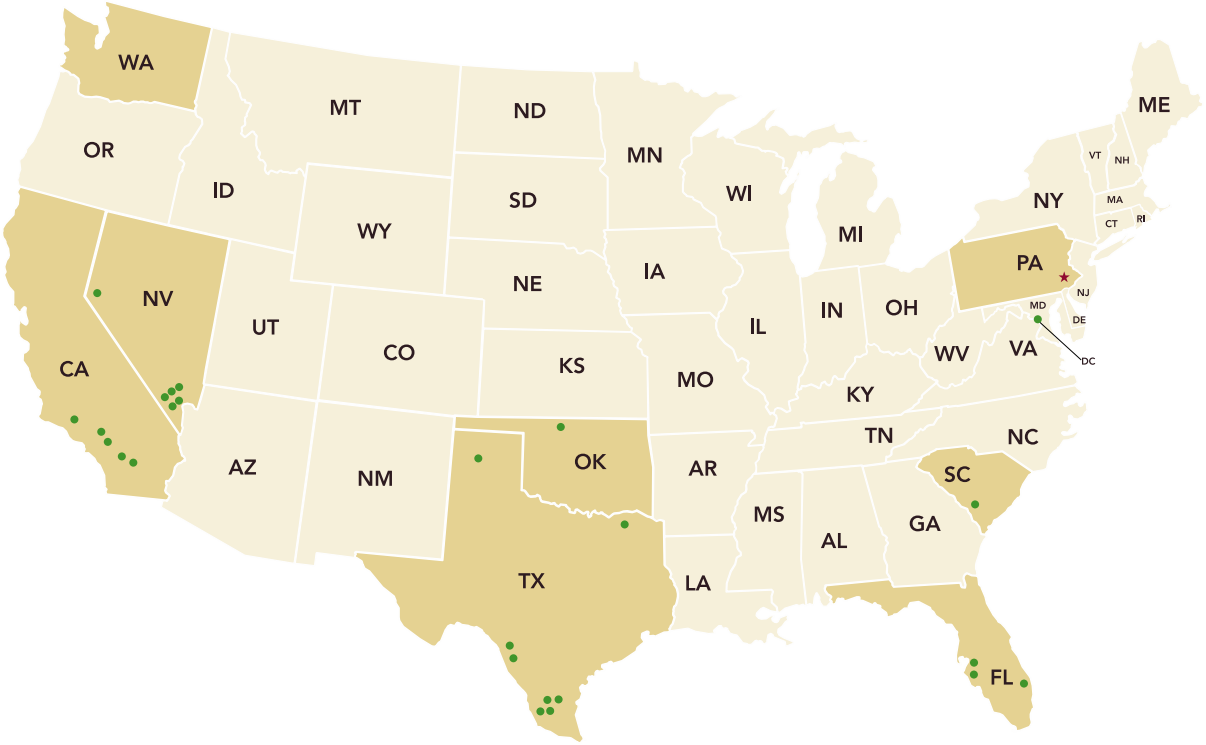
Universal Health Services
Case Study

UHS – who we are

- UHS is a Fortune 500 Company Headquartered in King of Prussia with approximately $10 billion in annual revenue.
- We own and operate more than 350 acute care hospitals, behavioral health facilities and ambulatory centers across the U.S. & U.K. & employ more than 83,000 people.



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UHS – Who we are

Publicly traded, integrated delivery network with 2 major divisions:

27 Acute Care Hospitals in the US

83K employees

320+ Behavioral Health Facilities in the US and England

$10B annual revenue, consistently profitable

Strong financial position—minimal debt load as compared to industry peers
Strong oversight of daily “operations”, minimal outsourcing
Corporate office connected directly to facility C-suite execs

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Physician alignment – Creating a better experience

- Approximately 6,000 active medical staff
- UHS employs only 500 Providers (115 clinics)
- All other MDs are independent physicians, some of whom split patients with competitors
- Challenge for us is to create a better EMR experience for physicians and nurses practicing in our facilities

EMR implementation goals

1. Create EMR software that supports all patient care scenarios / MD and RN preferences

2. Focus on enabling key uses:

- **MDs:** CPOE, medication reconciliation, documentation
- **RNs:** BCMA, care plans, dashboards, documentation, regulatory, meaningful use, etc

3. Direct support of facilities/clinicians

- Facility Implementation Team (FIT) Project Management
- Integration Testing Events on site at facilities
- Pre Go-live Technical Testing/Personal reminders to MDs
- 2 weeks onsite go-live support

4. Long standing personal relationships established

Guiding principles of EMR design

1. Clinically driven project

- Goal of EMR is to improve patient care and safety

2. Standardization/reduction of unnecessary clinical variation

- Promote evidence-based practice
- Localization when appropriate for state/local regulatory needs
- Tools sufficiently flexible to allow personalization

3. Physician Engagement

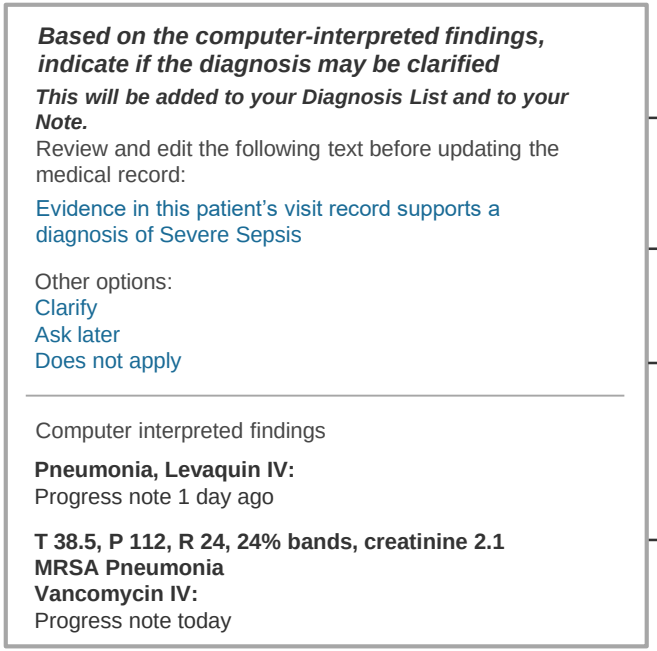
- Make “doing the right thing” within the system the easiest thing
- CMIOs/ACMIOs
- Invest in conversion support (2 weeks on-site)

4. Usability

- Minimize navigation, clicks and complexity
- Configure system to be as intuitive as possible

What is CAPD?

Physician documentation guidance at the point-of-care



As the physician signs the note, clinical evidence across the encounter is identified and analyzed **to discover additional diagnoses**.

Clarifications typically **impact risk of mortality, severity of illness, and help identify the principal diagnosis**.

Clinical strategies automate the most common clarifications and support documenting a more specific diagnosis that more accurately reflects care delivery.

Discovery of clinical evidence in the encounter that support undocumented diagnoses and comorbidities helps clinicians **better capture the true severity and acuity of each patient**, positively impact quality metrics and drive appropriate reimbursement.

Approach to CAPD

- Previously inpatient physicians were primarily using dictation with mix of electronic and handwritten progress notes
- Goal was to transition physicians off dictation and to the EMR
- UHS customized documentation tool included voice recognition system
- Focus on usability and efficiency with good adoption

Why is CAPD important at UHS?

- Physician quality scores are in large part based on the accuracy of the documentation of the patient's clinical condition
- CAPD will suggest additional potential diagnoses based on the available documentation

Why it matters

- Assists in accurately reflecting the quality of care provided
- Reflects actual acuity
- Fewer retroactive coding queries
- Looks at all notes and evidence across an encounter

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Benefits to physicians, patients & stakeholders

The right information presented in the right context 'in work flow' is proven to deliver meaningful improvements and outcomes

Positive impact on patient care when all team members have immediate access to the note

Saves time and minimizes transcription errors

Fewer retrospective queries and disruptions in clinical workflow

Lighter inbox as information is gathered at the point of care

Removes duplicate work through better quality documentation

Promotes collaboration among care team in building the discharge summary across the patient's stay

Why it matters

- One can't under estimate the value of a patient experience, 'first time right'
- Technology nor provider training alone will maximize the provider or stakeholder experience
- Employed or affiliated physicians demonstrated the efficacy and experience is meaningful

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Key clinical example and importance

Physicians – get credit for the documentation

If you are treating a septic patient and your documentation reflects pneumonia there is a huge impact:

- *A septic patient has 30x the mortality rate of the simple pneumonia*
- *4x the expected complication rate*
- *2x the expected readmission rate*

Example	CODE	MS DRG	Mortality Expected	Complication Expected	Ave LOS Expected	Expected Readmission Rate
Pneumonia	J18.9	195	0.55%	5.91%	3.33	7.89%
Sepsis + Pneumonia	A41.9 J18.9	871	14.80%	20.12%	6.90	16.12%

Physician documents Left Lower Lobe Pneumonia with no other co-morbidities documented

Current MS DRG 195 Simple Pneumonia & Pleurisy W/O CC/MCC

Clarification is fired from DQR noting that clinical documentation suggests the patient has sepsis. If accepted by the physician the DRG will be MS DRG 871 Speticemia/severe Sepsis w/o MV 96+ Hrs w MCC

*Expected (Exp) Outcome Values based on specific Population with Proprietary analysis of Severity may vary with different population and assessment methods. For illustrative purposes only; based on real data.

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CAPD deployment model

Data collection

Facility (some have multiple hospitals)	Percent Evaluated	Clarifications Unique	Total Responses	Agree Responses	DNA Responses	Response Rate	Agree Rate
Facility 1	**94.04%**	568	495	171	324	**87%**	**35%**
Facility 2	**92.20%**	556	587	274	313	**106%**	**47%**
Facility 3	**89.66%**	156	140	95	45	**90%**	**68%**
Facility 4	**88.92%**	772	535	263	272	**69%**	**49%**
Facility 5	**88.92%**	919	873	547	326	**95%**	**63%**
Facility 6	**88.17%**	673	686	186	500	**102%**	**27%**
Facility 7	**86.08%**	684	768	352	416	**112%**	**46%**
Facility 8	**85.85%**	182	158	73	85	**87%**	**46%**
Facility 9	**85.73%**	464	393	187	206	**85%**	**48%**
Facility 10	**85.42%**	589	643	316	327	**109%**	**49%**
Facility 11	**84.86%**	601	360	105	255	**60%**	**29%**
Facility 12	**84.60%**	222	157	51	106	**71%**	**32%**
Facility 13	**83.91%**	349	313	161	152	**90%**	**51%**
Facility 14	**81.71%**	708	548	263	285	**77%**	**48%**
Facility 15	**81.55%**	538	528	226	302	**98%**	**43%**
Facility 16	**80.25%**	432	334	157	177	**77%**	**47%**
Facility 17	**80.19%**	461	389	137	252	**84%**	**35%**
Facility 18	**79.80%**	781	812	316	496	**104%**	**39%**
Facility 19	**74.19%**	237	162	75	87	**68%**	**46%**
Facility 20	**72.75%**	149	168	36	132	**113%**	**21%**
Facility 21	**72.05%**	165	122	52	70	**74%**	**43%**
Facility 22	**57.67%**	607	533	184	349	**88%**	**35%**
Total	**82.76%**	10813	9704	4227	5477	**90%**	**44%**

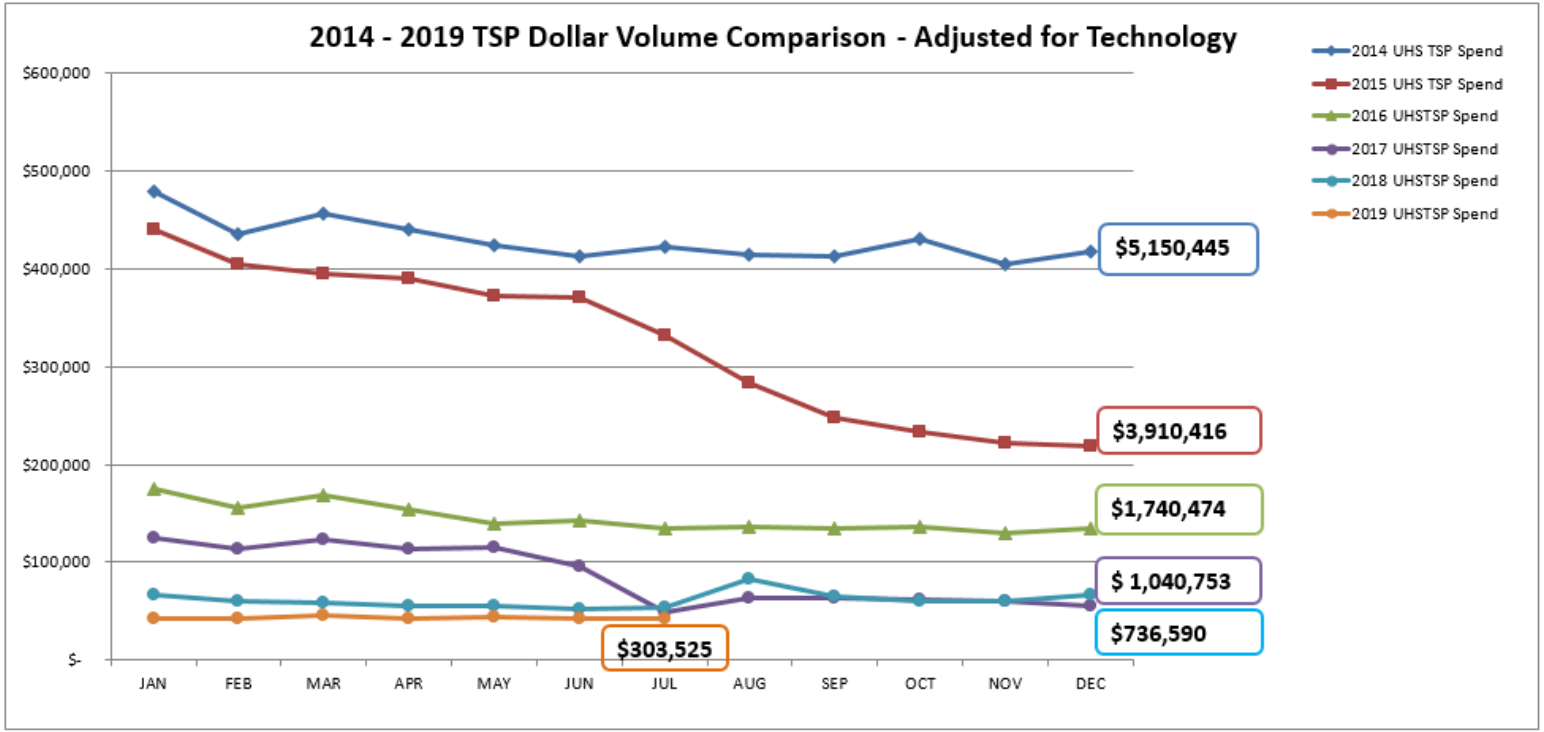
Success metrics

- Hospitals and physicians are being measured on the quality of care delivered
- Metrics being monitored include:
  - **Severity of Illness (SOI):** Indication of the complexity of your patients based on your documentation
  - **Risk of Mortality (ROM):** Calculated based on the diagnosis and the degree of complexity (SOI)
  - **Observed/Expected Mortality (O/E Mortality):** Compares observed mortality rates to the risk of mortality (ROM) rates calculated based on SOI documentation
  - **Length of Stay (LOS):** Expected LOS is calculated based on the SOI documented
- Each metric is dependent upon provider documentation that reflects accurate severity of illness

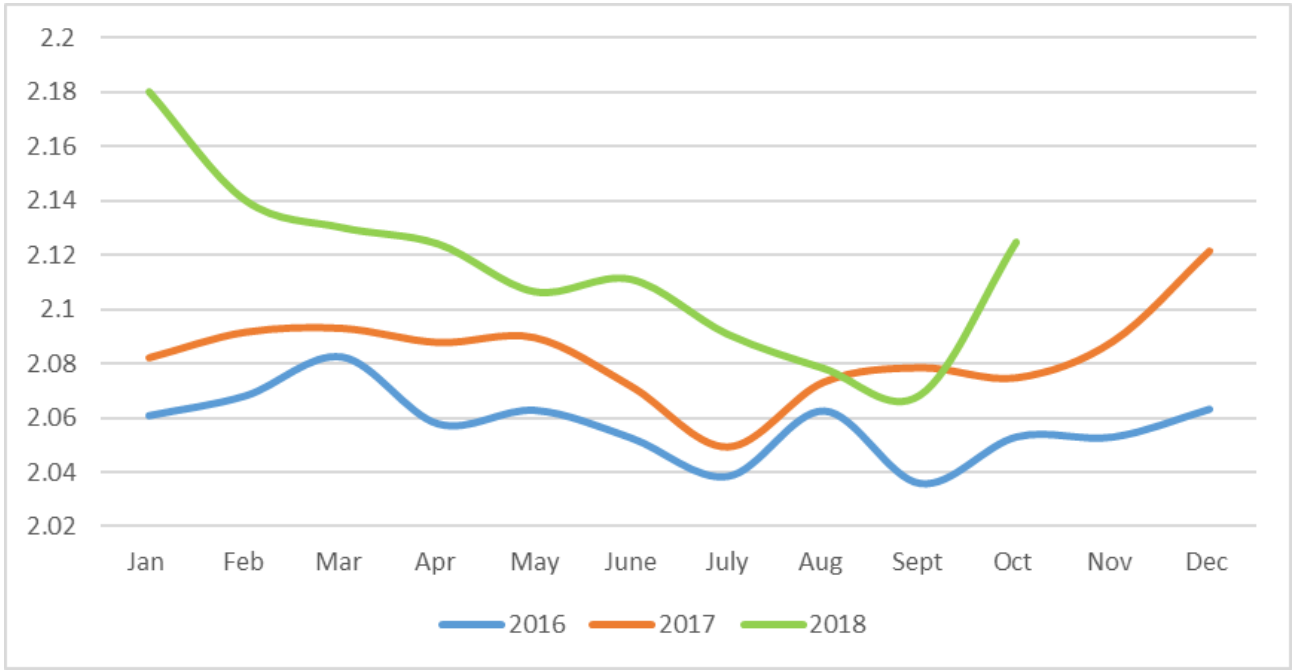
Outcomes

Transcription expense reduction

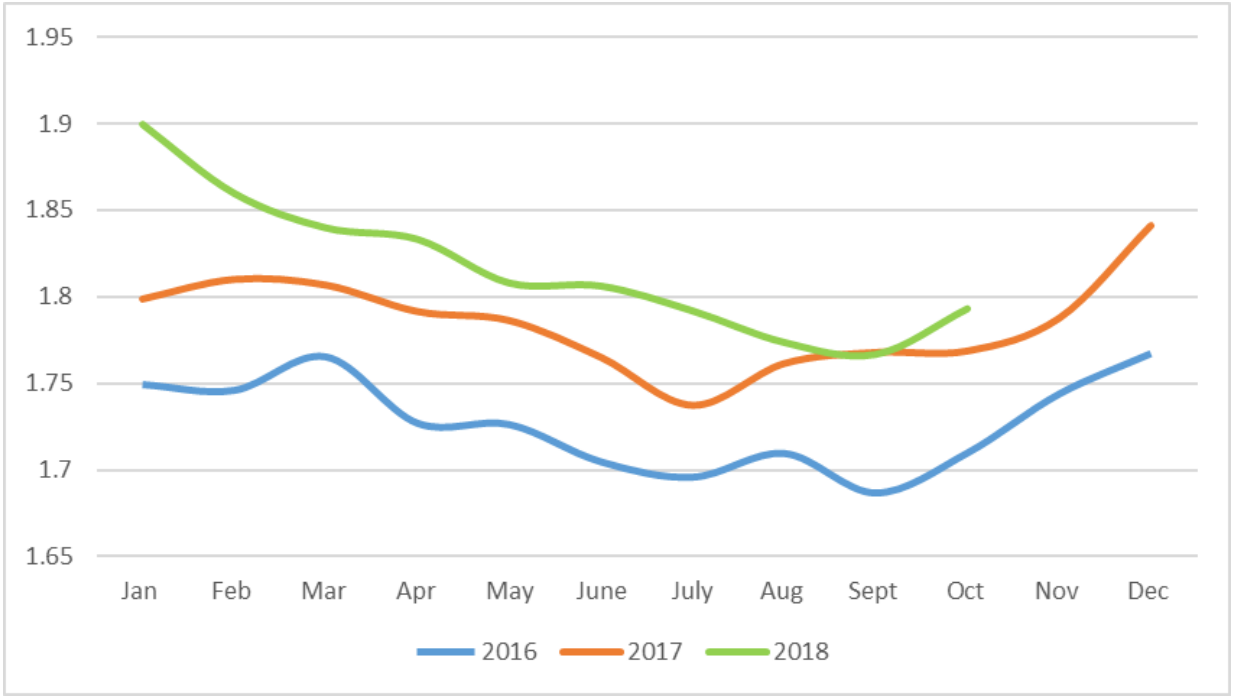
(15%+ increase in admits during these years)



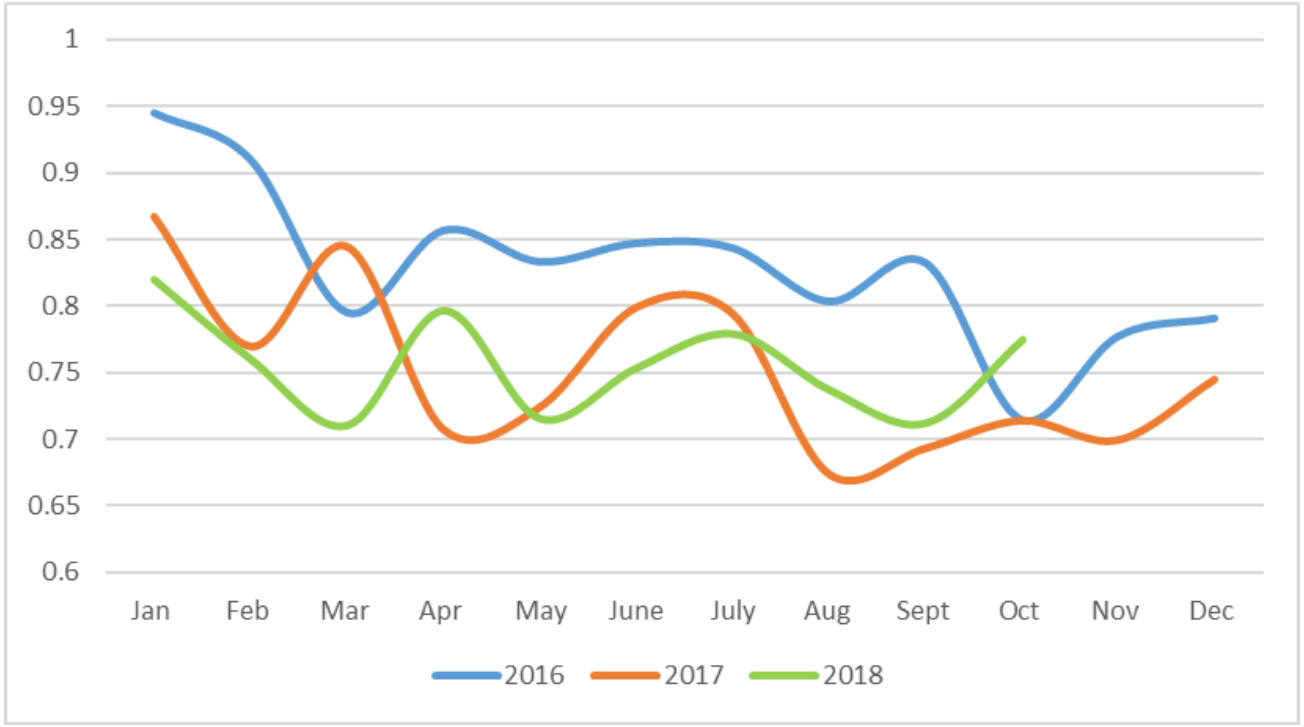
Improved documentation of severity level



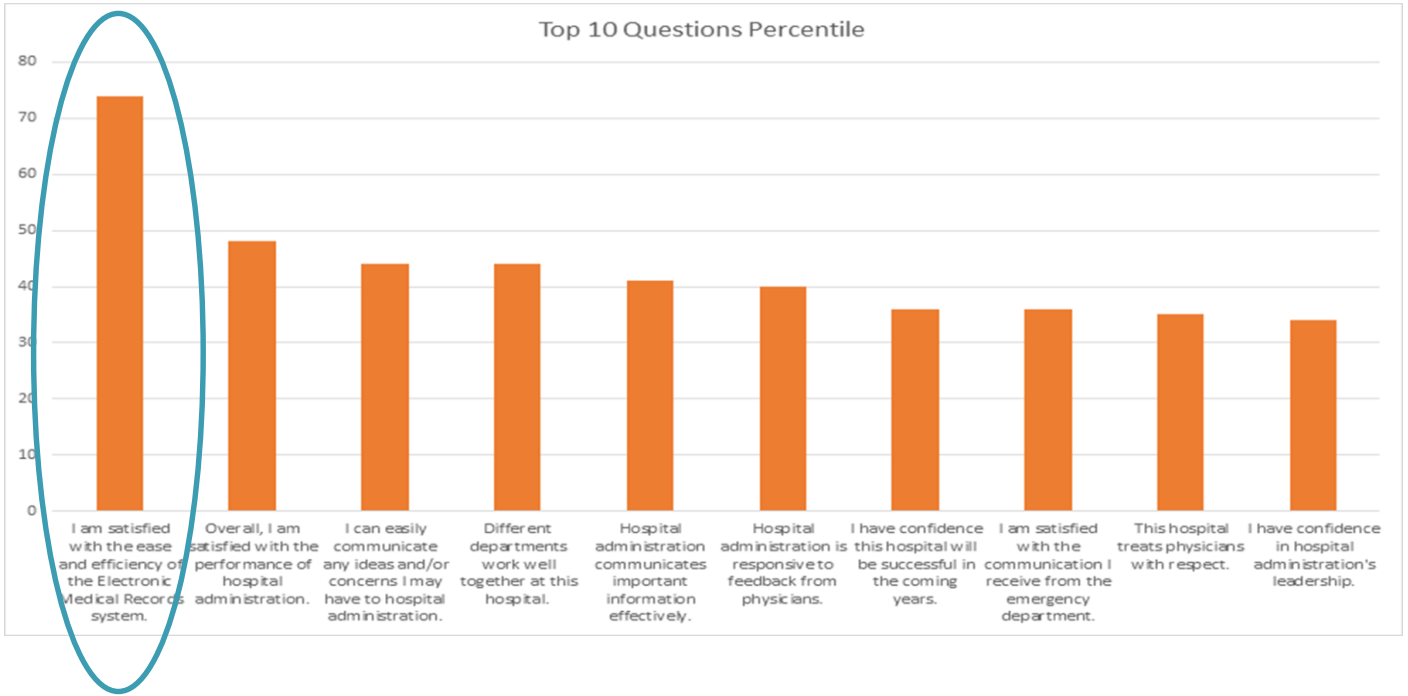
Improved documentation of risk of mortality



Improved observed / expected mortality



Outcomes: Clinician satisfaction



Most positive score was for "EMR Satisfaction"

Full quartile above 2nd highest item surveyed

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Key pillars of good clinical decision support

The right information

Succinct and evidence/guideline based

To the right person

Provider documenting patient care

The right format

Meaningful and relevant guidance

The right channel

Physician documentation workflow

At the right time

When completing a note

Here's what our physicians said

"That is an outstanding piece of software." (Chief Medical Officer)

"I love this system. It is really the best thing you have introduced." (Orthopedic Surgeon)

"This is the best thing I've seen from our EMR." (Urologist)

"For lack of a better descriptor, you guys rock! I'm in love with your solution." (CMIO)

"I am so glad you showed me this. Knowing that we can save Op Reports as templates and personalize them to each patient will save me a lot of time." (OB/GYN)

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Key learnings/best practices

- Practice 5 key pillars of good clinical decision support
- Consider a CAPD rollout supported by vendor (internal / external resources)
- Include independent and affiliated physicians as part of one quality program
- Establish measurable success metrics to track ROI of CAPD
- Include qualitative assessment of physician satisfaction in ROI

Questions? Thank you.