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Nebraska Medicine: A Davies Journey

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April 23, 2018

Nebraska Medicine

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Clinical Effectiveness and Davies

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Medical Director, Clinical Effectiveness

Charlotte Brewer, BSN, RN
Coordinator, Clinical Effectiveness

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Clinical Effectiveness Mission

The mission of the Clinical Effectiveness team is to reduce variability of care through the development and implementation of evidence-based best practices to realize cost savings and develop programs, while improving patient quality, safety, and outcomes.

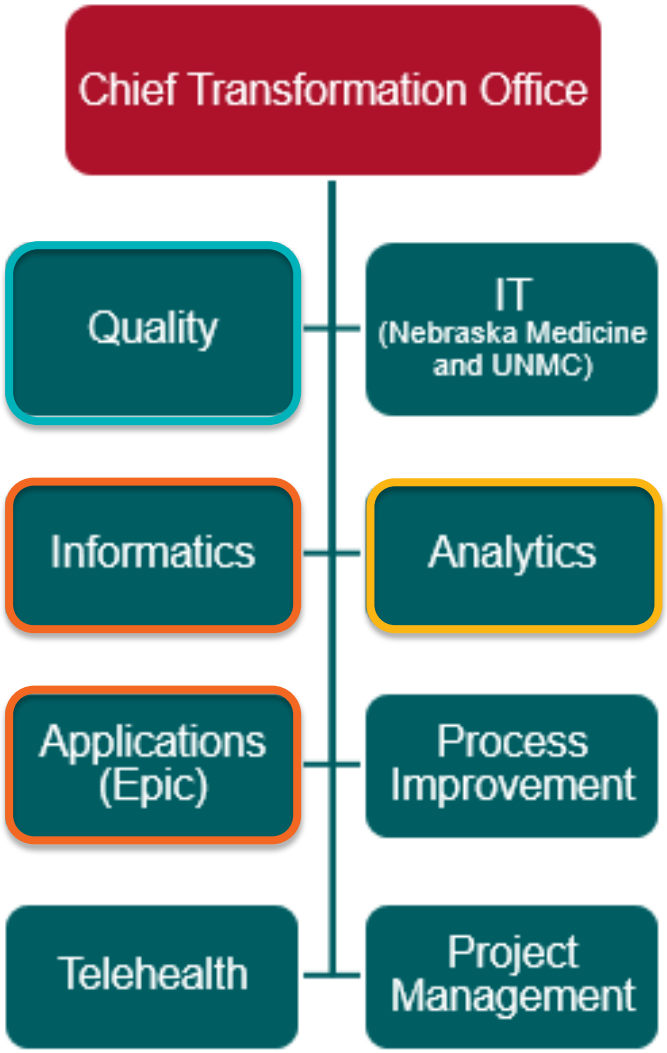
Quality

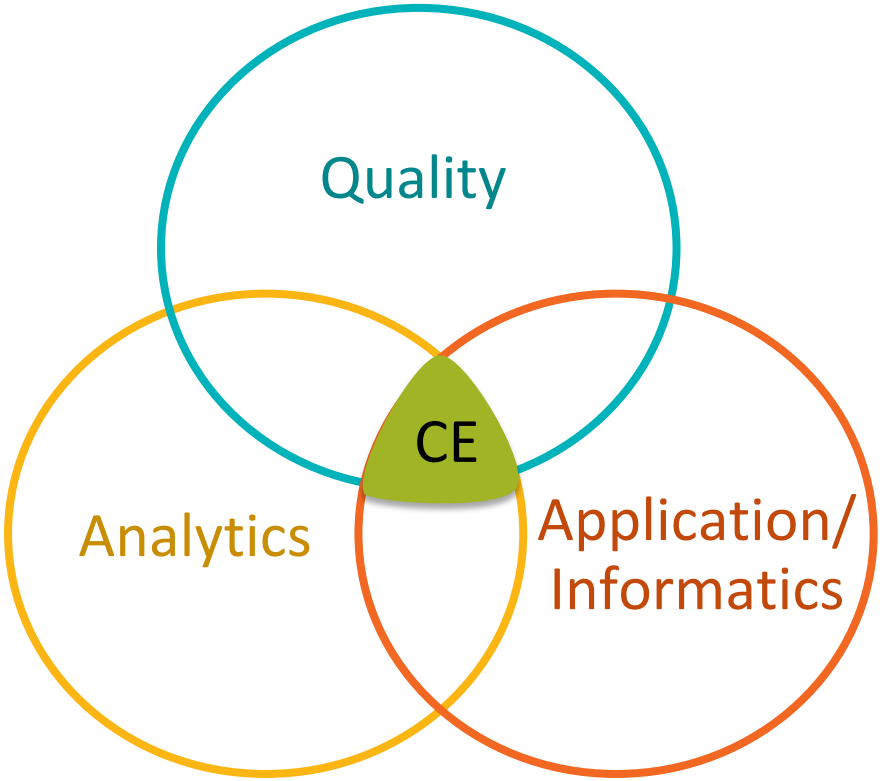
Patient Safety

Cost Savings

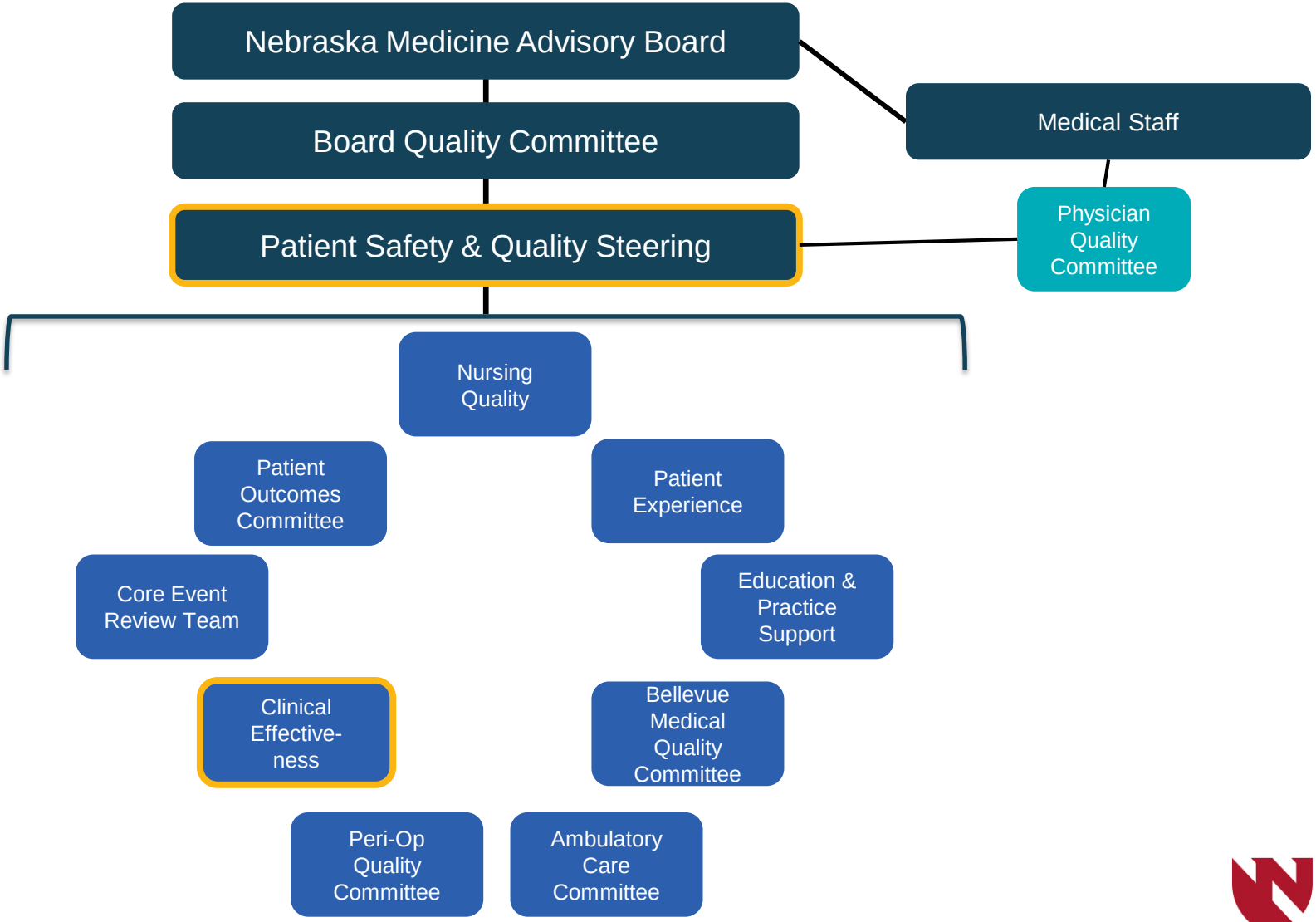
Service Line/Program Support & Infrastructure Development

Clinical Effectiveness Core Team Structure

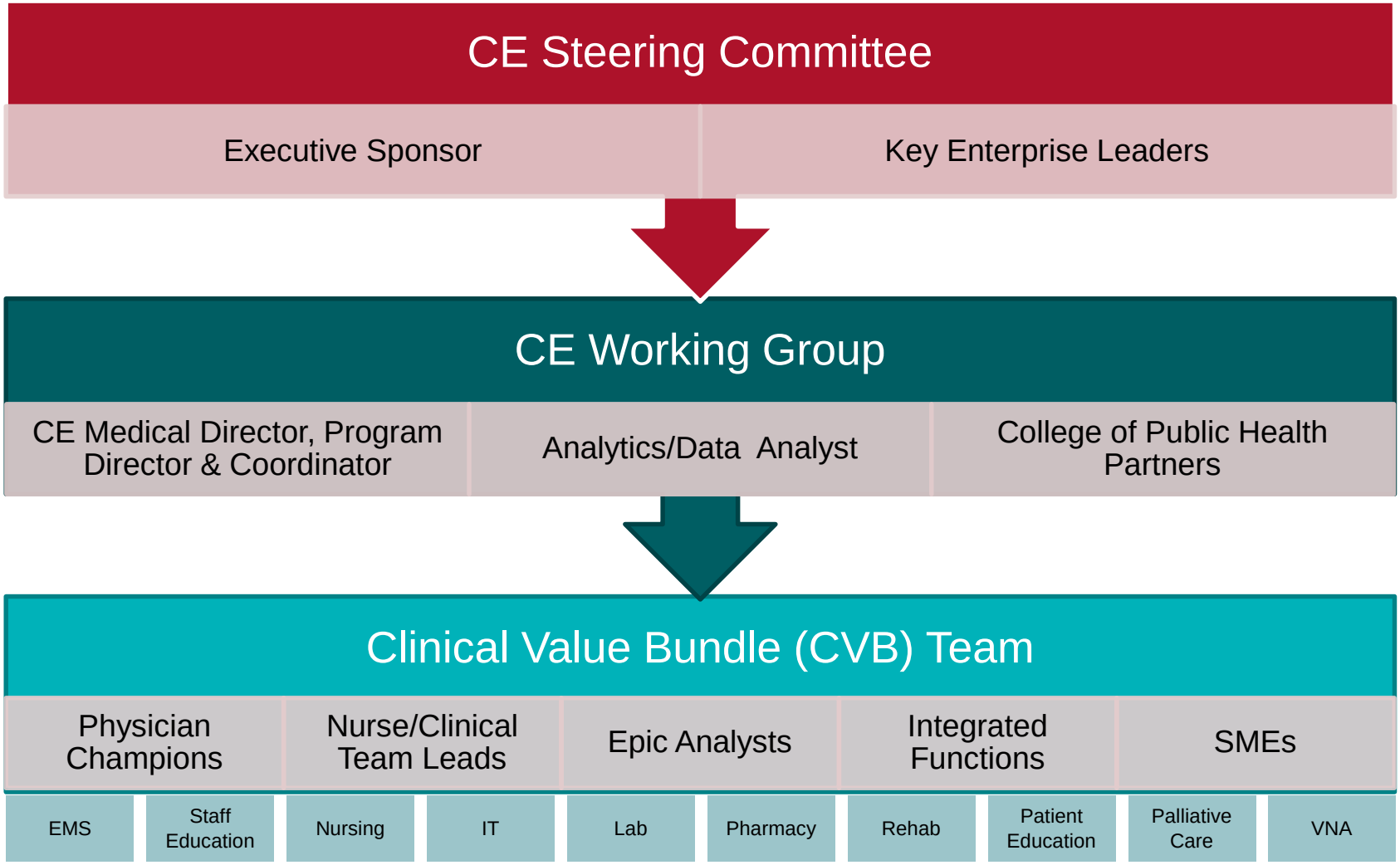




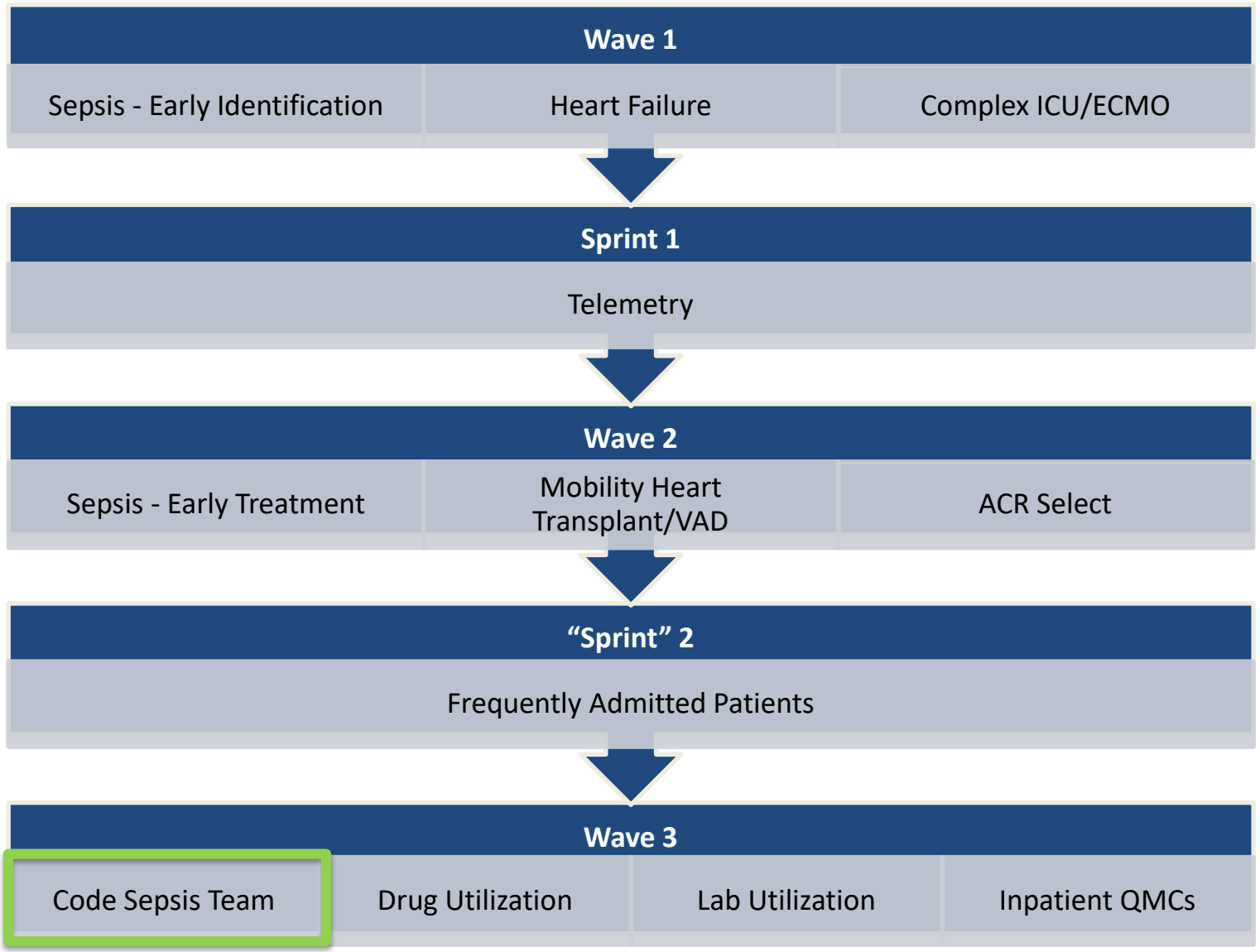
Quality Governance



Clinical Effectiveness Program Structure



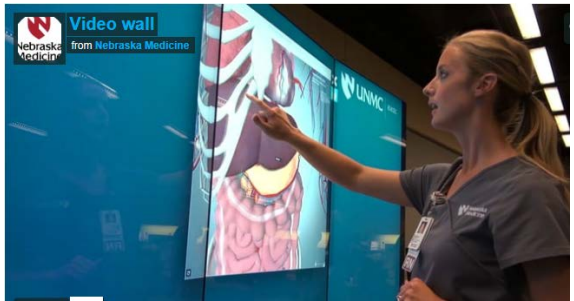
Clinical Effectiveness Initiatives



Clinical Effectiveness Sepsis Program

Clinical Effectiveness (CE) program partnership with multi-disciplinary sepsis operational team focused on reducing variability in sepsis care

- Implemented tools and processes to improve early identification
- Standardized documentation for outside transfers to assist with screening
- Developed education and ongoing marketing campaign
- EHR improvements implemented to assist with core measure adherence



Despite improvements in early identification of sepsis patients at Nebraska Medicine, early treatment strategies remained variable and compliance with evidence based timely interventions (3 & 6 hr bundle) was suboptimal.

Why a Code Sepsis Team?

- Frequently changing definitions & treatments make it difficult to keep large number of staff up to date
- Ensured sepsis is treated with urgency at the time of recognition
- The large rotating, membership of the Rapid Response Team made it difficult to ensure consistency of expertise in sepsis recognition and treatment
- Best practice requires adherence to time sensitive treatment strategies (3 & 6 hour bundle)

Code Sepsis Team (CST) Pilot

November 2016 – January 2017

- 2 Medical/Surgical Units

Team Members

- Hospitalist advanced practice provider
- ICU lead nurse
- Critical care pharmacist

Training

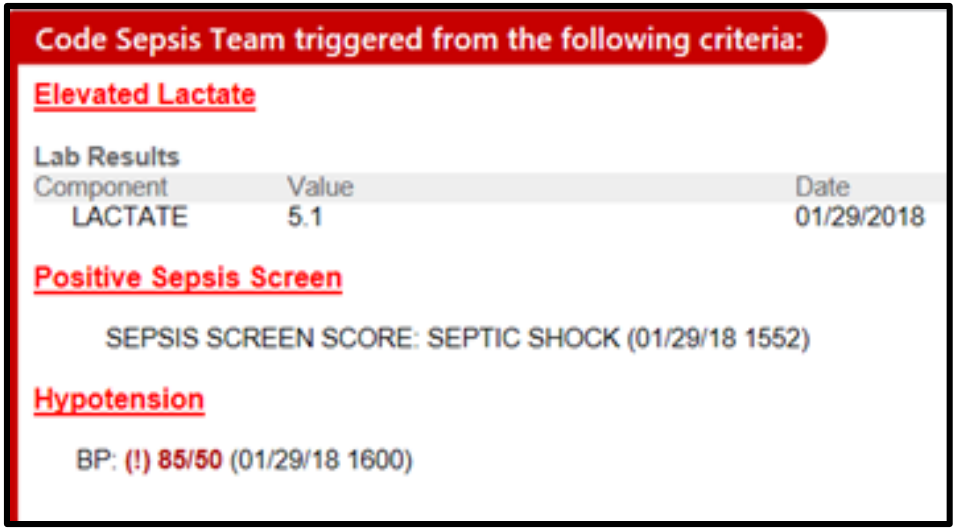
- Workflow
- Team member responsibilities
- EHR tools & resources available
- Clinical case reviews for providers

Metrics

- Workflow feedback/refinement
- Time needed per team member
- Adherence with 3 and 6 hour bundle (CMS core measure)

Code Sepsis Team Activation from EHR

- Automated activation Triggers
  - o abnormal lactate
  - o nurse sepsis screen results
  - o low blood pressure
- Team members dispatched to patient's bedside to evaluate and treat the patient in collaboration with the primary team



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Code Sepsis Tools: Chart Review

Sepsis Predictive Model - Likelihood Ratio

Total Score: 17

YOUR PATIENT IS THIS MANY TIMES MORE LIKELY TO DEVELOP SEPSIS THAN OTHER INPATIENTS AT NEBRASKA MEDICINE (BASELINE SEPSIS PREVALENCE 2-3%)

Meets SIRS Criteria - Screen for Sepsis!

3 Total Score

- TEMPERATURE > 38.3 OR < 36 IN THE LAST 24 HOURS
- HEART RATE > 90 IN THE LAST 2 HOURS
- RESPIRATIONS > 20 IN THE LAST 2 HOURS

Nursing Sepsis Screen

Report

SEPSIS SCREEN SCORE

SEPSIS at 01/17 1000
SIRS at 01/17 0800
SIRS at 01/17 0400

Sepsis Comprehensive Flowsheet

Go to now | 7/20/2017 | 07/20/17 - Today

Oncology | 24 Hrs | 8 Hrs | 4 Hrs | 1 Hr | 15 Min | All

5USW 5TH FLOOR UNIVERSITY TOWER SOUTHWEST

Time:	07/20 1300	1353	07/25 0926	09/18 1200	09/22 1600	10/02 1600	1618	10/26 0701 - 10/27 0700 0800	1200	1300	11/28 1654	11/29 1018	1331	12/18 1600	1642	01/04 0400	01/04 0800	01/17 0400	01/17 0800	1000	
Sepsis																					
Screening Score															SEVE...	SIRS	SIRS	SIRS	SIRS	SEPSIS	Screening...
Temp		39.2		39.1	39.2	39.1	35.4			39.2				39.1		39	39.2	38.5	39	39.1	Temp
Pulse		89		122	125	120				120				122		92	102	96	110	122	Pulse
Resp		26		26	28	26				16				22		22	26	22	24	24	Resp
BP	85/50	90/60			90/55	92/60	85/40			90/60				85/55		95/60	88/56	95/60	85/60	80/55	BP
Pulse Ox	90	92		94																	Pulse Ox
WBC								15.2													WBC
Procalcitonin			1.2						0.75		1.2	1.5	1.7								Procalcitonin

30mL/kg IV Fluid Bolus Estimator

- Septic patients with **Lactate >4**, **SBP <90** or **MAP <65** require 30 mL/kg of crystalloid fluid
- Weight: 92.5 kg
- Bob Brewer needs approximately **3L bolus** to meet the 30ml/kg requirement

Active Lactate and Blood Cultures

Collapse | Hide

Ordered		Ordering Provider
Tue Oct 3, 2017 11:05 AM		
10/03/17 1105	Lactic acid, venous whole blood SEPSIS STAT and in 4 hours Start: 10/03/17 1105 — Status: Final result — Details 10/03/17 1505 — Details	Micah W Beachy, DO
Mon Oct 2, 2017 11:42 AM		
10/02/17 1142	Lactic acid, venous whole blood Every 6 hours Comments: First draw to be 6 hours after the last lactic acid value. Start: 10/02/17 1200 — Status: Final result — Details 10/02/17 — Final — Details	Micah W Beachy, DO

Microbiology Results (last 2 days)

** No results found for the last 48 hours. **

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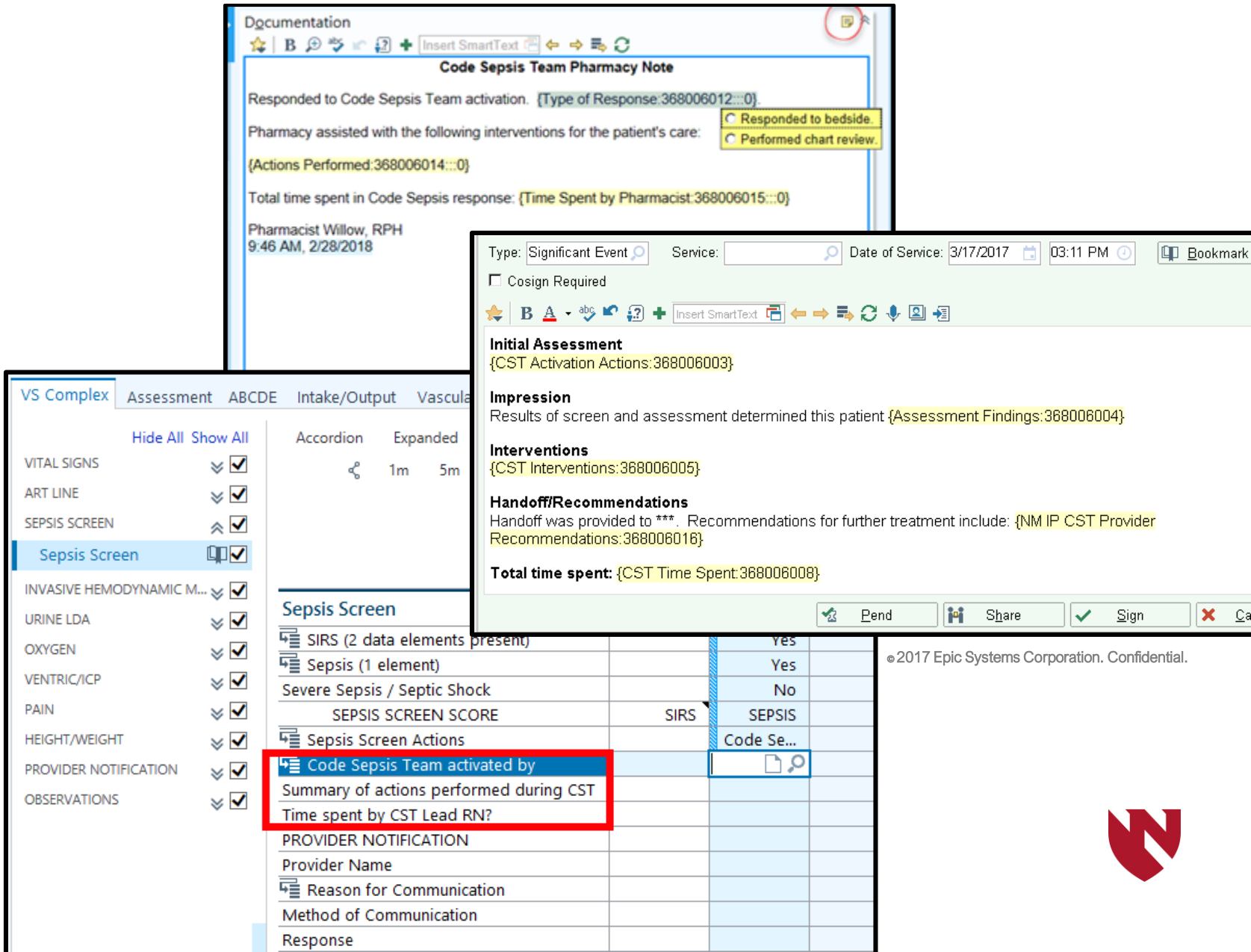
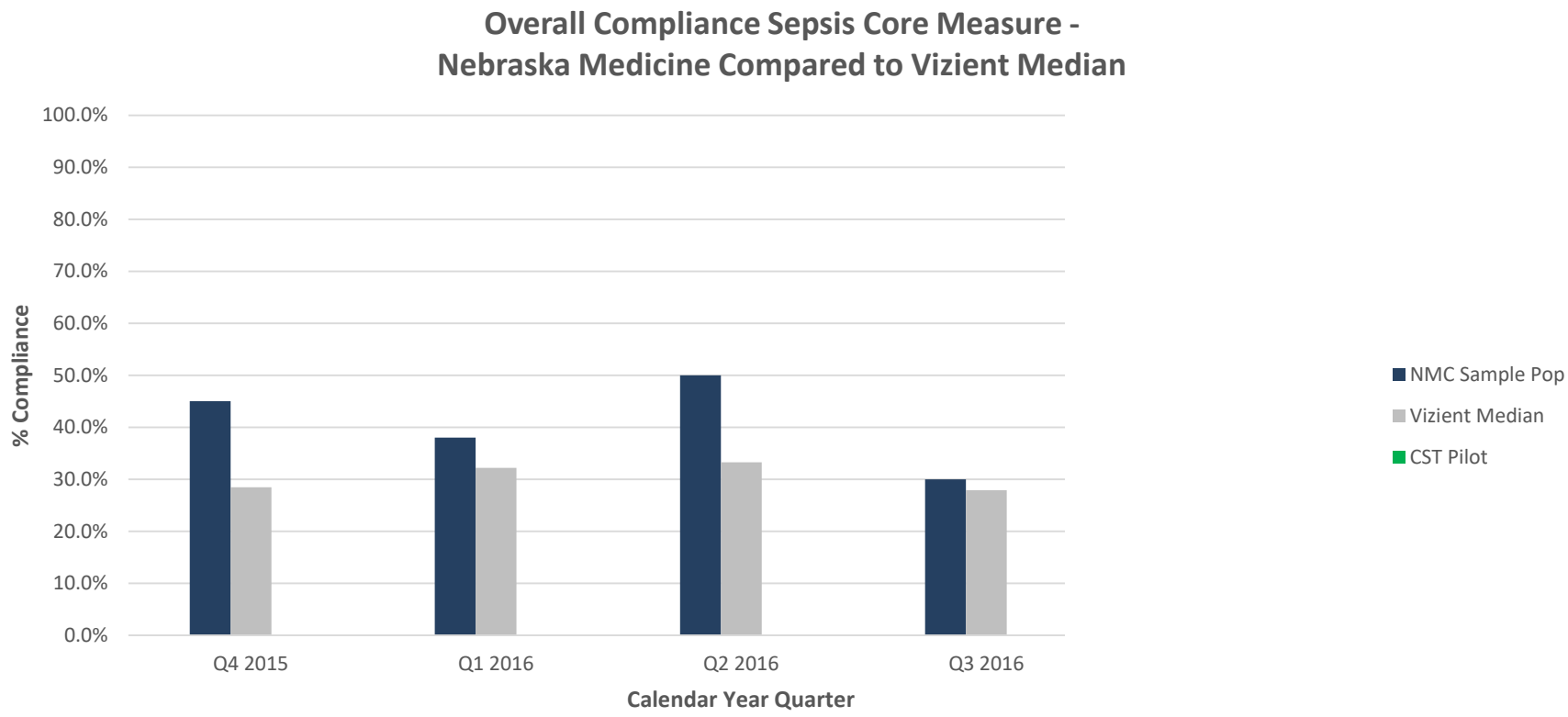
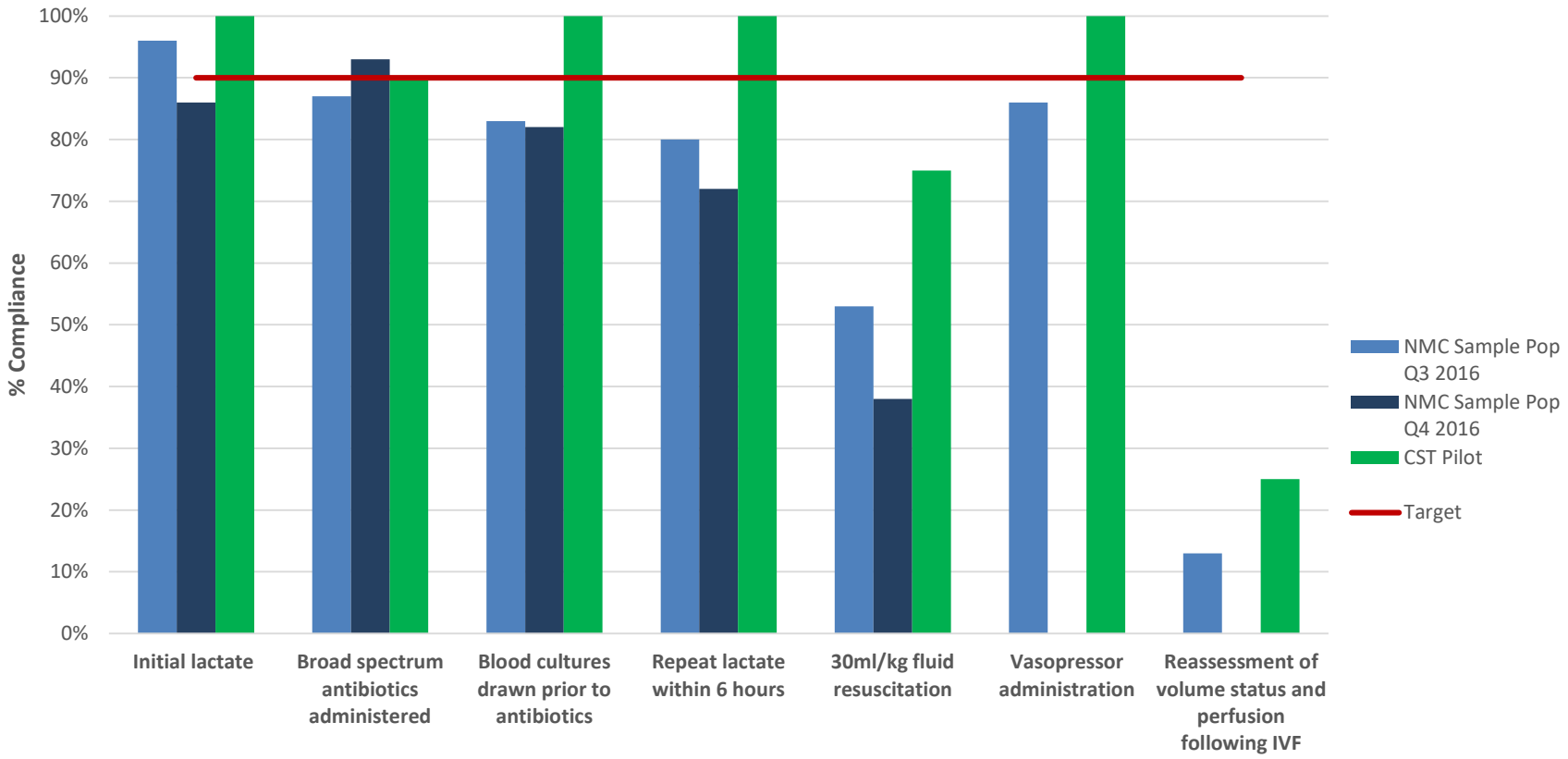
Code Sepsis Tools: Documentation



CST Pilot: Sepsis Core Measure



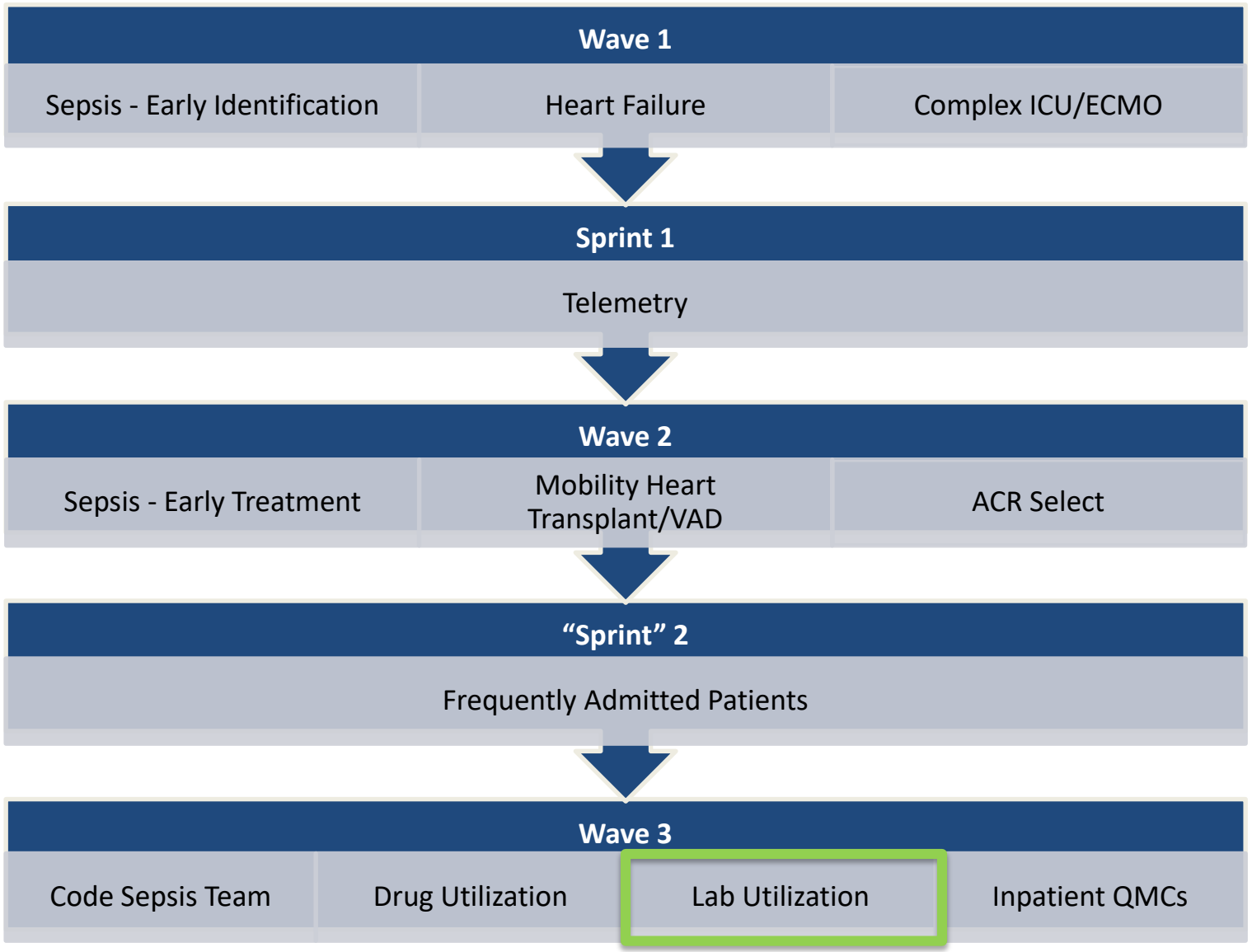
CST Pilot: Sepsis Core Measure



Sepsis Program Current Initiatives

- **Code Sepsis Team**
  - Launched at NM Bellevue
  - NM Main campus implementation planned 2018
  - ED specific workflow
- **Sepsis Screening**
  - Optimized ED screening alerts
  - New screening workflow for infusion center
  - ED, IP and infusion workflows live at all Community Connect sites
- **Integrating Predictive Analytics**

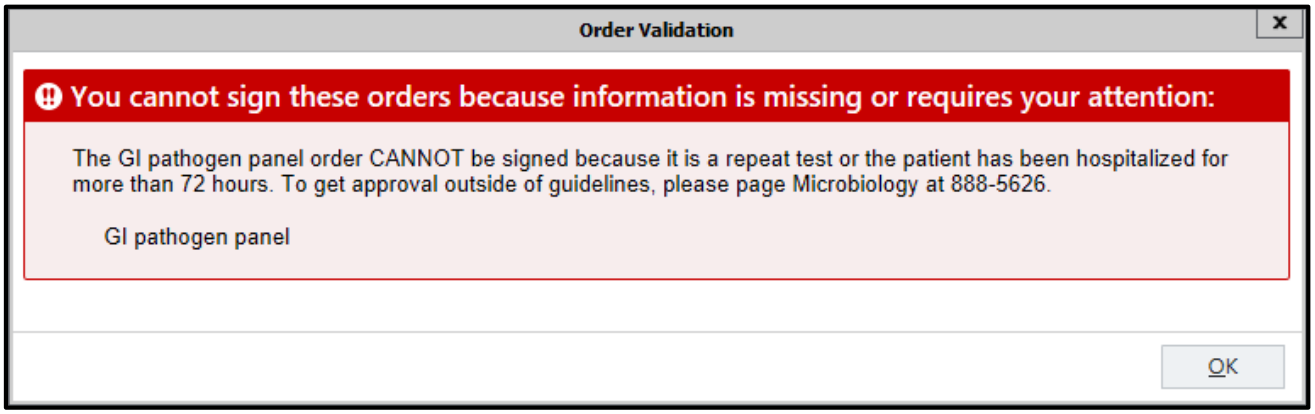
Clinical Effectiveness Initiatives



CE Program Lab Utilization Initiatives

- **Reason for action**
  - Need for improved visibility to cost with the transition to value based contracts
  - Hardwiring appropriate use guidelines
- **Partnered with Lab Utilization Committee to identify opportunities**
- **Initiatives to date**
  - GI Pathogen Panel
  - Displaying inpatient lab costs
  - Respiratory Pathogen Panel
  - Indicating “send out” tests

Lab Utilization – GI Pathogen Panel



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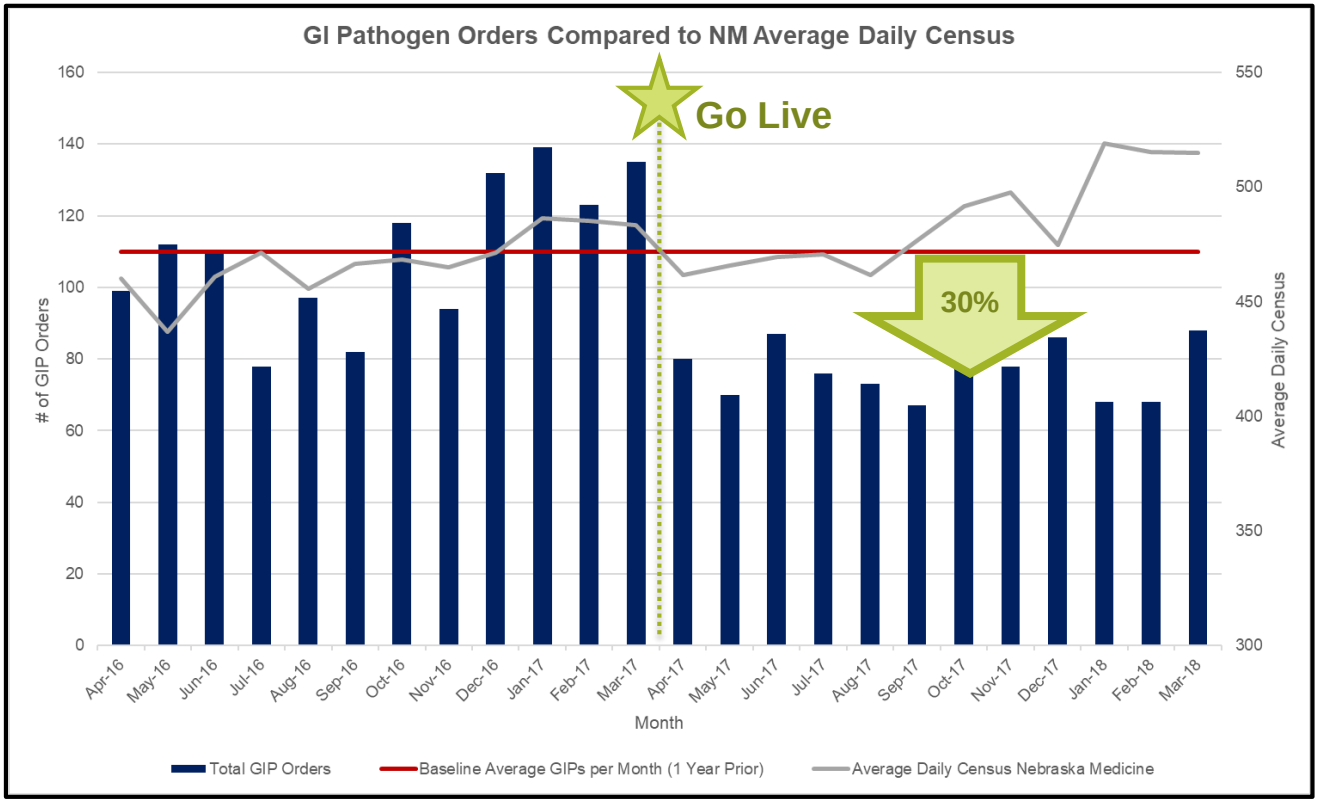

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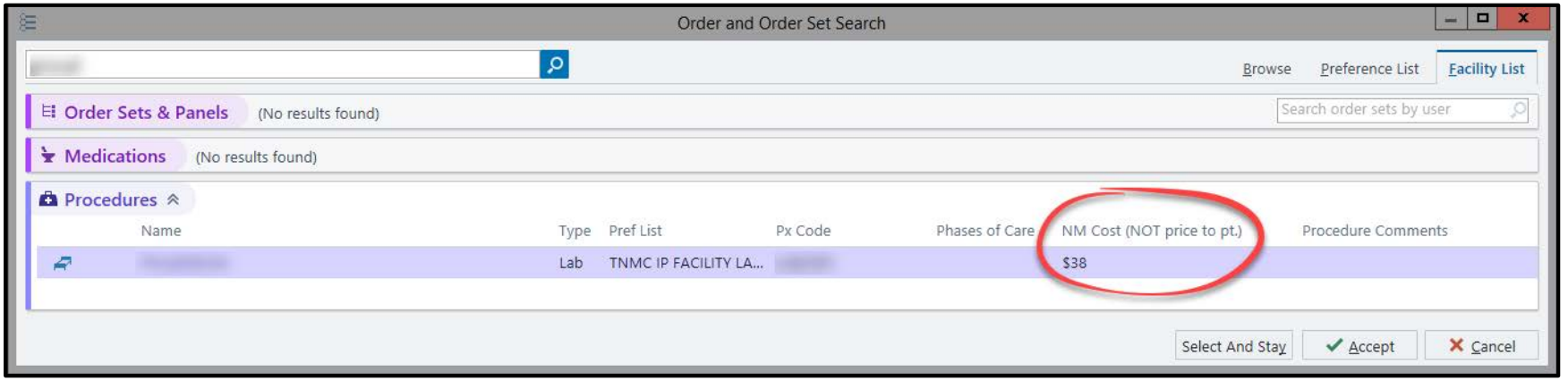
Lab Utilization – Displaying Cost



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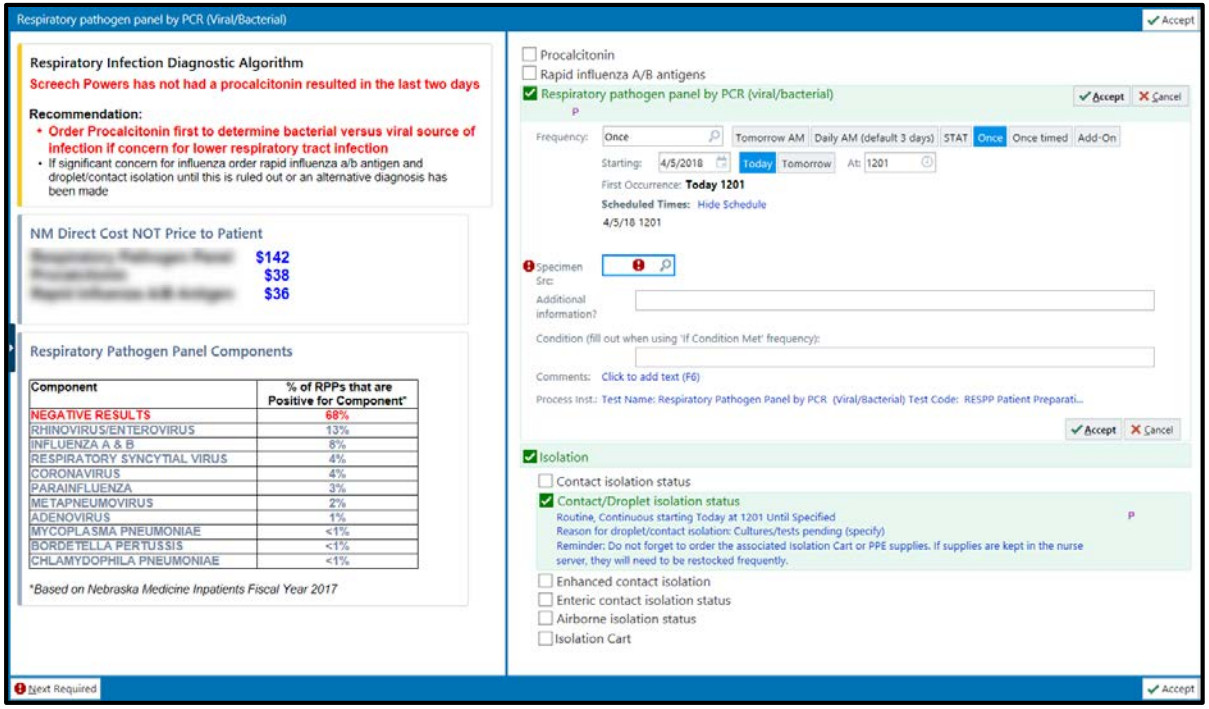

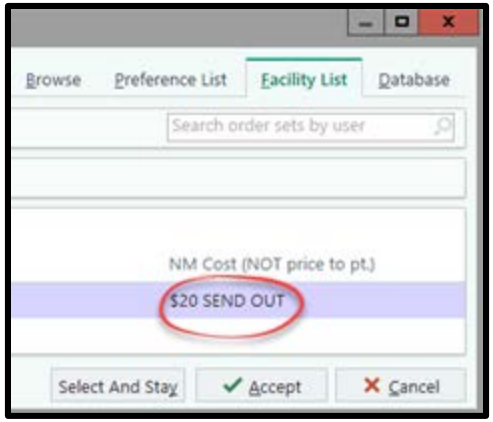

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Acknowledgements

Sepsis Team Past & Present

- Lisa Ablan
- Mike Altschuld
- Nate Anderson
- Ozgur Araz
- Lorena Baccaglini
- Aaron Barksdale
- Nancy Bernard
- Justin Birge
- Kelly Cawcutt
- Kellie Clapper
- Sandy Crites
- Tracy Diehm
- Val Driscoll
- Dave Gannon
- Jodi Garrett
- Ashley Gay
- Emilie Goldsberry
- Meredith Hellman
- Sara Hooper
- Jo Jameson
- Brandi Johansen
- Brandon Jordon
- Dan Kalin
- Katie Kerrigan
- Maria Lander
- Anna May
- Amy Mead
- Jenny Nano
- Jennifer Nguyen
- Greg Peitz
- Craig Reha
- Kiri Rolek
- Jamie Rudd
- Todd Sauer
- Dara Schlecht
- Lisa Schlitzkus
- Michelle Schulte
- Megan Skryja
- Christopher Smith
- Sue Stensland
- Jessica Strickler
- Karen Townsley
- Melanie Tuamoheloa
- Jana Uryasz
- Trevor Vanschooneveld
- Suzanne Watson
- Adam Wells
- Kirstin Woodbury
- Wes Zeger
- Qin Zijian

Lab Team Members

- Amy Crismon
- Paul Fey
- Jodi Garrett
- Susan Griffith
- Caitlin Murphy
- Lauren Hood
- Jason Shiffermiller
- Trevor Vanschooneveld
- Kirstin Woodbury

HIT Successes For Quality Improvement

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April 23, 2018

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Ongoing Optimization

CAUTI:

- Modification of Indwelling Urinary Catheter Indications
- Provider Decision Support Tools

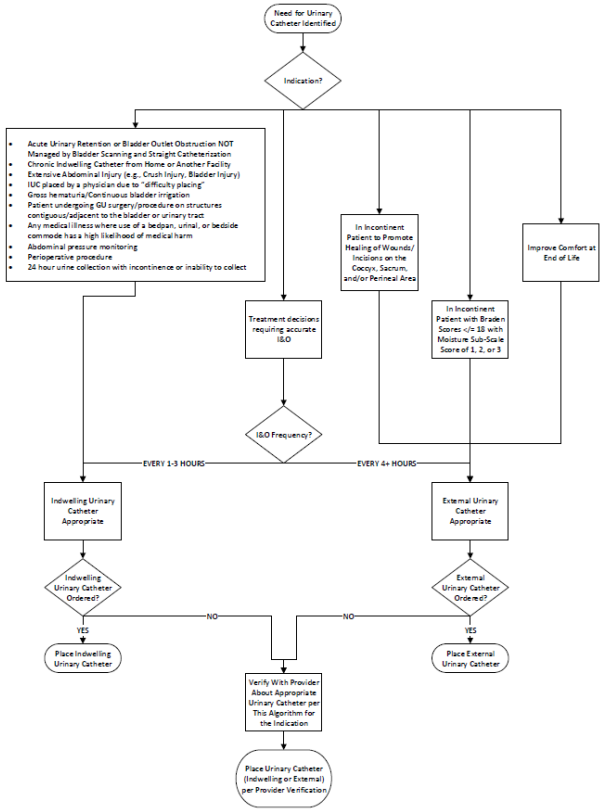
Additional Quality Metrics Improvements:

- CLABSI
- Violence Prevention

CAUTI Optimization

Indication Modifications:

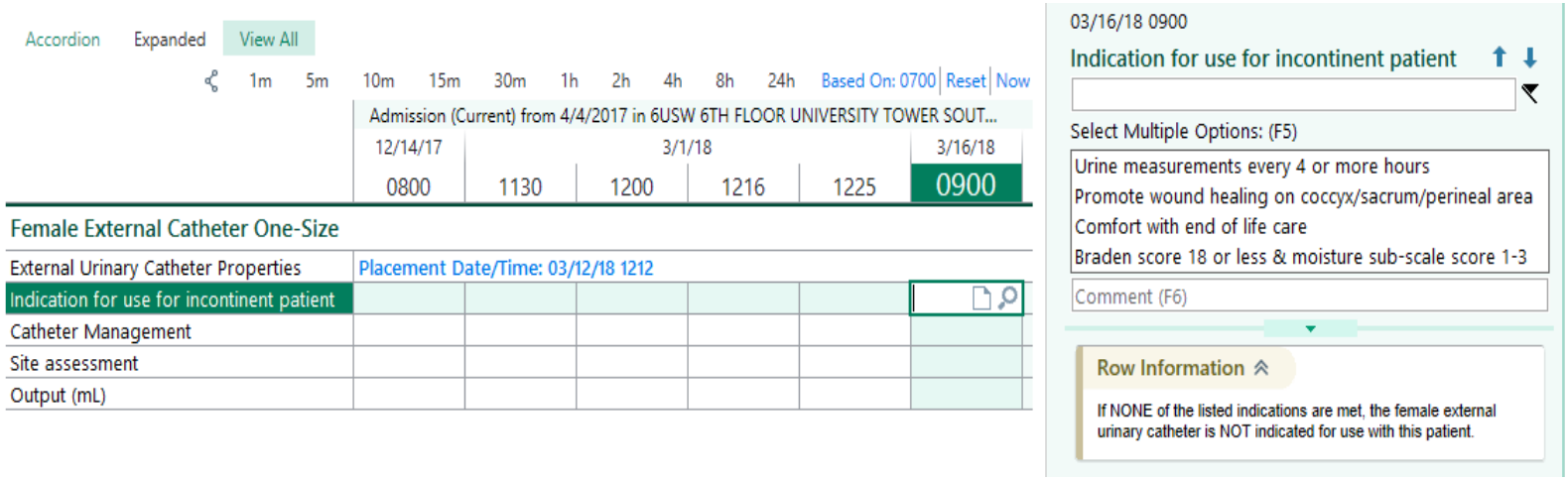
- Evaluating Input & Output Frequency
  - Every 1- 3 hours vs. every 4 hours
  - Utilization of decision support tools to aid in catheter selection



CAUTI Optimization

Utilization of a Female External Urinary Catheter:

- Evaluating Input & O1utput Frequency



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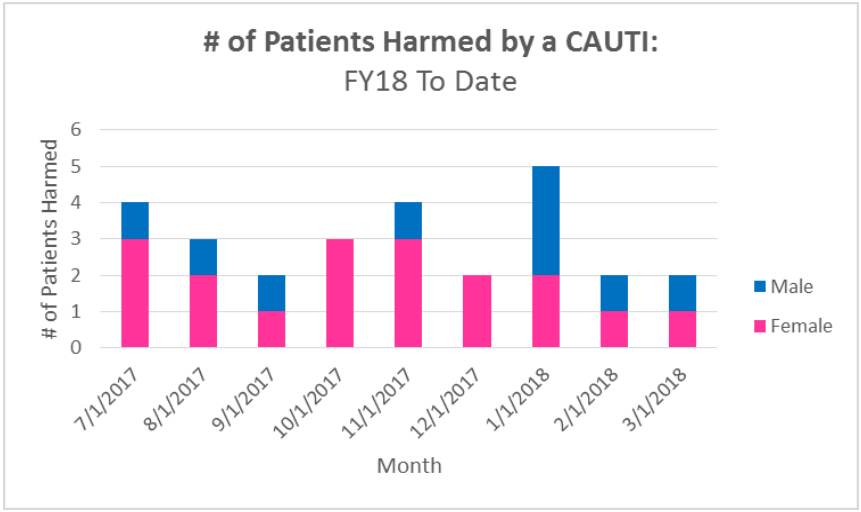
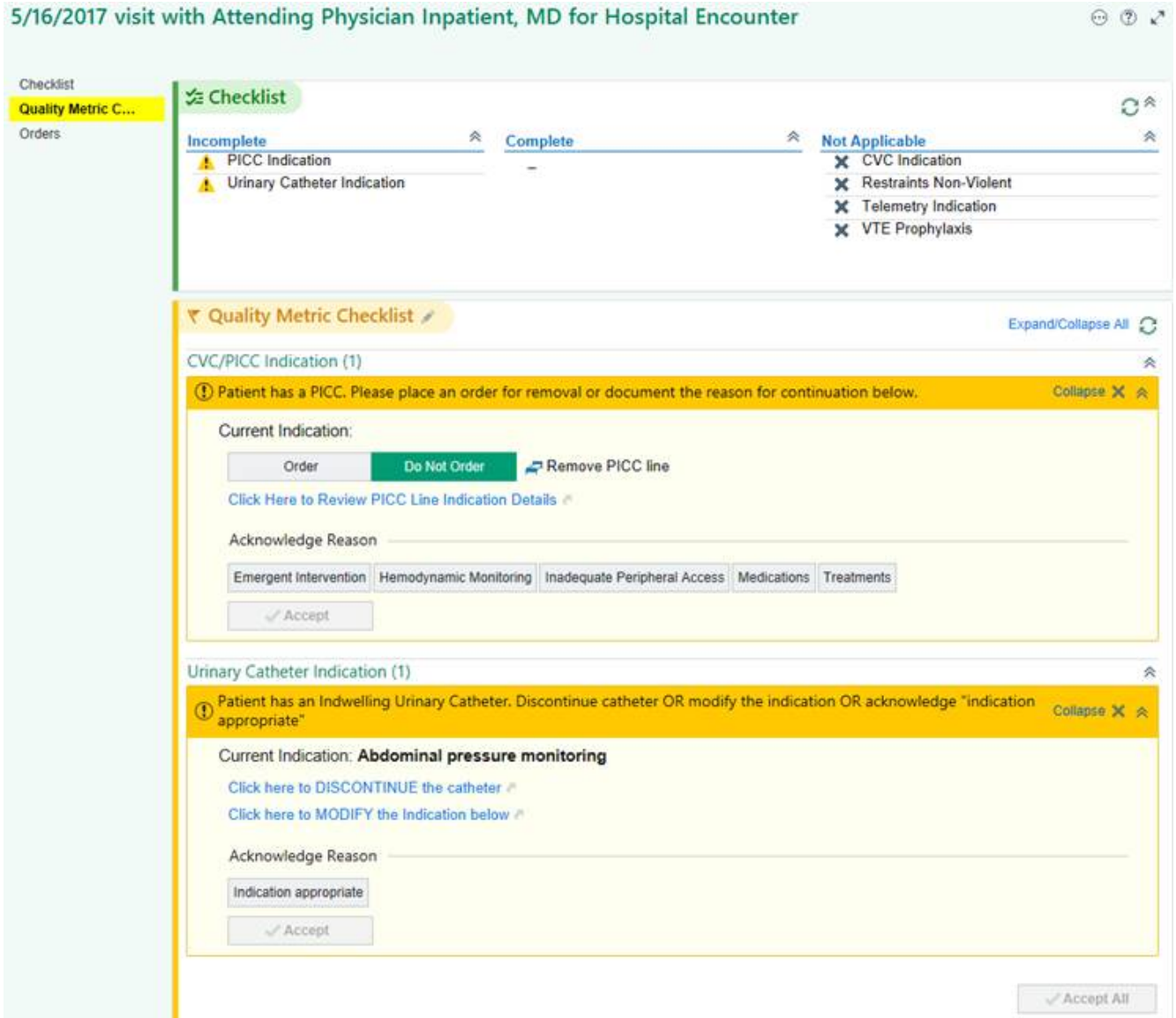


Quality Improvement

Quality Metric Checklist:



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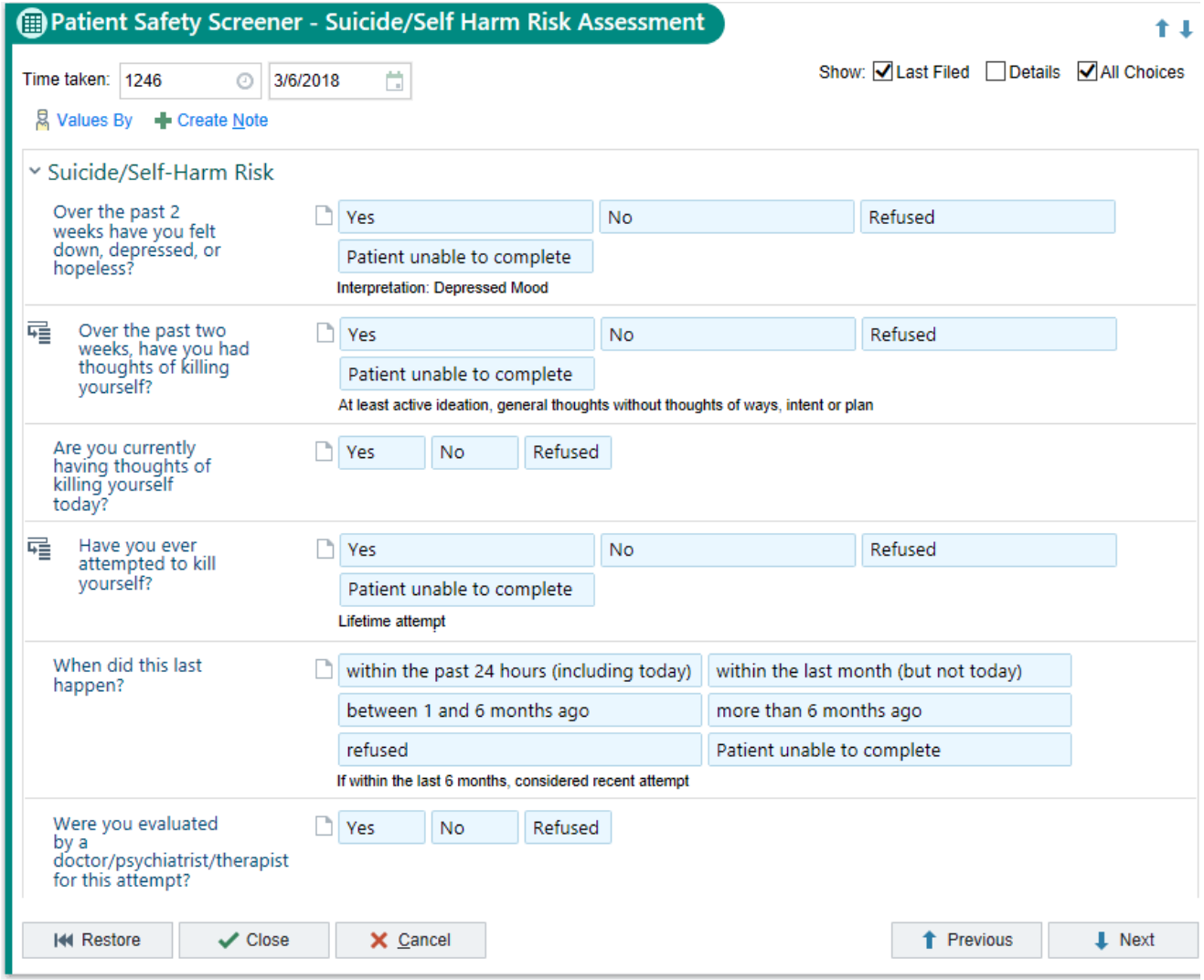
Staff Safety Optimization

Violence Prevention Project:

- Standardized Screening Tools



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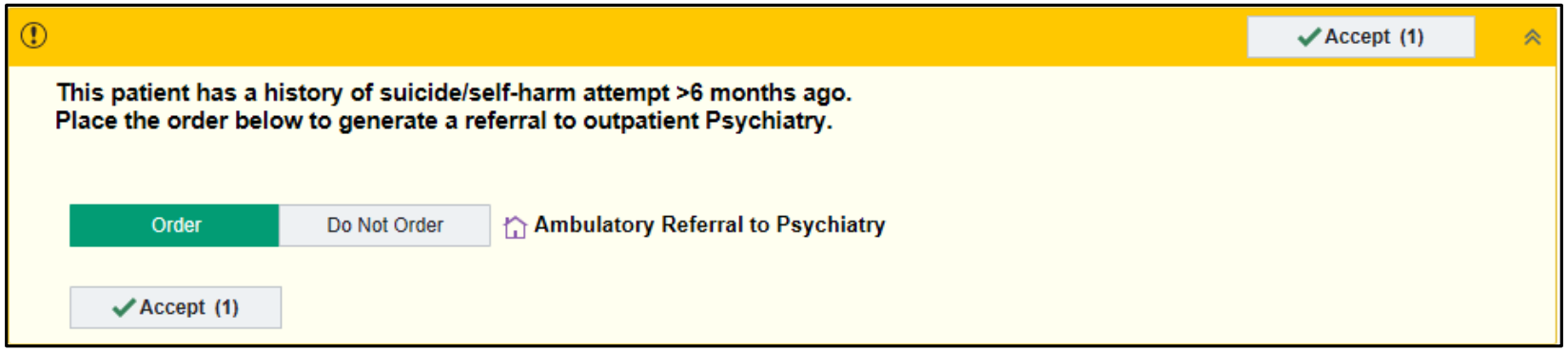
Staff Safety Optimization

Violence Prevention Project:

- Decision Support Tools



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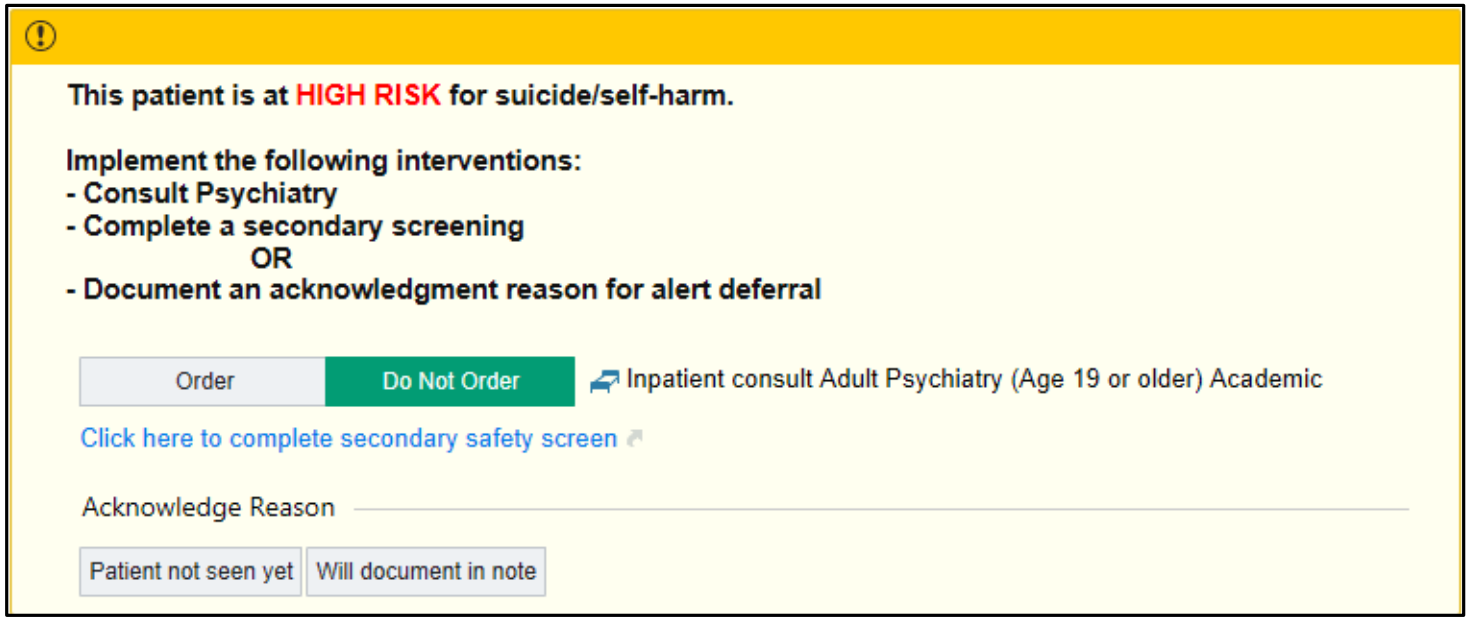

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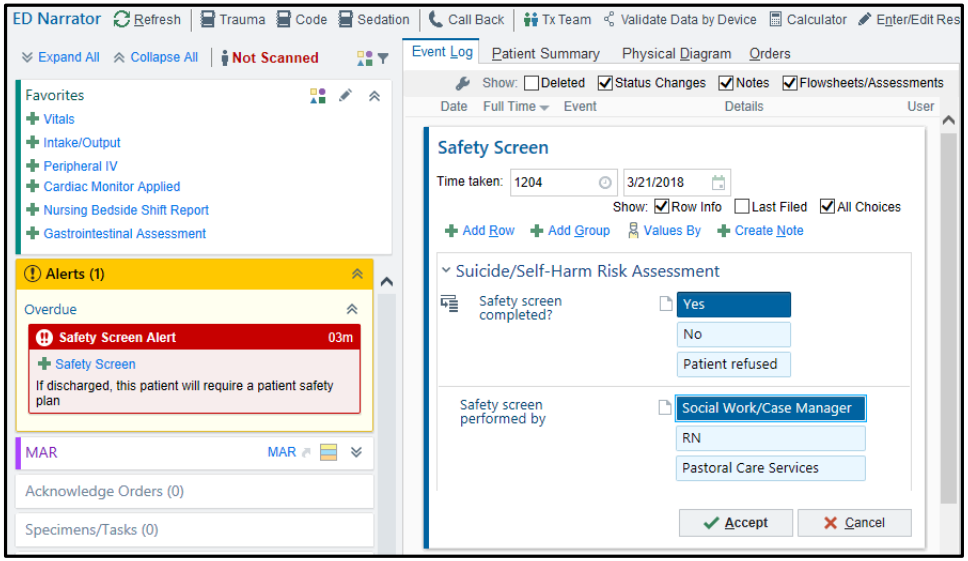
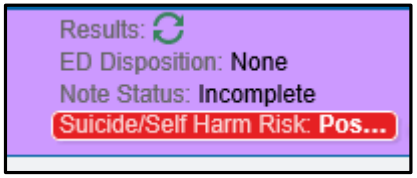
Staff Safety Optimization

Violence Prevention Project:

- Encounter Based Flags





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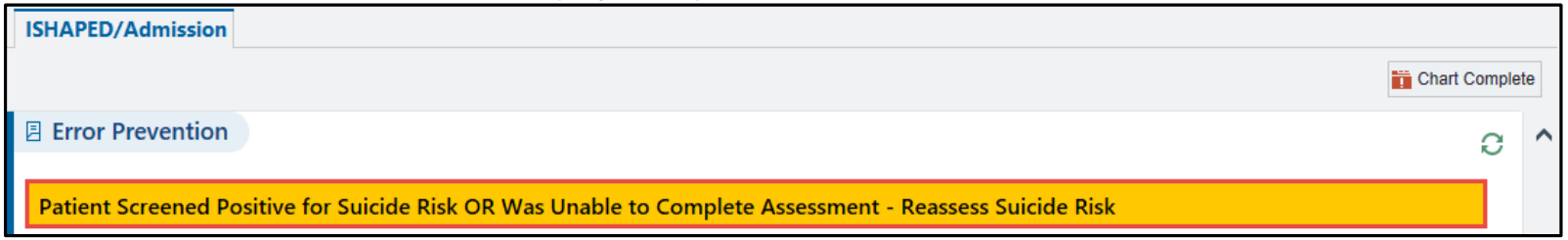

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Applications, Logic and Integration for Davies

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Applications Manager, Enterprise Clinical Applications

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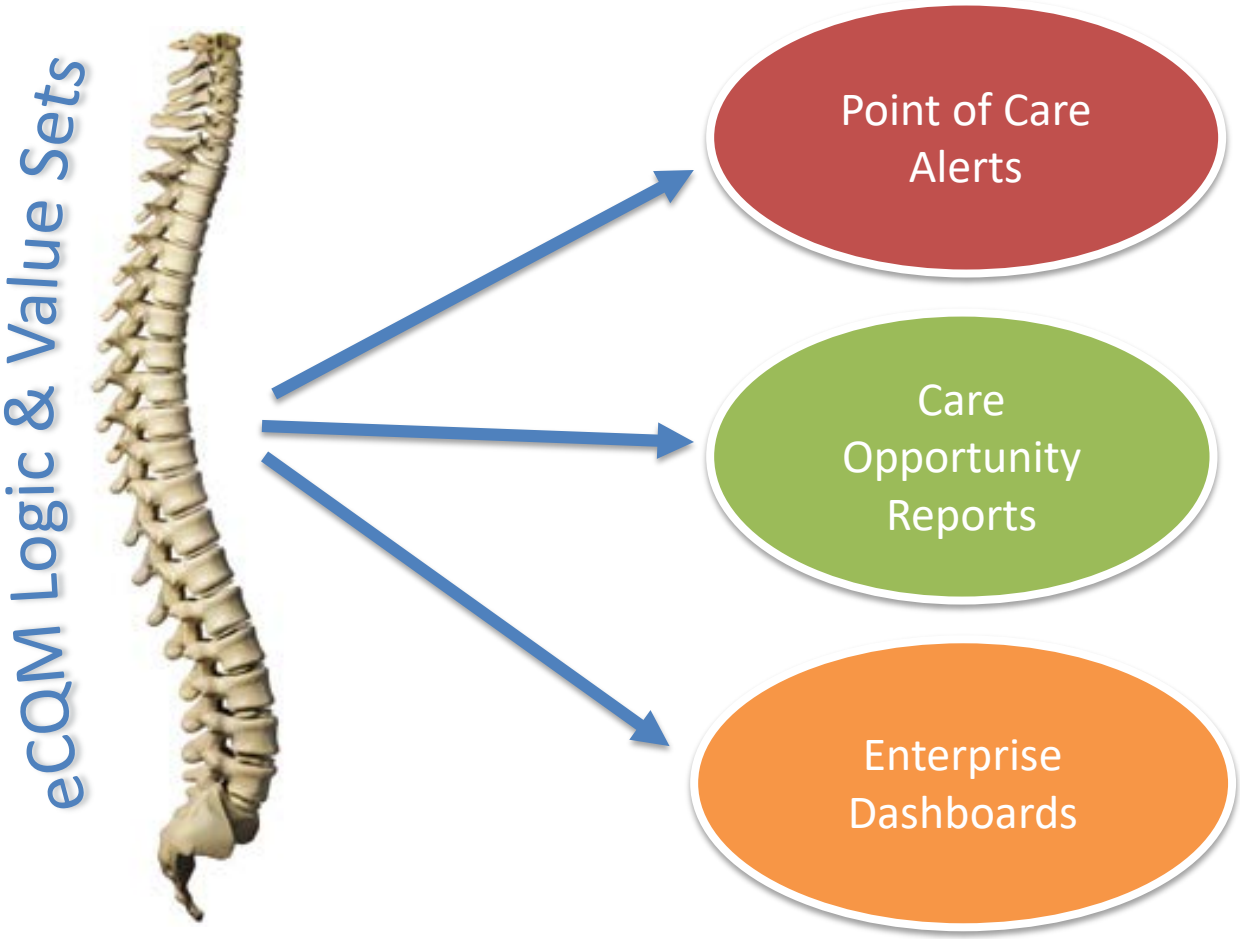
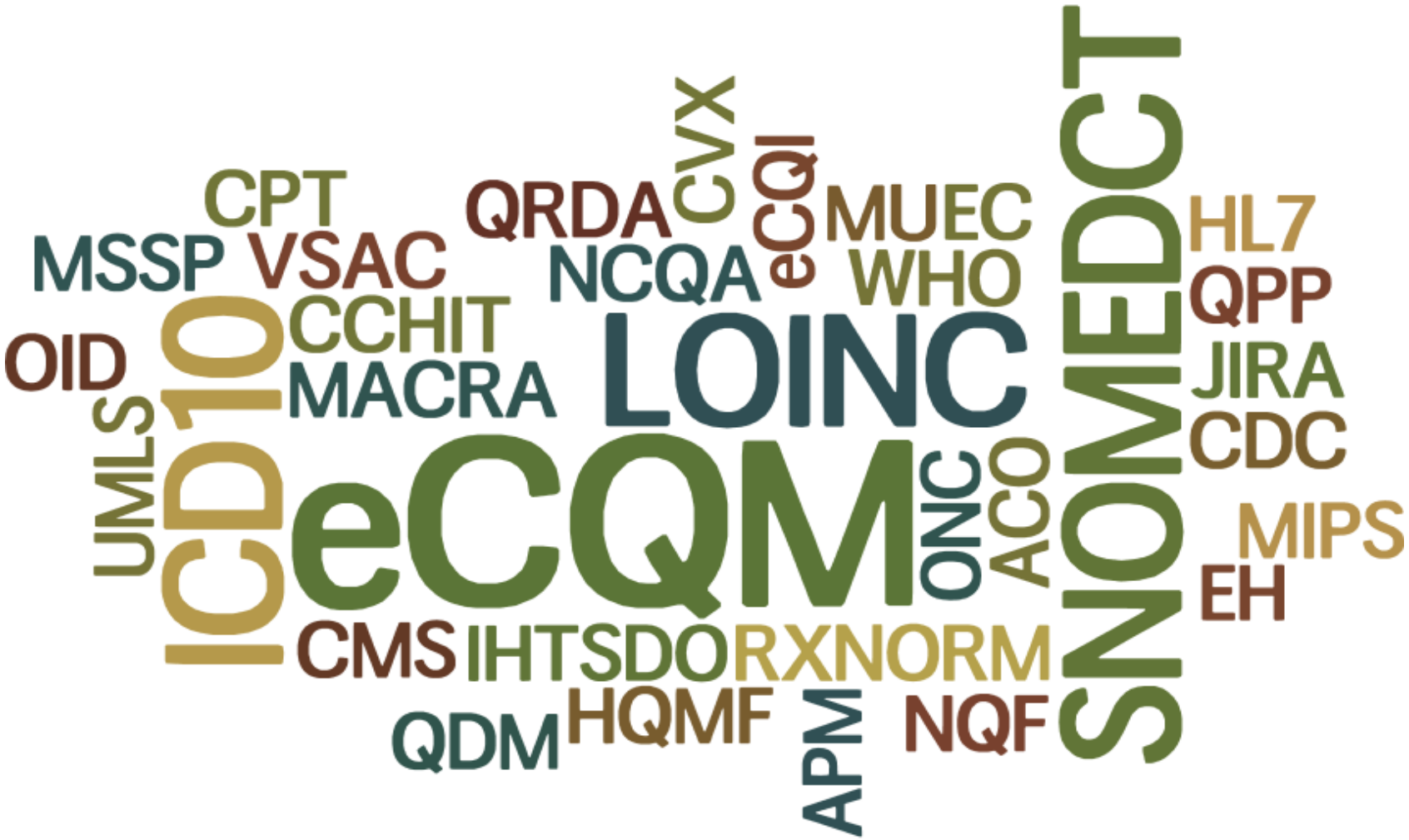
Clinical Decision Support Backbone

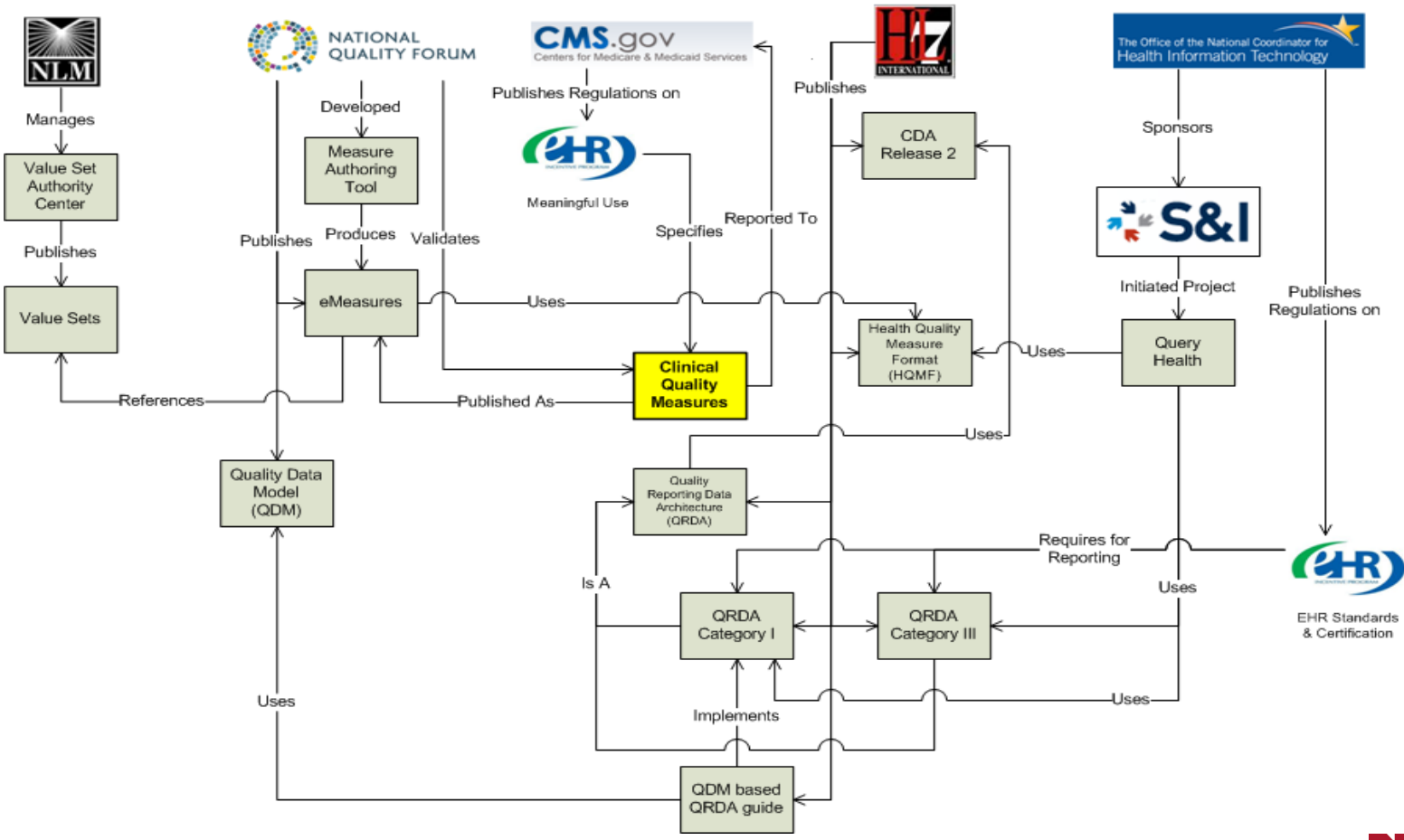


Regulatory Reporting Alphabet Soup



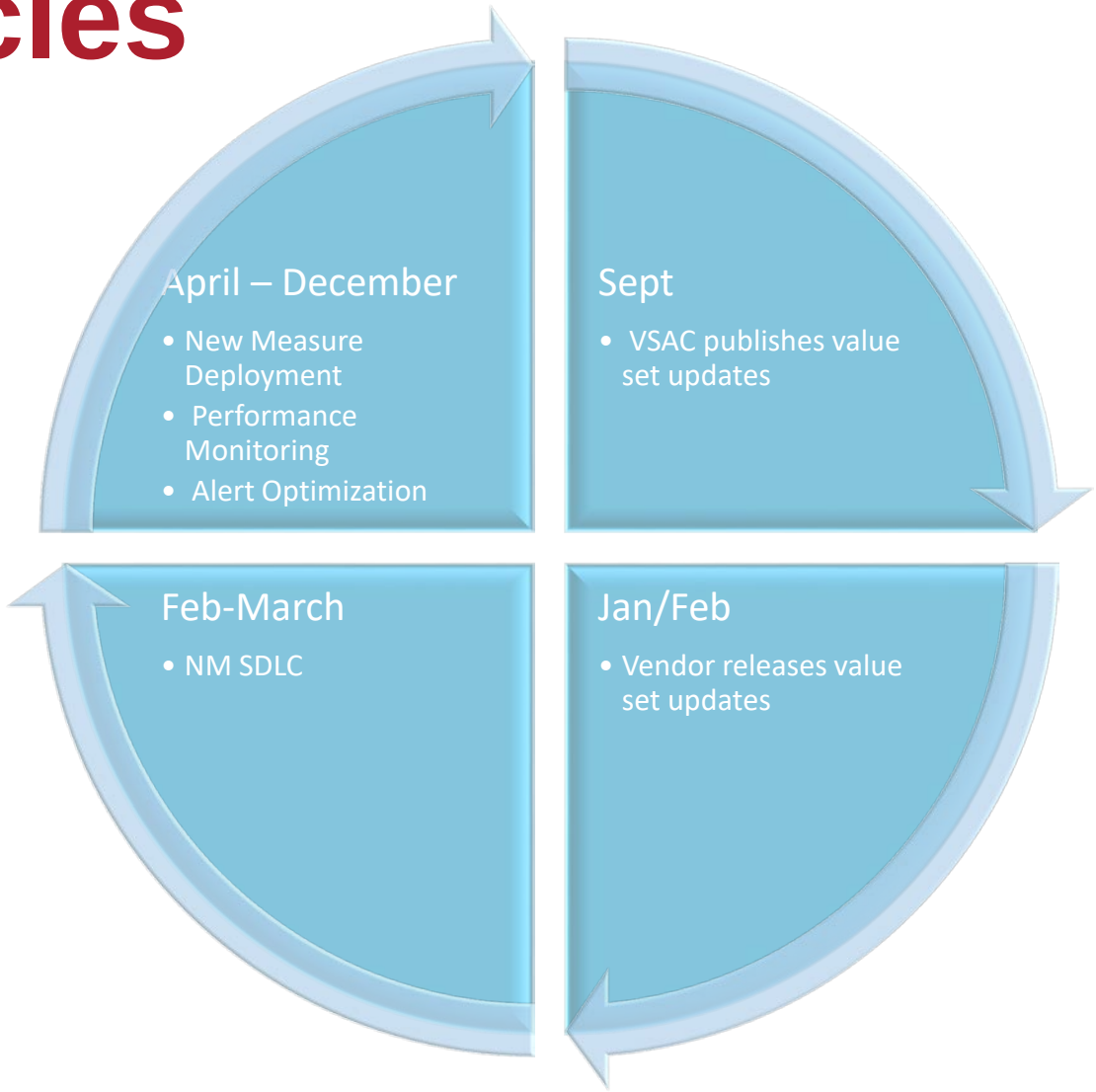
Making sense of the governing bodies

Clinical Quality Measures

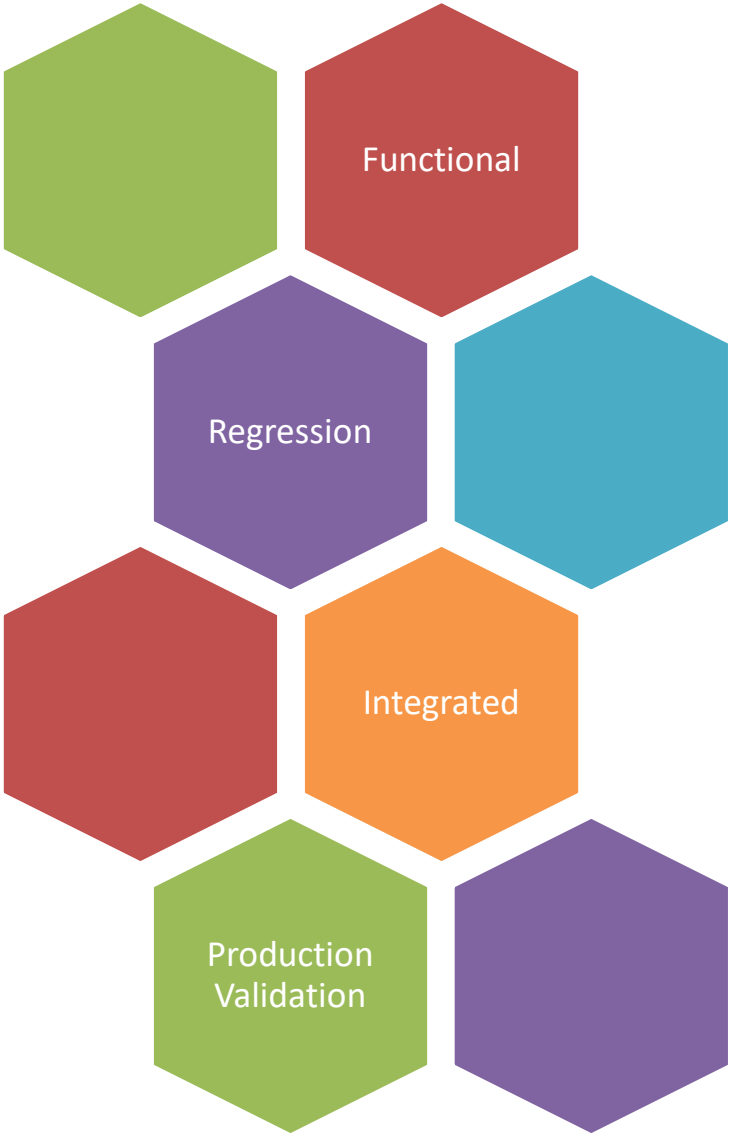


Boone, K. (2012, November 12) *Hashtag Soup: Relating QDM, HQMF, eMeasures, QueryHealth, QRDA, SIFramework and MeaningfulUse* Stage2. Retrieved from http://motorcycleguy.blogspot.com/2012/11/hashtag-soup-relating-qdm-hqmf.html

Nebraska Medicine eCQM Cycles



Testing Imperative



Lessons Learned

- Attribution is everything
- Be prepared to build Decision Support based on clinical best practice logic when eCQM logic does not fit with Point of Care presentation
- Validate that Lab testing procedures align with clinical best practice and LOINC codes
- Be agile when addressing bugs
- Partner with vendor

Integration

Bidirectional NESIIS Transactions

- Enables reconciliation with patients chart
- Support eCQMs via CVX
    - CMS147 - Preventive Care and Screening: Influenza Immunization
    - CMS127 - Pneumococcal Vaccination Status for Older Adults

HealthCare's most wired 2017

MAGNET RECOGNIZED
AMERICAN NURSES CREDENTIALING CENTER

THE JOINT COMMISSION
NATIONAL QUALITY APPROVAL

Bernard A Birnbaum, MD
Quality Leadership Award
2016 Winner
vizient.

Bernard A Birnbaum, MD
Quality Leadership Award
2017 Winner
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