iNICQ 2016: Choosing Antibiotics Wisely
Vermont Oxford Network’s
Internet-Based Quality Improvement Collaborative
Core Curriculum Webinars

PRELAUNCH WEBINAR – Choose 1 Date –
January 13, 2016 / or / January 14, 2016 3:00 PM Eastern

January 20, 2016  3:00 PM Eastern
iNICQ Core Curriculum Session 1– iNICQ 2016 Launch! Choosing Antibiotics Wisely
Setting the Stage For Improvement

Learning Objectives

1. Convene clinicians, senior leaders, and parent improvement advisors to prioritize and commit to an appropriate plan for an antibiotic stewardship program in the NICU setting.
2. Identify the steps to implement critical principles and practices of antibiotic stewardship recommended by the CDC.
3. Critically appraise the evidence focused on 40-fold antibiotic prescribing variations in the NICU setting.
4. Identify the impact of antibiotic exposure on the infants’ and the unit’s microbiome.
5. Apply the model for improvement to craft a clinical, a value, and a family-centered care aim focused on antibiotic stewardship.
6. Discuss the importance of developing a local prospective measurement strategy to “plot the dot” and guide the progress of your local quality improvement project.

Session Plan

3:00   Welcome to Your Virtual Homeroom!
Unleashing the Power of Collaborative Improvement           M. Buus-Frank / J. Horbar

3:05   The Centers for Disease Control and Prevention Calls All Caregivers,
Clinicians and Senior Leaders to Action –
Help us Fight the Resistance!                           A. Srinivasan

3:20   The Evidence: Antibiotic Use in the NICU -
Delving Into the 40-Fold Variation in Antibiotic Use         J. Schulman

3:30   Questions / Answers Dialogue

3:40   The Evidence: Risks of Antibiotic Over-Use in Neonates       J. Neu

3:55   Questions / Answers / Dialogue
4:05 PBP #1: Organizational Commitment and Culture

T. Ho. / D. Dukhovny

The “Choosing Wisely” Connection and Introduction to the Toolkit

- AIMS
  - Develop 3 Aims: Clinical, Value and Family-Centered Care Aims
  - Elements of a SMART AIM*
- Drivers
  - What is Driving Our Current Practice?
  - A Sample Driver Diagram
- Changes
  - Potentially Better Practices Defined
  - What Changes Might We Consider and Test?
  - PDSA Cycle Examples

4:15 How Will We Know Changes are an Improvement? T. Ho / R. Soll

- Audit and Feedback – The Science
  - VON Day Quality Audits
  - Local AUR Tracking / “Plot the Dot” Strategy
  - Longer-Term Goal? NHSN Data Submission

4:25 Structuring Engagement – Using the iNICQ Improvement Tool Suite M. Buus-Frank

- Deliverables and Timelines

4:30 Webinar Adjourns

4:30 – 5:00 Local Team Time Exercise - Crafting a SMART Aim

Key Resources for Team Time and Phase 1 Work

- SMART AIM Worksheet
- Driver Diagram Worksheet
- PDSA Cycle Worksheet

---

March 9, 2016 3:00 PM Eastern

iNICQ Core Curriculum Session 2 – Choosing Antibiotics Wisely

Early Onset Sepsis

PBP Focus #2 Develop, Test and Refine Policies and Protocols for Appropriate Antibiotic Use

Session Learning Objectives

1. Reflect on key lessons that parents can teach us about infection, antibiotic use, and improvement.

2. Compare and contrast key challenges in evaluating preterm and full-term infants who are at risk for infection, and identify appropriate use of the sepsis risk calculator.

3. Review the use of common screening tests for infection and the diagnostic test accuracy of each.

4. Analyze your local VON Day Audit data and review aggregated findings.

5. Apply key principles from the CDC’s antibiotic stewardship guidelines to the NICU setting.
6. Brainstorm and identify key potentially better practices to test in your NICU using PDSA methods.

Session Plan

3:00 Welcome! Setting the Stage for Improvement M. Buus-Frank / J. Horbar

3:05 Engaging Parents Early – The Story of Infection Family Story

3:15 Questions / Answers / Dialogue

3:20 The Evidence: Early Onset Sepsis K. Puopolo

- Practice Impact, Evolving Guidelines and the Chorioamnionitis Quandary
- When to Start? When to Stop?
- Diagnostic Test Accuracy

3:40 Questions / Answers / Dialogue

3:50 VON Day Quality Audit #1 Results R. Soll

- VON Day Audit - Unit Level Measures
  o The Policy and Guideline Scorecard
- VON Day Audit - Patient Level Data – Early Onset Sepsis
  o Prescribing Patterns
- Next Steps – Plotting Your Local AUR (Weekly!)
- Other Relevant VON “Big Dot” Measures to Monitor

4:00 Antibiotic Stewardship in the NICU Setting – Getting Started S. Patel

4:15 Questions / Answers / Dialogue R. Soll / S. Patel

4:25 Team Time Exercise – Plan a PDSA T. Ho

System-Wide Improvement Strategies – PDSA Examples From the Toolkit

- Standardized Care Team Rounding: Report on Every Patient - Every Day
- Standardized Documentation / Notes
- Empowered Nursing / Pharmacy Team Members
- Standardized Parent Communication
- Learning From Protocol “Deviations”
- Regular Audit and Feedback – With Case Review

4:30 Webinar Adjourns

4:30 – 5:00 Local Team Time Exercise – Plan a PDSA Cycle

Relevant Team Time Resources

- Review Local and VON Benchmark – VON Day Audit Data
- Planning a PDSA Cycle Worksheet
- Driver Diagram Worksheet
April 27, 2016
Optional Session– Open Microphone and Coaching Call
Learn How to Build an Abstract in 6 Months or Less!

Learning Objectives

1. Review VON Abstract guidelines and link to MOC Part IV requirements.

2. Discuss key details / data that are critical to an abstract report.

3. Review the anatomy of a run-chart and identify how to annotate the run chart.

4. Critically analyze an abstract “in development” and identify opportunities for improvement.

5. Participate in robust question / answer session to learn from others.

Relevant Team Time Resources

- VON Abstract Guidelines
- SQUIRE 2.0 Guidelines
- MOC Part IV Made Simple
- Run Chart Tutorial, Links, and Readings

Session Plan

3:00 Welcome! Build Your Abstract Incrementally D. Zayak, T. Ho, Dmitry Dukhovny, M. Buus-Frank

- Identifying key abstract components
- SQUIRE and VON Abstract Guidelines
- Focus for MOC Part IV – The Annotated Run Chart

3:15 Open Microphone – Bring Us Your Challenges and Opportunities

3:30 A Look at Examples – Baseline, Improving, Better, to Best!

3:45 Questions / Answers / Dialogue

3:55 Final Tips to Improve

4:00 Webinar Adjourns
May 18, 2016  
Core Session 3 – Choosing Antibiotics Wisely  
Late Onset Sepsis

### Learning Objectives

1. Reflect on how local unit culture and the presence or absence of standardized protocols influences prescribing practices.

2. Identify 3 strategies to standardize the evaluation and treatment of LOS.

3. Analyze the findings from a critical appraisal of the literature on duration of antibiotic treatment for specific conditions.

4. Foster a dialogue including key members of your obstetrics, nursery, NICU, and pharmacy team aimed at developing care systems that will assure treatment of the right patients, with the right dose and duration of antibiotics and conversely, that these agents are discontinued promptly when no longer indicated.

5. Review key examples of an annotated run chart and a statistical process control chart and huddle with your team to interpret this data.

6. Discuss the value of small tests of change to fuel incremental improvement.

### Session Plan

3:00 Welcome! Setting the Stage for Improvement  
M. Buus-Frank / J. Horbar

3:03 Culture Trumps Everything! Infection Improvement Story  
iNICQ Improvement Team

3:10 The Evidence: Evaluation and Treatment of Late Onset Infection  
W. Edwards (invited)

- Sepsis
- Meningitis
- The VAP Trap
- Wound / Skin Infections
- UTI

3:25 Questions / Answers / Dialogue

3:30 The Evidence: Duration of Antibiotic Therapy  
M. Cotten (invited)

3:45 Questions / Answers / Dialogue

3:55 Pharmacy-Driven Interventions to Foster Improvement  
K. Burch

4:05 Small Tests of Change – PDSA Swap:  
A Sharing and Open Microphone Exchange  
Teams & Faculty

4:20 Real-time Data Fuels Improvement:  
Run Chart and SPCC Examples  
T. Ho
4:30 Webinar Adjourns: Team Time M. Buus-Frank
4:30 – 5:00 Team Time Exercise
June 8, 2016

PBP Focus #2: Develop, test and refine policies and protocols for appropriate antibiotic use.

Core Session 4 – The Complex Surgical Patient

Learning Objectives

1. Apply lessons from a center-level improvement story and identify generalizable improvement opportunities for your setting.

2. Reflect on the contribution of surgical infant antibiotic exposure to your local antibiotic utilization rate.

3. Identify 3 strategies to develop an evidence-based approach and to standardize the evaluation and treatment of infants undergoing or recovering from surgery.

4. Analyze whether your center’s AUR is driven by preventable morbidities (over-diagnosis of chorioamnionitis, high rates of hospital-acquired infection, NEC, low breastfeeding rates, or poor handwashing and infection control practices).

5. Identify 3 key components of a business case for improvement.

Session Plan

3:00 Welcome! Setting the Stage for Improvement M. Buus-Frank / J. Horbar

3:03 Infection Improvement Story iNICQ Improvement Team

3:10 The Evidence: Antibiotics and Surgical Infants S. Gadepalli

• Condition Specific Considerations
• Phase of Care – Transport / Stabilization,
• Perioperative, Intraoperative, Post-operative
• Critical Controversies – Triple Coverage?


3:40 Questions / Answers / Dialogue

3:50 Are High Rates of “Indicated” Antibiotics Driving Use? Connecting the “Big” and “Little” Dots! R. Soll

• NEC
• Late Onset Sepsis
• Human Milk Exposure (or lack thereof!)
• Other Potential Local Audit Data (handwashing, line maintainance, CLABSI)

4:00 Questions / Answers / Dialogue

4:10 Demonstrating Value: How To Build a Simple Business Case for Improvement J. Zupancic / D. Dukhovny

4:25 Next Steps – Time to Improve M. Buus-Frank
4:30     Webinar Adjourns: Team Time – Planning Your Next Steps To Excellence

4:30 – 5:00     Team Time Exercise

Key Team Time Resources /Exercises
  • Bring a Surgeon Brainstorming Session / or
  • Bring a Senior Leader / Business Case Blueprint for Session

---

September 12, 2016
NICQ Symposium – Live - Choosing Antibiotics Wisely Sessions Presented in Chicago Only!

PLEASE NOTE: Live participation in the NICQ Symposium is included in the Intensive Curriculum.
Relevant antibiotic homeroom sessions from Chicago will be recorded and shared post-event on the VON Learning Management System

---

October 5, 2016
Core Session 5 - The Power of Crowd-Sourced Learning
Lessons From Our “Virtual” Homeroom

<table>
<thead>
<tr>
<th>PBP #1</th>
<th>Session Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBP #1</td>
<td>Demonstrate an organizational commitment and promote an organizational culture that supports appropriate antibiotic use in the NICU as a critical priority.</td>
</tr>
<tr>
<td>PBP #2</td>
<td>Develop, test and refine policies and protocols for appropriate antibiotic use.</td>
</tr>
<tr>
<td>PBP #3</td>
<td>Apply pharmacy-driven interventions designed to assure appropriate antibiotic use in newborn infants.</td>
</tr>
<tr>
<td>PBP #4</td>
<td>Report regularly on antibiotic use and resistance in the NICU to doctors, nurses, and staff.</td>
</tr>
</tbody>
</table>

Learning Objectives

1. Reflect on your teams clinical, value and family-centered care aims – and evaluate your progress towards measurable improvement.

2. Invite your senior leader or administrative champions to join the iNICQ Webinar to learn from the experiences of other centers.

3. Develop one strategy to share the antibiotic stewardship message across units (OB, NB, NICU, and beyond) to celebrate the national “Get Smart” campaign.

4. Critically review the impact of families on improvement and your progress towards engaging their expertise and in improving antibiotic-related care.

Session Plan

3:00     Welcome! Setting the Stage for Improvement         M. Buus-Frank / J. Horbar

3:03     CDC Updates: The Evolving National Landscape       A. Srinivasan

3:15     Team Improvement Story 1
Choosing Wisely: Impacting Antibiotic Use at the State Level  TIPQC Team

3:25     Questions / Answers / Dialogue
3:30 Improvement Story 2
Choosing Wisely: Learning from Level 1 and 2 Centers  iNICQ Improvement Teams

3:37 Questions / Answers / Dialogue

3:42 Improvement Story 3
Choosing Wisely: High Impact Team-Based Interventions  iNICQ Improvement Teams

3:50 Questions / Answers / Dialogue

4:00 Improvement Story 4 Choosing Wisely:
California AUR Ranges 2013-2015  J. Schulman

4:07 Questions / Answers / Dialogue

4:15 Faculty Round Robin – Lessons Learned!  All

4:25 Next Steps – Time to Improve  M. Buus-Frank

4:30 Webinar Adjourns

4:30 – 5:00 Team Time Exercise


Key Resources

- Initial VON Day Audit Results
- Team Progress / Reflection Tool – Unit Level and Infant Level Measure Progress
- Interpreting Your Local Run Chart
- Rapid Cycle Work Plan
December 7, 2016
Core Session 6 – Choosing Antibiotics Wisely

Fighting the Resistance!
Multi-Center Progress and Tips for Sustaining Results

PBP Focus

| PBP #1 | Session Focus | Demonstrate an organizational commitment and promote an organizational culture that supports appropriate antibiotic use in the NICU as a critical priority. |
| PBP #2 | | Develop, test and refine policies and protocols for appropriate antibiotic use. |
| PBP #3 | | Apply pharmacy-driven interventions designed to assure appropriate antibiotic use in newborn infants. |
| PBP #4 | | Report regularly on antibiotic use and resistance in the NICU to doctors, nurses, and staff. |

Learning Objectives

1. Analyze your VON Day Audit #2 results and benchmark this data with the report from all iNICQ Centers.
2. Identify key data and resources, from the CDC and NHSN that will provide critical support to ongoing antibiotic stewardship and infection prevention programs.
3. Develop a plan for ongoing measurement of AUR and related infection measures that will fuel sustained local improvement in 2017 and 2018.
4. Prioritize key PBPs and a strategy that your team could employ in the coming 2 weeks, to improve your partnership and collaborations around antibiotic use.

PBP Focus

PBP 1-4

Session Plan

3:00 Welcome Back to Your Virtual Homeroom! M. Buus-Frank / J. Horbar

3:10 VON Day Audit Results – Audits 1 vs. 2 – How Do We Measure Up? R. Soll
- The Results
- Ongoing Opportunities for Improvement
- Connecting the “Dots” With Other Measures

3:24 Questions / Answers / Dialogue

3:25 What Were the Key Drivers of Improvement? D. Pursley / J. Zupancic / T. Ho / D. Dukhovny
- Culture / Senior Leaders Commitment
- Power of Data and Ongoing Audit and Feedback
- PDSA Interventions – Key Themes
- Coaching for Compliance and Learning From Deviations
- Outright Innovators!
- Demonstrating Value

3:40 Questions / Answers / Dialogue
3:50  Family Voice – Real Stories, Real Contributions, The Ultimate Value

4:00  Questions / Answers / Dialogue

4:10  Sustaining Results! Guidance From the CDC  A. Srinivasan

- Lessons Learned
- Are You Ready? NHSN Optional Data Modules and the Goal of Even Better Neonatal Data
- What is Possible on the Road to Ever Improving Care?

4:25  iNICQ  2016 – It’s a Wrap!  M. Buus-Frank

4:30  Webinar Adjourns
iNICQ 2016: Choosing Antibiotics Wisely  
Vermont Oxford Network’s  
Internet-Based Quality Improvement Collaborative  
INTENSIVE Curriculum Webinars

Intensive Session 1  
February 24, 2016

Lead Faculty: J. Schulman

How to Harness (or Build) Health Information Technology to Support Antibiotic Stewardship – Tutorial Part 1.

Learning Objectives

1. Review the basic elements of an EMR highlighting the wide variation between capabilities and data structures among and between various EMRs.

2. Define “green data” and identify 3 key sources that may be relevant to antibiotic stewardship programs.

3. Develop and prioritize a list of relevant data items that will be needed to “plot the dot” for improvement in antibiotic use / overuse.

Session Plan

EMR and Database 101

• Basic Anatomy With Emphasis on Variation
• Do You Speak Nerd? Learning Key Concepts and Vocabulary
• No EMR Yet?

Green Data

• What is Green Data and Where Does it Live?
  o EMR / CPOE
  o E-MAR
  o Pharmacy Tools
  o Micro Tools
  o Importance of Field Trips

Structuring The “Ask” – How to Develop a Cogent Data Wish List to Support Antibiotic Stewardship

• Who Might Be Able to Help?
  o Accessing / Querying Data
  o Analyzing and Appending Data

Crowd-Sources Knowledge – The California Experience Accessing AUR Data From the EMR

PREWORK

1. Meet with your team to discuss your current state – do we have data on NICU use? Does this data come to us from the EMR? If YES, map who, what, where, when and how you obtain and use this data to track antibiotic use. If NO – identify what you know about existing antibiotic data in your system, what you don’t but need to know, and key obstacles to getting data to fuel improvement.
PREWORK DUE DATE: February 14, 2016

Intensive Session 2
April 20, 2016

Lead Faculty: J. Schulman / NHSN Faculty

How to Harness Health Information Technology

Learning Objectives

1. Identify generalizable concepts from the experience of others who have been successful in identifying and developing data streams related to their antibiotic and/or infection practices.

2. Review the NHSN Module for AUR and perform a readiness assessment.

Session Plan

Deeper Data Dives

Strategies to Extract “Green” AUR Data From Your EMR
- iNICQ Team Presentations – 7 slides / 7 minutes
- Feeding Data to the Troops – Examples and Importance of Real-time Feedback

Exploring the NHSN Modules / Goals and Path to Sustainable Data

PREWORK

Demonstrate leadership, creativity, and team “divide and conquer” skills by completing at least 1 of the following prework assignments.

1. **Novice Centers:**
   Make a date to dig for green data and take your team on a structured field trip to ID data sources in the pharmacy, and/or microbiology lab. Complete the 1-page “Data Dig Report Back”

2. **Advanced Centers:**
   If you are already running CPOE or other data queries on antibiotic use, and/or those reporting AUR to the CDC, share your standard code / or strategy for data queries and if possible provide a sample report to VON. Volunteer to present your strategies in a focused 7 minute 7 slides presentation.

3. **Really Advanced Centers and/or High Achievers!**
   Review the CDC / NHSN Reporting Modules. Perform the NHSN readiness self-assessment – Submit to VON. Meet with your NHSN Reporter / Infection Practitioner to explore feasibility and a timeline to implementation of the NHSN modules.

PREWORK DUE DATE: April 7, 2016
Intensive Session 3  
November 2, 2016  

Lead Faculty: J. Schulman  

Turning Data Into Action!  

Learning Objectives  

1. Identify 2 key strategies to use data to inform improvement cycles and to motivate and sustain ongoing improvement.  

2. Outline key steps in a NICU plan to develop an ongoing and sustainable data stream focused on antibiotic utilization rates.  

3. Discuss the use of compliance tools and audits to inform ongoing performance.  

4. Create, share and interpret a run chart or SPCC with your team.  

Session Plan  
Sharing Data – the Ultimate Motivator  

- Stratified rates of early onset sepsis, late onset sepsis, and sepsis evaluation rates  
- Number needed to treat (NNT)  
- Is there a “right” rate?  
- Identifying local outliers, feedback and compliance  

NHSN NICU AUR Data  

- Lessons from automated extraction?  
- What can the data teach us?  
- Example of 1 units NHSN experience  
- Pathway to the future – risk-adjusted NICU data?  

PREWORK  

1. Review a set of compliance improvement tools.  

2. Create a simple plan to report data to stakeholders. (Clinicians, Leadership, Families).  

3. Share your current data / reporting on an annotated run chart or SPCC before the webinar. Please include a table of data value on each axis so that faculty can create a corresponding SPCC.  

PREWORK DUE DATE: September 23, 2016