National Quality Initiatives in Renal Colic Imaging from the American College of Emergency Physicians (ACEP)

Arjun K. Venkatesh MD, MBA, MHS
@arjunvenkatesh
Disclosures

• Centers for Medicare and Medicaid Services
• Center for Medicare and Medicaid Innovation (E-QUAL)
• National Institute of Health
• Agency for Healthcare Research and Quality
• MCIC Vermont
• American College of Emergency Physicians

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Usual QI Project
Multidisciplinary QI Work
Growing a CQI Program
QI Practices in the ED Today

(N= 766 EDs)
Too many targets
Power of a National Learning Network

Focus on big, important targets
Learning Collaboratives: Prior Success

D2B: Milestones of Success

- **D2B Alliance Launches**: November 2006
  - February 2007: Less than 90 minutes
  - March 2008: Less than 75 minutes

- **Median D2B Time Declines**:
  - January 2005: 96 minutes
  - September 2010: 64 minutes

- **Patients with recommended D2B time < 90 minutes**:
  - January 2005: 44.2%
  - September 2010: 91.4%

- **Patients with D2B time < 75 minutes**:
  - January 2005: 27.3%
  - September 2010: 70.4%

“engage emergency clinicians and leverage emergency departments to improve clinical outcomes, coordination of care and to reduce costs”

1. Improving outcomes for patients with sepsis

2. Reducing *avoidable imaging* in low risk patients by implementation of ACEP’s Choosing Wisely recommendations
   - High-cost imaging for *low back pain*
   - Head CT scan after *minor head injury*
   - Chest CT for *pulmonary embolus*
   - Abdominal CT for *renal colic*
   - Head CT for *syncope*

3. Improving the value of ED evaluation for low risk *chest pain* by reducing avoidable testing and admissions
E-QUAL Recruitment: Who’s In?

Number of clinicians participating in the E-QUAL Network

As of July 2017
863 ED practices
27,464 ED clinicians

Year 2 Goal

Year 1 Goal
E-QUAL: 1,000 EDs Strong
What do EQUAL sites do?

**Recruitment & Enrollment**
- Readiness Assessment Survey
- Participation Sign Up

**Learning Period (9 months)**
- Monthly Webinars
- Introduction to tool kit
- Publicize guidelines and materials
- Disseminate CME
- Benchmarking data
- Office Hours

**Wrap Up**
- Data Reports
- Summary Report
- Lessons Learned
- eCME & MOC credit
- CMS MIPS requirements
- Re-enrollment
Virtual Learning Collaboratives

- National "group project"
- Free to join and quick to expand
- Self-assessment model
- Focus: Participation and Improvement

Success depends on
- Champion
- Clinician engagement
- Commitment

- Partner with ACR, ACP others
E-QUAL: Learnings

- Improve Outcomes for patients with sepsis
- Reduce Avoidable Testing for low risk patients through implementation of Choosing Wisely Recommendations
- Improve The Value of ED chest pain evaluation by reducing avoidable testing and admissions of low risk patients
Which ACEP Choosing Wisely™ recommendations is your ED either engaged in or interested in?

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Currently engaged in QI activities</th>
<th>Interested in starting a QI activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid CT of the abdomen and pelvis in patients with recurrent renal colic</td>
<td>17%</td>
<td>48%</td>
</tr>
<tr>
<td>Avoid lumbar imaging in patients with atraumatic low risk back pain without red flags</td>
<td>38%</td>
<td>36%</td>
</tr>
<tr>
<td>Avoid chest CT imaging for PE in low pre-test probability patients with a negative D-Dimer or PERC rule</td>
<td>24%</td>
<td>38%</td>
</tr>
<tr>
<td>Avoid CT imaging of the head in atraumatic syncope with a normal neurological exam</td>
<td>27%</td>
<td>38%</td>
</tr>
<tr>
<td>Avoid CT imaging of the head for mild traumatic head injury meeting established clinical criteria</td>
<td>46%</td>
<td>38%</td>
</tr>
</tbody>
</table>
Which of the following QI approaches have been used in your ED?

- **Provider-specific feedback reports on imaging utilization or appropriateness**: 33%
- **Computerized decision support**: 14%
- **Radiologist review or consultation for imaging**: 32%
CT Imaging for Renal Colic – Wave 2

<table>
<thead>
<tr>
<th>No. of Abdomen CTs without Contrast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flank Pain, Back Pain &amp; Kidney Stone ED Visits</td>
</tr>
</tbody>
</table>

Utilization Rate = \[ \frac{\text{No. of Abdomen CTs without Contrast}}{\text{Flank Pain, Back Pain & Kidney Stone ED Visits}} \]

Pilot Benchmarking: Variation in CT Utilization from 9% to 31%
A 10 minute conversation can save 3.5 hours in the ED
Motivation and Incentives

MACRA
The Law

- Medicare Access and CHIP Reauthorization Act

QPP Payment

- Quality Payment Program

MIPS Scoring

- Merit Based Incentive Payment System
MIPS: Big Money

How much can MIPS adjust payments?

+/- Maximum Adjustments

-4% -5% -7% -9%

2019 2020 2021 2022 onward

(Graphic from the Centers for Medicare & Medicaid Services.)
E-QUAL 2018 Deadlines

Sepsis Wave 3: January 2018

Avoidable Imaging Wave 3: Winter 2018

Chest Pain Wave 2: Spring 2018
Quality
Clinical Practice Improvement Activities
Resource Use
Advancing Care Information
What is CEDR?

- CMS designated Qualified Clinical Data Registry (QCDR)

- Designed to measure healthcare quality, outcomes, practice patterns and trends in emergency care

- Developed by ACEP to enable emergency physician participation in MACRA

- First and only emergency medicine specialty registry at a national level
CEDR GROWTH BY ED GROUPS AND INDIVIDUAL ED

- # of ED Groups
- # of ED

CEDR Growth
CEDR Growth

# OF PATIENT VISITS IN CEDR (IN MILLIONS)

- # of Visits Added (in millions)

- 0
- 2
- 12
- 30
- 45

- 2015
- 2016
- 2017
- 2018
- 2019
43 Total Measures

- ED Throughput Measures (Length of Stay)
- Septic Shock Care Measures
- Ultrasound Use Measure
- Choosing Wisely/Appropriateness Measures
  - Foley catheter appropriateness
  - Coagulation study utilization in chest pain
  - Head CT for minor head trauma
  - Abdominal CT for recurrent renal colic
CEDR: ACEP QI 102: Appropriate Imaging for Renal Colic

• Draft QI Measure

• Description: Percentage of ED visits (age 18-50) presenting with flank pain with a history of kidney stones during which:
  • No imaging
  • Appropriate imaging (plain film, XR, US)

• Exclusions: Infection, Cancer, Renal Disease, Anticoagulation, Symptoms > 72 hours, pregnancy, trauma, persistent pain that cannot be controlled during ED visit, procedure within 48 hours

• Electronically (EHR) specified using VSAC
CEDR Metric Next Steps

• Measure Testing
  • Are EHR codes valid?
  • Is the measure reliable at the provider or group level?

• Unanswered questions
  • Should low-dose CT be included?
  • Are exclusions appropriate?

• Future
  • Complementary measure for non-ED settings
CEDR Metric Next Steps

- Measure Testing
  - Are EHR codes valid?
  - Is the measure reliable at the provider or group level?

- Unanswered questions
  - Should low-dose CT be included?
  - Are exclusions appropriate?

- Future
  - Complementary measure for non-ED settings
CEDR Data Flow

CEDR: Data Flow
# Fundamental Data Elements

<table>
<thead>
<tr>
<th>Element name</th>
<th>Coding Instructions</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Last Name</td>
<td>Indicate the patient's last name. Hyphenated names should be recorded with a hyphen.</td>
<td>N</td>
</tr>
<tr>
<td>Patient First Name</td>
<td>Indicate the patient's first name.</td>
<td>N</td>
</tr>
<tr>
<td>Patient Middle Name</td>
<td>Indicate the patient’s middle name(s).</td>
<td>N</td>
</tr>
<tr>
<td>Encounter Date and time</td>
<td>Indicate the date of the patient encounter or visit to the physician office.</td>
<td>Y</td>
</tr>
<tr>
<td>Date and time of Birth</td>
<td>Indicate the patient’s date of birth.</td>
<td>Y</td>
</tr>
<tr>
<td>Patient Zip Code</td>
<td>Indicate the patient’s United States Postal Service zip code of their primary residence</td>
<td>N</td>
</tr>
<tr>
<td>Provider NPI</td>
<td>Indicate the NPI of the provider.</td>
<td>Y</td>
</tr>
<tr>
<td>BMI</td>
<td>Patient's Body Mass Index</td>
<td>N</td>
</tr>
<tr>
<td>Language Code</td>
<td>Code defining the language known or spoken by patient</td>
<td>Y</td>
</tr>
<tr>
<td>Language Ability Mode Code</td>
<td>A code representing the patient’s language skill level</td>
<td>Y</td>
</tr>
<tr>
<td>Payer ID</td>
<td>Indicate the Payer ID of the patient’s primary insurance payer.</td>
<td>Y</td>
</tr>
<tr>
<td>Insurance - Private Health Insurance</td>
<td>Indicate if the patient has private health insurance.</td>
<td>N</td>
</tr>
<tr>
<td>Insurance - Medicare (Fee for service)</td>
<td>Indicate if the patient is insured by Medicare (fee for service).</td>
<td>Y</td>
</tr>
<tr>
<td>Insurance - Medicare (Advantage care)</td>
<td>Indicate if the patient is insured by Medicare (managed care/HMO).</td>
<td>Y</td>
</tr>
<tr>
<td>Insurance - Blue Cross/ Blue Shield</td>
<td>Indicate if the patient is insured by Blue Cross/ Blue Shield</td>
<td>N</td>
</tr>
<tr>
<td>Insurance - Other Government / Indian Health Service/ State Local government</td>
<td>Indicate if the patient is insured by Other Government.</td>
<td>N</td>
</tr>
</tbody>
</table>
## Data Element Mapping

<table>
<thead>
<tr>
<th>Measure ID</th>
<th>Measure Description</th>
<th>Element ID</th>
<th>Element Name</th>
<th>Numerator/Denominator/Exception/Exclusion</th>
<th>CDR Section</th>
<th>CDR Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACEP QI 102</td>
<td>Emergency Medicine: Appropriate Use of Imaging for Recurrent Renal Colic</td>
<td>2050</td>
<td>Date and time of Birth</td>
<td>Denominator</td>
<td>Patient Demographics Section</td>
<td>21 - Date of Birth</td>
</tr>
<tr>
<td>8505</td>
<td>Date and Time of arrival (onset) to Emergency Department</td>
<td>Denominator</td>
<td>Encounter Section</td>
<td>73 - Encounter Start Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1510</td>
<td>Encounter Date and time</td>
<td>Denominator</td>
<td>Encounter Section</td>
<td>73 - Encounter Start Date</td>
<td></td>
<td></td>
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<tr>
<td>6880</td>
<td>Flank Pain</td>
<td>Denominator</td>
<td>Problem Section</td>
<td>105 - Problem Code/106 - Problem Text</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6885</td>
<td>Onset date and time of flank pain</td>
<td>Denominator</td>
<td>Problem Section</td>
<td>110 - Documentation Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8500</td>
<td>Emergency Department Visit</td>
<td>Denominator</td>
<td>Encounter Section</td>
<td>71 - EncounterType Code</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8500</td>
<td>Date and Time of arrival (onset) to Emergency Department</td>
<td>Denominator</td>
<td>Encounter Section</td>
<td>73 - Encounter Start Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8150</td>
<td>CT of abdomen or pelvis ordered</td>
<td>Numerator</td>
<td>Result Observation Section</td>
<td>188 - Observation Code/189 - Observation Name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8160</td>
<td>KUB X-ray of abdomen or pelvis ordered</td>
<td>Numerator</td>
<td>Result Observation Section</td>
<td>191 - Observation Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6285</td>
<td>Determination of pregnancy</td>
<td>Exclusion</td>
<td>Problem Section</td>
<td>105 - Problem Code/106 - Problem Text</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6350</td>
<td>Prescription of anticoagulant medications</td>
<td>Exclusion</td>
<td>Problem Section</td>
<td>105 - Problem Code/106 - Problem Text</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6570</td>
<td>Diagnosis of trauma</td>
<td>Exclusion</td>
<td>Problem Section</td>
<td>105 - Problem Code/106 - Problem Text</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6290</td>
<td>Onset date and timing of pregnancy</td>
<td>Exclusion</td>
<td>Problem Section</td>
<td>110 - Documentation Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8110</td>
<td>Diagnosis of cancer</td>
<td>Exclusion</td>
<td>Problem Section</td>
<td>105 - Problem Code/106 - Problem Text</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8125</td>
<td>Onset date and time of diagnosis of kidney conditions</td>
<td>Exclusion</td>
<td>Problem Section</td>
<td>110 - Documentation Date</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
EMRs/Data Systems that CEDR has worked with

- EPIC
- Cerner
- Meditech
- Allscripts
- PICIS
- Merge Financials
- Wellsoft

- T-system
- MEDHOST EDIS
- Paragon WebStation
- Soarian EDIS
- Medpoint
- Forerun
CEDR Dashboard – Measure View
CEDR Dashboard – Measure Detail
Bringing it all together

High Value Emergency Care
E-QUAL Website: www.acep.org/equal

CEDR Website: www.acep.org/cedr