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

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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)

Does your ED currently engage in any of the following quality improvement activities?

- Collection of quality data for hospital public reporting
  - Yes
  - No

- ED group MOC activities for continued board certification
  - Yes
  - No

- Morbidity and Mortality (M&M) conference
  - Yes
  - No

- Sharing of provider comparative data on utilization and cost of care (e.g. CT rate, admission rate)
  - Yes
  - No

- Structured peer review of cases
  - Yes
  - No
Too many targets

Active Quality Improvement Initiatives:

- Trauma
- Stroke (Door-to-needle focus, participation in AHA Get-with-the-Guidelines)
- Hand Hygiene
- CAUTI
- AMI (Door-to-Balloon)
Power of a National Learning Network

Focus on big, important targets
Learning Collaboratives: Prior Success

D2B: Milestones of Success

- **D2B Alliance Launches**
  - November 2006

- **Achieved**
  - D2B time <90 min. in >75% of patients
  - March 2008

- **Median D2B time Declines**
  - January 2005 vs. September 2010

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

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

TCPi | Transforming Clinical Practice Initiative

EMERGENCY MEDICINE

E·QUAL | EMERGENCY QUALITY NETWORK
“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

Oct-15 Jan-16 May-16 Aug-16 Nov-16 Mar-17 Jun-17 Sep-17
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

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?

+4% +5% +7% +9%

-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

<table>
<thead>
<tr>
<th>Year</th>
<th># of ED Groups</th>
<th># of ED</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>2016</td>
<td>30</td>
<td>70</td>
</tr>
<tr>
<td>2017</td>
<td>90</td>
<td>500</td>
</tr>
<tr>
<td>2018</td>
<td>150</td>
<td>1,000</td>
</tr>
<tr>
<td>2019</td>
<td>200</td>
<td>1,500</td>
</tr>
</tbody>
</table>
# OF PATIENT VISITS IN CEDR (IN MILLIONS)

- # of Visits Added (in millions)

CEDR Growth
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
• 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
## 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>102</td>
<td>ACEP QI</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></td>
<td>Emergency Medicine: Appropriate Use of Imaging for Recurrent Renal Colic</td>
<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>
</tr>
<tr>
<td></td>
<td></td>
<td>1510</td>
<td>Encounter Date and time</td>
<td>Denominator</td>
<td>Encounter Section</td>
<td>73 - Encounter Start Date</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6880</td>
<td>Flank Pain</td>
<td>Denominator</td>
<td>Problem Section</td>
<td>105 - Problem Code/106 - Problem Text</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6885</td>
<td>Onset date and time of flank pain</td>
<td>Denominator</td>
<td>Problem Section</td>
<td>110 - Documentation Date</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8500</td>
<td>Emergency Department Visit</td>
<td>Denominator</td>
<td>Encounter Section</td>
<td>71 - EncounterType Code</td>
</tr>
<tr>
<td></td>
<td></td>
<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>
</tr>
<tr>
<td></td>
<td></td>
<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>
</tr>
<tr>
<td></td>
<td></td>
<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>
</tr>
<tr>
<td></td>
<td></td>
<td>6285</td>
<td>Determination of pregnancy</td>
<td>Exclusion</td>
<td>Problem Section</td>
<td>105 - Problem Code/106 - Problem Text</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6350</td>
<td>Prescription of anticoagulant medications</td>
<td>Exclusion</td>
<td>Problem Section</td>
<td>105 - Problem Code/106 - Problem Text</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6570</td>
<td>Diagnosis of trauma</td>
<td>Exclusion</td>
<td>Problem Section</td>
<td>105 - Problem Code/106 - Problem Text</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6290</td>
<td>Onset date and timing of pregnancy</td>
<td>Exclusion</td>
<td>Problem Section</td>
<td>110 - Documentation Date</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8110</td>
<td>Diagnosis of cancer</td>
<td>Exclusion</td>
<td>Problem Section</td>
<td>105 - Problem Code/106 - Problem Text</td>
</tr>
<tr>
<td></td>
<td></td>
<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>
</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