Point-of-Care Ultrasound: Documentation and Billing Overview

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Disclosures

- Small amount of stock in Nanosonics (Trophon)
Project Goals

1. Improve professional and technical fee capture

2. Improve exam documentation
   a. Patient FIN
   b. Provider IDs
   c. Video clips of minimum exam views
   d. Indication and interpretation

3. Improve clinical transparency
   a. Images- radiologist, ob, surgery, cardiology
   b. QPath reports shared via EMR
Grand Rapids Emergency Departments
- Butterworth- 100,000 adults / year
- HDVCH- 50,000 pediatric / year
- Blodgett- 28,000 combined visits/ year

7 Zonare ultrasound systems
Demographic Page

Last: 
First: 
Middle: 
Gender: Male

ID: PT BRACELET FIN

DOB: [ ] - [ ] - 19 (MM-DD-YYYY) Age:

Operator: RESIDENT Cerner ID
Ref.Phys: ATTENDING CERNER ID

StudyDes:

Comment: BRIEF HPI

*SAVE THIS SCREEN AS AN IMAGE*
Required Views: Early OB
New Billing Worksheet

- Ability to place technical fee order immediately
- Selectively bill for components of exam i.e. EFAST, Hypotensive Exam
- Ability to order independent of exam’s preset
- Selectively transfers patient care exams to EMR and PACS
- Creates a duplicate set of images for each billable exam in PACS
# Bedside Order Placement

## E-FAST

### Billing

**Request billing? (attendings only)**
- ☐ yes, exam(s) selected below
- ☐ no
- ☐ resident only

### Request Billing for Selected Exams

#### Diagnostic
- ☐ abdomen
- ☐ transvaginal ob
- ☐ aorta
- ☐ echo
- ☐ renal
- ☐ ocular
- ☐ thorax
- ☐ bladder volume only
- ☐ transabdominal ob
- ☐ gallbladder

#### Procedural
- ☐ vascular access
- ☐ needle guidance
- ☐ breast drainage
- ☐ pericardiocentesis

#### Soft Tissue
- ☐ extremity right
- ☐ torso below diaphragm
- ☐ axilla right
- ☐ infant hip
- ☐ extremity left
- ☐ breast right
- ☐ axilla left
- ☐ torso above diaphragm
- ☐ breast left
- ☐ head and neck
QPath Bedside Documentation

### Indication(s) for Exam
- **trauma code**
- dyspnea
- hypotension
- blunt thoracic trauma
- chest pain
- educational
- penetrating thoracic trauma
- hypoxia
- Other

### E-FAST

#### Interpretation (Full Report in EMR Documentation)

- **Hemoperitoneum / Ascites**
  - Absent
  - Ruq
  - Lq
  - Pelvis
  - Indeterminate

- **Pericardial Effusion**
  - Absent
  - Present
  - Indeterminate

- **Hemothorax / Pleural Effusion**
  - Absent
  - Right
  - Left
  - Both
  - Indeterminate

- **Pneumothorax**
  - Absent
  - Right
  - Left
  - Both
  - Indeterminate

- **Other**
Physician Ends Exam
QPath Network Communication
Cerner Technical Fee Orders

<table>
<thead>
<tr>
<th>Order Name</th>
<th>Status</th>
<th>Date/Time</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED· Vital Signs</td>
<td>Ordered</td>
<td>08/26/15 9:58:02</td>
<td>PRN Ordered by Discrn Expert.</td>
</tr>
<tr>
<td>Request Discharge Event with Discharge Medication</td>
<td>Ordered</td>
<td>08/26/15 12:17:22</td>
<td>Ordered by Discrn Expert.</td>
</tr>
<tr>
<td>ED Allergy and Medications</td>
<td>Completed</td>
<td>08/26/15 9:58:02</td>
<td>Ordered by Discrn Expert.</td>
</tr>
<tr>
<td>Contact Isolation - Resistant Organism</td>
<td>Completed</td>
<td>08/26/15 9:58:02</td>
<td>Patient has had this before, once - last reported 05/22/2012 16:55 Methicillin Resistant Staph aureus Manly. Ordered by Discrn Expert.</td>
</tr>
<tr>
<td>ED Plan of Care at Discharge</td>
<td>Ordered</td>
<td>08/26/15 9:58:12</td>
<td>Ordered by Discrn Expert.</td>
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<tr>
<td>CBC with Diff</td>
<td>Completed</td>
<td>STAT, 08/26/15 10:13:00</td>
<td>Source Blood, Universal Precautions, Nurse Collect, Print Label By Order Location, Step 0.</td>
</tr>
<tr>
<td>Troponin T Blood Level</td>
<td>Completed</td>
<td>STAT, 08/26/15 10:13:00</td>
<td>Source Blood, Universal Precautions, Nurse Collect, Print Label By Order Location, Step 0.</td>
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<tr>
<td>Comprehensive Metabolites</td>
<td>Completed</td>
<td>STAT, 08/26/15 10:13:00</td>
<td>Source Blood, Universal Precautions, Nurse Collect, Print Label By Order Location, Step 0.</td>
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<td>Lipoase Blood Level</td>
<td>Completed</td>
<td>STAT, 08/26/15 10:13:00</td>
<td>Source Blood, Universal Precautions, Nurse Collect, Print Label By Order Location, Step 0.</td>
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<tr>
<td>DR Chest 2 View Frontal a...</td>
<td>Completed</td>
<td>Chest pain, trauma 1 month ago with rib frx, excr ptxs, pnc, contusion, 08/26/15 10:13:00, Now, Stretcher, Universal Precautions, 08/26/15 10:13:00.</td>
<td></td>
</tr>
<tr>
<td>EKG</td>
<td>Completed</td>
<td>08/26/15 9:59:00</td>
<td>STAT, chest pain, Universal Precautions, Stretcher. 08/26/15 9:59:00.</td>
</tr>
<tr>
<td>Sodium Chloride 0.9% w/...</td>
<td>Completed</td>
<td>08/26/15 10:13:00</td>
<td>100 mL/hr, Start: 08/26/15 10:13:00, 10 hour(s).</td>
</tr>
<tr>
<td>HYDROMorphine (HYDROMorphine IV)</td>
<td>Ordered</td>
<td>08/26/15 10:13:00</td>
<td>1 mg is equal to 1 mL IV push, q 10 min. NOW, PRN severe pain. Start: 08/26/15 10:13:00, 3 dose(s). Stop: Limited #. To be used for severe pain, pain score 7-10 or per patient description. maximum 3 mg.</td>
</tr>
<tr>
<td>acetaminophen-hydroco...</td>
<td>Prescribed</td>
<td>08/26/15 10:13:00</td>
<td>1 tab(s), PO, q8hr, PRN for pain, x 3 days(s), P 12 tab(s), 0 Refill(s)</td>
</tr>
</tbody>
</table>
### Triage/Initial Assessment Documentation

- **Chief Complaint:** R IJ, & J are f, & Pt has her jaw wired shut from a MVC, Pt woke up this am with chest pain & neck pain, admits to s/p, denies fevers or chills
- **Airway/Breathing ED Triage:**
- **Circulation ED Triage:** Skin warm dry, periph pulse 88 regular, cap refill 2-3 sec
- **Disability/Cognitive ED Triage:**
- **Alert:** moves all extremities, pupils 3, responds to commands
  - **Triage Assessment:** pt crying & restless during triage, denies n/v/d
  - **Weight:** 210 lbs
  - **Height:** 6 ft
  - **BP:** 120/80
  - **Heart Rate:** 88
  - **Respirations:** 20
  - **Pain Scale Used:** Numeric (0-10)

### Ambulatory Problems (EPIC)
- No problems found in Epic

### Ambulatory Medications (EPIC)
- No Medications found in Epic

### Surgical Histories
- No surgical history found.

### Labs

#### Primary Results (2)

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
<th>Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucose Lvl</td>
<td>90</td>
<td>09/05/15 10:24</td>
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<tr>
<td>WBC</td>
<td>6.21</td>
<td>09/05/15 10:24</td>
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</tbody>
</table>

#### Chemistry - Routine (17)

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
<th>Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Lvl</td>
<td>144</td>
<td>09/05/15 10:24</td>
</tr>
<tr>
<td>Potassium Lvl</td>
<td>4.0</td>
<td>09/05/15 10:24</td>
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<tr>
<td>Chloride</td>
<td>103</td>
<td>09/05/15 10:24</td>
</tr>
<tr>
<td>HCO3</td>
<td>25</td>
<td>09/05/15 10:24</td>
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### Vital Signs

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Temp</td>
<td>36.7</td>
</tr>
<tr>
<td>HR</td>
<td>80</td>
</tr>
<tr>
<td>Total Respiration</td>
<td>14</td>
</tr>
<tr>
<td>BP</td>
<td>124/78</td>
</tr>
<tr>
<td>Pulse Oximetry</td>
<td>99</td>
</tr>
</tbody>
</table>

### PACS Images

- **Radiology:**
  - **CT Chest 2 View Frontal and Lateral:**
    - Blunt trauma, chest pain, shortness of breath, 08/26/15 10:17:09, Now, Bedside, Universal Precautions, 08/26/15 10:17:09
  - **ED Bed US Echo:**
    - Blunt trauma, chest pain, shortness of breath, 08/26/15 10:17:09, Now, Bedside, Universal Precautions, 08/26/15 10:17:09
  - **ED Bed US Thorax:**
    - Blunt trauma, chest pain, shortness of breath, 08/26/15 10:17:09, Now, Bedside, Universal Precautions, 08/26/15 10:17:09
Cerner ED Summary Page

Hyperlink directly to review images on PACS in minutes.
Increased Transparency
Reason For Exam
blunt trauma

Findings
Spectrum Health
Exam Date: 5/14/2015
Exam Type: FAST
Operator: Keller, Duke
Attending: Kooistra, Joshua

Worksheet: E-FAST
Billing:
Request billing? (attendings only): yes, exam(s) selected below
Request Billing for Selected Exams:
  Diagnostic: abdomen, echo

Indication(s) for Exam:
  blunt trauma

Interpretation (Full Report in EMR Documentation):
  Hemoperitoneum / Ascites: absent
  Pericardial effusion: absent
  Submit exam for QA: yes

Enhanced professional fee billing and documentation!
### Missing Documentation

<table>
<thead>
<tr>
<th>Exam Type</th>
<th>Operator</th>
<th>Attending</th>
<th>Review</th>
<th>Images</th>
<th>Clips</th>
<th>Audio</th>
<th>User group</th>
<th>QA Status</th>
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<tr>
<td>All</td>
<td>All</td>
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<td>All</td>
<td>All</td>
<td>All</td>
<td>All</td>
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<tr>
<td>ECHO/IVC</td>
<td>Coss, Catherine</td>
<td>Flannigan, Matthew</td>
<td>N/A</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>Resident</td>
<td>Pending</td>
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<td>GB</td>
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<td>Flannigan, Matthew</td>
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<td>6</td>
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<tr>
<td>OB / Gyn</td>
<td>Shake, Alisha</td>
<td>Riley, Brad</td>
<td>N/A</td>
<td>3</td>
<td>11</td>
<td>0</td>
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<td>OB / Gyn</td>
<td>Coss, Catherine</td>
<td>Flannigan, Matthew</td>
<td>N/A</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>Resident</td>
<td>Pending</td>
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<tr>
<td>Transvaginal OB</td>
<td>Coss, Catherine</td>
<td>Flannigan, Matthew</td>
<td>N/A</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>Resident</td>
<td>Pending</td>
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<tr>
<td>FAST</td>
<td>Buck, Lauren</td>
<td>Mikula, Gary</td>
<td>N/A</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>Resident</td>
<td>Pending</td>
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</tbody>
</table>
### Countermeasures

Weekly emails to physicians with missing documentation

<table>
<thead>
<tr>
<th>Exam Type</th>
<th>Operator</th>
<th>Attending</th>
<th>Review Images</th>
<th>Clips</th>
<th>Audio</th>
<th>User group</th>
<th>QA Status</th>
<th>Category</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAST</td>
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<td>N/A</td>
<td>N/A</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>Pending</td>
<td>All</td>
<td>FIN / Worksheet</td>
</tr>
<tr>
<td>FAST</td>
<td>Chapin, Nicholas</td>
<td>N/A</td>
<td>N/A</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>Pending</td>
<td>FIN / Worksheet</td>
<td></td>
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<tr>
<td>Proc Guid</td>
<td>Vryhof, Daniel</td>
<td>Poortenga, Scott</td>
<td>N/A</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>Resident</td>
<td>Pending</td>
<td>FIN / Worksheet</td>
</tr>
<tr>
<td>OB / Gyn</td>
<td>Barnes, Mariah</td>
<td>N/A</td>
<td>N/A</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>Resident</td>
<td>Pending</td>
<td>FIN / Worksheet</td>
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<td>FAST</td>
<td>N/A</td>
<td>Hall, Mark</td>
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<td>0</td>
<td>3</td>
<td>0</td>
<td>Pending</td>
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<tr>
<td>OB / Gyn</td>
<td>Badour, Joshua</td>
<td>Singh, Matt</td>
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<td>2</td>
<td>0</td>
<td>Resident</td>
<td>Pending</td>
<td>FIN / Worksheet</td>
</tr>
</tbody>
</table>
Results

Technical Fee Orders

- QPath Order (Mar 2015 – Feb 2016): 3976
- Clinical + Educational Exams: 7033 vs. 7383 (+5%)

Net Result: 96% increase in order capture

PMID: 28646595
Significant improvements to physician workflow!

- Immediate scanning - no pre-exam order
- Bedside documentation
- Bedside order placement
- Improved billing clarity ... hypotensive exam

Improved interspecialty communication

Improved technical and professional fee capture
Challenges

- Information into incorrect fields ➔ RegEx or Qview
- Inability to send QA feedback to EMR
- Lack of automated incomplete documentation reports
- Transfer process failures?
- Patient with multiple exams
  - Each exam has its own billing worksheet: TA OB and TV OB or E-FAST
  - 1st billing worksheet triggers QPath automation
  - Attending and operator fields do not consistently match
Regional Departments

Phase II (completed: Jan 2016)
- Zeeland- 20,000 combined visits/ year
- Gerber- 25,000 combined visits/ year
- United- 25,000 combined visits/ year
- Big Rapids- 25,000 combined visits/ year
- Reed City- 20,000 combined visits/ year
- Kelsey- 10,000 combined visits/ year

Phase III (projected completion: Jan 2018)
- Pennock- 20,000
- Ludington- 25,000
Questions?