System-Wide Point of Care Ultrasound Initiative at Alice Peck Day Memorial Hospital

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Problem Statement
- Point of care ultrasound (POCUS) is used by many departments at Alice Peck Day Memorial Hospital (APDMH).
- There is currently no standard process for POCUS credentialing, performance, documentation, education, quality assurance, image storage, infection prevention, or billing in place.

Aim
- Lead a multidisciplinary effort to develop APDMH POCUS standards, document our experiences, and share with others through an agnostic POCUS website.

Background
- Ultrasound is commonly used at the point of care to guide procedures and answer largely dichotomous diagnostic questions.
- POCUS has important implications in improving both patient care and safety.
- Although previously restricted to individual departments, the increasing use of POCUS has driven it to now become a hospital system-wide initiative.
- Lack of standardization has the potential for profound impacts on suboptimal and variable patient care and safety, education and provider satisfaction, education of trainees, equipment and maintenance costs, lost billing opportunities, medicolegal liability, and potential Joint Commission implications.
- It is a rapidly-evolving initiative that has garnered interest from medical centers around the US.
- However, few hospitals have successfully put it into practice in part due to the novelty of this broad based and complex initiative.
- There is currently no structure or template to follow for individual hospital systems to champion this initiative, despite the necessity for guidelines to ensure effective use. (Strony, 2018)
- With this in mind, we set out to intervene locally, document our experiences, and pioneer a path forward for others to employ this initiative.
- To better understand the unique needs of other interested hospital systems, we surveyed the American College of Emergency Physicians (ACEP) with questions we developed over the course of our project at APDMH.

Methods
- Used the DMAIC (Define, Measure, Analyze, Improve, Control) model from Six Sigma to create process and standards for POCUS at APD.
- Developed an interdisciplinary team consisting of individuals from: Hospital Leadership, Board of Governors, Infection prevention, Credentialing, Professional Development, Finance, Clinical departments, and IS/IT.
- Measured success as a metric of completed milestones and pre-determined goals.
- Surveyed the American College of Emergency Physicians (ACEP); 70 responses, 28 excluded due to exclusion criteria*; 42 respondents.
- Sharing process development resources with others (www.pocusalliance.com).

Flow Chart of System-Wide POCUS Initiative

Accomplishments at APDMH

Table 1: abbreviations are as follows; PI (peripheral intravenous line); EM (emergency medicine); Ortho (Orthopedics); SM (sports medicine); DH (Dartmouth-Hitchcock Health); LLE (light level disinfection); US (ultrasound). Elsevier is a video module platform used for training and competencies. Knack is a centralized document database, and Synchronicity is the image storage platform.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Goal #1</th>
<th>Goal #2</th>
<th>Goal #3</th>
<th>Goal #4</th>
<th>Goal #5</th>
<th>Goal #6</th>
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</thead>
<tbody>
<tr>
<td>Education</td>
<td>EM/Opto/SM: Guidelines in all location</td>
<td>EM/Opto/SM: Providers complete required training modules</td>
<td>Self registration aid in ED</td>
<td>3 AV ED Nurses trained in Ultrasound PIV</td>
<td>EM/Opto/SM: nurses, techs, Ph probe cleaning</td>
<td>Medicine thoracis + pericardiens</td>
</tr>
<tr>
<td>Credentialing</td>
<td>Developed EM/Opto special privileging</td>
<td>EM + General POCUS specific credentialing</td>
<td>EM/Opto/SM completed Knack profiles</td>
<td>Investigate AP applications + credentialing</td>
<td>Confirm new incoming ED providers</td>
<td>Credentialing Ortho AP Providers</td>
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<tr>
<td>Equipment + Purchasing</td>
<td>All machines inventoried and accounted for</td>
<td>Formalized relationship w/ EM/Opto equipment committee</td>
<td>Developed online US company tool</td>
<td>2 New US machines for Ortho</td>
<td>Probe cleaning tags on all machines</td>
<td>Support purchasing needs as they arise</td>
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<tr>
<td>Billing + Coding</td>
<td>Collected projected number of cases</td>
<td>Analytic CPT codes and charges</td>
<td>Return of investment projections for EM/Opto for 2021</td>
<td>Run 6-month report and compare to projected</td>
<td>Support synchrony</td>
<td>Smart phone education</td>
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<td>Image Storage</td>
<td>Synchronicity + Knack proposal</td>
<td>Merging US studies from injectable tech analysis and storing and sharing of EM/Opto images on enterprise archive</td>
<td>Negotiate Synchronicity contract</td>
<td>Confirm wired connectivity</td>
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<tr>
<td>Infection Prevention</td>
<td>Handized US probe cleaning standards</td>
<td>IP probe + machine cleaning module review</td>
<td>Continue High Level disinfection process</td>
<td>Attach Surigee holders</td>
<td>Assign cleaning vials to all clinical POCUS users</td>
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Results of ACEP Survey

SWPOCUS is a rapidly-evolving initiative at hospitals around the country with important patient safety, systems process, and billing implications that is made possible with institutional attention, proper guidance, and disseminated information.

Citations