

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



Gus Hendrick<sup>1</sup>, Zachary Soucy, DO<sup>1,2</sup>

<sup>1</sup>Geisel School of Medicine, Dartmouth College, Hanover, NH

<sup>2</sup>Department of Emergency Medicine, Dartmouth-Hitchcock Medical Center, Lebanon, NH

## 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

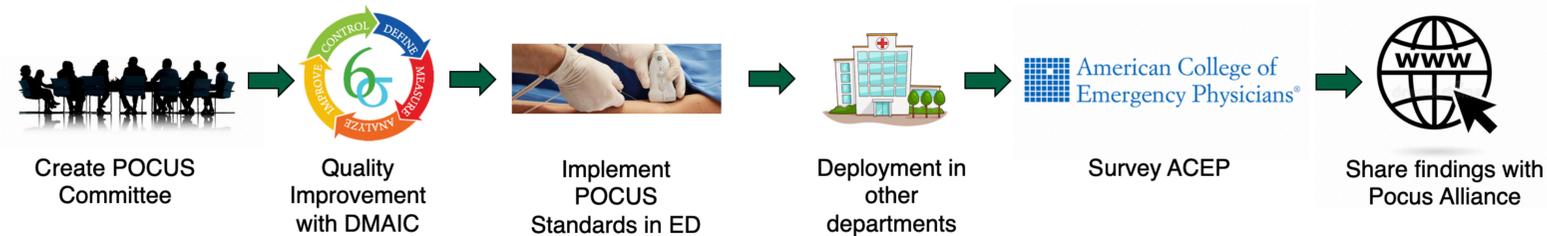
## Aim

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

## Flow Chart of System-Wide POCUS Initiative



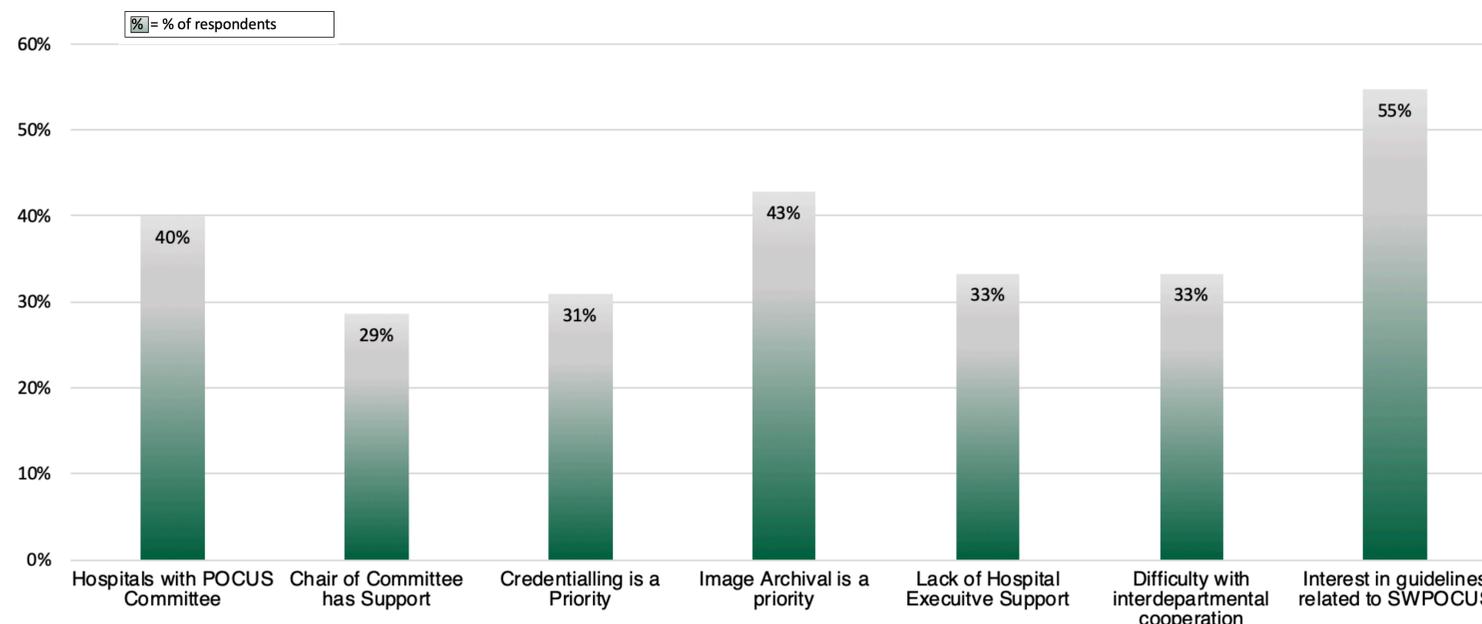
## Accomplishments at APDMH

Table 1	Goal #1	Goal #2	Goal #3	Goal #4	Goal #5	Goal #6
<b>Education</b>	EM/Ortho/SM: Guidelines in central location	EM/Ortho/SM: Providers completed cleaning modules	Self-registration aid in Elsevier	3 APD ED Nurses trained in Ultrasound PIV	EM/Ortho/SM: nurses, techs, PA probe cleaning	Medicine: thoracentesis + paracentesis
<b>Credentialing</b>	Developed SM/Ortho special privileges	EM + General POCUS specific credentialing	EM/Ortho/SM: completed Knack profiles	Investigate AP applications + credentialing	Confirm new incoming ED providers	Credentialing Ortho AP Providers
<b>Equipment + Purchasing</b>	All machines inventoried and accounted for	Formalized relationship w/ DHH Rads equipment committee	Developed online US comparison tool	2 new US machines for Ortho	Probe cleaning tags on all machines	Support purchasing needs as they arise
<b>Billing + Coding</b>	Collected projected number of scans	Analysis: CPT codes and charges	Return of Investment projections for EM/SM/Ortho for 2021	Run 6-month report and compare to projected	Support synchronicity	Smart phrase education
<b>Image Storage</b>	Synchronicity + Fujifilm proposal	Migrating US studies from Qpath	Tech analysis and storing of EM/SM/Ortho images on enterprise archive	Negotiate Synchronicity contract	Confirm wired connectivity	
<b>Infection Prevention</b>	Finalized LLD probe cleaning standards	IP probe + machine cleaning module review	Continue High Level disinfection process	Attach Saniwipe holders	Assign cleaning video to all clinical PoCUS users	

= accomplished  
 = in progress

**Table 1:** abbreviations are as follows; PIV (peripheral intravenous line); EM (emergency medicine); Ortho (Orthopedics); SM (sports medicine); DHH (Dartmouth Hitchcock Health); LLD (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

## Results of ACEP Survey



## 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](http://www.pocusalliance.com)).

## Summary

- Success at APDMH was possible as a result of POCUS acknowledgment, top-down leadership, organized approach to problem solving, and intense interdepartmental cooperativity.
- Major institutions across the U.S. are pursuing SWCUS and are struggling with similar issues.
- Through trialing a variety of processes, we hope to answer some of the questions posed by other institutions and pave a stepwise path forward for SWPOCUS
- We are sharing our experiences on [www.pocusalliance.com](http://www.pocusalliance.com)

## Conclusion

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

Strony et al. Systemwide Clinical Ultrasound Program Development: An Expert Consensus Model. West J Emerg Med. 2018 Jul;19(4):649-653.