Point of Care Ultrasound as a Gateway to Enterprise Imaging

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Background/Problem Being Solved

Indiana University Health is a 15 Hospital integrated healthcare system located in central Indiana. An enterprise imaging archive was purchased to support the growing need for radiology and cardiology PACS storage. The archive also was intended to support other forms of clinical imaging, but a clearly defined strategy beyond PACS had not been developed. Centralized and permanent storage of Point of Care Ultrasound (POC US) was identified as a pilot program for enterprise imaging at IU Health. System-wide access to POC US images was recognized as a way to improve patient care and standardize the practice across the institution.

Interventions

A cross-functional workgroup consisting of physicians from multiple clinical specialties using POC US, technical expertise from IU Health Information Services, and a project manager was formed to develop a system-wide solution. Three working subcommittees - Credentialing, Workflow, and Billing - developed the necessary framework to implement image acquisition, storage, reporting, and technical billing.

Outcome

The credentialing committee created model POC US credentialing documents for Pulmonary Critical Care and Emergency Medicine. This included both initial credentials and re-credentialing requirements. The workflow committee examined the pros and cons of orders-based versus encounters-based imaging and elected to pursue encounters-based workflow. This necessitated the development and implementation of "reflex-orders" by system EMR personnel. The billing subcommittee implemented the necessary system changes to facilitate billing for the exam technical component.

A small pilot was implemented December 2016 at a 360-bed tertiary referral community hospital spearheaded by a Pulmonologist. The program quickly expanded to include two additional physicians. Over 2017, 547 studies were performed resulting in $746,099 in new technical revenue. This resulted in $49,053 of net new actual dollars because of DRG payments. For the first time, POC US images linked to reports became accessible in the EMR using the Enterprise Imaging Viewer. Based on the initial pilot, additional resources were obtained to expand the program which includes further spread of POC US across the enterprise as well as diabetic retinal imaging in Primary Care. Success with POC US enabled the creation of a larger Enterprise Imaging Governance Committee and a smaller Enterprise Imaging Strategic Committee. These committees will develop the system strategy and implement the wider application of clinical image storage across the enterprise.

Conclusion

Point of Care US can be used as a low risk venture to facilitate the development of an Enterprise Imaging program. The implementation of infrastructure to enable POC US image acquisition, storage, and reporting requires the creation of a nominal governance group. This group can become the nidus of a larger enterprise imaging governance structure.

Statement of Impact

Based on the success of our POC US pilot, our hospital system approved the creation of Enterprise Imaging Strategic and Governance Committees and resources to expand the use and application of a system enterprise archive.

Keywords

enterprise imaging, point of care ultrasound, encounters-based imaging