(MACEs) in NSTEMI patients. **Methods:** A total of 1044 patients with NSTEMI patients in hospital from January 2019 to August 2022 were consecutively enrolled. The median follow-up time was 26 (IQR: 18-38) months. The patients were divided into two groups according to whether or not they were presence of MACEs. Cox proportional hazards regression was used to analyze the independent predictors of MACEs. The value of the incremental model to the GRACE was analyzed by calculating the C-index of the two models. The K-M method was used to draw the cumulative risk curves of above variables. **Results:** Adjusted multivariate cox proportional hazards regression showed compared with patients with 1 lesion, with 2- and 3 -vessel lesions had a higher risk of MACEs (HR= 3.108 and 3.662, p < 0.001). And chronic kidney disease (CKD) (HR=1.840, p=0.008), P2Y12 receptor antagonist (HR=0.479, p < 0.001) and left atrial volume index (LAVI) (HR=1.041, p=0.006) were also independent risk factors for MACEs in NSTEMI patients. An incremental model combining the above independent predictors and the GRACE increased the prediction of the GRACE for MACEs (C-index: 0.607 VS 0.682, p<0.001). The AUC of incremental model for predicting MACEs was larger than that of GRACE in each year of follow-up (1 year: 0.592 VS 0.692; 2 years: 0.618 VS 0.694; 3 years: 0.634 VS 0.692; 4 years: 0.665 VS 0.700). The K-M curve showed that the cumulative risk of MACEs was higher in NSTEMI patients with CKD, no P2Y12 receptor antagonist, more affected vessels and higher LAVI. **Conclusion:** CKD, P2Y12 receptor antagonist, number of affected vessels and LAVI are independent predictions of MACEs in NSTEMI patients. The addition of these variables can improve the prediction of GRACE.

P4-11

Improving Efficiency in the Inpatient Echo Lab: A Quality Improvement Project

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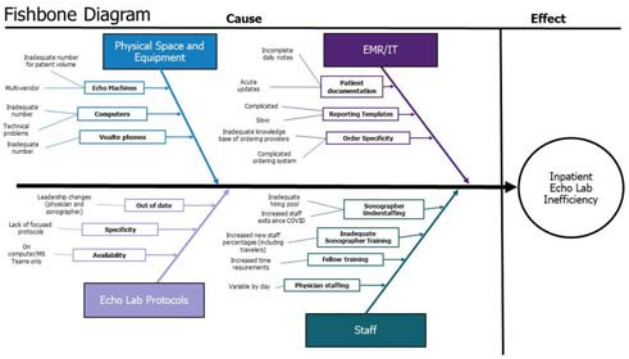
Background: Pediatric echocardiograms are performed daily on inpatients with the largest volume in the Cardiac Care Unit (CCU). Precise order indications are critical to ensuring correct imaging is completed. Timely completion of echocardiograms is important for maintaining echo lab efficiency and productivity. Using a fishbone diagram, limitations in the ordering system and inadequate ordering provider knowledge base were identified as areas for improvement to increase echo lab efficiency.



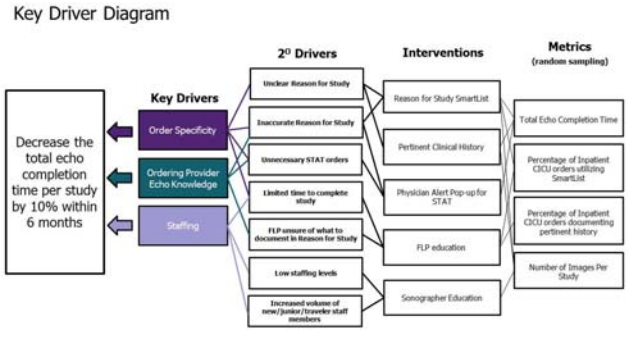


Table 1 Data from baseline and 2 PDSA cycles including notation of change from baseline on primar

	Baseline	Cycle 1	Cycle 2	Change from basleine
Echo Completion Time (min)	68	61	54	-20%
Buffer/Waste Time (min)	32	24	16	-50%
Average images per study	106	115	107	0%
Average images per minute	2.9	2.5	3.5	+20%
Documentation of pertinent clinical history	84%	96%	99%	+18%
Average weekday CCU echo volume	7.9	6.1	5.4	-30%
Average weekday inpatient echo volume	16.5	18.2	16.7	+1%

Methods: Using a key driver diagram and other quality improvement methodologies, an improvement project was undertaken with a smart aim of decreasing the total echo completion time by 10% within 6 months. Primary process and outcome metrics included total echo completion time, pre-echo buffer time, and documentation of pertinent clinical history in the order. Cycle 1 implemented electronic order updates to provide increased specificity with a quick-select list of common reasons for echocardiograms. Cycle 2 implemented a physician alert for STAT studies to reduce the number of inappropriate orders. **Results:** Full results in Table 1. Total echo completion time decreased by a total of 20% by the end of Cycle 2. This correlated with a decrease in the pre-echo buffer time of 50% without any significant changes in the number of images obtained per study or the daily inpatient echo volume. The documentation of pertinent clinical history increased by 18% in the same timeframe. **Conclusions:** Inpatient echo lab efficiency significantly improved throughout the course of this improvement project. Ongoing efforts for sustaining these improvements are in process in subsequent PDSA cycles as well as evaluation for any unintended consequences from the changes.

P4-12

Real-World Clinical Validation of an Artificial Intelligence Pipeline for Automated Assessment of LV Function

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Background: Accurate measurements of left ventricular ejection fraction (LVEF) and global longitudinal strain (GLS) are important for the diagnosis and management of heart failure with preserved ejection fraction (HFpEF). Sonographers often acquire multiple clips and retrospectively measure the most optimal image and readers may re-trace measurements. This leads to increased exam time, higher chance of musculoskeletal injuries, and measurement variability. Interpretation of TTE with the assistance of artificial intelligence may address these challenges. We aimed to assess whether a fully automated, FDA-cleared pipeline utilizing artificial intelligence algorithm (EchoGo Heart Failure, Ultromics Ltd) could accurately and consistently measure LV parameters as part of the HFPEF workup when compared to real-world interpretation. **Methods:** 143 clinical echocardiograms that were screened positive for HFpEF by the algorithm were included in the study. LVEF was measured manually using the Biplane method of discs and GLS was measured by speckle tracking analysis of the two, three, and four chamber apical views. Manual measurements were compared to those performed by the algorithm. **Results:** Of the 143 patients, 53% were male and consisted of both inpatient and outpatient TTEs. Mean difference in LVEF was 1.12% with standard deviation of 7.33%; t-testing revealed a nonsignificant difference between measurements. (t-statistic = 1.43, p-value = 0.16). However, mean difference in GLS was -2.33% with standard deviation of 4.99%; t-testing revealed that this mean difference was statistically significant (t-statistic -4.35, with p-value < 0.05). There a was moderate concordance correlation coefficient between the manual and automated measurements for LVEF (0.56) and GLS (0.45). **Conclusions:** Our results indicate that an artificial intelligence algorithm that automatically identifies images and provides GLS and LVEF in HFpEF patients is a promising tool that may address sonographer and physician workflow. Continued efforts should be made to increase agreement between manual

Parameter	Mean Difference	Standard Deviation of Differences	T-Statistic	P-Value	Concordance Correlation Coefficient
LVEF (%)	1.12	7.33	1.43	P=0.16	0.56
GLS (%)	-2.33	4.99	-4.35	P < 0.05	0.45

and automated measurements. Using this technology can help to improve consistency and reduce variability LVEF and GLS between readers, may reduce sonographer post-processing time, and improve reporting on our HFpEF patients.

P4-13

Improving Daily Echo Lab Workflow Utilizing Quality Improvement Methodologies and Introducing a Graduated Approach to Echocardiographic Image Review

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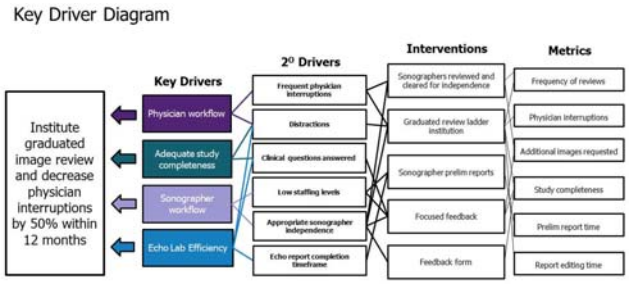
Background: Complete echocardiographic assessment is vital to pediatric echo laboratories. Previously, physician image review prior to patient discharge increased study completeness in our echo lab. However, an unintended consequence over time was decreased sonographer independence and increased distractions for reporting physicians. These issues were identified as negatively impacting daily echo lab workflow, so a subsequent quality improvement study was designed to address them. **Methods:** Using quality improvement methodologies, an improvement project was designed to institute a graduated image review ladder for sonographers with a goal of decreasing physician interruptions and increasing appropriate sonographer independence (Figure 1). Sonographer studies were independently reviewed by the physician study team, and they were advanced on the image review ladder when deemed independent. A balancing measure of study completeness was employed from an independent review of images by 2 physicians grading completeness by national quality standards. **Results:** Data was collected from 60 patients at baseline and 63 patients after cycle 1 utilizing outpatient first time complete echocardiograms. Complete data in Table 1. Required image reviews decreased from 82% to 66%. Interruptions decreased from 34% to 14%. Preliminary reports continued to predominantly require no edits or only minor editing prior to finalization. Echo completeness scores were essentially unchanged from 28.45 at baseline to 28.3 after interventions. **Conclusions:** The percentage of studies requiring image review and interruptions for physicians improved during the study period. This improvement occurred despite the addition of 6 junior sonographers to the echo lab staff who continued to require image review, including needing additional imaging after review and increased prelim reporting time. Additional PDSA cycles are being utilized for continued clearance of junior sonographers and expansion of this process to the inpatient echo lab.



P4-14

Effective Use of a Pediatric Cardiology Echocardiography Mastery Learning Curriculum in Mwanza, Tanzania

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Background: There are currently no pediatric cardiologists at Bugando Medical Center (BMC) in Mwanza, Tanzania, despite a large burden of congenital and acquired heart disease in children. The pediatric residents are the front-line, in-patient and out-patient cardiology providers without subspecialty expertise ,and limited access to focused education in pediatric echocardiography. **Methods:** The target group was BMC pediatric residents in year 2 and 3 of pediatric residency who participated in the pediatric echocardiographic workshop. We conducted a baseline comfort survey in performing and interpreting echocardiograms and a pretest in echocardiography knowledge. This was followed by an in-person, 5-day, hands-on, echocardiography workshop with focus on obtaining basic pediatric 2-dimensional echo images from five imaging planes and the ability to recognize abnormal pediatric echo images from these imaging planes. A post skill test was performed to assess each resident's ability to perform an echo by obtaining a standard echo image from each imaging plane, and a post test given to assess their interpretation skills by being able to recognize normal vs. abnormal echocardiographic images. **Results:** The baseline comfort survey (n=20) showed that only 10% (n=2) felt very comfortable using an echocardiography machine and interpreting images. Pretest knowledge test scores (n=30) showed a mean score of 55% with a standard deviation of 15%. 24 pediatric residents participated in the echocardiography workshop. Based on the skills post-test, 22/24 (91%) trainees felt very comfortable using an echo machine and were able to obtain all five imaging planes within 3 attempts, 9/24 in only 2 attempts and 1/24 in a single attempt. The average score on interpreting images, i.e., recognizing a normal vs. abnormal echo image was 80% (24/30, SD 2.2). Of these, the average score in recognizing an abnormal image was 85%(17/20, SD 1.6). **Conclusion:** An intense 5 -day echocardiography workshop using rapid cycle deliberate practice increased the knowledge and skill in performing and interpreting a basic pediatric echocardiogram for novice trainees in a resource limited setting.

Data from process and outcome measures at baseline and after interventions.

	Baseline	Cycle 1
Total patients (n)	60	63
Scan time (min)	39.06	35.62
Sonographer prelim report (min)	8.55	15.93
Reviewed studies	82%	66%
In person reviews	96%	97%
Additional imaging recommended	22%	33%
MD review (min)	4.43	4.35
MD report (min)	10.57	12.52
Reporting interrupted	34%	14%
Average times interrupted (n)	1.5	1.3
No prelim report edits	43%	35%
Minor prelim report edits	57%	61%
Major prelim report edits	0%	4%
Echo completeness score (out of 30)	28.45	28.3

P4-15

Empowering Cardio-Oncology: Innovations, Achievements, and Future Frontiers of the Cardio-Oncology Program and Task Force in a Large Community Hospital

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Background: In 2022, the USA had 18.1 million cancer survivors. Cardiotoxicity ranks 2nd in survivor morbidity/mortality causes. Northside stands out with an annual caseload of over 14,000 cases, establishing itself as a prominent national cancer program. The system has created a Cardio-Oncology (CO) task force comprising an alliance of oncologists, cardiologists, hematologists, pharmacists, navigators, researchers, and support providers. The task force created the Northside CO Program for early identification, management, and follow-up of oncology patients at risk for cardiovascular issues due to cancer treatments (before, during, and after).This enhances cancer treatment and reduces cardiotoxicity in survivors. **Methods:** An electronic questionnaire was sent to Northside oncologists to assess the cardiology-oncology bridge need. In 2021, only ~8% felt "very high" knowledge; in 2023, ~25% did (Figure 1, A). In 2021, 41.6% were "somewhat" or "very comfortable" treating cardiac toxicities; in 2023, 100% were (Figure 1, B). The 2021 survey highlighted the need, and the 2023 survey showed the CO program's success. **Results:** The task force and program