



# MAYO CLINIC

## Expanding After-hours Access for Echocardiography Services

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**Background:** The Department of Cardiovascular Diseases (CVD) at Mayo Clinic Arizona (MCA) provides a full-range of echocardiography services to the Phoenix-metro area. Echocardiograms are complex 80 minute appoints in which a specially trained cardiac sonographer takes multiple ultrasound images of the heart. These images are interpreted by an echo-trained cardiologist to determine overall cardiac function. Overall demand for echocardiograms at MCA has steadily increased by six percent on average per year over the last five years while the physical footprint of the hospital Echo Lab has remained unchanged. It is common practice for outpatient echo labs to only operate during normal business hours. Due to space constraints the Echo Lab provided limited after-hour outpatient echo services until 7:00 pm on weekdays. With the increasing dynamic of patient consumerism as well as the growing demand for after-hours services, CVD practice leadership hypothesized that an expanded after-hours outpatient delivery model could help meet the increasing demand of working patients and allow the Echo Lab to better utilize their fixed capital assets and increase access.

**Objective:** To pilot expanded after-hours hospital outpatient echocardiography services while achieving the following objectives:

- Increase capacity and volumes of hospital-based outpatient echocardiograms
- Increasing access for patients while maintaining or improve payer mix
- Achieve a favorable financial impact

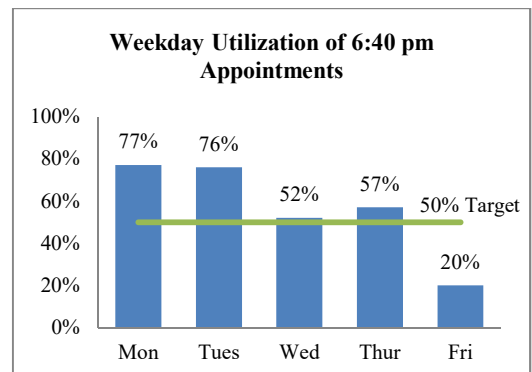
**Planning/Research Methods:** To prove this new pilot concept, CVD leadership received MCA leadership's approval to hire three incremental sonographer staff. Planning was conducted by Echo Lab leadership team which consisted of physician leadership, administration, and supervisors of the sonographer and nursing staff. After-hours services were defined as any appointments after 4:00 pm. With the additional staff the Echo Lab leadership team believed they could increase after-hours outpatient echo access by 225%. This could be done by increasing the number of 4:00 pm and 5:20 pm appointment slots and adding new 6:40 pm appointment slots Monday – Friday. This would extend hospital outpatient Echo Lab operations until 9:00 pm. Multiple stakeholder engagement meetings were held with echocardiography cardiologists and sonographer staff to inform them of the new late shift staffing model. Based on echo cardiologists' input a new late shift was created to cover the hours of 1:00 pm – 9:00 pm late shift and was combined with nightly call assignments. This required an additional 0.5 FTE of a cardiologist. Change management tools such as ADKAR (an acronym for Awareness, Desire, Knowledge, Ability, and Reinforcement) were needed to ensure the success of the proposed pilot. Prior to implementation, a FEA (an acronym for Financial Effect Analysis) of the proposed pilot was completed based on a sensitivity analysis for different fill rate scenarios to determine financial viability. Achieving a 50% fill rate would be the minimum threshold for success.

**Implementation Methods:** Physician and sonographer staff members were informed of the new shift six months in advance. New staff schedules were created and EHR calendar templates were updated. A soft go-live of the pilot was started in October 2018 with full implementation starting January 2, 2019 and lasting through May 31, 2019. Fill rates were tracked daily by the Echo Lab supervisor and volumes and demographic information was captured in the Echo Information Management System (EIMS) database.

**Results:** The pilot achieved or exceeded many operational and financial targets. However, the appointment utilization rates for Fridays were less than the 50% threshold and were subsequently discontinued. The success of this pilot confirmed that there is patient-consumer demand for after-hours echocardiography services. The expanded after-hours model was reinitiated in September 2019 and continued year-round in 2020.

Results of the January 2, 2019 –May 31, 2019 pilot included:

- After-hours echos increased by 679 (198% increase)
- Total hospital-outpatient echo volumes increased 36%
- Overall after-hour appointment utilization rate: 80%
- 6:40 pm appointment utilization rate: 56%
- 6:40 pm appointment demand varied by weekday
- Non-government patients accounted for 50.1% of all pilot patients compared to 44.0% for all echo patients
- 52% of 6:40 pm patients were under the age of 65 compared with only 43% for all other echo patients
- Late shift echos accounted for 27% of gross hospital Echo Lab revenue
- The increase in the number of after-hours echos accounted for 75% of the total increase in gross revenue for the MCA Echo Lab by October 2019



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