

# Kaizen Results in Drastic Transformations in Cardiac Services Unit

## Outcomes

- In total, the staff developed a total of **33% in staff time savings per patient** during the event, or nearly \$115,000 annually.
- The team was able to lower the required pre-procedure arrival time by 67 minutes. **This decreased the amount of patient time by 20%** prior to the procedure.

At a Tennessee medical center's cardiac services unit, time was the primary focus of quality for the patient. However, time was at a premium for the department. Saving time meant getting a diagnosis and a possible life saving procedure done quicker.

## The Problem

The department hinged around the preparation of the patient in the cardiac recovery area. The general policy was to have the patient arrive at the hospital *two-and-a-half hours* prior to the scheduled procedure. However, even with this much time, the department always seemed to be running behind schedule. Nurses would often have to double up with a patient to get them ready for the Cath, EP or Special Procedures Lab. Late-arriving doctor's orders and other patient documentation necessary prior to the initialization of the procedure would be routinely run to the procedure room from CRU to enable the process to continue.

Scheduling of the three, Cath, EP and Specials, was always cumbersome. The schedule was kept on a single hand written calendar that was passed from person to person as needed. Once, the

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"Bible" had gotten lost in the tube system and never found, resulting in weeks of people and doctors showing up for scheduled procedures of which the staff had no record.

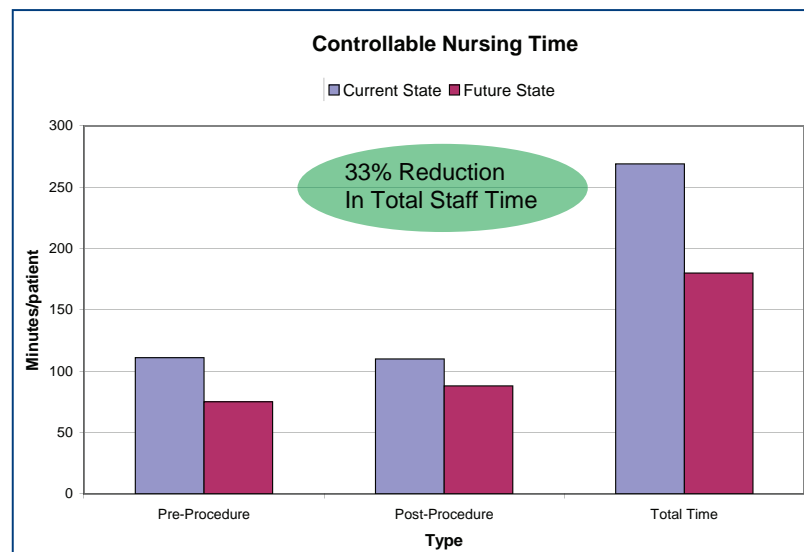
With the expected number of patients to rise from 10 to over 19 within one year and also opening a 23-hour care unit, urgent changes needed to take place.

## The Solution

A cross functional team of representatives from each Cardiac Services area met over five days to tackle the problems.

For the current state, the team fused observation forms and spaghetti diagrams to quantify the steps of each of the processes that comprised

the Current State Value Stream (CSVS). What the team found was surprising. From actual patient observations, even though the patient was told to be there 2.5 hours ahead of time, it was taking 2.65 hours on the average from the patient's arrival into the facility until the procedure was started. It was no wonder the staff always seemed like they were behind—they were!



The team decided to focus on the area of the CSVS that was more within their control. For the most part, that was the Cardiac Recovery Unit (CRU) itself. There, patients were presented for the procedure and prepped. When the procedure was over, they would usually return to the area until they were clinically ready to be released.

The team found that the biggest driver by far was the nursing assessment and care plan portion of the process. Since the area did not have bedside computer registration, the nurses would ask questions and write down the information on preprinted forms and then type the information into a computer. This alone represented 17 minutes of waste. The addition of bedside computers for patient assessment and plan of care would eliminate the waste completely.

The team was able to lower the required pre-procedure arrival time by 67 minutes. This decreased the amount of patient time by 20% prior to the procedure.

### The Outcome

The team was able to lower the required pre-procedure arrival time to 92 minutes, allowing for the policy to be changed to two hours. This decreased the amount of patient time by 20% prior to the procedure.

After all action items are completed, with the mix and volumes remaining unchanged, **the Cardiac Services Unit is expected to save over 89 minutes in nursing time per patient, or nearly \$115,000 annually.**

### CONTROLLABLE NURSING TIME IN MINUTES/PATIENT

Type	Current State	Future State
Pre-Arrival	48	17
Pre-Procedure	111	75
Post-Procedure	110	88
<b>Total Time</b>	<b>269</b>	<b>180</b>

### OTHER IDENTIFIED AREAS OF IMPROVEMENT:

- Using recommended 5cc blood specimen vials, lab processing time was a total of 8 minutes shorter.
- The constant moving of staff in and out of the patient prep area to find required supplies represented 8 minutes that caused the patient to be waiting unless two nurses were working together. The solution was to put bedside supplies in the prep area.
- Before each patient arrived, they had to be scheduled, patient procedure packs had to be pulled and every form needed a sticker with the patient account number located on it. The primary solution for much of this pre-arrival work was to start using the community scheduling module of existing software. At a push of a button, patient packs could be printed with the account numbers already on them.
- The time a patient spent in the post-procedure recovery area was mostly dependent on the type of procedure they had undergone. However, through process mapping, the team identified **110 minutes of controllable time** by the staff. Not only did the assessment and care plan have to be updated, but the post procedure vitals had to be monitored, recorded and entered into the system also, representing **17 minutes of wasted nursing time**. The team recommended acquiring mobile wireless computers on carts.