

## Patient Electrocution

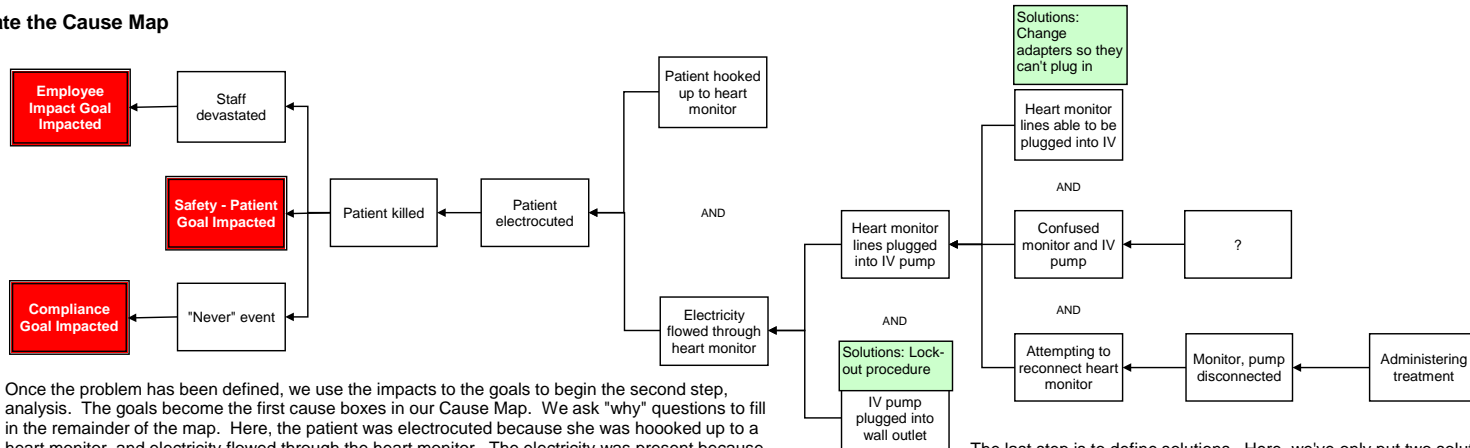
Patient death or disability associated with electric shock is one of the never events as defined by The Joint Commission. In order to reduce the occurrences of these unfortunate events, we can perform a root cause analysis on an event that has already occurred. This will allow us to apply the lessons learned to keep this type of event from happening at other facilities. A thorough root cause analysis built as a Cause Map can capture all of the causes in a simple, intuitive format that fits on one page.

### Step 1. Outline the Problem

<b>What</b>	Problem(s)	Patient electrocuted
<b>When</b>	Date	?
	Differences	Heart monitor plugged into IV pump
<b>Where</b>	Physical Location	Medical facility
	Work/Task Being Done	Heart monitoring
<b>Impact to the Goals</b>		
	<b>Safety - Patient</b>	Patient killed
	<b>Employee Impact</b>	Staff devastated
	<b>Compliance</b>	Never event

The first step to a root cause analysis is to define the problem. On an unknown date, a patient was electrocuted and killed while undergoing heart monitoring at a medical facility. The heart monitor was plugged in to an IV pump inadvertently. We put the incident in the context of the organization's goals: the patient safety goal was impacted because of the death of a patient; the staff was devastated, resulting in employee impact, and the compliance goal was impacted because this was a never event.

### Step 2. Analysis (Create the Cause Map)



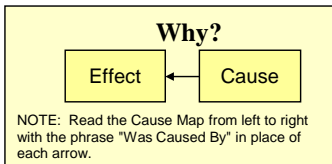
Once the problem has been defined, we use the impacts to the goals to begin the second step, analysis. The goals become the first cause boxes in our Cause Map. We ask "why" questions to fill in the remainder of the map. Here, the patient was electrocuted because she was hooked up to a heart monitor, and electricity flowed through the heart monitor. The electricity was present because the heart monitor lines were plugged into an IV pump, and the IV pump was plugged into the wall. The heart monitor lines were plugged into an IV pump because a staff member was attempting to reconnect the heart monitor and confused the monitor and the IV pump, and the heart monitor lines were able to be plugged in to the IV pump.

The last step is to define solutions. Here, we've only put two solutions, though more are possible. One is to change the adapters so that it isn't possible to plug the heart monitor into another piece of equipment. Another is to institute a lock-out procedure, so that other pieces of equipment in the room are de-energized (if possible) or tagged to prevent confusion.

### Cause Map Detail Level



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### Step 3. Solutions

Corrective Actions to be taken from this Incident that are Causally Related

No.	Cause	Action Item
1	Heart monitor lines able to be plugged into IV pump	Change adapters so they can't plug in
2	IV pump plugged into wall outlet	Lock-out procedure