Problem

What
When
Where

Problem(s)
Date
Different, unusual, unique
Facility, site
Task being performed

Unable to remove titanium ring on swollen finger
Unknown
Patient wearing titanium ring
Emergency room
Removing ring from injured finger

Impact to the Goals

Table: Cause "Why"

<table>
<thead>
<tr>
<th>Goal</th>
<th>Impact</th>
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</thead>
<tbody>
<tr>
<td>Patient Safety</td>
<td>Potential for finger tissue death</td>
</tr>
<tr>
<td>Patient Safety</td>
<td>Potential for additional finger injuries</td>
</tr>
<tr>
<td>Schedule/Operations</td>
<td>Treatment of patient delayed</td>
</tr>
<tr>
<td>Labor/Time</td>
<td>Additional effort required to remove patient's ring</td>
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</tbody>
</table>

1 Problem: Unable to remove titanium ring on swollen finger
2 Analysis: A patient came to the ER after his finger swelled following a soak in a hot tub. Normally, removing a ring from a swollen finger is a quick and relatively easy procedure, but in this case the patient was wearing a titanium ring and all the usual methods used to remove rings failed.

3 Solutions: In order to get the titanium ring off, one of the doctors decided to try something new – bolt cutters. The bolt cutters finally cut through the metal, but the doctors still had to find a way to pull the metal apart. Using some large, heavy-duty paperclips, two doctors were able to pull the ring far enough apart that the man could slip his finger out. Thankfully, the man's finger is going to be fine with no long-term damage.

The bolt cutter solution worked so well, the doctors involved actually published a letter to share the idea with other physicians. Bolt cutters are commonly available in many hospitals, but not something that ER doctors may initially think of to use. Solving a single problem is a good thing, but sharing solutions so that the wheel doesn't have to be reinvented the next time the problem is encountered is even better.

Cause Mapping is a Root Cause Analysis method that captures basic cause-and-effect relationships supported with evidence.