Risk Assessment of Pediatric Emergency Transfers

Toolkit: AHRQ P20 HS017125

For further questions, please contact:

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# Pediatric Emergency Transfers Toolkit

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FMEA Preparation Checklist

A. Identify process of care to be discussed

B. Arrange the FMEA
   1. Identify potential participants at referring hospitals/departments
   2. Identify key participants in your hospital/department
   3. Send introduction letter/e-mail to all potential/key participants
   4. Telephone/e-mail follow-up with participants
   5. Establish dates and reserve rooms for all FMEA sessions
      • One-three 60 to 90 minute sessions, less than four weeks apart
      • Consider holding one meeting at each referring hospital/department

C. Prepare for FMEA Session 1
   1. Gather supplies: post-its, markers, flip chart/butcher paper
   2. Arrange for snacks and parking
   3. Send meeting reminders with directions to all participants:
      One week before
      Two days before

D. Conduct FMEA Session 1
   1. Map the process of interest by having the group discuss each step in the process of interest
   2. During the session, create a visual representation of the process by:
      • Writing each step on individual post-it notes
      • Place the post-it notes on the butcher paper as they appear in the process
   3. Refer to “Tips for Facilitating FMEAs and Other Frequently Asked Questions”

E. After FMEA Session 1
   1. Referring to the butcher paper process map, create a formal process map using Microsoft Visio or similar software
   2. Potentially send process map to participants for review prior to second session
   3. Referring to each step in the process map, create a risk chart using Microsoft Excel®
F. Prepare for FMEA Session 2
   1. Gather supplies: copies of process maps, risk charts, pens
   2. Arrange for snacks and parking
   3. Send meeting reminders with directions to all participants:
      One week before
      Two days before

G. Conduct FMEA Session 2
   1. To refresh all participants’ memories, review the process map as a group
   2. As a group, complete the risk chart by:
      • Systematically reviewing each step and identify potential failures and their
        causes
      • Estimating the frequency and consequence of each
      • Identifying existing institutional safeguards, if any

H. After FMEA Session 2
   1. Update risk chart Microsoft Excel® document
   2. Send to participants for review
   3. Using the Category Scores document, “risk-bin” each process step (high,
      medium, or low) according to the frequency and consequence of identified
      failures
Date

Dear OSH/Department 

We are writing to invite you to participate in a project that seeks to improve the quality of communication and information about pediatric patients who need to be transferred from the Emergency Department to our hospital. The project is funded by XX Agency.

We are contacting you because we think that you are knowledgeable and informed about the transfer process of pediatric patients from your ED to our institution. For the project, we would like to have 2 participants from your hospital with good knowledge about the transfer process from the ED.

While most children are discharged home following an emergency department visit, seriously ill children and children with chronic illnesses often require transfer to another healthcare setting, typically a hospital with inpatient pediatric services. The need for improved transmission of complex information and better coordination and management of pediatric patients during these transfers has been identified in the IOM Report “Emergency Care for Children: Growing Pains.”

This project seeks to assess the risks during the process of transferring pediatric patients between hospitals. Once we have identified the risks at all of our hospitals, we will try to condense the results into a single set of risks and then, design a standardized, safe process for the transfer of pediatric patients to be used by all of the EDs.

Participation would involve attending, three to five, 90-minute meetings over a one to two month period. During these meetings, we will conduct a Failure Modes Effects and Criticality Analysis (FMEA) about the ED transfer process. You will be asked to describe the key stages and steps that are involved in the process of arranging transfer of a pediatric patient from your emergency department to our institution. Participants will be compensated $____ per 90 minute session and for parking. Some of the meetings will occur at our institution, but we would also like to hold one or two meetings at your institution, if possible.

During the FMEA meetings, you will not be asked to discuss any information about any patients or clinicians at your institution. Therefore, you do not need to be concerned with HIPPA. We have obtained IRB approval at our institution and you are not required to sign any consent form. Your participation in the meetings will be considered to be your assent to participate. Your institution may use the results of the FMEA to fulfill their Joint Commission requirement of conducting at least one “proactive risk assessment” or FMEA each year. You will be given all of the documentation that you need to fulfill this requirement.

If you are interested in participating in this project or if you would like to suggest a colleague who may be more appropriate for participation in this project, please contact me by e-mail at _________ or by telephone at _________.

Sincerely,

Name/Name of your institution/department

---


2 The Failure Mode Effects and Criticality Analysis (FMECA) is one of several hazards analysis techniques used in high-risk industries that can be implemented as a prospective analytic method that (1) predicts how and where processes may fail and result in significant detrimental consequences and (2) constructs strategies to prevent those failures or to protect against or to mitigate their effects if they occur. A key advantage of the FMECA method is that it helps to counter the common temptation of most organizations to focus on solutions for the most evident and visible weaknesses of a process or system.
### FMEA Risk Chart: Worksheet Example

<table>
<thead>
<tr>
<th>Process Steps</th>
<th>Failure Modes</th>
<th>Failure Mode Causes</th>
<th>Frequency</th>
<th>Consequence</th>
<th>Safeguard</th>
<th>Risk Bin</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the key steps in the transfer of a patient from an outside hospital to one of the CPQSC Hospitals?</td>
<td>What can go wrong?</td>
<td>For each failure, why does it go wrong?</td>
<td>Refer to Category Scores table</td>
<td>Refer to Category Scores table</td>
<td>Refer to Category Scores table</td>
<td>Refer to Category Scores table</td>
</tr>
</tbody>
</table>

Insert Process Step 1

Insert Process Step 2
FMEA Process Map and Risk Chart Examples

A. Process Map (Hospital A)

1. Patient not transferred?
   - Yes
     - Where should the patient be transferred?
       - Contract with Hospital A
       - Relationship with Hospital A
       - Some confusion around where to send newborns
       - Issue of insurance status
     - Decide to transfer to Hospital A
       - Referring nurse calls Hospital A to arrange transfer
       - Hospital A FMEA Transfer Process
         - Referring hospital ED attending recommendation
         - Transfer all pediatric patients requiring in-patient care
         - Small in-patient unit, transfer certain cases (critic, undiagnosed seizures, neuro)

2. No
   - Does the patient need to be transferred?
     - Referring nurse calls Hospital A to arrange transfer

B. Populated FMEA Risk Chart (Hospital C)

<table>
<thead>
<tr>
<th>Step ID</th>
<th>Process Steps</th>
<th>Failure Mode</th>
<th>Failure Mode Causes</th>
<th>Freq Score</th>
<th>Cons Score</th>
<th>Consequences</th>
<th>SG Score</th>
<th>Safeguard</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Decide if the patient needs to be transferred</td>
<td>Incorrect Assessment</td>
<td>Capacity (single MD on duty 12-6 AM with no back up) or lack of pediatric training</td>
<td>F3</td>
<td>C2</td>
<td>Delay in care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.1.1</td>
<td>Decision by referring hospital ED physician</td>
<td>Primary care physician may not call back right away</td>
<td>F2</td>
<td>C3</td>
<td>Delay in care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.1.2</td>
<td>Child’s primary care physician is consulted</td>
<td>Primary care physician may not call back right away</td>
<td>F2</td>
<td>C3</td>
<td>Delay in care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Referring hospital decides which receiving hospital to call</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Choose which hospital to call</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>If patient has an established relationships with another hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.2.1</td>
<td>Parent rejects other options</td>
<td>Parent doesn't provide or provides wrong data or clinician doesn't ask</td>
<td>F3</td>
<td>C3</td>
<td>Delay in care and/or patient care is less effective</td>
<td>S3</td>
<td>Complete consent forms earlier</td>
<td></td>
</tr>
<tr>
<td>12.2.2</td>
<td>Cell multiple institutions (simultaneously or 1 at a time) and chose the receiving hospital based on bed availability and timing of the transfer</td>
<td>May wait for a call back and then patient is not accepted</td>
<td>Some institutions avoid low-paying/insured and it is &quot;culture&quot; the way it has always been done</td>
<td>F3</td>
<td>C3</td>
<td>Delay in care</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pediatric Emergency Transfers Toolkit
Northwestern University Institute for Healthcare Studies
Holl, AHRQ P20 HS017125

Institute for Healthcare Studies
Northwestern University Feinberg School of Medicine
### FMEA Category Scoring and Risk-Binning Criteria

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>Remote</td>
<td>Possible, no known data (happens once in 10 years)</td>
</tr>
<tr>
<td>F2</td>
<td>Uncommon</td>
<td>Documented but infrequent (happens once a year)</td>
</tr>
<tr>
<td>F3</td>
<td>Occasional</td>
<td>Documented and frequent (happens once a month)</td>
</tr>
<tr>
<td>F4</td>
<td>Very Frequent</td>
<td>Occurs routinely (happens more than once a month)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Consequence</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C0</td>
<td>None</td>
<td>No impact on the chance of occurrence</td>
</tr>
<tr>
<td>C1</td>
<td>Little</td>
<td>Little impact on the chance of occurrence</td>
</tr>
<tr>
<td>C2</td>
<td>Some</td>
<td>Some impact on the chance of occurrence</td>
</tr>
<tr>
<td>C3</td>
<td>Significant</td>
<td>Significant impact on the chance of occurrence</td>
</tr>
<tr>
<td>C4</td>
<td>Certain</td>
<td>Almost certain impact on the chance of occurrence</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Safeguard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>Multiple checks</td>
<td>Hospital procedure has a formal built-in check and other safeguards</td>
</tr>
<tr>
<td>S2</td>
<td>Formal check</td>
<td>Hospital procedure includes a formal built-in check</td>
</tr>
<tr>
<td>S3</td>
<td>Standard practice</td>
<td>Standard practice includes a check</td>
</tr>
<tr>
<td>S4</td>
<td>Noticeable</td>
<td>Worker notices and responds</td>
</tr>
<tr>
<td>S5</td>
<td>Nondetectable</td>
<td>The failure is not detectable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Risk/Bin</th>
<th>Consequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>C0</td>
</tr>
<tr>
<td>F1</td>
<td>Low</td>
</tr>
<tr>
<td>F2</td>
<td>Low</td>
</tr>
<tr>
<td>F3</td>
<td>Low</td>
</tr>
<tr>
<td>F4</td>
<td>Low</td>
</tr>
</tbody>
</table>
Tips for Facilitating FMEAs and Other Frequently Asked Questions

**What is an FMEA?**
The Failure Mode Effects Analysis is derived from a widely used engineering quality method that helps identify and counter weak points in the early conception phase of products and processes. FMEA takes the viewpoint that even though human error is inevitable, it can still be addressed through a systematic process. The goal of FMEA is to predict how and where processes fail and construct strategies to prevent or mitigate their effects if they occur and to further test these strategies using the Failure Mode Effects Analysis method.

In the realm of FMEA, The Failure Mode Effects and Criticality Analysis (FMECA) is one of several hazards analysis techniques used in high risk industries (such as healthcare). FMECA can be implemented as both a retrospective and prospective analytic method. Its accomplishment is two-fold:

1. It predicts how and where processes may fail and result in significant dangerous consequences and
2. It constructs strategies to prevent those failures or to protect against or to mitigate their effects if they occur.

FMECA does not differ significantly from FMEA. It provides additional opportunity to assess the “criticality” index and to assess the effectiveness of existing safeguards. FMECA focuses on solutions.

**How many people should I expect be in my FMEA and how long does it last?**
The usual FMEA consists of 5 – 7 persons. The FMEA should last between 1 ½ to 2 hours, over approximately 8 – 10 weeks.

**Why are several FMEAs usually convened about a single topic?**
Several FMEAs are convened because each time one is held there are different influences, depending on who participates in the group and how they interact with one another. FMEAs are conducted with different group dynamics by using different participants until no new ideas or information is reported during a group discussion. This is usually is referred to as reaching “saturation.”

**General information about how to conduct the discussion**
Pre-determined questions are prepared and asked. The number of questions should be small (eight or less). Beginning questions should be broad and general and become more narrow or specific as the conversation progresses. Once the participants begin to respond, the conversation should be allowed to continue naturally among the participants.

The role of the moderator is to keep the participants focused on the topic without limiting their responses. If the moderator is successful, the discussion will occur between and among the participants rather than between a participant and the moderator.

If the moderator feels the need to ask for more information, the question should be open-ended.

- Try not to ask questions that will result in a “yes” or “no” answer.
- Try not to ask "why." It often results in an obvious or stereotyped answer.
- "How" and "what" questions usually work well.
What are some successful methods to keep my FMEA group talking?

- KEEP PARTICIPANTS ON THE TOPIC. Memorize the questions. Keep a copy of the questions in front of you and check it from time to time.

- STOP A CONVERSATION THAT IS NOT ABOUT THE TOPIC. Be polite but remind everyone that you want to gather their opinions about “xxxxx” (repeat the question).

- CONTROL PEOPLE WHO TRY TO MONOPOLIZE THE DISCUSSION. It is helpful to get a “feel” for the each participant during informal discussions before the focus group begins.

- TRY TO GIVE EVERYONE A CHANCE TO CONTRIBUTE. This may mean gently calling on shyer participants and asking them to give their opinion.

- BE NONJUDGMENTAL AND KEEP THE ATMOSPHERE TOLERANT so people with diverse viewpoints will feel comfortable giving their opinions.

- REMEMBER TO PROBES
  - Is there anything else?
  - I need an idea of what you mean by...

- FACILITATORS SHOULD NOT TALK TOO MUCH. Let people "jump into the silence." Focus groups should be more of a give and take. It is not an interview. You gathered these individuals together to let THEM talk!

- CONTROL YOUR SETTING. No barking dogs, ringing telephones, screaming toddlers!

- PREPARE ABOUT A DOZEN QUESTIONS. Your goal is to stimulate group discussion.