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*"To care for him who shall have
 borne the battle and for his
 widow and his orphan."*

Abraham Lincoln,
 Second Inaugural Address



Healthcare Failure Mode Effect Analysis



VA National Center
 for Patient Safety

Healthcare Failure Mode Effect Analysis

Improving Patient Safety

Making medical procedures safer was the key reason that the HFMEA process was designed by NCPS. It has a wide range of applications, from developing backup medication delivery systems, to improving the way laboratory specimens are drawn.

The five-step process is used by interdisciplinary teams to proactively evaluate a healthcare process. Specifically designed for use by healthcare professionals, it offers users analytical tools such as flow diagramming, decision trees and prioritized scoring systems that enable the user to proactively identify vulnerabilities and deal with them effectively.



The process streamlines hazard analysis steps found in a traditional Failure Mode and Effect Analysis procedure, an analytical process often used by engineers to identify potential failures of individual components and subsystems. HFMEA includes healthcare-specific definitions for “severity, probability and detectability.” It is a systematic engineering-based approach used to identify system vulnerabilities and correct problems before they occur. Here’s a thumbnail sketch of the HFMEA process:

Step 1: Define the HFMEA Topic

When selecting the topic, be specific about the process or

product to be studied, thus narrowing the scope of the analysis.

Step 2: Assemble the Multidisciplinary Team

The team should include one or more subject matter experts, as well as those who have no detailed knowledge of the process under review. When needed, others are called in as consultants.

Step 3: Graphically Describe the Process

Team members develop and verify a flow process diagram, not to be confused with a chronological diagram. Each step in the process under study is identified and numbered. If a process is complex, a specific area is identified, to keep

the effort manageable.

Appropriate sub-processes are also identified and flow process diagrams developed.

Step 4: Conduct a Hazard Analysis

Focusing on the sub-processes, team members list all potential failure modes, to determine their severity and probability. Cognitive aids developed by NCPS to support teams at this step include a Scoring Matrix and a Decision Tree. The Matrix is used to determine the probability of an event’s reoccurrence and its severity; the Decision Tree is used to determine if corrective actions should be taken.

Step 5: Actions and Outcome Measures

The team determines what best course of action to take. Outcome measures are identified to analyze and test redesigned processes.

More information is just a click away

The five-step HFMEA process is described in detail on the NCPS Web site, just log on to the homepage (www.patientsafety.gov) and scroll down to the “Safety Topics of Interest” link.

