

Emergency Medicine Process Failure Mode and Effects Analysis



What is a Process failure Mode and Effects Analysis (PFMEA)?

PFMEA's are a quality control methodology that use a systemized group of activities to identify potential failures of a product or process, along with specific actions to reduce or eliminate their likelihood for occurrence.

This methodology provides a proactive means of addressing quality issues by taking steps to eliminate them before they ever occur. In addition, PFMEA's yield a continuous improvement approach to quality, as some of the activities involved in developing and maintaining these records are ongoing over the life of the product or process.

How Does it Work?

PFMEA's use a standardized template and set of measurables to calculate the risks associated with each identified failure mode for a particular product or process. This includes determining the effects of a failure, severity, likelihood of an occurrence and ease of detection, to name a few.

All of this information is used to calculate a "risk priority number" which determines whether the failure mode is significant enough to warrant an action plan. If so, the action plan is developed and recorded as part of the PFMEA.

What's Involved In Developing a PFMEA?

Developing PFMEA's for an ED usually involves four steps. First, management engineers work with ED personnel to create flow diagrams for a particular process or activity. Then, the team lists all possible failure modes for each step, which are then captured on the PFMEA. Management engineers work with ED staff to determine severity, probability, occurrence and risk priority numbers. Lastly, an action plan is developed for each failure mode along with outcome measures and recommended actions. Personnel are assigned to each recommended action for completion as part of this last step.

The development of a complete set of PFMEA's usually takes anywhere from a total of sixteen to twenty weeks to complete, with approximately four weeks of onsite data collection and observation, followed by several follow up reviews and a final buyoff of the documentation. A separate implementation phase is usually performed after development of the PFMEA's by the same project engineers, with oversight provided by department staff and hospital administrators.

Emergency Medicine Process Failure Mode and Effects Analysis

How Much Does it Cost?

The development of a complete set of PFMEA's for a typical ED with a patient census of 61,000 cases annually, will range anywhere from \$60,000.00 to \$90,000 USD. The hospital annual payback rate in savings and/or cost avoidance is usually in a range from 50 to 100 times the cost of the study.

Can it Really Make a Difference?

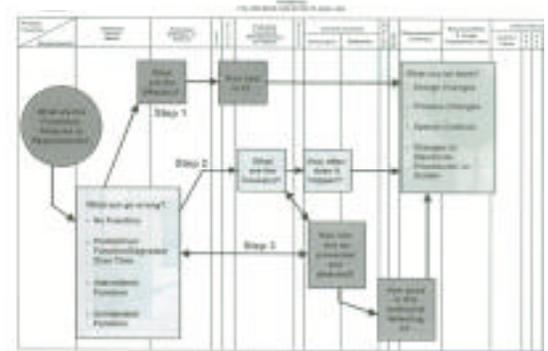
Absolutely. It's the very reason why commercial airlines have the safest record in the transportation industry and telecommunications manufacturers measure quality at six sigma levels. These industries, as well as others, have been using PFMEA's for literally decades.

A significant factor related to the use of this system is the fact that it is a proactive means of reducing risks associated with treating patients in emergency medicine, by considering problems which may arise during the delivery of healthcare services, before they can ever occur. It's also a requirement under JCAHO patient safety standards (LD.5.2)

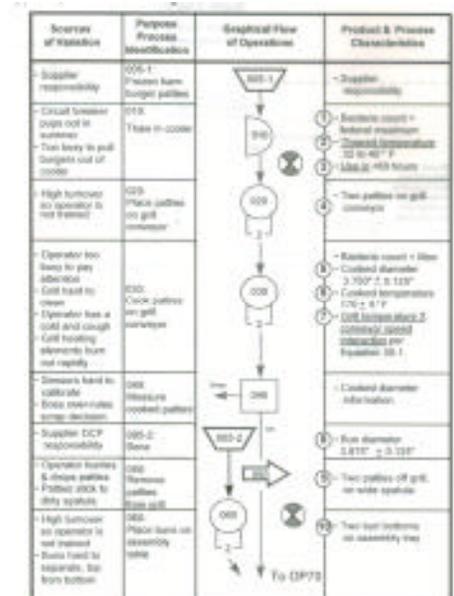
How Do I Go About Getting This Service?

If you're directly involved in managing your department, feel free to give us a call or send an e-mail. We would welcome the opportunity to discuss specifics on the use of PFMEA's and how it may solve problems, lower the cost of services and increase the quality of patient care in your ED.

If you're not directly involved in managing your department, but believe that this may be of interest to those who do, then please forward this information accordingly. Certainly, both you and your patients will benefit.



Typical PFMEA With Development Steps Depicted



Process Flow Diagrams Used in the Development of a Typical PFMEA

For more information on how management engineering and quality operating systems can make a big difference in your emergency department, please contact our sales staff at Xigma Engineering Services, LLC, or e-mail us at sales@xigmaworks.com

Xigma Engineering Services, LLC
1632 John A. Papalas Drive
Lincoln Park, M 48146
Ph. 800.440.9968
313.388.9350
F. 313.388.8655

www.xigmaworks.com

Xigma Engineering Services is more than a consulting company. Our team of engineers and project managers develop unique ideas to solve problems, save time, and lower the cost of delivering healthcare. Then we turn those ideas into reality.