Learning from Defects Tool

What is a Defect? A defect is any clinical or operational event or situation that you would not want to happen again. These could include incidents that you believe caused patient harm or put patients at risk for significant harm.

Purpose of Tool: This tool is designed to provide a structured approach to help caregivers and administrators identify the types of systems and factors that contributed to the defect, as well as identify corrective actions to ensure safety improvements are achieved.

Who Should Use this Tool:
Unit Teams as part of the Comprehensive Unit Based Safety Program (CUSP) at monthly meetings

All staff involved in the delivery of care related to this defect ***should be present when this defect is evaluated***. At a minimum, this should include the physician, nurse and administrator and other healthcare professionals as appropriate (e.g. medication defect include pharmacy, equipment defect should include clinical engineering)

How to Use this Tool: Complete this tool on ***at least one defect per month***. In addition, units should investigate all of the following defects: healthcare acquired infections, sentinel events, and events for which risk management is notified.

Investigation Process

I. Provide a clear, thorough and objective explanation of ***what happened***.

II. Review the list of factors that contributed to the incident and check off those that negatively contributed and positively contributed to the impact of the incident. Rate the most important contributing factors that relate to the incident.

III. Describe how you will reduce the likelihood of this defect happening again by completing the tables. Develop interventions for each important contributing factor and rate each intervention for its ability to mitigate the defect and ability to be implemented. Identify 2-5 interventions that you will implement. List ***what*** you will do, ***who*** will lead the intervention, and ***when*** you will follow-up on the intervention's progress.

IV. Describe how you know you have reduced the risk. Survey frontline staff involved in the incident to determine if the intervention has been implemented effectively and risk has been reduced.

V. Summarize your findings using the **Defect Analysis** tool below.

I. What happened? Reconstruct the timeline and explain what happened. For this investigation, put yourself in the place of those involved to understand what they were thinking and the reasoning behind their actions/decisions.

II. Why did it happen? List contributing factors and whether the factor negatively contributed (increased harm) or positively contributed (reduced impact of harm) to the incident. Then rate the most important contributing factors that relate to this event.

Contributing Factors	Negatively Contributed	Positively Contributed
Patient Factors (For example, patient was acutely ill or agitated, did not speak English, and/or had personal or social issues) ***Add more lines if needed.***		
Task Factors (Was established protocol available? Were accurate test results and other pertinent information available?		
Caregiver Factors (Did fatigue, role perception, and/or physical or mental health factors contribute?)		
Team Factors (Was verbal and/or written communication clear and accurate? How did team structure and dynamics contribute?)		
Training & Education Factors (Was/were the provider(s) knowledgeable and skilled? Did s/he or they follow established protocol? Seek supervision or help if needed?)		
Information Technology (Were there computer/software errors made or did computer malfunction?		
Local Environment (Was adequate equipment available and working properly? Was physical environment conducive to enhancing patient care? Was there enough staff of the right skill mix on the unit to care for patient volume? Did workload impact provision of care?)		
Institutional Environment (Were there adequate financial resources available from administration? Were there adequate ancillary service support?		

Review the above list of contributing factors and **identify the most important factors related to this event**. Rate each contributing factor on its importance to this event and future events.

Contributing Factors *(add more lines if needed)*	**Importance to current event, 1 (low) to 5 (high)**	**Importance to future events, 1 (low) to 5 (high)**

III. How will you reduce the likelihood of this defect happening again? Develop interventions to defend against the 2 to 5 most important contributing factors. See ***Strength of Interventions**** chart below for examples of strong and weak interventions. Rate each intervention on its ability to mitigate the contributing factor and on the team's belief that the intervention will be executed. Make an action plan for 2-5 of the highest scoring interventions.

Interventions to reduce the risk of the defect *(add more lines if needed)*	Ability to mitigate the contributing factor, 1 (low) to 5 (high)	Belief intervention will be executed 1 (low) to 5 (high)

Select 2 – 5 of the highest scoring interventions and develop an action plan for implementation:

Specific interventions you will do to reduce the risk of the defect? *(add more lines if needed)*	**Who will lead this effort?**	**Follow up date**

***Strength of Interventions**

Weaker Actions	**Intermediate Actions**	**Stronger Actions**
Double Check	Checklists/ Cognitive Aid	Architectural/physical plant changes
Warnings and labels	Increased Staffing/Reduce workload	Tangible involvement and action by leadership in support of patient safety
New procedure, memorandum or policy	Redundancy	Simplify the process/remove unnecessary steps
Training and/or education	Enhance Communication (read-back, SBAR etc.)	Standardize equipment and/ or process of care map
Additional Study/analysis	Software enhancement/modifications	New device usability testing before purchasing
	Eliminate look alike and sound- a-likes	Engineering Control of interlock (forcing functions)
	Eliminate/reduce distractions	

Adapted from John Gosbee, MD, MS Human Factors Engineering

IV. How will you know the risk is reduced? Ask frontline staff who were involved in the defect if the interventions reduced the likelihood of recurrence of the defect. After the interventions are implemented complete the "Describe Defect" and "Interventions" sections and have staff complete this survey by rating the interventions.

Describe Defect:		
Interventions	**Intervention was effectively implemented, 1 (low) to 5 (high)**	**Intervention reduced the likelihood of recurrence, 1 (low) to 5 (high)**