Mishap Prevention Model

Process Review and Measurement System

I. **Introduction**. This model evaluates the command actions to identify and control unacceptable risks. The first and key measure for this model is the Injury/Illness Incidence Rate (IIR). The second measure is a quality assessment of the collection and analysis of mishap and hazard data AND correction actions taken.

II. **Injury/Illness Incidence Rate (IIR).**

A. This is a sum of all injuries, occupational illnesses, fatalities, and first aid cases logged on the OPNAV Form 5102/7 or in INJTRAK, divided by the total activity hours worked (# of personnel X 2000). The results are standardized using a 200,000 multiplier.

B. The key to this measure is the cases recorded on the OPNAV Form 5102/7 because it is the only factor that is subject to error, assuming that the number of work hours is not too much above or below 2,000 per person.

C. Factors that affect the total number of cases logged include:

1. Injuries/illnesses reported to safety by supervisor/employee.

2. Injuries/illnesses reported to safety from the medical treatment facility or department.

3. Injuries/illnesses reported to safety by the Injury Compensation Program Administrator (ICPA).

4. Personnel reports of injuries or illnesses that occur away from the workplace (i.e. while on TAD, off-site)

III. **Collection and Analyses of Mishap Data.**

A. Medial reports of injuries and illnesses. A review of the process by which injuries and illnesses are reported to the Safety Office must include:

1. Written notification of personnel treated in the emergency room or out-patient clinics. When a worker (civilian or military) is treated and diagnosed with an occupationally related injury or illness, written notification must be made to the Safety Office. A worker diagnosed with a permanent threshold shift of occupational origin is a reportable injury. The process review should include:

a. A review of the emergency room/out-patient log to obtain the number of reportable injuries and illnesses. Be sure to check for after normal working hour and TAD injuries/illnesses.

ER/Outpatient Report Factor =

$$\frac{\text{\# of injuries and illnesses reported to ER/Outpatient}}{\text{\# of these reported to OSH Office}} =$$

The percent of ER/Outpatient injuries and illnesses reported to OSH Office.

Target is 100%

2. Interview with occupational health nurse to obtain the number of newly diagnosed injuries and illnesses, including audiology.

OH Report Factor $= \frac{\text{\# of injuries and illnesses reported to OH}}{\text{\# of these reported to OSH Office}} =$

The percent of OH injuries and illnesses reported to the OSH Office.

Target is 100%

B. Review of injuries/illnesses reported by the Injury Compensation Program Administrator (ICPA), Human Resources Office (HRO).

HRO Report Factor $= \frac{\text{\# of injuries and illnesses reported to HRO}}{\text{\# of these reported to OSH Office}} =$

The percent of HRO injuries and illnesses reported to the OSH Office.

Target is 100%

C. Supervisor reports of injuries and illnesses. After logging injuries and illnesses reported/received by all sources (supervisor , ER/Outpatient, OH, and HRO) determine which supervisors had reported. If supervisors have not reported injuries/illnesses 100%, develop and implement a plan to improve the supervisor reporting process. The plan must include input from the medical staff, HRO and supervisors:

1. Interviews with Medical and HRO personnel, supervisors, and workers to determine their level of understanding of reporting all occupational injuries/illnesses.

2. Review mishap reporting training lesson outlines.

Depending upon the size of the activity, this fraction may require several months or a year to obtain enough cases. It is probably sufficient to deal with each un-reported case on an individual basis.

IV. **Trend Analysis**

A. The IIR is designed to provide a measure that can be used to set intervention priorities. Workplaces/shops that have a high IIR should be reviewed to determine the root causes. Mishaps can be reduced by various means, i.e. Job Hazard Analysis, training, SOPs. hazardous material changes, adequacy of PPE, re-survey by IH, etc. Shops that are industrial and have many opportunities for mishaps should have more reported injuries/illnesses than administrative workplaces. By monitoring case rates over time, mishap trends can be identified. A spreadsheet with a column for the shops on the far left and the time intervals for the columns can provide a quick visual for tracking IIR at the shop and department levels.

EXAMPLE:

Dept/Shop	IIR					
	Jan	Feb	Mar	Apr	May	
Metal Trades		1.1	1.3	1.2	1.5	1.7
Welding	3.0	2.1	2.1	1.8	3.0	
Sheet	7.0	4.4	5.4	6.0	2.0	
Plumbing	0.4	2.1	1.4	1.5	2.0	
Admin	0.0	0.0	0.1	0.0	0.0	

The Sheet Metal Shop is the obvious candidate for a closer look.

B. Factor Analyses. Injuries/illnesses must be analyzed by Lost Workday, No Lost Time and First Aid injuries, and frequency and severity rates determined. A total case rate (TCR) must also be determined. Data analyses can be accomplished by several methods, bar graphs, pie charts, spreadsheet, etc. Use whatever method is easy for each of you. However, this analyses alone is not sufficient. Further analyses must include the type of injury (i.e. strain, fracture, abrasion), location of where it happened, causal factors, department/ code/occupation, part of body affected explanation of significant peaks and valleys in occurrence, etc. Some factors are command-wide factors (command orientation, ergonomics, respirator training, training), and others are shop specific (eye injuries due to dust, chemical exposure, slips, trips, and falls, etc.) By categorizing several broad categories during the analyses, some trends may begin to emerge that may have been lost if they were not displayed visually. This would also permit tracking of a training IIR, HM IIR, etc.

Frequency rate =

Severity rate =

C. Intervention (corrective action, improvement strategies) and tracking success. Too often interventions are instituted and

forgotten. Under PR&MS, interventions need to be tracked and a determination made as to the effectiveness/success of the action. Successes in one shop may be applied to others. Documentation is the key.

V. Obstacles. Because resources are required to implement improvement/new controls and data is collected across command lines, obstacles to implementing these controls must to be identified and addressed in writing. An analysis of the impact of the obstacles must be included in the analysis (i.e. if medical refuses to report all injuries and illnesses, how will that affect the mishap prevention program? What steps did you take to work out the problems? What are the sticking points outside of your control? Is the chain of command engaged?

VI. Sources for interventions. Many times, the intervention requires assistance from outside the command. This is especially true in the mishap prevention program. It is very important to involve all players in the process – IH (HM substitution, PPE effectiveness and use, hazard specific training, workplace monitoring); supervisors; workers; other safety managers and supervisors; professional safety committees; HRO case workers.

VII. Hazard Analysis and Abatement. Abatement of recognized hazards is a primary goal of the NAVOSH program and mishap prevention. Abatement of hazards does not refer only to those workplace deficiencies identified during workplace inspections. In addition to the workplace hazards, mishap data collection and analyses, other areas/factors must be considered as part of the mishap prevention/hazard abatement. IH surveys, medical reports, higher command inspections, and outside command inspection (Navy Crane Center, SPAWAR, NAVORD, etc) reports, etc. need to be reviewed to identify potential hazards or stressors that may lead to an injury or illness. In addition, identified hazards, real or potential, must be minimized. Too often hazards are identified, added to the hazard abatement plan and forgotten if funding is minimal or unavailable. The success of the abatement program is determined by the management of the program: tracking, setting abatement priorities, abating hazards, obtaining outside help for system problems, etc.

A. Tracking abatement actions. Items included in the official activity hazard abatement plan must be tracked until corrected. Follow-up is required to ensure the hazards aren’t lost. Attempts to obtain funding must be made. Just adding them to the abatement plan is not sufficient. Refer to the Hazard Abatement Section of the Activity Self-Assessment for a review of the abatement program and performance measurements.

B. Potential hazards/stressors. Areas that are not in violation of requirements, but have the potential to become a problem, must be evaluated and recommendations for improvement made before they become hazards.

VIII. **Communication/Notification.**

A. OSH Office Communication: OSH staff must share information on mishaps, hazards, abatement, etc. so that required records are maintained and up-to-date, hazards/potential hazards can be spot checked as part of workplace inspections and informal visits.

B. Process Owner Notification: In addition to distributing mishap analyses, the OSH staff must also inform managers and supervisors of the results of the analyses, i.e. command standing and desired goal, improvements/changes required as a result of the analyses, recommendations on how to obtain the improvements, follow-up procedures, etc.