National Center for Immunization and Respiratory Disease (NCIRD)
Non-Conforming Events Reporting Tool to Improve Quality and Safety

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Background

Safety of Laboratory personnel is a priority for all industrial and academic organizations. Many laboratory processes carry a significant risk due to the complexity of the testing procedure, biological or chemical agents involved, and the environment of the worker. Mishaps, mistakes, and adverse events may occur in the soundest of procedures. Evaluation of current and past non-conforming events (NCE) is needed to identify and prevent safety related incidents.

Safety event data must be collected objectively, and without blame, to ensure the event is appropriately investigated to identify what happened and how to prevent reoccurrence. Historically, tedious manual processes existed to compile data at the local (laboratory) level, but it became increasingly difficult to collate and report data across multiple organizations due to different processes and lack of information exchange. Without systems to easily collect, assess, and share event investigations, NCEs are apt to reoccur.
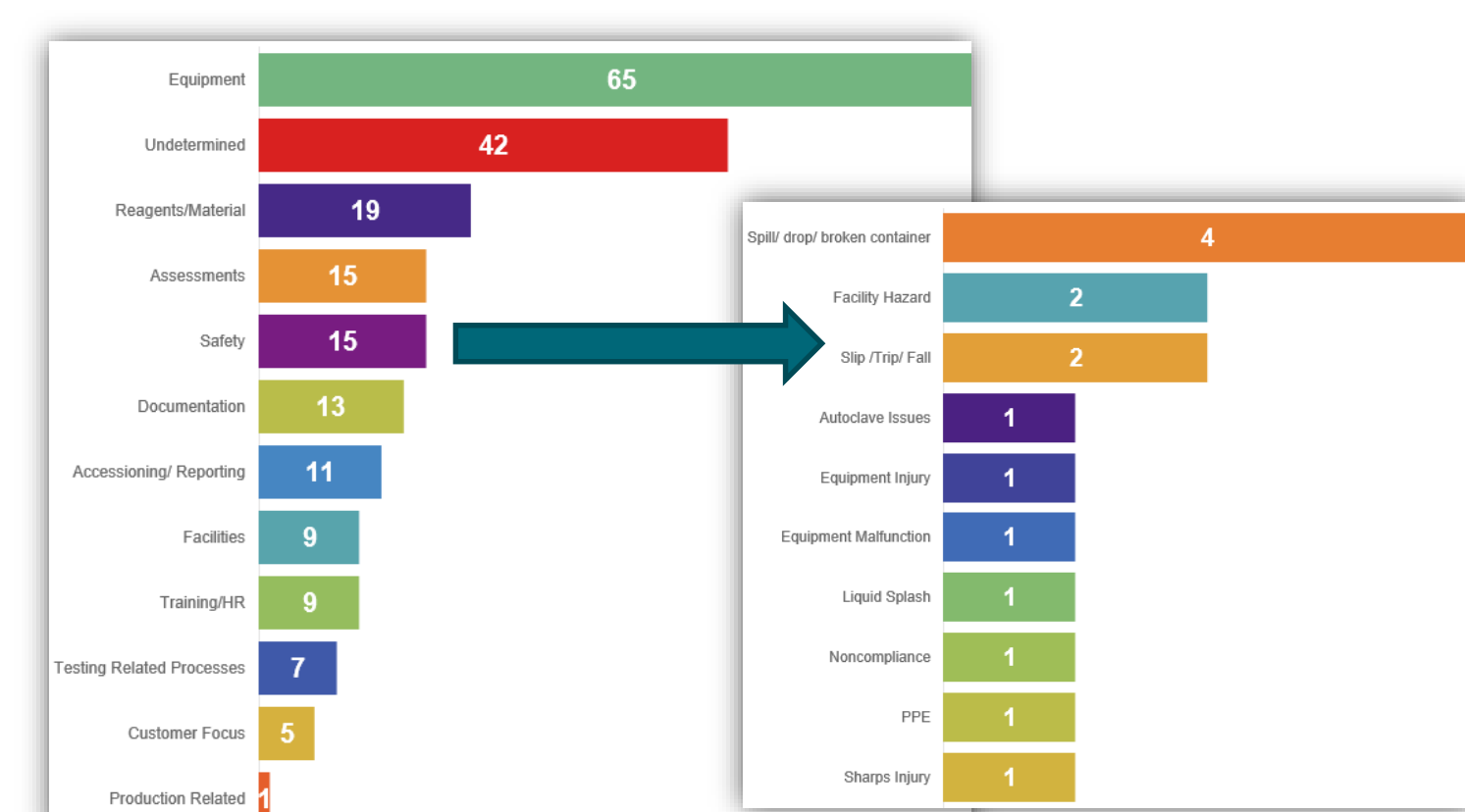
Gathering and trending data using quality management processes, assists in identifying related events and provide an opportunity to improve and protect our laboratory personnel. Promoting the ease of use of this tool has reshaped the safety culture by providing a path to correctly and sufficiently report and document an event. Additionally, system autogenerated notifications support the efficiency of the workflows and enhances the communication of safety related emergencies within the organization. Implementing standardized workflows and event classifications promotes the ease of data collection, provides the ability to perform trending analysis, and provides resolution to events.

Improving Data Collection and Trending Capabilities

In order to effectively analyze and trend events, investigation details must be gathered and reviewed. Establishing required data fields streamlines the data gathering processes by guiding the data and collection process.

Events are classified by categories to allow for charts to be trended by status, category, and organization. The data promote event awareness between units in the organization since many units have the same process or risks. Safety, Quality, and Organizational leadership use these trending charts, reports, and spreadsheets to identify gaps and trends to make decisions.

Case Studies

OVERVIEW: Reporting events in the database allows for the identification of reoccurring events and provides a path to collectively resolve the issue in the organization, not only the local level. This is improving our culture of safety by communicating to the laboratory personnel that their events are important and actions are solution driven.
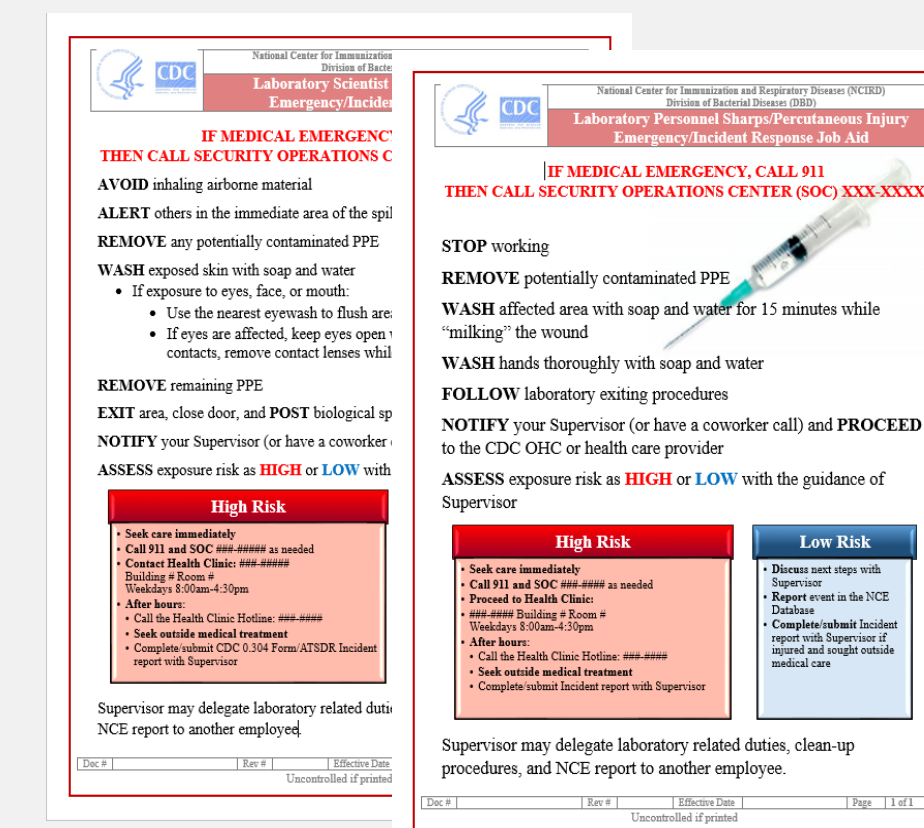
CASE STUDY 1: DEVELOPMENT OF EMERGENCY RESPONSE FOLDERS

Incident – During a laboratory emergency, communication of the event to leadership was not timely executed.
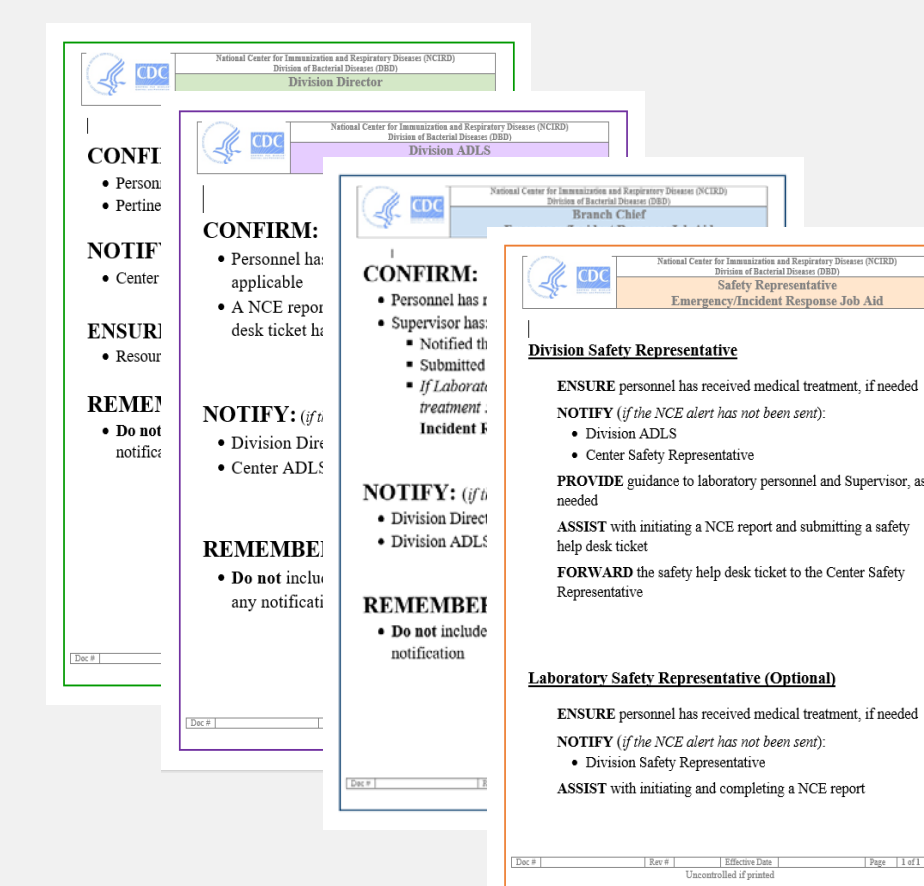
Investigation - Delegates were not fully aware of the actions needed to be taken in the event of an emergency. This gap in communication led to decreased efficiency in emergency response and notification of leadership.

Corrective Action – Development of role-specific Job Aids and annual training for emergency response to streamline response efforts. The folders are role based so that each member of the organization is aware of their responsibilities. Each job aid clearly outlines actions for each role to respond to an incident (laboratory personnel, supervisors, safety representatives, Director, other leadership).

Impact – Evaluating and streamlining the emergency response actions into job aids ensures personnel complete responsibilities and communications in a timely manner.

Laboratory Scientist Emergency Response Job Aid

Senior Leadership Emergency Response Job Aid

CASE STUDY 2: HOUSEKEEPING SERVICES CHANGE GLOVES TO COLOR NOT USED IN LABORATORIES

Incident – Several instances of gloves resembling laboratory use gloves were being discovered in non-hazardous waste trash (general lab areas, office areas, bathrooms, other public spaces).

Investigation – Discovered similar looking gloves were being used by housekeeping staff to clean bathrooms and common areas as were being used by laboratory staff to conduct experiments.

Corrective Action – Housekeeping no longer purchases gloves in commonly used laboratory colors (green, blue, black, latex). The housekeeping staff will exclusively use orange gloves for all work to differentiate from laboratory use gloves.

Impact -Ensures the ability to easily differentiate gloves that may have been used in the laboratory from gloves used by custodial staff for routine housekeeping.

Custodial Staff Specific Gloves

Laboratory Staff Specific Gloves

Conclusions

Standardizing reporting of quality and safety events has improved the quality and safety culture by:

Increase in Number of Reported Events

By implementing electronic workflows and streamlining the process, the number of reported events increased 26% from 2017 to 2019. Simplifying the reporting process, promoting use of the NCE tool, and leadership supporting a non punitive reporting environment allows for transparency in current processes and improvement opportunities.

Enhanced Communication

Centralized reporting of quality and safety events supports information distribution through autogenerated emails and workflows to ensure organizational points of contact are involved in the resolution of the event.
- Response time to safety events are measurable and trackable.
- Trending charts are easily presented in Management Reviews for discussing opportunities for improvement.
- Easily access reports for review and status updates
- Emergency alerts are managed within the tool to ensure quick circulation of event details.

Improved Oversight of Corrective Actions and Resolutions

Actions taken to resolve events are monitored for sustainability. Actions are evaluated for effectiveness to ensure the action corrected the issue.

Supporting Collaboration

Expanding the workflow and trending functionality allows for a broader evaluation of events with other laboratories to identify potential events and put into place preventive actions. Processes are being adopted by multiple organizations to provide broader insight to quality and safety related events.

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Office of the Director