# A Work Plan for The Joint Commission Alarm National Patient Safety Goal

William A. Hyman, ScD

The effective use of medical device alarms continues to be a challenging area. In addition to whatever internal efforts an organization may have currently underway, The Joint Commission–accredited institutions must now comply with the specific elements of the new National Patient Safety Goal on Alarm Management. Completing these elements before the specified deadlines will require considerable effort. A documented and functional plan of work will likely be necessary in order to achieve success in this endeavor.

The effective use of alarms continues to be a challenge in the clinical setting with respect to how they are selected, set up, and responded to. The Joint Commission (TJC) has specifically addressed alarm management in the past and more recently with its April 2013 Sentinel Event Alert[1] (SE) and June 2013 National Patient Safety Goal[2] (NPSG). The latter includes a number of specific steps that TJC-accredited organizations must undertake, along with deadlines ranging from July 1, 2014, through January 1, 2016. There have been a number of educational programs available to explain the NPSG including the no-cost Association for the Advancement of Medical Instrumentation and multiple coconveners webinar series, which began on September 25, 2013.[3]

It is fair to say that these steps are relatively complex and therefore potentially time consuming and human resource intensive. It is therefore imperative that affected organizations establish a compliance development plan with realistic estimates of how long it will take them to undertake and complete the multiple parts of this NPSG. Subcomponents and supporting activities can also be defined, along with the task sequencing necessary to move through the necessary steps. With this detailed task definition and associated time estimates, with an appropriate inefficiency multiplier, necessary start dates can in turn be estimated by working backward from the deadlines.

**Corresponding author:** William A. Hyman, ScD, 185 West End Ave, 19F, New York, NY (w-hyman@tamu.edu).

William A. Hyman, ScD, is professor emeritus of biomedical engineering at Texas A&M University, College Station and adjunct professor of biomedical engineering at The Cooper Union, New York.

The author declares no conflicts of interest.

DOI: 10.1097/JCE.0000000000000011

Of course, one does not have to wait until the deadline to implement the requirements, and waiting could create risk management issues. For example, if a required element is not due until, say, December 2014, but an adverse incident occurs before then that is related to that element, saying that you did not do it because it was not yet required may not be a satisfactory argument. For example, it might be hard to explain why the obvious necessity of educating staff and others about the operation of the alarm systems for which they are responsible was not put into place because it was not required until January 2016. Similarly, even for hospitals that are not TJC accredited, this new NPSG still provides guidance that can be pointed to as to what constitutes reasonable safety efforts.

The NPSG, as do all TJC standards, sets minimum requirements for accreditation. This minimum does not limit what else might need to be done based on an institution's own self-assessment and experience. In this particular case of alarms, the NPSG does not emphasize the challenges of communicating alarms to the right caregiver at the right time and ensuring that that caregiver is available and responsive or that the alarm communication is escalated if not responded to. The NPSG also does not address preventive (planned) maintenance activities relative to alarms, nor does it address ongoing monitoring of alarm utilization and close calls or adverse events. Nonetheless, what is called for is sensible and, for the most part, what probably should have already been in place.

## Requirements

Table 1 recasts the elements of the NPSG into a working document that includes the TJC text, a short summary statement, and the TJC deadline. Given that most organizations would want to have the element completed in advance of the deadline, Table 1 calls for the establishment of an earlier internal or working deadline. For each part of the TJC requirement, Table 1 also contains suggestions for a subset of tasks.

These subtasks are not unique, and they can be adjusted and combined to suit the organization's plans. However, in one form or another, it is important to recognize that each part, and the respective subparts, of the NPSG is itself a complex undertaking. Thus, for part 1, even establishing alarm safety as a priority can require a sequence of steps, especially if the establishment is going

**TABLE 1. NPSG Work Plan**

| TJC Text | In brief | Deadline | Task | Assigned to |
|---|---|---|---|---|
| Part 1. As of July 1, 2014, leaders establish alarm system safety as a [critical access] hospital priority. | Establish alarm safety as a priority | TJC: July 1, 2014 | Set and track milestones | |
| | | Working deadline: | Create approval document | |
| | | | Obtain approval | |
| | | | Disseminate | |
| | | | Implement | |
| | | | Track milestones | |
| | | | Review | |
| Part 2. During 2014, identify the most important alarm signals to manage based on the following: | Identify most important alarm signals | TJC: December 2014 | Set and track milestones | |
| | | Working deadline: | Develop written assessment of all alarms relative to their relative importance. | |
| | | | Review. | |
| • Input from the medical staff and clinical departments | Medical/clinical input | Working deadline: | Format and use survey mechanism to obtain necessary medical/clinical input. | |
| | | | Document. | |
| | | | Review. | |
| • Risk to patients if the alarm signal is not attended to or if it malfunctions | Risk analysis | Working deadline: | Create alarm risk tool and use it to assess each alarm. | |
| | | | Document. | |
| | | | Review. | |
| • Whether specific alarm signals are needed or unnecessarily contribute to alarm noise and alarm fatigue | Establish alarm necessity | Working deadline: | Create alarm necessity survey tool and use it to assess necessity for each alarm. | |
| | | | Document. | |
| | | | Review. | |
| • Potential for patient harm based on internal incident history | Use internal incident history | Working deadline: | Review internal alarm incident history. | |
| | | | Document. | |
| | | | Review. | |
| • Published best practices and guidelines | Review available best practices | Working deadline: | Identify and review best practices. | |
| | | | Document. | |
| | | | Review. | |

*continues*

**TABLE 1. NPSG Work Plan, Continued**

| TJC Text | In brief | Deadline | Task | Assigned to |
|---|---|---|---|---|
| Part 3. As of January 1, 2016, establish policies and procedures (P&P) for managing the alarms identified in Part 2 above that, at a minimum, address the following: | Establish alarm P&P, including | TJC: January 1, 2016 | Set and track milestones | |
| | | Working deadline: | Establish task force to create alarms P&P | |
| | | | Review | |
| | | | Document | |
| • Clinically appropriate settings for alarm signals | Establish settings | Working deadline: | Subtask: settings | |
| • When alarm signals can be disabled | Establish disablement rules | Working deadline: | Subtask: disabling | |
| • When alarm parameters can be changed | Establish change rules | Working deadline: | Subtask: changing | |
| • Who in the organization has the authority to set alarm parameters | Who can set | Working deadline: | Subtask: setting | |
| • Who in the organization has the authority to change alarm parameters | Who can change | Working deadline: | Subtask: changing | |
| • Who in the organization has the authority to set alarm parameters to ''off'' | Who can turn off | Working deadline: | Subtask: turning off | |
| • Monitoring and responding to alarm signals | Signal response systems | Working deadline: | Subtask: signal monitoring | |
| • Checking individual alarm signals for accurate settings, proper operation, and detectability | Settings check controls | Working deadline: | Subtask: settings checks | |
| Part 4. As of January 1, 2016, educate staff and licensed independent practitioners about the purpose and proper operation of alarm systems for which they are responsible | Educate staff | TJC: January 1, 2016 | Set and track milestones | |
| | | Working deadline: | Identify areas of alarm responsibilities | |
| | | | Develop training | |
| | | | Deliver and track training | |
| | | | Document | |

to have real meaning and not just be a platitude from management. In this regard, simply saying that it is a priority is not the same as providing the resources necessary to see that the stated priority is translated into real action.

Establishing a new priority activity also raises the question of how many priorities you can have, especially given the dictionary definition of priority as "something that is more important than other things and that needs to be done or dealt with first." If something new is made a priority, then something else that used to be the priority must be made at least secondary, and everything below it pushed down the list in turn. There is also a fundamental problem in externally created priorities. Something that is perceived as a national issue may or may not be a local issue, whereas something that is a local issue may or may not have generated a national priority. Of course, the glib answer is to do it all, with equal priority, but this ignores the reality of limited time and resources.

The final column of Table 1 suggests that there be a named individual responsible for seeing each part to its conclusion. This is a common component of good task management in that it requires that we know who it is that is supposed to be getting a task done, or at least seeing to it that it gets done. It is also necessary in most cases to have periodic progress reports on each task and subtask so that there can be a measure of progress.

Although Table 1 is intended to capture the overall work required, it is not a schedule-based document aside from the ultimate due dates. Setting additional operational tasks and deadlines can be presented in another table such as in Table 2. Here, the task is expanded to show all of the TJC called-out parts and internally created subparts, with their associated necessary completion dates in order to reach the ultimate deadline.

In general, these require identifying not only what the objective is but how the work is going to get done, and then doing the work, analyzing the results, documenting the results, and having appropriate review and sign-off, and then final documentation and action. Each of these steps has a time element that must be accumulated to determine the latest possible start date in order to achieve the goal by the end date. As given, the table is moved through from bottom to top to maintain focus on the final deadline. This could certainly be reversed as desired.

**TABLE 2. Schedule Development**

| Component:_____ Deadline: _____ |
|---|
| 1. TJC deadline |
| 2. Dissemination completed |
| 3. Internal completion deadline |
| Revisions |
| 4. Ready for final review |
| Revisions |
| 5. Ready for committee final review |
| 6. Component readiness |
| Part A |
| Part B |
| Etc |
| 7. Start A |
| 8. Start B |
| 9. Start X |
| 10. Assign tasks |
| 11. Establish work plan |

**TABLE 3. SE Elements (in Brief)**

| Primary | Components |
|---|---|
| Leadership ensures process | Focus on high-risk areas |
| Inventory of alarm-equipped devices | For high-risk areas and clinical conditions |
| Alarm settings | For high-risk areas and clinical conditions |
| | Identify where alarms are not necessary |
| Individualizing alarm settings | When can settings be adjusted from default |
| Preventive maintenance | Operation and detectability |

It must be noted where necessary that some subtasks must be completed before others can be begun. For example, in part 2, the input from the medical staff must be obtained before there can be an effective risk analysis. However, how the risk analysis is going to be done and by whom could be developed before all of the input from the medical staff is available. Appropriate parallel tasking of course saves calendar time, but not effort hours.

Moreover, depending on who is doing the work parallel tasks can overwhelm the people who are supposed to be doing the work. In this regard, the establishment of the NPSG as a priority must mean that the people who are doing this work have had as necessary a reduction in their other duties. Everything being an add-on is not likely to be possible, nor does it reflect prioritization. The milestone chart is a classic way to present and monitor task scheduling and record progress, especially when tasks are of necessity linked with respect to their start and end dates.

## Mapping From the Earlier Sentinel Event

The 2011 SE called for a number of tasks that if completed and maintained should serve as input to the NPSG process. For example, leadership commitment to the SE supports the priority commitment of the NPSG. Similarly the inventory process of the SE is a basis for the NPSG steps that require identification of the most important clinical alarms, and the guidelines for tailoring alarm settings should map into the alarm setting components of part 7 of the NPSG. Note here that while the SE called for a focus on high-risk alarms, the language of the NPSG is arguably less specific, calling for identification of the most important alarms (Table 3).

Some parts of the SE are not found expressly in the NPSG. For example, the preventive/panned maintenance of the SE has no direct relationship to any specific part of the NPSG, although the settings check at the end of part 3 is related. This of course does not mean that the maintenance part of SE is no longer applicable, in part because the SE has not been withdrawn, and also because proper maintenance is an existing part of TJC standards, even if an alarm focus is not called out elsewhere.

## CONCLUSION

Although presented in less than 2 pages, the TJC NPSG on alarm management has a considerable scope of requirements that involves study of the environment, development and implementation of plans, and education of personnel. These are no simple or quick activities, and a realistic plan of action and associated deadlines needs to be developed—and followed—in order to reach the end point in a timely and effective manner.

## References


1. The Joint Commission. Sentinel Event Alert, Medical Device Alarm Safety in Hospitals. http://www.jointcommission.org/assets/1/18/SEA_50_alarms_4_5_13_FINAL1.pdf. Accessed September 27, 2013.
2. The Joint Commission. National Patient Safety Goal on Alarm Management. http://www.jointcommission.org/assets/1/18/PREPUB-06-25-2013-NPSG060101.pdf. Accessed September 27, 2013.
3. AAMI, Healthcare Technology Safety Institute, The Joint Commission's National Patient Safety Goal on Alarm Management: How Do We Get Started? http://www.aami.org/meetings/webinars/htsi/resources.html. Accessed September 24, 2013.