Important Reminders

There is no evidence that using color-coded patient alert wristbands is superior to traditional methods of communicating clinical information. Therefore, if health care facilities are not using this practice to communicate important clinical information, it is not suggested that they begin this practice.

Color-coded patient alert wristbands should only serve as a visual cue and alert to caregivers. It should not replace verification of information in patients' medical records.

- Do not rely on color alone to communicate the meaning of an alert. Wristbands serve as a visual cue, and caregivers should always review the medical chart to confirm patients' clinical conditions or risks.
- When a discrepancy arises between a medical record and a color-coded patient alert wristband, caregivers need to reconcile those differences by referring to the patient's medical record as the source of truth.
- Educate staff to always utilize patients' medical records for verification of allergies, fall risks, and advance directives.
- Verify color-coded alert wristbands at the time of patient assessments, during patient care hand-offs, during change of shift, when transfers occur between units, and at the time of discharge.

Limit the use of color-coded wristbands to high-alert medical conditions.

- It is not necessary that a facility implement all three of these patient alert wristbands when adopting standardized wristbands. However, facilities should limit the total number of color-coded alert wristbands used in their facility, excluding the patient identification band.
- If a facility chooses to implement color-coded patient alert wristbands for a clinical message, other than the three outlined in this toolkit, the facility should choose a color other than those used to indicate allergy (red), fall risk (yellow), and do-not-resuscitate (purple). Use primary and secondary colors. Avoid using shades of the same color for more than one wristband alert.
- Special consideration for the pediatric population has been identified. Facilities using the Broselow color-coding system for pediatric resuscitation charts should take steps to reduce the potential for confusion between the Broselow bands and the color-coded wristbands used to designate allergy, fall risk and do-not-resuscitate.
- Consider the potential for confusion between color-coded wristbands indicating a clinical condition or risk factor if your facility uses a colored wristband for patient identification information.

Use patient alert wristbands that are pre-printed with text that clearly identifies the alert.

- This can reinforce the color-coding system for new clinicians, help caregivers interpret the meaning of the wristband in dim light, and also help those who may be color blind.
- This step helps to eliminate the chance of confusing wristband colors with overhead alert messages.
- Some facilities have expressed reluctance to include pre-printed text on the alert wristbands for fear of compromising patients' right to privacy. While it is important to respect every patient's right to privacy, The Joint Commission does not view the use of color-coded wristbands to be a violation of privacy in the health care setting.

Make sure that alert wristbands reflect the current medical conditions of patients.

- Assign clinical staff members responsibility for checking, applying, and removing color-coded wristbands.
- Upon admission to a hospital, and during initial assessment of patients, apply patient alert wristbands appropriate to individual conditions and risk factors.
- Place appropriate wristbands on patients at the time of admission, when medical condition(s) change, or when additional information is updated or received during the course of the hospital stay.
- Document patients' conditions or risk factors in medical records.
- Develop a consistent protocol for anatomical placement of color-coded wristbands.
- Reassessment of the appropriateness of the color-coded wristband should be ongoing and scheduled at intervals during the patients' care, including before invasive procedures, at transfer, and during changes in level of care.
- If alert wristbands need to be removed during the course of treatment, apply new wristbands on another extremity prior to removing the wristbands that are already in place.
- Errors and/or omissions of alert wristbands should be corrected immediately when identified by a health care worker.

Remove wristbands that have been applied from another facility.

- Ensure that hospital policy and procedure is amended.
- Wristband standardization and implementation is voluntary in Michigan, and as health care facilities elect to voluntarily implement this practice, the exact timing of implementation may differ among facilities. Therefore, existing wristbands should be removed at the time of admission to your health care facility.

Remove any "social cause" (such as LIVESTRONG, Alzheimer's Disease) or other non-facility colored wristbands.

- Ensure that hospital policy and procedure is amended.
- Non-facility (or "community") colored wristbands should not be worn in the health care setting and should be removed upon admission to a health care facility to avoid confusion with the facility's color-coded patient alert wristbands.
- Explain the hazards to patients who refuse to remove non-facility wristbands once they are in the health care setting.
- If a patient refuses to remove the non-facility wristband, explain that the health care facility has attached meaning to certain colored wristbands, explain the potential risks to the patient, and request that the patient sign a refusal form. A sample form is included in the "Implementation Information and Resources" section of this toolkit.

Educate patients and their families regarding the purpose and meaning of the color-coded patient alert wristbands.

- As with most patient safety and quality initiatives, it is important to explain to patients and/or their families the purpose of color-coded alert wristbands and to reinforce the importance of their involvement in their care.
- Remind patients and/or their families that the alert wristbands provide an important visual cue to caregivers about patients' medical choices or conditions and provide an opportunity to prevent error.
- Advise patients and/or their families to contact a nurse or other health care provider if the wristband falls off or is removed and not reapplied immediately.
- Use the patient and family education brochure provided in this toolkit or another that has been developed by your own organization.

Educate health care workers on the purpose and meaning of the color-coded patient alert wristbands.

- Educate new employees about alert wristband use and meanings during orientation and reinforce with annual staff competencies.
- Develop a strategy and implementation plan to educate existing staff in the organization.
- Education components should include the risks of alert wristband usage, meaning of colors, staff responsibilities, re-application of wristbands, communication during transfers within the facility, and discharge/transfer to another facility.

Leave the color-coded alert wristbands in place at the time of patient discharge.

- Color-coded wristbands should not be removed at discharge.
- For home discharges, the patient is advised to remove the wristband when he/she is off facility grounds.
- For discharges or transfer to another facility, the wristbands are left intact as a safety alert for staff at the next facility.
- The receiving facility is responsible for re-assessment and subsequent wristband removal, reconfirmation, and application.

Human Factors Considerations

Improving patient safety and quality is a critical goal for every organization, and a part of that goal is to reduce risks for injury or harm whenever possible. By implementing risk reduction strategies, organizations demonstrate a commitment to patient safety in a consistent fashion.

Risks are events that, when triggered, may potentially cause harm, significant injury or, in the worst case scenario, the death of a patient. The commitment to patient safety begins at the bedside and is underscored through leadership support to be proactive in the effort to ensure safe practice.

The initial step in maximizing patient safety is risk identification. Trends in adverse events or "the risk thereof" is key to organizational claim management. Failure to rescue, medication errors, and falls consistently challenge organizations to improve patient safety and reduce financial losses. Medication errors and falls are among the highest reported incidents and are often underestimated "based on their everyday occurrence." Human factors are often the root cause of such preventable events and are often related to a complicated communication process, an ever-changing environment, and a varying rotation of caregivers.

Communication is a key contributing factor of sentinel events that occur in the health care setting. One method to assist with effective communication is using color coding for alert wristbands. This provides a simplified tool that, when standardized, provides a continuous communication link within an organization, as well as among health care facilities.

Within the health care setting, the science of human factors addresses human performance within medical systems, particularly as it relates to processes of care, error management and patient safety. Error management involves not only decreasing errors themselves, but also decreasing the opportunity for error-causing situations to arise by designing safe systems that take human capabilities and limitations into account throughout the design process. This is of primary importance when addressing the design of wristbands, a tool used daily in health care by many providers.

To fully integrate human factors into wristband design, there are several key points to emphasize:

- Human error most frequently arises from stressful, busy, uncommon situations. Because of the dynamic nature of health care, it is important to structure our systems in a way that helps staff successfully complete their work. By standardizing alert wristbands across Michigan, staff members no longer have to remember symbols or colors specific to a hospital; they are able to learn a single set of rules that apply at every hospital.

- The text printed on the alert wristband should not wrap around the entire wrist. This decreases the chance that risk information will be missed because it is on the other side of the wristband and was not seen.

- The minimal amount of information that is required should be displayed on the wristband. Key data should be placed where it can be seen first.

- Alert wristbands should be designed so that they highlight *specific, pertinent* information. Too much information can be difficult to distinguish and can be misread or misinterpreted, especially when caregivers are hurried. Visual cues, such as highlighting, can be used to make the information 'pop out;' however, the cue should be used consistently. Also, the style and placement of information should remain consistent for every wristband. Again, only the absolute minimal amount of information should be placed on the wristband. Limit abbreviations.

- When using text on the wristband, be sure to use large letters that are NOT italicized. Italics are more difficult for the eyes to quickly read and interpret.

- The alert text should always be in a color that contrasts with the color of the wristband. For example: blue print on a black background or vice versa is difficult to read, but black print on a yellow background is very easy to read.

- Reading ability improves with an increase in text size, but only up to a critical point at which it levels off. That critical point is dependent on task; therefore, it would be beneficial to observe the task and determine how readable the text on the wristbands needs to be to allow for optimal performance.

In closing, taking human factors — human capabilities and limitations — into account will allow for a safer and more intuitive system. As a rule of thumb, simpler is *always* better. This advice is based on a broad spectrum of possible wristband designs, highly dependent on the amount and length of text. It is based on scientific research into human abilities to see, read, and perceive and interpret information. Some of these considerations were taken into account in developing the vendor wristband specifications found later in this toolkit.

Human Factors Resources

- *Helping clinicians to find data and avoid delays.* The Lancet, Volume 352, Issue 9138, Pages 1462-1466, E. Nygren, J. Wyatt, P. Wright
- *How to limit clinical errors in interpretation of data.* The Lancet, Volume 352, Issue 9139, Pages 1539-1543, P. Wright, C. Jansen, J. Wyatt