KEY CONSIDERATIONS:
Thermal Barcoded Infant Wristbands
EXECUTIVE SUMMARY

Medical centers worldwide are switching to barcoded wristbands to improve the safety and quality of care while meeting industry mandates. However, nurses in maternity wards are concerned that the switch from vinyl to new materials may not be suitable for infants. Tried and tested for decades, vinyl is nonabrasive, hypoallergenic, and does not damage the delicate skin of babies and premature infants. In fact, infants are the hardest patients to create wristbands for, and few adequate solutions exist that support this need.

Fortunately, barcoded wristband solutions now offer soft nylon material and foam cuffs that are perfect for the delicate skin of a tiny infant. Even with the right material, the information provided on the wristband must afford easy readability, and deliver the right information in the right way. Due to the small size of an infant’s wrist, little room exists on the wristband to contain all the information required for effective barcoding.

The purpose of this white paper is to provide maternity ward staff the information they need to make the right decisions when it comes to barcoded infant wristbands. Durable, supple wristbands that deliver the full benefits of barcoding make it easier for nurses to perform infant care tasks, and help eliminate workarounds. The result is improved efficiency and quality of care. Medical staff is more productive, there are fewer chances for errors, and nurses can provide more focused attention to infants in their care.

INTRODUCTION

INFANT WRISTBANDS FULFILL KEY MANDATES

Barcode wristbands are not just for adults—infants need them too. Imagine a mother’s shock to find out that a maternity nurse gave her newborn to another mother for the infant’s first feeding. Although this may seem like a simple, nonthreatening mix-up, the risks become acute when considering that many diseases like HIV and hepatitis can pass to a baby through breast milk. While reports of these incidents continue to grow, no one knows how often breast-feeding mix-ups occur. This is because few states require hospitals to report the incidents.

One well-reported case occurred at a Brooklyn hospital, where nurses confused two mothers that had the same first initial “S” and last name “Brown.” In this event, one of their children ended up with the wrong mother for his first feeding. At least eight other incidents received attention, including two at Washington area hospitals where nurse aides gave babies to the wrong mothers at checkout. These errors highlight the major challenge of accurate patient identification, which is a well-documented cause of health-care errors that goes beyond just the maternity ward.

In each of the incidents above, barcoded wristbands could have prevented each infant mix-up. Barcoded wristbands form the foundation for positive patient identification and help prevent serious medical errors, or infants leaving the maternity ward with the wrong mother. When The Joint Commission first introduced its National Patient Safety Goals (NPSG) in 2003, improving the accuracy of patient identification topped the list, a position it has held with each successive year. Of course, this mandate extends to all patients, regardless of age.
Medical centers are deploying patient IDs for older children and adults at an increasing rate. In most cases, providing the same information for infants tends to be an afterthought. While the industry struggles to find a solution, maternity nurses are worried about babies being injured by the new wristbands, and that they are too small to contain the required information. Now, as the American Recovery and Reinvestment Act (ARRA) spurs the widespread adoption of electronic health record (EHR) systems at hospitals nationwide, maternity wards need to move forward with the new mandates. To support this effort, barcode-based systems can improve the accuracy of patient records, minimize errors, and enhance the overall safety of maternity care. For infants, the new medical records created upon birth automatically link to their mothers, and carry forward as the child grows.

For babies, barcode-based wristbands allow maternity staff to identify patients and document the associated treatments. They also provide a more accurate way to ensure babies only come into contact with their mothers, and no one else.

**MEET REQUIREMENTS FOR EVEN THE TINIEST OF PATIENTS**

Barcoded wristbands for infants and their mothers provide a convenient way to comply with the National Patient Safety Goal (NPSG) to “Improve the accuracy of patient identification,” which The Joint Commission has included in its goals annually since 2003. Compliance with the patient ID goal requires that healthcare centers use at least two patient identifiers whenever taking blood samples and administering medications or blood products. A barcoded wristband can provide two forms of identification in one easy-to-access place by encoding the patient name and identification number. The Joint Commission recognized the value of this approach in an FAQ item on its Web site that explains the safety goal:

> “The two identifiers may be in the same location, such as a wristband… Acceptable identifiers may be the individual’s name, an assigned identification number, telephone number, or other person-specific identifier. Electronic identification technology coding, such as barcoding or RFID, that includes two or more person-specific identifiers (not room number) will comply with this requirement.”

Once wristbands contain barcodes to provide basic patient identification, medical IT staff can add numerous other identification, tracking, and data collection applications to take advantage of barcode data entry.
CONSIDERATIONS FOR INFANT WRISTBANDS—SOFT, SIZABLE, AND SAFE

Nurses in maternity wards may be resistant to moving over to barcoded wristbands because they are concerned that soft materials are not available. Solutions exist today that easily and safely enable barcoding for mature babies down to the smallest of preemies. The considerations that follow show how to properly choose infant wristbands so the maternity ward can achieve its goals of meeting patient identification standards.

**Soft—Will Not Injure an Infant’s Skin**

A baby’s skin is as thin as paper, and premature infants are even more delicate. The wristband must be the softest material available so it will not injure a baby’s skin. Hypoallergenic barcode wristbands exist that use very thin, nonabrasive, soft nylon material that is much more supple than conventional thermal patient wristbands. Antimicrobial coating that protects the wristband is another consideration. Be sure to take into account the material’s flexibility—it must afford efficient, smudge-free printing. In addition, soft foam cuffs can be used in conjunction with wristbands to provide an additional layer of comfort. To quickly and easily identify swaddled babies, Zebra offers a Swaddleband which creates an extension between the foam cuff and the wristband so it hangs out of the blanket.

**Sizable—For the Tiniest of Wrists**

Wristbanding infants is a sensitive issue. While hospitals go to great lengths to identify infants properly, staff members are also concerned with the flexibility and durability of the bands. The size of an infant’s wrist can range widely depending on her birth weight, and the age of prematurity. Given these variables, barcode designs must be adjustable to fit the smallest of patients.

**Scannable—Accessible and Easy-to-Read Data**

Adult wristbands contain enough surface area to present all the data required to meet positive patient ID standards. Infant wristbands are simply too small to afford easy scanning of the linear barcode. If nurses find it difficult to scan, the maternity ward will not use it, and the whole transition to barcoding fails. The best solution contains a flat surface print area with enough room to contain both 2-D and linear barcodes. The flat tab allows easy, safe barcode scanning from all angles, without having to disturb the infant or move his arm.

FORMATTING

THE RIGHT INFORMATION PRESENTED IN THE RIGHT WAY

Instead of using pre-numbered vinyl wristbands, maternity wards can use thermal barcode wristbands in soft nylon material to identify and associate the mother and father with the baby. When a nurse prints the baby’s patient ID wristband, she can also print parent wristbands with the baby’s financial identification number (FIN). The software that encodes data for healthcare wristbands typically supports standard defaults including the patient’s date of birth, age, and sex.

Infant wristbands should use linear barcodes as part of the basic design, which includes at least one, but preferably two, linear barcodes on the wristband to support glucometer readings. This is important because with two barcodes, the first meets the positive patient identification requirement mandated by the Joint Commission, while the second enables glucometer scans.

Beyond the actual barcode, the infant’s and/or mother’s last name and first name should be printed on the band with human-readable text so that clinicians can easily read it. Doing so fulfills the second part of the Joint Commission Mandate to identify the patient in two different ways—one is with the barcode, the second is with the human-readable name on the band.
CHECK CODES
SAFETY FOR INFANTS AND MOTHERS

Another consideration is to include a check code so that when the baby matches up with the parent, the nurse can easily verify the match. Check codes should be consecutive, and attached to the patient records. Check codes link to the mother’s registration, and are included on both the mother and father’s wristbands. In addition to being visible to the nurse, the check code needs to be part of the barcode format so that the nurse’s barcode scanner will read it.

CONCLUSION

Your medical center is moving to 100 percent barcoding for patient identification—but you are worried that the maternity ward cannot achieve these goals. Making the switch to thermal barcoded wristbands for infants is not as difficult as you think. With over 200 million wristbands sold globally, Zebra has already laid the groundwork for your success. Zebra delivers wristband solutions so you can easily make the switch from vinyl to barcoded wristbands. Gain the peace of mind that the wristband will not scratch or damage an infant’s delicate skin, is adjustable, is the right format, and is easily scannable. Now, medical centers can realize improved efficiency, better safety, and higher quality at the point of care—for even the tiniest of patients.

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Zebra’s extensive portfolio of marking and printing technologies, including barcode, RFID, GPS and sensoring, turns the physical into the digital to give operational events a virtual voice. This enables organizations to know in real-time the location, condition, timing and accuracy of the events occurring throughout their value chain. Once the events are seen, organizations can create new value from what is already there. For more information about Zebra’s solutions, visit www.zebra.com.