

Tracking bits of our genetics

Bar codes help identify and track the most precious of materials. **BY CHRISTY PAXTON** MANAGING EDITOR

In this age of cloning and stem cell research, it seems a natural (no pun intended) progression to develop a system that keeps track of all our genetic bits and pieces. So it should come as no surprise to learn that one company, a leader in the regeneration of human tissues, has taken the highly responsible step of installing an ADC system that ensures unique item tracking for each bit of material.

That company, Regeneration Technologies (RTI), specializes in tissue-based innovations to repair and promote the natural healing of bone and other human tissues, and it wanted to preserve the integrity of each tissue's history.

Besides processing tissue into shaped implants, RTI also services hospitals and surgeons through tissue recovery and distribution. With so much handling of such precious material, it's just common sense to want absolutely accurate tracking for the tissue. Common sense also suggests technology, specifically ADC, would be the linchpin of any such system.

"To be able to show we have a validation system is very helpful," says Roy Pumphrey, materials manager for RTI.

Switching to a print-on-demand labeling system meant the company could save money by printing only what it needed at the time and achieve 100% data integrity. It chose Zebra Technologies' 900Xi2 printer to create the labels and the Microscan MS-850 scanner to validate them. The return on investment (ROI) on this new part of the system was less than two months.

Spin-off started the process

RTI was founded in February 1998 when it spun off from the University of Florida Tissue Bank (UFTB). UFTB had participated in the development of special methods of fashioning tissues into specific forms (called allografts) to benefit surgical patients. RTI was formed to further develop its current specialty tissues and research other alternatives.

Allograft tissue is a natural substance people can donate when they die, just like organs or corneas. The tis-

At A Glance

User:

Regeneration Technologies,
Alachua, FL

Applications:

Inventory control, quality control, asset management

Technologies:

Bar code

Benefits:

- 100% accuracy in tracking.
- Substantial cost savings; dollar value of one order of preprinted labels paid for entire system.
- Less waste.
- Better internal control.

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sue can be precision-tooled for use in many surgical procedures, including orthopedic surgery (vertebrae repair, musculoskeletal reconstruction, fracture repair and sports medicine); urological; vascular; and oral/maxillofacial surgery. That star athlete who broke his arm and comes back faster than you thought possible? Oftentimes, he benefits from allografts

such as bone pins, threaded screws or bone paste. And the best part is, there is no rejection.

Since the beginning, RTI used bar codes to identify and track its products. It was using a preprinted label system that was costly, labor-intensive and wasteful. At first, preprinted labels seemed the way to go. "But we had a bad experience," Pumphrey says. "There were duplicate numbers and high cost."

Sometimes, labels went unused, since the preprinted stock had 10 of each label, yet some processes required less than that.

So Pumphrey and systems integrator Rich Bruce of The Danby Group put their heads together and came up with this system.

Bar codes immediately assigned. With the on-demand setup, each "tissue

in process" is assigned a bar code once it is procured from the inventory of rough cuts (allografts). The tissue in process then gets a document pouch which contains the correct number of labels, each with the same identical bar code. As each label is created, the scanner, which is mounted on the printer, reads

the label to make sure it is scannable and contains a unique bar code. The scanner has to finish reading the bar code, validate and verify it, and then send a command to the printer to create the next code before the first code is done printing.

The pouch also contains a number of documents, each of which is assigned to a specific stage in the manufacturing process. Once the specific process at each stage has been completed, a technician takes one of the bar code labels from the pouch and attaches it to the appropriate document. The tissue is then ready to be transferred to the next stage in the regeneration process. "The tissue is handled by at least five check points by the time it gets to shipping," Pumphrey says.

At each station, to validate the tissue's identity and record that the procedure has been done, bar codes are read by Symbol Technologies' LS3600 wireless laser scanners. Scanning the bar code also generates a finished-goods label at the end of the process. Software shows the sample as picked when it is being packed for shipping; once shipped, the status changes to "shipped" and the item is deducted from inventory.

A benefit to hospitals


The system also helps hospitals once they receive their samples. Though not tied to the RTI database, hospitals can scan the sample's bar code to get the serial number, then provide that number to RTI so the company can track the history of the sample.

Despite the benefits, Pumphrey admits it was a challenge to sell this system to management.

"Convincing management was difficult, but the cost savings and the integrator won them over," Pumphrey says of the approval process, which took a month. "One order from the former vendor paid for this whole system."

Though the system currently does not interface with any others at RTI, Pumphrey says the possibility exists that the system could be expanded to other subsidiaries in the United States.

"We may implement it in other business units," he points out.

Sort of like connecting the kneebone to the thighbone with a bone-tendon-bone piece and some injectable paste, right? Simple, practical and the right thing to do. 



An on-demand print setup means each "tissue in process" is assigned a bar code once it is procured from inventory.

