

ABSTRACT

Title: Functional Applications of the Interactive Tissue Tracking and Management System of the Bone Bank at the Massachusetts General Hospital

Authors: William W. Tomford, MD¹, Azita Sharif, MS, MBA²
1- Massachusetts General Hospital, Cambridge, MA
2- Daedalus Software, Inc., Cambridge, MA

Submitted to: The Australian Tissue Banking Forum, April 10th –12th, 2003

We have developed a web-enabled windows-based interactive software to support the Bone Bank operations at the Massachusetts General Hospital (MGH). The software is generically called Biomaterial Tracking and Management (BTMTM) system. It is designed to use bar-code technology, perform queries initiated by OR nurse or Tissue Bank personnel, maintain a real-time inventory of banked tissues, identify specific locations of tissues in storage areas, generate reports and maintain a database of research users and their requests. Furthermore, the software package is built with capabilities to be interfaced with other internal and external applications to provide a comprehensive tracking and management system from donors to recipients. These interfaces provide institutional links among organizations that are a part of the total Tissue Bank Supply Chain, thereby enabling secure seamless data transfer for increased process efficiency.

BTMTM converts unique Bone Bank accession numbers into bar-code formats and retains a default function to suggest a specific location for each sample at time of accession. The default location function can be over-written manually. When conducting a search, BTM identifies the specific location of each sample.

BTMTM is also designed to maintain pertinent data on all donors, tissues, storage methods, sterilization methods, and vital recipient data such as diagnoses, dates of surgery, surgeons, and important follow data. To comply with FDA regulations, BTMTM works through a shadow database, hiding confidential information for security purposes from outside application users. BTMTM also supports data on users such as institutional affiliations, quantities, types, and dates of requests, shipment dates, and signed/authorized copies of the tissue request form. BTMTM may provide restrictions to allow only authorized users to search within restricted fields for data availability on specimens with user-defined specifications. As further clinical documentation, BTMTM has the capability of incorporating gross and microscopic images of banked specimens, radiographs and offers a query option employing ICD & CPT coding systems.

In summary, this new approach to tissue bank software has potential to provide relational database capabilities with user- friendly interface and clinical data storage and acquisition.