BREAKTHROUGHS 2009
CONFERENCE AND EXHIBITION

Developing and Implementing a Clinical Equipment Replacement Plan

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About Norton Healthcare

- More than 85 locations throughout Metro Louisville and Southern Indiana, including:
  - 5 hospitals
  - 14 outpatient and diagnostic centers
  - Nearly 60 owned physician practice locations
- Norton Healthcare provides care to nearly one in every two people in Greater Louisville – nearly 1.5 million patients each year

NORTON HEALTHCARE

KOSAIR CHILDREN'S HOSPITAL
A Part of Norton Healthcare

Common challenges

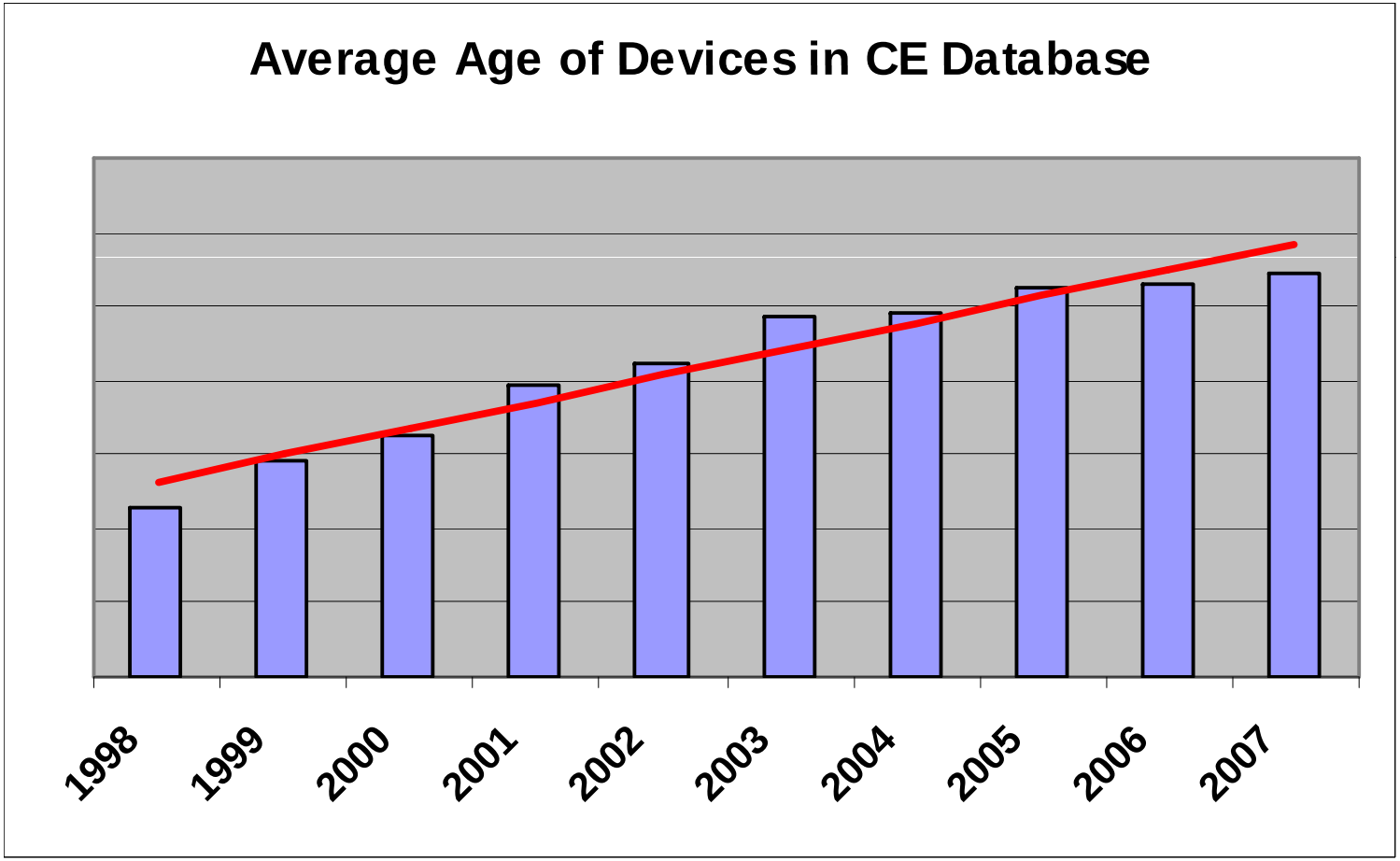
- **Growth vs. replacement**
- **Clinical equipment replacement not seen as a strategic enabler**
- **Scarce capital (increased cost of debt and less accessible)[1]**
- **Capital allocation quandary**
- **Regulatory compliance**
- **Standard of care/clinical quality**
- **Maximizing equipment lifespan**
- **Mitigation of risk**
- **Organizational structure**
- **Data elements needed to evaluate replacement need may not be readily available**

[1]American Hospital Association (2008). *Report on the Economic Crisis: Initial Impact on Hospitals.* Retrieved June 1, 2009, from http://www.aha.org/aha/content/2008/pdf/081119econcrisisreport.pdf.

Challenges with the approach to clinical equipment replacement prior to 2007

- Routine clinical equipment replacement competed with growth related initiatives at an annual capital prioritization session
- Clinical equipment replacement left up to each facility to fund out of discretionary capital
- Equipment standards were informal and sometimes facility or department specific
- Replacement activities often met local/tactical needs, but not necessarily global/strategic needs
- Replacement activities were in disparate stages across the system
- Pricing negotiation was handled on a case-by-case basis
- Clinical Engineering and Materiel Management were typically consulted only at the back end of the clinical equipment replacement process (at or near the point of acquisition)

Challenges with the approach to clinical equipment replacement prior to 2007

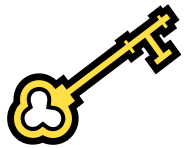


How did Norton Healthcare's Clinical Equipment Replacement Plan come to be?

- **The system CNO proposed that clinical equipment replacement should become:**
  - A strategic initiative with pre-committed annual funding
  - An initiative with clear ownership to facilitate a coherent, coordinated effort
- **Clinical Engineering and Materiel Management fully supported the concept**
- **After negotiations with senior management, $10M was set aside for clinical equipment replacement in 2007**
- **The bulk of this discussion occurred just prior to the 2007 capital prioritization session**

Implementing the Clinical Equipment Replacement Plan ("CERP")

- **A team was assembled to manage CERP**
  - System Chief Nursing Officer (executive sponsor)
  - Associate Vice President, Care Operations (chair)
  - Director, Clinical Engineering
  - Director, Capital Asset Management
  - Director, Value Analysis (RN, ad hoc)
- **A mission statement for CERP was developed: "To facilitate provision of the highest level of care throughout Norton Healthcare through routine, proactive assessment and replacement of clinical equipment"**



Key members

Implementing the Clinical Equipment Replacement Plan ("CERP")

- **Scope was defined as items maintained by Clinical Engineering, as well as critical care beds, OR tables, and sterilizers**
- **Items excluded were any items < $3,000/each, all lab equipment, all imaging equipment, surgical instruments, surgical lights, and med/surg beds**
  - Lab and imaging are themselves highly specialized and capital intensive; it was felt that these two categories should stand-alone as it relates to replacement planning
- **The concept of contingency funds within CERP was developed for unexpected replacement needs that would arise unexpectedly throughout the year**

Implementing the Clinical Equipment Replacement Plan ("CERP")

- **Development of a draft plan was driven with data pulled from the Clinical Engineering equipment database**
- **Items were identified for replacement; the primary focus was equipment already in or approaching an "out-of-support" scenario (i.e., no manufacturer or third party parts/repair available)**
- **The initial plan identified replacement priority items for the next 5 years**
- **The plan was then presented to each hospital and appropriate service line leaders for discussion and approval (C-level, then directors and managers); this discussion included both a strategic overview, as well as specific 2007 plans**

☞ **Key lesson: building an objective, data oriented plan greatly facilitated hospital buy-in**

Implementing the Clinical Equipment Replacement Plan ("CERP")

- **It is important to mention at this point it is estimated that it would take an investment of $15M per year over 5 years to bring the categories within the current scope of CERP into a 10 year replacement cycle**
- **The final categories included in the 2007 CERP were:**
  - **Infusion pumps (large volume and epidural)**
  - **Defibrillators**
  - **Fetal monitors**
  - **Critical care ventilators**
  - **ECG machines**
  - **Vital signs monitors**
  - **Electrosurgical units**
  - **Infant incubators**
  - **Infant warmers**
  - **Critical care beds**
  - **EMG machines**
  - **Heart-lung machines**
  - **Pacemakers**
  - **Infant phototherapy units**
  - **Pulmonary function testing systems**
  - **Sterilizers and washers (all types)**
  - **OR tables (electric)**

Standards development

- The CERP team decided to leverage existing clinical supply chain teams (sponsored by Materiel Management) where possible to discuss and develop formal standards
- These teams already represented a variety of clinical areas and facilities (i.e., they were inclusive)
- In equipment categories with very specific user groups, we engaged those groups directly
- A robust process was used to arrive at formal standards
- There is a recognition that medical technology is rapidly evolving, and periodic reviews of standards (without the full clinical supply chain teams) are planned

Equipment allocation

- **A somewhat unexpected benefit of standardization was an opportunity to standardize ratios of deployed quantities in like units**
- **In many cases, we found equipment was unnecessarily duplicated due to non-standardization and/or the absence of correct features and functionality**

- **Defibrillator theoretical example**
  - Pre-CERP: 5 total devices from 2 manufacturers
  - Post-CERP: 2 total devices from 1 manufacturer
- **Vital signs monitor theoretical example**
  - Pre-CERP: 4 total devices from 3 manufacturers
  - Post-CERP: 2 total devices from 1 manufacturer

Equipment allocation

- **Any quantities of equipment freed up by facilitating proper allocation is reallocated to other replacement needs**
  - The potential downstream impacts are obvious
  - Reduced equipment base equals reduced service costs
  - Any unused funds are used to accelerate replacement in the same or other categories
- **The converse scenario is one where the facility/department needs additional equipment**
  - The scope of CERP is replacement only
  - CERP team can help to validate the need and how best to meet it
  - Additional equipment is ultimately considered “growth” and must be funded with non-CERP funds

Removal of existing equipment

- Equipment that is being replaced must be removed
- Oftentimes, departments desire to keep the existing equipment for “back-up” (in case a device failure occurs or patient volumes increase)
- However, this back-up equipment must be maintained to full standards if it has the potentiality of being used on a patient, staff competencies must be maintained, and supporting accessories and consumables must be maintained
- The team at Norton has been very clear that a 1:1 replacement/removal ratio must be maintained
- It is easy for replacement activities to scope creep into growth activities
- Avoid the perpetual replacement pitfall

Vendor contracting

- **Once a set of viable vendors was identified in a particular category, we were fairly transparent in providing them with our multi-year replacement plans**
- **In most categories, our actual pricing came in below the budgeted (historical) pricing**
- **We did err in under budgeting for some categories, but the savings in other categories more than covered the negative variances**
- **The ability to leverage prospective purchase volumes for multi-year vendor agreements has been huge**
- **Non-formulary vendor noise has been non-existent**

Where does CERP stand today?

- CERP has been a tremendous success at Norton Healthcare
- The team is actively working on securing 2010 funding
- The majority of 2008 and 2009 CERP funds were dedicated toward infusion pump replacement
- CERP is becoming a part of the culture of Norton Healthcare
- Trust and credibility has been gained by the CERP team

Key lessons learned

- **Develop robust data sets to shore up replacement planning**
- **Empower Clinical Engineering to be a “strategic driver” versus playing only a supporting/consulting role**
- **Leverage replacement activities to match equipment quantities, features, and functionality to clinical needs**
- **Leverage prospective replacement quantities for pricing efficiencies**
- **Develop processes to ensure equipment being replaced is ultimately removed for the appropriate disposition**
- **Document the rationale behind standardization decisions, including the objective criteria considered and the parties involved**

Key lessons learned

- **Celebrate successes via employee newsletters and other communications**
- **Be transparent with information and timing issues to build credibility with managers and staff**

Contact information

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Executive summary

- Challenges
  - Consolidating clinical equipment replacement need into a senior management supported program
- Key players
  - Senior executive sponsor (strategic/tactical)
  - Director of clinical engineering
  - Director of capital asset management (Materiel Management)
- Steps/processes
  - Gather supporting data
  - Meet with stakeholders and gain buy-in
- Outcomes
  - Structured approach to clinical equipment replacement
  - Standardization
  - Cost savings
- Success factors/pre-requisites
  - Transparency