The Value of Commissioning in Healthcare Facilities

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Today's Goals

- What is Cx?
- Cx in Healthcare
- Lessons Learned
- Value

What is Cx?

A quality-oriented process to verify and document performance of systems and components to meet the Owner's and Engineer's objectives and criteria



Cx Isn't

- Construction inspection
- "Value engineering"
- Project management
- Directing contractors
- Re-design



Cx Authority

- Technically competent
- Understands systems and how they function as a whole
- Understands the design intent before site visits



Cx in Healthcare

- Required by FGI, NYSDOH
- 2014 Edition

"Added are requirements for developing the owner's project requirements, preparing a commissioning plan, and developing commissioning specifications and construction checklists. The types of systems to be commissioned now include domestic hot water, fire alarm and fire protection, and essential electrical power systems and automatic temperature controls.

alth Care Facilities



Guidelines

FOR DESIGN AND CONSTRUCTION OF

Outpatient Facilities

The Facility Guidelines Institute

Hospitals and

Considerations

- Pressurization
- Critical power
- Backflow prevention
- Temperature control
- Specialty gases
- Nurse call
- Safety eye washes, showers



Path to Cx Success

- Documented Cx procedure
- Develop Cx team
- Design phase Cx
- Pre-bid
- Review submittals
- Review ongoing installation



Path to Cx Success

- Cx Issues Log
- Cx forms
- Final acceptance testing
- Training
- Close-out, including offseason testing
- Warranty review
- Final report



- If you don't test it, how do you know it works?
- Out of the box equipment failures
- Untrained staff
- Liability



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Opportunities

- You know it works
- Patient, staff safety
- Energy savings
- Limit liability



"The patient in the next bed is highly infectious. Thank God for these curtains."

Retro-Cx of Existing Systems



Why Retro-Cx

- Buildings, systems and equipment age
- Change of use
- Opportunity to re-tune for operations and energy efficiency



RCxA Performance

- Coordinates process between Administration, Building Operators, Vendors, RCxA
- Builds team of stakeholders
- Controls design, implementation, and M/V process, develops long-term continuous RCx plan
- Owner must implement and follow-through

RCx TEAM Creation

- Engage operators
- Engage BMS and equipment vendors
- TEAM with RCxA
 - Set targets
 - Define building or space use
 - Document new operation and control strategies
 - Make logical changes (hardware, software, equipment)
- Provides a plan forward

Space Use Changes





RCx Results

- Provides operators confidence that building will operate properly
- Makes what you have work better
 - 70-80% of issues are controls-related
 - 20-30% is equipment age-related
- RCx must continue over time

Maintenance

- Keep systems functioning as intended
- Identify problems
- Not letting small issues snowball to larger system malfunctions



New Use

- Existing building and interior space change of use
- Not major demolition or system replacement



Approach

- Different than Cx for new construction
- Review existing design, equipment
- Suggest equipment changes
- Generate O&M procedures











