Use of Lean Six Sigma in Improving Best Cochlear Implant Practices and Financial Sustainability

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Disclosures

• Cochlear Advisory Board
Cochlear Implant Audiology and Speech Services

- Perception that CI programs cannot be profitable
- Expanding criteria for cochlear implantation will result in more candidates
- 18,000 potential CI candidates in Eastern Missouri and Southern Illinois
Cochlear Implant Programs

• The added pressure of healthcare reform coupled with the goal of continued provision of excellent patient care challenges Cochlear Implant (CI) programs to revisit clinical practices. This includes redefining models of care to grow the CI program to increase patient access.

• Objective: increase the number of patients seen per day per audiologist by limiting technical and administrative functions previously performed by Audiologists through the development of best practice guidelines as well as the implementation of a Hearing Aid/Cochlear Implant (HA/CI) coordinator.
Lean Sigma Six (LSS)

- Lean Six Sigma (LSS) is a methodology that relies on a collaborative team approach for problem solving and process improvement.

- The core tool used to drive Lean Six Sigma projects is the DMAIC cycle. DMAIC stands for:
  - Define
  - Measure
  - Analyze
  - Improve
  - Control
Lean Six Sigma (LSS)
8 types of waste

- Defects
- Overproduction
- Waiting
- Non-utilized talent
- Transportation
- Inventory
- Motion
- Extra Processing
Prior to LSS Implementation

- 50% of Audiology time spent on non-billable activity
- Average of 3 patient appointments/day
Clinic Reorganization

- Best practice protocols
  - Preoperative evaluation protocols
  - Templated evaluations
  - Initial Stimulation protocols
  - Routine follow up standards
  - Continuity between CI clinicians
  - Templates allow for ease of data input

- LSS Methodologies
- Reduce non-billable activities by 30%
- Train non-clinical CI/HA coordinator
- Offset cost of coordinator with increased billable activity
Profitability starts with Productivity

- 54% increase in profitability
- Average 6 appointments per day per CI Audiologist
- Audiologist reduced technical and administrative functions by 30%
CI Procedures Performed

- 2008: 27
- 2009: 26
- 2010: 23
- 2011: 30
- 2012: 31
- 2013: 45
- 2014: 60
- 2015: 80
- 2016: 100
- 2017: 106
Conclusions

• Following adoption of LSS Principles
  
  • >100% increase in patient visits per CI provider
  
  • Improved efficiencies and increased revenues
  
  • Significant increase in CI procedures
Long Term Management

- Ongoing review of clinic activities
- Ongoing modification of best practice methods
- Thoughtful consideration of expansion of clinical resources