Same-day Patient Consultation and Cochlear Implantation: Innovations in Patient-Centered Health Care Delivery

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Background

• Cochlear implantation (CI) is a surgical option for hearing rehabilitation in patients who no longer receive adequate benefit from hearing aid amplification.
• Preoperative evaluation and treatment process for patients undergoing CI is complex, requiring multimodal preoperative evaluation (audiologic, radiographic, and surgical workup)
• As a result, patients experience significant referral-to-surgery time delay and travel burden for each appointment.
• Challenges around access to relatively scarce high-volume CI centers and a growing population of CI candidates additionally stress the need for coordinated, efficient care that expedites treatment and minimizes patient travel burden.
• Since the Center for Medicare and Medicaid Innovation launched the Bundled Payments for Care Improvement initiative in 2013(3), bundling of surgical procedures (most commonly in orthopedics) have been demonstrated to reduce costs and improve the patient experience (1-4).

Objective

To develop a streamlined, patient-centered health care delivery model for patients referred for CI at a high-volume academic center.

Methods

• VUMC IRB approval #170564
• Retrospective review of 245 consecutive patients referred from external provider to VUMC for CI in 2018.
  • Included: 215 patients who underwent CI surgery in 2018
  • Excluded: 9 patients for delays in care outside of hospital-related processes (required other otologic surgery prior to CI, delayed for personal reasons)
• A process map with key events leading up to surgical intervention was developed from observational data (Initial Operational State)
  • Wait times between key events were determined from time stamps in the electronic medical record, while activity times were estimated by personnel responsible for the task.
  • Patient wants / needs were determined through feedback during clinical practice

Results

• 206 patients included for process analysis (Initial operational State)
• New Patient-Centered Care Delivery Model has been piloted with one patient.

Patient Needs & Correlating Operational Improvements

<table>
<thead>
<tr>
<th>Patient Need</th>
<th>Operational Changes</th>
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<tr>
<td>Shorter referral-to-treatment time</td>
<td>Pre-reserved, coordinated appointments</td>
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<td></td>
<td>Bundled model (eliminated insurance approval time)</td>
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<td></td>
<td>CI device inventory</td>
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<td>Interactive EMR to upload prior test results</td>
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<td>Fewer trips to institution</td>
<td>Same-day evaluation and surgery</td>
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<td>Access to information</td>
<td>Interactive EMR with CI information</td>
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<td>Telesurgery / staff messaging</td>
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Summary & Next Steps

• New Patient-Centered Care Delivery Model reduced the referral-to-surgery time from 136 to 24 days, with in-person new patient consultation, preoperative evaluation and surgery occurring during a one-day outpatient experience.
• Initial trial with patient had excellent feedback.

Next Steps:
  • Implement interactive EMR with ability to upload outside hospital records and audiograms, access to CI information and videos about the evaluation and surgical process
  • Implement broader CI device inventory.

References


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