Surgical Hearing Implant Program

Otolaryngology
Program Coordinator - Summary

This report will outline the current status of the Surgical Hearing Implant Program (SHIP) of the department of Otolaryngology – Head & Neck Surgery at Health Sciences Centre (HSC) as of December 31, 2014. The report will provide summary information on both cochlear and bone anchored implant programs, including the number of surgeries performed, the number of devices dispensed and the surgical wait list for the 2014 calendar year.

Program Personnel:
Darren Leitao MD: Co-Director and Pediatric Cochlear Implant Surgeon
Jordan Hochman MD: Co-Director and Adult Cochlear Implant Surgeon
Les Garber MD: Pediatric and Adult Bone Anchored Implant Surgeon
Justyn Pisa AuD: Program Coordinator and Audiologist for Bone Anchored Hearing Aids

Program Details:
Annual Bone Anchored Implant Quota: 14
Annual Cochlear Implant Quota: 35
Annual Program Device Budget: $1,185,629

Program Achievements:

Bone Anchored Implant Program
• Successfully submitted an REB proposal for a bone anchored implant study to compare the subjective outcomes of patients with mixed/conductive hearing loss versus those with single-sided deafness.
• Doubled the amount of bone anchored implants from the previous year while remaining within budget.
• Purchased speech in noise testing materials to objectively measure outcomes.

Cochlear Implant Program
• Marked the 100th cochlear implant for the program with a media event through the Health Science Centre Foundation.
• Reduced the adult waiting list by approximately 20 patients from the previous fiscal year.
• Reduced the average adult wait time by 5 months.

Program Goals:
• Develop an EMR/database system to track patient data, log pre and post-operative outcomes, and generate reports on program efficacy.
• Secure funding for administrative staff for the bone anchored implant program in order to expand the program and increase patient access.
• Secure funding for the development of a baha processor upgrade program to help parents purchase replacement processors for children 18 years and under.
• Secure funding for the cochlear implant program to establish an adult bilateral cochlear implant program in Manitoba.
**Medical Director - Summary**

In September 2014, Dr. D. Leitao split the Director position for the Surgical Hearing Implant Program with Dr. J. Hochman, titles changed to Co-Directors.

Baha clinical volume:
- Wait list and wait times continue to increase annually.
- Numerous communications with audiology and senior officials to resources/funding.

Requests for bilateral implantation:
- Numerous communications with WRHA and MB Health regarding feasibility and costs.
- Met with MB Health to review needs of program, and strategies for implementation.

Fundraisers for CSHC:
- Involved in the event programming, invited speaker

Media Session for 100th Cochlear Implant Surgery in Manitoba:
- Invited speaker. Engaged with Media

New RFP process to begin:
- Involved in leading discussions and refinements of process to ensure clinical needs are well-represented in process.

Surgical Volumes:
- Targets for volume of surgery have been met, and will be surpassed before year end for both cochlear implants and baha.

Operating time:
- Challenges of securing adult OR time for D. Leitao to ensure volume and skill set maintained.

Operating Budget:
- Utilized operating budget surplus to purchase number of equipment and instrumentation for both adults and pediatrics.

Program development:
- Streamlined workflow and paperwork for adult cochlear implant candidates. CT scans and ENG testing is now ordered prior to initial ENT consultation, once audiological candidacy is met. Reducing wait times.

Database creation:
- Several meetings with MB eHealth and WRHA Privacy Office to discuss implementation.
- Numerous roadblocks to development and patient care encountered.
- Numerous costs outlined, which are exorbitant considering the small scope of project.
- Request sent to senior admin to pursue alternate, off-site database.

Space issues:
- J. Pisa currently in GG2 (due to lack of clerical support in Rehab), but his space is to be deleted and used for ENT clinical purposes. Required due to shift in needs of GG2.
- Request submitted to senior admin for additional clerical support, to be funded through existing operating budget.

Equipment issues:
- J. Hochman successful in leveraging surplus money in CI budget to engage HSC to purchase new clinic microscopes for adult ENT Clinic.
- D. Leitao engaging with similar processes within Child Health Program. Results pending.

Education:
- Engaged with educators in Deaf and Hard of Hearing Research Forum, to highlight advances, research and outcomes in deaf education.
**Bone Anchored Implant Program Summary**

The **Bone Anchored Implant Program** achieved 200% (28/14) of its annual implant quota for the 2014 calendar year. 28 adult patients (average age: 51.9 years) and 0 pediatric patients were implanted unilaterally and fit with an external processor. There are currently 30 patients awaiting implant surgery (an increase of 6 from the previous calendar year) and 17 patients awaiting trial for candidacy (a decrease of 3 patients from the previous fiscal year). The current surgical wait time is 11.1 months for bone anchored implant procedures (an increase of 1.1 months from the previous calendar year). The bone anchored implant program was able to exceed its annual device quota this year, due to savings achieved from the cochlear implant contracted vendor price.

The bone anchored implant program has a current caseload of approximately 160 active participants. Approximately 35% of these patients were implanted out-of-province prior to program initiation while 65% were implanted in-province since 2010 or are awaiting consultation for surgery. The program has seen an increase in patients from other provinces seeking services in Manitoba. Average wait times are expected to rise to 18 months in 2015.

<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of bone anchored implant surgeries</td>
</tr>
<tr>
<td>Number of bone anchored implants</td>
</tr>
<tr>
<td>Number of adult baha patients</td>
</tr>
<tr>
<td>Number of pediatric baha patients</td>
</tr>
<tr>
<td>Number of patient referrals for audiological candidacy assessment</td>
</tr>
<tr>
<td>Average Number of patients referrals for audiological assessment (per month)</td>
</tr>
<tr>
<td>Number of patients seen for audiological candidacy assessment</td>
</tr>
<tr>
<td>Number of patients on the waiting list for audiological candidacy assessment</td>
</tr>
<tr>
<td>Number of patients on the waiting list for baha surgery</td>
</tr>
<tr>
<td>Average wait time for baha surgery (months)</td>
</tr>
<tr>
<td>Percentage of intraoperative complications</td>
</tr>
<tr>
<td>Percentage of post-operative complications (infection, excessive skin growth)</td>
</tr>
<tr>
<td><strong>Total spent on bone anchored implants and sound processors</strong></td>
</tr>
</tbody>
</table>

*Table 1. Summary of the bone anchored implant program for 2014.*
Cochlear Implant Program Summary

The Cochlear Implant Program achieved 123% (43/35) of its annual implant quota for the 2014 calendar year. The program completed 40 surgical procedures on 35 adult and 5 pediatric patients. There are currently 40 patients who have passed audiological candidacy criteria for surgery and are awaiting consultation with physicians, representing a drop of 20 patients from the previous year. In conjunction with the decreased wait list for surgery, the average waiting time for adult patients is 20-months, which is a decrease of almost 5 months from the previous year. The cochlear implant program achieved 99% of its annual budget.

The Cochlear Implant program has a caseload of approximately 105 active participants currently implanted and approximately 40 patients awaiting surgery. All adult patients were implanted unilaterally while 60% of pediatric patients (3/5) were implanted bilaterally. The adult waiting list was reduced by approximately 20 adults from the previous year. There is no pediatric waiting list.

<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cochlear implant surgeries</td>
</tr>
<tr>
<td>Number of cochlear implants</td>
</tr>
<tr>
<td>Number of adult cochlear implant patients</td>
</tr>
<tr>
<td>Number of pediatric cochlear implant patients</td>
</tr>
<tr>
<td>Percentage binaural (pediatric cochlear implant patients only)</td>
</tr>
<tr>
<td>Number of patient referrals for audiological candidacy assessment</td>
</tr>
<tr>
<td>Average Number of patients referrals for audiological assessment (per month)</td>
</tr>
<tr>
<td>Number of patients seen for audiological candidacy assessment</td>
</tr>
<tr>
<td>Number of patients on the waiting list for audiological candidacy assessment</td>
</tr>
<tr>
<td>Number of patients on the waiting list for cochlear implant surgery</td>
</tr>
<tr>
<td>Average wait time for cochlear implant surgery (months)</td>
</tr>
<tr>
<td>Percentage of intraoperative complications</td>
</tr>
<tr>
<td>Percentage of post-operative complications</td>
</tr>
</tbody>
</table>

Total spent on cochlear implants and sound processors $1,106,086

Table 2. Summary of the cochlear implant program for 2014.