

ABSTRACT: 2013 ELAM Institutional Action Project Poster Symposium

Project Title: LEADING THE DEVELOPMENT OF A NEUROMODULATION CENTER

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Background, Challenge or Opportunity: The University of Minnesota Medical Center is seeking to expand clinical programs in Neuromodulation, and enhance research funding in this arena. The purpose of this Institutional Action Project is to lead the development of an interdisciplinary Neuromodulation Center at the University of Minnesota, which will *also* support the recently articulated priority of President Kaler to “improve human health and reinvigorate Minnesota’s medical device and related industries with neuromodulation research”.

Purpose/Objectives: **Short-term goals** include establishing the scope of this program, formulating a business plan for expansion, integrating care, building clinical volume, and launching core activities such as seminars and interdisciplinary collaborative research efforts. **The long-term goal** is to establish a financially self-sustaining center with clinical revenue, extramural and philanthropic support, and international name-recognition.

Methods/Approach: The concept for this project emerged naturally from existing institutional clinical and collaborative research efforts. (1) Leadership of existing high-profile Neuromodulation programs across the country, including UCSF, University of Florida (Gainesville), and Emory, were interviewed regarding center infrastructure, metrics, and organization. (2) Local feasibility was determined through discussions with institutional leadership. (3) A business *pro forma* was developed with help from academic health center, hospital system, and industry personnel, which supported a return-on-investment for center development, and attainment of goals.

Outcomes: Strengths noted included the reputation of the program as an early adopter in Neuromodulation therapies for movement disorders, epilepsy, and neuropsychiatric disorders, presence of a diverse portfolio of Neuromodulation research funding, and the depth and scope of the existing program. Weaknesses included the presence of political friction that has contributed to the growth of regional competitors and the absence of patient support groups. The following four areas of focus were identified and will be winnowed down to 2-3 based on early funding success: (1) Addressing geographic disparities through telemedicine; (2) outcomes research and guidelines formulation; (3) translational research for development of novel therapies and indications; and (4) comparative effectiveness of surgery vs. best medical therapy. Challenges faced during the course of the project included changes in institutional leadership, with an adjustment in the pace and degree of resources committed to programmatic development. **Evaluation:** Formulation of this Institutional Action Project contributed to my understanding of issues that underlie successful programmatic development within an academic health center. The lessons learned are not specific to my own institution, and are therefore portable. This process allowed me to stretch my current leadership role by involving colleagues at other institutions, and financial and administrative staff within my own institution to learn about different organizational structures that would support a Neuromodulation Center, and how to construct a credible business proposal. The challenges faced served to highlight the various stakeholders, and the many factors that must be aligned in order for a medical center to support programmatic development.



Neuromodulation Program Development

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Background:

UMMC seeks to expand/enhance Neuromodulation Program.

IAP Purpose: To develop an interdisciplinary Neuromodulation Center, supporting President's priority to "improve human health & reinvigorate Minnesota's medical device & related industries with neuromodulation research".

Goals:

Short-term—establish program scope, formulate business plan, integrate care, build clinical volume, launch core activities (e.g., seminars, interdisciplinary research efforts).

Long-term—establish financially self-sustaining center via clinical revenue, extramural & philanthropic support, international name-recognition.

Programmatic Development Strategy:



Approach:

1. Interviewed leadership of successful US Neuromodulation programs re: infrastructure, metrics, organization.
2. Local feasibility determined via discussions with institutional leadership.
3. Business *pro forma* developed with UMMC, hospital system, & industry personnel.

Outcomes:

Strengths— Program reputation as "early adopter", diverse research funding, scope.

Weaknesses—Politics & lack of patient-centered infrastructure contribute to regional competition growth.

Focus areas identified:

- (1) Address geographic disparities via telemedicine;
- (2) Outcomes research & guidelines formulation;
- (3) Translational research for novel therapies/indications;
- (4) Comparative effectiveness of surgery vs. best medical therapy.

Challenges faced during IAP: Changes in institutional leadership → adjustment in pace/resources committed to program development.

Next Steps:
Program Development

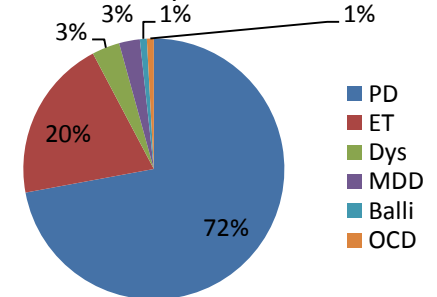
DBS Patient Zip Code of Origin at UMMC:



Growth Potential:

- # of potential DBS patients is far greater than currently treated: >1300 PD, > 1000 ET candidates in Twin Cities.
- Procedure evolving, referrals increasing.
- Market grew by 12%, from 2011-12.
- Additional indications in FDA approval process (Depression, Epilepsy)

Indication for DBS Implantation at UMMC:



5-yr Growth Scenario to Capture DBS Market:

	2012 Projected	'13	'14	'15	'16	'17
12% DBS Growth Rate		9	12	14	17	20
Strategic Referrals		10	10	10	10	10
Tot. Ann. Incremental		19	22	24	27	30
Total Volume	77	96	118	142	169	199