The Challenge of Neuroscience Growing Pains: Optimizing Patient Flow

Holly Tavianini RN, BSN, MSHSA, CNRN
Lehigh Valley Health Network, Holly.Tavianini@lvhn.org

Donald J. Butz RN, CNRN
Lehigh Valley Health Network, Donald_J.Butz@lvhn.org

Follow this and additional works at: http://scholarlyworks.lvhn.org/patient-care-services-nursing

Part of the Neurosciences Commons, and the Nursing Commons

Published In/Presented At
The Challenge of Neuroscience Growing Pains: Optimizing Patient Flow

Holly D. Tavianini, MSHSA, BSN, RN, CNRN and DJ Butz, MSN, RN, CNRN
Lehigh Valley Health Network, Allentown, Pennsylvania

Abstract

One Magnet hospital faced growing pains in response to accelerated growth in the neuroscience service line. In an effort to increase community access to specialized care, patient throughput came more into focus. Historically, capacity in the neuroscience intensive care unit exceeded the available number of beds. This disparity impacted the flow out of the Emergency Department and post-operative recovery units. Faced with patient flow gridlock, the decision was made to develop a neuroscience transition unit that would have a reduced nurse-patient ratio with specially trained nurses as a means to improve throughput. The strategic plan was to designate four transitional beds on a medical-surgical neuroscience unit, offering an improved nurse-patient ratio while providing advanced care outside an ICU setting. This presentation outlines strategies needed to develop a transition unit within the financial and structural framework of an existing unit, which include budget, admission-discharge criteria, education, provider and logistic support.

Objectives

- Explore causation of expanding neuroscience patient population needs and the challenges of patient flow
- Discuss the specialized care required by neuroscience patients and the need for advanced nursing education through didactic and simulation training.
- Outline steps needed to develop and implement a transition unit, focusing on admission-discharge criteria, budget, staffing, and inter-professional collaboration.

Model Infrastructure

Business Plan

- Allocation of Bed Source
  - 4 beds designated on medical-surgical neuroscience unit for higher acuity patients
- Admission/Discharge Criteria
  - 1:4 patient ratio for transitional beds
- Equipment Capital Expenditures
  - Monitoring equipment
- Staff Development
  - Staff training

Inter-Professional Collaboration - Stakeholders

- Nursing
- Physicians
  - Neurologists
  - Neurosurgeons
  - Critical Care Intensivists
  - Hospitalists
- Executive Leadership
- Patient Logistics/Bed Management
- Division of Education

Staff Development

- Didactic Presentations – 4 hours
  - Brain Anatomy
  - Hemorrhagic Vascular Pathology of the Brain
  - Care of the Post-Operative Neurosurgical Patient
  - Neuromuscular and Neurodegenerative Diseases
- Simulations – 4 hours
  - Vasospasm
  - Epileptic seizure management
  - Lumbar drain management
- Pocket Guide Book
- Reference Book on Unit

U.S. Neuroscience Population

<table>
<thead>
<tr>
<th>Condition</th>
<th>Total Patient Days</th>
<th>Average Length of Stay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alzheimer’s</td>
<td>1,420</td>
<td>10.5 days</td>
</tr>
<tr>
<td>Stroke</td>
<td>1,230</td>
<td>7.8 days</td>
</tr>
<tr>
<td>Malignant Brain Tumors</td>
<td>970</td>
<td>12 days</td>
</tr>
<tr>
<td>Stroke Tumors</td>
<td>570</td>
<td>10.2 days</td>
</tr>
<tr>
<td>Multiple Sclerosis</td>
<td>450</td>
<td>8 days</td>
</tr>
<tr>
<td>Hypophysectomy</td>
<td>360</td>
<td>7.5 days</td>
</tr>
<tr>
<td>High Risk Stroke</td>
<td>240</td>
<td>5.5 days</td>
</tr>
<tr>
<td>Lumbar Dissection</td>
<td>180</td>
<td>4 days</td>
</tr>
<tr>
<td>Stable Craniotomy</td>
<td>120</td>
<td>2.5 days</td>
</tr>
<tr>
<td>Stable SAH/ICH</td>
<td>90</td>
<td>1.5 days</td>
</tr>
<tr>
<td>Non-Operative</td>
<td>45</td>
<td>0.5 days</td>
</tr>
<tr>
<td>Neuromuscular and Neurodegenerative Diseases</td>
<td>30</td>
<td>0.3 days</td>
</tr>
</tbody>
</table>

References: