

## VitalStim Therapy in Inpatient Rehab

VitalStim Therapy is the use of neuromuscular electrical stimulation (NMES) during dysphagia therapy. Patients exercise their swallowing muscles while simultaneously receiving transcutaneous electrical stimulation applied through surface electrodes attached to the skin over the anterior neck. This use of NMES is FDA cleared and proven to be safe and effective, especially in stroke and deconditioned patients. Therapists receive special certification training to ensure competency.



### Dysphagia has significant cost impact

- 20% of adult primary care patients seeking unrelated medical care have symptoms of dysphagia of which 46% had not reported problem to their physician<sup>1</sup>
- Up to 65% of stroke patients have dysphagia<sup>2-5</sup>
- Fluid intake is insufficient in dysphagic patients following stroke<sup>6</sup>
- Dementia and dehydration are significant risk factors for pressure ulcer incidence<sup>7</sup>
- Direct charges associated with tube feeding over 1 year are estimated at approximately \$30,000 (much of this cost incurred during hospital stay)<sup>8</sup>
- Quality of life and ability to participate in therapy are severely affected as a result of dehydration and malnutrition<sup>9</sup>

### Treatment of dysphagia is directly related to improved function

- Swallowing treatment improves swallowing function, and improved swallowing function is associated with improvements in nutritional parameters<sup>10</sup>
- Thickened liquids do not alter the rate of water absorption in the gut<sup>11</sup>
- Better nutrition leads to better exercise performance and prevents energy depletion as a result of rehabilitation of the compromised patient<sup>12</sup>

### Cost benefit of using VitalStim Therapy

- VitalStim Therapy is effective to treat dysphagia, especially in IRF setting<sup>13, 14</sup>
- Improved hydration and nutrition is directly correlated with improved patient outcomes and direct cost benefits (decreased associated costs and complications)
- Improved patient participation in therapy leads to better outcomes and faster discharge<sup>14</sup>
- Decreased number of patients on modified diets
- Improved staff and patient satisfaction<sup>15</sup>

#### Benefits of implementing VitalStim Therapy Program

- ↓ length of stay
- ↑ patient admissions
- ↑ marketability
- ↑ patient's participation in therapy
- ↑ patient outcomes
- ↓ cost of dysphagia supplies
- ↓ reliance on tube feeding

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### Cost impact study

Figure 1 below shows a typical scenario in an Inpatient Rehab Facility. In this case study, the facility has 60 inpatient beds with an average occupancy of 50 filled beds. The percentages of dysphagia patients are in line with national averages. The savings are based on a reduction in length of stay and an avoidance of cost associated with dysphagia. This facility realized a net positive impact on the bottom line of \$4,366 per month and a healthy ROI. The investment was recouped within the first few months.

VitalStim Therapy Cost Calculator: Inpatient Rehab									
Estimate of cost impact prepared for:	<b>IRF</b>								
<b>Demographics</b>									
Total number of IP beds	60								
Average occupied beds	50								
% of stroke pts	50%								
% of stroke pts with dysphagia	50%								
% of other neuro pts	5%								
% of other neuro pts with dysphagia	50%								
Total number of pts with dysphagia	13.8								
Average cost per patient day	\$ 640.00								
Additional cost per dysphagia day	\$ 200.00								
<b>Initial investment</b>									
Training SLP staff (@ \$745.00)	1	\$	745.00						
Handheld units (@ \$1,595.00)	2	\$	3,190.00						
Experia (@\$13,880)	1		\$13,880.00						
<b>Savings per month</b>									
	<b>Days</b>								
Decreased length of stay	2	\$	5,500.00						
Decreased cost per patient day	1	\$	2,750.00						
<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Net monthly savings:</td> <td><b>\$ 4,366.44</b></td> </tr> <tr> <td>Annualized savings:</td> <td><b>\$ 52,397.32</b></td> </tr> <tr> <td>Return on initial investment:</td> <td><b>294.12%</b></td> </tr> </table>				Net monthly savings:	<b>\$ 4,366.44</b>	Annualized savings:	<b>\$ 52,397.32</b>	Return on initial investment:	<b>294.12%</b>
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Figure 1: Cost Impact in typical IRF

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