

# Negative Pressure Wound Therapy as a Predictor for Delayed Discharge

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## Introduction

- Negative pressure wound therapy (NPWT) is used across multiple surgical subspecialties for complex wound management and is commonly continued after discharge
- At Huntington Hospital, delays in home wound vac (HWV) delivery have been observed to:
  - Postpone discharge
  - Prolong hospitalization
  - Potentially increase hospital costs and throughput inefficiencies

## Methods

- Retrospective quality improvement study
- Adults  $\geq 18$  years with operating room wound vac placement
- Required home NPWT
- Excluded: insufficient documentation
- Primary endpoints
  - Time awaiting home wound vac delivery
  - Length of discharge delay
  - Reasons for delay

## Results

Variable	Overall (n=33)	HWV Delivery $\leq 24$ hours (n=21)	HWV Delivery $> 24$ hours (n=12)	p-value
<b>Time Awaiting HWV Delivery</b>				
– Mean $\pm$ SD (days)	2.30 $\pm$ 3.46	0.48 $\pm$ 0.51	5.50 $\pm$ 4.10	0.0014
<b>Any Discharge Delay (for any reason)</b>				
– Mean $\pm$ SD (days)	1.24 $\pm$ 2.60	0.43 $\pm$ 0.60	2.67 $\pm$ 3.94	0.076

**Key Takeaway: Home wound vac delivery  $> 24$  hours is associated with significantly longer discharge delays**

Discharge Delay Attributable to HWV Delivery				p-value
– Patients affected, n (%)	13 (39.39)	–	–	–
<b>Patients with HWV Related Discharge Delay</b>		Shorter Delay ( $\leq 24$ hours, n=9)	Longer Delay ( $> 24$ hours, n=4)	
– Discharge delay duration, mean $\pm$ SD (days)	–	0.78 $\pm$ 0.67	2.50 $\pm$ 1.00	0.033

## Discussion

### Clinical Impact

- 39% experienced HWV related discharge delays
- Delays  $> 24$ h significantly prolonged length of stay
- Preventable operational bottleneck

### Operational Implications

- Increased hospital costs
- Bed utilization strain
- Discharge inefficiency

### Proposed Solution

- Maintain hospital-based consignment NPWT supply

### Proposed Streamlined Model

