Standardizing to Self-Adaptive Dressings to Reduce Cost and Optimize Outcomes in Long-Term Acute Care

PROBLEM

- Wound care patients in long-term acute care facilities (LTACs) often present with multiple wounds which require specialty dressings for adequate containment.
- Patient and wound complications prompt use of multiple and varying types of dressings, leading to application of expensive dressing combinations.
- Cost containment requires price awareness, yet bedside clinicians have long been unaware of the cost of dressings used and the cost of non-reimbursed, select dressings left unused in patients’ rooms.
- Communication gaps exist between purchasing agents and clinicians who are applying the dressings.
- In addition, determining actual wound care costs within a facility is complex. Important considerations include dressing decision making time, inventory costs and dressing change time expenditures.

RATIONALE

- A multi-faceted approach focused on standardization to self-adaptive dressings was recently undertaken at an LTAC facility in an effort to reduce costs and improve outcomes.
- Self-adaptive wound care dressings are composed of multiple layered synthetic polymers with a breathable, insensible film backing.
- Self-adaptive wound care technology is based on science of dynamic wound dressing materials with variable wound demand functionality (VWD) dressings are designed to facilitate moisture balance in wounds through simultaneous absorption of fluid and release of water vapor.

METHODS

- Wound care staff nurses from all shifts were trained on use of self-adaptive dressings.
- LTAC purchasing department published prices of all wound care related products, and prices were stored on an electronic index.
- Wound care nursing staff was informed of intent to standardize to one dressing type – self-adaptive dressings – and that dressing use outside of the new standard regimen requires permission from the attending physician.
- Wound care stock room was cleared of all contact layer and specialty cover dressings; shelves were re-stocked with three sizes of self-adaptive wound dressings, wound cleansers, plain gauze, tapes, and transparent dressings.
- Self-adaptive dressings were applied as first-line dressing on all indicated wounds for two months.
- Dressing change frequency was ordered as needed; observed dressing change frequency during use of self-adaptive dressings was compared to observed dressing change frequency during use of prior dressing regimen.
- Averaged monthly product usage and cost for two months of self-adaptive dressings was calculated and compared to averaged monthly expenditures during prior 4 months; dressing change time expenditure was also calculated for each of the two time periods.

RESULTS

- Self-adaptive dressings replaced use of silver alginates, hydrogel and hydrocolloid dressings in approximately 80% of wounds.
- Patients who were non-compliant or who had deep wounds with exposed tendon and/or deep tunnel/undermining did not receive self-adaptive dressings.
- Approximately $728 ($5.5% savings) in monthly expenditures was achieved during the first month of full implementation of the standardization, compared to average expenditures during 6 months (August 2013 to November 2013) prior to initiation of the standardization study (Table 1).
- Clinicians observed improved wound scores and decreased containment during use self-adaptive dressings.
- Average dressing change frequency decreased from once daily to twice weekly with standardization, resulting in labor savings of approximately 137.60 per wound per month (Table 2).
- Use of one single dressing type largely eliminated incidence of incorrect dressing selection and associated waste and costs.
- Overall patient satisfaction increased due to reduced dressing change frequency and moderate wound closure. Wound improvement also led to decreased patient discomfort.

CONCLUSIONS

- Standardization to first-line use of self-adaptive dressings required setup time, through training and careful planning.
- Product cost awareness among staff nurses, and particularly nurse managers, was a crucial component in overall cost reduction in this study. Knowledge of cost helped guide decision making with respect to the dressings used to secure self-adaptive dressings.
- When fully implemented, standardization to first-line use of self-adaptive dressings resulted in labor and product cost savings within the LTAC facility.
- Factors that contributed to high patient and caregiver satisfaction during use of self-adaptive dressings included decreased dressing change frequency, enhanced moderate wound closure, and simplified decision-making.
- High quality patient care standards were maintained while costs and waste were reduced during standardization to self-adaptive dressings.

REFERENCES


METHODOLOGY

- 70-year-old female presented with two non-healing chest drain tube sites on her right flank. Surgical wounds had been present for one month with copious drainage. Patient’s medical history included respiratory failure, delirium, dementia, acute renal failure, and anasarca.

Day 0

A. Before conversion to single self-adaptive dressing.
Prior to self-adaptive dressings, copiously draining surgical wounds were treated with 3% mupirocin liposome ointment with once daily dressing changes. Wounds were slowly increasing in site with inflamed, thickened wound edges.

Day 6

B. After conversion to single self-adaptive dressing. Surgical wounds were treated with self-adaptive dressings with twice weekly dressing changes, resulting in labor cost savings. Wounds were completely epithelialized in 25 days. Patient and caregiver satisfaction increased considerably due to drainage control, decreased dressing change frequency, and wound closure. Wound improvement also led to decreased patient discomfort.

Day 20

Table 1: Estimated monthly cost of self-adaptive dressings vs. previous wound care regimen

<table>
<thead>
<tr>
<th>Category</th>
<th>Self-adaptive dressing</th>
<th>Previous dressing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average cost per wound-related supplies</td>
<td>$2,598.55</td>
<td>$2,660.20</td>
</tr>
<tr>
<td>Savings per month</td>
<td>$61.65</td>
<td>59.70</td>
</tr>
</tbody>
</table>

Table 2: Estimated labor cost of self-adaptive dressings

<table>
<thead>
<tr>
<th>Category</th>
<th>Self-adaptive dressing</th>
<th>Previous dressing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total dressing change/week</td>
<td>20 hours</td>
<td>22 hours</td>
</tr>
<tr>
<td>Average time expended per dressing change</td>
<td>1.5 hours / dressing</td>
<td>1.7 hours / dressing</td>
</tr>
<tr>
<td>Labor cost per patient</td>
<td>$12.90</td>
<td>13.30</td>
</tr>
</tbody>
</table>

Table 3: Estimated labor cost of self-adaptive dressings

<table>
<thead>
<tr>
<th>Category</th>
<th>Self-adaptive dressing</th>
<th>Previous dressing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor cost per patient</td>
<td>$137.50</td>
<td>137.50</td>
</tr>
</tbody>
</table>

Lessons we have learned

- Set a future date for conversion at least one month in advance
- Plan and communicate openly with all staff members who will be impacted by the conversion, including nursing staff and purchasing representatives
- Train entire nursing staff on use of new dressing, remain if necessary
- Set time from nursing staff regarding dressing changes
- Clear stockrooms shelves of everything except the dressings you will be using
- First and foremost dressing
- Offer significant benefits over most other dressings and topical solutions (enzymes/instillment/gel/cream/skin prep), in order to reduce consumption of the most expensive dressings and bandages
- Satisfy requirements for effective healing throughout all wound healing phases
- Be affordable within confines of reimbursement systems (maintain profitability within facility)
- Provide benefits that transfer to all caregivers, such as reduced dressing change frequency, readily available distribution and supply, established reimbursement, and positive outcomes

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