

# Transforming Wound Management: A Catalyst for Clinical and Workflow Transformation

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## INTRODUCTION

- Painful wounds affect nearly half of all hospitalized patients, burdening nursing staff and resources and often resulting in extended length of stay (LOS)<sup>1</sup>
- Conventional dressings require frequent, painful dressing changes and advanced therapies like negative pressure wound therapy and skin substitutes are expensive and require specialized expertise
- There is a critical need for more efficient wound care solutions that simplify care, improve outcomes, and reduce resource utilization**

## OBJECTIVES

- Analyze the clinical, operational and financial impact of implementing an extended-wear wound management system, Transforming Powder Dressing (TPD) with an up to 30-day wear time, on patient outcomes and utilization of nursing, material and facility resources in diverse wounds and care settings
- Develop an evidence-based plan for systematic implementation of the new clinical practice innovation within AdventHealth (AH), incorporating strategies for interdisciplinary collaboration, stakeholder engagement, and measurable outcome tracking to generate system-wide impact

## METHODS

- AdventHealth Orlando - Central Florida Division's (AH-CFD) supply chain team requested a clinical evaluation of TPD by the wound care and surgical teams in an effort to reduce wound related nursing burden and material costs
- The wound care and general surgery teams reviewed available literature and product data and submitted TPD for approval to the AdventHealth Clinical Value Analysis Committee (VAC) based on its potential to improve patient outcomes while reducing dressing changes, and caregiver workload
- The Committee conducted a cost-benefit review, which compared TPD to alternative therapies and concluded that TPD was less expensive than NPWT and skin substitutes, and even conventional dressings due to its potential to reduce dressing changes and nursing time
- Following VAC approval, wound care and general, colorectal and podiatric surgical teams initiated evaluation of TPD including:
  - Two quality improvement projects
  - A Department of Defense-funded, multi-center randomized clinical trial
  - Numerous case studies – spanning acute and chronic wounds – in patients ranging from micro-preemies to geriatric populations
  - A nursing time utilization study
- Positive results led to endorsement from the Chief Medical Officer and nursing leadership for division-wide adoption of the clinical transformation project
- Nursing leadership coordinated an inter-departmental initiative involving surgical services, care management, pharmacy, data informatics and supply chain teams to establish processes for systematic implementation

**About TPD:** TPD is a novel extended-wear dressing (up to 30 days) for acute and chronic wounds. Upon hydration, the granules aggregate into a moist, oxygen-permeable barrier that protects the wound from contamination while wicking excess exudate. As the wound heals, TPD dries and flakes away.

## RESULTS

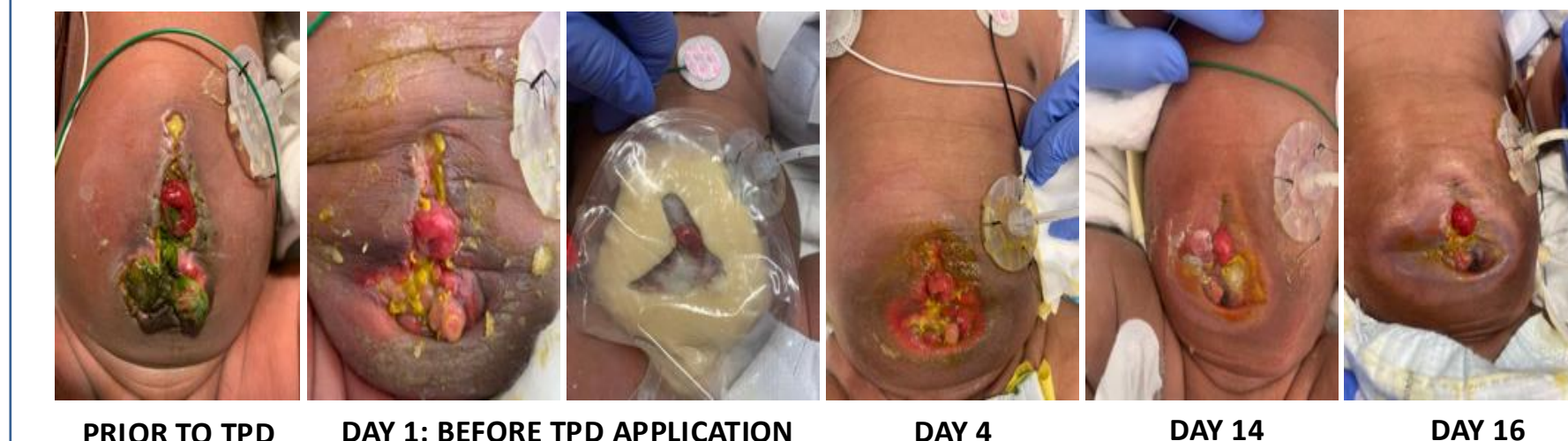
**A. CLINICAL AND OPERATIONAL EFFICIENCY OUTCOMES:** Consistent results were reported by all evaluating departments: positive healing outcomes, fewer dressing changes / assessments, and reduced pain / pain medications associated with dressing changes. Reduced LOS was also observed in a prospective quality improvement project in post-operative wounds and several case studies. No adverse events related to TPD were reported. Select study results are presented below.

### Acute Wounds

- Quality Improvement Project – Painful Post- Operative Wounds (N=12)**
  - Wound Care Assessments:** 67% reduction from 3x to 1x per week
  - Pain Score:** 83% reduction from 8/10 to 1/10
  - Pain Medication:** 80% reduction after 1st application. 100% after the 2nd
  - LOS:** 33% reduction from 6 days to 4 days
    - Estimated Cost Savings:** \$5,923 per patient

- Quality Improvement Project – Complex Colorectal Wounds (N=10)**
  - Dressing Frequency:** 82.2% reduction (1.2 vs. 6.6 per week with SOC)
  - Pain Score:** Reduction in pain reported by all patients
  - Positive Healing:** Mean time = 18.8 (range: 2.3 to 42) weeks
  - No Readmissions** related to wound care

### Illustrative Case: 2-Month Old with Wound Dehiscence Post Omphalocele Repair



### Chronic Wounds

- DoD-Funded Randomized Controlled Study – Diabetic Foot Ulcers (N=135)**
  - TPD wounds healed faster with significantly lower resource utilization

N=135, Sites = 11	SOC (n=63)	TPD (n=72)	Improvement with TPD	p
Wound Area Reduction Rate / Week	7.3%	11.0%	51% faster WAR rate	0.002
Dressing Changes / Subject	31.3	10.6	67% fewer changes	<0.001
Debridements	5.6	3.8	33% fewer debridements	0.01
Pain Scores During Dressing Changes	1.7	0.7	59% lower pain scores	0.009

- 89% of TPD patients rated TPD as “much better than prior dressings”

Subjects Reporting TPD as Much Better Than SOC - N (%)					
Time	42 (89.4)	Convenience	39 (83.0)	Ease of Use	38 (80.9)
Pain	23 (50.0)	Comfort	36 (76.6)	Overall Satisfaction	42 (89.4)

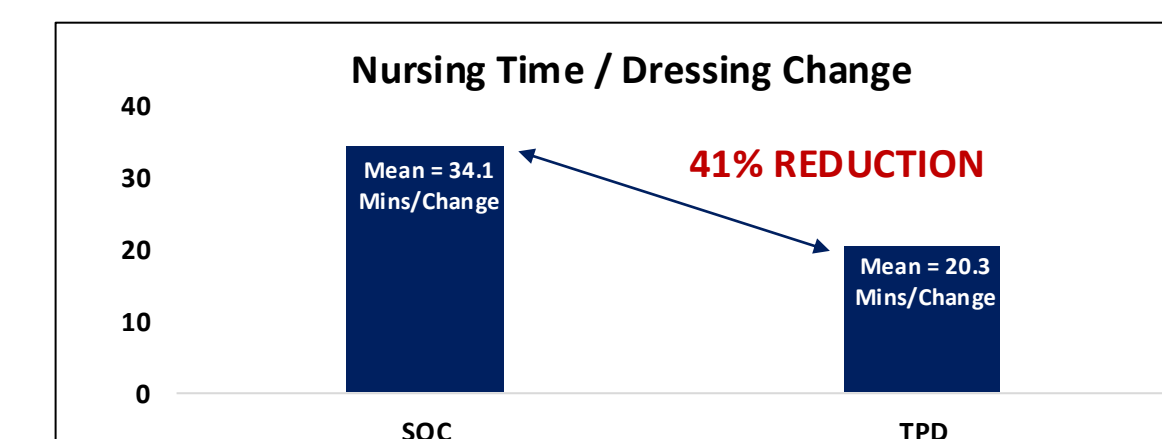
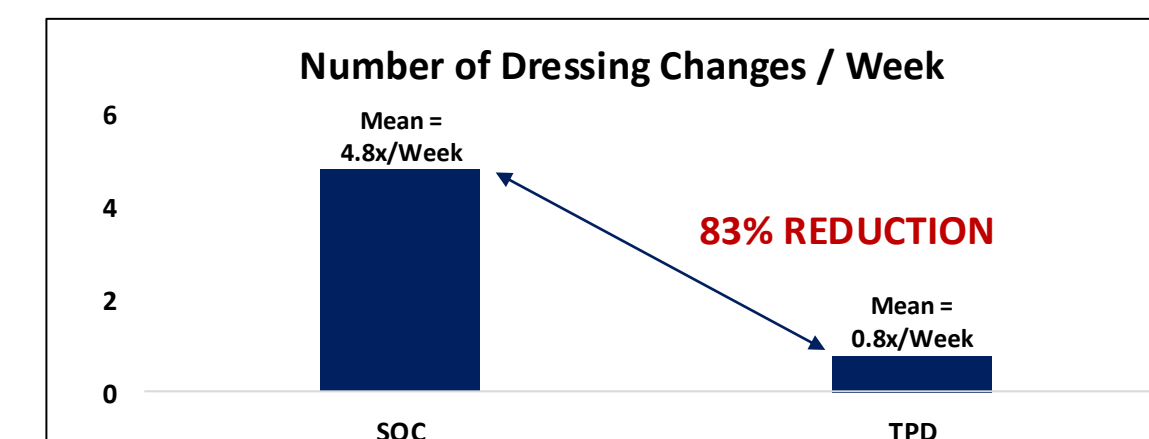
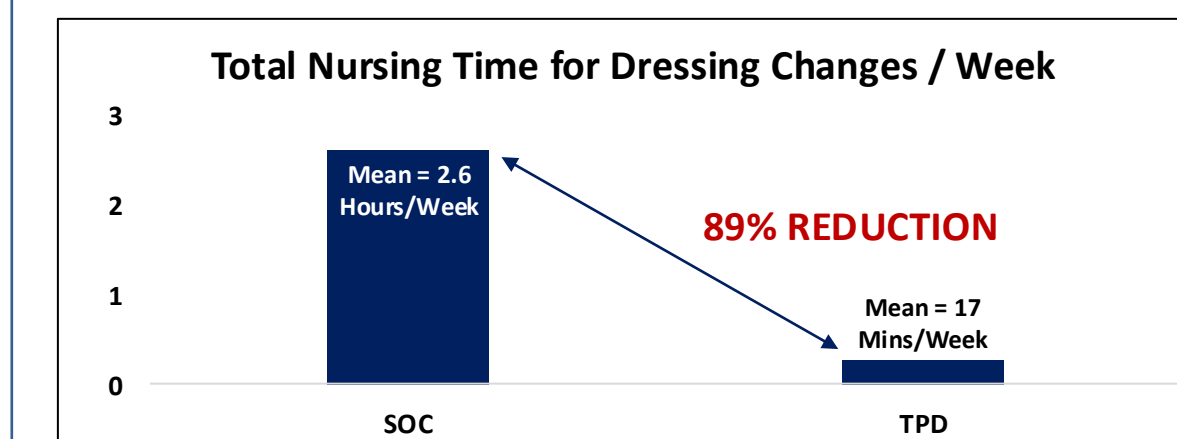
- Retrospective Study – Recalcitrant Pressure Injuries (N=21, Stage 2-4)**

- Wounds healed in 52 days with one application every 14 days
- Pain scores reduced from 8-9/10 to 1-2/10

### Illustrative Case: 20-Year-Old Paraplegic Male with 5-Month-Old Stage IV Pri



### Nursing Efficiency Impact (n=76, 41% acute and 59% chronic wounds)



## B. OUTCOMES FROM INTERDISCIPLINARY COLLABORATION FOR SYSTEMATIC ROLL OUT PROCESS DEVELOPMENT

With support from the AH-CFD CMO and CNO offices, nursing leadership convened a cross-departmental team—including supply chain, data informatics, pharmacy, surgical services, wound care, and care management—to develop a structured plan for systematic implementation of TPD. A plan has been designed to ensure streamlined access, standardized use, and consistent education across clinical teams

- Access:** The product has been stocked in operating room (OR) and central supply rooms at each hospital. Additionally, the outpatient pharmacy has added the product to its formulary and will support patient discharge through the “meds-to-beds” program to facilitate continuity of care post-discharge
- Workflow Integration and Outcomes Tracking through EPIC Implementation:** Order sets for EPIC have been jointly developed to facilitate seamless workflow from the OR to inpatient nursing units and discharge, incorporating treatment line use cases across surgical and wound care services. Dedicated order sets for TPD will also enable data informatics to conduct targeted utilization studies and outcomes tracking
- Cross-Departmental Education:** A phased rollout of training has been initiated for surgery and wound care teams as well as select nursing units. Tailored educational resources have been developed in collaboration with the vendor partner to support clinician adoption and reinforce best practices. Product application SOPs have also been implemented in the AdventHealth Learning Network under the Skills and Standards SOP

This multi-pronged approach aims to ensure that the efficiencies demonstrated during evaluation—reduced nursing workload, improved patient comfort, shorter length of stay, and lower costs—are translated into daily clinical practice across the health system.

The schedule for plan implementation is being finalized in preparation for near-term launch.

## DISCUSSION | CONCLUSION

By leading evaluation, securing value analysis approval, and coordinating interdisciplinary activities, nursing leaders at AH-CFD demonstrated that the introduction of a novel transforming powder dressing (TPD) can drive meaningful improvements in wound care delivery. Across multiple evaluations—including randomized trials, quality improvement projects, retrospective reviews, and nursing efficiency assessments—consistent findings were observed:

- Reduced pain and analgesic requirements
- Fewer dressing changes and lower material costs
- Significant reductions in nursing workload
- Earlier discharge and shorter hospital stays

These outcomes highlight the potential of TPD not only to improve healing and patient comfort but also to support workforce efficiency and resource optimization—critical priorities for both urban and rural hospitals.

TPD is now being regionally deployed across AH-CFD as part of a clinical transformation strategy. This project demonstrates how a single product innovation can act as a catalyst for collaboration across nursing, surgery, wound care, pharmacy, supply chain, data informatics and care management, ultimately aligning with our mission to deliver the highest-quality of care.

## REFERENCES | DISCLOSURES

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