



# TRANSDERMAL SUSTAINED OXYGEN THERAPY FOR CHRONIC WOUND CARE MANAGEMENT

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## Context

As we are noticing an increased number of chronic non-healing wounds within the Complex Continuing Care program due to multiple medical factors; the clinician is always seeking for innovative technology to assist in wound healing.

Our facility was financially supported by Converg Medical ® for a total of 25 EpiFLO<sup>SD</sup> units during the period of January 31, 2007 to March 31, 2007.

This adjunct therapy was trialed for wound management of selected patients with chronic non-healing wounds.



SCO Health Service

## Goals

1. To conduct a trial within the Complex Continuing Care Program Wound Care Stream and within Rehabilitation from January 31 to March 31, 2007.
2. To familiarize ourselves with this new wound care management modality.
3. To measure outcomes related to management of chronic non-healing wounds.
4. To make recommendations for the Product Evaluation and Standardization committee.

## Trial

- A team of Advanced Practice Nurses and Practice Support Nurse selected potential patients in collaboration with attending physician
- A teaching and communication plan was implemented with interdisciplinary on the unit
- Data collection was completed with information on the patient and wound measurement using digital photography every two weeks
- 13 patients participated in the trial
- Anecdotal reports from nurses on this therapy were positive
- The EpiFLO<sup>SD</sup> units had to be used within the trial period of March 31, 2007

## What is the evidence on this new treatment modality?

Animal studies demonstrated that wounds treated with TSOT have a significant increase in re-epithelialization, collagen development, granulation, glycosaminoglycans and other collagen precursors in the treated wounds<sup>1</sup>. Several case studies demonstrated that after 8 to 10 weeks of therapy wound closure was achieved.

## What is EpiFLO<sup>SD</sup> ?

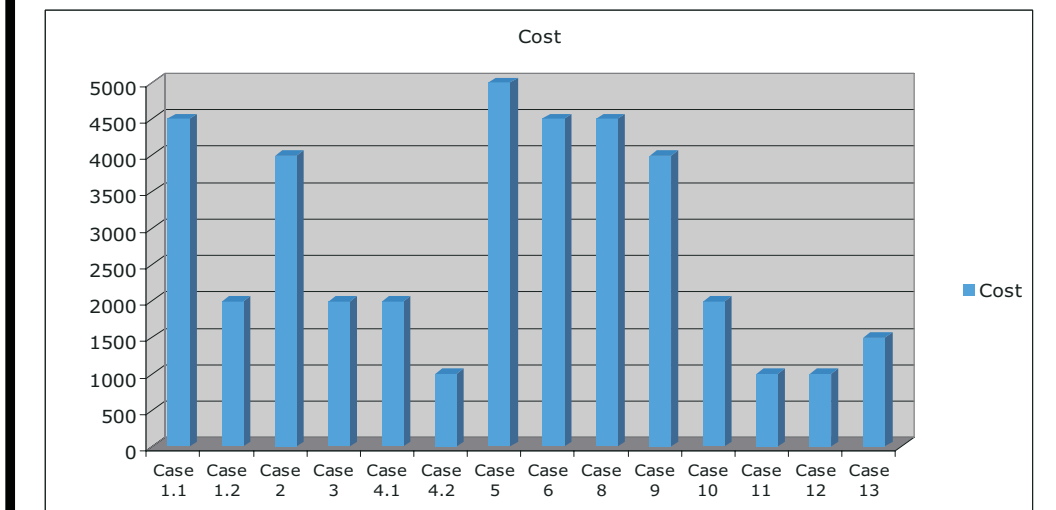
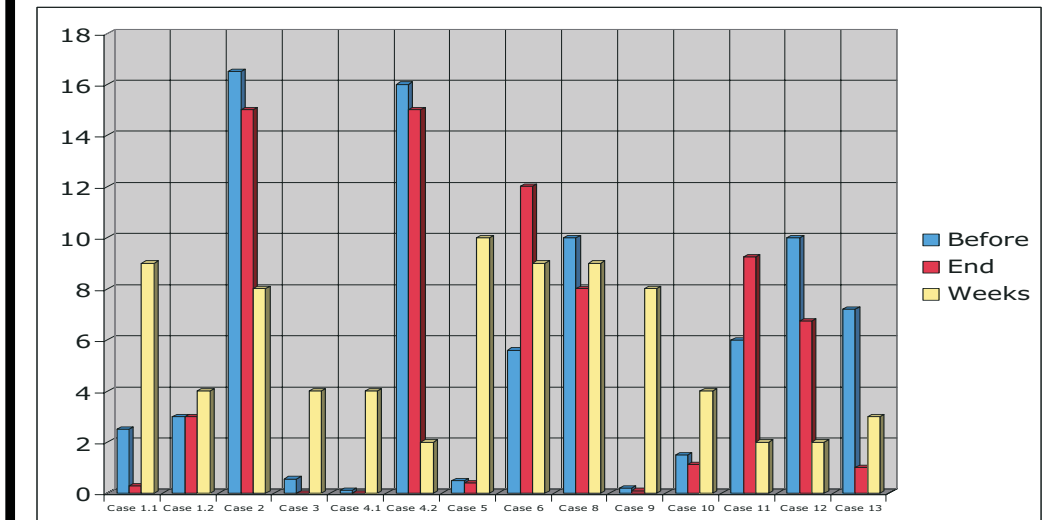
This therapy is a class 2 medical device approved by Health Canada and FDA. It is intended to provide sustained transdermal oxygen to treat skin ulcers due to diabetes, pressure ulcers, amputations or infected stumps, skin grafts and/or burns. It silently delivers 3 mL/hour of oxygen directly into the wound bed providing treatment 24 hours / day, 7 days / week through a 152cm 60" long # 5 Fr. cannula.



## Case # 1 and Case # 3—Before and After Outcomes



## Outcomes



## Next Steps

1. Submission of a cost analysis report to the Product Evaluation and Standardization committee.
2. Consider a clinical research with chronic non-healing wounds to assist in establishing clinical guidelines, cost and protocol with transdermal oxygen therapy.



# WOUND CARE PROGRAM: THE FIRST YEAR EXPERIENCE

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## Context

This Wound Care Program was created in January 2006 in response to an increasing demand for the restoration of patients with complex wounds requiring an interdisciplinary approach and technology based wound care.



**SCO Health Service**  
 Complex Continuing Care Program: 348 bed  
**Three (3) Streams**  
 Specialized Complex Care:89  
 Restorative (total): 55 (wound): 20  
 Supportive: 204

## Admission Criteria:

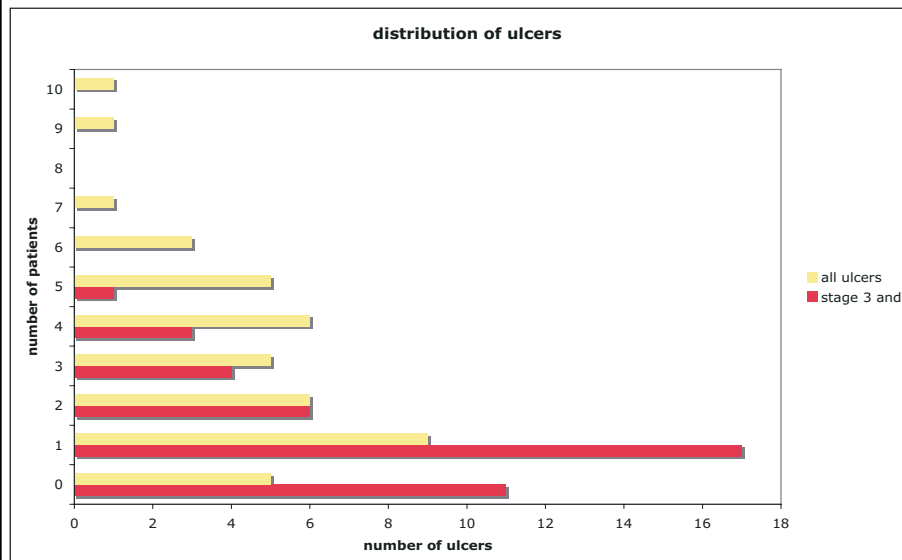
- Surgical, pressure or vascular wounds, single or multiple in number, ranging from partial to full thickness.
- May have multiple co-morbidities requiring risk factor modification.
- May require multiple interventions (ie: IV antibiotic therapy) and extensive investigative follow up, but are medically stable.
- Late loss ADL (bed mobility, transfers, toileting, feeding).
- Unable to participate in an intensive rehabilitation program but good prognosis for recovery with an interdisciplinary team approach.
- Discharge destination either to rehabilitation or a lower level of care (home or community).

## Admissions by source and gender FY 2006 (MEDITECH)

Source	F	M	total
acute care	18	10	28
CCC	1		1
convalescent care	1		1
home	2	1	3
palliative care	1		1
rehab (all)	3	2	5
total	26	13	39

## Admission Data; relevant co-morbidities on admission (RAI) N = 42 (April 1, 2006)

RAI item	diagnosis	N
il1a	DM	19
il1j	peripheral vascular disease	12
il1n	amputation	9
il1w	hemiplegia	2
il1z	paraplegia	6
il1bb	quadriplegia	2
i2m	wound infection	13
k2a & b	BMI less than 20	4
k2a & b	BMI greater than 30	9



## Goals of the Restorative Wound Care Program

- To attain successful wound healing using a collaborative interdisciplinary approach
- To optimize management of illness and co-morbidities.
- To promote risk factor modification by means of patient and family education.
- To attain maximal functional independence sufficient for discharge to a lower level of care.

## Admission Wound Management (RAI) N= 42

RAI item	management	N
m5a	pressure relief device for chair	28
m5b	pressure relief device for bed	30
m5c	turning and positioning schedule	35
m5d	nutrition and hydration	30
m5e	ulcer care	36
m5f	ulcer surgery	18
m5g	dressings to ulcer	34
m5h	medications to ulcer	25
m5i	other skin protection activities	33
p1ac	iv antibiotics	11

## Outcomes

ulcer stage	I	II	III	IV	total	III & IV only
admission average	.55	1.14	.71	.67	3.1	1.4
change	.28	-.1	-.06	-.22	-.11	-.28
discharge average	.83	1.04	.65	.45	3	1.12
percent change	50.9	-8.78	-8.45	-32.8	-3.54	-20

## Next Steps

- Review allocation of resources including bed allocation, medical, nursing, and allied staff.
- To further quantify outcomes via completion of Minimum Data Set (MDS) assessment just prior to patient discharge.
- To review and develop documentation tools that support outcome identification (wound assessment tool, care mapping).
- To enhance risk factor modification via the continued development of patient and family education programs.