



# **Lean Six Sigma Methodology:**

## **Driving Improvements in Community Wound Management**



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# Presentation Plan

- Introduce Lean Six Sigma Methodology
- What is the cost of poor quality in community wound management
- Determining which metrics you need to target for change
- The interventions
- The outcomes



# The NSM CCAC

The North Simcoe Muskoka Community Care Access Centre (NSM CCAC)

- One of 14 similarly structured home care organizations in Ontario
- Provide services to eligible clients;
  - Nursing
  - Personal support (help with bathing, dressing, etc.)
  - Therapy
  - Social work
  - Nutritional counselling
  - Medical supplies and equipment



# Lean Six Sigma

- A data driven improvement methodology that can be applied to all aspects of a business
- An analytical approach to identify the root cause of a problem
- Involves tools to interpret data, and how interpretation can drive improvements
- Looks to eliminate 'waste' in a system that does not add value to the client/patient/customer experience

# Cost of Poor Quality

Cost of Poor Quality (COPQ) is defined as;

- The dollars associated with any care activity which does not add value to the patient/client/family



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# Importance of Data

- Data is critical in any improvement project;
- Health Outcomes Worldwide and the how2trak® data/outcomes management system
  - Point of care documentation of all wound management metrics by front –line nurses
  - Shared data base between the NSMCCAC and visiting nursing providers
  - Generate reports of practice based on evidence-informed indicators



# Home Care - What Do We Know?

- Health Outcomes Worldwide Data 35 – 50% of community nursing caseload is for wound management (NSM CCAC – 35%-40%)
- Adverse Events –wound management is a critical patient safety issue
- Health Quality Ontario– public reporting on incidence of new pressure ulcers from RAI-HC data



# Defining the Project

- Relationship with Health Outcomes Worldwide and benchmarks of best practice in the community health
- The benchmark for Daily Dressing Changes is between 15-20% of a community health wound care caseload
- Nursing Agency A – 32% of their wound management clients were daily dressings
- COPQ (12 – 17% difference) in doing daily dressing changes that were not needed, according to best practice, was annualized to be \$89,813.88



# COPQ and Impact

COPQ comes with two distinct impact points;

- Business Impact – potential reallocation of dollars saved in unnecessary nursing visits
- Client Impact – better wound management outcomes; improvement in quality of life; decreased length of stay on caseload



# Project Team

- Green Belt Candidate (1)
- Manager representation from the NSM CCAC (1)
- Client Care Coordinator from the NSM CCAC (1)
- Manager from Nursing Provider Agency(1)
- Front line community visiting nurse from Nursing Provider Agency (1)



# Seeking Tribal Knowledge

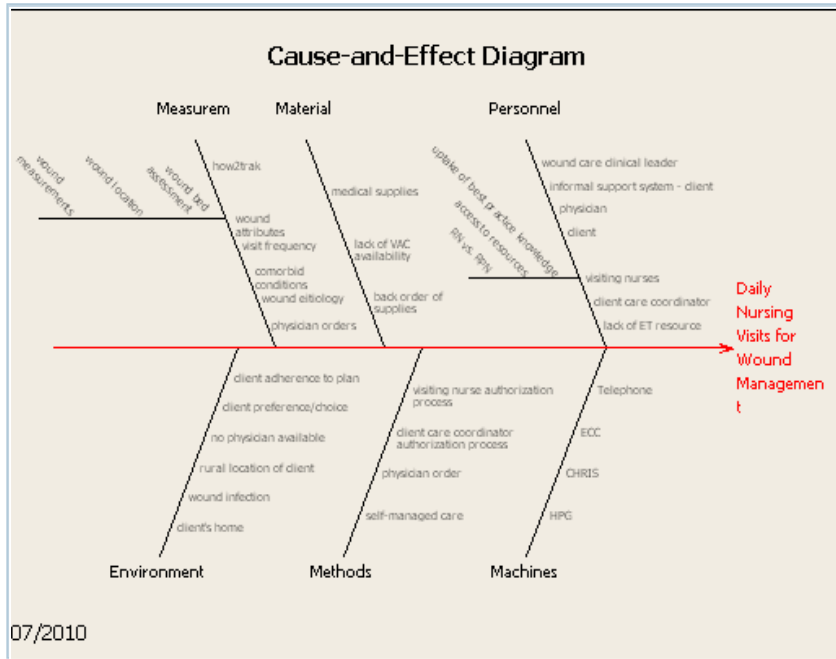
Critical for each of the stakeholder groups to participate in sharing their knowledge and expertise, to answer the question;

*What do we believe contributes to the occurrence of daily dressing changes?*

# What are the Factors?

The top four:

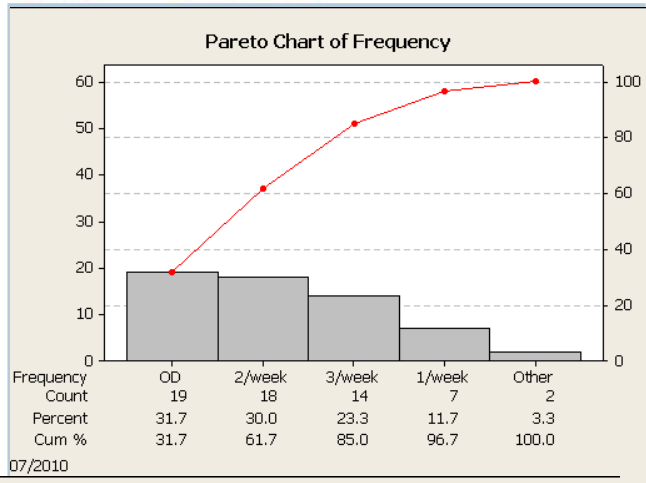
1. The wound type/attribute (*uncontrollable*)
2. The client attributes and choices (*uncontrollable*)
3. The community nurses' own practice beliefs - assessment
4. The uptake and application of best practice knowledge



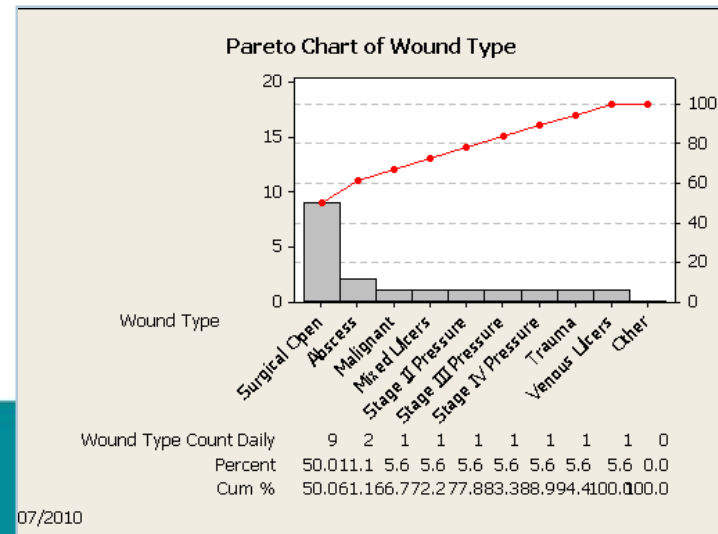
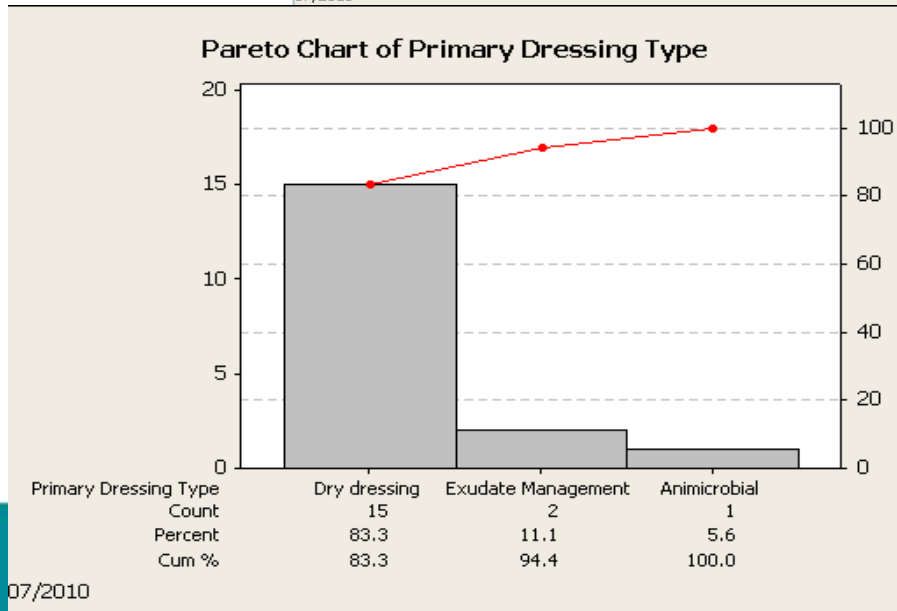


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# What and Where of the Problem



Used Pareto charts to lead us to the conclusion that daily dressing changes are linked to the Surgical Open Wound and the use of Gauze-based Dressing Products



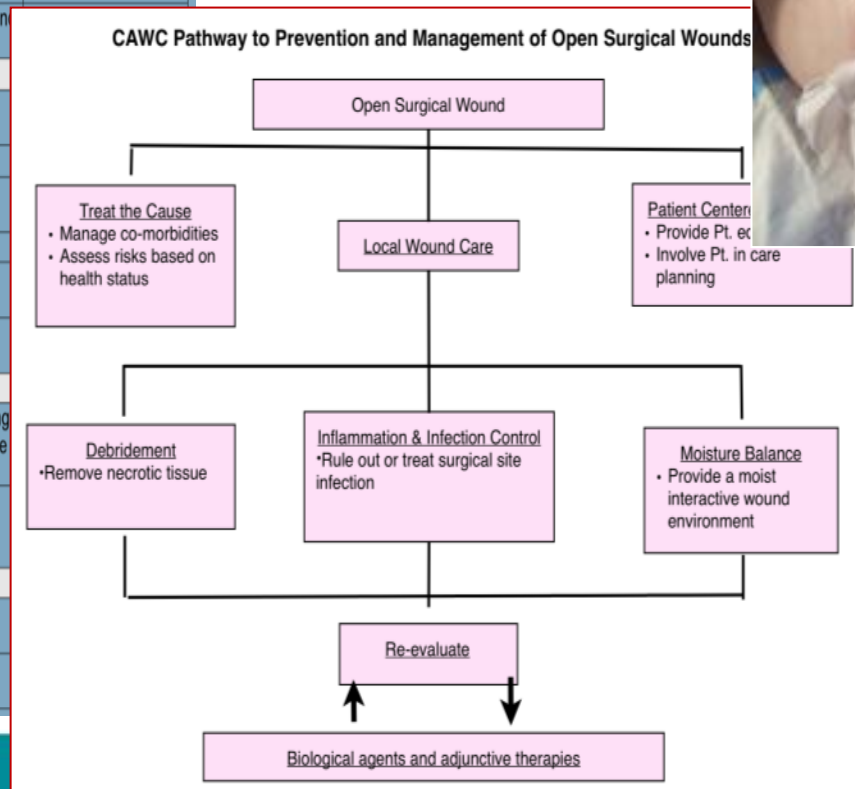
# Focus on the Surgical Wound and the Gauze-Based Dressing



# Standardized Evidence-Based Care

## Quick Reference Guide for the Prevention and Management of Open Surgical Wounds

	Recommendation	Strength of Evidence
<b>Cause</b>		
1	Complete a holistic assessment to identify factors that may affect surgical wound healing in the pre-operative, intra-operative and post-operative phases of care	NICE level 2+ RNAO level IV
2	Create a treatment plan to eliminate or reduce factors that may affect surgical wound healing in the pre-operative, intra-operative and post-operative phases of care	
<b>Patient Centered Concerns</b>		
3	Include the patient, family and/or caregiver as members of the team when developing care plans	
4	Educate the patient, family and/or caregiver to optimize surgical wound healing	
5	Assess the surgical wound and document findings using a standardized approach RN	
6	Debride the surgical wound of necrotic tissue	
7	Rule out or treat a surgical site infection	
8	Provide optimal local wound moisture balance to promote healing by choosing an appropriate dressing for the acute and chronic phases of surgical wound healing	
<b>Re-evaluation</b>		
9	Determine the effectiveness of interventions and reassess if healing is not occurring at the expected rate. Assess the wound edge and rate of healing to determine if the treatment approach is optimal	
10	Consider the use of adjunctive therapies and biologically active dressings	
<b>Organizational Concerns</b>		
11	Recognize that surgical wound healing requires a team approach	
12	Implement a surgical site surveillance program that crosses clinical setting boundaries	





# Provider Interventions

- Met with the manager and the front line nurses of Agency A to share the data
  - Comparing to the benchmark for daily dressing changes in community wound management
- Educated Agency A front line community nurses in the evidence-informed care of the Surgical Open Wound
  - Face to Face education sessions
  - Pocket enabler for the Surgical Open Wound and Moist Wound Healing





# CCAC

## Shared Accountability

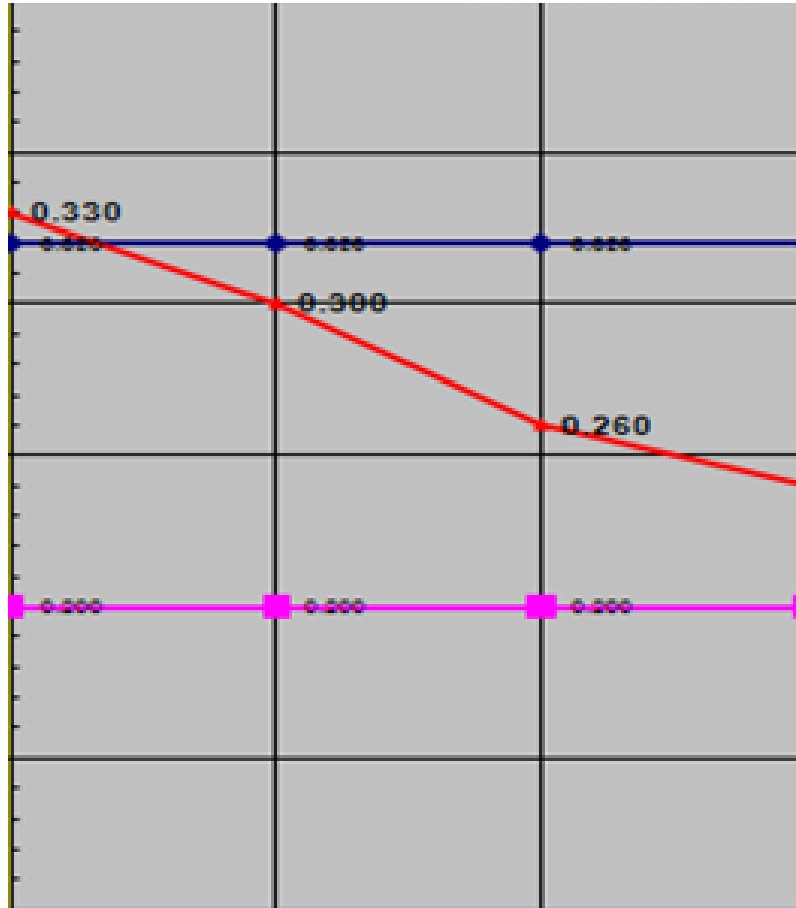
- Using our relationship with Health Outcomes Worldwide and our access to how2trak®
  - Client Care Coordinators knew at a glance who of their clients had a surgical open wound
  - Access to and understanding of the evidence-informed care expected for this wound type, including the typical visits to anticipate and the questions to ask if the care didn't go according to plan –
  - Fostering the inter-disciplinary team approach to community wound management

# The Control Phase

Shift in daily dressing changes  
 – almost immediately!

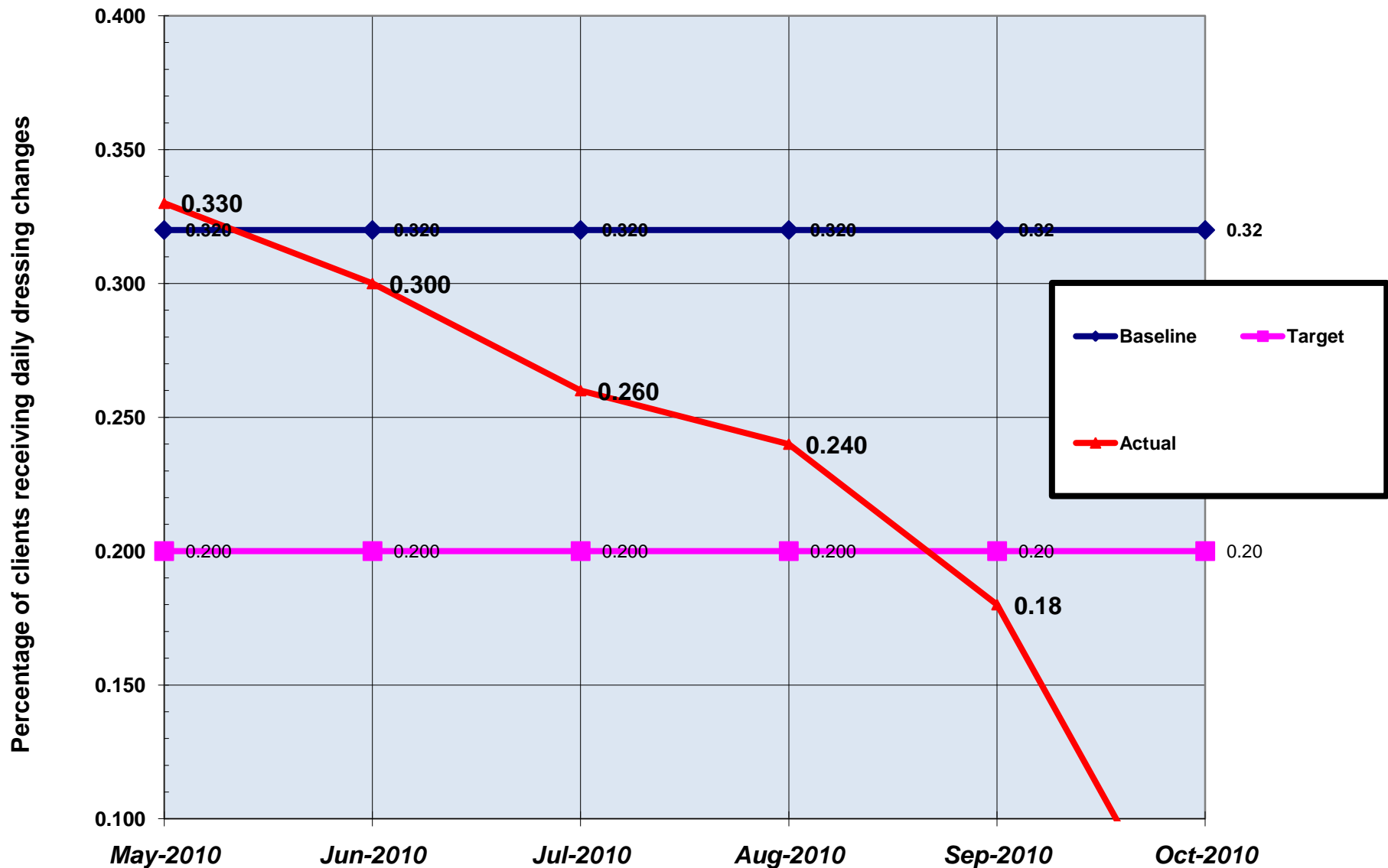
## Control Methods;

- Standard Operating Procedure developed for all client care coordinators
- Agency A developed consultation for front line nurses with ET nurses
- Regular audits of practice shared and discussed monthly with CCAC and nursing agency



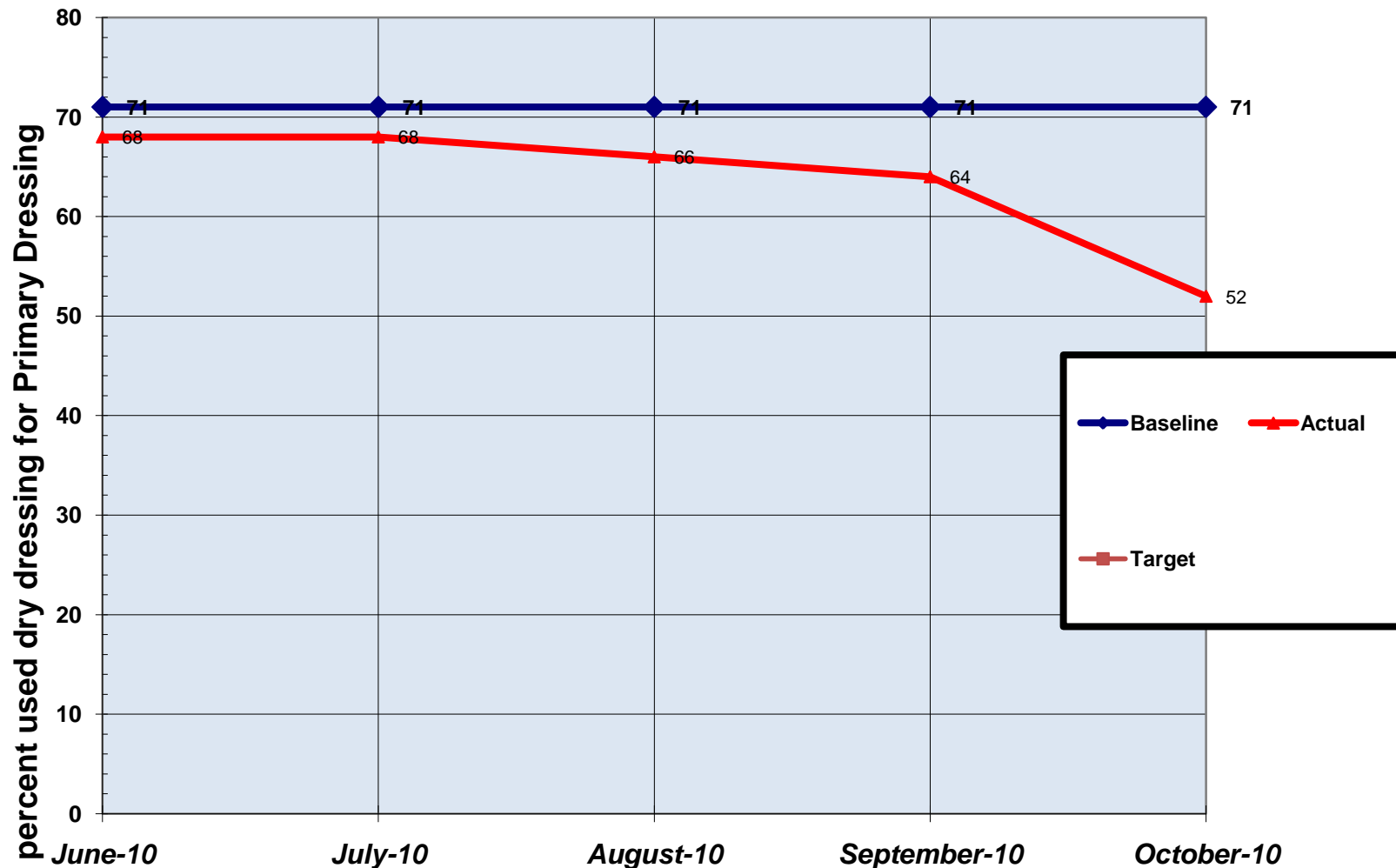
# PRIMARY METRIC

## Percentage of Clients Receiving Daily Visits for Wound Management



# SECONDARY METRIC

## Percentage of Primary Dressings that are Dry Dressings





# Impact Results

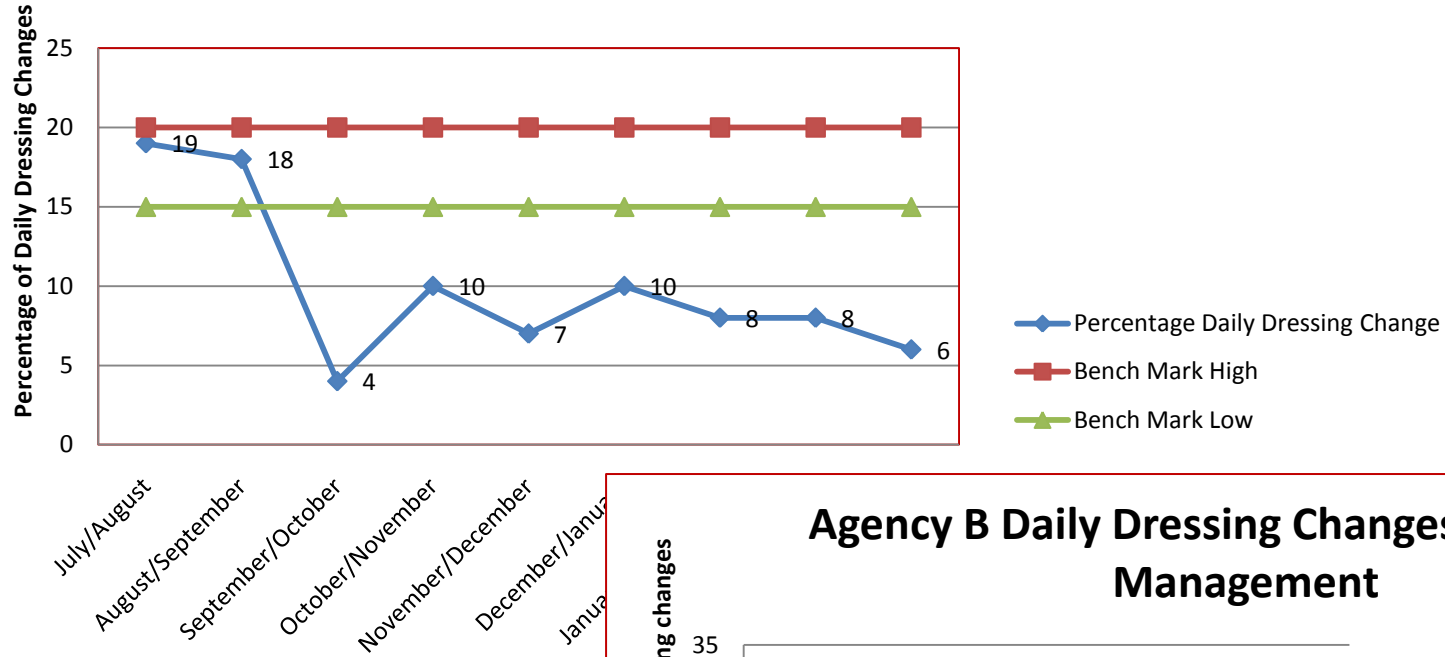
## Business Impact –

- Actual savings in the fiscal year 2010 = approximately \$90,000
- Increased organizational capacity to address personal support waitlist

## Client Impact –

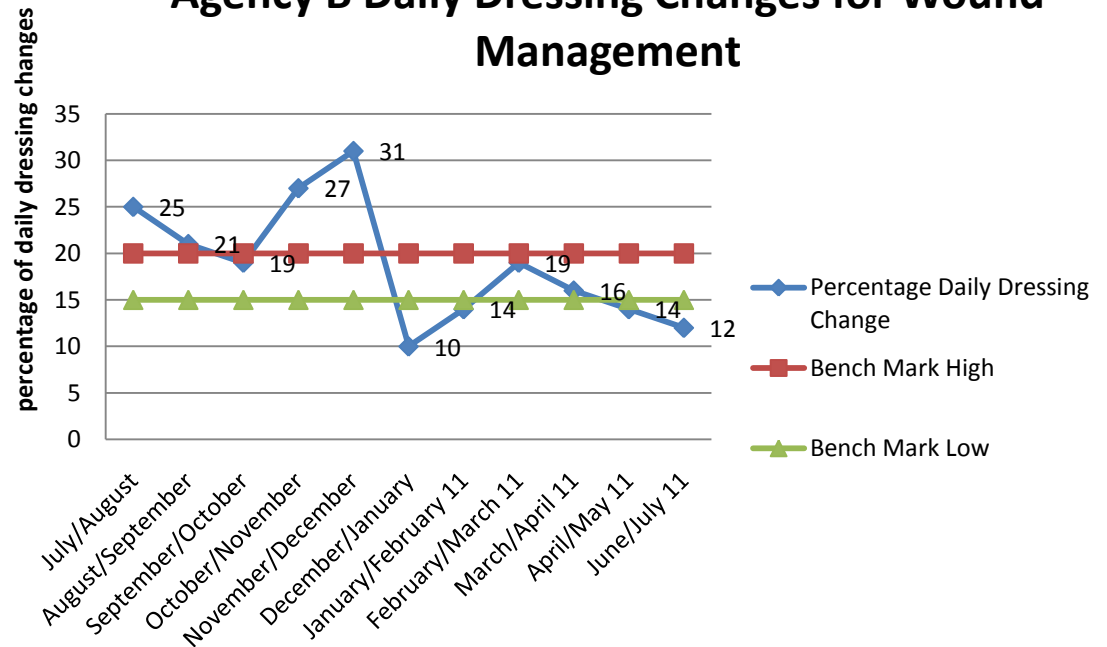
- Decrease in nursing visits related to dressing changes
- Wound closure occurring sooner / discharged sooner from CCAC caseload
- Increased Quality of life

## Agency A Daily Dressing Changes for Wound Management



The right data available to us, in a suitable way, allows for timely tracking of practice and immediate feedback to stakeholders

## Agency B Daily Dressing Changes for Wound Management





# NSMCCAC Comparison 2010 to 2011

2010 – percentage of daily nursing visits for wound management (dressing changes) = **25%** (average across 4 nursing agencies – approx. 600 wound clients)  
= \$69,720 / week  
**= estimated \$3,625,440 per year**

2011 – percentage of daily nursing visits for wound management (dressing changes) = **14%** (average across 4 nursing agencies – approx. 650 clients)  
= \$39,060 / week  
**= estimated \$2,031,120 per year**



# Next Steps for the NSM CCAC and Lean Six Sigma

2011 – 2012 –

- Project Decreasing the Prevalence of Stage II and Greater Pressure Ulcers
  - Utilizing how2trak® and RAI-HC data /outputs to identify client risk patterns earlier
  - Plan more proactively for our at risk of developing a pressure ulcer client
  - Promote the interdisciplinary team knowledge and sustainability



# Questions?

