

ASCO's Quality Training Program

Project Title: Improve Optimal Treatment in Head & Neck Cancer Patients

Presenter's Name: Glenn Mills, MD Project Sponsor, Team Leader
Jennifer Nicholson, RN, IT Analyst
Becky DeKay, MBA, Facilitator

Institution: LSU Health Shreveport, Feist-Weiller Cancer Center

Date: March 6, 2014

Institutional Overview

- Located in northwest Louisiana, Feist-Weiller Cancer Center (FWCC), is on the campus of LSU Health Shreveport and was designated as a Center for Excellence in Cancer Research, Treatment, and Education in 1993. It provides outpatient services for cancer patients in a 60,000 square foot outpatient building.
- The adjacent hospital, University Health, is a 550-bed tertiary acute-care hospital that has 16 beds dedicated to oncology patients and a 12 bed Bone Marrow Transplant unit. Radiation therapy is also provided at the University Health facility.
- The hematology/oncology program includes 11 Faculty, 16 Fellows, and 9 mid-level providers of LSU Health Shreveport academic setting.
- FWCC sees approximately 40,000 patient visits per year with over 1,300 new analytic cases each year.

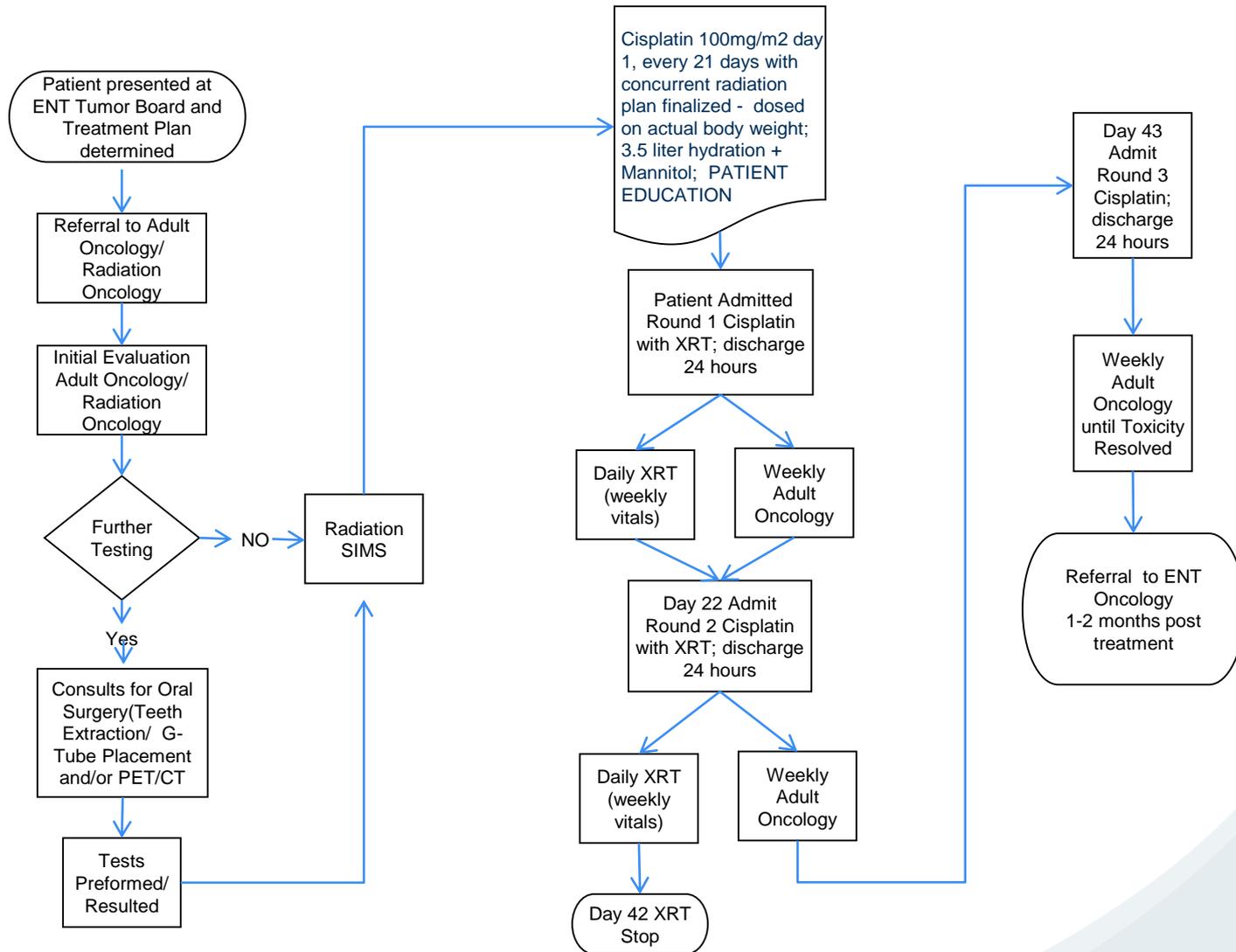
Problem Statement

- Since 2011 in Feist-Weiller Cancer Center, 50% of Head and Neck cancer patients receiving Cisplatin 100mg/m² day 1 and every 21 days (total 3 doses) with concurrent radiation, 35 fractions (CIS/XRT) have not been able to complete their therapy as per protocol (dose over time interval) leading to suboptimal therapy.
- Based on 2003 ECOG Study article, **An Intergroup Phase III Comparison of Standard Radiation Therapy and Two Schedules of Concurrent Chemoradiotherapy in Patients With Unresectable Squamous Cell Head and Neck Cancer**, by DJ Adelstein et al, the non-completion rate was 15%.

Team Members

- Glenn Mills, MD –Medical Hematology/Oncology – Project Sponsor, Team Leader
- Srinivas Deverakonda, MD – Medical Hematology/Oncology Fellow
- Vikas Mehta, MD – ENT Oncologist
- Lee Ann Maranto – Nurse Practitioner
- Jennifer Nicholson, RN – IT Analyst
- Kerri Barlow, RT Supervisor – Radiation Therapy
- Christine Porche, CFY SLP – Speech Pathology
- Becky DeKay, MBA – Facilitator
- Arif Kamal, MD - Coach

Process Map



Cause & Effect Diagram

Patient

Treatment

Lifestyle (smoking/ETOH)
Failure to keep appointments
Failure to disclose symptoms
Inadequate oral hygiene
Failure to fill Rx
Inadequate hydration (PO/PEG)
Comorbidities

Dental Extraction Timing
Inadequate Pre-meds
No Rx
Antiemetics/mucositis
Timing of admission
Inadequate IV Hydration
PEG tube placement timing
Inadequate dose adjusting (Chemo/XRT)

Unable to complete CIS/XRT therapy

PEG care/hydration
Proper Oral Care
Adequacy of instructions
Dietary needs
Side effects
When to report symptoms
Who to call

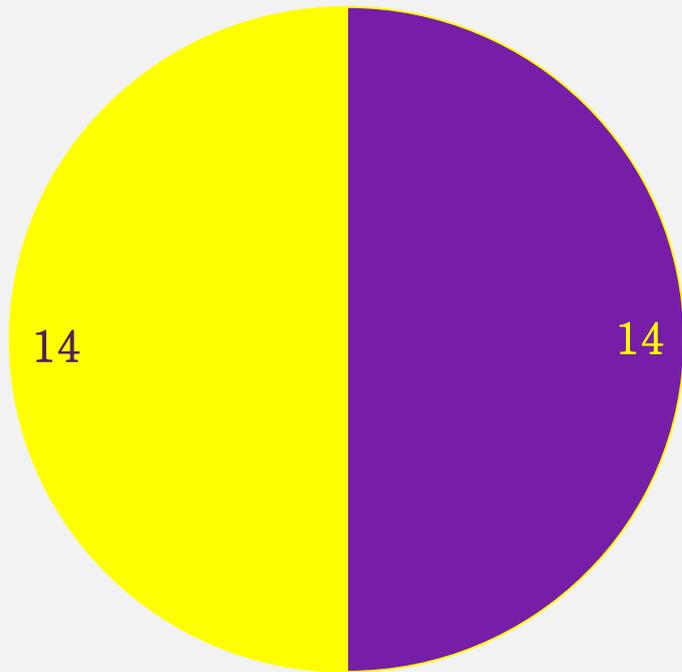
Labs/vitals/weight
Dietary support
Social Services
Speech Pathology
Follow-up call Post discharge
Frequency of symptom assessment
Frequency of determined visit needs
Financial counseling

Education

Clinical Support

Diagnostic Data

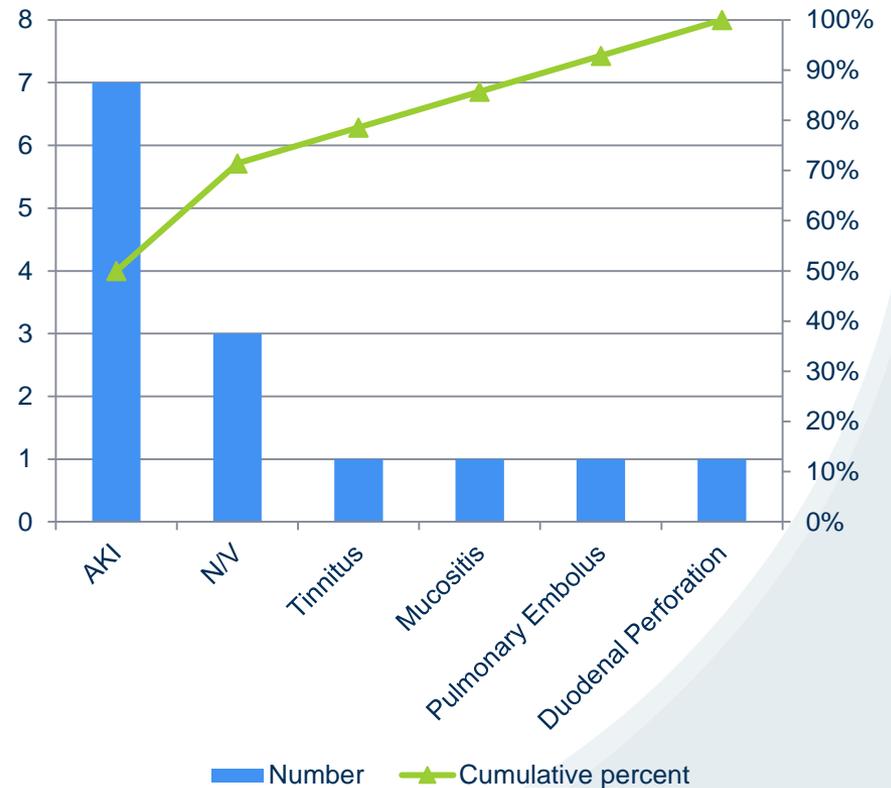
Total Patients = 28



Completed Therapy

Failed to Complete Therapy

Reasons for Failure to Complete Therapy



Aim Statement

By March 6, 2014, reduce by a relative 20% the number of head and neck cancer patients unable to complete CIS/XRT protocol therapy as per established treatment plan.

Measures

- Measure: Change in Weight
- Patient population: Head & Neck Cancer Patients receiving CIS/XRT
- Calculation methodology: Current weight vs. Previous weight
- Data source: Patients weighed in Radiation Therapy
- Data collection frequency: Daily
- Data quality (any limitations): Minimal count of patients

Measures

- Measure: Change in Creatinine Clearance
- Patient population: Head & Neck Cancer Patients receiving CIS/XRT
- Calculation methodology: Cockcroft-Gault Formula
- Data source: EHR patient data
- Data collection frequency: Weekly or as indicated
- Data quality (any limitations): Minimal count of patients

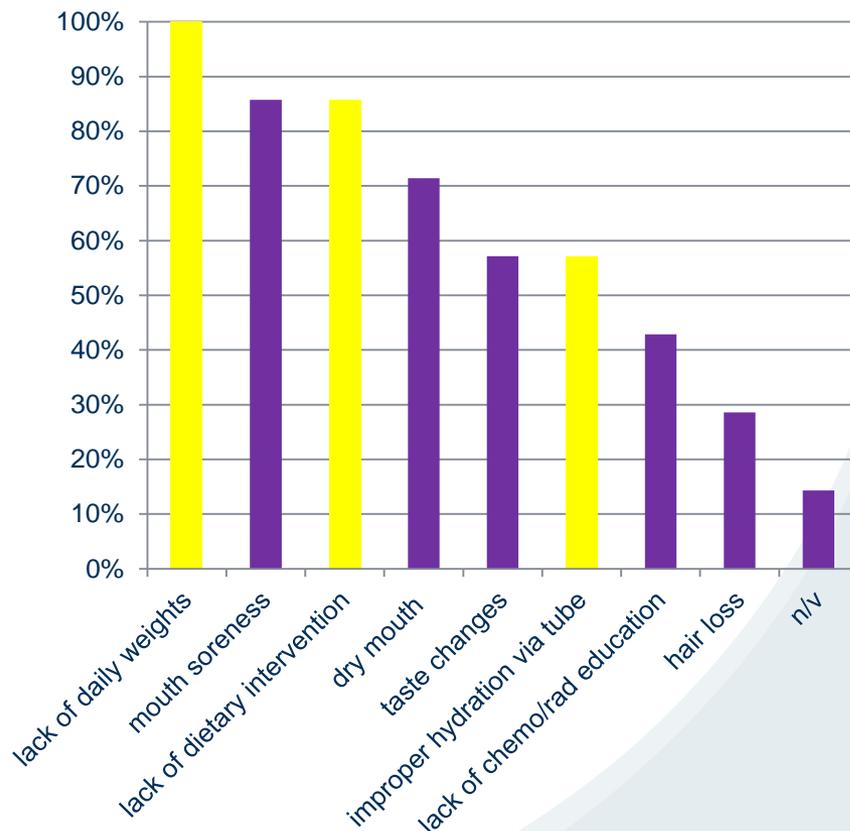
Baseline Data

Survey of Surviving Patients

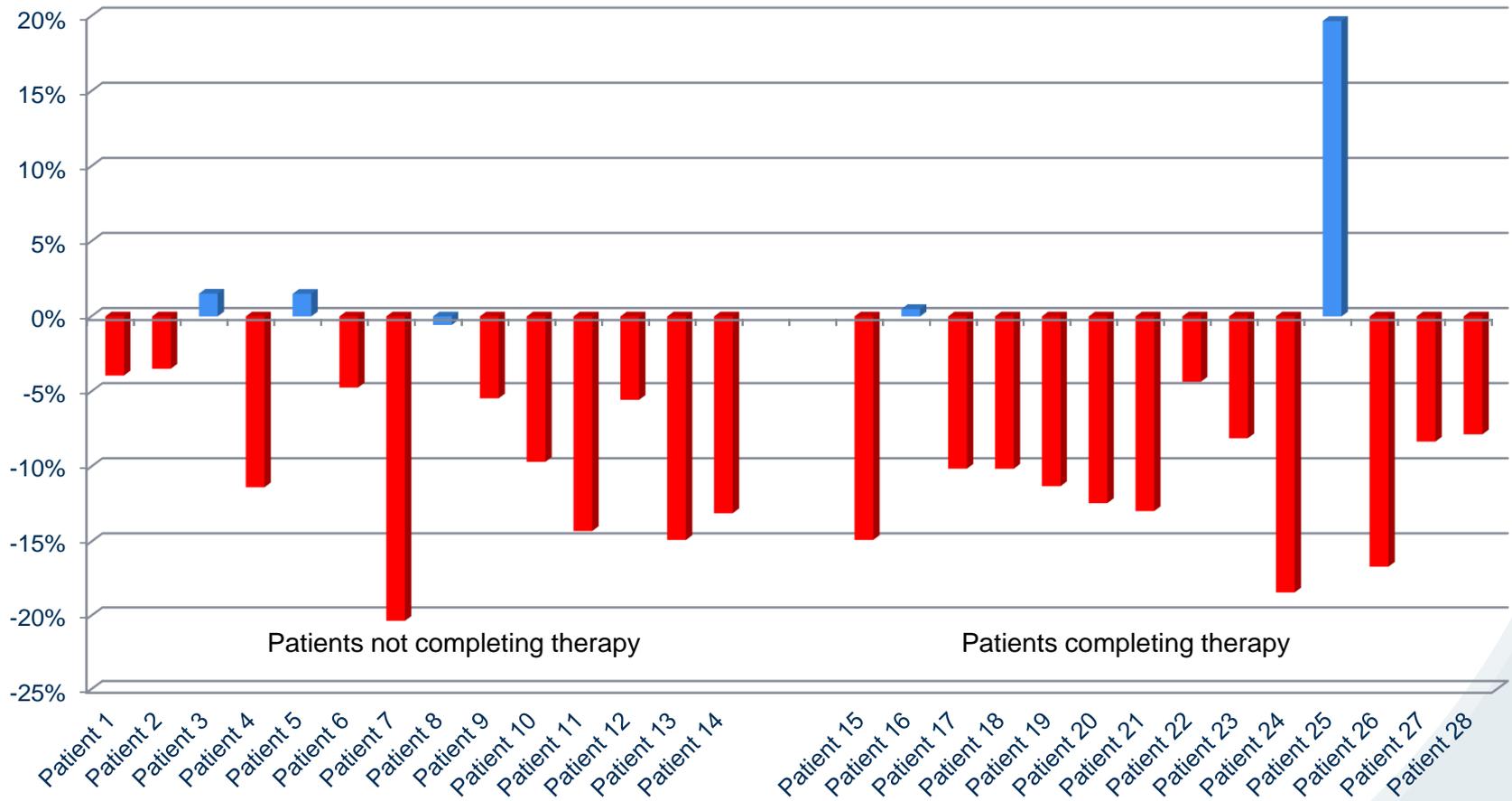
- Age:
- Gender:
- Smoking/Alcohol Usage:
- Top 3 symptoms you experienced during chemo/radiation
- Top 3 reasons you were unable to eat or drink
- If you missed chemo, can you tell me why?
- Did you have any nausea medication prescribed? If so, what were the names of the medications?
- Were you able to pay for and pick up your prescriptions?
- Did you have “magic mouthwash” or anything to use for sore mouth?
- Did you have a PEG tube or G tube?
- Can you tell me if anyone told you how to use your PEG/G tube?
- When did you begin to use your PEG/G tube?
- What did you put in your PEG/G tube?
- Did you use any supplemental feedings? If so, how much?
- How much water did you put into your tube and how often?
- Did you require IV fluids due to dehydration?
- Were you weighed or have vital signs taken daily?
- Did anyone tell you what to expect or educate you on your chemotherapy?
- Did anyone tell you what to expect or educate you on your radiation therapy?
- Were you able to continue activities during treatment or work?

Survey conducted December 2013

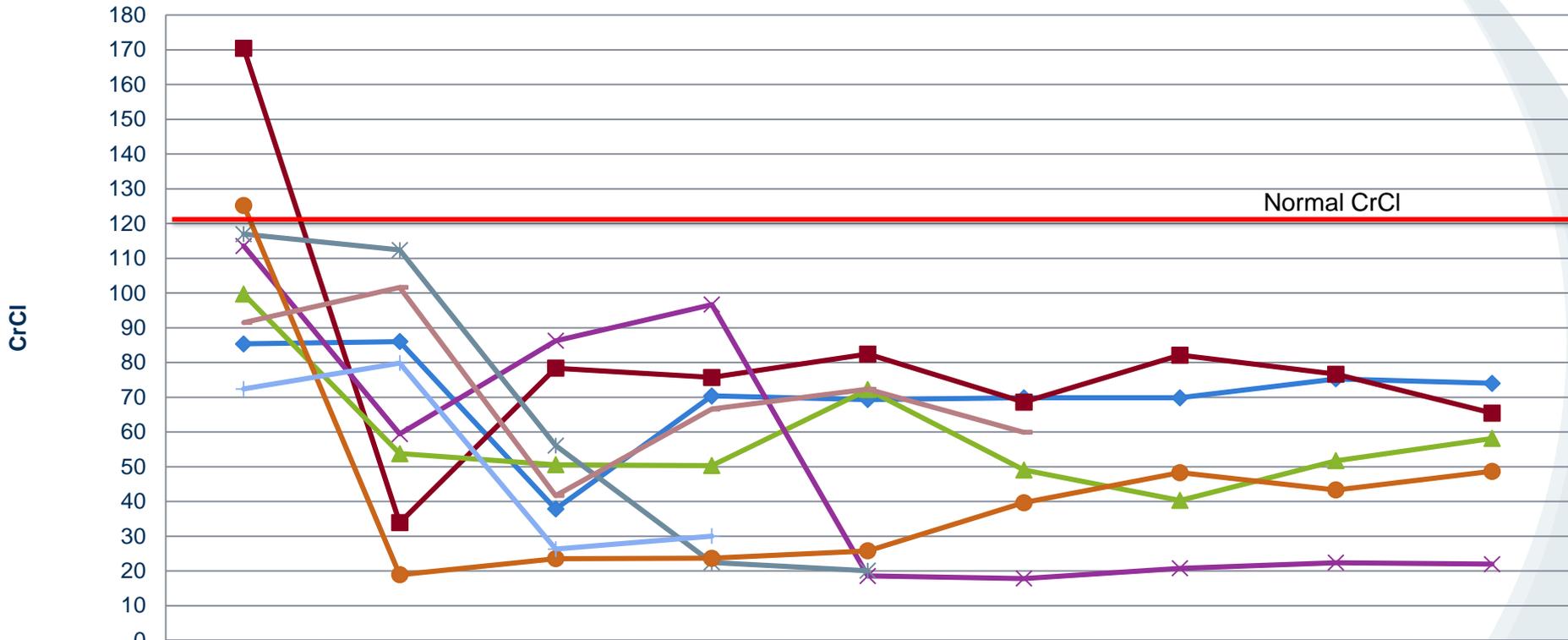
Survey Responses



% Weight Change from Beginning until End of Treatment

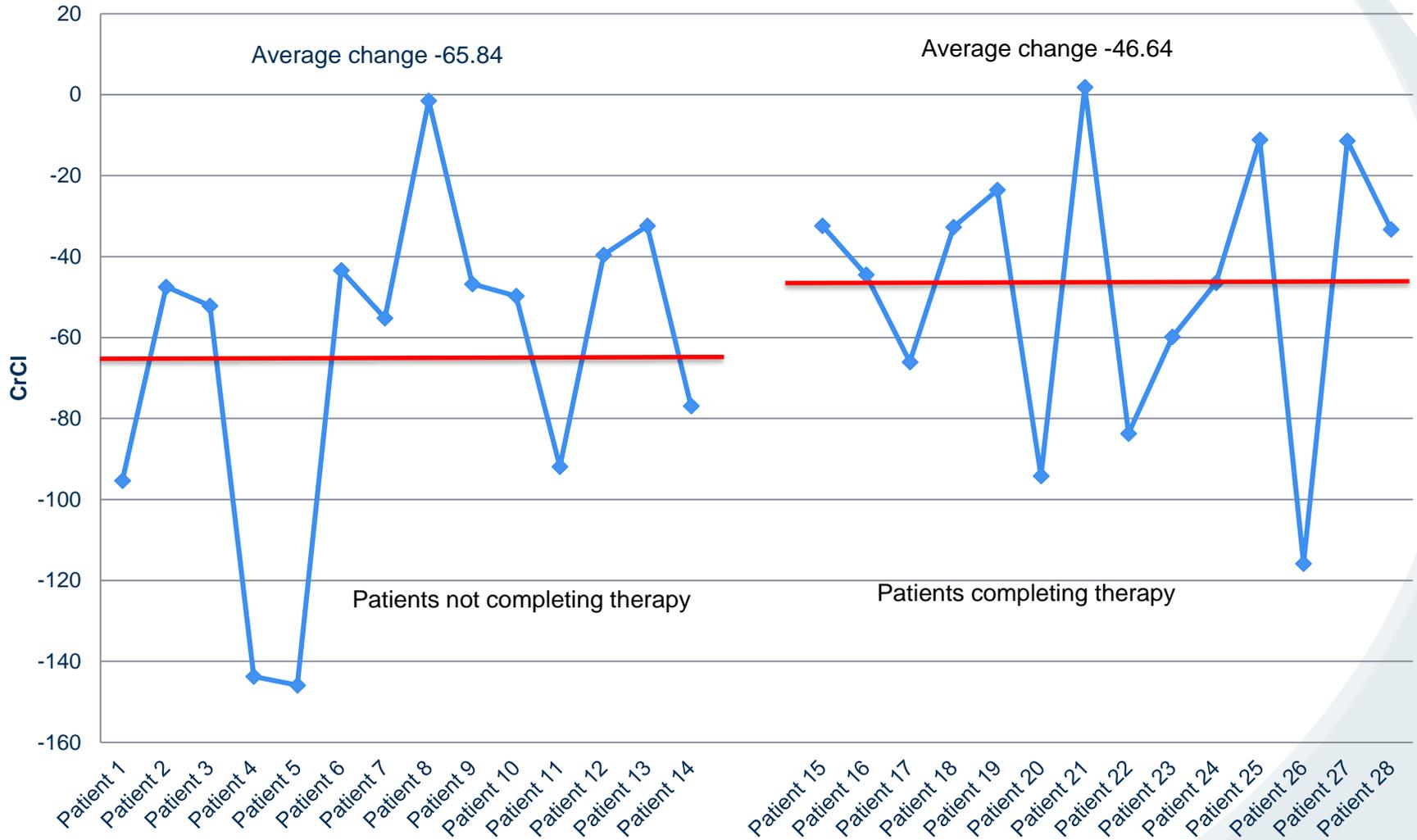


Creatinine Clearance Sample



	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9
◆ Patient 1	85.36	85.99	37.84	70.36	69.32	69.84	69.84	75.27	74.02
■ Patient 2	170.44	33.88	78.35	75.71	82.41	68.59	82.11	76.65	65.45
▲ Patient 3	99.69	53.77	50.55	50.35	72.19	49.07	40.29	51.72	58.15
✕ Patient 4	113.54	59.40	86.24	96.67	18.57	17.81	20.78	22.38	21.97
✱ Patient 5	116.95	112.37	56.10	22.44	20.07				
● Patient 6	125.21	18.92	23.56	23.66	25.78	39.63	48.28	43.33	48.69
⊥ Patient 7	72.37	79.83	26.27	30.02					
— Patient 8	91.51	101.60	41.67	66.58	72.32	59.93			

Absolute Change in Creatinine Clearance



From beginning until end of treatment

Prioritized List of Changes (Priority/Pay-Off Matrix)

Impact	High	Daily Weights Weekly Creatinine Symptom Assessment	Speech Pathology prior to Tx Mid-point Teaching Time
	Low	Patient Instruction Sheet	Dietary Consult Sample Supplements
		Easy	Difficult

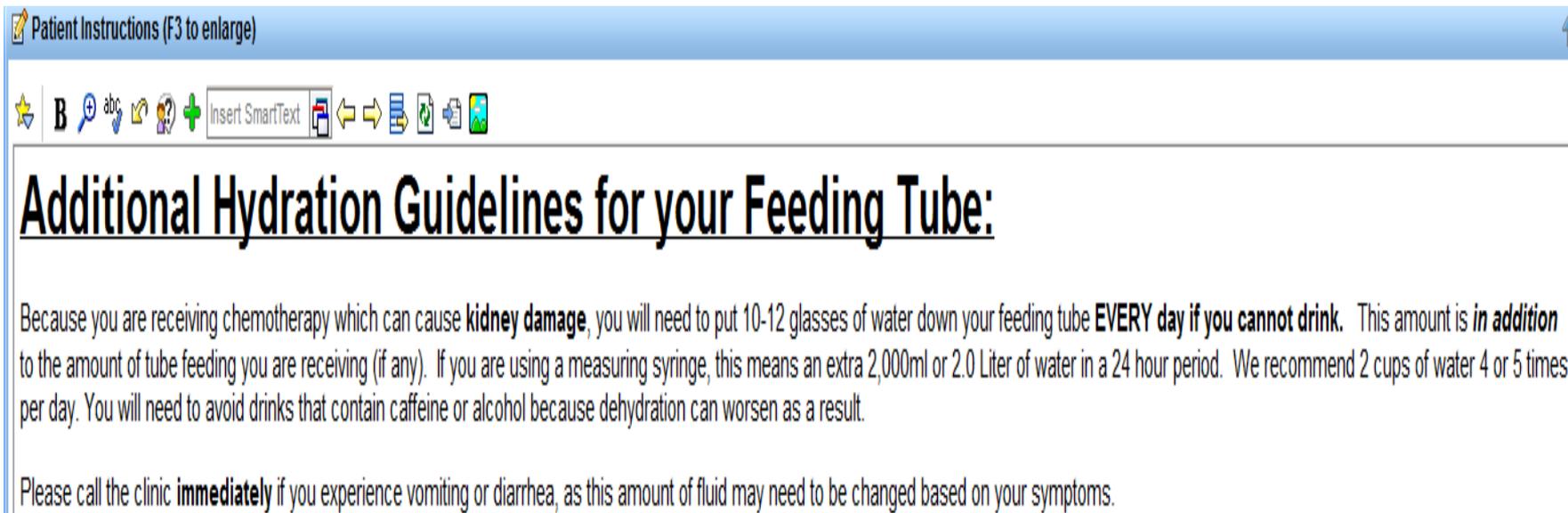
Ease of Implementation

PDSA Plan (Tests of Change)

Date of PDSA cycle	Description of intervention	Results	Action steps
12/13/13	Daily weights in XRT Minimum of weekly Creatinine Weekly Med Oncology visit	Alert of drop in 2 lbs Alert if low clearance Review vitals and lab; modify plan as necessary	Bring patient in to Medical Oncology for earlier intervention
12/13/13	Speech Pathology consult prior to therapy Dietary consult order prior to therapy	Teach swallowing prior to treatment Patients verbalized understanding of maintaining adequate nutritional intake	Make consult part of treatment regimen
12/13/13	NP educates the patient prior to treatment and mid-point Smart.phrase added to EPIC for addition to PEG/G tube instructions for H&N patients	Patients able to “teach back” proper care of PEG/G tube and need for hydration throughout treatment	Continue for all H&N patients Symptom Management Clinic

Materials Developed

In EPIC using a smart.phrase, we added the following to the G/PEG Tube instructions:



The screenshot shows a software interface for editing patient instructions. At the top, a blue header bar contains the text "Patient Instructions (F3 to enlarge)" and an upward-pointing arrow icon. Below the header is a toolbar with various icons: a star, a bold letter 'B', a magnifying glass, a question mark, a plus sign, a text input field containing "Insert SmartText", and several navigation and editing icons. The main content area displays the following text:

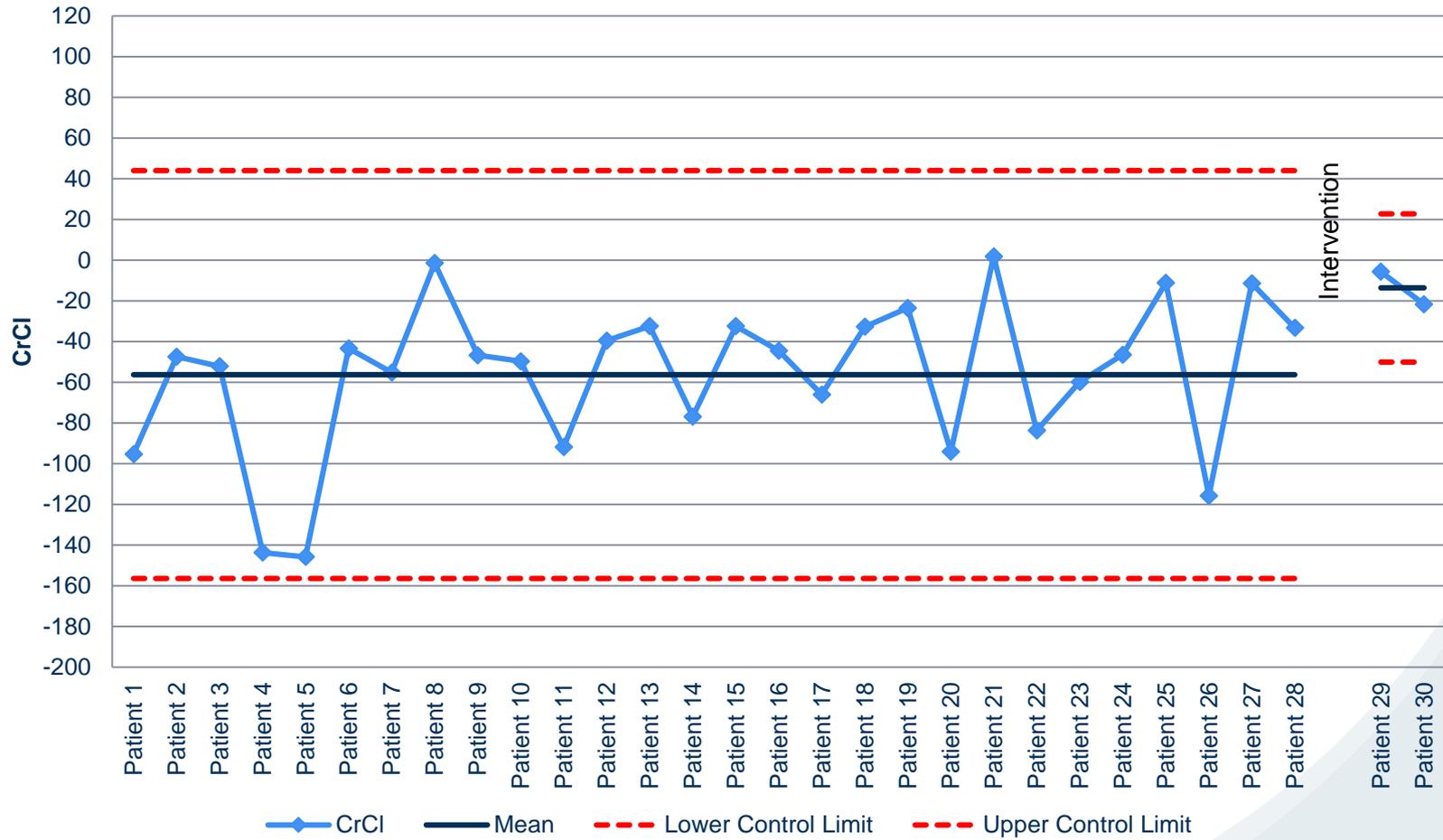
Additional Hydration Guidelines for your Feeding Tube:

Because you are receiving chemotherapy which can cause **kidney damage**, you will need to put 10-12 glasses of water down your feeding tube **EVERY day if you cannot drink**. This amount is *in addition* to the amount of tube feeding you are receiving (if any). If you are using a measuring syringe, this means an extra 2,000ml or 2.0 Liter of water in a 24 hour period. We recommend 2 cups of water 4 or 5 times per day. You will need to avoid drinks that contain caffeine or alcohol because dehydration can worsen as a result.

Please call the clinic **immediately** if you experience vomiting or diarrhea, as this amount of fluid may need to be changed based on your symptoms.

Change Data

Absolute Change in Creatine Clearance



Conclusions

- Too early to draw definitive conclusions as to whether AIM was met but early results promising
- Patients with advanced Head & Neck cancer are frail and subject to acute toxicity from chemotherapy
- Change in Creatinine Clearance is a sensitive measure of renal damage and predictor of non-completion
- Post-Intervention patients had fewer unplanned admissions leading to lower costs
- PDSA helped to identify inadequacies in our education and monitoring processes

Next Steps/Plan for Sustainability

- Continue study until post-intervention sample reaches 28
- Incorporate interventions into electronic protocols available to all clinicians
- Survey post-intervention patients 4-6 weeks after completion of therapy to assess impact of enhanced educational initiative
- Establish NP run Symptom Management Clinic

Improve Optimal Treatment in Head & Neck Cancer Patients

AIM: By March 6, 2014, reduce by a relative 20% the number of head and neck cancer patients unable to complete CIS/XRT protocol therapy as per established treatment plan.

INTERVENTION:

- Change EPIC Patient Instructions for G/PEG Tube to Include Hydration
- Daily Weights in Radiation Oncology
- Weekly Creatinine Clearance and Symptom Assessment
- Swallowing Exercises Prior to Initiation of Treatment
- Mid-Point Teaching

TEAM:

- Medical Hematology/Oncology
- ENT Oncology
- Radiation Oncology
- Speech Pathology

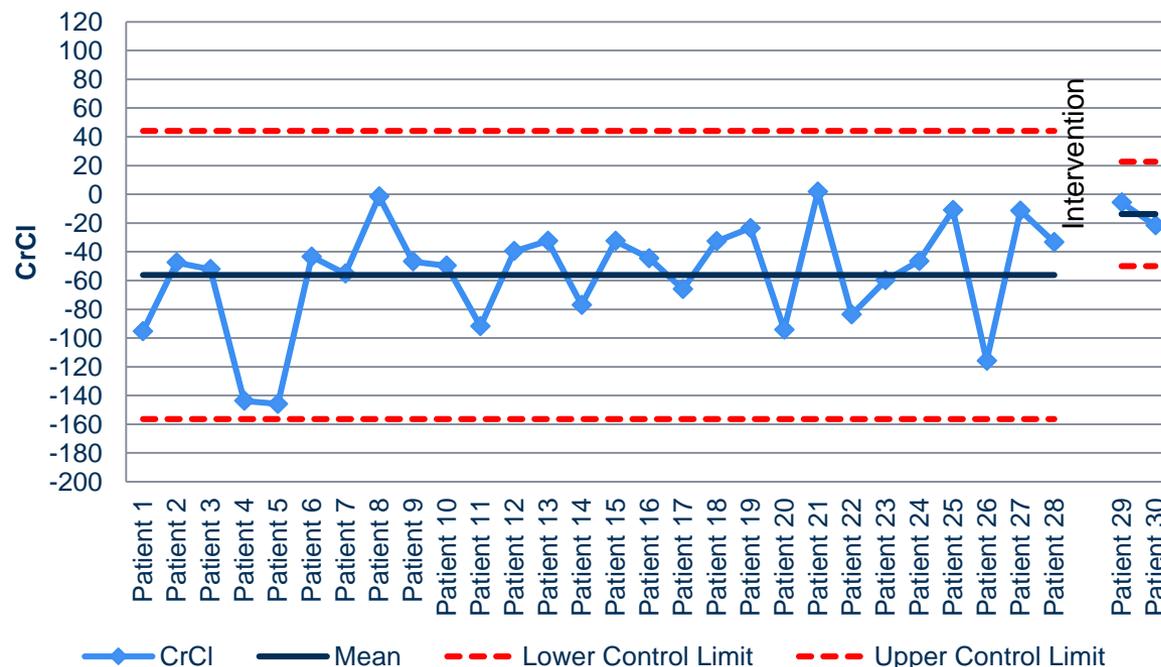
PROJECT SPONSORS:

Glenn Mills, MD

COACH:

Arif Kamal, MD

Absolute Change in Creatine Clearance



CONCLUSIONS

- Too early to draw definitive conclusions as to whether AIM was met but early results promising
- Patients with advanced Head & Neck cancer are frail and subject to acute toxicity from chemotherapy
- Creatinine Clearance is a sensitive measure of renal damage and predictor on non-completion
- Post-Intervention patients had fewer unplanned admissions leading to lower costs
- PDSA helped to identify inadequacies in our education and monitoring processes

NEXT STEPS:

- Continue study until post-intervention sample reaches 28
- Incorporate interventions into electronic protocols available to all clinicians
- Survey post-intervention patients several weeks after completion of therapy for baseline data comparison