Clinical Safety & Effectiveness Cohort # 13

Improve the multidisciplinary approach in the care of patients with thyroid cancer

CENTER FOR PATIENT SAFETY & HEALTH POLICY

UT HEALTH SCIENCE CENTER™

SAN ANTONIO

Educating for Quality Improvement & Patient Safety

Background

- Context: Scheduling patient with thyroid cancer for I131 involves the many physician located at different locations such as the MARC, TDI and UCCH north. It also involves UHS admissions, bed control, hospitalist, nuclear medicine physicians and technologist, radiation safety and nursing. In addition, the process begins during a follow up clinic visit and can take up to two hours to arrange.

- Rationale: At this time the endocrinology fellows are responsible for coordinating this care and as the number of physicians and patients have increased, the process has become more involved which can lead to errors.

Meet the Team . . .

– Supporter: Dr. Hillis, Chair Department of Medicine

– Team Leader

  » Jan Bruder, MD, Professor of Medicine, Chief of Endocrinology

– Other Team Players

  » Sonika Gupta, MD, Fellow in Endocrinology, Diabetes and Metabolism

  » Tim Arakawa, MD, Fellow in Endocrinology, Diabetes and Metabolism

  » Urban McCarthy-Scheherezada, MD , Fellow in Endocrinology, Diabetes and Metabolism

  » Alberto Chavez-Velaqueza, MD, Fellow in Endocrinology, Diabetes and Metabolism

  » Maureen Koops, MD, Associate Professor of Medicine, Div of Endocrinology

  » Sara Ahmadi, MD Assistant Professor of Medicine, Div of Endocrinology

  » Lisa Dodges, Bed Control

  » Theresa De La Haya, RN, Director of TDI

  » Camarino Salazar, Director of Quality Ambulatory Services, TDI

  » Tony Herron, RN, TDI

  » Joe Becker, MD, Assistant Professor of Medicine, Div of Endocrinology

  » Facilitator: Edna Cruz

What Are We Trying to Accomplish?
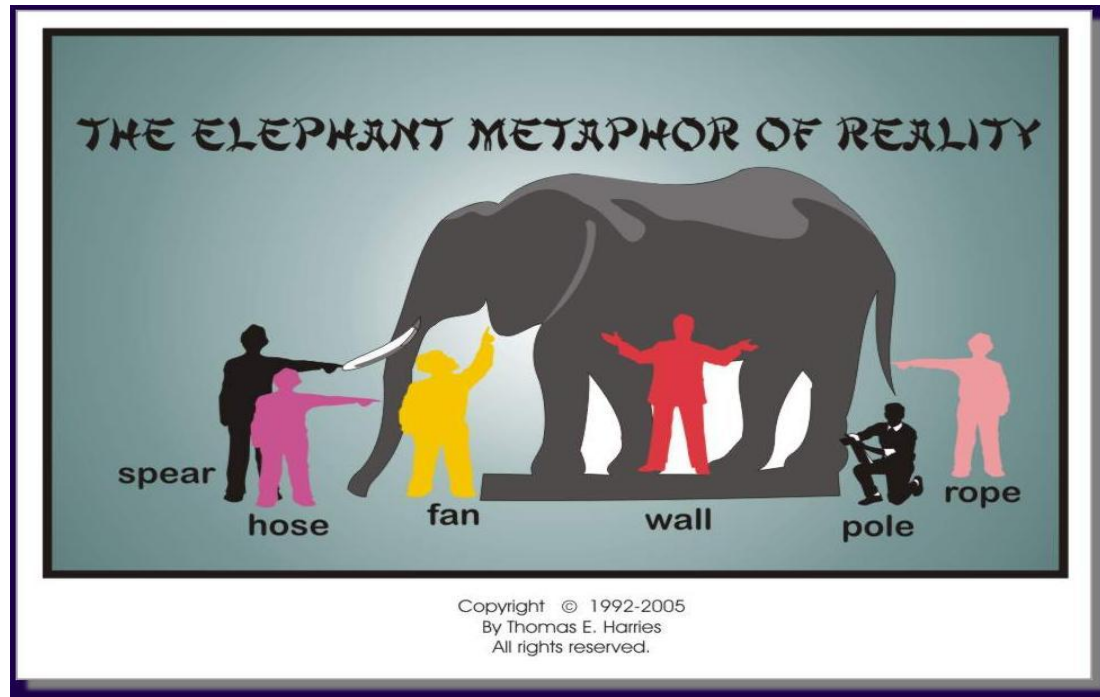
THE ELEPHANT METAPHOR OF REALITY
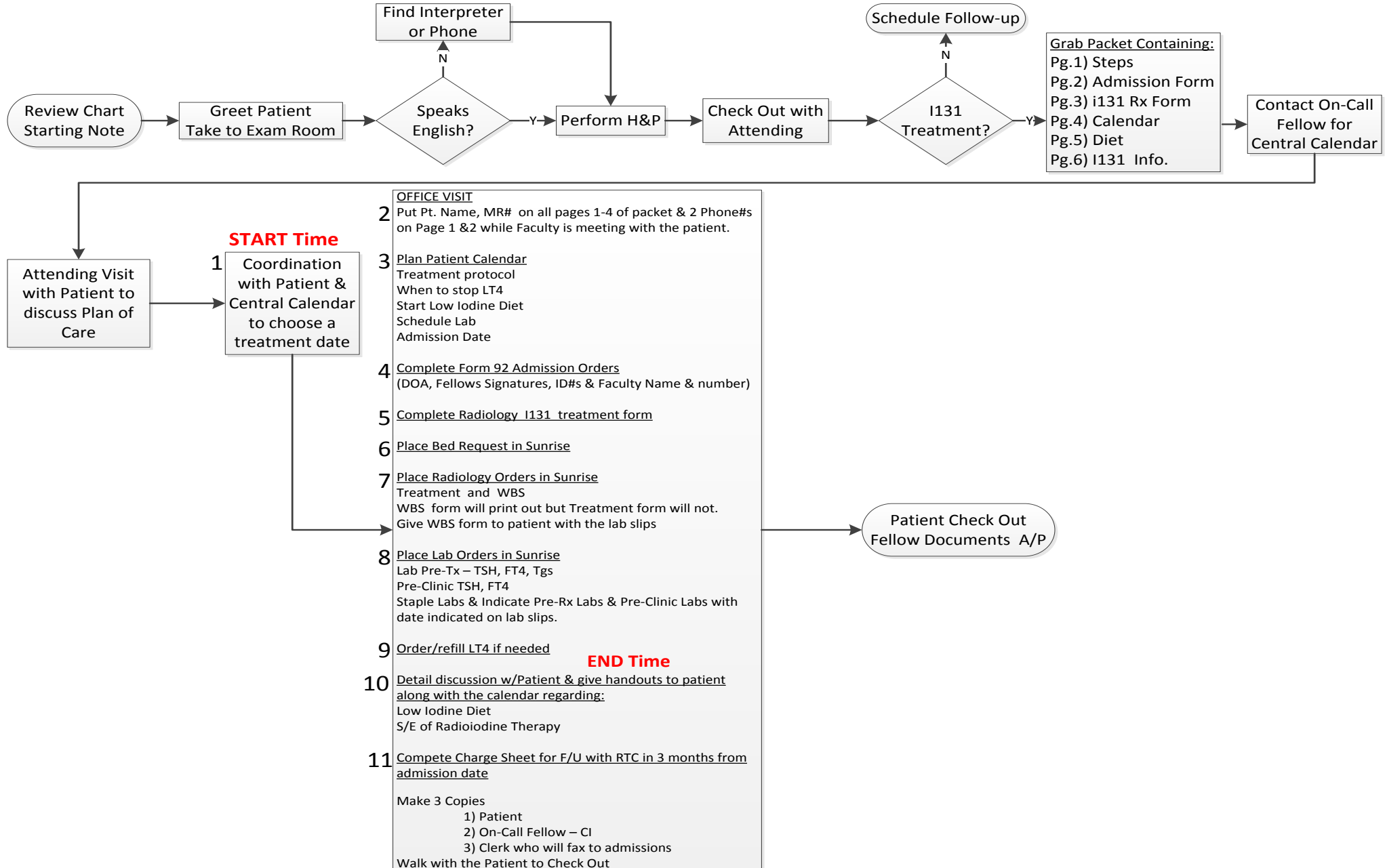
spear
hose
fan
wall
pole
rope

_____

To decrease by 50% the amount of clinic time used to arrange admissions for I131 treatment for patients with thyroid cancer, by implementing an electronic order set and a web based scheduling tool accessible to ordering physicians, nuclear medicine, nursing, radiation safety and admissions by January 2013.

_____

Project Milestones

- – Team Created   August 2013
- – AIM statement created   September 2013
- – Team Meetings Began   September 2013
- – Work Flow & Cause & Effects Diagram   September 23, 2013
- – Data Analysis   October 17, 2013
- – Multiple emails with SharePoint and IT managers
- – Met with TDI physicians   November 6, 2013
- – Interventions Implemented   November 2013
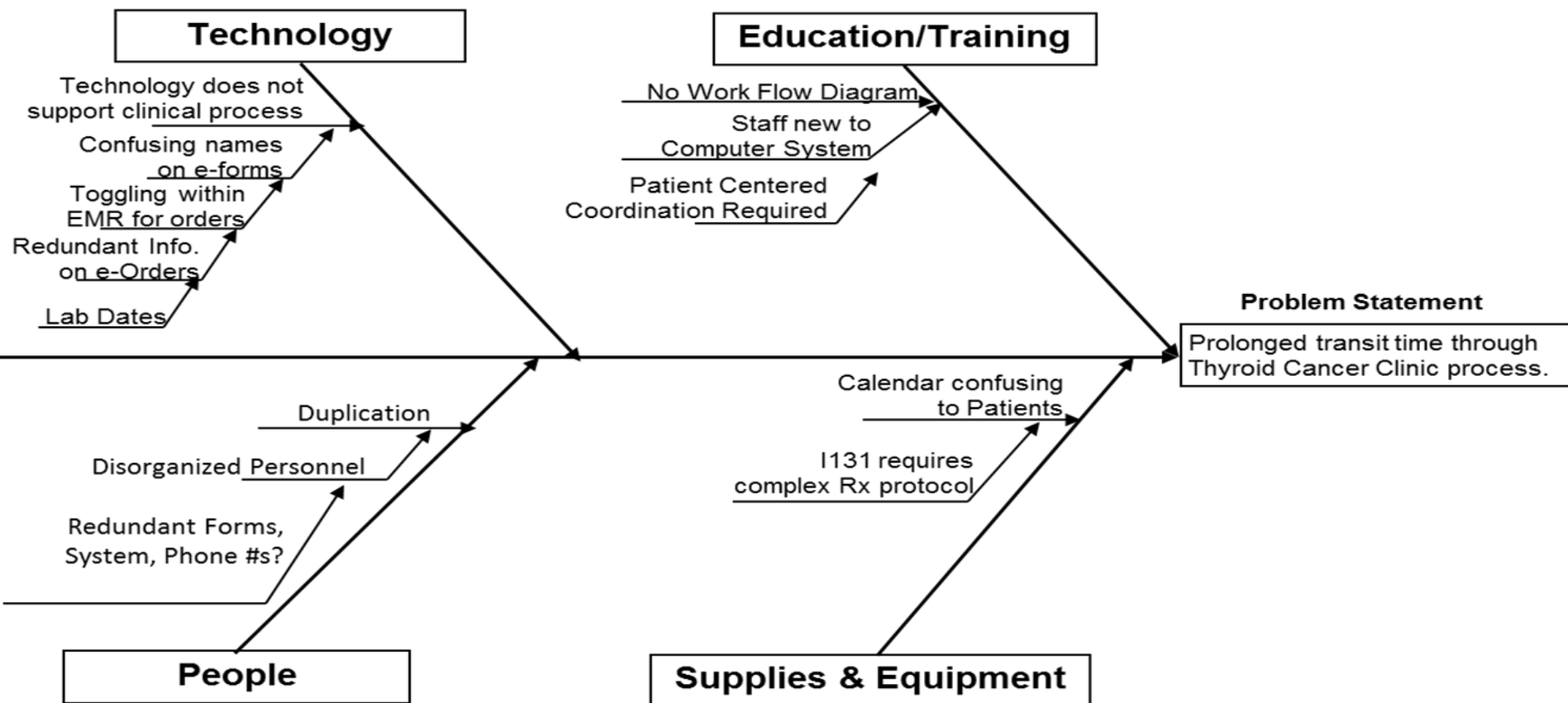- – Collect data   December/January
- – CS&E Presentation   January 2013

Department of Medicine – Improving the Multi-Disciplinary Approach to Thyroid Cancer Care -- FLOW

Find Interpreter or Phone

Schedule Follow-up

Review Chart Starting Note → Greet Patient Take to Exam Room → Speaks English? —Y→ Perform H&P → Check Out with Attending → I131 Treatment? —Y→

Grab Packet Containing:
Pg.1) Steps
Pg.2) Admission Form
Pg.3) i131 Rx Form
Pg.4) Calendar
Pg.5) Diet
Pg.6) I131 Info.

→ Contact On-Call Fellow for Central Calendar

START Time

Attending Visit with Patient to discuss Plan of Care →

1 Coordination with Patient & Central Calendar to choose a treatment date

2 OFFICE VISIT
Put Pt. Name, MR# on all pages 1-4 of packet & 2 Phone#s on Page 1 &2 while Faculty is meeting with the patient.

3 Plan Patient Calendar
Treatment protocol
When to stop LT4
Start Low Iodine Diet
Schedule Lab
Admission Date

4 Complete Form 92 Admission Orders
(DOA, Fellows Signatures, ID#s & Faculty Name & number)

5 Complete Radiology I131 treatment form

6 Place Bed Request in Sunrise

7 Place Radiology Orders in Sunrise
Treatment and WBS
WBS form will print out but Treatment form will not.
Give WBS form to patient with the lab slips

8 Place Lab Orders in Sunrise
Lab Pre-Tx – TSH, FT4, Tgs
Pre-Clinic TSH, FT4
Staple Labs & Indicate Pre-Rx Labs & Pre-Clinic Labs with date indicated on lab slips.

9 Order/refill LT4 if needed

END Time

10 Detail discussion w/Patient & give handouts to patient along with the calendar regarding:
Low Iodine Diet
S/E of Radioiodine Therapy

11 Compete Charge Sheet for F/U with RTC in 3 months from admission date

Make 3 Copies
     1) Patient
     2) On-Call Fellow – CI
     3) Clerk who will fax to admissions
Walk with the Patient to Check Out

Patient Check Out Fellow Documents A/P

UT Department of Medicine

Improving the Multi-Disciplinary Approach to Thyroid Cancer Care Delivery

CAUSE & EFFECT DIAGRAM

Technology
- Technology does not support clinical process
- Confusing names on e-forms
- Toggling within EMR for orders
- Redundant Info. on e-Orders
- Lab Dates

Education/Training
- No Work Flow Diagram
- Staff new to Computer System
- Patient Centered Coordination Required

Problem Statement

Prolonged transit time through Thyroid Cancer Clinic process.

People
- Duplication
- Disorganized Personnel
- Redundant Forms, System, Phone #s?

Supplies & Equipment
- Calendar confusing to Patients
- I131 requires complex Rx protocol

How Will We Know
That an Intervention is an Improvement?

- Types of measures – See flow diagram for start and end time.

- How you will measure – Manual data collection via use of observation and a stop watch

- Specific targets for change -- To decrease by 50% the amount of clinic time used to arrange admissions for I131 treatment for patients with thyroid cancer by January 2013.

Six Time Points

DOS	Physician	Start time	End time	minutes
8/27/2013	Ocampo	1340	1415	25
10/16/2013	Urban	1251	1446	47
10/16/2013	Gupta	1420	1609	35
10/23/2013	Venkatesh	0949	1050	61
11/20/2013	Urban			40
11/27/2013	Chavez	1611	1647	36

How Will We Know That an Intervention is an Improvement?

- We were unable to prospectively get more data using the start and end times.

- Types of measures – The team used a retrospective proxy measure of registration of patient to check out cycle time beginning in January 2013 and end in August 2013.

- How you will measure – The metric used was collected via e-time stamp within the EMR.

- Specific targets for change -- To decrease by 50% the amount of clinic time used to arrange admissions for I131 treatment for patients with thyroid cancer by January 2013.

Pre-Intervention Data

UT Medicine - Improving the Multi-Disciplinary Approach
to Thyroid Cancer Care
Data Timeframe: 2/20/13 -- 10/16/13
Clinic Cycle Time
Mean (X) Chart -- n=28
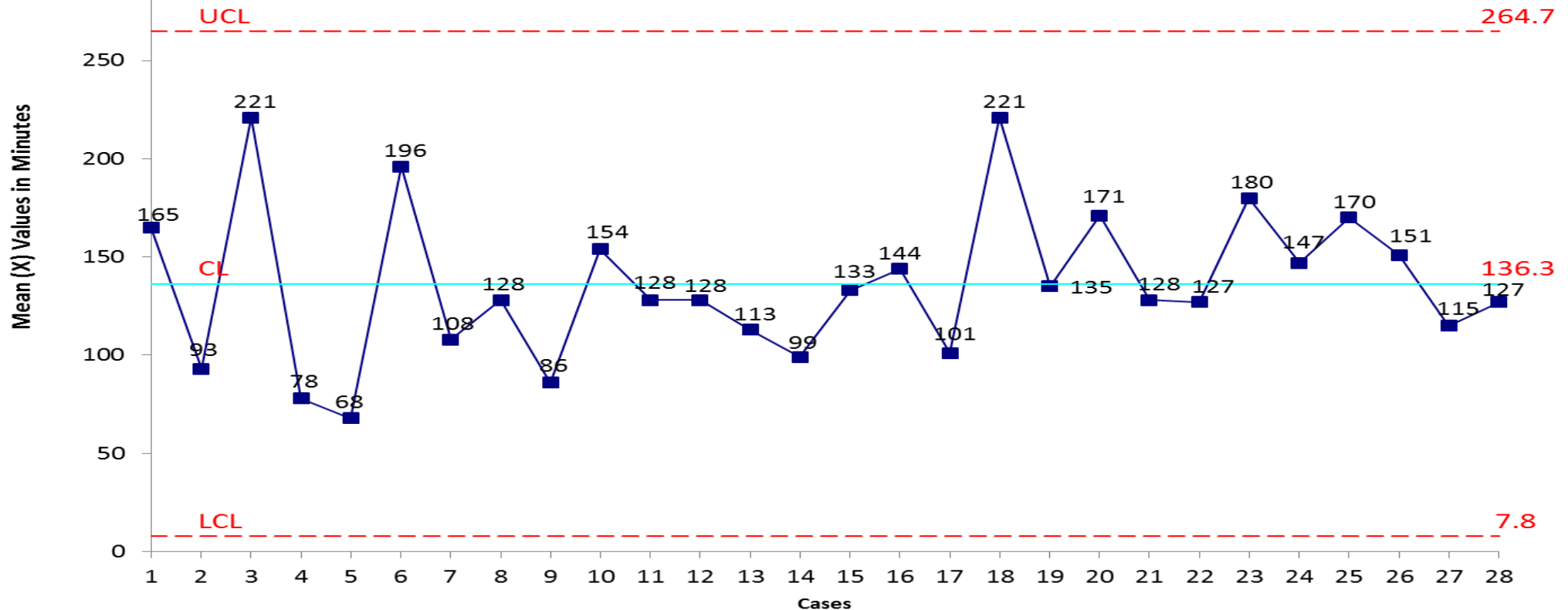
Comment: Data specific to the timeframe indicated in the flow is being collected. The data shown above represents the time from registration through the patient check out, as this was electronically documented and easily obtained.

11

Interventions We Will Make That Will Result in an Improvement?

Intervention #1 – e-Calendar for simultaneous notification of all involved in the admission for I131 therapy.

Intervention #2 – e-Order Set for I131 to simplify the process and standardize the orders.

Intervention #1 and # 2

Plan

What? Create an e-calendar on SharePoint and I131 Thyroid Cancer Care Order Set in Sunrise EMR

Who? developed by Drs. Becker and Bruder

Where? The e-calendar to be placed on UHS SharePoint with automatic email reminders to all involved parties and the order set to be placed electronically in Sunrise with pre-determined set of defaults.

When? by November 25

Intervention #1

e-Calendar for simultaneous notification of all involved in the admission for I131 therapy.

I131 Thyroid Cancer Care e-Calendar and Documents on SharePoint

I131 Thyroid Cancer Care e-Calendar on SharePoint

I131 Thyroid Cancer Care e-Calendar and Documents on SharePoint

I131 Thyroid Cancer Documents on SharePoint

I131 Thyroid Cancer Documents on SharePoint

Library Tools

Documents   Library

hared Documents ▸ THYROID CANCER Forms ▸ All Documents ▾

he team by adding it to this document library.

Search this site...

Type	Name	Modified	☐ Modified By
📄	1a FellowHousestaffAttending 2013-2014 [3]	11/4/2013 10:16 AM	Jan Bruder
📄	2013 calendar with date boxes	9/13/2013 3:12 PM	Jan Bruder
📄	5b-Thyroid Cancer Calendar Friday admission without cytomel 10-2013	10/31/2013 11:37 AM	Jan Bruder
📄	5b-Thyroid Cancer Calendar Friday admission without cytomel SPANISH 10-2013	11/4/2013 10:15 AM	Jan Bruder
📄	5b-Thyroid Cancer Cytomel Calendar Friday admission 10-2013	10/31/2013 11:37 AM	Jan Bruder
📄	5c-Thyroid Cancer Calendar Tuesday Admission without cytomel 10-2013	10/31/2013 11:37 AM	Jan Bruder
📄	5c-Thyroid Cancer Calendar Tuesday Admission without cytomelSPANISH 10-2013	11/4/2013 10:14 AM	Jan Bruder
📄	5c-Thyroid Cancer Cytomel Calendar Tuesday Admission 10-2013	10/31/2013 11:37 AM	Jan Bruder
📄	5e-Protocol for rhTSH new without scan 12-2012	9/4/2013 4:51 PM	Jan Bruder
📄	5h-low iodine diet 2012	11/4/2013 10:14 AM	Jan Bruder
📄	5h-Low iodine diet in Spanish 11-2013	11/13/2013 1:45 PM	Jan Bruder
📄	5i-I-131 for Thyroid Cancer2012 Final	11/4/2013 10:13 AM	Jan Bruder
📄	I131 Dosing Protocol 10-2013	10/31/2013 11:38 AM	Jan Bruder
📄	Patient Instructions and Low Iodine Diet	10/30/2013 2:20 PM	Joseph Becker
📄	Protocal for Setting up admission for I131 treatment 11-15-2013 ✚NEW	11/20/2013 1:28 PM	Jan Bruder
📄	Spanish I131 Instructions	10/31/2013 11:35 AM	Jan Bruder

Thyroid Cancer Initial I-131 Treatment Protocol
FRIDAY ADMISSION – 4.5 week protocol without cytomel

1. Stop thyroid medication (levothyroxine) on Day 1 (_____)
2. Begin low iodine diet on Day 19 (_____)2 weeks prior to admission
3. On Day 26 (_____), go to the lab for blood work.
4. Doctor will check labs on Day 30 and call you to confirm admission.
5. **Hospital Admission** will be on Day 33 (_____). Go to the Radiology Registration Desk located on the second floor at UHS for admission at 8:00 A.M.
6. Bring lemon drops with you on the day of admission.
7. You will return to Radiology Registration Desk 7-10 days after the I-131 treatment for a Whole Body Scan to evaluate uptake of the radioactive iodine. You will be given the appointment date before you leave the hospital.
8. If you have any questions, call the TDI call center to contact your doctor at 358-7500 or call Radiology at 358-2936 and ask for Robert or Brandon

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Day 1					
					Day 19	
					Day 26	
					Day 33	

Document example: Give to patient and Copy and paste into sunrise clinic note

Access and Email List for SharePoint

	9-4-2013	11-13-2013	11-20-2013
Endocrine 4 fellows TDI UT	4 6 5	4 6 5	4 6 5
Nuc Med MD Technologists	2 2	2 2	2 2
Radiation Safety	2	2	2
Bed Control	4	8	6
Admissions	0	7	6
6th floor UHS	2	2	4
Hospitalist	0	1	2
Misc	4	4	1
Total	34	43	40

Intervention #2

e-Order Set for I131 to simplify the process and standardize the orders.

I131 Thyroid Cancer Case Order Set

TEST Thyroid Cancer Trea...

Admit / Transfer / Discharge

☑ **Bed Status Request**
- Admit Dx: Thyroi...

Labs
Place the thyroid tests together at the top
•TSH and Thyroglobulin Ag and Ab panel – indicate in special instructions. Blood to be drawn a week prior to admission for I131 treatment
•TSH and FT4 to be T+120 and preclinic

Bed Status request
•Status – inpatient admission
•Condition on admission – stable
•Estimated length of stay - 3 days
•Admitting Service – Medicine 5
•Accepting Service – Same as Admitting Service
•Admitting Floor – Clinical Decision Unit 6
•Bed type – regular (private)
•Accepting Physician – Hospitalist
•Accepting faculty – Hospitalist on call
...thyroid cancer (193)
...Radioactive I131 treatment
...9005
...medication list reviewed and consider....
•Current PH of CHF - no

Thyroid cancer ablation or met astatic therapy order
•Exam time 0800
•Requested service location –university hospital
•Transportation – ambulatory

Thyroid scan (post I131)
•Exam time 0800
•Requested service location –university hospital
•Transportation – ambulatory
•Reason for Exam-   Whole Body Scan post I131 treatment for thyroid cancer 79005 with ICD 193
>   1.Please do scan 7-10 days after receiving dose of I131 to look for metastatic disease (above exam date is 7 days post I131 treatment)
•Attending physician – leave blank
•Isolation type – no isolation needed
•Service – Endocrinology

Radiolo...

☐ ... ICD 1...
☐ ... ICD 1...
☐ Thyroid scan (post I-131 therapy)   Whole Body Scan post I131 treatment for thyroid ca...

Implementing the Change

Action

The order set was piloted by Dr. Bruder on 11/05/13 with appropriate notifications sent to nuclear medicine and bed control. The e-calendar was piloted by Dr. Becker on 11/12/13 with appropriate notifications sent to physicians in nuclear medicine and to administrators in bed control.

Issues identified were redundant emails sent to many recipients. Moreover, a notification email was not sent to the head tech in nuclear medicine. Issues have been reviewed with IT.
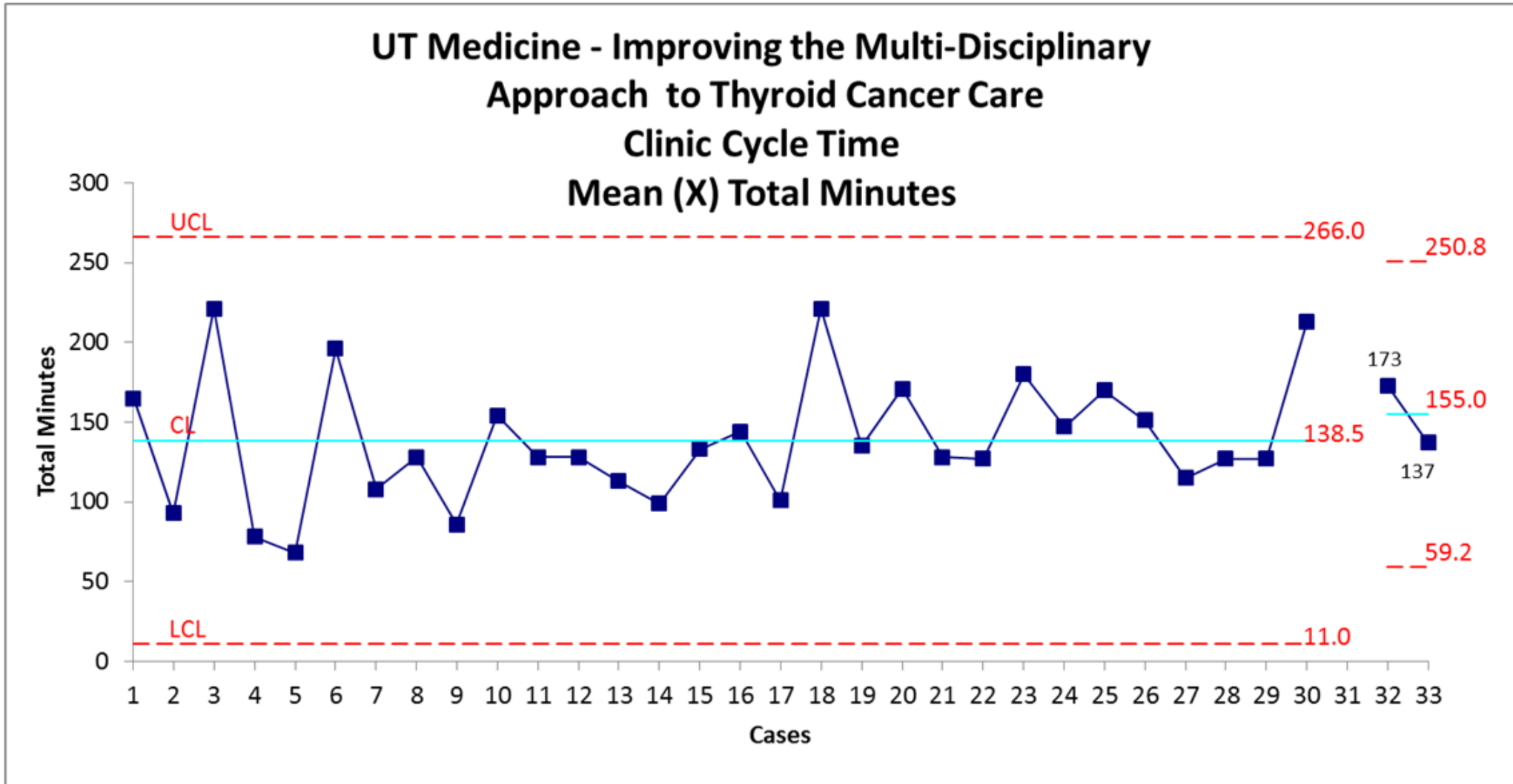
Key Time Points

- The order set was moved out of the test mode into the order template "UCCH Endocrine Orders" in Sunrise EMR on 11/25/2013.

- The final email recipients list for the share point calendar was created and retested on 11/25/2013

- The calendar went live in December 2013

- Patients that had been scheduled in the old system were added to the electronic sharepoint calendar in December

- In December, patients were timed using the new system:
  - start and end time per flow diagram
  - Proxy time from check in to check out
  - DATA COLLECTION WAS LIMITED AS A RESULT OF THE HOLIDAYS

Two Post-Intervention Time Points

DOS	Physician	Start time	End time	minutes
12/10/2013	Chavez	437	515	38
1/8/2014	Venkatesh	1308	1336	28

DOS	Physician	Start time	End time	minutes
8/27/2013	Ocampo	1340	1415	25
10/16/2013	Urban	1251	1446	47
10/16/2013	Gupta	1420	1609	35
10/23/2013	Venkatesh	0949	1050	61
11/20/2013	Urban			40
11/27/2013	Chavez	1611	1647	36

Post-Intervention Data

UT Medicine - Improving the Multi-Disciplinary Approach to Thyroid Cancer Care
Clinic Cycle Time
Mean (X) Total Minutes

Return On Investment

- Hard Return
  - Net Return or cost savings will be the time saved multiplied by the Fellow salary
  - There are no Investment Cost or denominator

Return On Investment

- Soft Return
  - Improved capability in the form of process/efficiency improvement
  - Fewer errors due to simplification, standardization and automation
  - Ability to maintain existing revenues levels by avoiding denial of payment due to errors
  - Potential to increase capacity while avoiding new hires due to process/efficiency improvements
  - Improved patient and staff satisfaction
  - Reduce/eliminate overtime pay, vacancies and turnover rate

Thank you!

And special thanks to

Chris Portis – SharePoint

Allison Clarke – EMR Orders

Lisa Dodge – Bed Control

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