Clinical Safety & Effectiveness
Cohort 14 Team 2

MARC Radiology Referral Patterns

CENTER FOR PATIENT SAFETY & HEALTH POLICY
UT HEALTH SCIENCE CENTER™
SAN ANTONIO

April 10, 2014

Educating for Quality Improvement & Patient Safety

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Background

- The majority of MARC clinic providers refer internally to MARC Radiology for imaging services. However, preliminary data suggest there is a degree of "leakage" of radiology referrals to outside groups.
- The leadership of UT Medicine has challenged the organization to address the issue of "leakage", not just in Radiology, but in the organization as a whole. Retention (and eventual growth) of internal referrals is key to the future sustainability of the organization.

The Team

- Division
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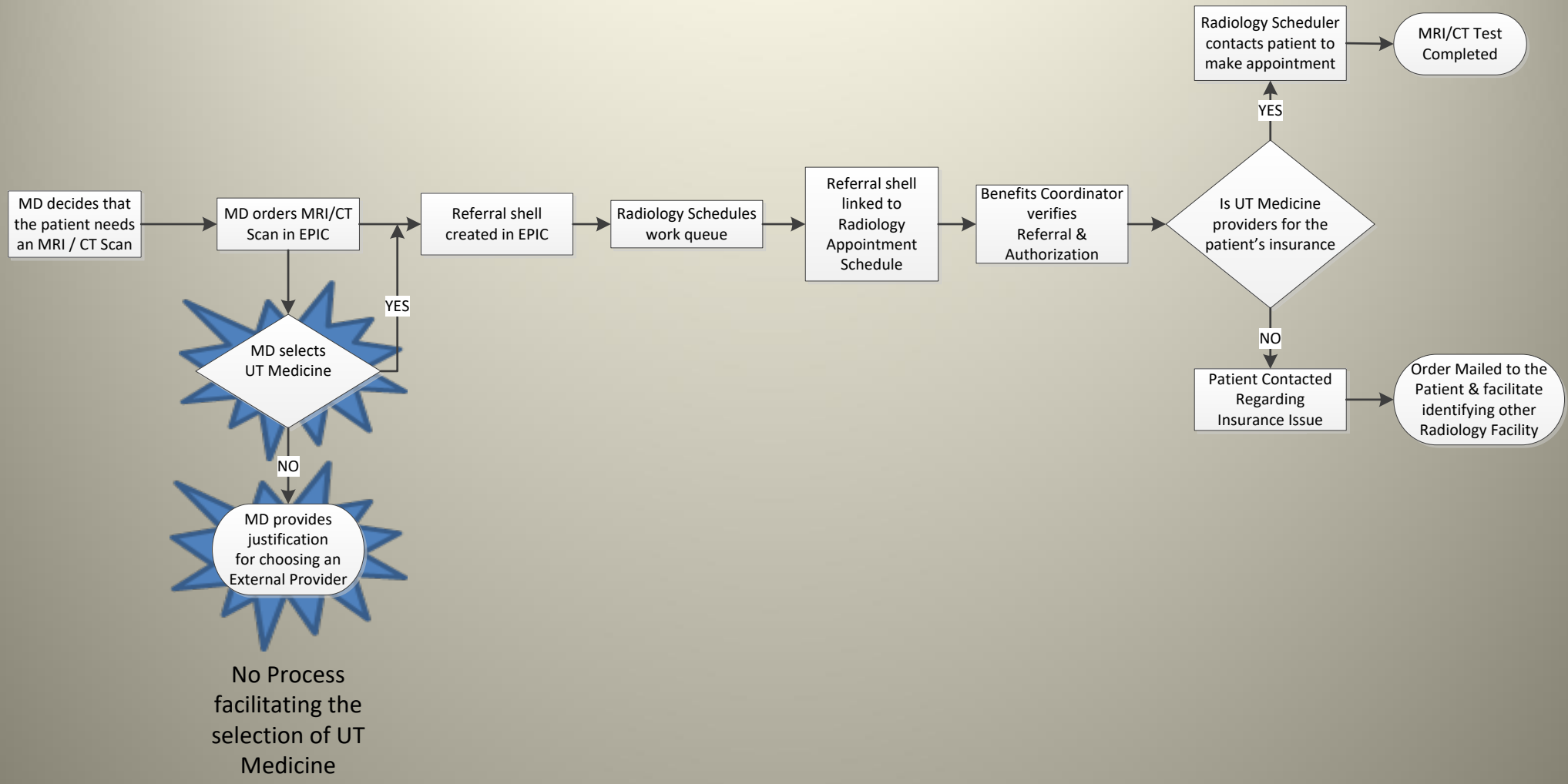
  - Christopher Rosas
  - Mary Lou Jew
  - Jana Lee Normandin
  - Edna Cruz, M.Sc., RN, CPHQ, Facilitator
- Sponsor Department:
  - Pamela Otto, MD, Chair, Department of Radiology

AIM STATEMENT

"To reduce leakage of UT Medicine Radiology MRI/CT referrals to outside groups by May 15, 2014."

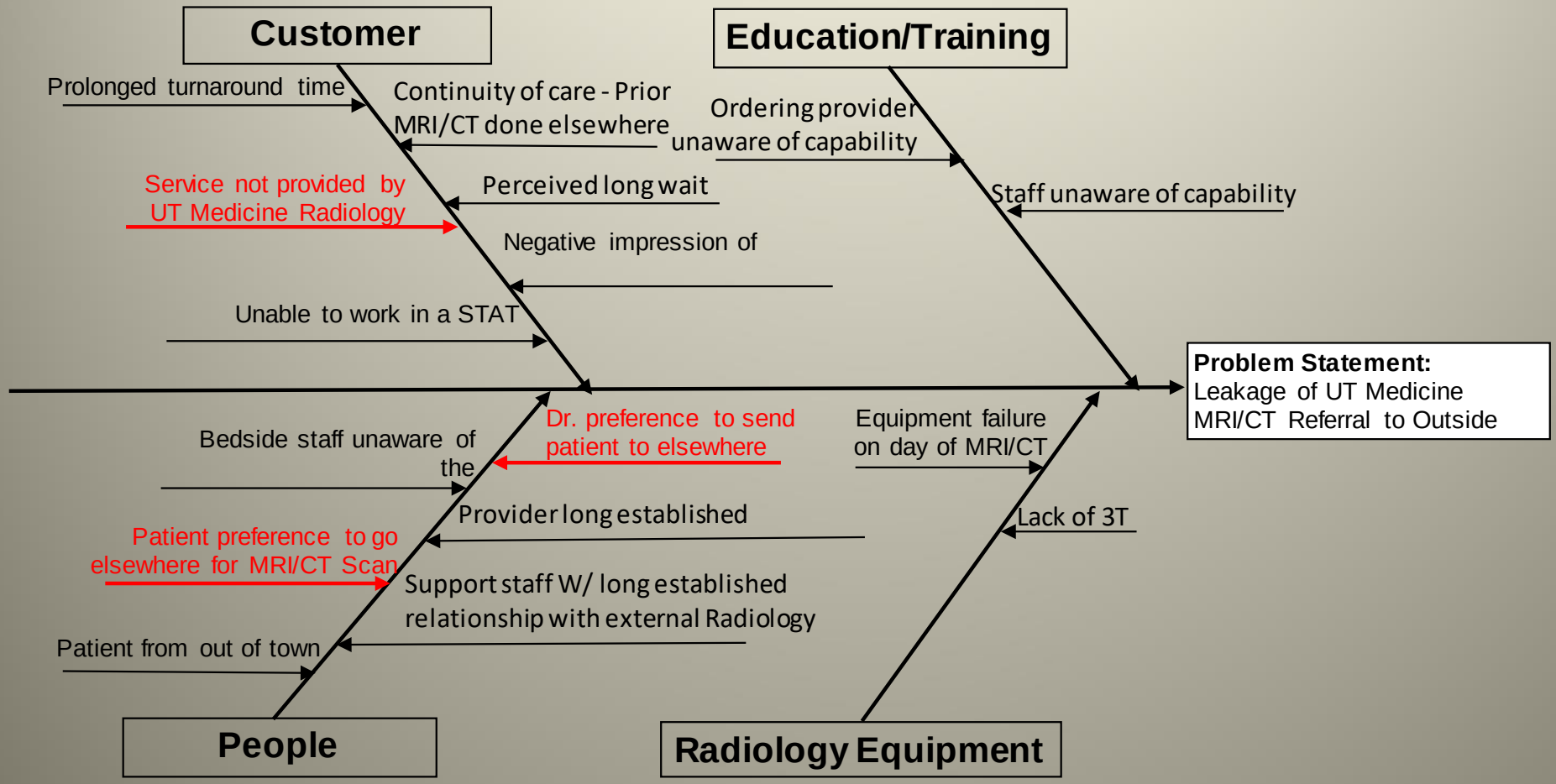
The Process

MARC MRI/CT Referral Patterns Flow Diagram



No Process facilitating the selection of UT Medicine

MARC MRI/CT Referral Patterns
Cause & Effects Diagram



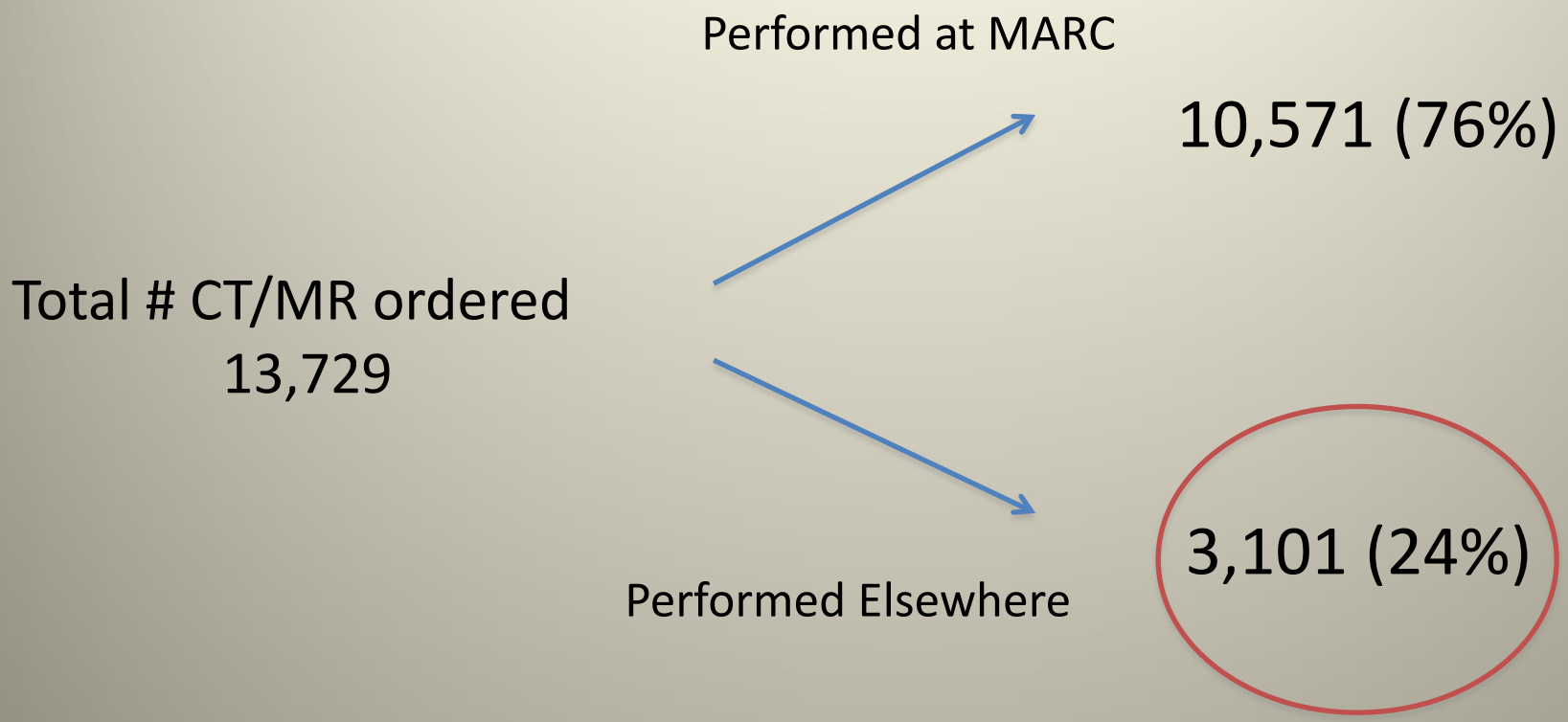
The Data

Data Source

- Epic report created – list of outgoing referrals for radiology tests (CT and MRI) ordered from 3/2/2013 to 2/28/2014.

- "Referral Reason"
  - Field in Epic for recording why an imaging study is done outside the practice
  - Entered by referral/benefits coordinators
  - Not mandatory field – therefore many "null"

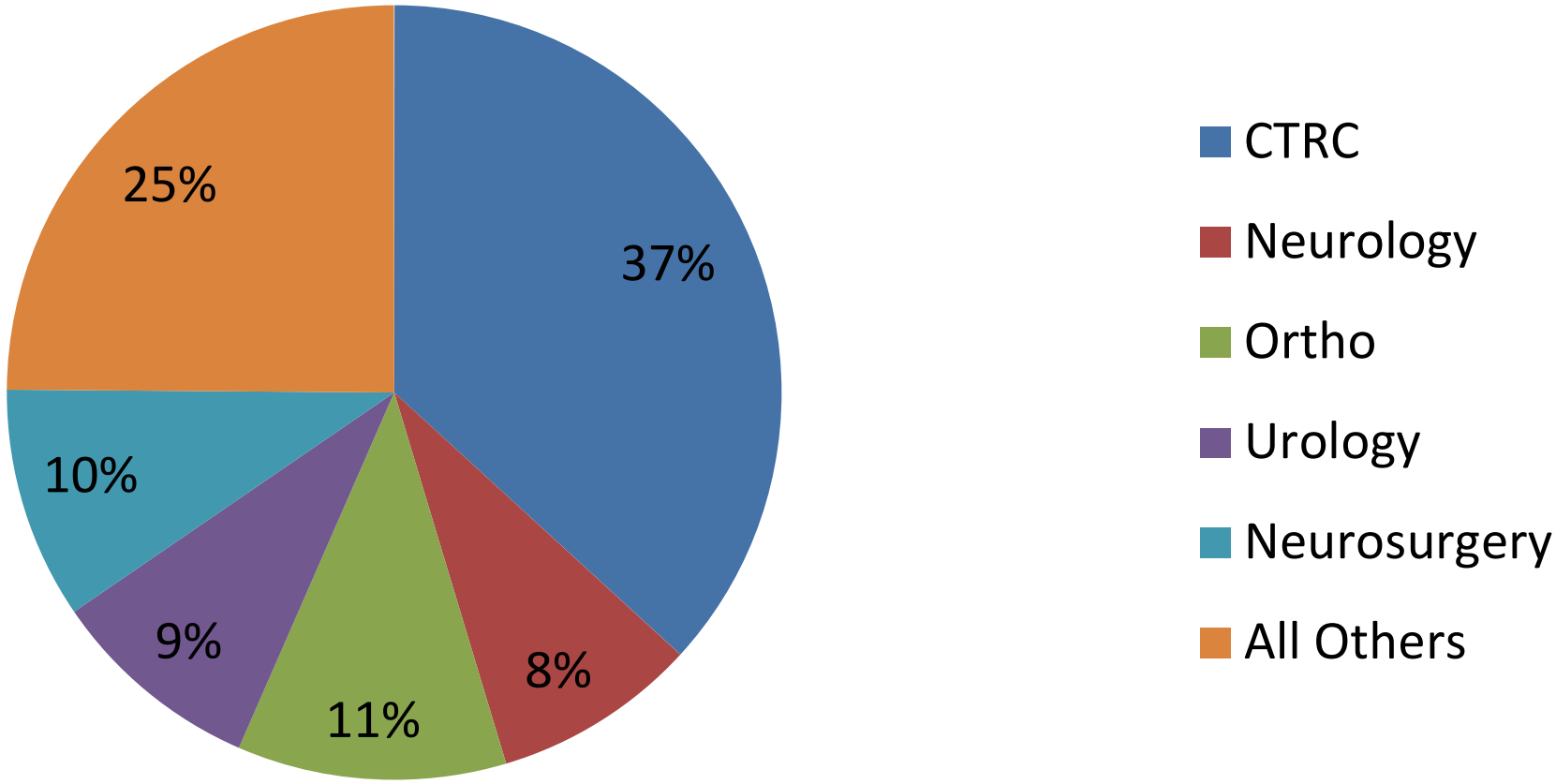
What is the Magnitude of the Problem?



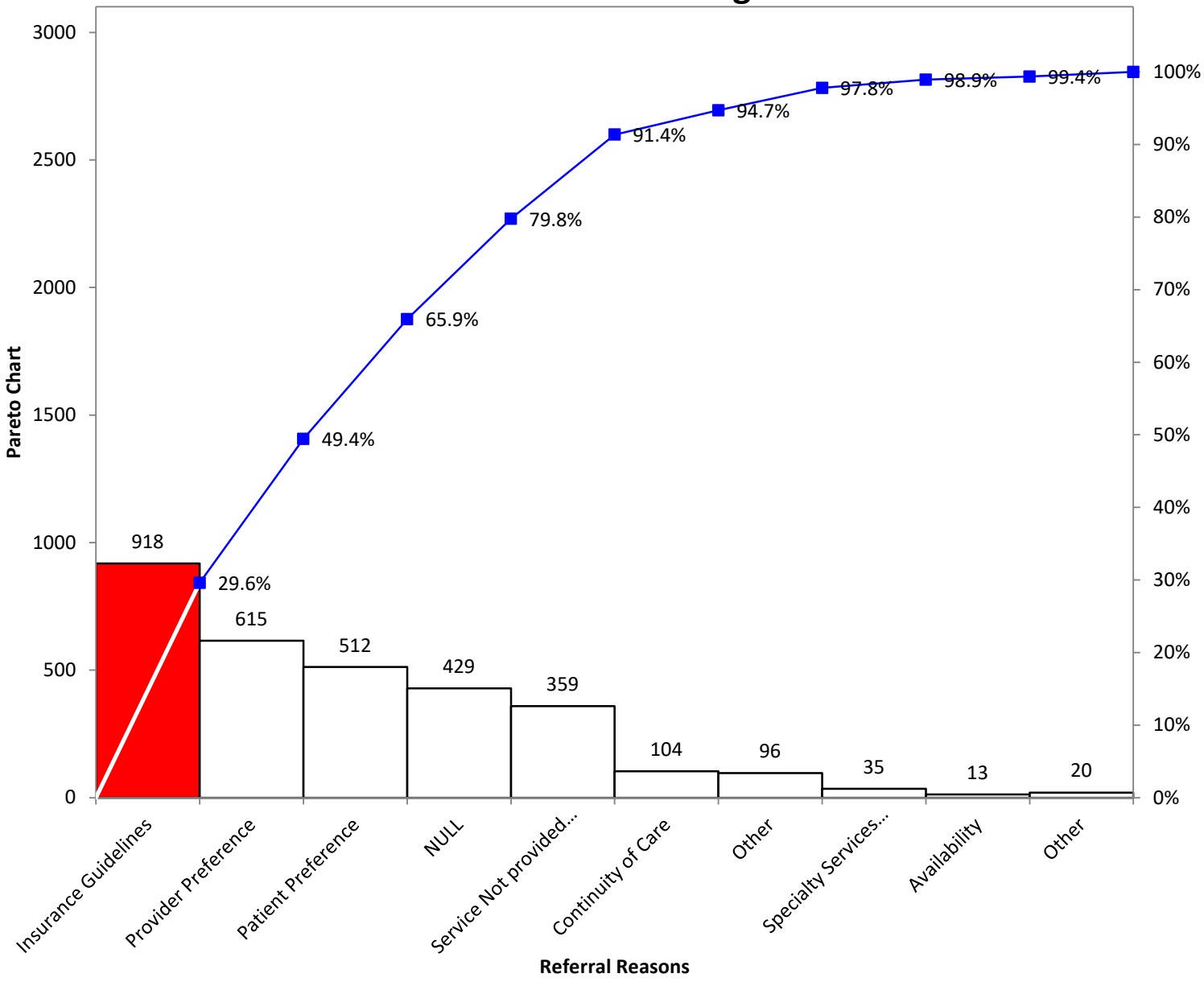
Financial Impact

	# Outgoing (3/13-2/14)	Avg Reimbursement (Tech + Prof)	Total Lost Revenue
CT	1549	$317	$491,033
MRI	1552	$539	$836,528
TOTAL CT + MRI	3101		$1,327,561

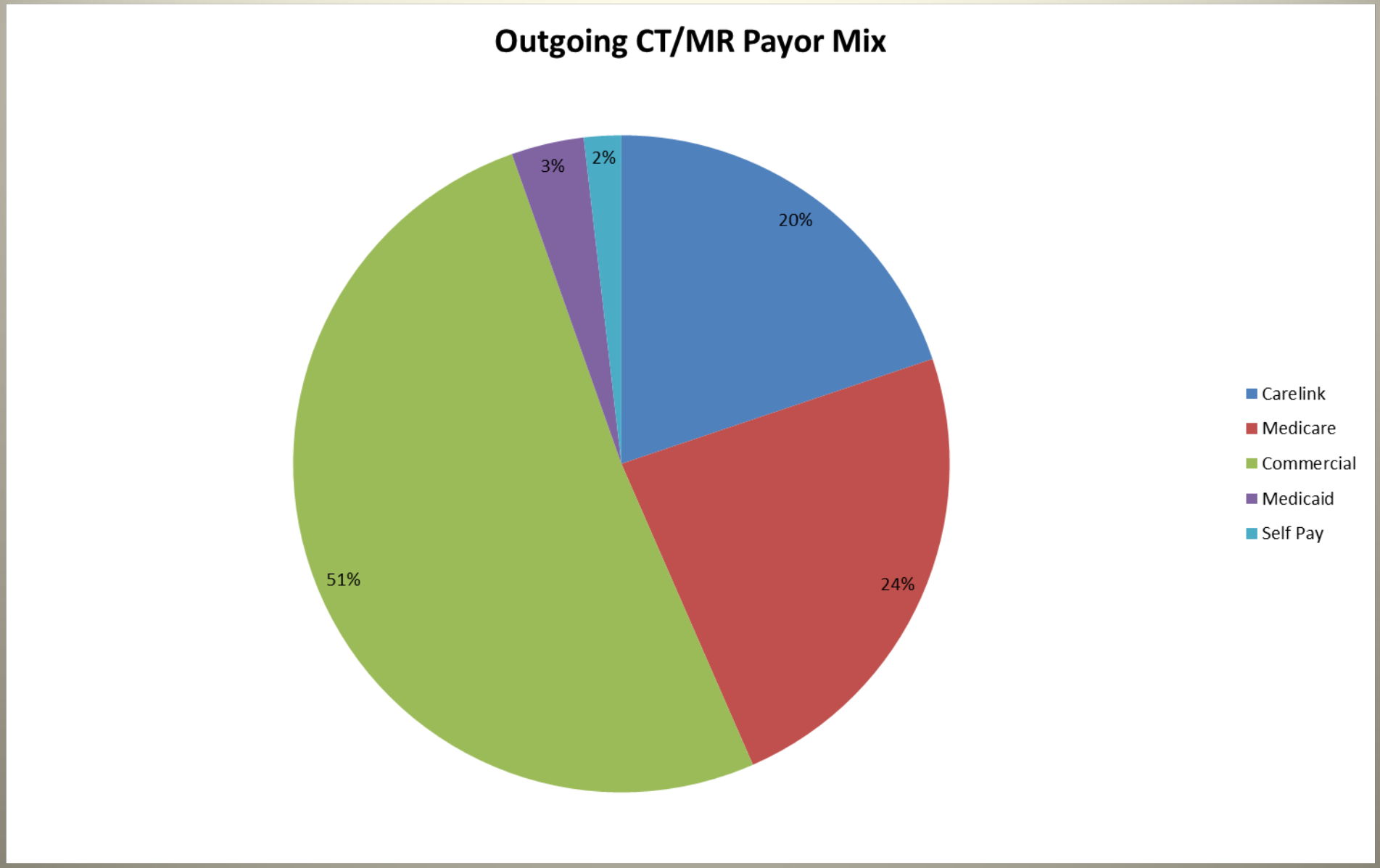
Who Are The Major Players?

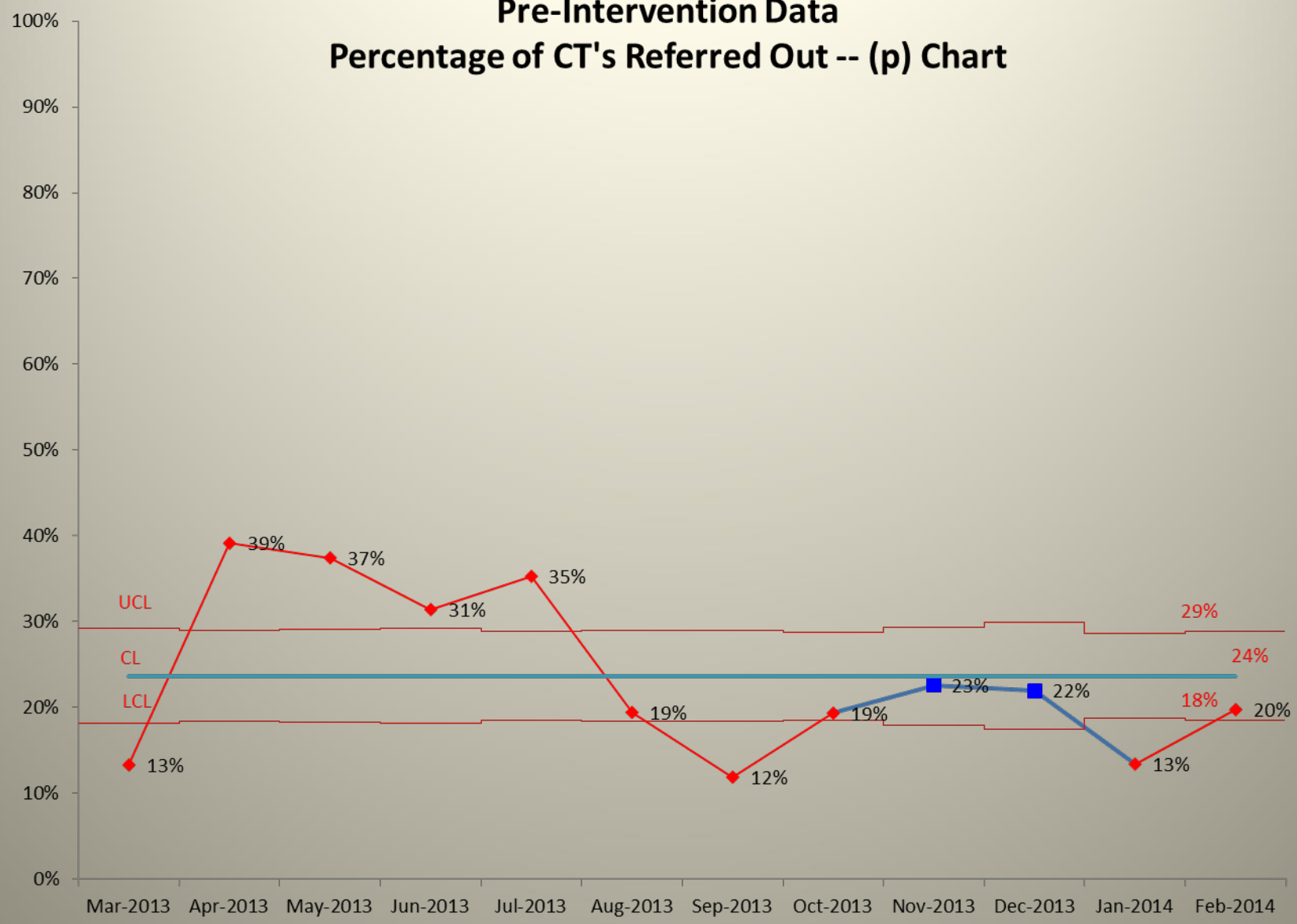


Pareto Chart
Reasons for Referring Out

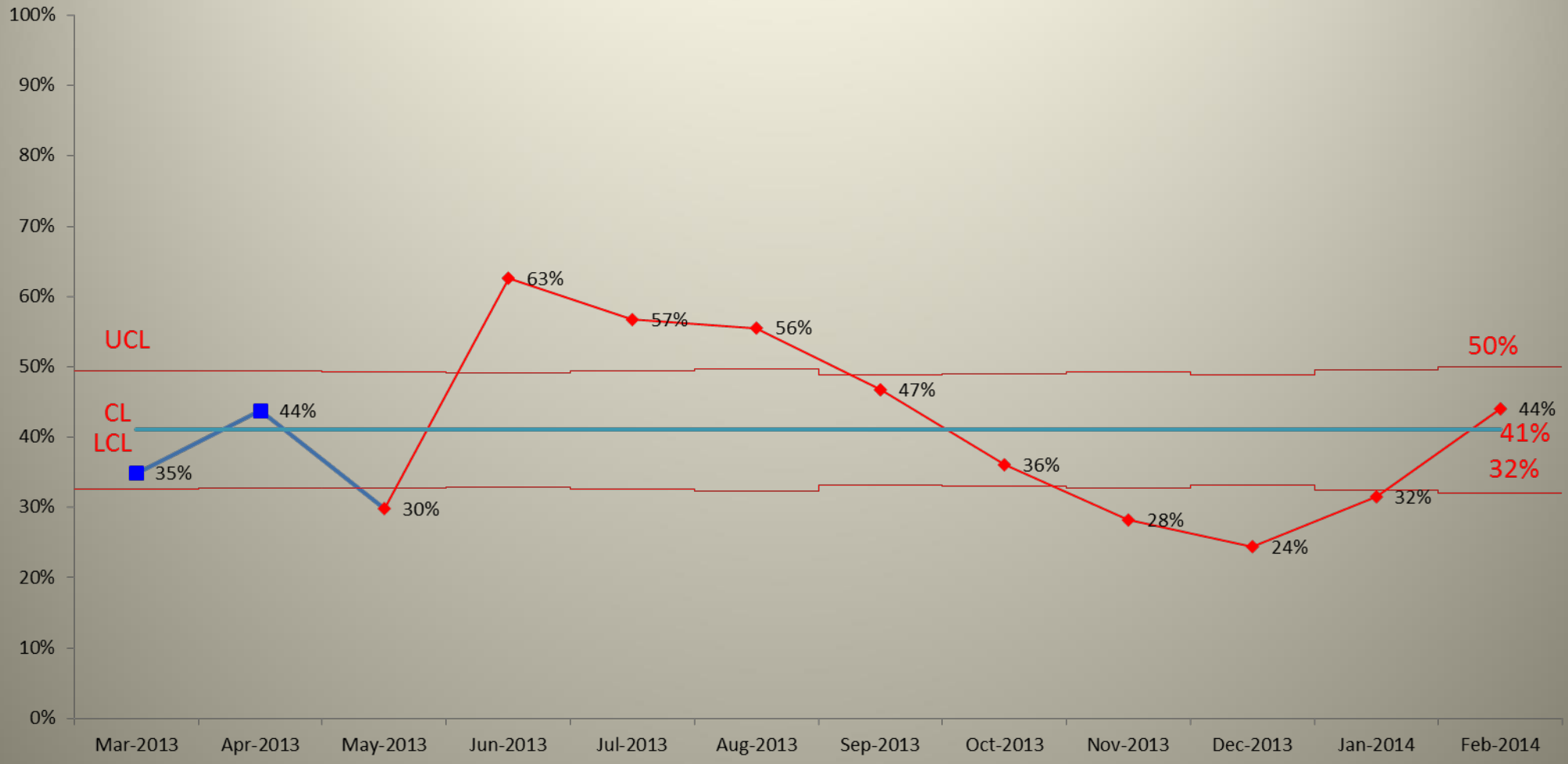


Top 3 Referral Reasons By Department	
Department	Total
CTRC	**924**
Insurance Guidelines	362
Patient Preference	196
Provider Preference	227
MARC ORTHOPAEDICS	**348**
Insurance Guidelines	73
Provider Preference	69
Patient Preference	56
MCT2 NEUROSURGERY	**300**
Null	256
Insurance Guidelines	11
Provider Preference	9
MARC UROLOGY	**275**
Insurance Guidelines	152
Service Not provided at UT Medicine	39
Patient Preference	36
MARC NEUROLOGY	**265**
Patient Preference	78
Service Not provided at UT Medicine	53
Insurance Guidelines	37


Outgoing CT/MR Payor Mix
20%
24%
51%
3%
2%
Carelink
Medicare
Commercial
Medicaid
Self Pay


Pre-Intervention Data
Percentage of CT's Referred Out -- (p) Chart
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
UCL
CL
LCL
29%
24%
18%
39%
37%
31%
35%
19%
12%
19%
23%
22%
13%
20%
13%
Mar-2013
Apr-2013
May-2013
Jun-2013
Jul-2013
Aug-2013
Sep-2013
Oct-2013
Nov-2013
Dec-2013
Jan-2014
Feb-2014

Pre- Intervention Data
Percentage of MRI's Referred Out -- (p) Chart



Strategic Assessment

STRENGTHS

- Patient convenience - same building, extended hours
- Provider convenience – radiologist immediately available, established relationships, referring physicians have access to images
- Subspecialty radiologists
- ACR accreditation
- Research
- "Add-on" capability
- Academic environment

WEAKNESSES

- Lack of equipment – 3T MRI, fluoroscopy
- Insurance restrictions – Carelink, Community First
- Lack of redundancy in equipment
- Competitor locations are more convenient for UT Med satellite clinics (i.e. Westover Hills)
- Lack of awareness of our capabilities
- EPIC/RIS integration, difficulty of placing orders in EPIC

OPPORTUNITIES

- New equipment – retention of existing business within UT Med; new services (e.g. arthrography, nuclear medicine, PET)
- Improved, streamlined communication with referring physicians
- Education of providers and support staff about our services
- Aggressive marketing of new equipment
- Imaging carve-out contract opportunities?

THREATS

- Reimbursement cuts
- Increase in imaging carve-outs (e.g. Secure Horizons and Well Med exclusivity with Bexar Imaging)
- Competitors already have the equipment we are planning for next year
- Established relationships between UT Med physicians and outside radiologists

PLAN: Intervention

Improve data collection

- Encouraged implementation of mandatory collection of "referral reason" data for radiology orders at the time of order entry in Epic.
  - In line with the organization wide initiative to retain specialty consultations within the practice
  - System-wide change went into effect in early January 2014 requiring providers to document a reason for sending referrals outside UTM.
  - In the course of our project, it was discovered that the radiology orders were not included in the system change.
  - As of March 2014, the referral reason must be entered for radiology orders.
  - We also learned that many of the radiology orders automatically defaulted to "non-UTM", resulting in an additional barrier to sending patients to UT Med radiology. This has been corrected so that all radiology orders in EPIC now default appropriately to "UTM".
  - May change behavior?

- Timeframe: March 2014

- Barriers: Need time for system change to be in place to assess impact

PLAN: Intervention

Analyze data for opportunities

- For “major players”, pursued more detailed analysis of data to look for patterns and specific types of studies that are sent out.
  - The majority of studies sent out are ones that we can do. Need to focus on RETENTION of these exams within the practice.
  - Data provide documentation to justify the planned equipment purchases. This will allow the creation of NEW business.
    - eg 80 arthrograms were ordered (and all sent out) over a 1 year period. For the MR portion alone, this translates into $43K in potential revenue
  - Radiology orders are often not entered directly by providers, but instead are entered into Epic by support staff (i.e. medical assistants, nurses, residents).
    - Some providers may specify where to send a patient for an exam but often it is left to the support staff to make this determination. Educational and marketing efforts need to be directed at all members of the clinic team, not just the providers.
- Timeframe: February - March 2014 and ongoing
- Barriers:
  - New equipment needed for certain procedures. Probably will not be in place until mid 2015.
  - Lack of awareness of our current capabilities.

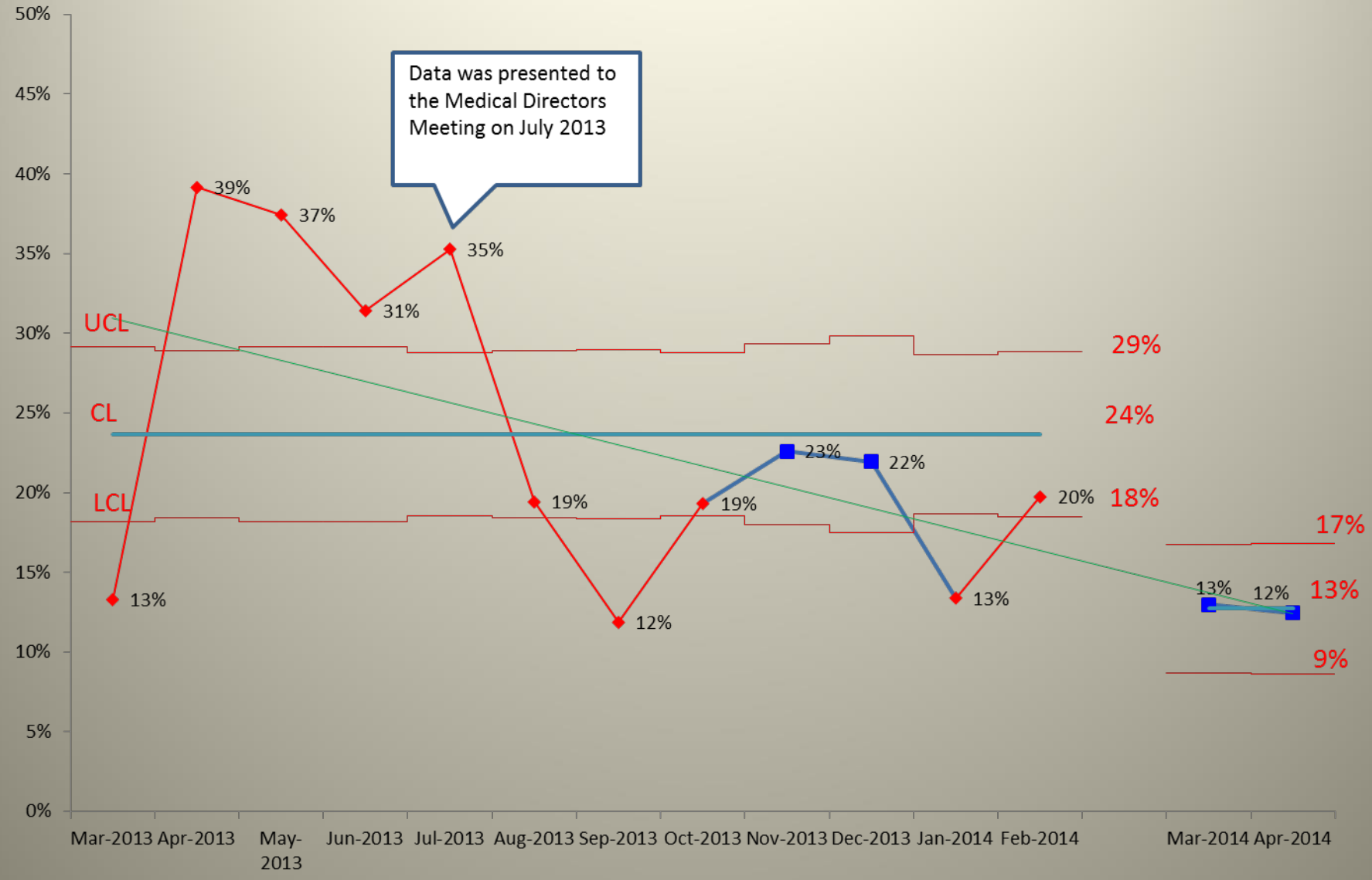
PLAN: Intervention

Increase awareness of Radiology services and capabilities

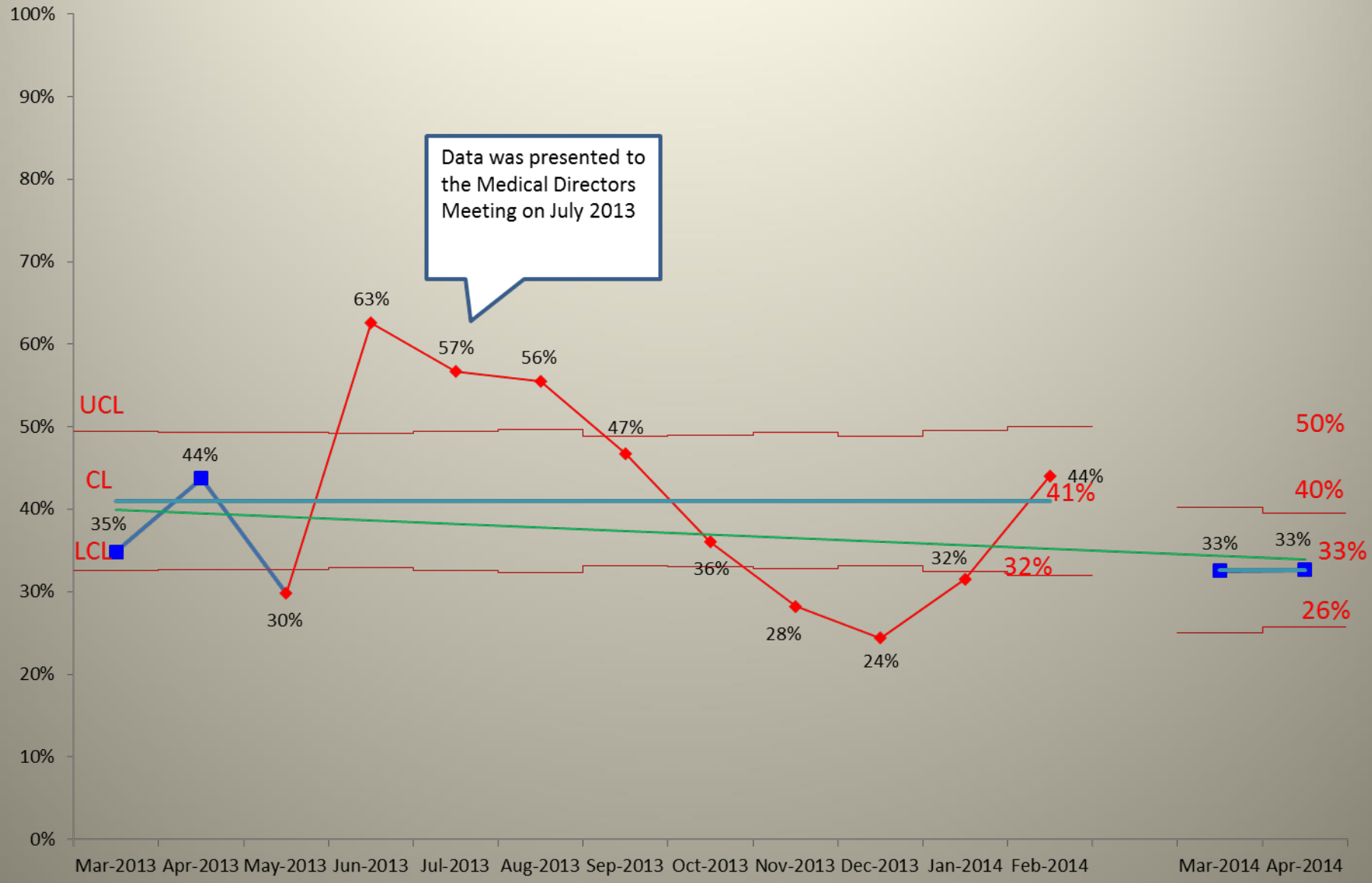
- Met with (and continuing to meet with) leadership for CTRC, Orthopedics and Neurology.
  - Learn from the customer directly about their issues with Radiology and expectations
  - Educate providers about the specific services we offer
  - Encourage clinical leadership to emphasize with their staff the importance of referring within the practice
- Chair of Radiology has charged each radiology subspecialty section chief to meet with key referring physicians about their radiology referrals
  - Provide data support for these conversations
  - Emphasize planned new equipment purchases (3 Tesla magnet, fluoroscopy, Gamma camera)
- Increased presence at networking events
  - One-on-one interactions allow for immediate feedback
  - Primary Care reception
  - CTRC reception (April 2014)
  - Monthly MARC provider lunches
- Referring Physician Tool-Kit

- Timeframe: April, May 2014 and ongoing

Post Intervention Data
Percentage of CT's Referred Out -- (p) Chart



Post Intervention Data
Precentage of MRI's Referred Out (p) Chart



ACT: Sustaining the Results

- Continue to track outgoing referral data beyond the project period
- Institute regular updates to MARC Radiology leadership team, radiology staff and faculty
- Intervene early on if there is an indication we are losing referrals
- Reinforce customer service commitment with every interaction
- Once new equipment is in place, evaluate referral patterns with a focus on the new offerings

NEXT STEPS

- Improve/simplify ordering in EPIC
- Strive to streamline communication with ordering providers (i.e. preferred contact numbers)
- Aggressively market new equipment and new services
  - Current plans include 3T MRI, PET-CT, fluoroscopy, gamma camera
  - Keep patients within the practice for standard CT and MRI exams
  - Develop referral bases for new services, e.g.
    - Image-guided therapeutic injections
    - MR arthrography
    - Cardiac imaging
    - MR Neurography
    - PET-CT

Thank you!

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