



Joint Commission Diagnostic Imaging
Requirements
Survey Results: Radiation Dose Optimization
7/1/2015-3/1/2017

Landauer Dose Optimization Symposium
June 5, 2017



The Joint Commission: Mission

To continuously improve health care for the public, **in collaboration with other stakeholders**, by evaluating health care organizations and inspiring them to excel in providing safe and effective care of the highest quality and value.



Dose optimization standards include:

▀ **EC.02.04.01 manages medical equipment risks**

- EP 10 Identifies quality control and maintenance activities to maintain image quality; identifies frequency



Dose optimization standards include:

- ▶ **EC.02.04.03 Inspects, tests, maintains medical equipment**

- EP 17 Measures CTDIvol for 4 protocols

- ▶ **EC.02.04.03 Inspects, tests, maintains medical equipment**

- EP 19 Diagnostic medical physicist conducts a performance evaluation at least annually

Dose optimization standards include:

▶ **PC.01.03.01 EP Plans for patient care**

- EP 25 Establishes/ adopts CT imaging protocols (current standards of practice; key criteria: clinical indication, contrast administration, age, body habitus, expected dose index range)

▶ **PC.01.03.01 Plans for patient care**

- EP26 Protocols reviewed/kept current; input interpreting physician, medical physicist, lead imaging technologist; current standards practice, changes in equipment, established time frames



Dose optimization standards include:

▶ **PI.01.01.01 Compiles and analyzes data**

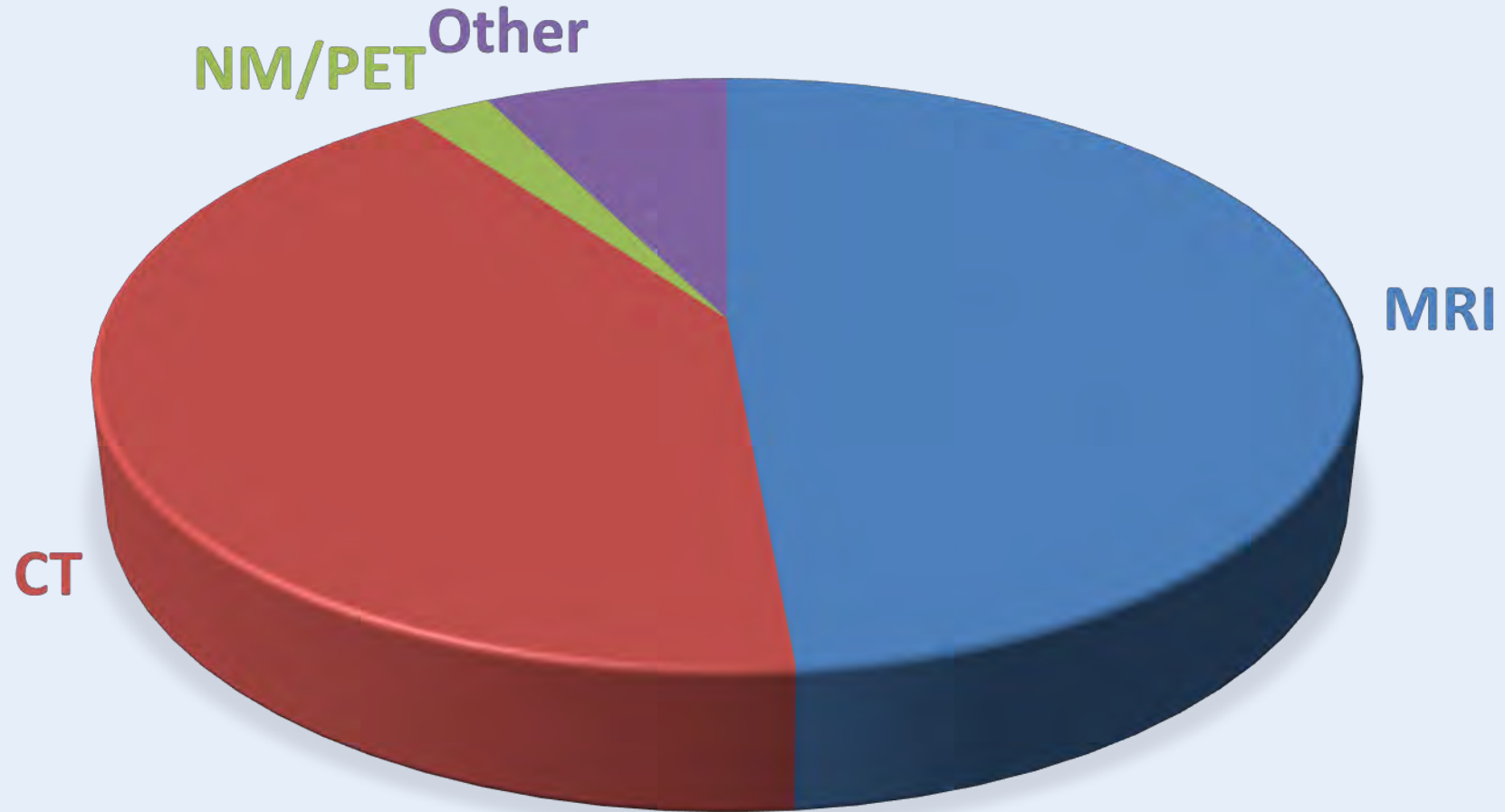
- EP 6 reviews/ analyzes incidents dose index exceeded expected range; compared to external benchmarks

Assessment of compliance during the onsite survey

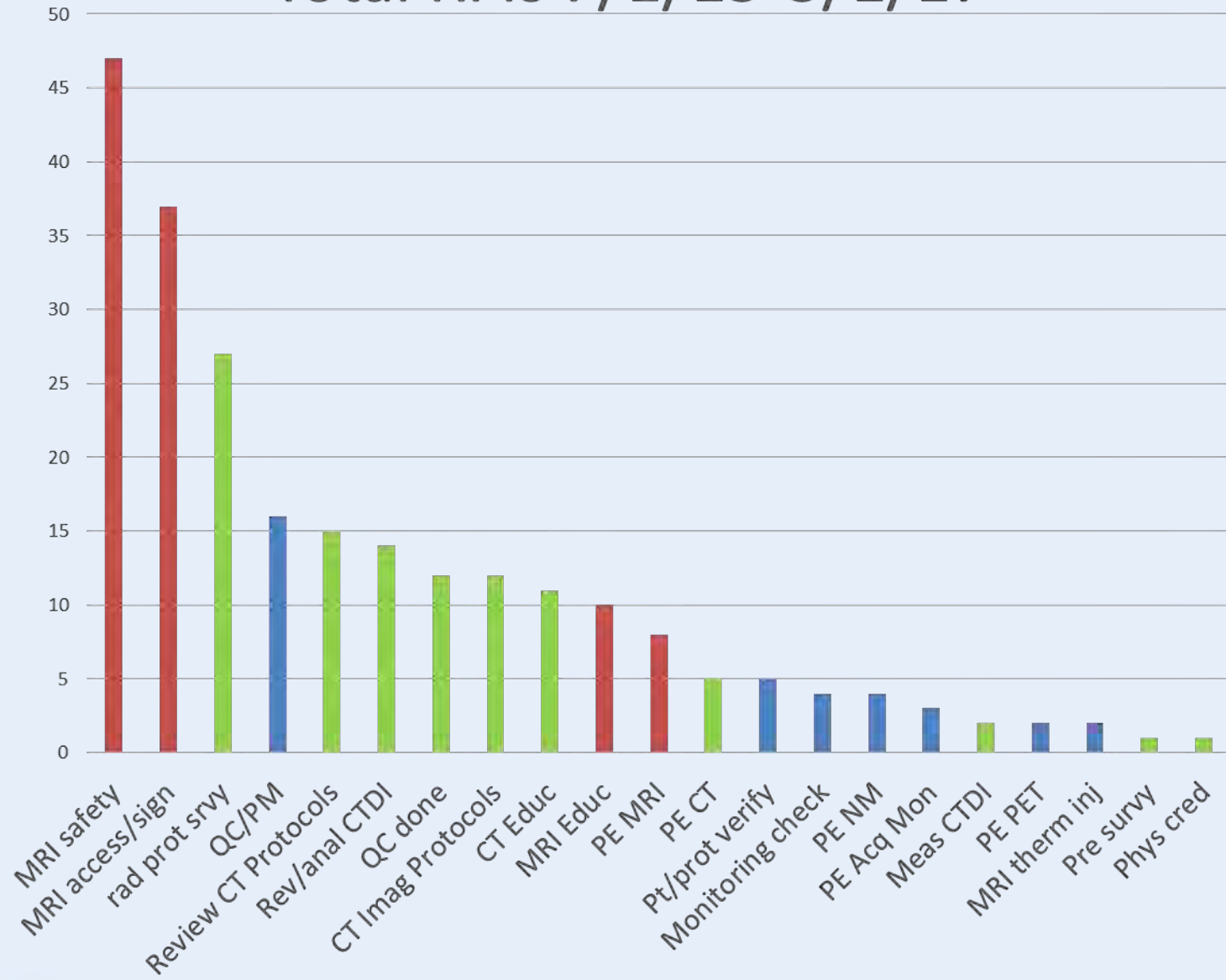


What are surveyors scoring?

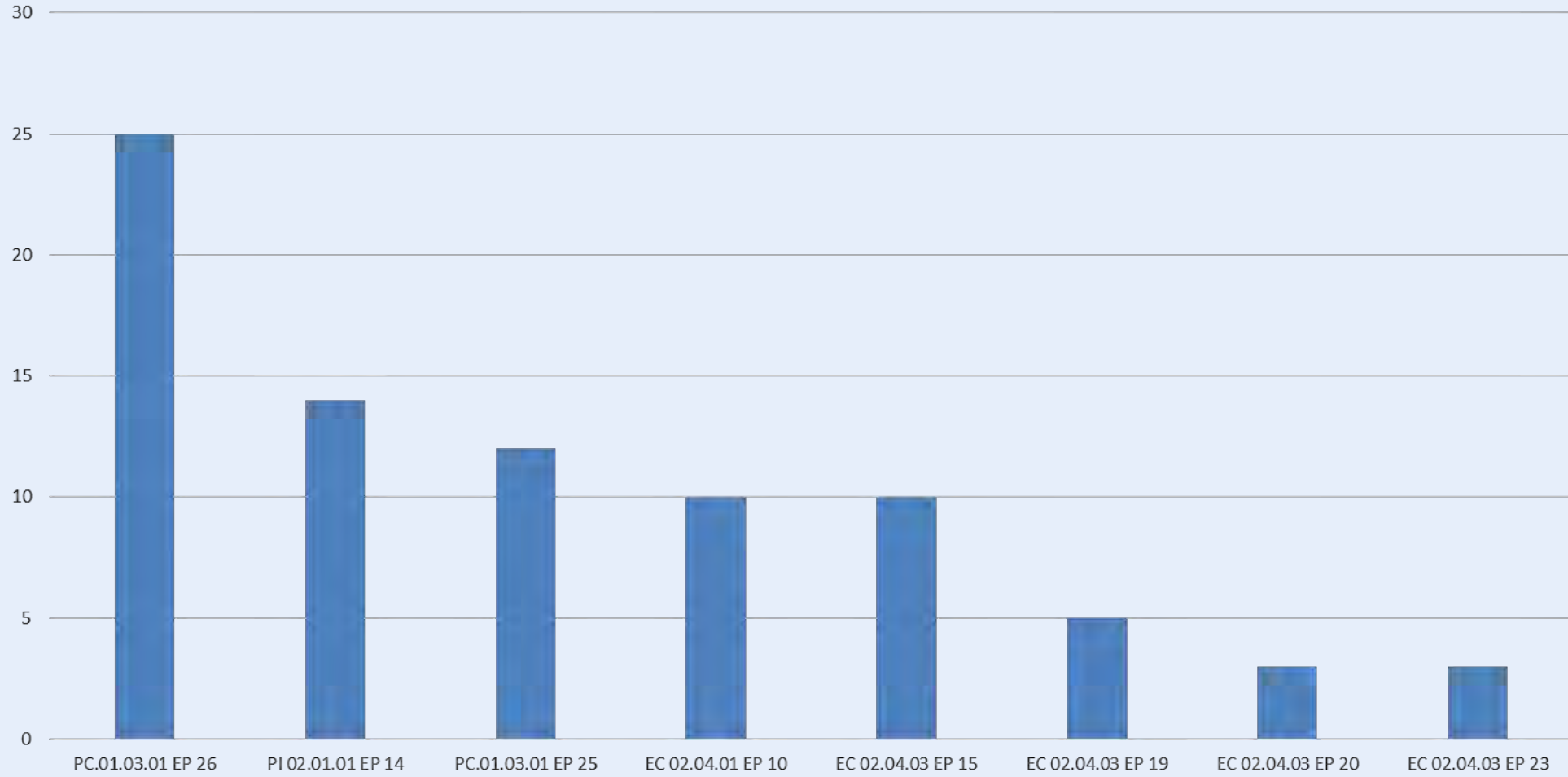
RFIS SCORED TOTAL



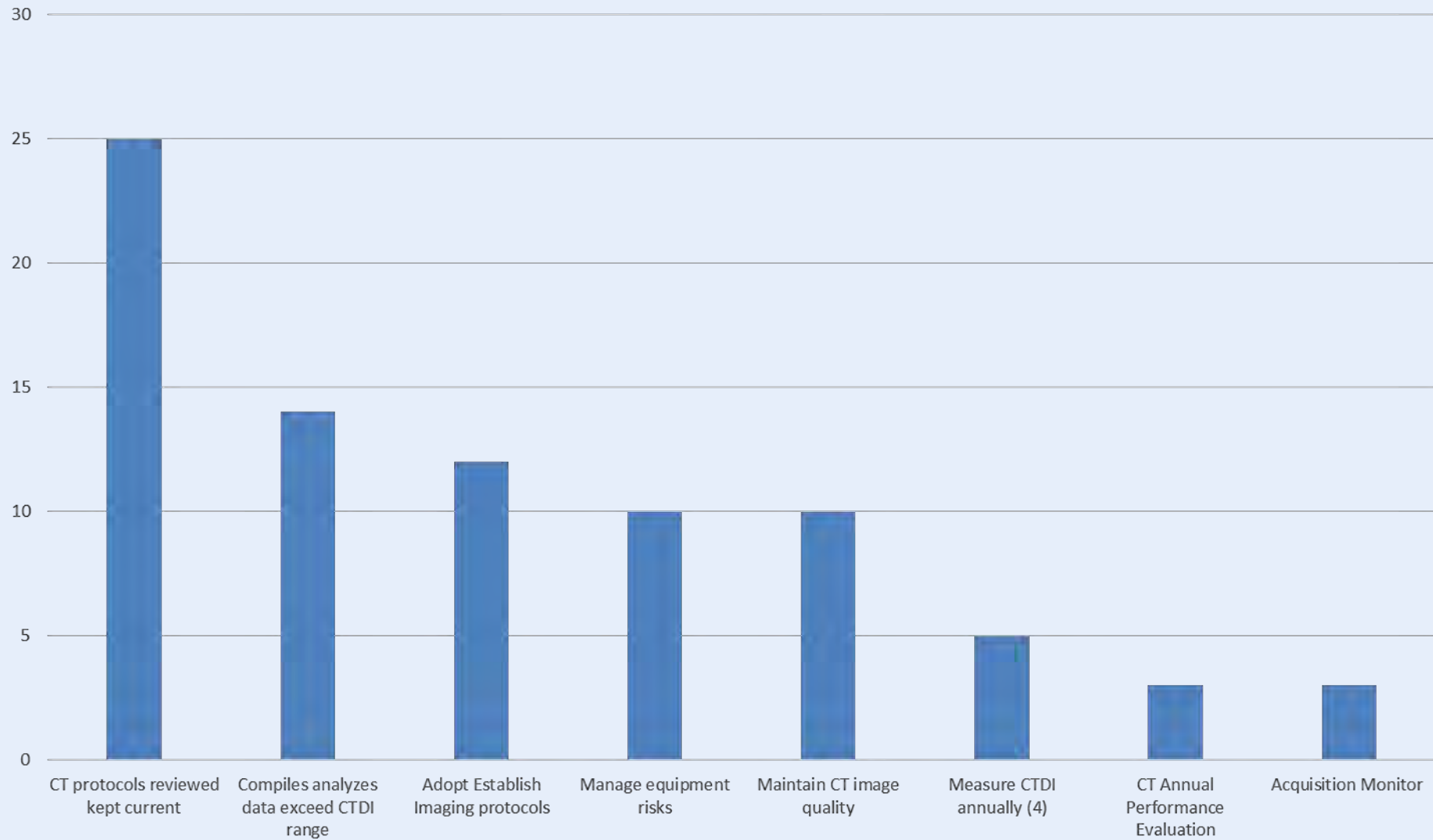
Total RFIs 7/1/15-3/1/17



RFI CT Dose Related Standards
7/1/15-3/1/17



RFI Dose Related Standards 7/1/15-3/1/17






PC.01.03.01 EPs 25 & 26 Establishing/ reviewing imaging protocols

Survey process:

- ✓ Staff interview – How are protocols are established? What criteria do they address? How often are they reviewed? Who is involved in the review? What is the process for selecting or modifying imaging protocols depending on patient diagnosis, age, and size?
- ✓ Direct observation – technologist set-up and/or performance of CT exam. Discuss changes or adjustments made to the imaging protocol. Review the protocol. Are expected dose ranges identified?

Themes: Surveyor Comments

- ▶ PC. 01.03.01 Plans for patient care
 - No kV mA in protocol, std of care is to vary kV, mA
 - Contrast use /amount not in policy/protocol
 - Random adjustment/modification CT protocols; no documentation
 - No evidence established CT protocols
 - Protocol did not address all required elements
 - Outdated contrast protocols (noted on tracer)
 - No time frame for review; no evidence physicist, imaging MD, technologist included in review



PI.02.01.01 EP 6 Review & analyze incidents where radiation dose index exceeded expected range identified in imaging protocols. Compare to external benchmark

Survey process:

- ✓ Staff interview – Have there been any incidents where the expected dose index was exceeded? If so, what happened? What was the follow-up? Describe process for review and analysis of incidents? Who is involved?
- ✓ Direct observation – Review collected data, if available. Discuss process for external benchmark comparison. Which ones are used?

Themes: Surveyor Comments

- ▶ No collection & analysis; did not review analyze data related incidents exceeding range, no benchmarking
- ▶ No process to review and analyze
- ▶ 2 of 3 reviews exceeded expected range, no RSC, no process to aggregate & analyze data report to PI Committee



EC.02.04.01 EP 10 – Manages medical equipment; IDs quality control & maintenance activities; identifies frequencies

EC.02.04.03 EP 15 (17) – Inspects, tests maintains medical equipment; maintains quality of CT, MRI, PET, NM images produced

Survey process:

- ✓ Staff interview – What equipment testing/ QC activities are needed? How did you determine? Frequency? By whom?
- ✓ Direct observation – Review of QC and testing log(s)

Themes: Surveyor Comments

- ▶ EC. 02.04.01 Identifies QC & maintenance activities
 - QC not performed as required (seen at tracer)
 - No record of actions when QC failed
 - Unaware of manufacturer's recommendations

- ▶ EC.02.04.03 Inspects, tests, maintains medical equipment
 - Four protocols not measured
 - Manufacturer recommends monthly pm; done quarterly
 - Performance evaluation not done annually

DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Medicare & Medicaid Services
7500 Security Boulevard, Mail Stop C2-21-16
Baltimore, Maryland 21244-1850



Center for Clinical Standards and Quality / Survey & Certification Group

Ref: S&C: 14-07-Hospital

DATE: December 20, 2013
TO: State Survey Agency Directors
FROM: Director
Survey and Certification Group
SUBJECT: Hospital Equipment Maintenance Requirements

Describes Alternative Equipment Maintenance Program

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Centers for Medicare & Medicaid Services
7500 Security Boulevard, Mail Stop C2-21-16
Baltimore, Maryland 21244-1850



Center for Clinical Standards and Quality / Survey & Certification Group

Ref: S&C: 14-07-Hospital

DATE: December 20, 2013
TO: State Survey Agency Directors
FROM: Director
Survey and Certification Group
SUBJECT: Hospital Equipment Maintenance Requirements

“hospital may adjust its maintenance, inspection and testing frequency for facility and medical equipment from what is recommended by the manufacturer based on a risk-based assessment by qualified personnel unless:”
required by Federal or state law or hospital CoP, **e.g. all imaging/radiologic equipment must be maintained per manufacturer’s recommendations**

Imaging radiologic equipment whether used for diagnostic or therapeutic purposes is governed by 42 CFR 482.26(b)(2): Periodic inspection of equipment must be made and hazards identified must be properly corrected.

NFPA 99-2012 has been incorporated by reference into 42 CFR 482

NFPA 99: Health Care Facilities Code
Chapter 10 Electrical Equipment
10.5.3 Servicing and Maintenance of Equipment



10.5.3.1 Describes documents manufacturers must provide

10.5.3.1.1(11) technical performance specifications

10.5.3.1.1(13) preventive and corrective maintenance and repair procedures

10.5.3.1.2 Service manuals, instructions and procedures provided by the manufacturer shall be considered in the development of a program for maintenance of equipment.


EC.02.04.03 EP 17(19) –Measures CTDI 4 protocols; verifies Within 20% of display

Survey process:

- ✓ Staff interview – describe processes in place to measure and verify CT radiation dose output. Measurements are taken for which types of protocols? How often? By whom?
- ✓ Direct observation – Review of equipment testing reports, do they include dates & results?

Themes: Surveyor Comments

- ▀ 4 protocols not measured



EC.02.04.03 EP 19(20) –Annual performance evaluation; listed metrics

- ✓ Staff interview – describe processes in place for CT, PET, Nuc Med and MRI performance evaluations. How often is this done? By whom?
- ✓ Direct observation – Review of performance evaluation reports. What tests were done? Were there any recommendations? If so, were they acted upon?

Themes: Surveyor Comments

- ▀ Not performed annually



Survey Analysis For Evaluating Risk (SAFER) Matrix

6/1/2016 Deemed Psychiatric Hospitals
(tailored and non-tailored)



1/1/2017 All other programs



The SAFER Matrix: A New Scoring Methodology

Project REFRESH (*see* related articles on pages 3 and 5), the Joint Commission's multiphase process improvement project, includes a transformative approach for

Contents

- 1  The SAFER Matrix: A New Scoring Methodology
- 2 In Sight
- 3  Project REFRESH and Improving the Survey Experience

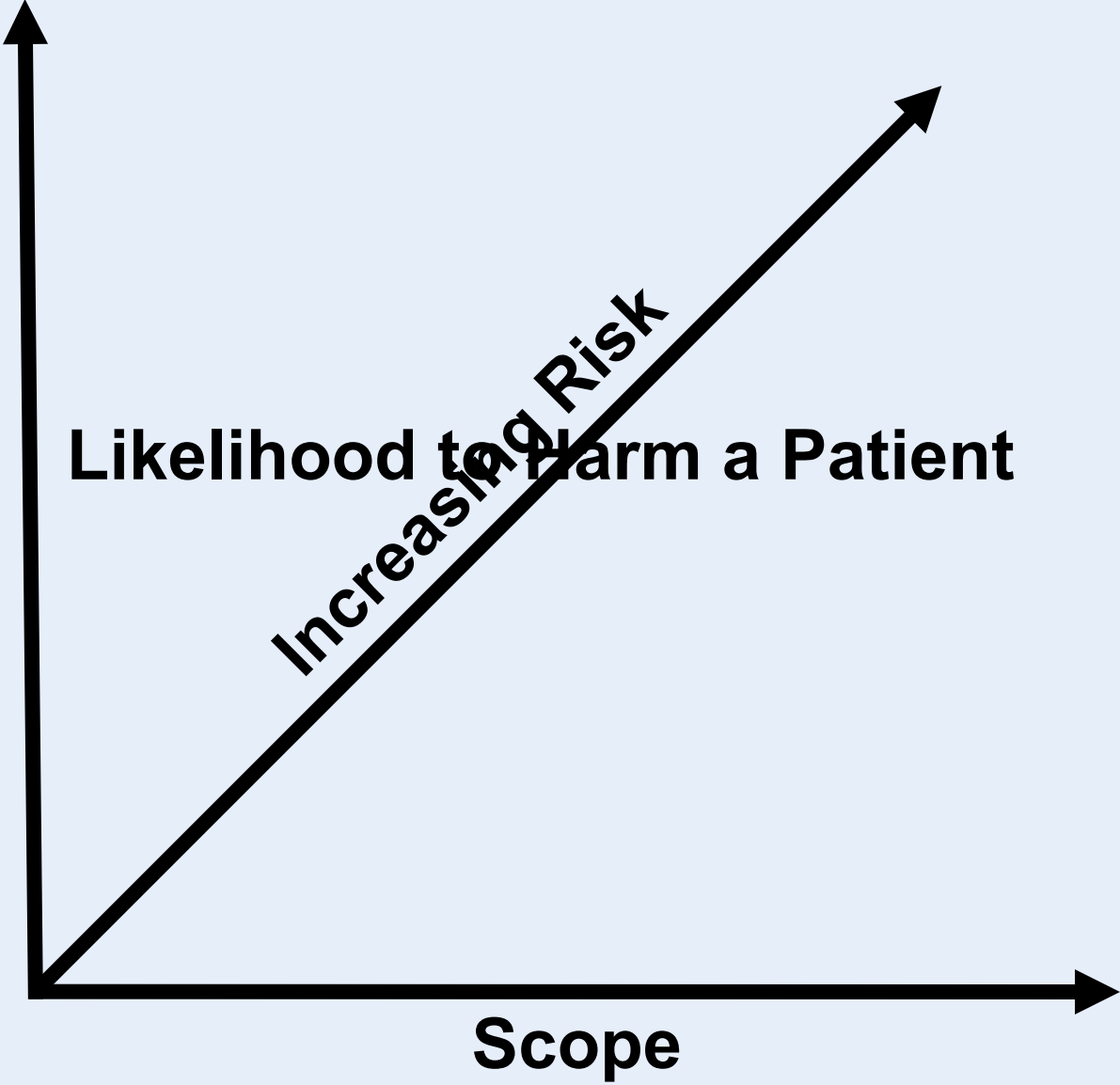
What is SAFER™?

- ▶ The **Survey Analysis for Evaluating Risk™ (SAFER™)** is a transformative approach for identifying and communicating risk levels associated with deficiencies cited during surveys. The additional information related to risk provided by the SAFER Matrix helps organizations prioritize and focus corrective actions.
- ▶ The **SAFER Matrix™** provides one, comprehensive visual representation of survey findings in which all Requirements for Improvement (RFIs) are plotted on the SAFER matrix™ according to the likelihood of the issue to cause harm to patients, staff or visitors, in addition to how widespread the problem is, based on the surveyor's observations.
- ▶ The **SAFER Matrix** replaces the current scoring methodology, which is based on pre-determined categorizations of elements of performance (such as direct and indirect impact) – instead allowing surveyors to perform real-time, on-site evaluations of deficiencies. Placement of RFIs within the matrix will determine the level of detail required within each RFI's Evidence of Standards Compliance follow-up.

Clean Slate....



A New SAFER Concept



The Joint Commission's Survey Analysis for Evaluating Risk (SAFER) Matrix™

Likelihood to Harm a Patient/Staff/Visitor

HIGH
MODERATE
LOW

<i>Immediate Threat to Life</i>			
HIGH			
MODERATE			
LOW			
	LIMITED	PATTERN	WIDESPREAD
	Scope		

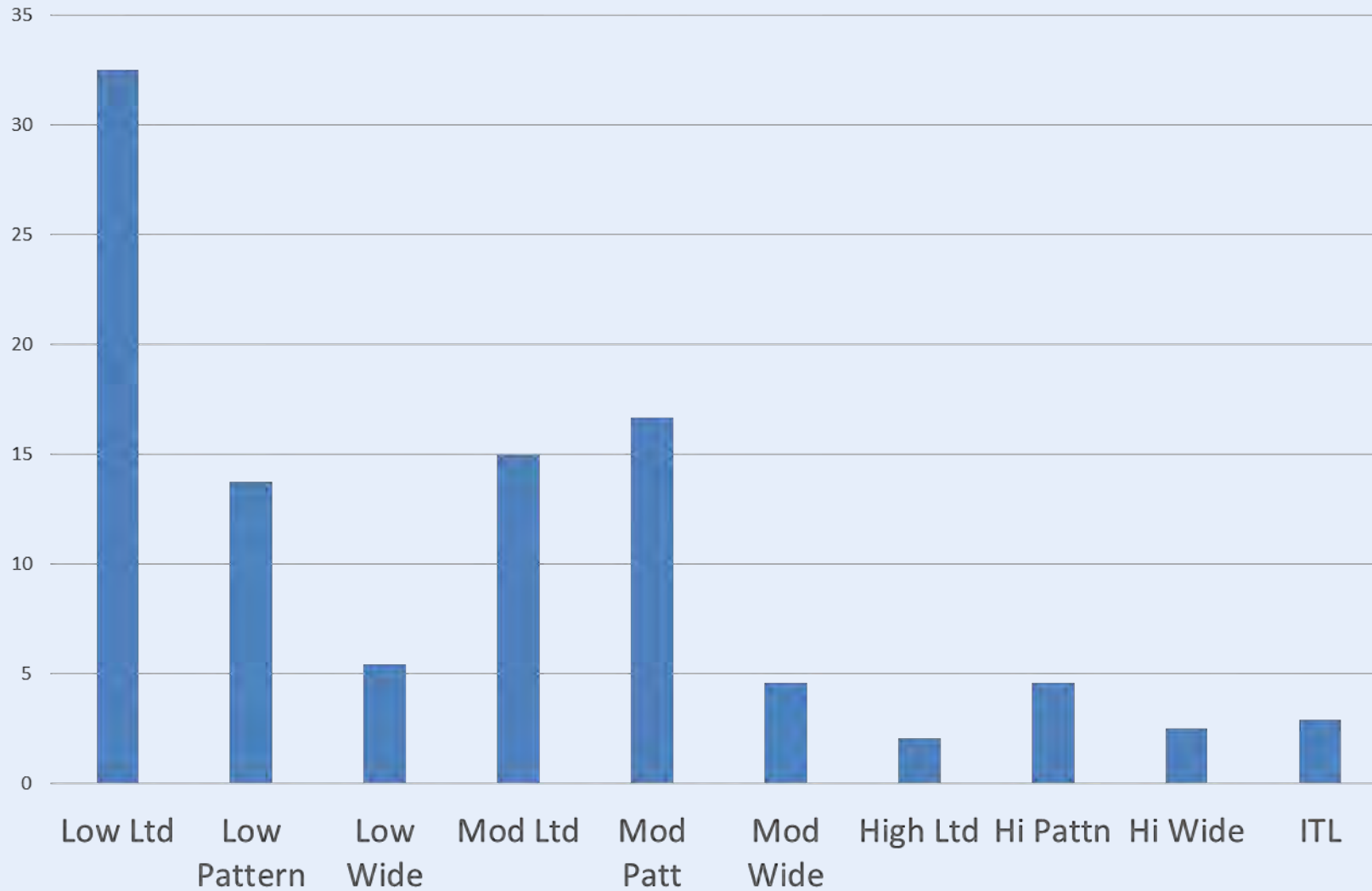
SCOPE

<u>Category</u>	<u>Definition</u>	<u>Further Guidance</u>
LIMITED	Unique occurrence that is not representative of routine/regular practice, and has the potential to impact only one or a very limited number of patients, visitors, staff	<ul style="list-style-type: none"> • <i>An outlier.</i> • Scope is isolated when one or a very limited number of patients are affected and/or one or a very limited number of staff are involved, and/or the deficiency occurs in a very limited number of locations.
PATTERN	Multiple occurrences of the deficiency, or a single occurrence that has the potential to impact more than a limited number of patients, visitors, staff	<ul style="list-style-type: none"> • <i>Process Variation.</i> • Scope is pattern when more than a very limited number of patients are affected, and/or more than a very limited number of staff are involved, and/or the situation has occurred in several locations, and/or the same patient(s) have been affected by repeated occurrences of the same deficient practice.
WIDESPREAD	Deficiency is pervasive in the facility, or represents systemic failure, or has the potential to impact most/all patients, visitors, staff	<ul style="list-style-type: none"> • <i>Process Failure.</i> • Scope is widespread when the deficiency affects most/all patients, is pervasive in the facility or represents systemic failure. Widespread scope refers to the entire organization, not just a subset of patients or one unit.

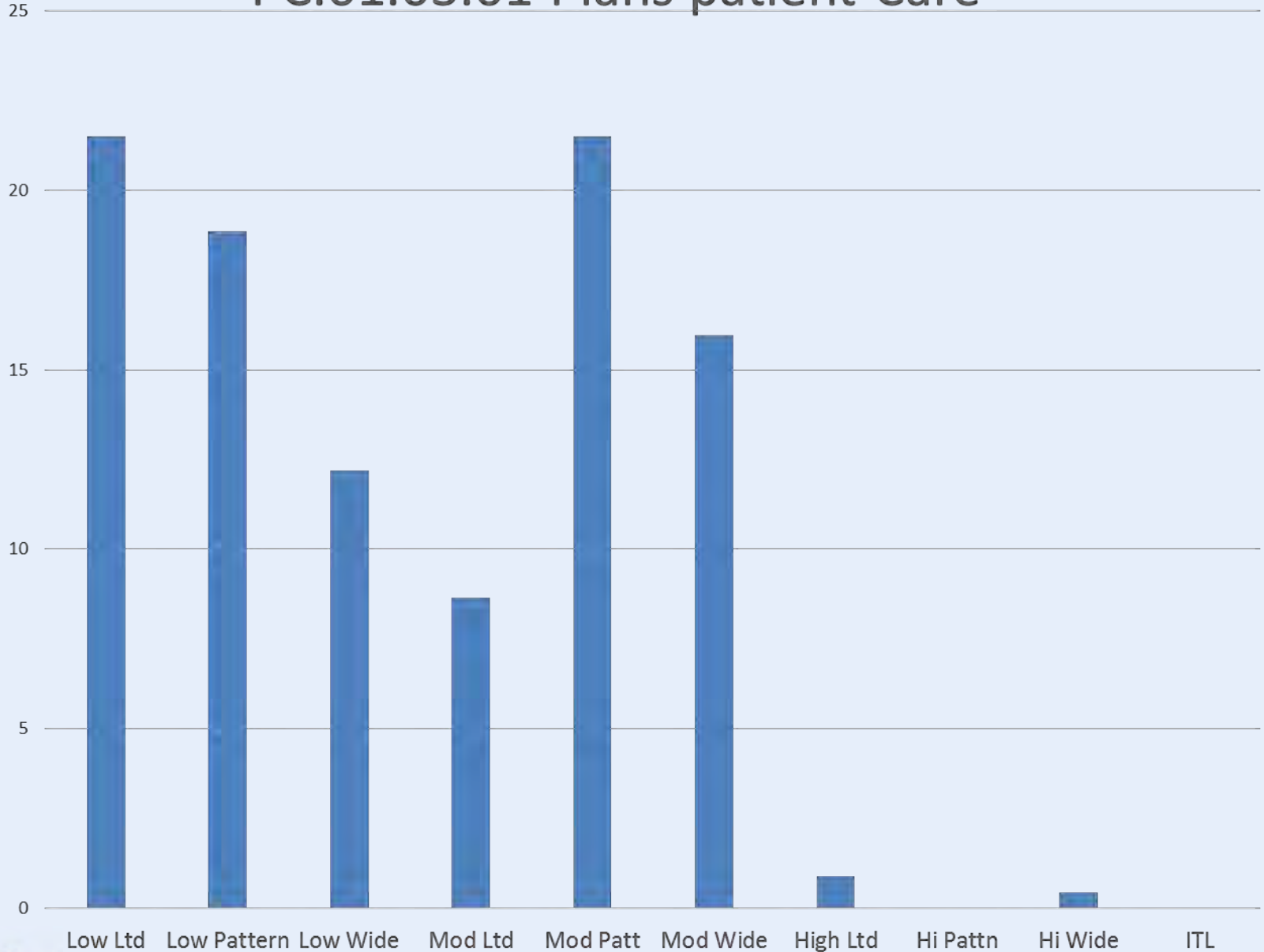
LIKELIHOOD TO HARM

<u>Category</u>	<u>Definition</u>	<u>Further Guidance</u>
LOW	Harm could happen, but would be rare	<ul style="list-style-type: none"> Undermines safety/quality or contributes to an unsafe environment, but very unlikely to directly contribute to harm. It would be <i>rare</i> for any actual patient harm to occur as a result of the deficiency.
MODERATE	Harm could happen occasionally	<ul style="list-style-type: none"> Could cause harm directly, but more likely to cause harm as a contributing factor in the presence of special circumstances or additional failures. If the deficiency continues, it would be <i>possible</i> that harm could occur but only in certain situations and/or patients.
HIGH	Harm could happen at any time	<ul style="list-style-type: none"> Could directly lead to harm without the need for other significant circumstances or failures. If the deficiency continues, it would be <i>likely</i> that harm could happen at any time to any patient (or did actually happen)

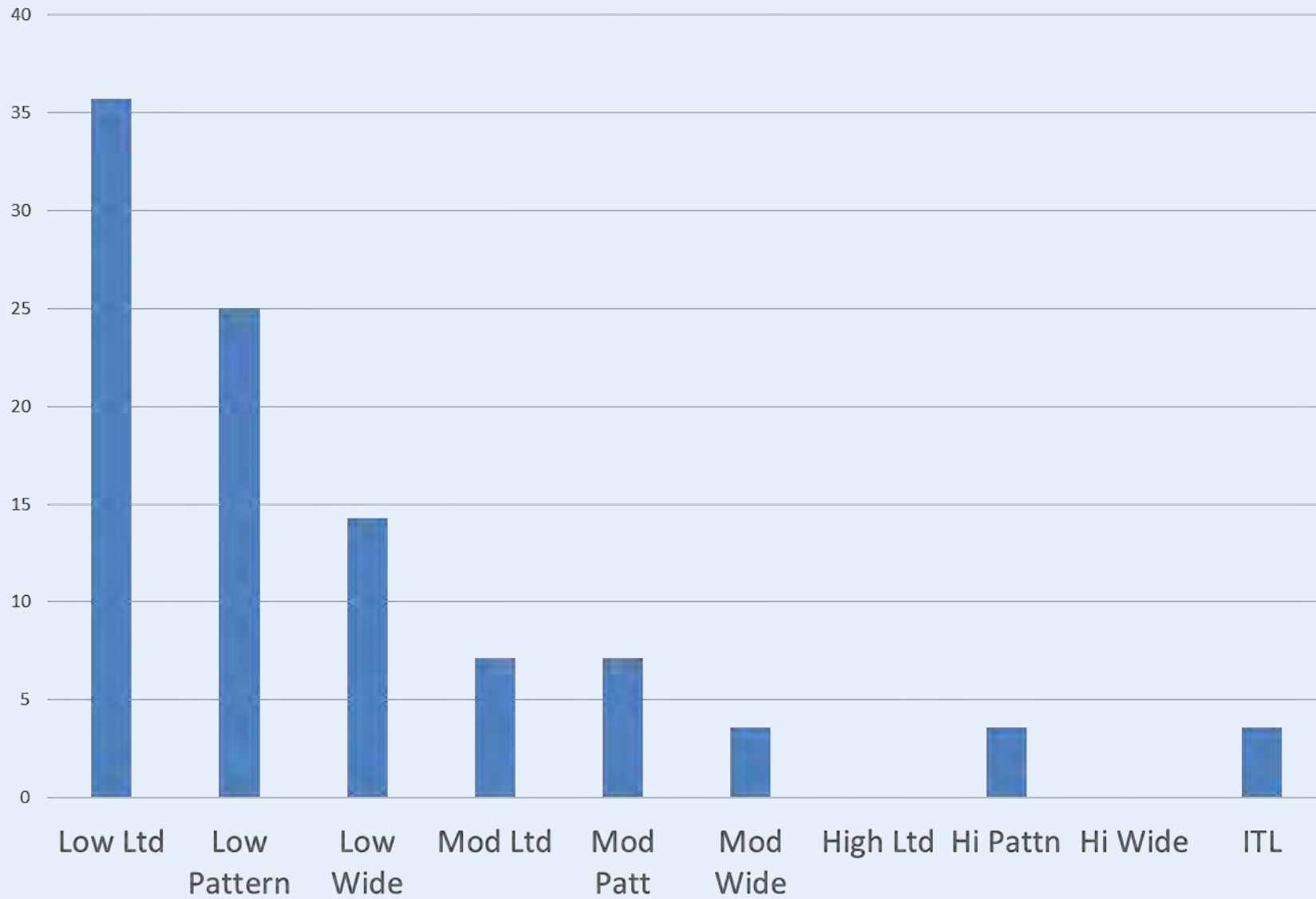
EC.02.04.03 Inspects, tests, maintains medical equipment



PC.01.03.01 Plans patient Care



PI.02.01.01 Compiles & Analyzes Data



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Questions?



Thank You!