

**RO•ILS®**

**RADIATION ONCOLOGY  
INCIDENT LEARNING SYSTEM**

*Sponsored by ASTRO and AAPM*



# QUARTERLY REPORT

## PATIENT SAFETY WORK PRODUCT

**Q1 2015**

**JANUARY 1, 2015 – MARCH 31, 2015**

CLARITY PSO,

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AGGREGATE REPORT CARD –  
**Q1 2015**  
 January 1, 2015 – March 31, 2015

Metric	Aggregate Current Quarter	Aggregate Previous Quarter	Provider Historical Quarter Average
<b>Total Number of Events</b>	<b>118</b>	<b>88</b>	<b>88</b>
Patient Incident	51	36	38
Near Miss	31	31	28
Unsafe Conditions	36	21	23
Not patient related	0	0	0
<b>Most Commonly Identified Characterization of Event</b>	<b>Not Sure How to Characterize:</b> 32% (38/118)  <b>Unanswered/Not Sure:</b> 51% (60/118)	<b>Not Sure How to Characterize:</b> 14% (12/88)  <b>Unanswered/Not Sure:</b> 59% (52/88)	<b>Desired Procedure Omitted:</b> 25% (22/88)  <b>Unanswered/Not Sure:</b> 55% (48/88)
<b>Most Commonly Identified Workflow Step Where Event Occurred</b>	<b>Treatment Delivery:</b> 34% (40/118)  <b>Unanswered:</b> 15% (18/118)	<b>Pre-Treatment Review and Verification:</b> 20% (18/88)  <b>Unanswered:</b> 39% (34/88)	<b>Treatment Delivery:</b> 18% (16/88)  <b>Unanswered:</b> 43% (38/88)
<b>Most Commonly Identified Treatment Technique</b>	<b>3-D:</b> 27% (32/118)  <b>Unanswered:</b> 24% (28/118)	<b>3-D:</b> 25% (22/88)  <b>Unanswered:</b> 44% (39/88)	<b>3-D:</b> 28% (25/88)  <b>Unanswered:</b> 32% (28/88)
<b>Characterization of Dosimetric Severity for Events That Reached the Patient</b>	<b>Incorrect Dose to All or Part of Body:</b> 22% (11/51)	<b>Multiple:</b> 14% (5/36)	<b>Incorrect Dose to All or Part of Body:</b> 13% (5/38)
<b>Potential Future Toxicity Within Events That Reached the Patient</b>	<b>None or Mild:</b> 75% (38/51)  <b>Unanswered:</b> 16% (8/51)	<b>None or Mild:</b> 42% (15/36)  <b>Unanswered:</b> 44% (16/36)	<b>None or Mild:</b> 53% (20/38)  <b>Unanswered:</b> 37% (14/38)

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# ANALYSIS & COMMENTARY

## **ANALYSIS OF RECURRING THEMES**

A. Communication problems were a recurring theme in more than a dozen events this quarter. The following are actual events reported to the PSO during the Quarter 1 2015 period and summarized by the Radiation Oncology Healthcare Advisory Council (RO-HAC). These summaries showcase the wide range of communication lapses and are dependent on the level of detail within each submitted event. Thereby, questions regarding the events will, and should, be raised. The ambiguity of these events illustrates the need to improve communication even within the RO-ILS system and the importance of clear and detailed narratives.

### ***Electronic Communication***

- **Physician instructions via email:** A patient with a complicated course of events led to an email (during the evening) from the physician to therapy and dosimetry to modify treatment fields for the next day. The plan was to be adjusted early in the afternoon before treatment. However, the therapists did not see the email, and the patient was treated in the morning, with the old fields. Given the concern about overlap of previous treatment of the involved vertebral body, the lack of response to the email was potentially important.
- **Email notification of VIP patient scheduled:** A VIP patient with privacy concerns was instructed to arrive for CT simulation via email, but the front desk staff was not notified prior to the patient's arrival. This "surprise" visit led to a chaotic response.
- **Email requests to physician for decisions and/or fixes:** The physician approved a plan fractionation that did not match the prescribed dose. Checks were performed, and the physician was informed of the issue. One hour before treatment, there was still no response, thus the physician was paged. Due to time constraints, the team was unable to re-plan for the desired fractionation, so the incorrect fractionation was used for the first day's treatment.

### ***In-person Communication***

- **Verbal discussions and decisions about treatment planning:** The individual responsible for treatment planning changed energy during the planning process. This was mentioned to the physician, who agreed to the change, but the physician was not told directly to change the prescription. This prescription mismatch led to other fields being added at the changed energy, and was not noticed through numerous second and weekly checks.

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## ANALYSIS & COMMENTARY | continued

- **Hand-offs:** Several events describe the “doctor of the day” being called to the machine to review a number of items such as the start of a treatment, an SBRT treatment, or to set a boost field, without having any handoff or description of important aspects of the case from the attending physician. Hand-offs between departments are also important and can be the cause of safety events. For example, one event reports an inpatient brought down for simulation accompanied by the inpatient nurse, who left without giving a handoff to the radiation oncology nurse. The patient was discovered in respiratory distress with urgent suctioning needed.
- **Communicating with the patient:** One event describes the change of a patient’s fractionation without notifying the patient. The patient was unhappy about the difference between 10 and 28 fractions.
- **Verbal directions:** Verbal information used for an MU calculation resulted in the wrong MU due to a wrong electron applicator.
- **Communicating about equipment:** One event describes confusion about the process of separating clean and dirty scopes used for head/neck examinations. This confusion led to the use of previously-used scopes during the examination of other patients, thus increasing risk for infection.

### *Written Communication*

- **Break documentation:** One patient’s boost started, even though the patient was supposed to be on break.
- **Written documentation for simulation:** In one event, the simulation order described one simulation site, while another lesion site was actually supposed to be simulated. The attending physician was not at the simulation, and it was the covering physician who noticed a discrepancy between other documentation and the order, and investigated.

The systems used to notify and document changes that are needed should be continually monitored and improved, as they are clearly not as effective as we wish. E-mail gives us the ability to send instructions to specific people, but does not guarantee that the recipient receives the e-mail or follows through. Notifications in our electronic systems are often rather general, and are not directed to a specific person who can do something as directed, and the system often does not send confirmation that the change has been made to the person ordering the change. There is much work to do in this area – in software, in our workflows, and in how we document change within our electronic medical records.

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## ANALYSIS & COMMENTARY | continued

**B.** Mismatches between the total dose, dose/fraction and/or number of fractions in the physician's written prescription and the numbers used in the treatment plan to initiate treatment were reported seven times during the past three quarters. Three such events were reported this quarter. In each of these cases, the error was caught within the first week of treatment, but nevertheless had made it through several layers of quality assurance. None of the differences were large enough to trigger regulatory reporting.

"Does the plan match the prescription" is a fundamental plan check question, and one would expect that such a basic error would be recognized. Yet, discrepancies do get through with some frequency. The reports did not identify causes. Some possibilities or suggestions to consider:

- Does the physician review the isodose distributions as percentages (which can be ambiguous) or as absolute dose, with prescription dose consistently labeled and displayed?
- Are the elements in plan review processes and checklists prioritized so that the most important issues are checked first?
- Are there opportunities for automated self-consistency checks?

**C.** Collisions involving a gantry being remotely rotated were reported three times this quarter. In one case a patient was touched but not hurt. In two cases the gantry hit the couch rail resulting in downtime and repair. Reports from earlier quarters showed similar events along with a concern about a potentially unsafe condition: with some accelerators, the direction of gantry rotation to the PA position is determined by the angle definition. For some situations, one direction is safe but the other is not. Inattention to this detail during planning or treatment delivery can lead to collisions.

The reports of actual collisions did not identify causes. Some possibilities or suggestions to consider:

- Are there pressures to move quickly combined with distractions that make such inattention more likely?
- Are there opportunities to limit the availability of remote motions when the couch is rotated?
- Are there opportunities to implement collision detection systems?

**D.** Treatment plans that are done on the wrong scan set were reported three times this quarter, and at least twice previously. Two events are described in more detail as case reviews later in this report. A common occurrence is accidentally using an outdated CT for planning a treatment course.

Some possibilities or suggestions to consider:

- Identify planning CTs with scan names that are unambiguous.
- Put the scan date in the scan name.
- Consider discussing, with your manufacturer, the potential of a planning software alert that would ask for confirmation if a new plan is created on a scan that is likely to be out of date, e.g. more than three months old.

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# CASE REVIEWS

Case reviews offer an opportunity to learn about patient safety through sharing of actual events.

## CASE REVIEW

### **Problem: Patient plan being developed on an old CT Simulation data set**

The following event descriptions, slightly edited for clarity, illustrate situations that have and can occur:

“I was the ‘dosimetrist of the day’ today so I was cleaning out the DICOM directory that stores all of our CT simulations that get pushed over by the SIM RTTs. There was a directory from one of yesterday's patients that had not been imported. I checked plan tracker and patient's plan status said 'Plan Approved.' Upon further investigation, we determined that yesterday the MD resident drew on the patient's old CT sim that had been done back in October. Attending MD and planning dosimetrist did not notice and were finalizing plan on the wrong CT sim. Plan was copied on to new CT sim and blocks/volumes had to be modified due to tumor growth.”

This case was found before the first treatment.

“The patient had previously been treated to his T spine in May 2014. We scanned a TPCT then and named it 'ct\_1 c t sp.' The two scans were registered to assess the overlap/abutment of his current and previous T spine treatments. We accidentally planned the new plan on the previous scan which we were using currently to establish the vertebral levels.”

This case was found at the time of the first treatment because the shifts were clearly incorrect.

As noted above, one could imagine methods of reducing the likelihood of such errors. Planning scans could be given names that clearly identify the date of the scan and the site being treated. It would also be useful to have planning systems warn that a new plan is being created on an old scan and ask for confirmation. *If your planning system does not currently do that, consider submitting a product improvement suggestion to the manufacturer. If you do so, please inform Clarity PSO at [radoncsupport@claritygrp.com](mailto:radoncsupport@claritygrp.com).*

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## CASE REVIEWS | continued

### **Problem: SBRT target drawn on the wrong side**

The following event description, edited for clarity, illustrates the possibility of error in target delineation and the value of peer review, especially for SRS and SBRT, when there are multiple potential targets:

“Attending physician identified a stable lesion in the right lung as the target, when the actual tumor volume was in the left lower lobe. The discrepancy was discovered during the department's pre-treatment SBRT conference, even though the attending physician was not present. By reviewing diagnostic scans and other information, the problem was identified, and one of the physicians present at the peer review conference contacted the attending physician to investigate.... The patient was simulated, but did not receive a treatment.”

Peer review of cases and treatment plans generated for few fraction treatments are crucial, as they can prevent unlikely but crucial potential errors, as this case shows. Quoting from *Safety is No Accident* (ASTRO, 2012): “Physician-to-physician peer review is useful, and review of target delineation and image segmentation prior to planning deserves more standardization.” This remains a challenge since peer review is logistically difficult to make happen efficiently.

## REFERENCES

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American Society for Radiation Oncology. (2012, October). *Safety is no accident: A framework for quality radiation oncology and care*. Retrieved from [https://www.astro.org/uploadedFiles/Main\\_Site/Clinical\\_Practice/Patient\\_Safety/Blue\\_Book/SafetyisnoAccident.pdf](https://www.astro.org/uploadedFiles/Main_Site/Clinical_Practice/Patient_Safety/Blue_Book/SafetyisnoAccident.pdf)

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# SUGGESTIONS

## **SUGGESTIONS FOR IMPROVING THE USE OF THE RO-ILS SYSTEM**

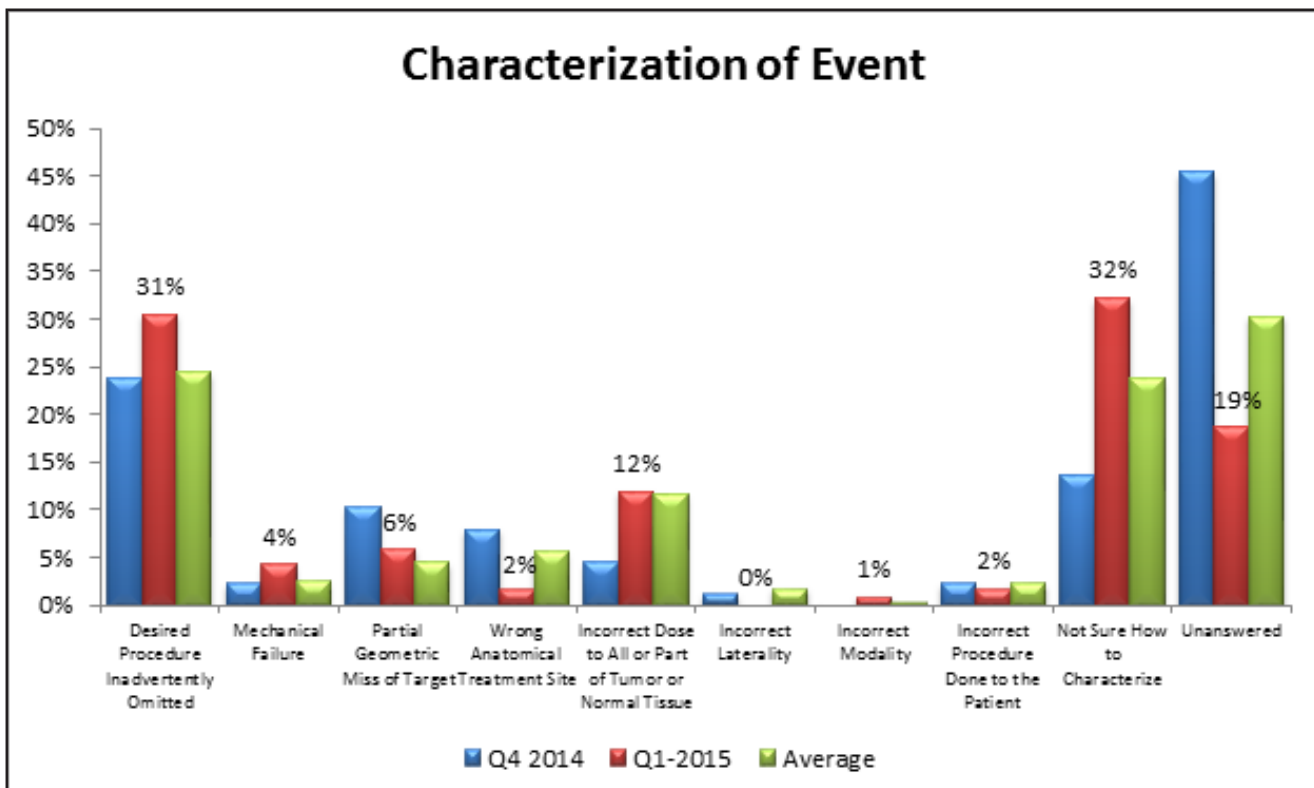
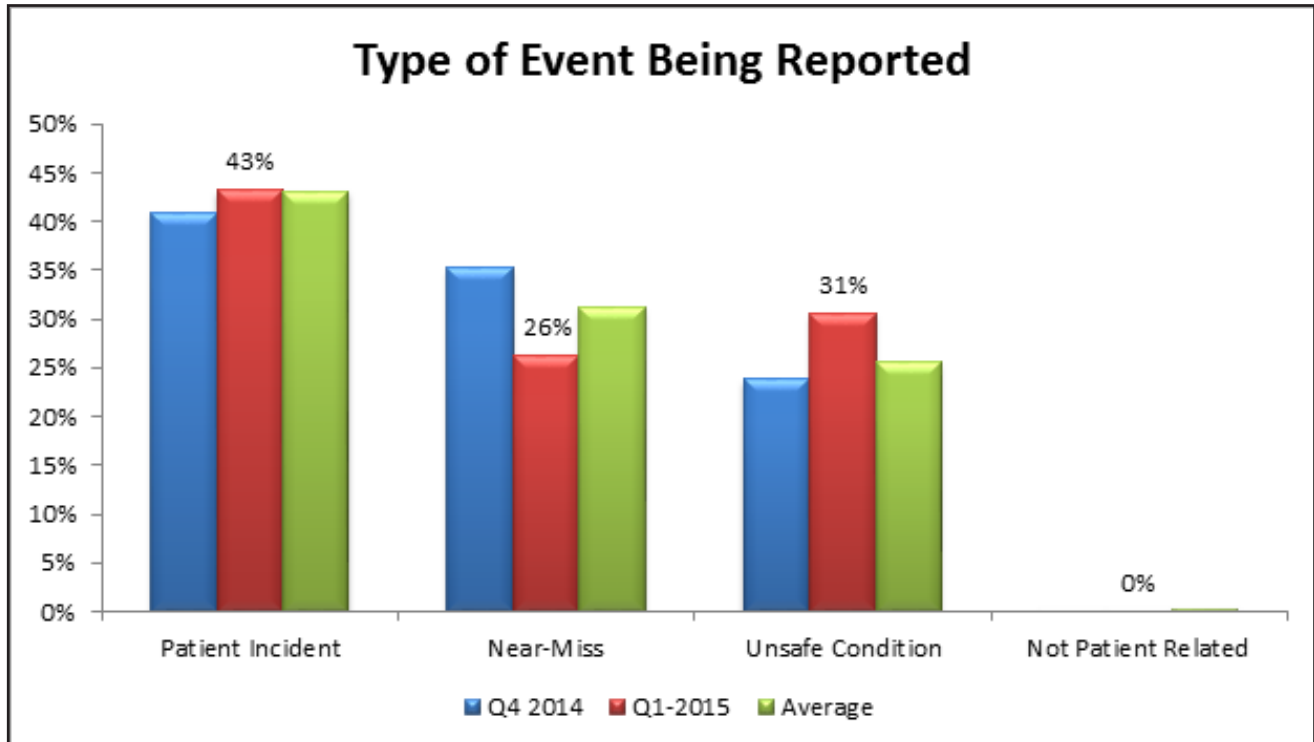
During review of the RO-ILS events logged during Quarter 1 of 2015, a number of issues or suggestions for the users of RO-ILS became apparent:

- The allocation of information about events is useful, especially when the facility can share changes that have been made to practice as a consequence of the event. Please enter this important information.
- As seen in the report card information at the beginning of the report, many respondents are not completing valuable information in the entry including: the treatment technique involved, the most commonly identified characteristic of the event, the workflow step(s) where the event occurred, as well as an estimate of the potential future toxicity (for events that reach the patient). **It is imperative that all questions pertinent to the event within the RO-ILS portal are answered.** If you have questions about the RO-ILS data elements, please send an email to [radoncsupport@claritygrp.com](mailto:radoncsupport@claritygrp.com) for guidance. As a reminder, we encourage all safety events be submitted to Clarity PSO to strengthen data analysis. Attached, please find the May 2015 Tip of the Month.

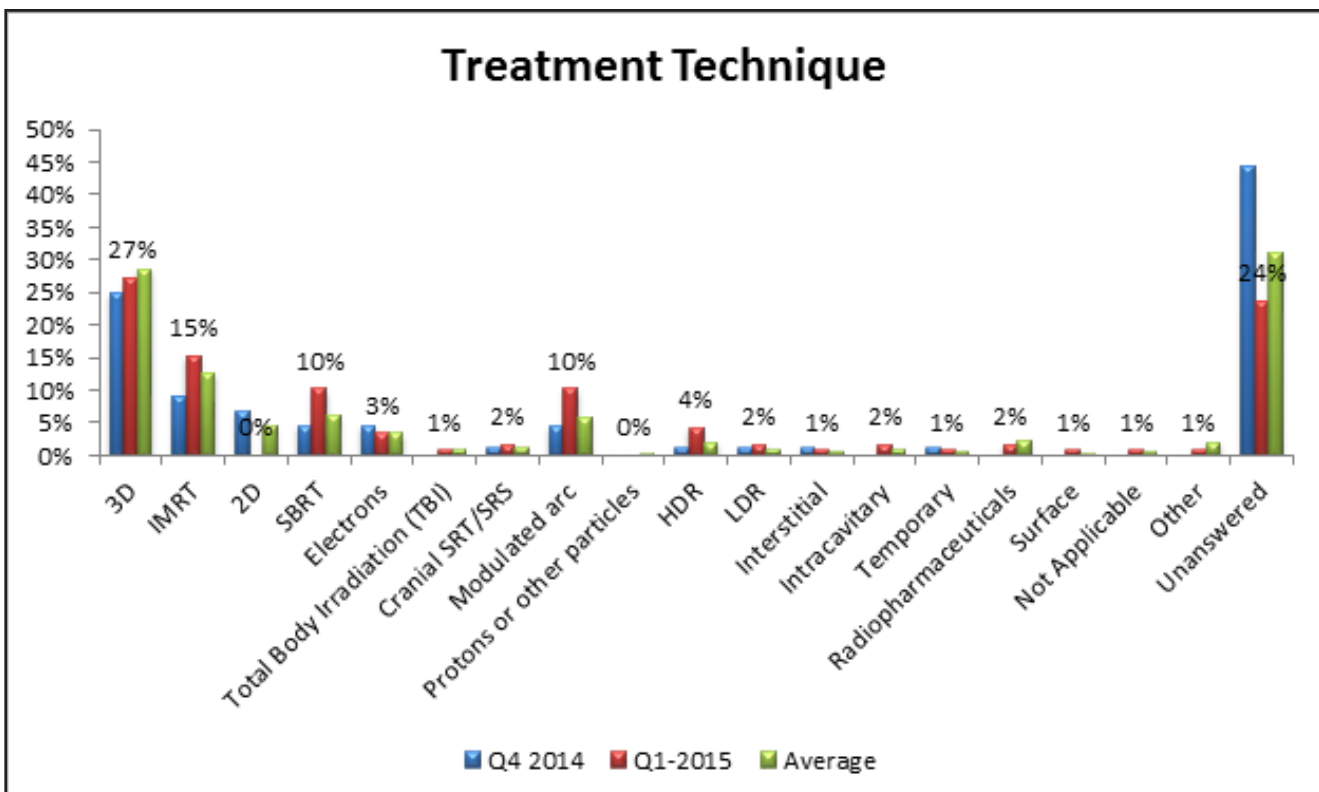
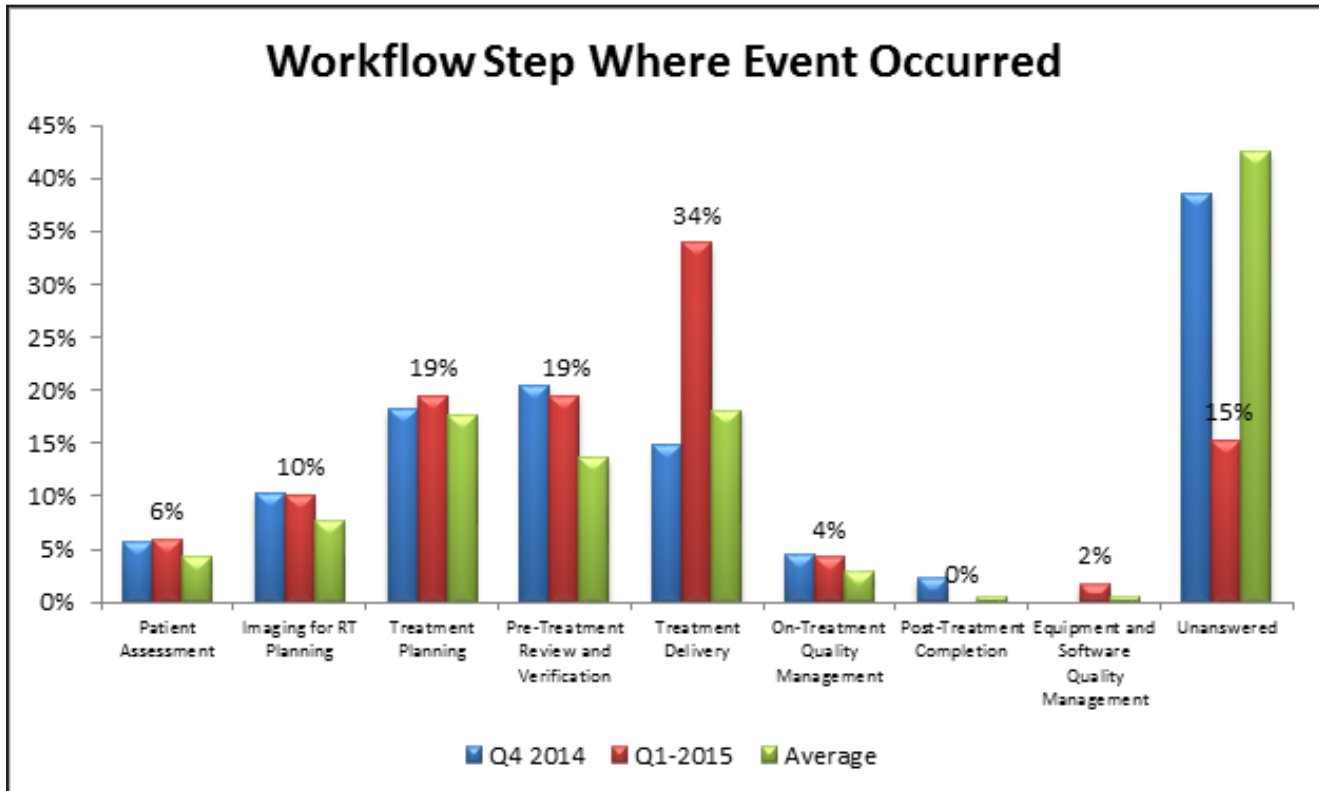


# AGGREGATE ANALYSIS GRAPHS

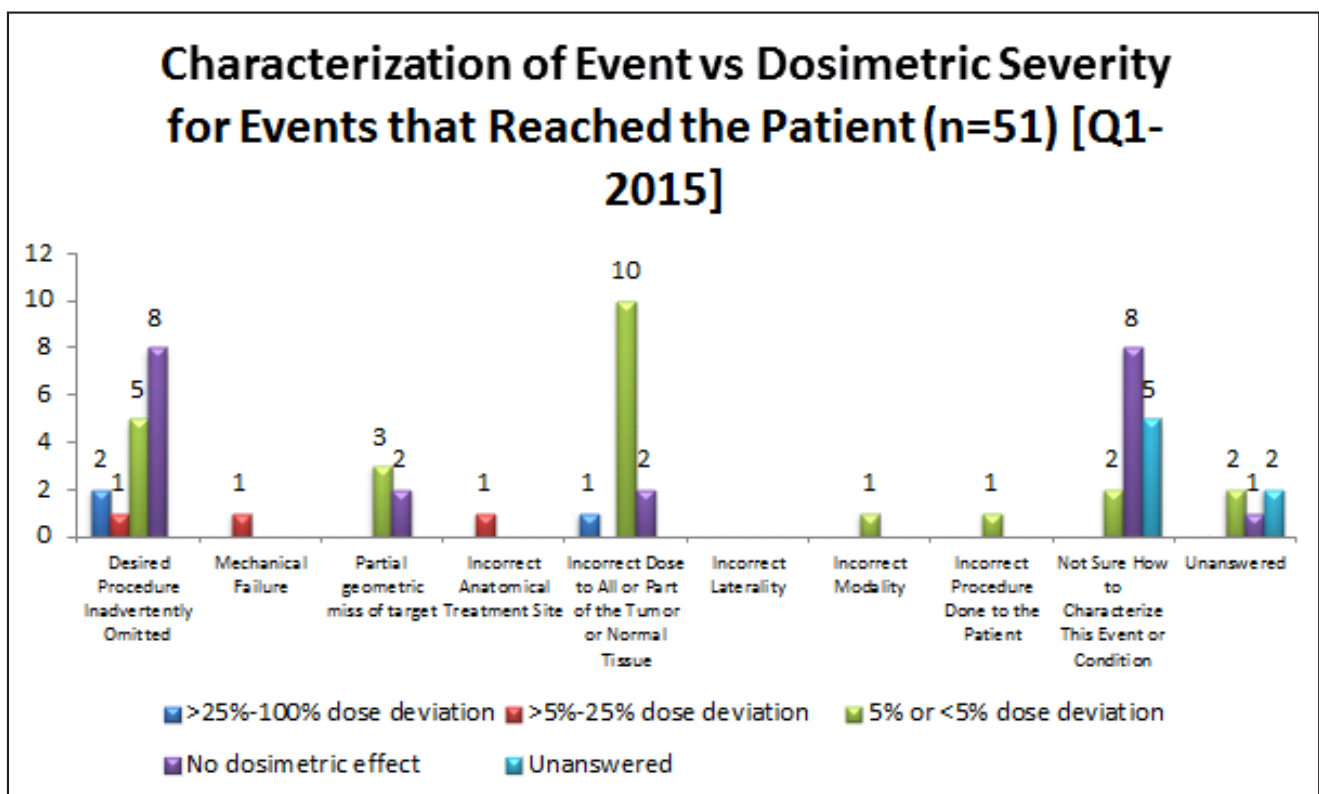
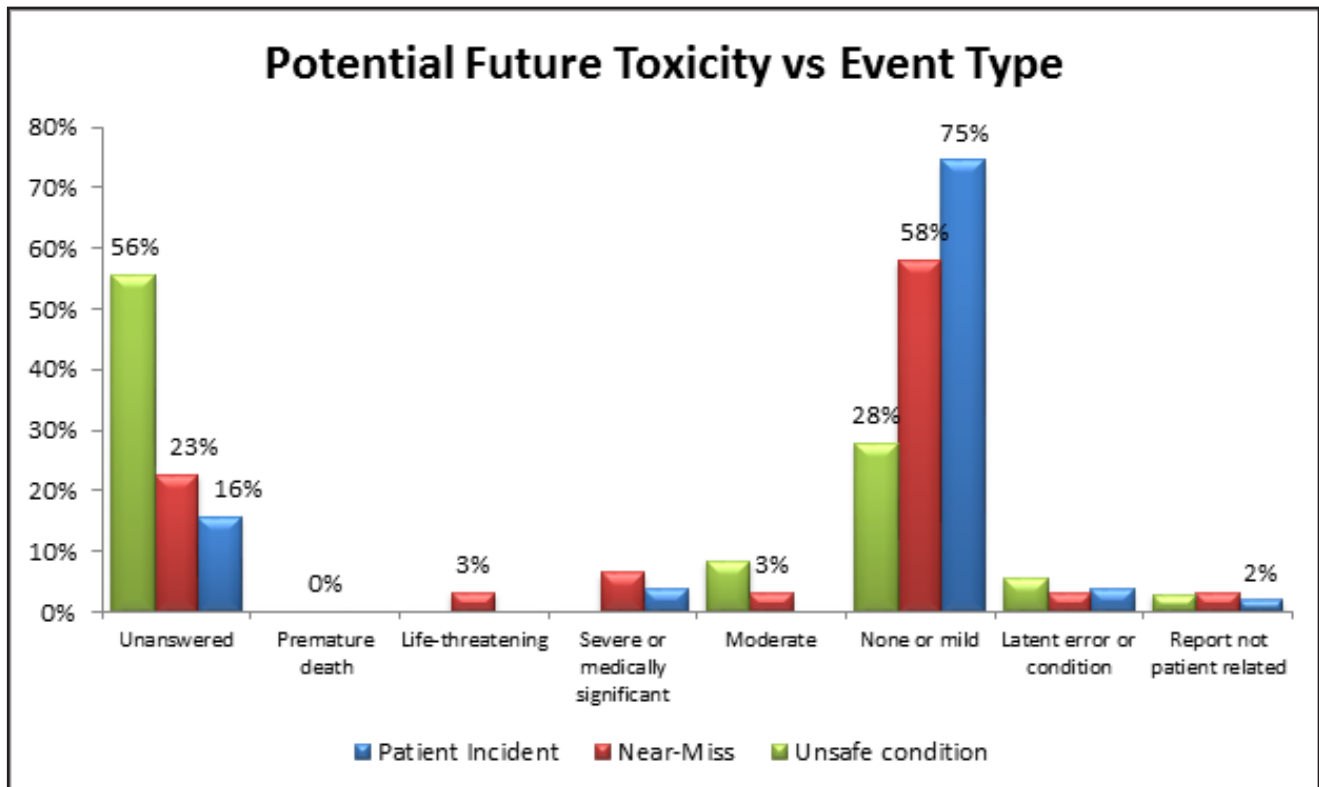
PERCENTAGES LISTED (RED BAR) REPRESENT THE CURRENT QUARTER'S DATA.



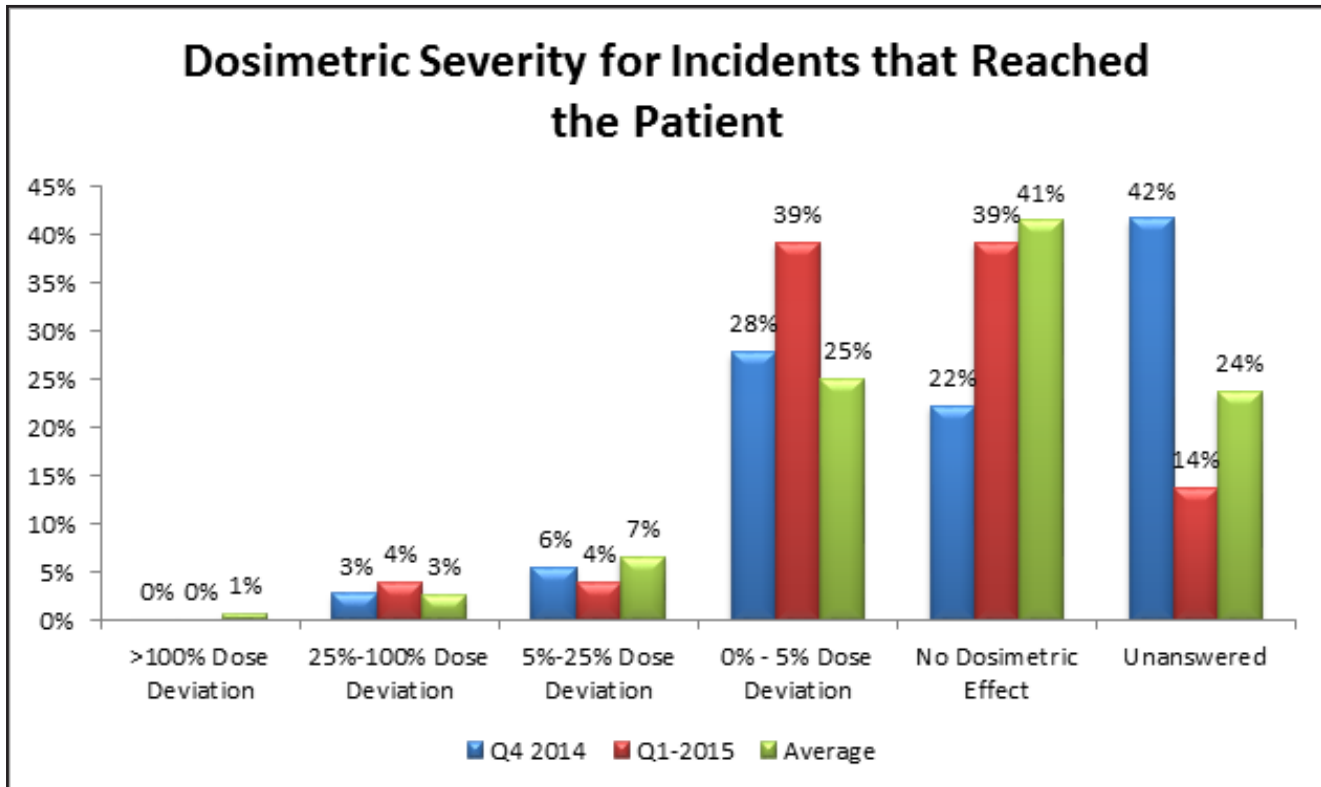
# AGGREGATE ANALYSIS GRAPHS | Continued



# AGGREGATE ANALYSIS GRAPHS | Continued



# AGGREGATE ANALYSIS GRAPHS | Continued





## TIP OF THE MONTH

### May 2015: Report All Safety Events to the PSO

**Tip:** Submit all safety events to Clarity PSO. This will ensure full protections of the data, as well as strengthen the aggregate and facility-specific reports.

**Why:** Simply because a safety event is entered into the RO-ILS system does **not** mean it is reported to Clarity PSO. The RO-ILS portal was purposefully structured this way to allow for localized activity – including local investigations, analysis, and processing. Providers are given the option to conduct the necessary investigation and analysis (and other reporting obligations) while RO-ILS events are being reviewed.

Reporting a safety event to Clarity PSO does not limit your ability to add additional information. As a reminder, if you submit an event, and then add additional information, you **do not** need to resubmit the event. You only need to click submit in the portal once. The data extracted from the system will automatically default to the most current information therefore data analytics are always up-to-date, regardless of when you reported the event. Therefore, it is acceptable to submit an “incomplete” report still under investigation.

Remember, participation in a PSO affords you protections under the Patient Safety Quality Improvement Act (PSQIA), including confidentiality and privilege of the patient safety events or incidents submitted to the PSO. Besides guaranteeing confidentiality and privilege protections, submitting your safety events to the national RO-ILS database will strengthen the data, and will allow for your facility to receive facility-specific reports as part of our analysis of the data. **If your facility has not submitted enough data to Clarity PSO, it may not be possible for a facility-specific report to be developed for you.**

**How:** Select “Yes” to the required question, “Do you want to report this event to the PSO?”

 \*Do you want to report this event to the PSO?

Yes  No

**Note:** Selecting yes indicates that you are reporting this event and the associated follow up information to the PSO. Once reported to the PSO, you cannot retract the information. Reports will be updated if/when additional data are added after submission to the PSO. All information remains in the RO-ILS portal.