Increasing Interventional Radiology Adverse Event Reporting Utilizing Morbidity and Mortality Conference Compliance Review

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Background

- Hospital safety and risk-management programs depend on timely reporting of adverse events (AE) to the institution.
- At our institution reportable IR AEs are those complications defined as major by SIR guidelines or result in an increased level of care.
- Physicians report AEs to the institution utilizing a web-based reporting tool, Penn Safety Net (PSN).
Background

- Multiple studies have shown that physicians have low rate of adverse event reporting \(^1,^2\)

- Previously within our group over one-third of reportable adverse events were not reported to the institution in a timely manner

- In order to encourage AE reporting we implemented a public review process in our M&M conference of whether appropriate reporting of each AE from the prior month had occurred
To assess the change of adverse event safety net submission over the 5 year period after implementation of the review process
Methods

• Since 2001 all IR cases and associated complications have been prospectively entered into an IR database (Hi-IQ; Conexsys)

• Each month all cases are reviewed in M&M conference by the entire division and these are then compiled into monthly M&M minutes

• In 2010 we instituted a practice in which an IR fellow would determine and discuss whether each case warranted institutional AE reporting and whether reporting had occurred prior to the conference
Methods

Process Diagram

Prospective daily entry of procedures and complications in Hi-IQ
  • Institutional reporting of complication via Safety Net (PSN) if applicable

Monthly compilation of complications and outcomes by rotating IR fellow

Fellow assigned to lead M&M conference determines if institutional reporting via PSN applicable and submitted

M&M conference review by IR section
  • Presentation slides document if PSN applicable and submitted

Yellow indicates process changes made
Methods

Example M&M conference slide

AC

- Safety Net: Applicable, PSN submitted

- Hx: Adv Pancreatic Ca w/ bili obstruction. Plastic biliary stent placed 2/11 with external drain above; persistent high output from biliary drain and rising bilirubin, planned for covered stent.
- Procedure:
  - 1. After tube cholangiogram, wire advanced into tube, access lost to segment III. PTC via same site to regain access & place stent (10x10 fluency). (2/26)
  - 2. Subsequent tube checks – stent has migrated into duodenum & clots (3/3)
  - 3. Bili tube check & planned removal – massive art bleed when tube removed OTW. (3/10). LHA bleed into L-hep duct – 4mm coils placed proximally
- Complication:
  - 1. Access lost – stiff wire advanced loop sprang cranially. PTC performed to cont with planned stent. Pt admitted overnight due to PTC.
  - 2. Fluency migrated into duodenum (placed next to plastic stent, plastic stent subsequently noted to be patent)

Yellow arrow indicates change made
Methods

• The de-identified minutes and PowerPoint presentations of all M&M conferences from Jan, 2011 to Dec, 2012 were retrospectively reviewed.

• Data collected: # total complications, # reportable AEs, and # of reported AEs.

• The change over time of AE reporting was modeled using logistic regression with the reporting of a reportable AE as the binary dependent variable and months from Jan, 2011 as a continuous independent variable.
## Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Patient Encounters</th>
<th>Number of Complications</th>
<th>Number PSN Reporting Applicable</th>
<th>Number Reported</th>
<th>% PSN Applicable Cases Reported</th>
</tr>
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<tbody>
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<td>2011</td>
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<td>10,248</td>
<td>261</td>
<td>101</td>
<td>96</td>
<td>95</td>
</tr>
</tbody>
</table>
Results

- The percentage of reportable AEs reported increased yearly from 70% in 2011 to 95% in 2015

- Logistic regression showed months from Jan, 2011 to be a positive predictor of the fraction of events reported (p<0.0001)

- On average the odds of AE reporting was 1.05 times that of the prior month [95% CI (1.03, 1.06)]
Conclusion

• Increasing compliance with timely adverse event reporting from 2011 – 2015 after initiation of a monthly compliance review in M&M conference

• Knowledge that future public review will occur appears to motivate gradual behavior change over time