Case Study

Improving Very Abnormal Vital Sign Re-Evaluations Prior To Discharge From The Emergency Department
Synopsis

In the course of partnering with one of the largest healthcare systems in the United States, The Sullivan Group gathered data showing that 19% of patients were being discharged from emergency departments across the system with very abnormal vital signs. Because such patients have an increased risk for morbidity and mortality, a large number of medical malpractice claims arose from these medical errors.

By implementing The Sullivan Group’s Emergency Medicine Risk Initiative program (EMRI), this particular healthcare system significantly reduced the percentage of patients discharged with very abnormal vital signs (down to 4%). In conjunction with the reduction of this medical error, the system saw significantly reduced medical malpractice claims filed against their emergency departments.

Background

Formed in 1998 by Dan Sullivan, MD, JD, FACEP, The Sullivan Group’s mission is to reduce the medical errors occurring in emergency medicine. Utilizing his medical and legal background, Dr. Sullivan has developed system solutions that provide clinicians with the resources they need to improve clinical outcomes.

Employed in over 700 emergency departments across the country, the EMRI program positively impacts over 15,000,000 patient visits annually. With the EMRI program, our clients have reported up to 50% reductions in medical malpractice claims filed against their emergency departments. This proven success has been presented to thousands of healthcare administrators at national forums over recent years, and as The Sullivan Group continues to partner with new clients, our EMRI program continues to positively impact the quality of care given to millions of patients.

The Challenge: ED’s Discharge Patients with Very Abnormal Vital Signs

In the fast-paced, dynamic environment of the emergency department, practitioners are at a high-risk for making medical errors, many of which lead to adverse outcomes. The discharging of patients with very abnormal vital signs is an error that can be prevented by educating clinicians, enhancing documentation, and measuring clinical behavior.

The Sullivan Group partnered with one of the largest healthcare systems in the country in 2002, to reduce the medical errors made in their emergency departments, which treat over 5,000,000 patients annually. In performing their preliminary clinical performance analysis, The Sullivan Group found 19% of the patients with very abnormal vital signs to have been discharged without a documented re-evaluation of their vital signs.

In 2005, The Sullivan Group published a study highlighting the areas of emergency medicine in which clinicians were at the highest risk for making medical errors. This risk profile included an evaluation of vital signs taken for 90,000 patients, and found that 9,000 of them presented to the ED with very abnormal vital signs. Of those, 1,440 were discharged without a documented re-evaluation of vital signs (16%).
The Solution: Implement The Sullivan Group’s EMRI Program

The Sullivan Group’s Emergency Medicine Risk Initiative consists of an e-Learning Program, Bedside Tools that provide clinical decision support, and a Clinical Performance Assessment Tool (Audit) that documents progress made and identifies shortfalls in the quality of care given.

**E-Learning Program**

The Sullivan Group’s e-Learning Program educates clinicians about vital sign medical errors through case-study courses based on real cases.

To correct the problem of discharging patients with very abnormal vital signs, it was imperative that the physician and nurse practitioners were made aware of the frequency of this medical error and the risks associated with it. By providing our curriculum to their clinicians, the health system created “front of mind” awareness in its practitioners.

**Bedside Tools**

Whether paper-based or electronic, The Sullivan Group’s documentation systems contain clinical prompts designed to help emergency medicine professionals apply risk management principles at the point of care: the bedside.

In order to reduce the occurrence of vital sign medical errors, The Sullivan Group worked with the health system to enhance their existing documentation tool, providing an area where the physician and nurse can verify that a re-evaluation of vital signs was performed prior to discharging the patient.

The Sullivan Group integrates the clinical decision support needed to eliminate the vital sign medical error into their electronic medical records. The alert feature gives the physician the enhanced support needed to prevent a patient with very abnormal vital signs from being discharged.
Clinical Performance Assessment Tool (Audit)

The self-administered, web-based audit of patient records determines how consistently very abnormal vital signs are re-evaluated prior to discharge. This analytical tool is essential to measure improvements and positive changes in the clinical practice of the emergency department staff. The Sullivan Group’s audit tool provides this data, and data for 9 other high-risk areas of emergency medicine, at both the individual and institutional levels.

2.9 Vital Sign Analysis

Vital sign analysis is critical. It is important to measure and evaluate team compliance with re-evaluation of abnormal vital signs. The discharge of very abnormal vital signs without a repeat should be near 0%.

<table>
<thead>
<tr>
<th>Vital Sign</th>
<th># of Abnormal Vital Signs this period</th>
<th>Abnormal Vital Signs not repeated</th>
<th># of Very Abnormal Vital Signs this period</th>
<th>Very Abnormal Vital Signs not repeated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulse</td>
<td>11</td>
<td>6(54.55)%</td>
<td>14</td>
<td>6(42.86)%</td>
</tr>
<tr>
<td>Resp. Rate</td>
<td>10</td>
<td>6(60.00)%</td>
<td>3</td>
<td>1(33.33)%</td>
</tr>
<tr>
<td>Systolic</td>
<td>31</td>
<td>12(38.71)%</td>
<td>4</td>
<td>2(60.00)%</td>
</tr>
<tr>
<td>Diastolic</td>
<td>17</td>
<td>6(35.29)%</td>
<td>1</td>
<td>1(50.00)%</td>
</tr>
<tr>
<td>Temp.</td>
<td>9</td>
<td>1(33.33)%</td>
<td>2</td>
<td>0(0.00)%</td>
</tr>
<tr>
<td>Total</td>
<td>72</td>
<td>31(43.06)%</td>
<td>21</td>
<td>10(45.45)%</td>
</tr>
</tbody>
</table>

The Results: Reduction in Medical Errors, Reduction in Claims

After implementing the EMRI program, the health system showed an immediate improvement in the amount of patients discharged with very abnormal vital signs. By applying the cyclic EMRI solution, the percentage of patients discharged with a re-evaluation of vital signs improved from 81% to 96%.
In addition to showing positive results in their clinical practice, the health system showed a dramatic reduction in the medical malpractice claims made against its emergency departments.

Conclusion

The results indicate that the implementation of The Sullivan Group’s EMRI program improved the clinical performance of emergency department staff; as the quality of care given increased, the amount of medical errors executed and malpractice claims filed decreased accordingly.

By providing a targeted solution, The Sullivan Group helped the healthcare system significantly reduce the occurrence of the vital sign medical error in its emergency departments, which, in addition to the reduction of other medical errors, lead to a 39.5% decrease in the annual number of new malpractice claimants over a 5-year period.