

## 2014 Gage Awards

<b>Reference #</b>	7492474
<b>Status</b>	Complete
<b>Name of hospital or health system</b>	UAB Medicine
<b>Name of project</b>	100% Departmental Mortality Review Improves Observed to Expected (OE) Mortality Ratios and University
<b>CEO name</b>	Anthony Patterson- Sr. VP Inpatient Operations
<b>CEO approval</b>	Check here to confirm that your CEO approves of this project being submitted for a 2014 Gage Award
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<b>Within which of the two categories does your application best align?</b>	Quality

<p><b>1. Provide a brief description of the project. (This section should resemble an abstract for a poster presentation or an abstract for a peer reviewed journal. Include an objective, data sources, study design, findings, and conclusions.)</b></p>	<p>Introduction: Public reporting of mortality, patient safety indicators (PSI) and hospital acquired conditions (HAC) is the latest paradigm of quality measurement. Our objective was to develop a review of our Department's data identified opportunities for improvement. We began a surgeon led, 100% review of mortality, PSIs and HACs to improve patient care and surgeon awareness of these metrics.</p> <p>Data Sources: UAB as a member of the University Healthsystem Consortium (UHC) participates in its clinical database (CDB). The CDB is a comparative database with discharge and line-item data from more than 300 UHC members and affiliate hospitals. The database allows you to compare your organization's clinical outcome performance with that of other hospitals as well as run comparisons within your facility.</p> <p>Study Design: A retrospective review of a prospectively collected database was accomplished. Preventability of deaths, complications and hospital acquired conditions were classified as part of an internal review process within the departments of Surgery at UAB. Our Quality and Data Resources Departments as well as our Coding and Documentation Specialists were engaged in the process. The main outcome measures were the UHC reported observed to expected mortality ratio and the IQI90 composite postsurgical complication and death ranking.</p> <p>Findings: The OE mortality ratio in the 4th quarter of 2012 was 1.14 and fell to 0.88, .91 and .75 in the first, second and third quarters of calendar year 2013(p&lt;0.05). The overall IQI90 UHC rankings increased from 109/118 in the 3rd quarter of 2012 to 47/119 in the third quarter of 2013.</p> <p>Conclusions: Surgeon led systematic review of mortality, PSIs and HACs improved our OE ratio and UHC postsurgical relative rankings. Surgeon engagement and ownership is critical for success.</p>
<p><b>1A. Attachment, if applicable (Applicable examples include a peer reviewed journal article, other content published in the literature, or a presentation at a national meeting)</b></p>	<p><a href="#">HeslinMortalityMSfinalMJHrevv4.docx (82k)</a></p>

<p><b>2. Describe the methods use in this project. Include where, why, and how the project was accomplished.</b></p>	<p>Methods: From 12/2012 through 8/2013 11,899 patients were cared for on 12 surgical services. A surgeon from each service led monthly reviews of all mortality, PSIs or HACs with central reporting of preventability and coding accuracy. We compared the UHC OE mortality ratios (<math>&lt;1</math> means fewer observed than expected deaths) and UHC relative rankings (lower number is better) before and after implementation. Statistical significance was <math>p &lt; 0.05</math> by Poisson regression.</p> <p>From December of 2012 through the end of August of 2013, 11,899 patients were “admitted to” or “discharged from” the DOS. During this time there were 552 coded adverse events in 448 patients; 235 who died (2.0%); 253 with at least one PSI (2.1%) and 26 had at least one HAC (0.02%). Table 1 describes the characteristics of the patient population that experienced at least one adverse event. In this subset of patients that had an adverse event, the median age was 59 years (IQR 48-71), the average length of stay was 14 days (IQR 5-28) and 65% of the patients in this study were cared for either emergently or urgently. Sixty-five percent of the patients were cared for by services that routinely managed acutely ill patients such as Trauma/Burns, Neurosurgery, C.V. Surgery, Orthopedic Surgery, and GI Surgery.</p>
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<p><b>3. Describe the results of the project. What data was used to support improvement results?</b></p>	<p>The association between admission status and mortality is shown in Table 2. Nearly all of the patients who died were admitted either emergently or urgently (84%). Mortality was coded as 'not-preventable; (NP), 'potentially preventable' (PP) or 'preventable' (P) after M&amp;M review. The proportion coded as PP or P varied significantly by admission status (Table 2). For mortality coded as PP or P, root cause analysis found "Failure to Escalate" was the most common. In fact, 60% of the possibly preventable or preventable deaths with a valid reason were associated with a failure to escalate.</p> <p>A similar analysis of the association between PSI and admission status was performed and summarized in Table 3. Just over half of the PSIs were admitted electively and 69% were classified as PP or P. This is different from mortality where the majority of deaths were felt to be NP and most were admitted emergently. Taking all PSIs together and excluding "Patient Risk factors" (all not preventable), the most common reasons were "no clear reason", technical, followed by failure to follow protocol and escalation issues. For the DOS, the four most common PSIs (51%) were 9 (postop hemorrhage/hematoma); 11 (postop respiratory failure), 12 (postop DVT/PTE) and 15 (accidental puncture/perforation). Figure 3 depicts these common PSIs by the root cause. For Hemorrhage/Hematoma (9) and Accidental Puncture/Perforation (15) the most common underlying cause was deemed as technical failure. For Postoperative Respiratory Failure (11) and Postoperative DVT/PTE (12) the most common underlying causes were Failure to Escalate and Failure to Follow Protocol, respectively.</p> <p>The analyses of HACs are limited by small numbers n=26 or 0.02%. In brief, the majority of HACs were admitted Emergently (64%), were Stage 3 or 4 Pressure Ulcers (52%) and 84% were felt to PP or P evenly split between Failure to follow Protocol and No Clear reason.</p> <p>Figure 4 shows the Observed and the Expected mortality for the DOS from quarter 3 of calendar year 2012 through quarter 3 of calendar year 2013. This graph demonstrates that the expected mortality is increased slightly likely due to improved documentation and effective coding. During the same time, the observed mortality decreased. This implies that the reduction in the OE ratio is both the result of improved patient care and documentation/coding.</p> <p>Figure 5 demonstrates the OE mortality ratio over the study period. There was a significant decrease in the ratio after Q4CY2012 (<math>p&lt;0.05</math>).</p> <p>The percentile ranking for our hospital over the study period as measured by UHC using the IQI90 is shown in Figure 6. At the time of this publication, the IQI90 was not available for the third quarter of calendar year 2013.</p>
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3A. Attachment, if applicable (Only graphically displayed data such as charts will be accepted. Data should include baseline and improvement data)	<a href="#">HeslinMortalityMS112513figuresandtables.docx (106k)</a>
4. Describe what happened as a result of the project. Was the improvement related to the intervention? Can the project be duplicated by other organizations?	The result of this project is an engaged faculty that is committed to improved quality of care and decreased deaths and complications in the Departments of Surgery at UAB. The results of internal review process serve as our ongoing professional review tool and help us to detect systemic issues that can be addressed in a relatively short time frame. We have also shown significant improvement in our external measures of quality in that we have had a sustained reduction the UHC observed to expected mortality ratio and a concomitant increase in the UHC rank of the IQI90 composite measure of postsurgical complications.
5. Describe how patients, families, and if appropriate, community was included in the work.	N/A
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