**BACKGROUND/PROBLEM**
In 2012, upon the retirement of the LVH-Muhlenberg Intensive Care Unit (ICU) unit manager and in association with hiring the new manager, nurse leader Kay Rauchfuss, MSN, RN, CCRN, Administrator, Patient Care Services, Cardiovascular and Respiratory Services, met directly with the staff. These conversations brought to light that staff believed there were opportunities to enhance their unit shared governance model, particularly related to quality and performance improvement.

At the same time, Kim Hitchings, MSN, RN, NEA-BC, Manager, Center for Professional Excellence and Magnet Program Director, through membership in the Philadelphia Area Magnet Hospitals Consortium, became aware of an opportunity for Philadelphia area Magnet hospitals to apply to participate in the American Association of Critical Care Nurses (AACN) Clinical Scene Investigator (CSI) Academy. The CSI...

“is designed to leverage the staff nurse’s expertise in order to enhance patient care. This is a team-based program with education, coaching and mentoring to improve patient and fiscal outcomes. Academy participants have been particularly effective in staff nurses reducing adverse patient outcomes.

Selection for participation in the Academy is a competitive process. A maximum of seven hospitals in a given region are chosen by a selection committee. The committee considers the potential impact of the proposed project as described in the hospital's application and overall diversity of unit and hospital types participating.

If selected, AACN provides each participating hospital with a $10,000 grant to support the project and provide trained faculty, staff and materials to support the program and facilitate projects."

When Ms. Hitchings shared the CSI Academy opportunity with Anne Panik and the nurse administrators, Ms. Rauchfuss, based on her conversations with the LVH-M ICU clinical nurses, immediately approached them and their new unit manager to see if they were interested in applying. They were extremely excited and collaboratively worked with Kim on the application. The project they proposed related to unit noise reduction. The unit scores for the Press Ganey question, “Noise level in and around room” for the then most recent year (July–September, 2011 through July–September, 2012) ranged from 68.8 – 76.8. These scores were consistently below the 50th percentile and at times below the 25th percentile of the peer database (hospitals between 150 and 199 beds).

This team and their proposed project were selected for the Philadelphia region CSI. Ms. Rauchfuss served as the project lead. Three ICU clinical nurses were selected as project participants. The internal coach for the project was nurse leader Carolyn Davidson, PhD, RN, CCRN, ARNP, CPHQ, Administrator for Evidence-Based
Practice and Quality. Dr. Davidson was responsible to mentor the CSI Academy ICU staff nurse participants and, along with Ms. Rauchfuss, facilitate removal of organizational barriers which may impede project work. As such, this project, from inception through completion, involved direct communication between the three clinical nurse participants and two nurse leaders – Ms. Rauchfuss and Dr. Davidson. The interactions between these nurse leaders and clinical nurses most assuredly influenced a change in the patient experience.

**GOAL STATEMENT(S)**

Improve the Press Ganey patient satisfaction score for the question, “During this hospital stay, how often was the area around your room quiet at night?” Target: 78

**DESCRIPTION OF THE INTERVENTION/INITIATIVE/ACTIVITY(S)**

The CSI Academy launched March 28, 2013 with an all day workshop for the three clinical nurses on the CSI team. A two-hour internal coach meeting immediately followed this session. The evening before, there was a dinner for the chief nursing officers and project leads of all participating sites. Subsequent training and information sessions, which included all regional participants and at times, the project leads and internal coaches, occurred 8 times through the program’s completion in August, 2014.

Titled, Project HUSH -- Helping Understand Sleep Heals – the purpose of the LVH-Muhlenberg ICU project was to demonstrate viable solutions to decrease the level of noise and number of controllable alarms to promote patient and staff satisfaction within the 20-bed ICU. Activities and key dates included:

- **August – September, 2013 – Pre-interventions**
  - staff survey;
  - electronic education to all staff detailing implications of noise for the critical care patient;
  - decibel measurements; and,
  - alarm counts.
- **September 9–13, 2013 – Launch Week**
  - distribution of staff tee-shirts and pens stating ‘Project HUSH;’
  - unit signage posted; and,
  - initiation of two-hour periods of ‘quiet time’ during the afternoon and night.
- **September – December, 2013 - Interventions**
  - new nurse call light devices that accommodate headsets and ear buds for music and television sounds;
  - use of ear plugs by patients to muffle noise;
  - development and use of enhanced alarm parameters and adjustments;
  - development of algorithms for better alarm management; and,
  - elimination of very loud hallway ventilator alarm.
- **December, 2013 – March, 2014 – Mid-project Data Collection**
  - decibel measurements;
  - alarm counts;
  - administration of Richards Campbell Sleep Questionnaire to patients and staff;
• question-answer luncheon for unit and interprofessional staff; and,
• Nursing Quality Retreat presentation.

• April – July, 2014 – Post-project Data Collection
  o staff survey;
  o decibel measurements;
  o alarm counts;
  o administration of Richards Campbell Sleep Questionnaire to patients and staff;
  o purchase of white noise sound machines for the unit;
  o presentation at the annual Philadelphia Area Magnet Hospitals Magnet Champions Conference; and,
  o presentation to the hospital Nursing Evidence-based practice and Research Council.

• August – October, 2014 – Post-project
  o staff party with gift;
  o Sleep Saks available for patients;
  o “Quiet Hours” signs obtained;
  o presentation at CSI Innovations Conference; and,
  o presentation at annual LVH Nursing Research and Quality Day.

NOTE: The three clinical nurse participants and Dr. Davidson were selected to offer an oral presentation on this project at the 2015 ANA Quality Conference, February 4 - 6, Lake Buena Vista, Florida. In addition, this project was selected to be offered as a poster presentation at the 2015 AACN National Teaching Institute, May 18–21, San Diego, California.

PARTICIPANTS

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<tr>
<th>Name</th>
<th>Discipline</th>
<th>Title</th>
<th>Department</th>
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<tbody>
<tr>
<td>Marion Daku, RN</td>
<td>Nursing</td>
<td>Clinical Nurse</td>
<td>LVH-Muhlenberg ICU</td>
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<tr>
<td>Carolyn Davidson, RN</td>
<td>Nursing</td>
<td>Administrator, Evidence-based Practice and Clinical Excellence</td>
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<td>Eva Fox, RN</td>
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<td>Heather Koch, RN</td>
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<tr>
<td>Kay Rauchfuss, RN</td>
<td>Nursing</td>
<td>Administrator, Patient Care Services, Cardiovascular and Respiratory Services</td>
<td>Patient Care Services</td>
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**OUTCOMES**
In addition to the outcome associated with the above identified goal, following are other outcomes:

- False alarms were decreased by 69%.
- EKG (electrocardiogram) alarms were decreased by 75%.
- Based upon the Richards Campbell Sleep Questionnaire, patients slept better than nurses perceived they did; and nurses rated the unit slightly more quiet than patients did.

As the following graph shows, of the four post-intervention data points, the target was achieved all 4 quarters for the Press Ganey patient satisfaction score for the question, “During this hospital stay, how often was the area around your room quiet at night?” For three of the four quarters, the score exceeded all pre-intervention scores.