

Texas -Taxonomy of Error Root Cause Analysis of Practice – Responsibility (TERCAP) Update

Summary of Request:

The purpose of this informational only agenda item is to provide an interim report to the Board including preliminary review of data during the first year of the two (2) year pilot as well as observations and plans for completion of the Texas TERCAP Pilot.

Historical Perspective:

In 2011, the 82nd Legislature passed SB 193 allowing the Texas Board of Nursing to adopt a standardized error classification system for utilization by nursing peer review committees. After passage of the bill, a workgroup was formed to advise the Board on implementation of the project. Following instrument, protocol, and data collection survey development, letters inviting participation in the Pilot were sent to hospital systems all across the state followed by training workshops in the summer of 2012 in Austin, Houston and the Dallas/Ft. Worth area. Approximately 200 nurses, representing peer review committees from 50 hospitals, attended the training workshops. Participants learned how to utilize the Texas TERCAP Protocol and Instrument for incidents reviewed by Peer Review Committees, but not deemed board-reportable.

Data collection through the Texas TERCAP Online Database from participating hospitals began in August 2012 and will continue through August 2014. In order to assist Board staff with implementation and data analysis, Dr. Mary Beth Thomas and Dr. Mari Tietze were hired to provide consultation on implementation strategies and an overview of the data to identify any important trends. Dr. Tietze also assisted Board staff in reformatting the data to provide better analysis and statistical review. Attachment A contains the mid-Pilot report developed by Dr. Mary Beth Thomas and Dr. Mari Tietze.

Staff Recommendations:

This report is for informational purposes only. Staff will keep the Board apprised of ongoing Texas TERCAP activities and present a full report following the Pilot completion in September 2014.

**TERCAP
Taxonomy of Error Root Cause Analysis of Practice-responsibility**

**Texas TERCAP Pilot Project
Mid Pilot Report to the Texas Board of Nursing
(January 24, 2014)**

ABSTRACT

Identifying factors surrounding nursing practice errors, also called practice breakdown, supports a comprehensive, just pathway to error resolution and provides a proactive approach in the assurance of patient safety: an approach the Board believes is important in fulfilling its mission of public protection. The Texas TERCAP Pilot Program provides a mechanism for this approach. Modeled after a national project developed by the National Council of State Boards of Nursing, the Texas TERCAP Pilot Program provides a method to collect nursing practice breakdown information from Texas hospital peer review committees utilizing a 44 item online instrument. Preliminary data during the first year of the two year pilot are reviewed as well as observations and plans for completion.

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Purpose of the Pilot

In 2011, the 82nd Legislature passed SB 193 allowing the Texas Board of Nursing (Board) to adopt a standardized error classification system for utilization by nursing peer review committees. Consequently, the Texas Board of Nursing implemented a pilot that allows peer review committees to use the Taxonomy of Error Root Cause Analysis of Practice-responsibility (TERCAP) to identify practice issues, including practice breakdown, normally investigated during the peer review process. A practice breakdown is defined broadly as the disruption or absence of any of the aspects of good practice. Often these cases involve errors or near misses.

The pilot calls for entering nursing practice breakdown incidents into the TERCAP state-wide online data base. The practice breakdown incidents appropriate for the pilot are those cases that a nursing peer review committee has reviewed and determined are not required to be reported to the Board (See *Texas Administrative Code Rule 217.16 Reporting of Minor Incidents*). This includes minor incidents which are events that indicate the nurse's continued practice does not pose a risk of harm to patients or other persons; or when remediation is reasonably expected to adequately mitigate any risk and the nurse successfully completes the remediation. Peer review cases meeting the following criteria may be included in the Texas TERCAP Pilot Program:

1. The peer review case concerns a nurse who was involved in a practice breakdown.
2. The peer review case involves one or more identifiable patients (if more than one patient was involved, data is to be gathered and submitted on the patient with the most harm or risk of harm).
3. The case allows for all or almost all of the data collection instrument fields to be completed.
4. The case is reviewed by the institution's peer review committee and not deemed reportable to the BON.

Objective

The Texas TERCAP Pilot Program aims to support the fundamental mission of this Board in the assurance of patient safety and public protection. As such, the Texas TERCAP Pilot Program was developed to:

1. Advance patient safety by analyzing incidents of nursing practice breakdown
2. Evaluate factors surrounding error events to facilitate an understanding of the etiology of nursing errors
3. Promote the development of methods to mitigate those errors.
4. Create a peer review environment that is transparent, positive and supportive of this error analysis effort.

These objectives provide a proactive approach in the assurance of patient safety: an approach the Board believes is important in fulfilling its mission of public protection.

Methods

Background and Recruitment

Submission of the practice breakdown cases in the Texas TERCAP Pilot Program is voluntary and confidential. Letters inviting participation in the pilot were distributed to hospitals around the state. Responses were favorable with approximately 200 nurses, representing peer review committees from 50 hospital systems and 95 individual hospitals, who participated in training workshops during the summer of 2012 in Austin, Houston and the Dallas/Ft. Worth area.

The pilot program's online data base became functional on September 1, 2012. The online data base collects confidential error events that have been reported to a nursing peer review committee and deemed not reportable to the Texas Board of Nursing. The pilot ends on September 1, 2014.

Instrumentation

A 44 item online instrument was developed based on the National Council of State Boards of Nursing (NCSBN) TERCAP© instrument. The NCSBN instrument was developed to provide a method for capturing nursing practice errors reported to Boards of Nursing. A national online data base is available to all participating boards and provides a method for analysis and trending.

The Texas instrument mirrors the national instrument by identifying nurse, patient, system and healthcare team factors involved in the error event. In addition to these items, the Texas instrument also captures remediation strategies for both the nurse and the institution. The NCSBN TERCAP© Protocol was modified for the Texas TERCAP Pilot and provides detailed instructions and examples for each item in the instrument. Dr. Elizabeth Zhong, with the NCSBN, has provided consultation and support during the pilot.

The Texas TERCAP instrument was piloted by a workgroup comprised of nursing leaders in Texas hospitals and found to be user-friendly and understandable.

Sample Size and Statistical Power

The *power* of a statistical test is the probability that the test will demonstrate a difference, when in fact, a difference truly exists.¹ For example, is there a difference in the location of the hospital being rural or urban (two category levels) and the number of error events reported? To answer that statistical question with, say 80% *power*, a minimum of 155 events should be included in the analysis.

At the other extreme, is there a difference in the length of time a nurse works in a patient care area (five category levels) and the number of error events reported? To answer that statistical question with, say 80% *power*, 260 events should be included in the analysis. As such, it is recommended that, for the full annual report, the project team target for a minimum of 260

¹ Source: Post hoc power analysis* was conducted using *G*Power Analysis* software available at <http://www.psych.uni-duesseldorf.de/abteilungen/aap/gpower3/download-and-register>

events so that the more complex questions (five category levels) can be answered with 80% power confidence.

Data Collection and Participation Progress

Several initiatives have been implemented since the beginning of the pilot to provide ongoing support and training. For example, in May 2013, a survey was sent to all nurses who attended the training to solicit their input and comments about the project. Eighty eight percent indicated they were satisfied with the project and 57% were very satisfied. In June, 2013 an information sharing Webinar was conducted to provide clarification about reporting requirements, consistency in data entry and early data trends. Seventy three participants attended this training.

During the month of October 15 – December 15, a free Board Webinar on *Rule 217.9 Incident-Based Peer Review* was offered to the peer review committees of participating institutions. Thirty participants completed a survey indicating they attended the Webinar and applied for continuing education. Additionally, several e-mail notifications have been distributed to participating hospitals providing updates and other important information aimed at encouraging ongoing participation.

General Results and Demographics

This interim report is based on the results of 99 events collected from 3 rural and 27 urban-based acute care facilities/hospitals between September 1, 2012 and September 30, 2013. Key findings of interest are provided with the understanding that the final report will contain closer to the desired 155 sample size needed for basic analysis.

The present report contains 102 events (see Table 1), of which 99 are from acute care facilities, two are from behavioral health facilities and one is from an assisted living facility. The analysis for this interim phase of the report is based on the 99 hospital-based events from 30 hospitals. Of those, the events ranged from 1 to 14, with 3.0 events being the most frequent count of events submitted per hospital.

Facility Type

Table 1: Type of Facility
Question 2. Type of facility or environment

	Frequency	Percent
Assisted Living	1	1.0
Behavioral Health	2	2.0
Hospital	99	97.1
Total	102	100.0

Metro (Urban) Compared to Non-Metro (Rural) Status

The classification of metro and non-metro was based upon the definition provided by the Healthcare Resources and Services Administration (HRSA) department. HRSA classifies a county as urban if it is in one of the 381 Metropolitan Statistical Areas (MSAs) delineated by the federal Office of Management and Budget (OMB).² In other words, all counties that are not part of a Metropolitan Statistical Area (MSA) are considered rural.

The United States Office of Management and Budget (OMB) has defined 381 Metropolitan Statistical Areas (MSAs) for the United States and seven for Puerto Rico. The OMB defines a Metropolitan Statistical Area as one or more adjacent counties or county equivalents that have at least one urban core area of at least 50,000 population, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties.³ Texas contains 25 MSAs as designated by the OMB 2010. As noted, 3 of the 30 hospitals included in this interim report were rural-based. See Figure 1.

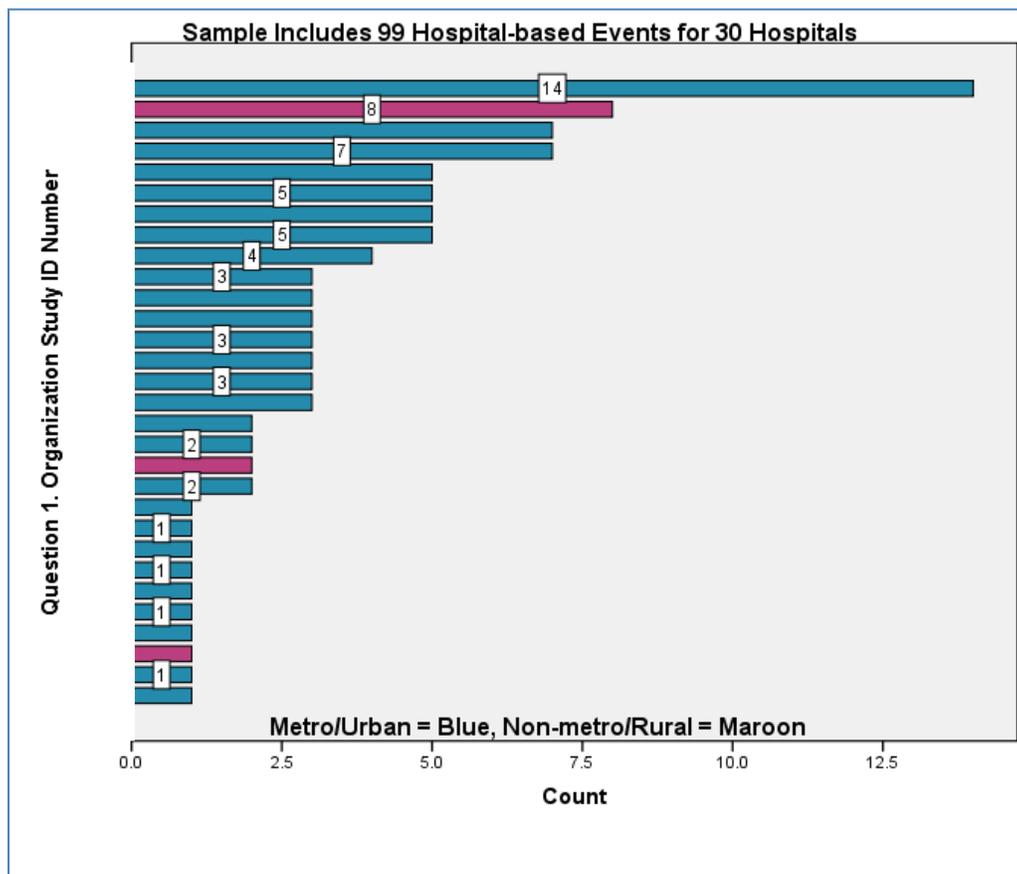


Figure 1

² All counties that are not part of a Metropolitan Statistical Area (MSA) are considered rural. Source: HRSA Defining Rural Population. Retrieved from http://www.hrsa.gov/ruralhealth/policy/definition_of_rural.html

³ Source: http://en.wikipedia.org/wiki/List_of_Metropolitan_Statistical_Areas

Distribution of Hospital-based Events by Bed Size Category

Of the 99 hospital-based events, the 100 to 599 bed sizes comprised the majority of submissions. See Figure 2.

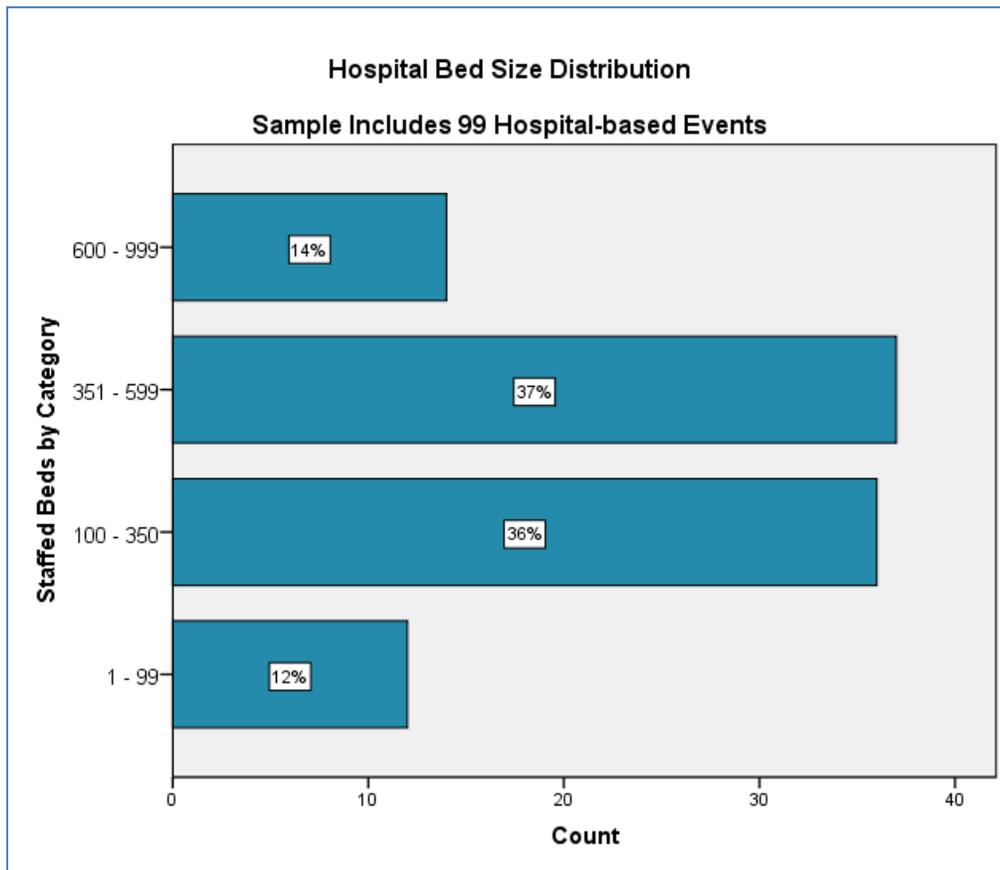


Figure 2

Year of the Nurse's Initial Licensure

Hospital-based events tended to be more frequently associated with nurses who received their initial licensure between 2001 and 2010. However, this data may simply reflect the licensure status of the current Texas nursing workforce. The final report at the end of the pilot may provide more substantive findings. See Figure 3.

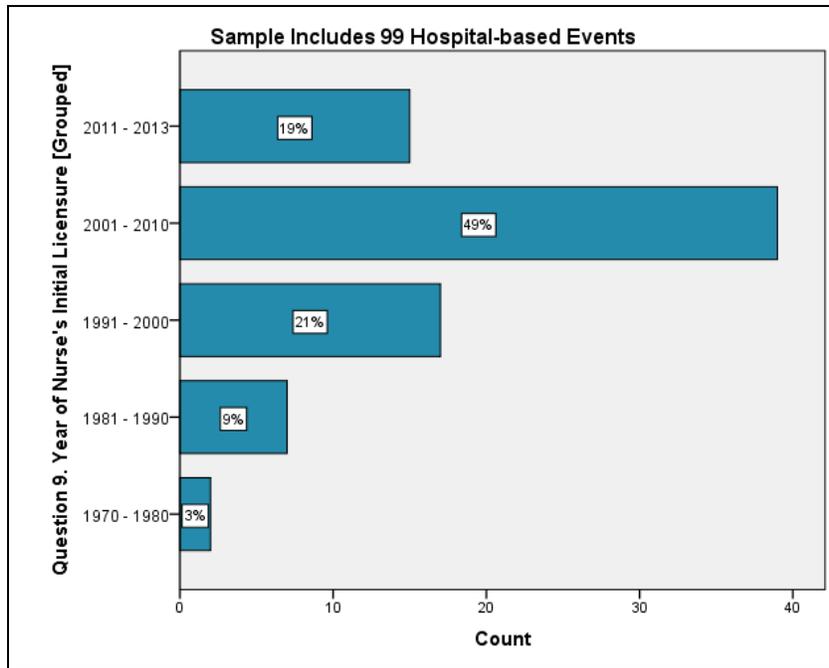


Figure 3

Professional Work History

Length of Time in Patient Care Area

Length of time the nurse had worked in the patient care location/unit/department where the practice breakdown occurred is provided in Figure 4. The majority of nurses had worked in the area of the event for more than five years.

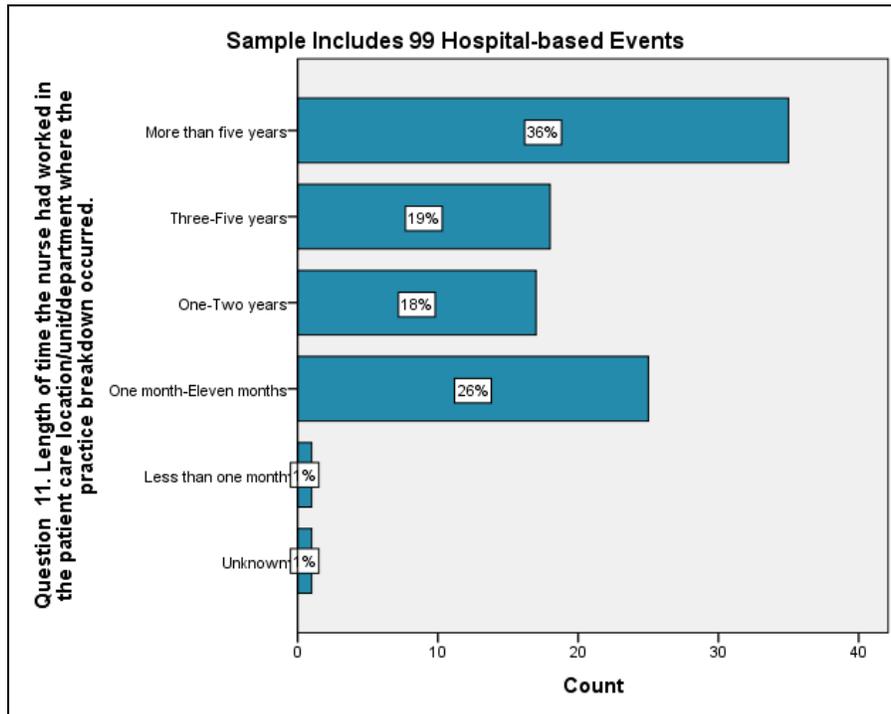


Figure 4

Working in Temporary Capacity

Eighty six percent of the cases did NOT involve a nurse who was working in a temporary capacity. See Figure 5.

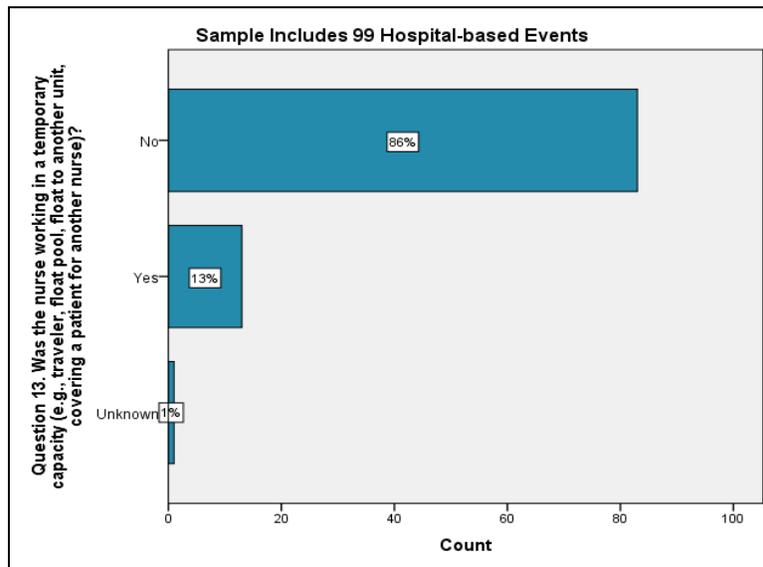


Figure 5

History and/or Pattern of Practice Breakdown

Eighty percent of respondents indicated no history and/or pattern of practice breakdown in their past clinical experience. See Figure 6

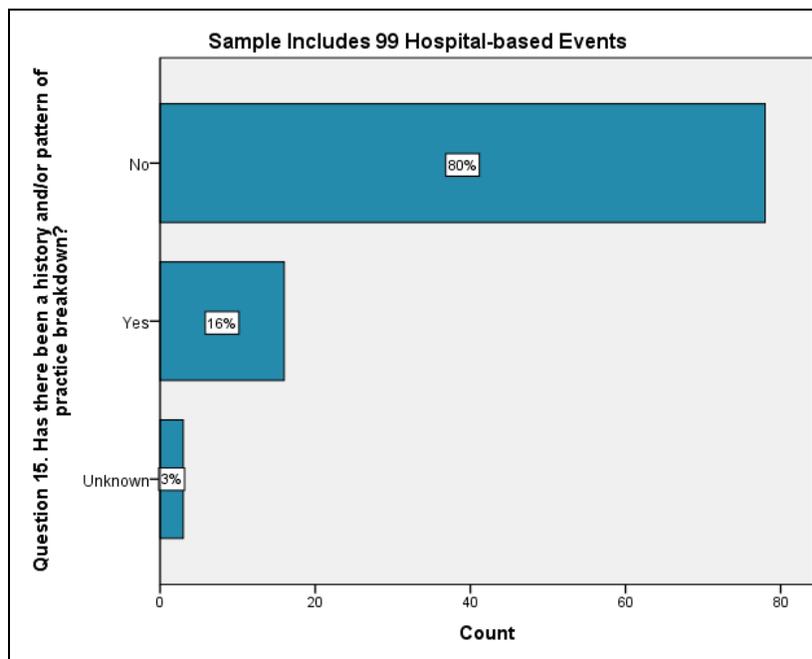


Figure 6

Nurse Employment Outcome of Practice Breakdown

In 95% of the incidents, the employer retained the nurse. See Figure 7.

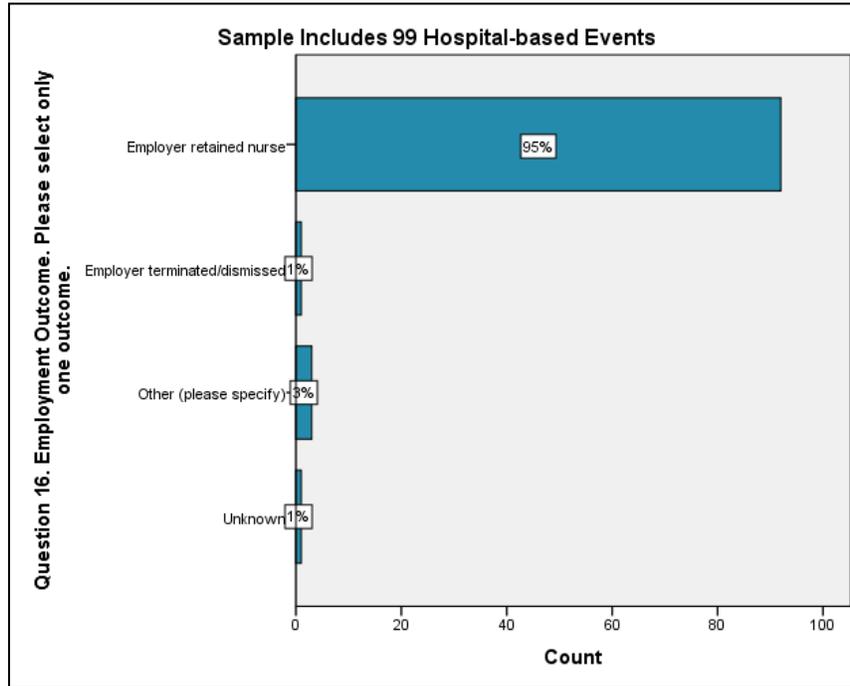


Figure 7

Level of Harm

Harm Level

Each event was classified in terms of the level of harm. The TERCAP instrument allows for the identification of four levels of harm: no harm, harm, significant harm, and patient death. See Figure 8.

Original: Four-Levels of Harm

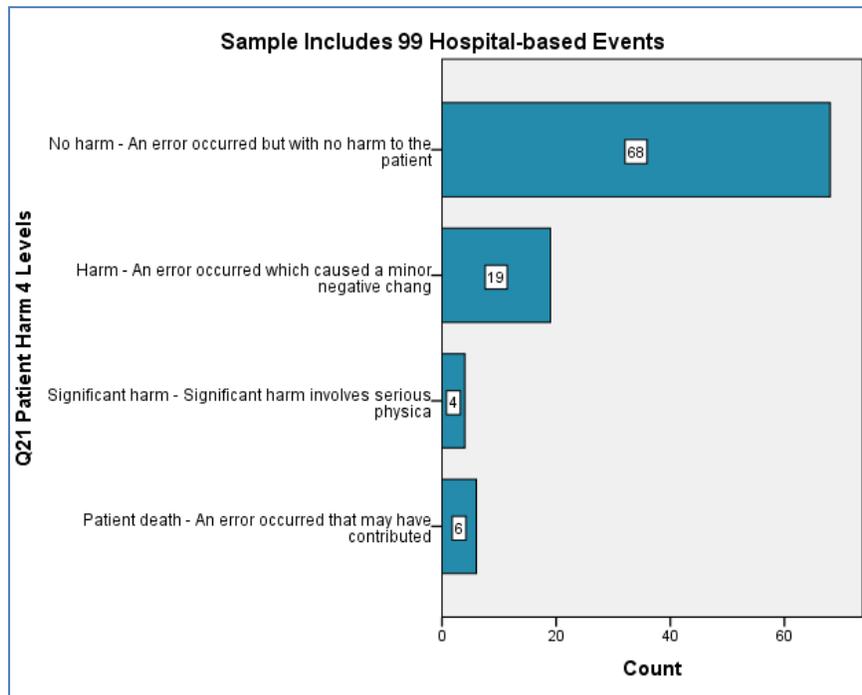


Figure 8

Study: Three-Levels of Harm

For study analysis purposes and due to the small number of events in the category for “patient death,” that category was combined with the “significant harm” category, yielding three levels of harm. Seventy percent of the incidents resulted in no harm to the patient. See Figure 9.

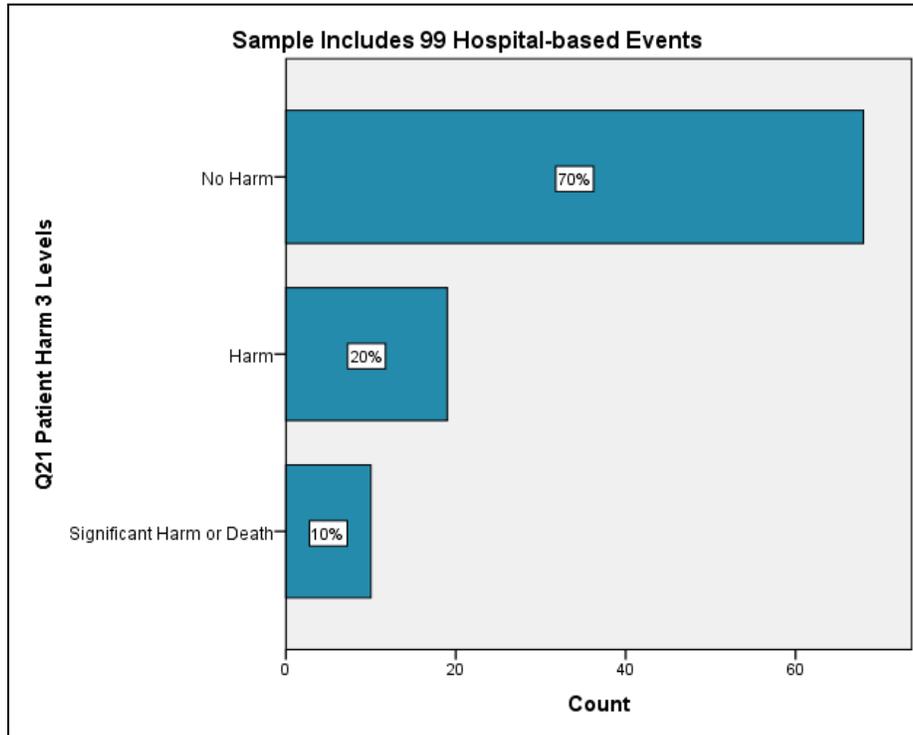


Figure 9

System Factor Trends

Contributing System Factor Counts

Additional detailed analysis was conducted on the system factors. Participants were asked to select items from various system factor categories perceived to contribute to the event. Examples of these categories are *Communication System Factors* and *Leadership/Management*, etc. as listed in Figure 10. Not listed in Figure 10 are the subcategories under each of the broad categories which provided more detailed examples. From these, the participants were allowed to select all applicable sub-categories. Figure 10 reflects the average number of all subcategories by the corresponding broad category.

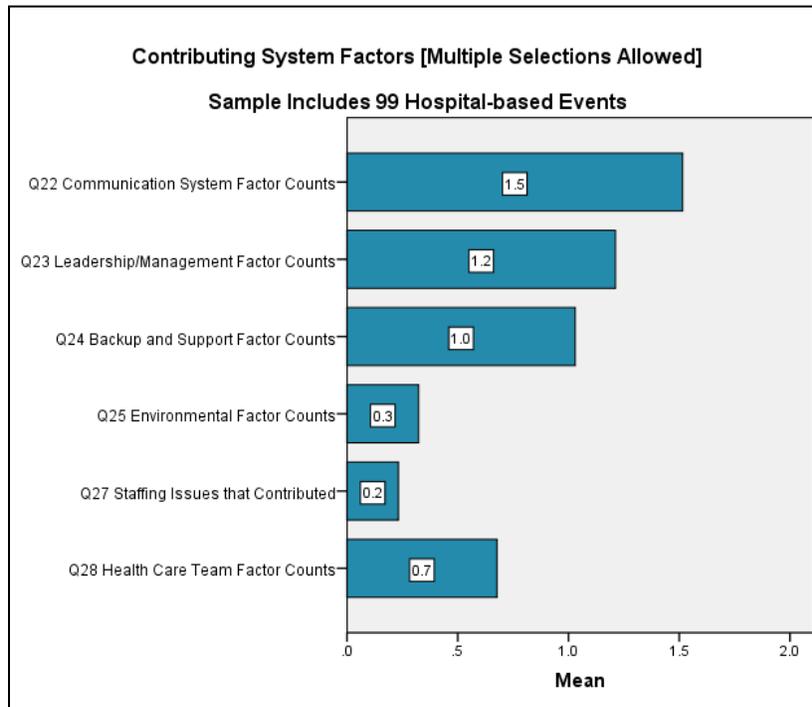


Figure 10

Contributing Team Member Counts

When asked what other team members contributed to the event, *Additional Staff Nurse* was identified as a contributing factor 26% of the time, followed by *Supervisory Nurse/Personnel* and *Physician*. See Figure 11.

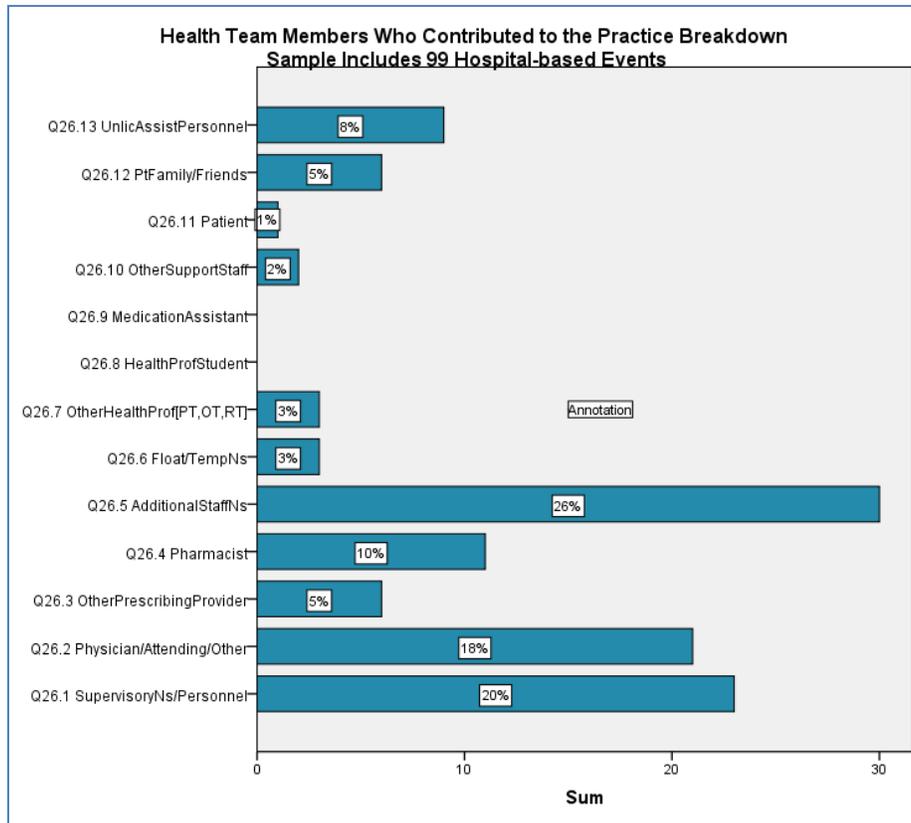


Figure 11

Intentional Misconduct Trends

Intentional Misconduct or Criminal Behavior

Very few (5%) of the 99 hospital-based events involved intentional misconduct. See Figure 12 and the summary of the types of misconduct.

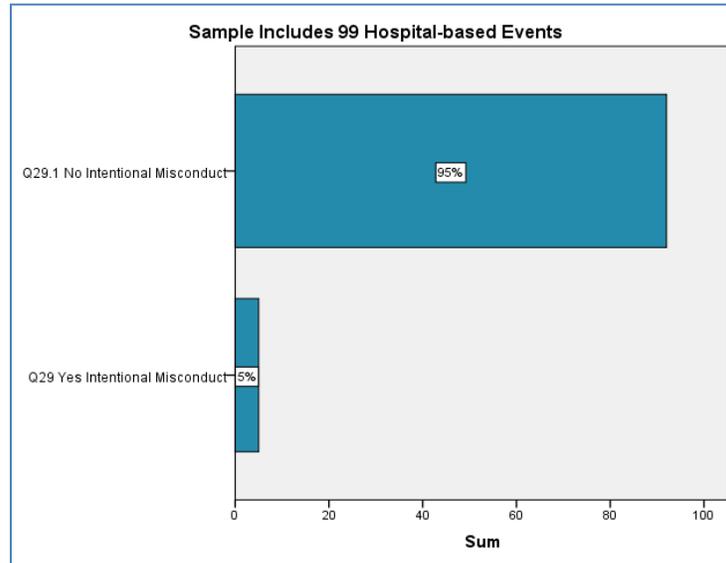


Figure 12

Intentional misconduct factors included:

1 incident involving *Changed/Falsified Charting*

1 incident of *Covering up an error*

3 incidents described in the "other" category including:

2 "No order, no documentation"

1 "Documented and initiated physician order-scope of practice".

Practice Breakdown Trends

Medication Errors

The majority of events did not involve a medication error. See Figure 13.

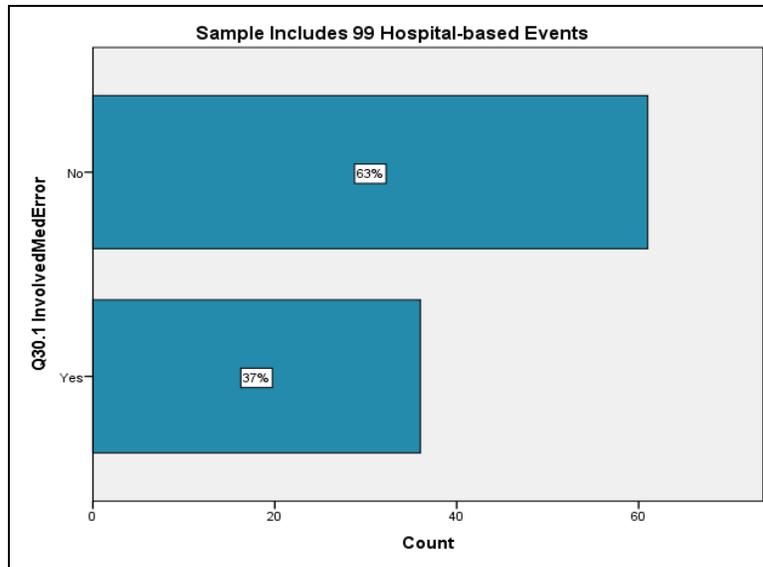


Figure 13

Documentation Errors

Approximately half of the events involved a documentation error. See Figure 14.

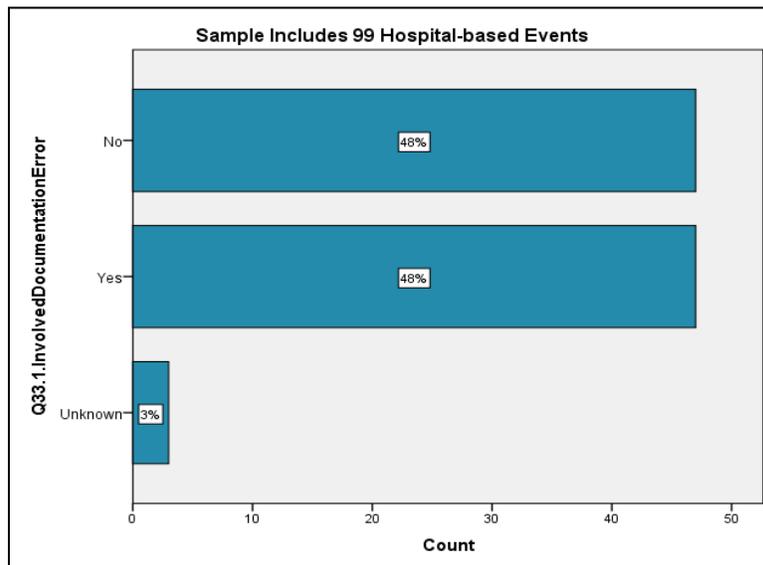


Figure 14

Type of Documentation Error

Of the documentation errors, *Incomplete/Lack of Charting* was the most commonly selected. See Figure 15.

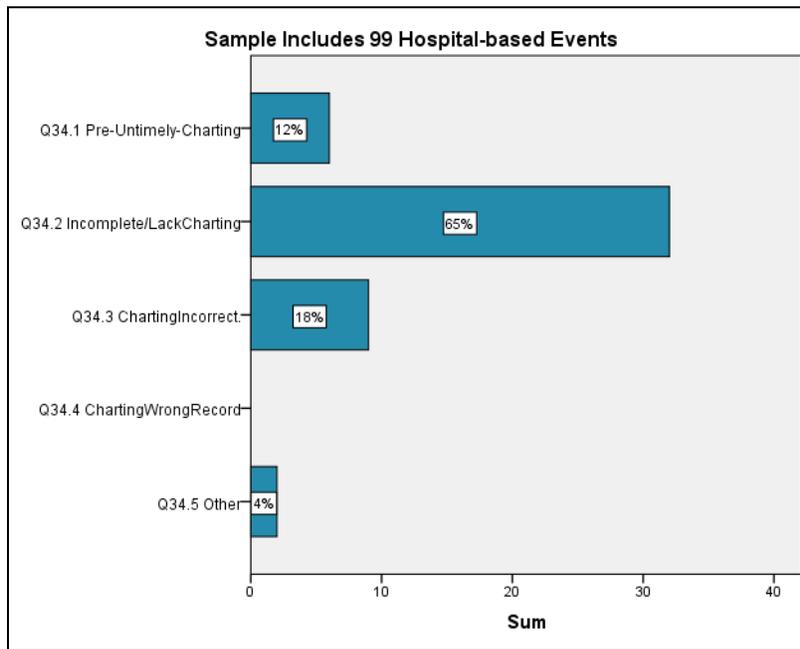


Figure 15

Documentation Errors Leading to Practice Breakdown

Approximately forty percent of the documentation errors were associated with the reported practice breakdown. See Figure 16.

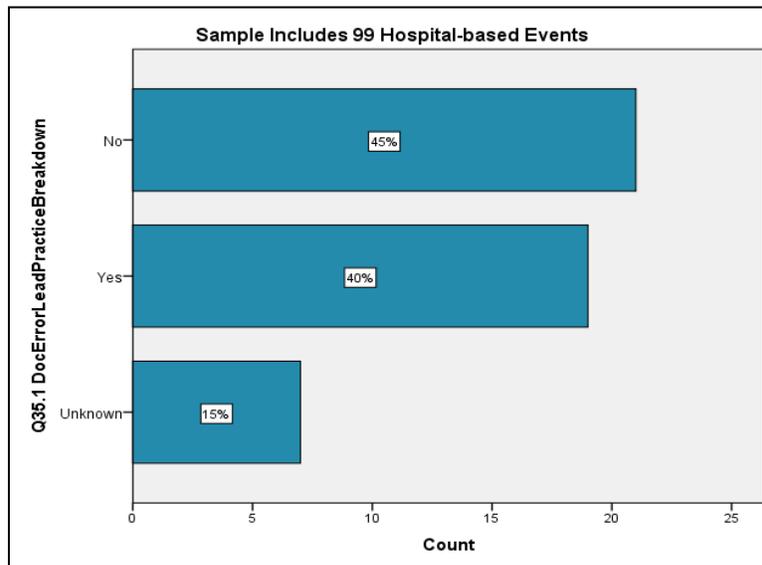


Figure 16

Perceived “Most Significant” Practice Breakdown by Respondents

Participants were asked to select the ONE most significant practice breakdown factor contributing to the event, of which *Clinical Reasoning* was the most frequent. See Figure 17 for the list of other such factors.

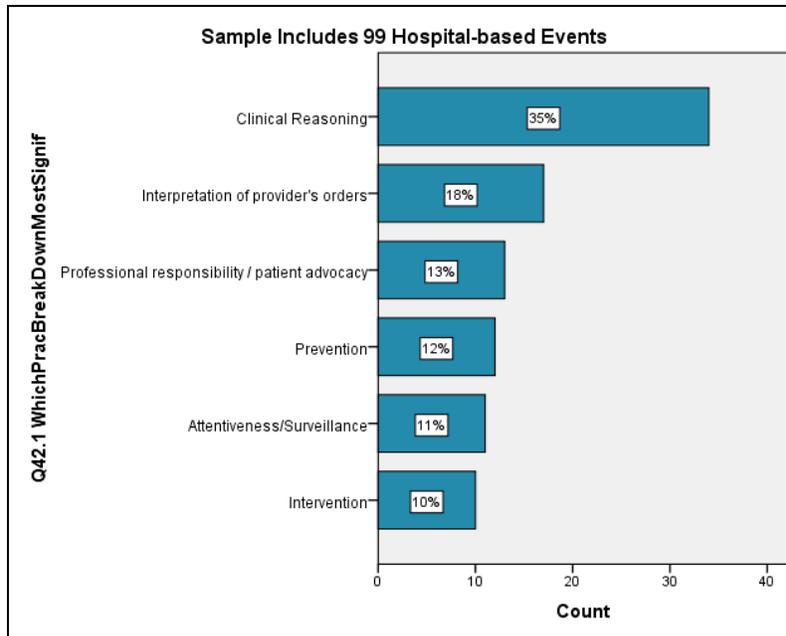


Figure 17

Contributing Practice Breakdown Factor Counts

Additional detailed analysis was conducted on the practice breakdown factors. Participants were asked to select items from various practice breakdown categories perceived to contribute to the event. Examples of these categories are Attentiveness/Surveillance, Clinical Reasoning, Prevention, etc. as listed in Figure 18. Not listed in Figure 18 are the subcategories under each of the broad categories which provide more detailed examples. From these, the participants were allowed to select all applicable sub-categories. Figure 18 reflects the average number of all subcategories by the corresponding broad category.

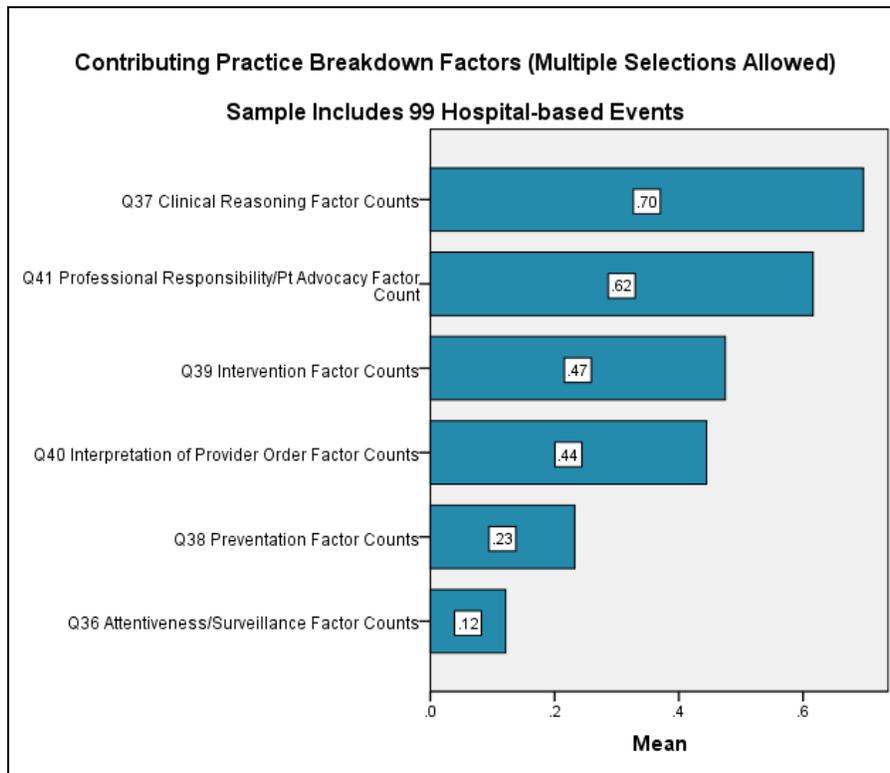


Figure 18

Outcome of Peer Review

Employers Remediation Activities for the Nurse

Outcomes of peer review activities for the nurse indicated that the most common approach was to provide internal and external training/classes. See Figure 19.

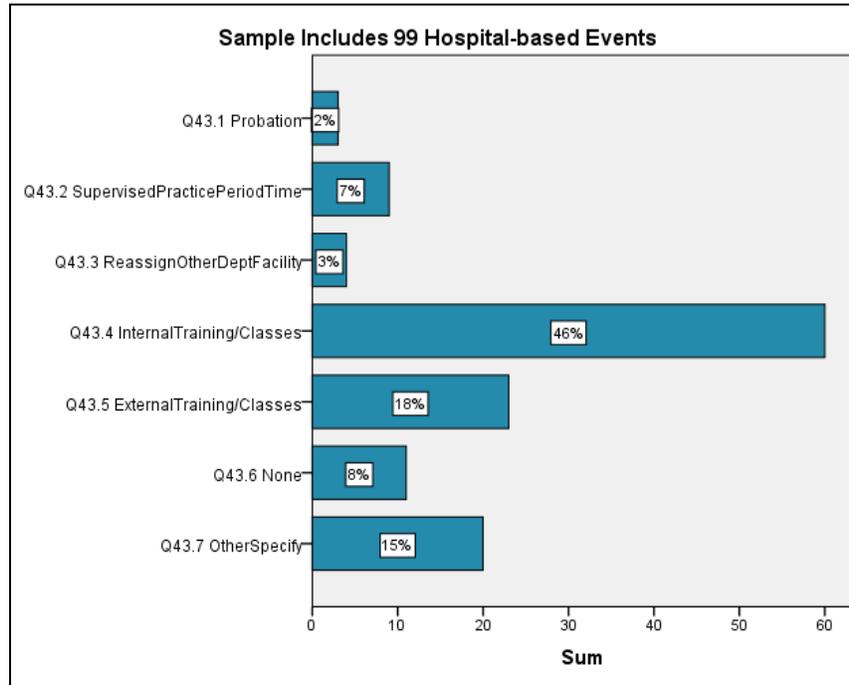


Figure 19

Summary of Key Findings

As this is an interim report reviewing the first year of a two year pilot, selected items from the Texas TERCAP online data base are reviewed to provide meaningful trending data. A more detailed analysis will be provided upon completion of the pilot.

Demographics, Professional Work History, Level of Harm

Figure 4 reflects the length of time the nurses had worked in the patient care location where the practice breakdown occurred. It is interesting that the majority were seasoned nurses who had worked on the patient care unit for over five years and that the second largest group were nurses who had only been on the unit 1 – 11 months. **Figures 5** and **6** reflect that the majority of nurses involved in the practice breakdown were not working in a temporary capacity nor did they have a history or pattern of practice breakdown. These findings mirror data collected by NCSBN through the national TERCAP Project. **Figure 7** indicates that in 95% of the cases, employers did not terminate employment of the nurse for the practice breakdown incident and **Figure 19** reflects that 92% provided remediation for the nurse. As the pilot was created to collect incidents that do not reach the level of being reported to the Board of Nursing, it seems likely that the employer would retain the nurse and work towards remediation of any practice issues. **Figure 9** indicates that 70% of the practice breakdown incidents did not cause harm to the patient. See discussion under the report section “Mid Pilot Observations and Plans for completion in 2014”.

System Factor Trends

Figure 10 reflects the most often cited system factors that impacted the practice breakdown event. Communication system factors within the institution were the most frequently selected followed by leadership and management factors. As noted in the *Sample Size and Statistical Power Section*, an increase in the number of cases will lead to a more robust analysis of the systems contribution to the practice breakdown. **Figure 11** reflects other health team members besides the nurse that contributed to the practice breakdown. The most frequently listed were *Additional Staff Nurse, Supervisory Nurses/Personnel* and *Physicians (attending, resident or other)*. These results reflect the importance of team work and professional communication.

Intentional Misconduct Subject to Reporting

Figure 12 reflects that 95% of the cases were solely practice breakdown without misconduct or criminal cases. However, 5 out of 99 events were identified as intentional misconduct. One case involved *Changed or falsified charting*, 1 case involved *Deliberately covering up an error* and 3 cases were included in the “other category” and related to not having an order and not documenting. See discussion under the report section “Mid Pilot Observations and Plans for completion in 2014”.

Practice Breakdown Trends

Figure 15 reflects that 65% of the documentation errors involved “incomplete or lack of charting”. This issue is common in practice breakdown cases that are reported to the Board and also appears to be a problem with minor incidents. Also of interest in **Figure 16** is that almost half of the documentation errors led to the nursing practice error. This information will be

further explored in the pilot.

Figure 17 reflects categories of practice breakdown. The participants were asked to select the one category that they believed was *most significant or primary* to the error event. As shown, *Clinical Reasoning* was selected most frequently while the selections of other practice breakdown categories were more evenly distributed. The importance of clinical reasoning and its impact on nursing practice is an area replete with investigative opportunities. **Figure 18** reflects the broad categories that were selected *as a component* of the practice breakdown. Of interest is that the selections were more evenly distributed than those deemed most significant or primary. The question of how the respondents determined which category was most significant is an area which may be explored in the future.

Outcome of Peer Review

Figure 19 reflects that employers implemented remediation activities for their nurses in 92% of the practice breakdown incidents. The majority of these remedial activities involved internal training or classes for the nurse. Though not reflected in this report, there is also an item in the database that collects information about remediation activities to address the system factors subsequent to the peer review hearing. This information will be compiled in the final pilot report.

Mid Pilot Observations and Plans for Completion in 2014

The first year of the TERCAP Pilot Program has been successful in identifying factors that will promote further analysis and investigation of nursing practice breakdown during the last year of the pilot. Staff are encouraged that participants engaged in the pilot during the first year and contributed sufficient cases on which to base beginning trends. However, as noted in the *Sample Size and Statistical Power Section* of the report, more cases are needed in order to perform a more robust analysis of the data. The majority of hospitals enrolled in the pilot have not contributed any cases and there is much work to be done this upcoming year to increase participation and ascertain actual or potential roadblocks.

Another finding is that the Texas TERCAP Pilot Program is very integral to an institution's existing peer review process. The inter-relatedness of these processes in promoting patient safety and improving quality nursing care is one that merits more review and analysis and staff will be gleaning this information throughout the next year.

One issue that surfaced during the beginning of the pilot occurred during staff's review of the data. Staff noted that the online data base included reports of practice breakdown cases that were noted to include a patient's death or serious harm. Practice breakdowns that may have contributed to patient death or serious harm have been designated as inappropriate to the pilot both in the signed contract agreements and throughout all of the training. Staff reviewed the solicitation instrument and the wording of the specific item where patient harm or death was being reported and believe that the wording may have caused confusion. It is possible that the pilot participants may have reported the level of harm as the final patient condition rather than the condition resulting from the practice breakdown. The participants were given clear direction in answering the item in question through an electronic communication and in a statewide Webinar. During the Webinar, case studies were reviewed and the criteria for inclusion or exclusion in the pilot. It was emphasized and that those practice breakdowns determined to have contributed to death or serious harm to a patient should be reported to the board and were inappropriate for the pilot. The wording of the item will be reviewed at the end of the pilot and revisions may be made. In the meantime, staff will continue to monitor the data. There should be no reports of serious harm or death to a patient that resulted from a practice breakdown reported in the pilot.

It was also noted that there were 5 cases of intentional misconduct behavior in the database. Falsifying information and deliberately covering up information in the medical record are considered "intentional misconduct" that is normally reportable. *Board Rule 217.16(d)(1)(C)* does mandate falsification as reportable but uses the words "a serious violation." These two reports of intentional misconduct as well as the written comments in the "other" section need to be better explained as the pilot progresses. The peer review committee may be attempting to identify non-serious intentional violations. A better explanation of why these acts are not reported should be explored in the pilot.

Another issue for the pilot is that of turnover of peer review staff and the need for ongoing training of new participants. Hoping to remedy this issue, in July, 2013 Board staff held a training in Austin for new pilot participants but only 7 attended the training. Staff will consult with the participating hospitals to ascertain the need for training in their area. As a result of the

turnover in the participants, Board staff are working diligently to update and revise the contact information of approximately 200 nurses participating in the pilot.

Dr. Mary Beth Thomas will continue to consult with Kristin Benton in the implementation of the pilot. In addition, Dr. Mari Tietze, a nurse researcher, has been hired as a consultant and will be providing ongoing support for analysis and interpretation of the data. Dr. Tietze has managed statistical analysis for large databases in the past and currently teaches statistics at the doctoral level.

A full report will be developed after completion of the pilot in September, 2014.