

**Sigma's 30th International Nursing Research Congress**  
**Acute Care Nurses Answer a Clinical Question Alongside Academic and Hospital Nurse Leaders Through Partnership**

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**Purpose:** The purpose of this project was to build confidence in applying skills attained through Research Academy (RA) participation to answer a clinical question of significance and relevance to cohort four participants through facilitative learning and role-modeling strategies by RA faculty.

**Aim:** The aim of this project was to ascertain what frequency of vital signs should be used to detect a reaction during blood product administration by applying newly acquired translational research skills with RA faculty facilitation.

**Research Question:** In individuals receiving a blood transfusion, what frequency of vital signs should be used to monitor for a reaction during blood administration?

**Background:** Research Academy (RA) fourth cohort sought to answer the clinical question of vital sign frequency associated with blood product transfusion by conducting a literature review, appraisal, and synthesis of current published evidence. The organization located in the southwest part of the United States recorded 51/12,077 (0.422%) transfusion-related adverse reactions in 2017, thus highlighting the importance of identifying evidence to support vital sign frequency to detect transfusion reactions. Initially cohort members were teamed up with a RA faculty member to write different sections of an abstract. Curriculum modification was made to synthesize findings as a group after feedback from RA participants. Synthesis was role-modeled using a research grid and themes emerging from reviewed articles by RA faculty. Active

participation by direct care nurses was supported by nurse administrators who saw resourcing RA initiatives as an institutional priority.

**Methods:** A literature review was conducted using Integrated Research Review (IRR) methodology adapted from Whitemore & Knafle (2006). Databases searched with guidance from a research librarian included CINAHL, Cochrane, Medline, & PubMed. Key search terms were "blood transfusion" AND "vital Signs" as MeSH major word terms. Included were current (<5 years) peer-reviewed articles not limited to English. Consensus was not to include practice guidelines. Forty-one articles were identified leaving 29 articles after duplicates were removed. An additional 17 records were excluded due to not addressing search terms. Twelve full-text articles were assessed for eligibility. Evidence of literature was established through inter-rater reliability. Independent review for level of evidence conducted by RA cohort members (N=6) and RA faculty (N=3) of final article sample (N=12) obtained using IRR methodology. Determination of level of evidence of each article was established through inter-rater reliability. Twelve articles were further narrowed to eight after critical review. RA participants organized literature findings through the use of a research grid independently to organize findings and facilitate synthesis of information. Full-text articles in final sample included four informing clinical implications, four addressing the clinical question, and four were removed due to lack of applicability to answering research question.

**Results:** Final article sample highlighted the impact of blood transfusion reactions on the respiratory system and pain. Inconsistencies were found in frequency of vital sign monitoring and "vital sign" components in reviewed literature. Vital sign components varied across all studies. Systolic blood pressure, heart rate, and temperature were the only components included in all "vital signs" across manuscripts. Respiratory rate was not always included in "vital signs" to identify transfusion reaction. In addition to not having "vital signs" components consistently applied throughout reviewed studies to allow for metanalysis of findings, the question of frequency of vital signs to detect an adverse reaction was not found.

**Implications/Translation:** Lack of derangement definitions to identify "abnormal" vital sign components to indicate transfusion reactions prevent triggering blood reaction recognition and interventions by nurses. A paucity of evidence exists to guide how frequently vital signs should be monitored and what components should be included in "vital signs" to identify transfusion reactions. Consistently throughout reviewed literature, vital signs alone were noted to not be enough to detect transfusion-related reactions. Transfusion reaction signs and symptoms include physical findings only detected with an assessment. Current vital sign monitoring at start, 15 minutes after, and at the conclusion of transfusions may not detect delayed reactions or respiratory system impairment, especially if oxygen saturation or respiratory rate are not included in monitored vital signs.

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**Title:**

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**Keywords:**

Blood Transfusion Reaction, Integrative Research Review (IRR) and Vital Sign Frequency

**References:**

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### **Abstract Summary:**

At the conclusion of this session participants will be able to discuss direct care nurse confidence in research proficiency resulting from facilitative learning and role-modeling by RA faculty in order to increase participant research capacity to conduct a literature review using Integrated Research Review methodology to answer a clinical question.

### **Content Outline:**

1. Introduction to academic and acute care partnership to increase research proficiency
1. Discuss purpose of Research Academy's literature review project
2. Identify aim of Research Academy project to apply newly acquired translational research skills
3. Define research question addressed by Research Academy project
4. Discuss how clinical question represents significance and relevance to clinical practice of participants and aligns with institutional goals
2. Method used to conduct literature review
  1. List search criteria
  2. Describe literature search critical review process
  3. Identify final article sample of relevance to answering the clinical question
3. Synthesis of findings
  1. Discuss synthesis of information identified through literature review
  2. Summarize relevance of findings to answer the clinical question
4. Conclusion
  1. Identify implications to nursing practice of literature review findings

### First Primary Presenting Author

#### **Primary Presenting Author**

Lauren M. Johnston, BSN, RN, CCRN  
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**Author Summary:** Lauren has been able to present the work of her Research Academy project orally at the Providence Saint Joseph Nursing Clinical Scholarship Symposium. She also presented the findings of her group in two poster presentations at the Lubbock Christian University Scholars Colloquium and Llano Estacado Oncology Nurses Society symposium.

### Second Secondary Presenting Author

#### **Corresponding Secondary Presenting Author**

Jamie K. Roney, DNP, RN-BC, CCRN-K  
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**Author Summary:** Hold American Nurses Credentialing Center certification in Nursing Professional Development and American Association of Critical Care Nursing Adult Critical Care. Completed a Nursing Education focused master's program. Serve currently on the nurse planning committees for American Critical Care Nurses Association's National Teaching Institute and Texas Public Health Association's Public Health Conference. Have presented internationally, nationally, locally, and at state level. Published author.

Third Secondary Presenting Author  
***Corresponding Secondary Presenting Author***  
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**Author Summary:** Michella wanted to learn more about translational research and grow her research capacity through enrollment in Research Academy cohorts four and five. She was integral to conducting an Integrated Research Review and changing practice, policy, and processes based on findings from peer-reviewed literature.

Fourth Secondary Presenting Author  
***Corresponding Secondary Presenting Author***  
Elizabeth R. Cason, BSN, RN, CHPN  
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**Author Summary:** Beth wanted to learn more about translational research and grow her research capacity through enrollment in Research Academy cohorts four and five. She was integral to conducting an Integrated Research Review and changing practice, policy, and processes based on findings from peer-reviewed literature.

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**Author Summary:** Christi wanted to learn more about translational research and grow her research capacity through enrollment in Research Academy cohorts four and five. She was integral to conducting an Integrated Research Review and changing practice, policy, and processes based on findings from peer-reviewed literature.

Sixth Secondary Presenting Author

***Corresponding Secondary Presenting Author***

Emelia C. Garcia, MSN, RNC-NIC  
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**Author Summary:** Emelia Garcia is a former Lubbock Christian University Master's in Science of Nursing graduate. Emelia is now Covenant Children's Hospital Neonatal Project Coordinator. She has also obtained her RNC-NIC.

Seventh Author

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**Author Summary:** This Elaine Emery she has been a Registered Nurse for 30 years and for the past 25 years she has been a certified Diabetes educator. Her passion is translational research in bringing best practices to the bedside in an effort to increase patient outcomes.

Eighth Author

Cindy Ford, PhD, MSN, BSN, RN, CNE  
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**Author Summary:** Dr. Ford has been a nurse educator for over 20 years. Her areas of interest are nursing leadership and research. She has presented nationally and internationally over a variety of topics. Her passion is seeing students succeed in new endeavors.

Ninth Author

Charles Randall Stennett, DNP, RN, CHSE  
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**Author Summary:** This author is a senior faculty and expert in simulation at an academic institution. His Doctor of Nursing Practice is in executive leadership. He co-leads teaching in the Research Academy initiative for the acute care facility.

Tenth Author

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**Author Summary:** Dr. Delaney has been a nurse for over 30 years and a nurse educator for the past seven years. Her passion is to help students succeed in returning to school to obtain a BSN and to see the importance of improving personal leadership skills within the nursing profession, so that they may become change agents.

Eleventh Author

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**Author Summary:** Profession experience: Research librarian for forty-two years and also serve as the nursing department liaison and participate with Center for Nursing Excellence Partnership. Research facilitator in Global, Culture, Health graduate nursing course for four years. Research partner and co-creator of evidenced based research tool (on-line supplemental text) with regional, national, and international nursing presentations.

**Any relevant financial relationships?** No

Twelfth Author

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**Author Summary:** Chief Nursing Officer supporting the development of the Research Academy collaborative. Acute care nurse executive approving and overseeing project. Key nurse leader in implementing research activity being presented.

Thirteenth Author

JoAnn D. Long, PhD, RN, NEA-BC  
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Department of Nursing  
Professor & Director of Nursing Research and Development  
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**Author Summary:** This author is the Director of Nursing Research & Development at Lubbock Christian University. This individual has experience teaching data science, evidence-based practice, research and statistics to nurses at the undergraduate and graduate levels. She is the co-author of an online EBP teaching tool used to assist faculty in teaching online search and critical appraisal skills to nurses.