

Nursing Research

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Editor's note: This is the 16th in a series of articles from the Penn Medicine Lancaster General Health Research Institute that describes ongoing research studies. Other active studies have been described in previous issues of this journal.

The Research Institute welcomes Dr. Christian Burchill as the guest coauthor of this Spotlight. Chris is director of nursing research and evidence-based practice, a position created for a nurse scientist who has an established research agenda as well as the ability to mentor LG Health clinical nurses and nurses in leadership positions in the conduct and dissemination of nursing research. He is a lifetime member of the Emergency Nurses Association and a member of the organization's Emergency Nursing Research Advisory Council.

Chris's research work focuses on the association of health care provider perceptions of psychological and physical safety with provider outcomes, with a special interest in workplace violence in all health care settings and best practices in emergency nursing care. Additionally, he serves as a co-investigator on a National Institute on Aging-funded multisite study investigating the effect of mobility techs on hospital length of stay and discharge disposition for older medical patients.

Physicians who wish to refer patients for any of the studies mentioned below are encouraged to contact the Research Institute at 717-544-1777. Other members of the LG Health staff who are conducting research and wish to have their studies described here are encouraged to contact the offices of JLGH at 717-544-8004.

Nursing is the “protection, promotion, and optimization of health and abilities; prevention of illness and injury; facilitation of healing; alleviation of suffering through the diagnosis and treatment of human response; and advocacy in the care of individuals, families, groups, communities, and populations.”¹ Many people are unaware that nurses conduct research that contributes to the body of evidence supporting the practice of nursing. In fact, nursing research has a long, rich history that continues to this day.

The history of nursing research dates back to England's involvement in the Crimean War (1853-1856) and Florence Nightingale's implementation of data-driven nursing practice. Nightingale was trained in mathematics by her parents, unheard of in that time

for women, and had her staff of trained nurses collect data on patient response to nursing interventions in British army hospitals. She transformed the data into a graphical representation she called the coxcomb graph so that policymakers at the time could more easily understand the effects of nursing interventions on patient outcomes in Crimea. She later used this data to demonstrate that reforms implemented throughout the British army would decrease unnecessary deaths from hospital-acquired infections regardless of geographic location or battlefield wound. Nightingale was the first woman elected to the Royal Statistical Society for her research work during the Crimean War and creation of the graphical coxcomb graph in 1858.^{2,3}

Following a report from the Institute of Medicine, nursing research became part of National Institutes of Health (NIH) funding priorities with its elevation to institute status – the National Institute of Nursing Research – in the early 1990s. Simultaneously, the American Academy of Nursing, an honorary affiliate arm of the American Nurses Association, was conducting research on how to address the critical nursing shortage in the 1980s.^{2,4}

Researchers found that a subset of hospitals had better nurse retention rates as well as patient outcomes, which they called Magnet hospitals. A common characteristic among these hospitals was their contribution to nursing research and implementation of evidence-based practice. Participation in and dissemination of a hospital's nursing research results subsequently became a requirement for Magnet designation.⁴

Lancaster General Hospital is a five-time Magnet-designated hospital, meaning that it met the Magnet requirements for nursing research at each designation. Standards for Magnet designation have been raised over the years, with current requirements necessitating completion of nursing research studies and internal and external dissemination of results, as well as proof of ongoing nursing research studies. Each entity within Penn Medicine has a nurse scientist as a member of its staff to assist with these efforts.



Here we present two LG Health Institutional Review Board-approved studies in progress as examples of research studies developed and led by LG Health nursing staff members with the potential to influence both nurse and patient outcomes in the future.

Pilot Study for a Multisite Retrospective Study on Emergency Department (ED) Blood Sample Hemolysis

Principal Investigator: Dr. Christian Burchill

Co-Investigators: Lorelei Ferre, BSN, BA, RN, SAFE, Clinical Nurse 2, Emergency Department; Christina Pierre, PhD, DABCC, FAACC, Clinical Chemist and Director, Clinical Chemistry and Coagulation Section, Department of Pathology and Laboratory Medicine

Background: Blood sample hemolysis occurs more commonly in emergency departments than in other phlebotomy sites, presumably due to pre-analytic factors. Blood sample hemolysis rates are associated with increased length of stay for patients in the ED and increased cost to the department. A 2021 study demonstrated that phlebotomy was primarily the responsibility of emergency nurses in the ED, but that hemolysis prevention best practices were not always employed.⁵ Data collected at LG Health, where phlebotomists are responsible for blood sample collection in the ED, demonstrated that ED hemolysis rates remain higher than in other settings.

Purpose: The purpose of this study is to explore characteristics of the organization and patient population associated with increased risk for blood sample hemolysis. Blood samples are routinely collected during intravenous catheter insertion in most EDs across the country, which significantly increases risk for hemolysis. Understanding patient and organizational characteristics associated with blood sample hemolysis would provide emergency nurses with the information they need to prioritize straight needle phlebotomy and begin to fill the gap in the literature about ED blood sample hemolysis rates.

Methods: Researchers will study deidentified data collected from LG Health ED-patient medical records to establish parameters for organizational and patient-related factors that might be associated with blood sample hemolysis. The researchers plan to establish feasibility for conducting a retrospective case-control study using data from a sample of all Penn Medicine ED visits.

Nurse Attitudes and Beliefs Regarding Mobilizing Patients: A Qualitative Descriptive Study

Principal Investigator: Eric D. Piasecki, MSN, RN, ACCNS-BC, CCRN, TCRN, SCRN, Clinical Nurse Specialist, Nursing Professional Development and Clinical Excellence

Co-Investigators: Melissa Craig, BSN, RN, CCRN, Clinical Nurse 4, Supplemental Staff; S. Kate Rouse, BSN, RN, CMSRN, Clinical Nurse 4, Intensive Care Unit; Jennifer Hutnyk, MSN, RN, CEN, Nurse Manager, 4 East/West; Dr. Christian Burchill

Background: Early and progressive mobility can decrease the risk of untoward outcomes for hospitalized adults, yet published research results and real-time audits at LG Health have demonstrated that getting patients ambulatory is only one of many aspects of care that nurses prioritize. Previous research focused on barriers and opportunities regarding patient risk for falls. Yet, researchers have not fully explored how nurses' attitudes may affect practice.

Purpose: The aim of this study is to explore nurses' attitudes and beliefs about patient mobility, with the idea that these are drivers of behavior change. Understanding nurses' attitudes and beliefs about patient mobility will allow for practice changes to be studied and implemented.

Methods: This study uses a qualitative descriptive method to explore clinical nurses' attitudes and beliefs about mobility on inpatient units at the Duke Street campus of LG Health. The study will use a convenience sample of those eligible nurses who agree to be audio recorded for an interview. Interviews and data analysis are currently in progress, and the study is open to participation.

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