

**Study protocol: Health system  
methods to improve nursing  
retention amidst ongoing COVID-19  
pandemic: a mixed-method study**

**Protocol #: 21-4768**

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# *COMIRB Protocol*

COLORADO MULTIPLE INSTITUTIONAL REVIEW BOARD  
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**Protocol #:** 21-4768

**Project Title:** Health system methods to improve nursing retention amidst ongoing COVID-19 pandemic: a mixed-method study

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## **I. Hypotheses and Specific Aims:**

This study aims to determine an objective compensation or mechanism of support from a healthcare system standpoint to aid in the retention of nursing staff amidst the ongoing COVID-19 pandemic. To understand this further, our evaluation will include recognizing strengths of each participants' current position, addressing relevant support from the healthcare system throughout this time of COVID-19, identifying areas for improvement in their jobs and motivational factors for retention, and assessing additional compensation measures to promote job satisfaction, provider well-being, and retention.

## **II. Background and Significance:**

COVID-19 has proven to be an unprecedented global pandemic since its initial outbreak, straining the healthcare systems in ways unimaginable. Today in the U.S., there have been over 900,000 deaths due to COVID-19, with numbers that continue to climb daily [1]. Despite community efforts of vaccination, masking, and social distancing, our hospitals continue to face challenges of resource depletion, lack of bed availability, and staff shortages. Nursing staff in particular, amidst a chronic nursing staff shortage nationwide, is facing high numbers of burnout, compassion fatigue, and low retention due to the mental and physical health toll associated with caring for COVID-19 patients and the reallocation of routine resources, according to recently published data [2, 3]. In addition to directly caring for COVID-19 patients, nurses taking care of other patient populations during this time are facing similar effects, dealing with reallocation of resources, higher nurse-to-patient ratios, and short staffing. Although research in the U.S. is relatively limited, it shows healthcare systems and institutions nationwide recognize this problem and the urgent need to provide improved, ongoing support to nursing staff during this dire time [2,3,4].

Recognizing the systemwide impact of COVID-19 and the implications it has on safe, quality patient care, bed availability, and its effect on other staff members, the administration has provided additional resources and means of social support with hopes of improving provider and staff retention, including provider bonuses and emotional support.

However, the coronavirus has proven its resilience in its ability to mutate and remain pertinent in our healthcare systems as numbers of infections and deaths continue to rise. As nurses continue to face increasing emotional and physical stress and worsening compassion fatigue and burnout, global healthcare systems continue to face the dire reality of losing staff and the subsequent sequelae that follow. Knowing this, there is an urgency to understand better how hospital systems may improve nursing retention. This study aims to evaluate different means of doing so while considering first-hand accounts from affected employees.

## **III. Preliminary Studies/Progress Report:**

## **IV. Research Methods**

- A. Outcome Measure(s):** This exploratory mixed-methods study will include qualitative, semi-structured interviews which will delve into nursing challenges during COVID, administration efforts, and aid in the development of nursing-generated administrative priorities, which will then be further explored in quantitative assessment across a broader sample size, using techniques such as ranked-choice voting distributed via email survey. Primary outcome measures will include identified barriers and facilitators to nurse retention as defined by study participants.
  
- B. Description of Population to be Enrolled:** Participants for the qualitative interviews will include current bedside nursing on both the Trauma/Surgical floor and Surgical ICU/Surgical Progressive Care Unit and clinical administrative staff at UCHealth – Medical Center of the Rockies. Other participants will also include prior nurses who have left their job on these respective units in the prior 24 months. Registered nurses, men and women, day-time and night-time nurses, full-time versus part-time nurses, and those with variable lengths of experience will be incorporated who have been or are currently involved with direct patient care during the COVID-19 pandemic. After initial study enrollment at this single institution, investigators may request human subjects division approval to expand recruitment to other units within Medical Center of the Rockies and other UCHealth hospitals. Quantitative assessments will be distributed inclusively to offer participation to all working RNs on the Trauma/Surgical units who meet inclusion criteria.

Adult hospital administrative staff and Registered Nurses who are or were directly involved with patient care on the Trauma/Surgical units over the past 24 months during COVID-19 will be eligible for inclusion. Exclusions include non-RNs (i.e., LPNs, CNAs) and nurses who have not had bedside experience in the past 24 months.

- C. Study Design and Research Methods:** Observational, mixed-methods, cross-sectional study of nursing staff on the Trauma/Surgical units and hospital administrative staff using qualitative semi-structured interviews and written quantitative survey instrument disseminated electronically.
  
- D. Description, Risks, and Justification of Procedures and Data Collection Tools:** This study will be performed using a comprehensive multimodal data collection method.

Approximately 12-20 confidential, in-depth, semi-structured personal interviews will be conducted. Interview participants will include current nurses who work on the Trauma/Surgical floor, Trauma/Surgical Progressive Care Unit (SPCU), Trauma/Surgical ICU, nurses who have left said units in the past 24 months, and the Medical Center of the Rockies administrative staff. Recruitment for interviews will be conducted via standard widespread email invitation to all nurses working on the Trauma/Surgical floor, SPCU, and Trauma/Surgical ICU. In addition, we will employ snowball sampling, meaning asking research participants to pass along the research team's contact information to others to participate in interviews. Recruitment of prior staff will be done exclusively using snowball sampling. Currently, employed participants will be provided with our contact information and asked to pass along to colleagues who have left whom they think may be interested in participating. Administrative staff will be recruited for interviews via standard email invitation. Subject recruitment will not be performed by direct personal contact with anyone.

Once a participant agrees to an interview, informed consent will be obtained via email prior to the interview. Interviews will be conducted in person or via Zoom by our research team. The interviewing team will include a Physician Assistant, a Registered Nurse, a Medical Doctor, and a research coordinator. All interviewers have completed CITI and conflict of interest modules, in addition to PhD-anthropologist-conducted qualitative interview training. Each interviewer's current role, clinical experience, and thus, positionality will be taken into account when determining who is interviewing who, focusing on professionalism, comfort, avoidance of pairings which reflect the disparity in traditional hospital authority hierarchy, and ease of communication between the interviewer/interviewee pair. Interviews will be recorded using a portable recorder or the recording

feature of Zoom, then transcribed. Prior to conducting Zoom interviews, anti-virus software and operating systems will be updated. Audio files will be immediately transferred to a computer and stored in a secure, password-protected healthcare system-managed server, then subsequently deleted from the device.

Secondly, using data derived from the semi-structured interviews via grounded theory methodology, a quantitative survey will be developed to evaluate identified priorities for compensation in a ranked manner; this will be sent out to all nursing staff on the Trauma/Surgical units via email at UCHealth – Medical Center of the Rockies.

Posed risks of these data collection methods include poor participation, selection bias, and lack of confidentiality. For the qualitative interviews, specific identifiers to include name and age will not be requested nor included. If these are provided unsolicited by the interviewee, they will be redacted and replaced with more broad classifications in order to extrapolate data from particular demographics (i.e., “I’ve worked here for seven years” would be replaced by “5-10 years”). For the survey, specific identifiers to include name and age will not be requested, nor will there be a place on the survey to capture granular data. Participants in the survey will select a box to specify gender, a broader age range, night vs. day shift, a broad range of amount of total experience, and how often they work. Efforts will be made to make selections broad enough to remove potential identifications to maintain confidentiality. These broad classifications will help analyze common themes or data amongst certain groups of study participants.

Audio files, transcriptions and survey responses will be stored in a secure, password-protected healthcare system-managed server; responses will be destroyed within five years.

Other risk includes psychological stress, as participation in the interview process or thoughts while filling out the survey may induce feelings of anxiety, sadness, regret, and emotional distress.

- E. Potential Scientific Problems:** Results will need to be cautiously interpreted, appreciating that widespread email invitation and voluntary surveys may over-represent individuals who are more responsive to email communication and those with strong opinions regarding potential opportunities for change. Furthermore, given the already taxed time of all healthcare staff, the response rate for surveys may be low, further limiting the representation of the sample.
- F. Data Analysis Plan:** Interviews will be transcribed, followed by coded and analyzed in DeDoose. Network analyses will permit visualization of themes and connection of themes. These will then be represented in a manuscript with narrative as well as de-identified quotations. Quantitative data will be presented as descriptive statistics. Multiple regression analysis may be employed if a singular outcome of interest (such as a popularly identified mechanism of change) is identified in the qualitative assessment and then further explored in the quantitative assessment to identify which demographic and/or opinion answers predict this outcome of interest.
- G. Summarize Knowledge to be Gained:** The goal of this mixed-methods human observational study is to gain a better understanding of answers to the following questions:
  - 1. Have nurses felt supported by the health system organization during the COVID-19 pandemic? If yes, how so?
  - 2. What has been the most beneficial means of organizational/administrative support to nurses within UCHealth during COVID-19?
  - 3. What is the most challenging part of work for the nurses during this time of COVID-19 in particular?
  - 4. What is one thing the UCHealth system can do to improve job satisfaction or intention to stay?

## **H. References:**

1. Centers for Disease Control and Prevention, [https://covid.cdc.gov/covid-data-tracker/#trends\\_totaldeaths](https://covid.cdc.gov/covid-data-tracker/#trends_totaldeaths)
2. Lavoie-Tremblay, M., Gélinas, C., Aubé, T., Tchouaket, E., Tremblay, D., Gagnon, M.-P., & Côté, J. (2021). Influence of caring for COVID-19 patients on nurse's turnover, work satisfaction, and quality of care. *Journal of Nursing Management*. <https://doi.org/10.1111/jonm.13462>
3. Alharbi J, Jackson D, Usher K. The potential for COVID-19 to contribute to compassion fatigue in critical care nurses. *J Clin Nurs*. 2020;29(15-16):2762-2764. doi:10.1111/jocn.15314
4. Lasater KB, Aiken LH, Sloane DM, et al. Chronic hospital nurse understaffing meets COVID-19: an observational study. *BMJ Quality & Safety* 2021;30:639-647.