

# Analyzing Health Care Professionals' Perception on Medication Administration Time and its Effects on Patient Well-Being

Farti Hamamjian, Nichole Telalyan, Fleuri Dindar, Natalie Markaryan Project Advisor: Dr.Brian Ma, PharmD Project Co-Advisor: Dr. Courtney Saeteurn

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#### **INTRODUCTION & ABSTRACT**

The study will be conducted at the Los Angeles General Medical Hospital. A world-class teaching hospital, Level-One trauma center, is a training site for the U.S. Navy, and more than 900 physicians complete their Graduate Medical Education in nearly every medical specialty and subspecialty.

About 1 in 5 adult patients in the hospital get delirium. Delirium is a state of confusion that comes on very suddenly and lasts hours to days, resulting in the individual not being able to think clearly, pay attention, or be aware of their environment. This may lead to higher healthcare costs, longer length of hospitalization, and higher workload. Modifiable risk factors that cause delirium include a number of infusions and a number of medications administered. Another modifiable risk factor is poor sleep, which can be caused by nighttime awakenings. "Poor" sleep may heighten the risk of delirium. Knowing how physicians, nurses, and pharmacists perceive medication administration times will allow for the formation of protocols that will prevent delirium caused by poor sleep resulting from nighttime medication administration.

The main focus of our study focuses on nighttime medication administration and its influence on delirium risk. We would like to compare and contrast how physicians, nurses, pharmacists, pharmacy and medical students, pharmacy and medical residents perceive delirium risk regarding medication administration timing. The purpose of this study is to understand how different professions respond to the risks associated with nighttime medication administration and the risk of delirium.

## **OBJECTIVE**

- Compare and contrast how different professions (physicians, nurses, pharmacists, pharmacy and medical students, and pharmacy and medical residents) perceive delirium risk in response to medication administration times
- Determine if medication class affects medication administration between physicians, nurses, and pharmacists

## MATERIALS & METHODS

Our research is based off of a survey study Liekert Scale where we provide a survey with questions to the physicians, nurses and pharmacists at the Los Angeles General Medical Center on the "General Medicine Floor". The survey will be conducted via email with a series of questions that we have formulated, and then we will analyze the data from the collected responses. Questions will be answered in a format of a scale with the options being "never, sometimes, and always". Survey will take 2-5 minutes to complete. There will be a total of 11 questions.

Survey Questions: Format of a scale with the options being "Always, Often, Sometimes, Rarely, Never" for questions 1-11.

- 1. What is your profession? Physician, Physician resident, Medical Student, Nurse, Pharmacist, Pharmacy Resident or Pharmacy Student
- 2. How often do you think about medication administration timing? Always, Often, Sometimes, Rarely, Never
- 3. How often do you give recommendations to other healthcare providers regarding the timing of medication administration? Always, Often, Sometimes, Rarely, Never
- 4. How often do you receive suggestions from other healthcare providers regarding the timing of medication administration? Always, Often, Sometimes, Rarely, Never 5. How often do you consider the appropriateness of nighttime administration? Always, Often, Sometimes, Rarely, Never
- 6. How often do you consider re-timing a medication? Always, Often, Sometimes, Rarely, Never
- 7. How often does the class of drug influence your assessment on when to administer a medication? Always, Often, Sometimes, Rarely, Never
- 8. How often have you considered that the timing of a medication administration could contribute to cases of severe delirium? Always, Often, Sometimes, Rarely, Never
- 9. How often a patient's circadian rhythm is considered before medication administration? Always, Often, Sometimes, Rarely, Never
- 10. How often do you ask patients if they have a preferred time for medication
- administered? Always, Often, Sometimes, Rarely, Never
- 11. How often have you had patients tell you that their sleep was disturbed because of the timing of their medication? Always, Often, Sometimes, Rarely, Never

#### **RESULTS**



■ always ■ often ■ sometimes ■ rarely ■ never

	Never	Rarely	Sometimes	Often	Always
How often do you think about medication					
administration timing?	0	0	1	4	5
•					
How often do you give recommendations to					
other healthcare providers regarding the					
timing of medication administration?	0	1	4	4	1
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How often do you receive suggestions from					
other healthcare providers regarding the					
timing of medication administration?	1	6	2	0	0
How often do you consider the					
appropriateness of nighttime					
administration?	0	2	2	3	3
How often have you considered that the					
timing of a medication administration could					
contribute to cases of severe delirium?	0	1	5	2	2
How often a patient's sleep circadian rhythm					
is considered before medication					
administration?	1	1	6	2	0
How often do you ask patients if they have a					
preferred time for medication					
administered?	6	2	2	0	0
How often have you had patients tell you					
that their sleep was disturbed because of the	•	_		•	
timing of their medication?	2	3	1	2	2

## **DISCUSSION**

Our study focuses on the attitudes of healthcare providers towards the timing of the medication and the relation of the administration timing to the risk of delirium, our results showed that medication administration timing is taken into consideration. Additionally, when deciding about the time of medication administration, the possibility of delirium is taken into account. Deciding on what time a medication should be administered to the patient is a collaborative effort between healthcare professionals. However, the patients' preferences in in terms of medication administration timing is not taken into consideration, even after informing the healthcare professional that a particular timing of administration is causing them sleep disturbances.

#### CONCLUSION

Based on the results we had after evaluating the survey responses, we were able to conclude that healthcare professionals do take medication administration time into consideration. One limitation we had was not getting responses from physicians on the survey questions and that was needed to determine the collaboration between the healthcare professionals.

#### REFERENCES

- •Who We Are. LA General Medical Center.
- https://dhs.lacounty.gov/lageneral/who-we-are/
- •What is Delirium? | American Delirium Society. https://americandeliriumsociety.org/patients- families/what-
- is-delirium/ •Hoch J, Bauer JM, Bizer M, Arnold C, Benzinger P. Nurses' competence in recognition and management of delirium in

older patients: development and piloting of a self-assessment

- tool. BMC Geriatr. •2022;22(1):879. Published 2022 Nov 19.
- doi:10.1186/s12877-022-03573-8
- •Van Rompaey, B., Elseviers, M. M., Schuurmans, M. J., Shortridge-Baggett, L. M., Truijen, S., & Bossaert, L. (2009). Risk factors for delirium in intensive care patients: a
- •(London, England), 13(3), R77. https://doi-
- org.libproxy1.usc.edu/10.1186/cc7892

prospective cohort study. Critical care

•Howell, A, Seung, H, So, JY, et al. Nighttime medication administration and patient perception of sleep in the intensive care unit. J Am Coll Clin Pharm. 2023; 1-9. doi:10.1002/jac5.1795

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