Improving Geographical Cohorting of Patients Admitted Under Hospitalist Service

Dear Editor:

Hospitalized patients frequently are assigned to specific inpatient wards to improve patient outcomes, a practice known as geographical cohorting or localization.[1] In situations where the hospital beds allocated to hospitalist teams reach capacity, it may become necessary to place patients in inpatient units that typically are not reserved for hospitalists. To mitigate this, hospitalist groups often implement cohorting programs aimed at consolidating care within specific units or reducing the number of units visited by each hospitalist daily. Previous research has shown that localization positively affects hospitalists' workflow, quality of patient care, and productivity, albeit with some challenges.[2,3] We evaluated the effectiveness of a protocol in minimizing patient dispersion and improving quality of care indicators at an academic medical center in Southeast Wisconsin.

This study was conducted from June 2022 through July 2023 at a 711- bed academic medical center with 578 medical/surgical beds. The hospitalist teams had an average daily census of 255 patients throughout the study. Out of the total hospital beds allocated for non-critical care services spread across 21 units, hospitalist teams were assigned 152 beds in 6 units. This resulted in a gap of 103 medicine patient beds and a considerable patient dispersion. To address these issues, an updated localization protocol was implemented in January 2023.

The updated protocol included assessing bed capacity in each assigned medicine unit and the average census managed by the hospitalist teams. To manage high patient volumes, reassignments were made for home teams and their primary units, which determined the allocation and census of overflow patients. Further, home teams were assigned secondary units to effectively manage the overflow. While these secondary units usually do not have beds specifically assigned for medicine patients, they were utilized to accommodate a high number of overflow patients from the medicine teams.

The primary measured outcome was dispersion, defined as the number of different units in which hospitalists had patients. Secondary outcomes included length of stay index (LOS-I), mortality index, 72-hour readmissions, patient satisfaction scores, and care coordination rounds (CCR) attendance. We also conducted a survey to capture feedback from hospitalists. A *t* test was used for comparison of outcomes before and after the implementation of the protocol. We found that dispersion decreased after protocol implementation, with average dispersion preimplementation of 7.33 units visited daily and postimplementation of 6.51 units (a net difference of 0.82, $P = 0.005$) (Table). While LOS-I also decreased, there were no differences in mortality index, 72-hour readmissions, patient satisfaction, or CCR attendance. Our survey findings showed 39% of hospitalists responded, with the majority reporting either improvements or no change in workflow and satisfaction.

Our study showed that a protocol to enhance hospitalist localization without adding newly assigned beds was effective at reducing dispersion. The overall impact was small but statistically significant. This was additionally associated with a reduction in LOS-I, although causation cannot be established. Other metrics, including CCR attendance, mortality, readmissions, and patient satisfaction were not affected. Subjective assessment by hospitalist team members was either positive or neutral. It is possible that with larger reductions in dispersion, these measures may be affected more significantly, so further research is warranted.

—Precious Anyanwu, BS; Kavita Naik, MD; Sanjay Bhandari, MD, MS; Pinky Jha, MD, MPH; Barbara Slawski, MD, MS

Table. Geographical Dispersion and Outcomes

	Mean		SD		*P* value
Outcome	**Pre[a]**	**Post[a]**	**Pre[a]**	**Post[a]**	
Dispersion	7.33	6.51	0.59	0.19	0.005
Length of Stay Index	0.84	0.79	0.03	0.03	0.013
Mortality Index	0.22	0.24	0.09	0.03	0.549
72-hour readmissions	2.62%	2.93%	0.31	0.41	0.194
Care coordination rounds attendance	97%	98%	1.26	2.24	0.354
Patient satisfaction	71.8%	71%	4.54	4.58	0.748

Abbreviation: LOS, length of stay.
[a]Pre and post refer to preimplementation and postimplementation of the geographic localization protocol.

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Author Affiliations: Medical College of Wisconsin (MCW), Milwaukee, Wisconsin (Anyanwu); Division of General Internal Medicine, MCW, Milwaukee, Wisconsin (Naik, Bhandari, Jha, Slawski).

Corresponding Author: Pinky Jha, MD, MPH, Section of Hospital Medicine, Division of General Internal Medicine, Medical College of Wisconsin HUB for Collaborative Medicine, 7th Floor, 8701 W Watertown Plank Rd, Milwaukee, WI 53226; email pjha@mcw.edu; ORCID ID 0000-0002-7893-188X

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Integrating Artificial Intelligence Into Radiology Resident Training: A Call to Action

Dear Editor:

The integration of artificial intelligence (AI) has become a game-changing element in the radiology landscape, offering immense potential to enhance patient care. However, it also poses substantial challenges in the training of radiology residents. As AI begins to assume more routine tasks, traditional training curricula must evolve to prepare residents for this new era.

Recent studies demonstrate that AI can significantly improve diagnostic accuracy and efficiency.[1,2] Research by Ito et al shows AI integration advances in diagnosing cervical intraepithelial neoplasia (CIN2-3)[2-3] and invasive cancer.[1] Additionally, AI also can be utilized to diagnose colorectal cancer, leading to remarkable improvements in image-based diagnosis precision and enhanced detection of polyps and adenomas.[2] This means that residents will need to acquire new skills to work effectively alongside AI. According to a recent systematic review, it has been observed that the current radiology resident curricula lack AI-related topics.[3] This is concerning, as residents will need to understand the limitations and potential biases of AI algorithms, as well as how to integrate AI into their clinical decision-making processes.

To integrate AI into the curriculum, a 5-step approach can be followed. This includes forming an AI expert team, assessing residents' knowledge, defining learning objectives, matching objectives with effective teaching strategies, and implementing and evaluating the curriculum.[4]

Some may argue that AI will replace radiologists altogether, making traditional training programs obsolete. However, AI assistants are likely to support radiologists by freeing them up from more complex tasks.[5] A study introduced a novel AI approach, labeled "explainable AI," which aims to strike a balance between human intellect and artificial intelligence, fostering collaboration and compliance with legal requirements.[5]

In conclusion, we urge all stakeholders in the field of radiology education to recognize the impact of AI on resident training and take proactive steps to adapt training programs accordingly. By including AI-related topics in curricula and prioritizing high-value tasks, we can ensure that residents are fully equipped to work effectively in this new era.

—Nageen Waseem, MBBS; Muhammad Saad Farooq, MD

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Author Affiliations: Dow University of Health Sciences, Karachi, Sindh, Pakistan (Waseem); Mercy Hospital Joplin, Joplin, Missouri (Farooq).

Corresponding Author: Muhammad Saad Farooq, MD, 1102, Rex Ave, Joplin, MO 64801; email saadfarooq6@gmail.com; ORCID ID 0009-0007-5734-9288

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Vigilance Needed in Polypharmacy Drugs

Dear Editor:

Kakes et al recently highlighted a case where pancreatitis was suspected to be caused by doxycycline.[1] We appreciate the authors for highlighting this uncommon case and raising awareness about drug safety worldwide. Additionally, we have included some key points related to this circumstance.

The case report indicates that cephalexin was initiated to treat a surgical site infection and was taken for 4 days at a dosage of 500 mg 3 times daily. The patient was switched to a different antibiotic due to stomach discomfort. It is important to note that the initial adverse reaction experienced by the patient – stomach upset – could be attributed to gastritis or early signs of pancreatic injury. For example, a case reported by Alim et al mentions acute pancreatitis due to cephalexin in a 55-year-old female who took 500 mg of cephalexin preventively. She presented to the emergency department (ED) 3 hours later with sudden upper abdomen pain radiating to her back. Her lipase levels were 889 units/liter on initial tests.[2] Afterward, she received doxycycline treatment for 10 days. Throughout the antibiotic regimen, ibuprofen 800 mg was taken intermittently for 7 days.

Additionally, aside from the author's citations, several other cases provide strong evidence linking suspected ibuprofen use to the progression of pancreatic damage resulting in pancreatitis.[3-5] It is evident that the first injury was caused by cephalexin, followed by continued injury from doxycycline and ibuprofen. According to the World Health Organization's causality assessment, this is considered a possible case with events related to drug use over time. The reaction also could be influenced by illness or other medications, and details about drug withdrawal may be unclear. Further, this case has been classified as level 5 on Hartwig's Severity Assessment Scale due to the need for intensive care and an extended hospital stay.

—Pugazhenthan Thangaraju, MD; Sajitha Venkatesan, MD

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Author Affiliations: All India Institute of Medical Sciences, Raipur, Chhattisgarh, India (Thangaraju, Venkatesan).

Corresponding Author: Pugazhenthan Thangaraju, MD, Assistant Professor, Department of Pharmacology, All India Institutes of Medical Sciences, Raipur, Chhattisgarh India; email drpugalfrcp@gmail.com; ORCID ID 0000-0002-4090-2004

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