

# For long-term care facilities, prioritizing part-time employee schedules can boost consistency of care

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In the United States, a multi-billion-dollar industry employs nurses and nursing assistants to provide long-term care in facilities such as nursing

homes, residential care facilities, and home health agencies. A new study has examined how these facilities—some of which have residents receiving care from more than 40 different nursing assistants in a month—should assign workers to resident groups on each shift to maximize the consistency of care.

The study found that scheduling practices for [part-time](#), per diem, and contract workers can drive poor consistency of care in [long-term care](#) facilities; prioritizing the consistent assignment of these workers can significantly improve consistency of care, which is associated with better quality of life for both residents and workers.

Conducted by researchers at Carnegie Mellon University (CMU) and Cornell University, the study is published in *Manufacturing & Service Operations Management*.

"Our findings are relevant to the daily staffing practices of more than 15,600 [nursing homes](#) in the United States, especially for the more labor-intensive nursing assistant role, but also for nursing roles," explains Alan A. Scheller-Wolf, Professor of Operations Management at CMU's Tepper School of Business, who co-authored the study. "We find that relatively simple changes in how facilities schedule workers can have a significant impact on consistency of care, which should also improve quality of care, and the satisfaction of residents, their families, and staff."

The amount of hands-on care delivered and the extended time horizon of care have important implications for long-term care staffing practices. In particular, concerns about quality of care have led practitioners to emphasize the idea of consistency of care, focusing on such matters as building relationships between staff and residents, reducing residents' distress, and improving clinical outcomes. During the pandemic, consistency of care (minimizing the number of unique caregivers seen

by any given resident) has also been emphasized to limit the spread of COVID-19.

Yet based on the authors' analysis of shift rosters from three mid-Atlantic nursing homes, common practices in assigning part-time and contract workers significantly impair consistency of care: In many facilities, full-time workers are first assigned to the same unit over a period of time, and part-time workers are then assigned to fill in gaps.

Researchers examined the relationship between consistency of care and rostering decisions; that is, how caregivers are assigned to different units for each shift. Specifically, they analyzed data from more than 15,000 shifts worked by nursing assistants at the three nursing homes over several months, comparing actual rosters to optimal schedules that maximize consistency. Then they compared the performance of the optimized rosters to the facilities' schedules.

Repeatedly assigning full-time workers to a home unit and giving low priority for home-unit assignment to part-time workers can result in high levels of inconsistent care, the study found. In contrast, consistently assigning part-time workers and having some flexible full-time workers can significantly increase consistency of care. Flexibility among full-time workers helps achieve consistency because their higher frequency of work makes a reassignment away from their home unit less likely to cause a problem in inconsistency since full-time workers can often work multiple shifts in a single non-home unit.

The authors' studies indicate that nursing homes that prioritize part-time workers can significantly improve consistency of care, potentially reducing the average number of different nursing assistants a resident interacts with by 20 to 30 percent each month. Most of the benefits of improved consistency of care can be achieved even if many of the full-time employees are still granted scheduling priority to work in their

home unit.

Furthermore, for facilities that house residents in large units (four to six nursing assistants per day or evening shift), splitting these units into smaller ones and prioritizing part-time employees can potentially reduce the level of inconsistency by 50 percent.

The researchers provide strategies for nursing homes that schedule shifts manually, and strategies for software companies that are automating scheduling long-term care shifts. Further work is needed to bring the principles of the study into practice; work with assisted care homes and software companies is ongoing.

"Facilities should seek as much flexibility as practicable from full-time workers to allow part-time workers to be assigned more consistently and improve their overall inconsistency level," suggests Vincent W. Slaugh, Assistant Professor of Operations Management at Cornell's S.C. Johnson College of Business, who led the study.

"The insights from our analysis offer a simple cost-free solution to improve quality of life for both residents and caregivers. Nursing homes that use more part-time and [contract workers](#) due to the [labor shortage](#) can use these insights to improve the experience of those workers."

**More information:** Vincent W. Slaugh et al, Flexibility and Consistency in Long-Term Care Rostering, *Manufacturing & Service Operations Management* (2022). [DOI: 10.1287/msom.2022.1174](https://doi.org/10.1287/msom.2022.1174)

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