

Title:

Staffing Optimization: Improve Staffing to Improve Nursing Worklife

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Session Title:

Improving the Quality of Nursing Worklife: Using Technology and Human Resources Solutions

Slot:

I 06: Monday, 30 October 2017: 3:45 PM-4:30 PM

Scheduled Time:

4:25 PM

Keywords:

big data, labor optimization and nurse staffing

References:

Gavigan, M., **Fitzpatrick**, & Miserendino, C. (2016). Effective staffing takes a village: Creating the staffing ecosystem. *Nursing Economics*, 34(2), 58-65.

Fitzpatrick, T. (2014). Does the package delivery industry hold the answer to our scheduling problems? *American Nurse Today*, 9 (3), 48-54.

Abstract Summary:

A growing body of evidence in a wide variety of diverse industries suggests that systematic and scientifically based process improvement that leverages mathematical optimization can produce a myriad of innovative solutions to intractable nurse staffing problems. Logistics science offers new insight into planning and deploying clinical human capital.

Learning Activity:

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
Explain how labor optimization can be used for nurse staffing.	Technical sub-system Logistics science (1) analysis or demand planning, (2) optimizing resources, and (3) executing the optimized model.
Demonstrate how mathematical modeling can simulate different staffing solutions	Mathematical modeling with multiple staffing variables Optimize and implement new staffing model

Abstract Text:

The technical subsystem of an organization consists of the tools, techniques, procedures, skills, knowledge, and devices used by members of the social subsystem to accomplish tasks of the organization. The most direct impact of technology is upon organizational productivity, not surprising since organizations acquire technology to increase speed and efficiency. Inevitably any survey of nursing worklife reveals issues around staffing and scheduling. Yet many traditional approaches still in use for planning and deploying human capital are not effective in meeting current organizational objectives.

Internally, staffing offices are chaotic, budgets are exceeded, staffing is frequently misaligned, and dissatisfaction with work schedules abounds. Externally, a growing number of state legislatures are mandating nurse staffing levels. The growing misalignment between supply and demand suggests that the current methods used to project labor demand, and to budget, staff, and schedule nurses have become both increasingly more complex and less effective. The multifaceted staffing problems we now face cannot be solved using historic averages or simple algebraic formulas. Because there are multiple dimensions to each staffing subprocess that interacts with or is somehow impacted by other subprocesses, mathematical models are needed along with the power of computer science to simulate solutions for complex staffing problems.

A growing body of evidence in a wide variety of diverse industries suggests that systematic and scientifically based process improvement that leverages mathematical optimization can produce a myriad of innovative solutions to intractable business problems. Logistics science offers new insight into planning and deploying clinical human capital. Optimal outcomes are possible if there is recognition of the complexity and interconnectedness of the systems and processes involved in workforce planning and deployment. The process of optimizing human capital in a complex environment involves 3 distinct steps: (1) analysis or demand planning, (2) optimizing resources, and (3) executing the optimized model. This final session will outline how optimization modeling works for nurse staffing in order to improve the quality of nursing worklife.