Implementation of a Self-Scheduling System for Hospital Nurses: Guidelines and Pitfalls

Lotte Bailyn, Ph.D., MIT Workplace Center
Robin Collins RN, BSN, Brigham and Women's Hospital
Yang Song, BS, MIT Sloan School of Management
#WPC0019

Submitted to *The Journal of Nursing Management*

For information regarding the MIT Workplace Center or for additional copies of this working paper, reference #WPC 0019 (see list on final page) please email workplacecenter@mit.edu, call (617)253-7996 or visit our website: web.mit.edu/workplacecenter

Table of Contents

Abstract

Introduction 1

Method 2

Findings 3

Questionnaires 4

Assessment and Follow-up 5

Table 1 8

Table 2 8

Table 3 9

Appendix I 10

Appendix II 11

Appendix III 12

Appendix IV 13

References 14

© 2005. Lotte Bailyn, Robin Collins, Yang Song. All rights reserved. This paper is for the reader's personal use only. This paper may not be quoted, reproduced, distributed, transmitted or retransmitted, performed, displayed, downloaded, or adapted in any medium for any purpose, including without limitation, teaching purposes, without the authors' express written permission. Permission requests should be directed to lbailyn@mit.edu

Abstract

Implementation of a Self-Scheduling System for Hospital Nurses: Guidelines and Pitfalls

Aim

To describe a model of self-scheduling by hospital nurses and the difficulties involved in implementation.

Background

A self-scheduling program was implemented on one nursing floor for a year. The researchers encountered pitfalls that are not covered in current self-scheduling research literature. A number of modifications were made, which are detailed.

Findings

While the nurse manager relayed the directions of the self-scheduling program to the nurses, some did not adhere to the rules of the program, which caused tension and stress for the manager and the nurses alike. Although self-scheduling did increase morale and gave nurses more control over their personal schedules and enhanced their ability to give good patient care, the attempt floundered.

Conclusion

Self-scheduling can be used positively to offer nurses more control over their schedules and to enhance patient care. But if nurses see this as an individual entitlement instead of a balance between individual and unit benefit, everyone loses. Miscommunication of rules and lack of adherence to self-scheduling guidelines can bring forth mixed feelings of tension and anxiety to the nurse manager as well as the nursing staff.

Introduction

The idea of self-scheduling is not a new one and was first documented in 1963 by Jenkinson, who initiated a self-scheduling program at St. George's Hospital in London (Hung 2002). Most present literature on self-scheduling agrees to its benefits including some of the following main points:

1) Empowering nursing staff and increasing their control to balance their personal and professional lives, particularly helpful to nurses who have children or part-time schooling
2) Increasing predictability and flexibility of the nursing schedule and at the same time, freeing the nursing manager for other tasks
3) Enhancing the communication and interaction in the work environment to stimulate cooperative community building

Indeed, such benefits can be built if the self-schedule is implemented correctly. However, in some cases, unfavorable conditions might develop such as complaints of peer pressure, favoritism and unavailability of staff (Teahan 1998). Under these circumstances one might encounter challenges to "sell" self-scheduling to a skeptical nursing staff. As Miller suggests, the nursing staff must participate in each aspect of the change to self-scheduling in order to make it successful (Miller 1984).

One particular suggestion that several literature state is to make a guideline early on in the implementation process. The best idea would be to draft a guideline at one of the first committee meetings and have relevant short- and long-term goals developed immediately after in order to keep the focus of the self-scheduling concept (Beltzhoover 1994). Furthermore, implementation should not be rushed and should be explained carefully and thoroughly to the staff.

The staff should agree to further detailed guidelines to determine the number of days the staff has to fill in the requested shift. Also, maximum and/or consecutive shifts should be set at this time (Phillips 1990).

Another possibility of self-scheduling that has been explored in recent literature is the use of a computerized rostering system mentioned in Ball's article "Shifting the control" (1997). Nurses would first enter the hours they wished to work into a time rostering software system, the computer program would then process their requested shift times and produce a 'best-fit' schedule, which would incorporate as many of the desired shifts as possible. The rostering software system also rated each hour on the nursing schedule according to popularity. Nurses who chose to work the unpopular hours were awarded with high scores. The nurses with the highest scores were the ones least likely to have to work any unfulfilled hours in the schedule, or the gap hours.

Before the implementation of the self-schedule, the nursing staff should attend a unit meeting to clarify the rules and guidelines that perhaps are unfamiliar. Surveys in some self-scheduling implementations have shown that nurses would have liked more preparation on the topic, underlining the enormity of the cultural shift that is involved in introducing a change to the scheduling process (Ball 1997).

To the extent possible, we followed these guidelines in our experiment.

Method

The unit consists of 70 RNs who oversee 31 total beds, of which 12 are step-down beds that require extra patient care from the TICU nurses. The signup sheet that the nurse manager prepares lists all the nurses down the column and 28 days across the top. In each cell there is a letter corresponding to the shift of that nurse on that day, or whether she is on vacation or on a day for education, jury duty, or whatever. Nurses on fixed schedules (some of the senior ones) would always be assigned to the same times. Other nurses knew the overall pattern of their schedule (e.g. 3 12-hour days or 2 12-hour and 2 8-hour days per week), but did not know on which specific days these shifts would fall. There were guidelines about Fridays and evening/night rotations, depending on seniority, based on union contract. These guidelines are shown in Appendix I. The schedule gets posted one month in advance of the starting day. If

nurses want to make a change they have to fill in a change request to the nurse manager who then had to reconfigure the schedule.

Our first attempt was to duplicate this format in the self-scheduling mode. But this turned out to be unworkable, since it was not clear when a full roster for any particular time period was met. We tried keeping track by both addition and subtraction, but without success. We then devised the format shown in Appendix II. Into this template, the nurse manager entered the fixed schedules, therefore showing clearly where there are places available. In order to give everyone a chance to sign up early, the nurses were divided into three groups, with each group having a one-week period for sign up before the schedule was opened to the other groups. This idea was based on a suggestion in Miller's article on "Implementing self-scheduling" (1984).

Findings

During the time of the self-scheduling experiment from January 4, 2004 to January 1, 2005, we closely monitored the number of change requests and sick calls, as well as the annoyance level and hours spent on scheduling by the nurse manager. These data are shown in Appendix III. We also received feedback and comments about the self-scheduling program and its progress through four questionnaires that were distributed as the program went on.

The number of change requests decreased dramatically after the first month of the self-scheduling implementation but then reverted somewhat but generally decreasing except for the last two months in the year due to the scheduling of Thanksgiving and Christmas (see Table 1).

While the number of change requests decreased over time, the number of sick calls per month remained relatively steady at approximately 45.

We also recorded the time the nurse manager used to make the monthly nursing schedules. Compared to her annoyance, the time spent on the schedule decreased while her annoyance eventually rose (taken into account the annoyance level of scheduling nurses to work on national holidays) (see Table 2).

Toward the end of the implementation process, the nurse manager became more frustrated at the miscommunication between the nursing staff and herself. Several nurses did not follow the directions laid out in the self-scheduling program, including sign-up times and shift restrictions. Some of the nursing staff did not fully understand that self-scheduling did not provide guaranteed times for nurses to work but rather allowed for more control and flexibility in one's schedule. But it could only reap these benefits if everyone followed the guidelines.

Questionnaires

Four questionnaires were handed out during the year, the first one before the experiment started. The responses from the questionnaires guided the researchers in determining the positive and negative sides of self-scheduling in this unit.

From these questionnaire responses, we determined the following findings (refer to Table 3):

1) Nurses' reported need for control and flexibility both decreased gradually as the self-scheduling implementation progressed.
2) At the same time self-scheduling gave the nurses more time to spend with their families as well as providing what they felt was better patient care.

In addition to the questions, comments provided by the nursing staff on the benefits and problems of self-scheduling are useful. Here are some of the benefits that were commented on:

> *"I don't like day/night rotation but love self-scheduling because it gives me the best opportunity/chance to get a good schedule as am/pm scheduling."*
>
> *"I really enjoyed it. I felt as though I could schedule my work around my personal needs without filling out multiple time request forms. I felt like I had more control. Even when my schedule wasn't exactly what I self-scheduled, I just figured it was changed because of needs and discussed any conflicts with my manager. I feel it is a great moral booster and worth the effort."*
>
> *"Hope we can keep doing the self-scheduling. I feel more in control of my life as opposed to waiting to see what is going to be done to me."*
>
> *"Managers so much more willing to work with sudden changes – it makes all the difference."*

"I enjoy the self-scheduling. It allows me to participate more with my family since nursing requires weekends and holidays."

"Self-scheduling works out nicely when there is a say in your schedule and is easier to work the schedule around your family if you can put yourself on or off certain days so you don't have to hassle others to work for you."

"Better than someone making schedule; gives you options for day off and some flexibility."

Nearly all the nurses commented that self-scheduling offered them more flexibility at the workplace. However some comments were more cautious, stipulating conditions on self-scheduling and highlighting some of the problems encountered.

"Self-scheduling works well when I get the schedule I requested – however I understand that staffing issues arise. From time to time, things need to be changed but it definitely work well if you get the schedule you requested."

"I am able to schedule around planned events although many times I do not know 2-3 months in advance what events there are unless it's a wedding."

"Good: Being able to schedule days off for more events, doctors appointments, etc. without filling request forms is good – scheduling myself to work days that fit my life (like every Friday) and not worry about protocol. Bad: When the shift you scheduled yourself for has to change to meet staffing needs."

"I am able to schedule around appointments etc, but only if I know them 2-3 months in advance and if I find out after the schedule is posted, it's not easy or sometimes possible to get the time off."

"I do not like the fact that others can sign up before you if you are not scheduled to work for a while when the new sheets come out. It should be on a rotating basis."

"I have been able to pick the shifts/days off I want but the schedule I choose compared to the final schedule is completely different. This is very frustrating. I will be paying closer attention to my schedule in the future and requesting the final schedule reflect what I request."

Assessment and follow-up

What eventually stopped the experiment is exemplified by the last comment. Nurses would insert their names, even though a particular time period was already full, and leave large

blocks of time without a full roster. Nurses would also sign up for consecutive day and night shifts without realizing the consequences or sign up for more shifts than they were scheduled to work. When the nurse manager then shifted people around in order to fulfill the staffing needs, they became annoyed that their wishes were not honored. In the end the nurse manager stopped the experiment.

In a follow-up two months after the experiment ended, we asked the nurses how they felt about self-scheduling. In the 10 nurses that we questioned, we found that 7 of them were indeed sorry that self-scheduling ended. They liked the control and freedom in their personal lives that self-scheduling allowed. However, if a nurse was in the third and last group to sign up for the schedule or just got back from vacation, the nurse became frustrated at the choice selection of shifts left over. On the other hand, the nurses did acknowledge that the three groups rotated for the sign up schedule, making the process the fairest possible.

We also asked why the nurses thought that self-scheduling did not work in this particular case. The answers were quite interesting and varied. Some believed the only reason that self-scheduling did not work was because it created too much work for the nurse manager. Others believed that a few nurses were ruining self-scheduling for everyone, that is, a few nurses did not follow the rules as they were supposed to. Furthermore, one nurse commented that the nurses who did not follow the sign up rules thought they could get the best schedule and try to "slide by" the nurse manager. This perception that only a few occasionally broke the rules does not agree with what actually happened. The ending of this experiment is not because only a few nurses were making mistakes.

To understand what happened one has to consider what underlies such an experiment. It means bringing together the needs of the individual nurses with the needs of the unit to the benefit of both. The data that show that both nurses' personal lives and their patient care improved with self-scheduling show the advantage of such an approach. But it is necessary, also, that everyone keeps both sides – both the individual employee and the need of the unit – continuously in mind; what has been called a dual agenda (Rapoport et al., 2002) must be

continuously kept in the foreground. What happened here is that the needs of the unit were ignored by the nurses who put their personal needs ahead of unit requirements. They began to see the schedules they signed up for as an entitlement, not as one part of a joint agreement to enhance both their lives and the functioning of the floor. And thus the experiment was stopped and everyone lost. They lost some of the control they had over their own time, which they had valued highly, and the benefits of self-scheduling – e.g. bringing nurses together, easing the burden of the nurse manager, enhancing morale and patient care – were lost.

Why this happened in this case is difficult to say. Because of the pressures of the work on this floor it was not possible to get all the nurses together to plan the experiment. The researchers met in individual groups with some of the nurses, but this may not have been sufficient. Also this was a large roster of nurses – more than 70 – and most successful experiments in the literature had been done with many fewer nurses. Finally, the nurse manager felt that perhaps the union environment made nurses more conscious of their particular duties and hence felt that the kind of cooperation needed to make this work was beyond their duties. It should be said, however, that the union representatives approved of the experiment.

So what have we learned? We have learned that the advantages of self-scheduling accrue both to the nurses and to the patient care of the unit. But to make it work it requires collective commitment to both sides of the dual agenda. Engaging such commitment in a large unit is not easy, as this example shows. Although the nurse manager continuously inquired about the progress and adaptation of self-scheduling throughout the experimental period via regular emails, staff meetings, and impromptu discussions on the floor, in retrospect, we probably should have spent more time with more of the nurses even before starting the experiment.

Table 1: Number of Change Requests

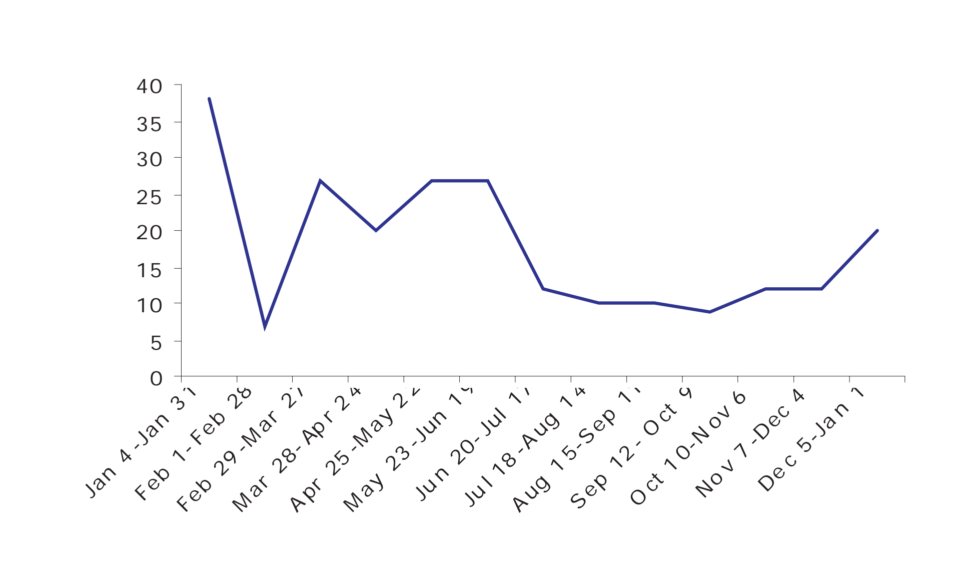


Table 2: Time Spent on Schedule and Annoyance Level of Nurse Manager

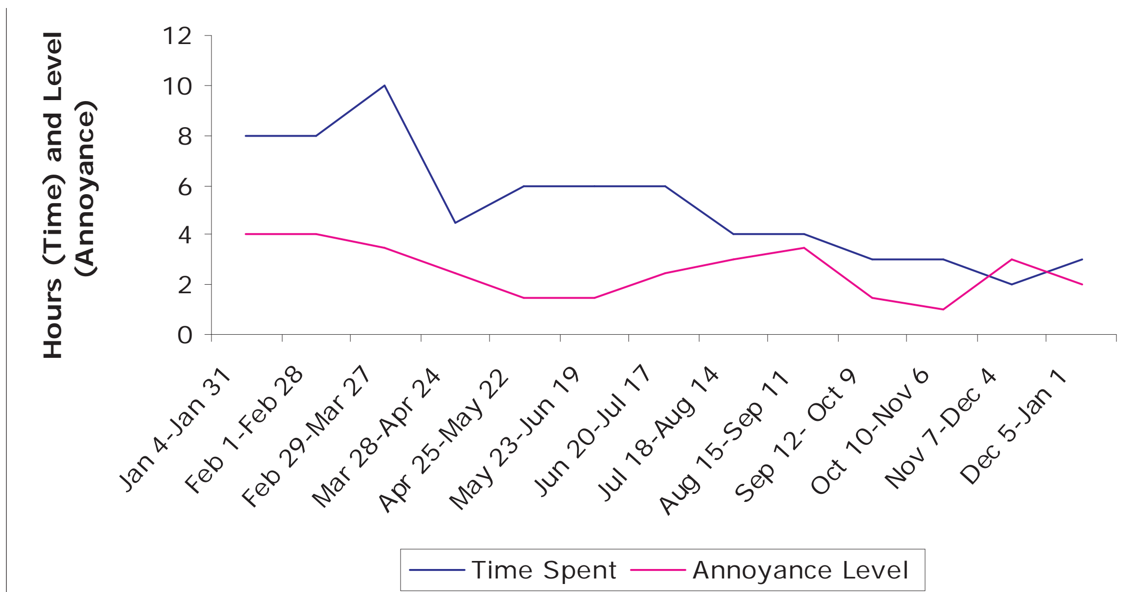
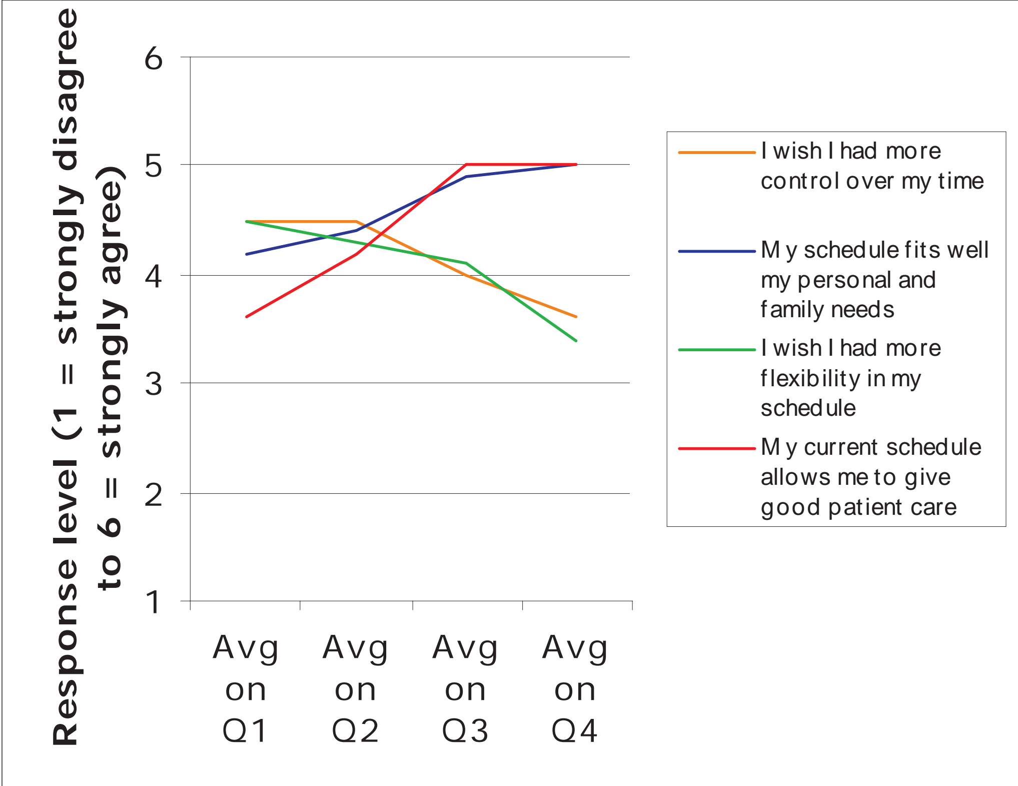


Table 3: Nurse Response Averages Taken over the Four Questionnaires



Appendix I: Guidelines Used to Implement Self-scheduling

Scheduling Guidelines

I – Number of Nurses

Monday – Saturday	nurses in charge	TICU nurses	staff nurses
Day and Evening	3	6	6
Night	3	6	5
Sunday			
Day	3	6	6
Evening	3	6	5
Night	3	6	4

II – Fridays and Weekends

2 Fridays/month

36 hour people (3x12)	up to every other weekend
40 hour people (2x8 + 2x12)	every third weekend

III – Rotation

< 3 years	50% day/night rotation
3-8 years	25%
> 8 years	can elect not to rotate

Appendix II: Sample Sign-up Sheet for Nurses

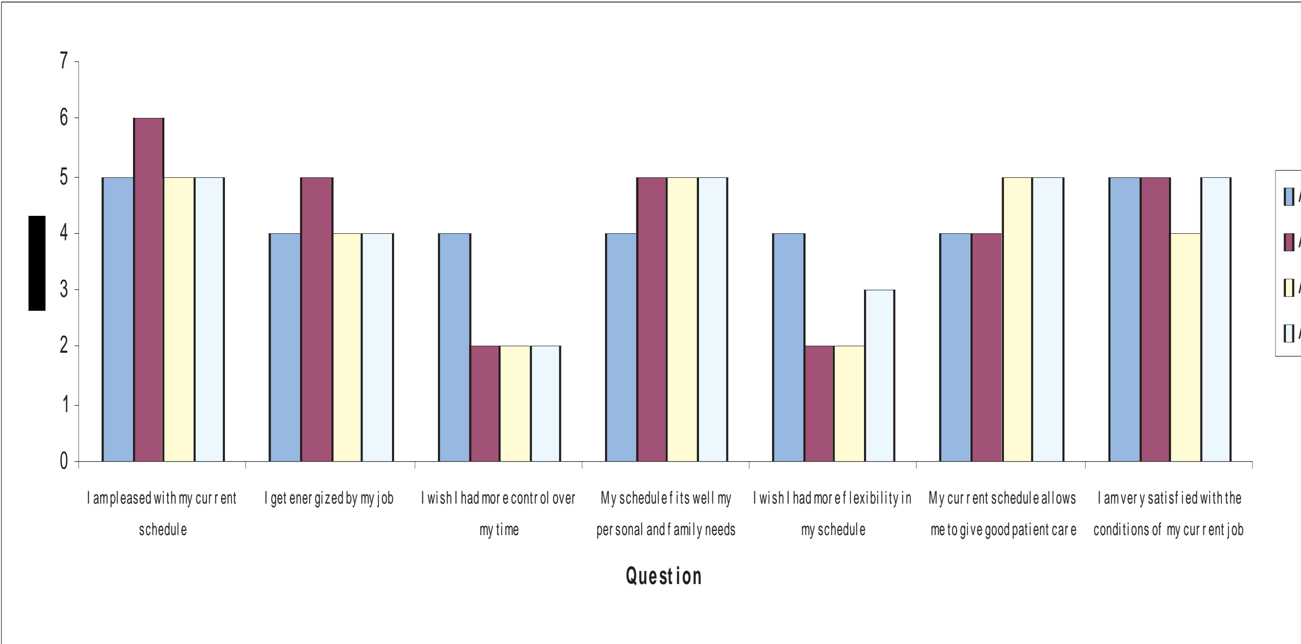
	RNs - 4/shift		week (1):______________________________	
	Day 7a-3p	Eve 3p-7p	Eve 7p-11p	Night 11p-7a
Sunday	1 Nurse X	Nurse X		
	2			
	3			
	4____________________	____________________	____XXXXXXXXXX____	____XXXXXXXXXX____
Monday	1			
	2			
	3			
	4____________________	____________________	____________________	____XXXXXXXXXX____
Tuesday	1			
	2			
	3			
	4____________________	____________________	____________________	____XXXXXXXXXX____
Wednesday	1			
	2			
	3			
	4____________________	____________________	____________________	____XXXXXXXXXX____
Thursday	1			
	2			
	3			
	4____________________	____________________	____________________	____XXXXXXXXXX____
Friday	1			
	2			
	3			
	4____________________	____________________	____________________	____XXXXXXXXXX____
Saturday	1 Nurse X	Nurse X		
	2			
	3			
	4____________________	____________________	____________________	____XXXXXXXXXX____

Appendix III: Data Record

Schedule Dates:	Posted:	Change requests	Sick calls	Nurse manager's time (hrs)	Nurse manager's annoyance (1-10=total misery)
Jan 4-Jan 31	5-Dec	38	49	4	8
Feb 1-Feb 28	2-Jan	7	48	4	8
Feb 29-Mar 27	30-Jan	27	50	3.5	10
Mar 28-Apr 24	27-Feb	20	55	2.5	4.5
Apr 25-May 22	26-Mar	27	48	1.5	6
May 23-Jun 19	23-Apr	27	52	1.5	6
Jun 20-Jul 17	21-May	12	35	2.5	6
Jul 18-Aug 14	18-Jun	10	35	3	4
Aug 15-Sep 11	16-Jul	10	54	3.5	4
Sep 12- Oct 9	13-Aug	9	22	1.5	3
Oct 10-Nov 6	10-Sep	12	41	1	3
Nov 7-Dec 4	8-Oct	12	36	3	2
Dec 5-Jan 1	5-Nov	20	61	2	3*

*Nurse Manager's annoyance level was 10 if taken into account for scheduling around the holiday season.

Appendix IV: Sample Questionnaire from a Nurse



References

Ball, J. E. (1997). "Shifting the control: Evaluation of a self-scheduling flexitime rostering system." European Nurse 2(2): 100-110.

Beltzhoover, M. (1994). "Self-scheduling: An innovative approach." Nursing management(4): 81-82.

Hung, R. (2002). "A note on nurse self-scheduling." Nursing Economics 20(1): 37-39.

Miller, M. L. (1984). "Implementing self-scheduling." Journal of Nursing Administration 14(3): 33-36.

Phillips, H., and Brunke, L. (1990). "Self-scheduling helps nurses balance their personal & professional lives." RNABC News (Jul-Aug): 15-16.

Rapoport, R., Bailyn, L, Fletcher, J.K., and Pruitt, B.H. (2002). Beyond Work-Family Balance: Advancing Gender Equity and Workplace Performance (San Francisco: Jossey-Bass).

Teahan, B. (1998). "Implementation of a self-scheduling system: a solution to more than just schedules!" Journal of Nursing Management 6(6): 361-68.

MIT Workplace Center
and Massachusetts Work-Family Council Initiative Publications

Working Papers

Workforce Issues in the Greater Boston Health Care Industry: Implications for Work and Family
Mona Harrington, Ann Bookman, Lotte Bailyn, and Thomas A. Kochan (#WPC0001)

Enhancing Patient Care Through Enhancing Employee Voice: Reflections on the Scanlon Plan at Boston's Beth Israel Medical Center
Mitchell T. Rabkin, MD and Laura Avakian (#WPC0002)

An Employment Policy Agenda for Working Families
Thomas A. Kochan (#WPC0003)

Work Redesign: Theory, Practice, and Possibility
Lotte Bailyn and Joyce K. Fletcher (#WPC0004)

Supporting Caring Caregivers: Policy and Practice Initiatives in Long Term Care
Susan C. Eaton and Barbara Frank (#WPC0005)

Reinventing the Health Care System from Within: The Case of a Regional Physician Network in Germany
Katrin Kaeufer, Claus Otto Scharmer, and Ursula Versteegen (#WPC0006)

Meeting the Family Care Needs of the Health Care Workforce: Reflections on the 1199 Child Care Fund
Carol Joyner (#WPC 0007)

Bridging the Gap Between Workplace Demands and Family Obligations: Lessons from the United Auto Workers/Ford Partnership
Bill Corey and Richard D. Freeman (#WPC0008)

Connecting Work and Family in the Higher Education Workplace: Past Successes, Future Directions
Kris Rondeau (#WPC0009)

Maintaining a Patient Focus in the Flexible Work Environment
Nancy Kruger, DNSc., RN and Nancy Hickey, RN (#WPC0010)

Professions Theory vs. Career Theory: Explaining Physician Employment in HMOs
Forrest Briscoe (#WPC0011)

Education, Families, and Workplace Policies: Their Roles in a Knowledge-Based Economy
Thomas A. Kochan (#WPC0012)

Restoring Trust in the Human Resource Management Profession
Thomas A. Kochan (#WPC0013)

Broadening the Horizons of HRM: Lessons for Australia from Experience of the United States
Russell D. Lansbury and Marian Baird (#WPC0014) [This paper provides commentary on Working Paper #WPC00013].

Bureaucratic Flexibility: How Organizational Processes Function to Provide Career Flexibility
Forrest Briscoe (#WPC0015)

From Here to Flexibility in Law Firms: Can It Be Done?
Lauren Stiller Rikleen (#WPC0016)

Job Autonomy vs. Career Flexibility: The Role of Large Bureaucracies in Professional Labor Markets
Forrest Briscoe (#WPC0017)

Restructuring Time: Implications of Work-Hours Reductions for the Working Class
Brenda A. Lautsch and Maureen Scully (WPC #0018)

Restructuring Time: Implications of Work-Hours Reductions for the Working Class
Brenda A. Lautsch, Faculty of Business Administration, Simon Fraser University
and Maureen A. Scully, College of Management, University of Massachusetts Boston
(WPC #0019)

Work-Family Council Initiative Working Paper Series

The State of Working Families in Massachusetts
Neeta Fogg, Paul Harrington, and Thomas A. Kochan (WFC #0001)

Teaching Cases

Beyond the Part Time Partner: A Part Time Law Firm?
Brendan Miller, Thomas A. Kochan and Mona Harrington. October 2003 (WPC #100)

Part Time Partner Redux: So We Solved the Problem, Didn't We?
Thomas A. Kochan. September 2002 (WPC #101)

General Publications

***"Labor-Management Partnerships for Working Families"*;** Edited by Susan C. Cass. Contributors: Carol Joyner, Bill Corey, Richard D. Freeman, Kris Rondeau (2003 MIT/MIT Workplace Center)

***"Who Cares?: Building Cross-Sector Partnerships for Family Care"*;** Edited by Susan C. Cass. Contributors: Stephanie Davolos-Harden, Judith Presser, Marta T. Rosa (2005 IT/MIT Workplace Center)

To obtain a copy of any of these publications, please visit our website at: web.mit.edu/workplacecenter or call at (617) 253-7996