

Shift Planning in the Care Sector

Ergonomics, autonomy and well-being

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Innovative working hours for the care sector

This is a summary of the book *Työvuorosunnitelu hoitoalla: Ergonomia, autonomia ja hyvinvointia* (Shift planning in the care sector: Ergonomics, autonomy and well-being). The book discusses the management of working times and the themes of shift planning from the viewpoint of the work activity. Shift planning is observed from the viewpoint of the care sector, but the book is also beneficial to those planning work shifts for period-based work in other types of workplaces. The book is suited for both beginners and persons with more experience in shift planning.

I

Opportunities of shift planning

Irregular working times are common in some forms of care work and impact both the well-being of patients and the health and performance of workers. Differences in the work shift arrangements and working times of care work between different countries are often clear. Different societies and cultures are reflected in the working time practices of care work.

A number of features of the work have an impact on job satisfaction among care workers, such as sufficient personnel, participatory design, support and appreciation by management, opportunities for career advancement, wages and benefits, working conditions, duties and working time arrangements. Experienced control of working times arrangements increases job satisfaction. Self-designed work shifts that coincide with the worker's own working time preferences are a central factor in the maintenance of resources. A working time culture supportive of workers with families also promotes coping at work.

Regulation of working times

Working Time Directive

The member states of the European Union are bound by the Working Time Directive 2003/88/ EY, serving as the basis for national legislation on working times. The Working Time Directive is one of the principal directives on working life in the EU, as it confirms the minimum requirements regarding health and safety for the organization of working time.

Working Hours Act

In Finland, working times are regulated by the Working Hours Act 9.8.1996/605. The Working Hours Act determines the general provision on working times, stating period-based working time as an exception available to certain sectors. Period-based working time allows for highly flexible shift planning for regular working time as well as working-time arrangements departing from the general provision and overtime premiums.

Collective agreements

The majority of personnel in the care sector are employed by municipalities, in which case the General Collective Agreement for Municipal Personnel (KVTES) is applied. Care sector personnel are also employed by private sector, the state and the Evangelical Lutheran Church of Finland. For these employees, collective agreements for the sectors in question are applied.

From regulation to planning

Efficient and purposeful organization of operations must be accounted for in shift planning. Working time arrangements are affected by a number of different factors.

The organization of working time is decided on by the supervisor. Good shift planning develops operations and promotes equality, the well-being of personnel and coping at work.

Reality and practices

The 'Promotion of innovative working times in the care sector' project implemented a survey with the aim of gathering information on working-time practices and solutions to issues associated with the planning and implementation of working times. The survey was implemented in collaboration with labour market organizations. A total of 328 municipal care-sector supervisors and employees involved in working-time planning responded to the query. The respondents came from a number of different areas in care work: units of hospital care, elderly care and children's day care were the most widely represented.

Characteristics of units that responded to the query:

- the most common operating hours were 24/7
- the rota is prepared by charge nurse or equivalent
- individual wishes are usually accounted for
- exchanging shifts between workers does not present problems
- the roster is irregular
- the reference period is three weeks
- the roster usually contains at least two consecutive days off, one out of three weekends off and equal distribution of days off
- individual working-time arrangements include unpaid leave, job alternation leave, part-time work, part-time childcare leave, study leave and part-time pension
- the personnel is committed to their work and find their work motivating and rewarding.

Opportunities of working-time organization

There is a reasonable amount of research information on the impacts of shift work on health. Shift and night work appear to be linked to numerous symptoms and diseases that result from disturbances in the physiological sleep pattern caused by irregular working-time arrangements. A disturbed sleep pattern also has psychological and social consequences. The temporal discrepancies of shift work from a social perspective can present problems in establishing the right work-life balance. Attempts to reduce the hazards of shift work require the integration of the viewpoints of workers, employers and society.

Efforts to prevent the hazards of shift work are directed at both working-time arrangements and the worker. The coping of the individual in shift work is aided by tools such as bright light therapy, opportunity take a nap during night shift, education and counseling, a healthy lifestyle, sufficient health checks and medication. Strain from shift-work can be reduced through the organization of working time, development of the shift system and adequate breaks.

From morning to evening or from evening to morning

From the viewpoint of the worker's coping at work, it would be beneficial to apply the ergonomic principles of shift work regarding work shifts, work periods and rest times in the preparation of rotas. Due to the longer total working time, the application of ergonomics in shift planning is of course more challenging in period-based working time compared to solutions developed in industrial workplaces. Efficient planning requires a sufficient number of employees in the shift system at any one time.

Characteristics of an ergonomic shift system include:

- regularity
- a rapidly forward-rotating system
- 8 to 10 hour shifts
- a minimum of 11 hours of free time between shifts
- maximum work periods of 48 hours and
- unbroken periods of free time, also on weekends.

Quantity of work

The planning of work means the matching of tasks and people in relation to both working times and the quantity of work. Shift planning also requires the distribution of appropriate quantities of work. The quantity of work has an impact on the loading experienced as well as the health and work capacity of the care worker. When calculating the amount of personnel in shift planning, it is also necessary to account for both foreseeable and unexpected absences. This would require the development of substitute systems and the availability of substitutes also in practice.

Night work

Night work is indisputably the most difficult work shift for persons working three shifts. Staying up at night and sleeping during the day are against human biology, which can cause a great variety of problems physically, mentally as well as socially. When arranging work shifts for work to be performed for full 24 hours, it is important to apply both research information and common sense.

Recommendations for night-shift planning:

- The amount of permanent night work should be minimized.
- If it is not possible to reduce the amount of night work, a fast rotation is preferable to a slow one.
- The number of consecutive night shifts should not exceed two or three.
- The worker should have at least two days off following night shifts.
- Permanent night work is not recommendable to the majority of workers.
- Permanent night work must be voluntary.
- Use of shorter shifts; it is recommended that night shifts are shorter than other work shifts, eight hours according to the Directive.

How many consecutive night shifts?

One night shift

- Traditionally single night shifts are not recommended to avoid making the worker face the hardest night shift, i.e. the first, every time.
- Doing a single night shift at a time is easier compared to consecutive nights.
- A transfer from evening shift to night shift is natural to many people.

Two consecutive night shifts

- If the person is able to stay up and sleep during the day, the second night is easier than the first.
- Doing two consecutive night shifts enables weeks without night work.

Three consecutive night shifts

- If the person is able to stay up and, in particular, sleep during the days, it pays to concentrate night shifts.

Four or five consecutive night shifts

- Regular shift systems in industrial workplaces often feature four or five consecutive night shifts.
- In three-shift work, long periods of night work are more difficult than short ones.
- A certain build-up of sleep debt seems inevitable in the case of several consecutive night shifts, depending on the number of nights followed by too short sleep.

Six consecutive nights

- A system featuring a 'night-shift quota', in which case each worker could do, for example, one period of six night shifts in six weeks.

Seven nights or continuous night work

- Seven nights, seven days off is one of the most unusual shift-work arrangements in care work.
- A regular system that leaves every other weekend free.
- Work strain is increased by the 10-to-11-hour duration of the work shifts.
- The system should be observed from the viewpoint of the Occupational Safety and Health Act, the responsibility of the employer and the realization of equality and fairness in the work community.

Overly long work shifts

Work shifts longer than the 10-to-12-hour maximum duration stated in collective agreements are increasingly popular in care work. Adoption of work shifts as long as 14 to 15 hours has been proposed. Reasons given for such proposals have been continuity in care on the one hand and long periods of free time on the other. From the viewpoint of strain, overly long work shifts are problematic.

The prolonging of work shifts should always be based on a need emerging from the work itself, such as improving the flow or quality of the work. For example, long shifts planned in advance are an option that provides workers with more control over their work than doing unplanned overtime. The improvement of shift work ergonomics is another important factor to consider.

Long work shifts (more than 8 hours) can be considered only if

- a long shift is suitable considering the workload and the nature of the work
- there are adequate breaks in the shift
- the shift system is designed to avoid the accumulation of fatigue by allowing enough time for recovery between shifts
- absences are handled using a sufficient number of substitutes
- no one is required to do overtime
- exposure to substances hazardous to health is restricted
- full recovery from work is possible.

Overtime

Flexibility in working times, such as overtime, is used to respond to an unpredicted increase in the need for services. In period-based working time, overtime is calculated in hours per period.

Overtime may increase fatigue and reduce work performance as an added demand and thus result in excessive stress. The time spent on travelling to work contributes to the strain. Loading caused by overtime is highlighted among workers who have no control over when they are expected to do overtime. Vast amounts of overtime are likely to create conflict between work and family life. Moreover, overtime should be avoided in connection with overly long work shifts.

Avoiding repeated unplanned overtime is important from the viewpoint of well-being as well as the economy. From the viewpoint of coping, it is recommendable to reward overtime with free time rather than financial remuneration. Unrewarded overtime should not exist.

Working time bank

A working time bank is a locally agreed upon system for balancing work and free time that is used to save, borrow or combine working time, earned free time or financial benefits transformed into free time. Examples of these could consist of evening the balance at the end of the reference periods of regular working time or flexitime, compensations for additional work, overtime or inconvenient working hours, annual holidays or holiday pay leave.

In the municipal sector, the working time bank is one element in a selection of flexible working times and working time systems. In the municipal sector, the terms of the working time bank are agreed upon locally. The terms must be written into a contract that contains the scope of application, content, how to take the time off, the functionality of the bank and other necessary aspects.

The working time bank can be used for flexibility needs springing from both production reasons and the personal life of the worker. For example, accumulated overtime can be rewarded in free time instead of money. A central feature of the arrangement is increasing management of working times by the workers themselves. However, saving working time for later use is rarely appropriate in case of fixed-term work contracts.

Annual working time

The use of annual working time is intended to increase flexibility according to operational needs. Annual working time could be the solution for units where the amount of patients gets congested during a certain period of the year and at other times it is often quiet. Variation in the amount of work between different days of the week, weeks or seasons can be accounted for in working-time planning to render the use of working time more efficient. The employees' preferences can be incorporated into shift planning and the allocation of days off.

Using the annual working time system, it can be agreed that the working time follows the demand for the services in a flexible manner. More working time is allocated to periods when the need is greater and less for times when the need is reduced. The reference period for regular working time can be determined at 52 weeks. The beginning and end dates of the reference period must be clearly stated. All terms must be included in the contract, including the maximum amount of hours the workers are allowed to exceed or fall behind the regular working times during the reference period.

Working time autonomy

Good shift planning is based on the notion that working times are designed for the job to be done and for the workers doing that job. Preconceived models do not always exist. Good shift planning accounts for legislation and collective agreements, considerations to do with economy and production, individual needs of workers as well as health and safety aspects.

Experiencing a sense of control over work is a significant contributor to well-being at work. This means the worker's opportunity to influence working conditions, content and versatility of work and the ability to participate in decision-making concerning one's own work. The workers' opportunities to influence their working times constitute another aspect of this control. When workers are able to participate in the planning of their own work shifts, this is called communal shift planning or working time autonomy.

In working time autonomy, workers and work communities have the right to make independent decisions in shift planning within the limitations imposed by the Working Hours Act, collective agreements and the operations of the organization.

Perhaps the best way to examine working time autonomy is from the viewpoint of participatory design. Participatory design is one way to draw attention to both operational demands and the viewpoints concerning work-life balance. However, participatory design does not work on its own. Efficient cooperation requires the structuring of the planning process in a way that allows enough room for participation. There is also a need for methods by which the joint planning can be carried out.

In working time autonomy, the shift planning is based on the functional organization of work and the content of the work to be done.

In addition to improving efficiency, the process aims to promote work-life balance irrespective of irregular working time arrangements. The whole work community is responsible for the functional operations of the unit and for equal and fair consideration of the individual needs of the workers. The duty of the supervisor is to support and guide their subordinates in shift planning when needed.

Working time autonomy is not about dictation or picking out shifts. Success is based on clearly established goals and rules and trust between management and personnel. The planning produces a proposed rota, where the work shifts are distributed in accordance with the operational goals of the ward and jointly agreed upon rules. The responsibility for the final roster always lies with a representative of the employer.

II

Shift planning in the ward

Perspective: Ward-level design of work

Shift planning is part of the process of designing the operations of a ward. Other elements include workflow design and personnel planning. It is good to bear in mind that the concepts of workflow design and personnel planning are described here in a simplified form.

Workflow design includes elements such as the continuity of care, the continuity of information and back-up plans for unexpected situations. The continuity of care is planned through the use of care lists and primary nursing.

The care list is a tool used on the planning of the daily work flow. To prepare a care list, a list of patients and the work roster are needed. The work roster indicates the persons working at any one time and the patient list the persons to be cared for. The care list is useful for instance when attending to patients whose care requires working with a partner. If the work shift is to include a substitute, this information is also contained in the care list, and the patients to be attended by the substitute have been allocated advance. This way, the care list will show the patients that the substitute is expected handle alone and the patients whom they will need help attending to.

The continuity of information is maintained through verbal and written reports and other open tools such as folders (including care lists), notebooks and whiteboards. Situations that prevent workflow as planned or the implementation of the roster are the most problematic with view to both work loading and the outcome of the care work.

A typical problem situation is when someone is absent unexpectedly and no substitute is available. If the ward is able to execute a back-up plan, it is not necessary for anyone to prolong their shift. Is it possible to do something differently or postpone some duties until later? If no back-up plan is possible and no substitute is available, someone from the ward will need to cover the extra work caused by the absence.

An important principle in personnel and work-shift planning is that the right number of staff is working at the right time and in the right place so that operational peaks and slow moments are both accounted for. Moreover, workflow and well-being at work is improved by occasionally allocating one person over the minimum number of staff per work shift to handle any work that has been left pending.

A central requirement for implementing a planned roster is having a substitute available for unexpected absences. The availability of a substitute familiar with the work to be done in the ward has been solved in number of different ways. The ward can have its own permanent substitute. The organization can maintain a substitute or resource bank that can help solve the problem. The ward can also have a regular substitute, such as a student or a person who has retired from the ward. The student or pensioner will come to work when needed, and they are familiar with the routines in the ward and ready to begin work immediately.

Towards joint shift planning in the wards

The central idea in the ‘Towards joint shift planning’ model is to transition from shift planning implemented by a single person to joint planning via a four-stage process. In different stages of the process, the personnel adopt different roles and duties in shift planning. First, the ward can identify their current stage in the transition process.

Stages of joint shift planning:

- 1) The charge nurse completes the roster alone.
- 2) The charge nurse is assisted in the preparation work by one or two other persons appointed for the job.
- 3) In the independent stage, everyone enters their own shifts into the roster.
- 4) At the joint planning stage, everyone must also consider the preferences of others when completing the roster.

At each stage, in addition to personal preferences, it is important to consider the staffing and competence needs in the ward as well as the principles of equality and fairness created for the purposes of planning.

In the first stage, the personnel have fewer opportunities to impact their work shifts than in the fourth stage. In the first stage, participation is realized mainly through writing down staff preferences for the period to be planned in a separate notebook. In the fourth stage, the element of participation has been broadened: accounting for competence and staffing needs, the personnel prepares, jointly and independently, a workable roster that adheres to the jointly agreed upon rules and is then approved by the superior.

The transition from stage 1 to stage 4 can take, for instance, two years. The questions of equality and fairness need to be resolved at every stage. The questions of equality and fairness increase in importance as the number of working time preferences to be taken into consideration increases and the involvement of personnel in the process is expanded.

If the ward identifies its current stage as stage 1, stage 2 can be the most convenient step to take next. In the model presented here, each stage represents the 'next small step' towards joint shift planning. There is no shortcut that leads directly from stage 1 to stage 4.

Changes to approved work rota

Changes to the rota can be caused by a variety of different reasons. A typical case is when someone is absent unexpectedly. If no substitute is available, someone from the staff must do the extra work caused by the absence and prolong their shift. Personnel planning and other factors coinciding with the unexpected absence contribute to the extent of the changes required in the work rota.

- If a worker (person 1) can continue their work shifts after the prolonged shift as planned in the work rota, the change has no impact on the work shifts of other people or the planned rota.
- If the prolonged working time means that person 1 must have their daily rest during the next shift planned for them and is thus not able to do the next shift, someone else (person 2) from the ward must then do the shift uncompleted by person 1. This again means that the work shifts marked down for person 2 will be altered, which can then have further consequences in the joint rota.
- If the competence (who has the competence needed in the shift) and recovery situation (someone may have the competence but is not able to do the shift due to need for recovery) impact the selection of the person to do the missing shift, an unexpected missing of a shift can cause a complex chain of changes in the accepted work rota.

Proposal for ideal shift planning

Shift planning is the sum of a number of different factors.

1. Shift planning is based on the operations of the ward and the staffing and competence needs deriving from those operations.
2. Shift planning departs from working-time preferences and individual, rota-specific wishes. It may be worthwhile to perform a systematic charting of more general working time preferences in the ward.
3. The quality and fairness principles to be followed in difficult situations have been discussed among the staff, and the principles have been jointly approved. For example, what should be done in a situation where, based on working time preferences, parts of the rota are becoming over- or under-staffed?
4. A rota based on working-time preferences can be prepared by the person in charge of the rota, either independently or jointly.
5. It is also possible to state a preference for an ergonomic work rota.
6. From the viewpoint of recovery, the best situation would be one where everyone opts for an ergonomic rota.
7. The objective is that once a rota is approved, the number of new preferences brought up by staff (and consequent changes) would be minimized.
8. Sufficient recovery is accounted for.
 - The need for pre-arranged longer shifts has been discussed among the staff, and joint decisions have been made. A long work shift can be appropriate for instance to enable the treatment of one patient from start to finish. This can increase a sense of control over work.

- The situation where a greater number of consecutive shifts without days off are needed has been discussed among the staff, and joint decisions have been made. Similarly, the practices regarding consecutive night shifts have been discussed and decided on jointly.
 - Compensation for additional working time can be made, for instance, in full days off.
 - The practices associated with prolonging a shift due to unexpected absences and the limits of doing so have been discussed and agreed upon.
9. Ways to handle unexpected absences have been incorporated in the personnel plan. In addition to competent staff, the implementation of a rota requires the availability of competent substitutes or sufficient staffing in the ward for example to enable management of unexpected absences. Managing the absences means that no one is made to prolong their shift and no changes are introduced in the rota.
10. The goal is a work rota that can be implemented with minimal changes.