HEABC

SHIFT ROTATION MANUAL

A GUIDE FOR HEALTH CARE PROFESSIONALS

Prepared through a joint effort by
the Health Employers Association of British Columbia and by
the British Columbia Nurses' Union

Revised September 2003

In consideration of the cooperative effort by Health Employers Association of British Columbia and the British Columbia Nurses' Union in the preparation of this manual, we request:

Should any party other than those represented by HEABC or BCNU wish to use all or part of this manual, we ask that you seek permission from either HEABC or BCNU.

Revised: September, 2003

OBJECTIVES

This “teaching tool” is designed to:

1. Help you adapt to and live with your work schedule and resulting lifestyle as best you can.

2. Help you develop both a physiological and sociological understanding of why problems occur and what you can do to avoid or alleviate them.

3. Help you develop standard and extended work day rotations.

4. Help you implement standard and extended work day rotations.

Sixty-six years ago, a nursing textbook described shift work this way:

> “An abnormal condition - - trying to the nerves, digestion and temper.”

The Technic of Nursing, 1930

COPING TIPS - FOR AN "ABNORMAL CONDITION"

Lessen or eliminate noise before sleeping. Unplug the phone, get an answering machine, or wear earplugs. Use "white sound", such as a fan, to mask noises.

Have children eat lunch at school. Tell friends and neighbours about your schedule; ask them to call you only during your awake hours.

Time meals carefully. Afternoon workers should have the main meal in the middle of the day instead of the middle of the work shift. Night shift workers should eat lightly throughout the shift and have a moderate breakfast. In this way, they should not get too hungry while sleeping during the day, and digestive discomfort should be minimal.

Avoid excessive use of antacids, tranquillizers and sleeping pills. It is healthier to watch what you eat and when you eat and use relaxation techniques to aid sleep.

Use dietary aids. Before going to bed, eat a high-carbohydrate meal or drink some warm milk. Milk contains L-tryptophan; both L-tryptophan and carbohydrates release serotonin, a sleep-inducing brain chemical.

It is also helpful to limit your intake of caffeine and alcohol; caffeine is a stimulant, so overconsumption may cause restlessness and insomnia, and alcohol is a depressant that interferes with the normal sleep cycle.

Eat light, well-balanced meals at regular times. Avoid snacking to overcome feelings of fatigue. Also avoid overeating, heavy foods, and starvation diets. If possible, eat with family or friends on a regular schedule.

Establish a sleep schedule. Avoid frequent napping. Instead, plan to sleep at a regular time and for several consecutive hours. Maintain this schedule consistently. Establish a pre-sleep ritual, such as brushing your hair 100 times or slowly cleansing your face. When you wake up, change from night into day clothes.

If your average sleep time consists of only four to six hours, take a nap in the evening before going to work. When you have a night off duty, be sure to maintain your sleep/wake schedule by staying up most of that night.

Exercise regularly - - 20 minutes of exercise at least three times each week - - though not just before bedtime. Jogging, walking and aerobic dancing are examples of exercise that will reduce stress and feelings of fatigue and increase your sense of well-being.

Don't feel that you have to do this alone. Ask your co-workers to tell you about their experiences on the night shift. Veteran night nurses can offer a lot of help to newcomers.

Socialize. Strive for a set pattern of time off, so that you can easily plan night-time social events well in advance.

Seek social contacts, through phone calls, visiting with friends, and pursuing hobbies, classes.

Participate in social activities with other shift workers who also have to leave parties early. Socialize with fellow night workers. Go out together for breakfast or plan an occasional potluck dinner for the night shift.

SOURCE: Canadian Centre for Occupational Health and Safety

FOR MORE DETAIL, READ ON ...

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PREAMBLE

In negotiations leading to the 1985 to 1989 Collective Agreement, BCNU and HLRA identified the need to address the concerns of employers and employees regarding the development of master work schedules and rotations.

To meet this need, BCNU and HLRA agreed to jointly develop a teaching tool which would assist member **employers** and **employees** in developing satisfactory work schedules.

An extremely high level of cooperation was achieved, which resulted in the establishment of guidelines for the implementation of extended hours / compressed work week schedules that allow for local autonomy, individual nursing unit flexibility and an expeditious approval process. The parties also published a Rotation Planning Manual in February, 1989.

Extended Work Day and Compressed Work Week Schedules were examined with a view to providing for a blending of 7.5 hour work days with extended work days.

Since the development of this Manual in February 1989, a number of changes have taken place which require revisions to be made to the Manual. Specifically, the Health Labour Relations Association (HLRA), the Continuing Care Employee Relations Association (CCERA), and the Labour Relations Department of the B.C. Association of Private Care (B.C. Pricare) merged to form the Health Employers Association of B.C. (HEABC) on December 1, 1993. Some minor revisions were made to this Manual in 1996 to make reference to HEABC, the 7.2 hour day and the 36 hour work week. Further revisions were made to this Manual in 2003 to reflect changes to the Provincial Collective Agreement.

The revised procedures meet the following objectives:

1. The development of rotations which provide for 7.2 hour, 7.5 hour, and other extended workday shifts. The types of work schedules to be allowed include:
   a. 7.2 or 7.5 hour work schedules;
   b. extended workday schedules with a single shift length (i.e. all shifts worked in the rotation are 11 hour shifts);
   c. two-part work schedules where one group of employees work a schedule of one length (i.e. 7.5 hours) and another group of employees works a second schedule of another shift length (i.e. 11.25 hours); or
   d. combination schedules where employees rotate through a schedule which is composed of 2 or more shift lengths (i.e. 7.2 hours, 7.5 hours and 11 hours).

The changes should go a long way in allowing flexibility in scheduling for both hospitals and nurses.

2. Preliminary approval of an extended work day schedule will be possible prior to the opening of a new unit (see procedures outlined on page 39 – B. Opening of a New Ward / Unit using the Extended Shift Schedule). The ultimate determination of whether to work an extended work day remains with the employees.

3. By allowing units to work two-part or combination schedules without having to seek special status approval, the entire approval process is simplified. In turn, approval requires less time and new rotations can be implemented more quickly. The calculation sheet has also been refined and simplified.

The information provided herein will help you develop your own rotations.

Of course, it is difficult to anticipate all the variables for each unique unit, but it is hoped that the principles which govern the preparation of rotations have been made clear.

Rotation development is as much an art as a science and, like art, the longer one works at it, the better one becomes.

Our rotation planning manual has the following focus:

Section I focuses on the fact that most people who work shifts have a hard time making the biological and social adjustments required by their work. In this section, we have identified some of the problems associated with working shift work with suggestions as to how one can adjust to the changes in shift patterns. As well, this section focuses on the role of the employer in making adjustments to shift work.

Section II contains information of assistance to both employees and employers in the preparation of rotations. The steps to be followed and sample rotations are also included.

Section III contains the guidelines for implementing extended work day rotations.

Section IV contains a bibliography of reference material.

SECTION I
THIS IS SHIFT WORK TODAY

Shift work is a reality (a normal condition) for nurses in British Columbia. Health care must be provided 24 hours a day, 7 days a week, 365 days a year. Studies of nurses and other workers have discussed the effects of shift work on individuals and organizations. While these may not be apparent in each and every instance, some of the possible effects to be aware of include:

Individual

a) Disruption of normal body rhythms governing sleeping, waking, digestion, adrenalin levels, body temperatures, blood pressure, etc. The result may be:
   - chronic fatigue
   - gastro-intestinal disorders
   - increased risk of heart attack
   - irregular menstrual cycles
   - increased usage of drugs or alcohol

b) Interference with family life as many activities revolve around daytime hours. Some consequences might be:
   - inadequate child care
   - strained sexual relations
   - limited family time

c) Disruption of social activities including recreational and spiritual activities.

d) Feelings of isolation from other non-shift workers.

e) Feelings of anxiety where the safety of the individual is in question.

f) Mood changes related to physical disruptions.

Organizational

a) Introducing shift work or altering shift patterns will affect, for example:
   - production levels
   - supervision patterns
   - communication with and between staff
   - overall operating costs

b) Organizations with shift work may discover problems with:
   - performance levels
   - employee morale and job satisfaction
   - accident and injury rates
   - employee absenteeism and turnover

Section IV of this manual provides a list of articles for further information on any of the above areas.

The best solution to the occupational health and safety problems of shift work would be to eliminate it; unfortunately, this is not possible. Nurses work day shifts, evening shifts, rotating shifts, 12-hour shifts and more. Changing schedules and shift work are a way of life. Many nurses find significant advantages in a particular shift schedule. However, the difficulties involved in adjusting to and coping with various shift schedules can affect both the individual and the organization. Those who manage a healthy life style and thrive make compromises, informed adjustments, and take pro-active measures.

SO WHAT DO WE DO?

There are two basic levels at which to address the problems of shift work.

I. THE INDIVIDUAL

The individual focuses on the **S.E.C.R.E.T.** to surviving shift work.

II. THE ORGANIZATION

The organization focuses on improving the quality of working **L.I.F.E.**

SECRET TO
SURVIVING SHIFT WORK

S LEEPING HABITS

E ATING

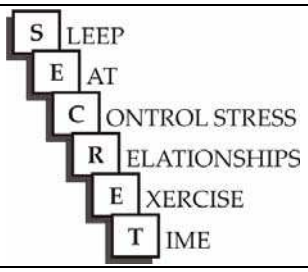
C ONTROLLING STRESS

R ELATIONSHIPS

E XERCISE

T IME

S LEEP



The most obvious result of schedule changes or shift work are changes in sleep patterns. Sleep is essential to health and normal functioning.

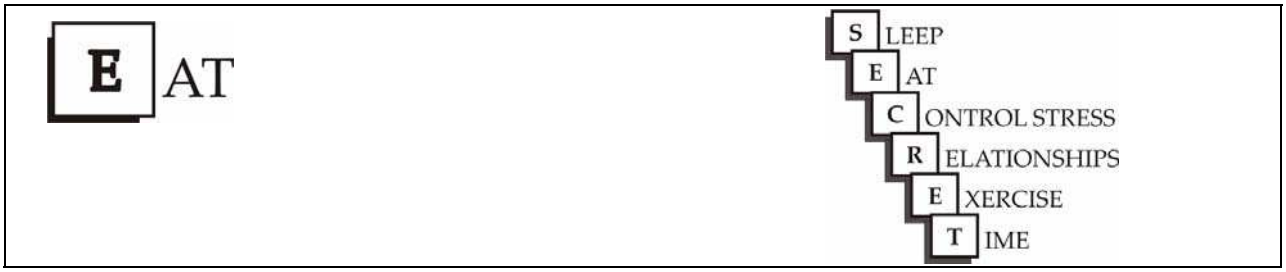
"YOU ARE NOT ALONE"

Commercial airline pilots face many of the shift-related problems that nurses have to deal with. Sleep deprivation has been directly correlated with diminished alertness and error-prone performance. Both pilots and nurses hold the well-being of passengers / patients in their hands. Both need to know how to rapidly fall asleep by natural means so as to be fresh and alert for their next shift.

Here are some tips from the Flight Safety Foundation on how to go to sleep.

- Prior to going to bed, clear your mind. Review the things you have dealt with during the day and designate certain hours, days or weeks in the future for unfinished business. Making a constructive plan helps you relax and keeps nagging, generalized worries at bay.
- Establish and follow a routine for going to bed. For example, wash up, prepare for bed, make sure that the cats are out, open the windows and lock the house. In other words, get settled for the night.
- Go to bed for sleep. Don't go to bed to watch TV, to read or to think.
- Avoid any stimulants prior to going to bed. For caffeine, this period should be six to eight hours; for nicotine, it is two hours. Alcohol or drugs will both disrupt sleep by causing you to wake up after a few hours of sleep.
- Have a drink of warm milk before going to bed.
- Make sure your bed is comfortable, the pillow is right, you have enough room to move and that the room is quiet.
- When falling asleep, picture a pleasant thought in your mind, or a pleasant place where you'd like to be. This quietens the mind. Practising relaxation exercises just before sleep can be helpful.

If your average sleep time consists of only four to six hours, take a nap in the evening before going to work. When you have a night off duty, be sure to maintain your sleep / wake schedule by staying up most of that night.



Shift workers are highly susceptible to stomach and digestive problems as a result of irregular eating habits. Some ways to deal with these problems were contributed by nutritionists and nurses surviving / thriving on shift work.

KEY FACTORS FOR HEALTHY NUTRITION

- Balance your food intake: two milk groups, two meat or alternatives, four grains, four fruits and vegetables.
- Snacking all day is fine provided you eat the right things (high nutrients, low calories).
- Don't miss breakfast. If there is no time, have and use an adequate quickie substitute.
- Don't skip a meal if it means overeating later.
- You don't have to sit down for meals. You can eat them on the run, but sitting down even for a short snack is good for you.
- An unhealthy diet plus a vitamin-mineral supplement often still remains an unhealthy diet. It is not only what you might be missing (vitamins) but what you are taking in (fat) which cause problems. The supplement will not counteract the detrimental intake.
- More fibre, vegetables, and important vitamins, selenium, calcium. Less fat, cholesterol, salt, smoke and nitrite-cured foods, less alcohol, and caffeine.

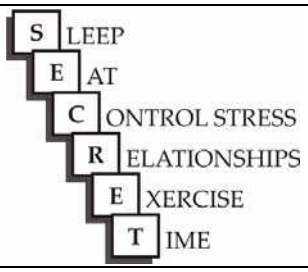
Time meals carefully. Afternoon workers should have the main meal in the middle of the day instead of the middle of the work shift. Night shift workers should eat lightly throughout the shift and have a moderate breakfast. In this way, they should not get too hungry while sleeping during the day, and digestive discomfort should be minimal.

Use dietary aids. Before going to bed, eat a high-carbohydrate meal or drink some warm milk. Milk contains L-tryptophan; both L-tryptophan and carbohydrates release serotonin, a sleep-inducing brain chemical.

It is also helpful to limit your intake of caffeine and alcohol; caffeine is a stimulant, so overconsumption may cause restlessness and insomnia, and alcohol is a depressant that interferes with the normal sleep cycle.

Eat light, well-balanced meals at regular times. Avoid snacking to overcome feelings of fatigue. Also avoid overeating, heavy foods, and starvation diets. If possible, eat with family or friends on a regular schedule.

CONTROL STRESS



Stress can be defined as any action or situation that places physiological, social or psychological demands on a person. Too much stress from either under or over stimulation can lead to distress, placing the mind and body in disharmony.

The requirements for dealing with stress are:

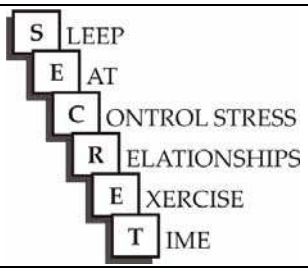
- **Awareness**
  - Recognize the signs and symptoms of stress - - even those which are subtle. Acute or chronic stress can negatively affect your general health and well-being.
- **Acceptance**
  - Accept who you are - - including your own limitations.
- **Responsibility**
  - Assume responsibility for controlling the sources of stress in your life.
- **Coping Skills**
  - Develop ways of coping with stress such as improving your general health and substituting relaxation for stress; change the stress-inducing situation; or change your perception about the stress.

Some common key points are:

- Bolster personal and professional support systems.
- Communicate with others about personal problems.
- Adjust unrealistic personal standards.
- Actively develop non-work-related interests and hobbies.
- Adopt strategies for encouraging a clean break between work and home.
- Cultivate a healthy and hearty lifestyle. Adopt a holistic approach to “wellness”, which means responding to physical, emotional, social, spiritual and cultural needs.
- Learn and use relaxation methods.

Don’t feel that you have to do this alone. Ask your co-workers to tell you about their experiences on the night shift. Veteran night nurses can offer a lot of help to newcomers.

RELATIONSHIPS



Perhaps the biggest difficulty imposed by shift work is its strain on relationships. It's difficult to fulfil the role of parent or spouse when our schedules don't match those of our family. It's difficult to pursue a relationship or to spend time with friends.

Difficulties at home and in our personal life can affect job performance, mood and attitudes, and even our ability to sleep. In turn, difficulties at work and in adjusting to odd schedules can make us irritable and moody at home.

In their "handbook" on shift work, Syncrotech suggests the following considerations to help the shift worker cope.

Discuss how the schedule affects others as well as you.

Keep in mind that your work schedule is really your whole family's "life schedule". Talk about what's important to all of you. Good communication is essential if you're to work out compromises everyone is willing to support.

Let your family and friends know how much you need their support.

If you're to get regular, uninterrupted sleep, their cooperation is necessary. If you need to sleep during the day and have small children, try to arrange for a babysitter / daycare so that you can get at least a few hours of solid **undisturbed** sleep.

Friends often appreciate a copy of your work and sleep schedule. It enables them to know when it's safe to call without disturbing your sleep. It also allows them to plan social activities with your schedule in mind.

Try to have at least one meal with family members each day.

This might be breakfast if you work the evening or night shift. Plan daytime lunches at school, possibly a family "picnic" lunch during your main break at work.

Discuss family "security" concerns while you are working the night shift.

Take action to reduce such anxiety, such as wearing a beeper, check-in calls, arrangements with neighbours, deadbolt locks, security systems, etc.

Plan personal time with your spouse or special friends.

If your work and sleep schedules conflict, it is essential to **plan** for special time together. Even the most solid relationships require nurturing. Don't let housework, yardwork, appointments and all the other responsibilities take priority over something as important as your relationship.

Do not ignore your sex life if this is an integral part of your relationship.

Sex often suffers when partners sleep at different times. However, we all know sex does not have to occur at bedtime. Plan times when you are both awake enough to relax and enjoy some time together.

Organize or participate in group activities.

Try to get together with others on the same shift so you can do these things at unusual times. Whether it's recreational sports, a card club, or pursuing a hobby, participating in group activities can help you feel less isolated from the rest of the world.

Try not to take your troubles out on those closest to you when you feel tired and irritable.

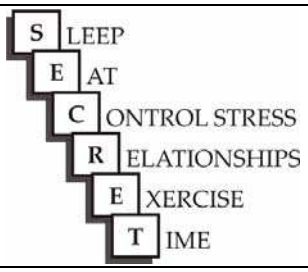
Even though it may seem that someone else has triggered your bad mood, hold onto the insight you've developed. The way you feel is most likely a result of fatigue or insufficient sleep ... things over which you have a good deal of control. Take steps to improve your sleeping and eating habits. If you can improve the way you "feel", that alone can impact family / social relationships.

SOCIALIZE. Strive for a set pattern of time off, so that you can easily plan night-time social events well in advance.

Seek social contacts, through phone calls, visiting with friends, and pursuing hobbies, classes.

Participate in social activities with other shift workers who also have to leave parties early. Socialize with fellow night workers. Go out together for breakfast or plan an occasional potluck dinner for the night shift.

E XERCISE



Physical fitness contributes to good health and a long life. It improves the quality of life and assists in achieving a state of relaxation. Experienced shift workers who have overcome adjustment difficulties have pointed out that shift changes produce pressures that provide unsound excuses for not exercising in the very situation where it is needed most.

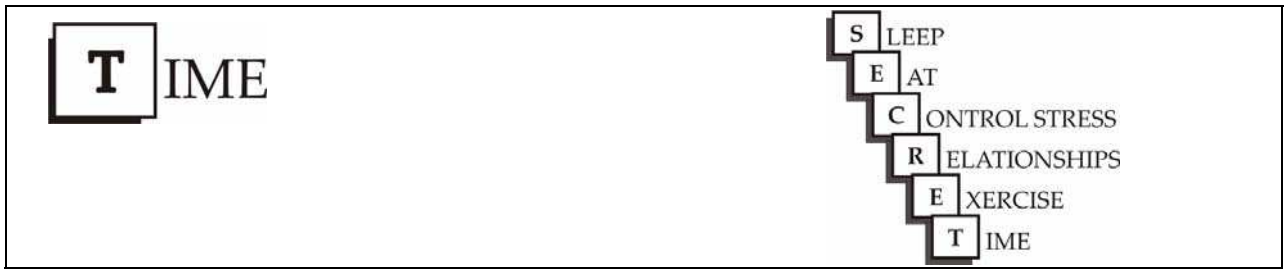
Experienced counsellors in the field of stress management and fitness point out that hard work on the job, work-related fatigue and sore feet are not necessarily sound reasons for not exercising. Some advocate off-the-job exercise as a way reducing job-related physical and mental fatigue.

Find a form of exercise which is convenient and establish a ritual. It will become as important a contribution to your well-being as cleaning your teeth and almost as hard to miss out on. Exercise at a regular time. Many suggest that the best time is soon after you get up from sleeping.

A physical fitness program should stress:

- Safety
- Suppleness
- Stamina
- Strength
- Satisfaction

Exercise regularly - - 20 minutes of exercise at least three times each week - - though not just before bedtime. Jogging, walking and aerobic dancing are examples of exercise that will reduce stress and feelings of fatigue and increase your sense of well-being.



If you have reached this point in this manual, it is obvious that you have taken time out of your busy schedule.

We hope that the suggestions that we have included in this manual may make things easier for you in coping with shift work.

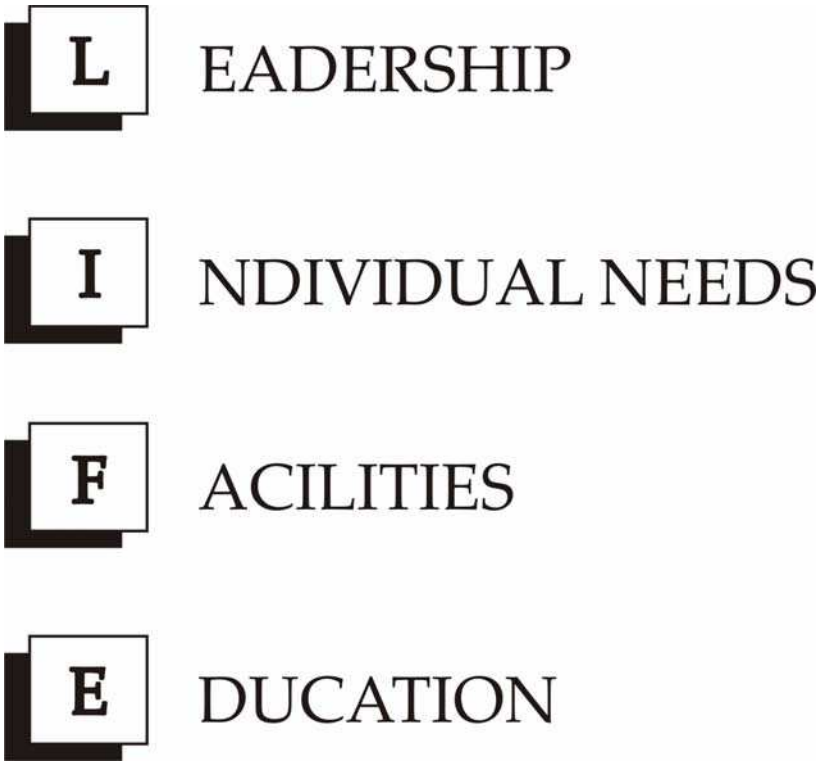
You've read about the importance of regular sleep and healthy eating habits.

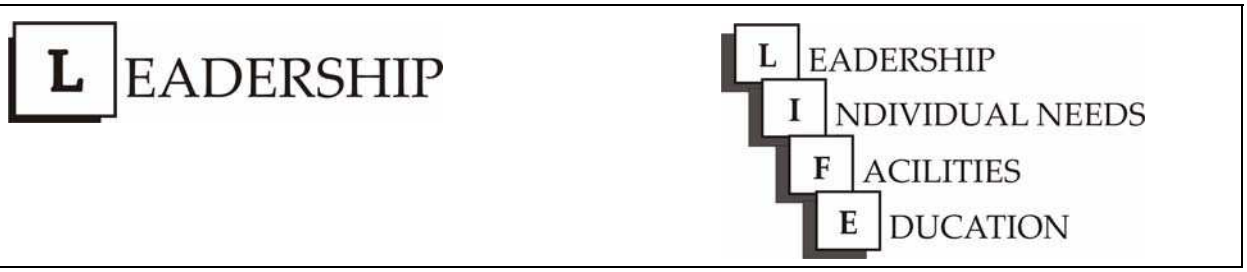
You have read about how to control stress.

You've read about the importance of family and social relationships and you have read about the benefits of exercise.

Armed with this information, give yourself the time to learn to cope with shift work.

IMPROVING
THE QUALITY
OF WORKING LIFE





The extended work day, or compressed work week, has been adopted by many organizations in recent years. By squeezing the 36 hour work week into three or four days, the number of consecutive days worked is decreased and the number of consecutive days off is increased.

The extended work day allows workers more uninterrupted time for family and other activities, and less night work. It requires them to work fewer consecutive night shifts and provides them with longer blocks of time off to recuperate. Moreover, it allows them to commute to and from work less often and at times when traffic is light.

However, according to a report by the Canadian Centre for Occupational Health and Safety, the extended work day also has disadvantages. The primary disadvantage is that it contributes to fatigue and allows little opportunity to do much more than work, eat and sleep on work days.

At present, says the Centre, there is no clear evidence that the extended work day adversely affects health and safety. The main health and safety issues are fatigue, increased risk for accident and injury, changes in patterns of exposures to chemicals and physical hazards, and the effects on social and family life.

To help with the decision of whether or not to use or continue to use an extended work day schedule, the Centre suggests the following guidelines.

- Consult workers about their desires to have a change in the work schedule and specifically an extended work day.

- Consider the physical demands of jobs, occupational hazards such as chemicals or noise exposure and aspects of job design, such as rest schedules. Changes in the environment or job design can sometimes make an extended work day more acceptable.

- Consider the mental and emotional demands of the job. Work that requires constant attention or intense mental effort may be less acceptable for the extended work day. Use additional rest breaks or variation of job tasks to help decrease the strain of the extended work day.

- Consider the workers and the other demands on their time. People who have other significant responsibilities each day may require additional support such as child care facilities. Seasonal demands may also have to be considered.

If the decision is made to try the extended work day, introduce it gradually to small groups to allow more flexibility and better analysis of the situation. Evaluate the success of the new schedule by doing the following:

- Monitor the health and safety of the group. Look for any changes in accident rates, health levels and, especially, fatigue.

- Changes in absence rates are also a useful indicator. Even though absence is not always a good measure of health or ill health, an increase may indicate a problem. On the other hand, a decrease may indicate that the extended work day is successful.

- Listen to and solicit input from workers to determine their satisfaction and acceptance of the extended work day.

INDIVIDUAL NEEDS

Shift work has repercussions far beyond the mental and physical health of nurses. Making their lives easier improves morale, increases efficiency and adds to the quality of patient care. Here's what the literature suggests for employers.

- Optimize employee involvement by ...

  including staff nurses in all discussions around possible shift changes.

- Try to schedule inservice classes ....

  support groups and staff meetings around the clock.

- Establish predictable schedules .....

  to minimize the disruption of the nurses' personal lives and post schedules well in advance.

- Plan work pacing .....

  for best performances: Peak work loads – physical and mental – should be avoided between 3:00 a.m. and 6:00 a.m.

- Rotate shifts forward .....

  (afternoon to night) instead of backward (day to night) in order to help rotating shift nurses adjust their sleep / wake cycles with the least difficulty.

- Consider alternative forms .....

  of organizing work schedules such as extended work days, two-part and combination rotations.

FACILITIES

The Canadian Centre for Occupational Health and Safety suggests the following considerations to help the shift worker cope.

- Give attention to the work environment.

For example, good lighting and ventilation are important on all shifts. In particular, attention should be paid to lighting the approaches to work places and the corridors between them. Good lighting can help "lighten the mood" of night workers. Minimize social isolation by quieting noisy equipment. Remove visual barriers and do not widely separate work stations. In some cases, music can help combat excessive quiet.

- Provide rest facilities where possible.

Whenever the shift worker must remain at work in order to attend a meeting or a training session, it is advisable to provide rest facilities. In occupations where a night shift worker is "on call" as back-up staff, it is advantageous for this person to be well rested.

- Provide good cafeteria services .....

so shift workers can maintain a balanced diet. The nutritional needs of the rotational shift worker differ between day and non-day shifts because of circadian rhythms.

- Consider offering facilities for social activities .....

with the needs of the shift worker in mind since recreational opportunities are often minimal for workers on non-day shifts.

- Consider access to quality day care for shift workers' children.

This would alleviate some of the strain on all family members.

EDUCATION

The shift worker is at risk for health problems because of irregular patterns of eating, working, socializing and sleeping. The result can adversely affect physical and psychological health. Special care must be taken by both the shift worker and the employer to prevent as many of the adverse effects as possible. Design of the shift schedule to make it compatible with the body's circadian rhythm is an extremely important factor. Cooperation of the employer, the shift worker and the family of the shift worker is essential.

Educate employees on the potential health and safety effects of rotational shift work and what can be done to alleviate these effects. In particular, education about stress recognition and reduction techniques is helpful.

Consider:

- Orientation Programs which include a discussion on shift work.
- Counselling Referral for those experiencing domestic problems.
- Inservices on coping with shift work - - remember, hospitals have social workers, nutritionists, doctors, nurses, etc. (i.e., use on-site resource people).

SECTION II
PREPARATION OF ROTATION SCHEDULES

Before you begin your review of scheduling requirements, take some time to familiarize yourself with:

1. The scheduling provisions as set out in the Provincial Collective Agreement.

2. The specific requirements as found in the document “Procedure for Implementing Extended Work Day and Compressed Work Week Schedules” in Section III of this manual.

   For your information and use with this manual, the following five types of work schedules have been identified.

- **7.2 Hour Work Day Schedule**

  – 7.2 hour shift schedule covered by the scheduling provisions of the collective agreement.

- **7.5 Hour Work Day Schedule**

  – 7.5 hour shift schedule covered by the scheduling provisions of the collective agreement.

- **Standard Extended Work Day Schedule**

  – Usually, 11 hour or 11.25 hour or 11.5 hour shift schedule.

- **Two Part Work Day Schedule**

  – For wards / departments / units where one group of employees works a schedule of one shift length (i.e. 7.5 hours) and another group of employees works a second schedule of another shift length (i.e. 11.25 hours).

- **Combined Work Day Schedule**

  – For wards / departments / units where the employees all rotate through a schedule which is composed of 2 or more shift lengths (i.e. 7.2 hours, 7.5 hours, and 11 hours). Generally, the standard extended work day schedule and the standard work day schedule should be mutually exclusive blocks.

- **Non-Standard Work Day Schedule**

  – Usually for wards / departments / units that are not staffed on a 24 hour basis but work an extended hour rotation that is greater than 7.5 hours.

TERMINOLOGY USED IN CONNECTION WITH SHIFT ROTATION DEVELOPMENT

- **Approved (Extended Work Day) Schedule** is one for which 90% of the regular employees have indicated approval and the schedule has received approval from BCNU and HEABC.

- **Block Rotation** means a vertical rotation consisting of a given number of weeks through which all employees must rotate. Upon completion, the rotation is repeated.

- **Calendar Year** means a period of 12 consecutive months commencing on the first day of January.

- **Calendar Day** means a 24 hour period ending at midnight.

- **Extended Work Day Shift** means the normal consecutive working hours scheduled for each employee (regular full-time, regular part-time or casual) which may occur in any 24 hour period. In each 24 hour period, there are three shifts, namely ***day shift***, ***evening shift***, and ***night shift***.

  Day Shift means a shift in which the major portion occurs between 0730 hours and 1530 hours. Where there are only two shifts in a 24 hour period, the major portion of hours in a day shift occur between 0700 and 1900 hours.

  Evening Shift means a shift in which the major portion occurs between 1530 hours and 2330 hours.

  Night Shift means a shift in which the major portion occurs between 2330 hours and 0730 hours. Where there are only two shifts in a 24 hour period, the major portion of hours in a night shift occur between 1900 and 0700 hours.

- **FTE** means full-time equivalent.

- **Imbalance** means the difference between the number of hours in a year worked in the rotation and the number of paid work hours in a year. The maximum allowable imbalance is 12 hours, positive or negative.

- **Line Rotation** means a linear rotation consisting of a given number of weeks through which a given employee(s) must rotate. Upon completion, the employee begins again to work the rotation.

- **Mutual Agreement** means a common understanding between the employer and the nurses on a given unit as to the determination of a work schedule. Where mutual agreement cannot be achieved, the employer may contemplate unilateral action but only after following these six steps:

  One, the employer must give the nurses a clear and detailed outline of what it wishes to do.

  Two, the employer must have a good reason(s) for making the proposal in the first place, and it must express the

reason(s) to the nurses and be prepared to engage in dialogue with respect thereto.

Three, the employer must invite a reply from the nurses, and it must give the nurses a reasonable opportunity to formulate a reply and to make their own proposal(s).

Four, the employer must give *bona fide* consideration to any proposals which the nurses might put forward and be prepared to show that its rejection thereof was reasonable in light of its proper objectives.

Five, within this frame, the employer must make every reasonable effort to secure mutuality.

Six, the employer's actions and its proposed schedule of shifts must not be in breach of any other provision of the collective agreement.

- **Shift** means the normal consecutive work hours scheduled for each employee (regular full-time, regular part-time or casual) which occur in any 24 hour period. In each 24 hour period, there shall normally be three shifts per day, namely ***day***, ***evening*** and ***night*** shifts.

  Day Shift means a shift in which the major portion occurs between 0730 and 1530 hours.

  Evening Shift means a shift in which the major portion occurs between 1530 and 2330 hours.

  Night Shift means a shift in which the major portion occurs between 2330 and 0730 hours.

- **Statutory Holiday** means paid holiday pursuant to the collective agreement.

- **Tour of Duty** means one or more completed shifts.

- **Year** means a period from any given date in one month to the immediately preceding date 12 months later.

DEVELOPING A ROTATION

There are many factors which influence the development of work schedules. Most of these will already be predetermined and so the rotation must be developed within certain limitations. Some of these factors include:

- the type of patient / resident / client serviced by the facility or a given unit;
- the hours of work and scheduling provisions written in the collective agreement;
- the availability of support systems and staff;
- the operating budget of the unit; and
- the method of staff utilization.

Changes in any of these factors could result in the need to develop a new rotation. Often however, new rotations must be developed because of changes within the staff themselves – either different people are now working on the unit or the needs of those already working may have changed in some way.

Whatever may be motivating the need for change, the result is that a new rotation must be developed.

To do this, three basic steps must be followed:

STEP 1: DETERMINE THE NUMBER OF STAFF REQUIRED ON THE UNIT

STEP 2: DETERMINE THE FRAMEWORK OF THE ROTATION

STEP 3: CREATE THE ROTATION(S)

STEP 1
DETERMINE THE NUMBER OF STAFF REQUIRED ON THE UNIT

To develop a rotation you need to know two things:

1) the number of staff required on each shift (coverage requirements), and
2) the total number of staff needed to meet these requirement on a weekly basis.

Often, both of these figures will already be known.

If the number of staff required on each shift has been specified, you can calculate the total number of staff needed on the unit, as follows:

a) Multiply: the number of staff needed per shift
x the number of shifts in a day
x the number of days worked per week
x the number of hours per shift
Equals: the number of hours requiring coverage in a week.

b) Divide: the total number of hours requiring coverage by 34.483 *(see NOTE below)*
Equals: the total number of staff required.

NOTE

Under the collective agreement, there are:

	52.2	weeks in a year
x	36	paid hours in one week
=	*1879.2*	*paid hours in one year*
	11	statutory holidays
x	7.2	base hours in one day
=	*79.2*	*paid hours of statutory holidays (<u>unworked</u> hours)*
	1800	*paid <u>work</u> hours in one year (1879.2 – 79.2 = 1800)*
÷	52.2	weeks in one year
=	*34.483*	*paid <u>work</u> hours in one week*

If the total number of staff has been specified, you can calculate the number needed on each shift by reversing the above calculation as follows:

a) Multiply: the total number of staff
x 34.483 hours
Equals: the total number of hours requiring coverage in a week

b) Divide: the number of hours requiring coverage in a week
÷ the number of hours per shift
÷ the number of days worked per week
÷ the number of shifts in a day
Equals: the number of staff required per shift.

If both figures are provided, proceed with STEP 2.

STEP 2
DETERMINE THE FRAMEWORK OF THE ROTATION

Now you have determined the coverage and staffing requirements, you can begin to develop the parameters of the rotation.

a) Determine the length of the rotation.

The most efficient and equitable rotation has everyone working the same pattern. This requires that the number of weeks equals the number of staff, or multiples thereof.

b) Determine how many times the rotation will repeat itself in the course of the year.

Divide the number of weeks in the year (52.2) by the number of weeks in the rotation. This will give you the number of rotations in a year.

c) Determine how many shifts must be worked.

i) Multiply the number of weeks in the rotation by 34.483 hours *(see NOTE above)*.

ii) Divide this total number of hours by the length of the shift.

The result will be the number of shifts to be worked in the rotation.

THE MAIN FRAMEWORK OF THE ROTATION IS NOW COMPLETE.

The above information can now be transferred to the calculation sheet.

STEP 3
CREATE THE ROTATIONS

Developing a rotation is an art, not a science. There is no magic formula which will work in every instance. There is one major rule to be followed however – A ROTATION MUST BE IN ACCORDANCE WITH THE COLLECTIVE AGREEMENT.

Points to be noted are:

	Example	
	8 hours or less	11 hours
The maximum allowable number of shifts to be worked in a row.	6	4
The minimum allowable number of weekends required off and their frequency.	1 in every 3 weekends per 9 weeks*	
The maximum allowable number of different shifts permissible within 7 days.	2	2
The minimum allowable number of days off between sets of shifts.	2	2
The minimum allowable number of hours off after a tour of night duty.	48	48

***** Note: this does not apply to employers covered by the Continuing Care Component, as referenced in Article 25.06.

All regular full time and part time employees should be assigned a place on the master work schedule.

The start and stop times of each shift should be noted on the rotation.

All paid days for statutory holidays should be noted on the rotation.

Also it is important to take into account unit preferences regarding the pattern of shifts, the distribution of days off, the sequence of weekends off, etc.

ADDITIONAL TIPS:

- Use or create graph paper.
- Use a calculator.
- Put the days of the week along the top of the graph.
- Put the number of weeks in the rotation along the left-hand side of the graph.
- In making your shift pattern, it may be helpful to begin with the maximum number of consecutive shifts which can be worked according to the collective agreement. Any excess shifts can be eliminated from the rotation.
- Check other rotations in your facility and keep copies in this manual.

Using the three steps which have been outlined, we will now develop a number of sample rotations.

EXAMPLE

	M	T	W	T	F	S	S
1							
2							
3							
4							
5							
6							
7							
8							
9							

SAMPLE ROTATIONS

SAMPLE 1
7.5 HOUR WORK DAY SCHEDULE

STEP 1
DETERMINE THE NUMBER OF STAFF REQUIRED ON THE UNIT

COVERAGE ON EACH SHIFT	MONDAY TO FRIDAY	SATURDAY TO SUNDAY
0730 – 1530	6	5
1530 – 2330	4	4
2330 – 0730	3	3

(a) Calculate the total number of hours of coverage required in a week.

13 shifts x 5 days x 7.5 hours	=	487.5 hours
12 shifts x 2 days x 7.5 hours	=	180.0 hours
		667.5 hours

(b) Divide the total hours of coverage each week by 34.483.

667.5 hours of coverage divided by 34.483 work hours = 19.357 staff required

STEP 2
DETERMINE THE FRAMEWORK OF THE ROTATION

For the purpose of this example, this unit will be split into two separate but complementary rotations. The first shall consist of day and evening shifts, the second shall consist of day and night shifts *(see attached schedules)*.

***Rotation #1* – DAY AND EVENING SHIFT SCHEDULE**

(a) There will be 18 weeks in the rotation.

(b) With an 18 week rotation, the rotation will repeat itself 2.9 times in one year:
(52.2 weeks / year divided by 18 weeks / rotation = 2.9 rotation / year)

(c) There will be 83 shifts in the rotation:
(18 weeks x 34.483 hours = 620.694 hours divided by 7.5 hour shifts = 82.759 shifts)

***Rotation #2* – DAY AND NIGHT SHIFT SCHEDULE**

(a) There will be 14 weeks in the rotation.

(b) With a 14 week rotation, the rotation will repeat itself 3.729 times in one year:
(52.2 weeks / year divided by 14 weeks / rotation = 3.729 rotation / year)

(c) There will be 64 shifts in the rotation:
(14 weeks x 34.483 hours = 482.762 hours divided by 7.5 hour shifts = 64.368 shifts)

		M	TU	W	TH	F	S	S	M	TU	W	TH	F	S	S
***ROTATION #1* – DAY AND EVENING SHIFT SCHEDULE**													**0730 – 1530 *and* 1530 - 2330**		
FT	**1**	E	E	E			D	D	D	E	E	E			D
	2	D	D	D	D	D			ST	D	D	E	E	E	E
	3			E	E	E	E	E	E			D	D		
	4		D	D	D	D	D	E			E	E			ST
	5	E	E			E	E	E	E	E	E			D	D
	6	D	E	E	E			D	D	D	D	D	D		
	7		D	D	E	E	E			ST	E	E	E	E	E
	8	E			D	D				D	D	D	D	D	
	9		E	E	E				E	E			E	E	E
PT	**1**					E	E	E				ST	D	D	D
	2	D											E	E	E
	3			D		ST	D	D							
	4	E							E	E					
***ROTATION #2* – DAY AND NIGHT SHIFT SCHEDULE**													**0730 – 1530 *and* 2330 - 0730**		
FT	**1**	ST	D	D	D	D	N	N			N	N	N	N	N
	2			D	D	D	D	D	D			N	N	N	N
	3	N				D	D	D	D	D	D	ST			
	4	N	N	N	N				D	D	D	D			
	5	D	N	N	N	N	N			D	D	D	D	D	D
	6			N	N	N	N	N	N			D	D	D	D
	7	D	D	ST					N	N	N	N			
PT	**1**	N			D				D	N	N				
	2		N					N	N	N					
	3	D	D			N						ST	N	N	N
COVERAGE															
	D	6	6	6	6	6	5	5	6	6	6	6	6	5	5
	E	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	N	3	3	3	3	3	3	3	3	3	3	3	3	3	3

- "ST" denotes Statutory Holiday. In rotation #1 for regular part-time employees, two statutory holidays would have to be dropped as the rotation provides for two statutory holidays every eight weeks (52 ÷ 8 = 6.5 * 2 statutory holidays = 13 statutory holidays per year).

CALCULATIONS

***Rotation #1* – DAY AND EVENING SHIFT SCHEDULE**

52.2 weeks / year divided by 18 weeks / rotation = 2.9 rotations / year

83 shifts x 7.5 hours = 622.5 hours

622.5 hours x 2.9 rotations = 1805.25 hours worked / year

1805.25 – 1800 = 5.25 hours over / year

***Rotation #2* – DAY AND NIGHT SHIFT SCHEDULE**

52.2 weeks / year divided by 14 weeks / rotation = 3.729 rotations / year

64 shifts x 7.5 hours = 480 hours

480 hours x 3.729 rotations = 1789.92 worked / year

1789.92 – 1800 = -10.08 hours short / year

(Short fall of hours can be partially made up by scheduling each RN to work a Day shift on Monday of week eleven (11) once per year, as indicated * on the rotation.)

Calculation Sheet For Extended Work Day
Compressed Work Week Schedules/BCNU

Rotation #1

Facility: _____

Ward/Unit: _____ No. of Employees: 9 Full-Time

Minimum number of work hours per year	1,879.200	
Less entitled stats (11 stats x 7.2 hrs)	- 79.200	
The total number of required hours per year	1,800.000	A
Number of weeks per rotation	18	B

# of shifts		at	7.2	hours =	hours
# of shifts	83	at	7.5	hours = 622.5	hours
# of shifts		at	11	hours =	hours
# of shifts		at	11.25	hours =	hours
# of shifts		at	11.5	hours =	hours
# of shifts		at		hours =	hours
# of shifts		at		hours =	hours

Total Hours Worked			622.5	C
Exact number of weeks per year			52.200	
Divided by B number of weeks, per rotation		÷	18	
Equals times rotation must be worked in year (to 3 decimal places)			2.9	D
Total hours per rotation	C		622.5	
Multiplied by number times rotation worked per year	D	x	2.9	
Equals total hours scheduled per year			1,805.250	
Deduct required hours	A	-	1,800.000	
* Difference (Maximum 12 hours)		±	+ 5.25	

* This difference in time can be made up by scheduling the RN to work, or by giving the time off, whichever is appropriate to the calculation.

This initial imbalance in hours will be dealt with in the following manner (enter your intention):

At some mutually agreed upon time, the employees are to be given 5.25 hours off.

Calculation Sheet For Extended Work Day
Compressed Work Week Schedules/BCNU

Rotation #2

Facility: _____

Ward/Unit: _____ No. of Employees: 7 Full-Time

Minimum number of work hours per year	1,879.200	
Less entitled stats (11 stats x 7.2 hrs)	- 79.200	
The total number of required hours per year	1,800.000	A
Number of weeks per rotation	14	B

# of shifts		at	7.2	hours =	hours
# of shifts	64	at	7.5	hours = 480	hours
# of shifts		at	11	hours =	hours
# of shifts		at	11.25	hours =	hours
# of shifts		at	11.5	hours =	hours
# of shifts		at		hours =	hours
# of shifts		at		hours =	hours

Total Hours Worked		480	C
Exact number of weeks per year		52.200	
Divided by B number of weeks, per rotation	÷	14	
Equals times rotation must be worked in year (to 3 decimal places)		3.729	D

Total hours per rotation	C		480
Multiplied by number times rotation worked per year	D	x	3.729
Equals total hours scheduled per year			1,789.92
Deduct required hours	A	-	1,800.000
* Difference (Maximum 12 hours)	±		- 10.08

* This difference in time can be made up by scheduling the RN to work, or by giving the time off, whichever is appropriate to the calculation.

This initial imbalance in hours will be dealt with in the following manner (enter your intention):

Each RN will work a day shift on Monday of week eleven (11) once per year.

SAMPLE 2
STANDARD EXTENDED WORK DAY SCHEDULE

STEP 1
DETERMINE THE NUMBER OF STAFF REQUIRED ON THE UNIT

COVERAGE ON EACH SHIFT	MONDAY TO SUNDAY
0730 – 1930	4
1930 – 0730	2

(a) Calculate the total number of hours of coverage required in a week.
6 shifts x 7 days x 11 hours = 462 hours

(b) Divide the total number of hours of coverage by the paid hours in a week.
462 hours of coverage divided by 34.483 work hours = 13.4 staff required

STEP 2
DETERMINE THE FRAMEWORK OF THE ROTATION

(a) There will be 24 weeks in the rotation plus two part-time positions.

(b) There will be 2.175 rotations in one year.
(52.2 weeks / year divided by 24 weeks / rotation = 2.175 rotations / year)

(c) There will be 75 shifts in the rotation.
(24 weeks x 34.483 hours = 827.6 hours divided by 11 hour shifts = 75.2 shifts)

	M	TU	W	TH	F	S	S	M	TU	W	TH	F	S	S
FT 1	D	D	N	N				ST	D	D	N	N		
2			D	D	N	N					D	D	N	N
3					D	D	N	N						
4	ST	D	D	N	N					D	D	D	N	
5				D	D	N	N					D	D	N
6	N					D	D	N	N					D
7	D	N	N					D	D	N	N			
8		D	D	ST						D	D	N		
9				D	D	D					D	D	D	D
10					D	D	D							ST
11	D	D					D	D	D	N				
12	D	N					D	D	D	D	ST			
PT 1	N												D	D
2			D	D				D	N			ST	D	D
COVERAGE														
D	4	4	4	4	4	4	4	4	4	4	4	4	4	4
N	2	2	2	2	2	2	2	2	2	2	2	2	2	2
D = 0730 – 1930 N = 1930 - 0730														

- "ST" denotes Statutory Holiday. In rotation #1 for regular part-time employees, two statutory holidays would have to be dropped as the rotation provides for two statutory holidays every eight weeks (52 ÷ 8 = 6.5 * 2 statutory holidays = 13 statutory holidays per year).

CALCULATIONS: 52.2 weeks / year divided by 24 weeks / rotation = 2.175
75 shifts x 11 hours = 825 hours / rotation
825 hours x 2.175 rotations / year = 1794.375
1794.375 – 1800 = -5.625 hours short / year

Calculation Sheet For Extended Work Day
Compressed Work Week Schedules/BCNU

Facility: _____

Ward/Unit: _____ No. of Employees: 12 Full-Time

Minimum number of work hours per year	1,879.200	
Less entitled stats (11 stats x 7.2 hrs)	- 79.200	
The total number of required hours per year	1,800.000	A

Number of weeks per rotation	24	B

# of shifts		at	7.2	hours =	hours
# of shifts		at	7.5	hours =	hours
# of shifts	75	at	11	hours = 825	hours
# of shifts		at	11.25	hours =	hours
# of shifts		at	11.5	hours =	hours
# of shifts		at		hours =	hours
# of shifts		at		hours =	hours

Total Hours Worked	825	C

Exact number of weeks per year	52.200	
Divided by B number of weeks, per rotation	÷ 24	
Equals times rotation must be worked in year (to 3 decimal places)	2.175	D

Total hours per rotation	C		825
Multiplied by number times rotation worked per year	D	x	2.175
Equals total hours scheduled per year			1,794.375
Deduct required hours	A	-	1,800.000
* Difference (Maximum 12 hours)	±		- 5.625

* This difference in time can be made up by scheduling the RN to work, or by giving the time off, whichever is appropriate to the calculation.

This initial imbalance in hours will be dealt with in the following manner (enter your intention):

Time owing by employees will be made up with an in-service (for example).

SAMPLE 3 – COMBINED WORK DAY SCHEDULE
Minimizing Extended Work Day Shifts

A combination extended work day rotation is desired.

Extended work day shifts are desired only on weekends.

STEP 1
DETERMINE THE NUMBER OF STAFF REQUIRED ON THE UNIT

COVERAGE ON EACH SHIFT	MONDAY TO FRIDAY		SATURDAY TO SUNDAY
0730 – 1530	3	0730 – 1930	2
1530 – 2330	3	1930 – 0730	2
2330 – 0730	2		

(a) Calculate the total number of hours of coverage required in a week.

8 shifts x 5 days x 7.5 hours	=	300 hours
4 shifts x 2 days x 11.0 hours	=	88 hours
		388 hours

(b) 388 hours of coverage divided by 34.483 work hours = 11.25 staff required.

STEP 2
DETERMINE THE FRAMEWORK OF THE ROTATION

(a) There will be 11 weeks in the rotation.

(b) There will be 4.745 rotations in a year:

(52.2 weeks / year divided by 11 weeks / rotation = 4.745 rotations / year)

(c) There will be 8 x 11 hour shifts and 39 x 7.5 hour shifts in the rotation.

Determination:

There will be 8 shifts worked over the weekend:

(2 x day shift (0730 – 1930) and 2 x night shift (1930-0730) x 2 days (Saturday and Sunday) = 8 extended hour shifts)

The 8 shifts will account for 417.56 work hours in a year:

(4.745 rotations x 8 shifts x 11 hours = 417.56 hours worked)

The remaining 1382.440 hours in the year are to be worked in standard hour shifts:

(1800 hours / year – 417.56 hours = 1382.440 hours)

There will be 39 shifts in the standard hour rotation:

(1382.440 hours / year divided by 4.745 rotations / year divided by 7.5 hours worked / shift = 39 shifts / rotation)

Therefore, there will be 8 x 11 hour shifts and 39 x 7.5 hour shifts in the rotation.

		S	S	M	TU	W	TH	F
FT	**1**	D	D	d	d			
	2	N	N	n	ST			
	3	D	D				d	d
	4	N	N			d	n	n
	5			d	d	d	d	d
	6			e	e	e	e	e
	7			e	e	e	e	e
	8			d	d	d	d	d
	9			e	e	e	e	e
	10			n	n	n	n	ST
	11				n	n		
PT	**1**							n*
COVERAGE								
	D	2	2	-	-	-	-	-
	N	2	2	-	-	-	-	-
	d	-	-	3	3	3	3	3
	e	-	-	3	3	3	3	3
	n	-	-	2	2	2	2	2

Note: Article 25.12 in relation to working three (3) different shifts.

- "ST" denotes Statutory Holiday. In rotation #1 for regular part-time employees, two statutory holidays would have to be dropped as the rotation provides for two statutory holidays every eight weeks (52 ÷ 8 = 6.5 * 2 statutory holidays = 13 statutory holidays per year).

* Under Article 11.03(A) of the HEABC/BCNU Provincial Collective Agreement, regular part-time employees must work a minimum of 14.4 hours per week.

CALCULATIONS: 52.2 weeks / year divided by 11 weeks / rotation = 4.745 rotations / year

8 shifts x 11.0 hours	=	88 hours
39 shifts x 7.5 hours	=	292.5 hours
Total:		380.5 hours

380.5 hours x 4.745 rotations = 1805.473 hours worked / year

1805.473 – 1800 = +5.473 over / year **

** *At some mutually agreed upon time, the employees are to be given 5.473 hours off.*

Calculation Sheet For Extended Work Day
Compressed Work Week Schedules/BCNU

Facility: _____

Ward/Unit: _____ No. of Employees: 11 Full-Time

Minimum number of work hours per year	1,879.200	
Less entitled stats (11 stats x 7.2 hrs)	- 79.200	
The total number of required hours per year	1,800.000	A
Number of weeks per rotation	11	B

# of shifts		at	7.2	hours =	hours
# of shifts	39	at	7.5	hours = 292.5	hours
# of shifts	8	at	11	hours = 88	hours
# of shifts		at	11.25	hours =	hours
# of shifts		at	11.5	hours =	hours
# of shifts		at		hours =	hours
# of shifts		at		hours =	hours

Total Hours Worked	380.5	C	
Exact number of weeks per year	52.200		
Divided by B number of weeks, per rotation	÷ 11		
Equals times rotation must be worked in year (to 3 decimal places)	4.745	D	

Total hours per rotation	C		380.5
Multiplied by number times rotation worked per year	D	x	4.745
Equals total hours scheduled per year			1,805.473
Deduct required hours	A	-	1,800.000
* Difference (Maximum 12 hours)	±		+ 5.473

* This difference in time can be made up by scheduling the RN to work, or by giving the time off, whichever is appropriate to the calculation.

This initial imbalance in hours will be dealt with in the following manner (enter your intention):

At some mutually agreed upon time, the employees are to be given 5.473 hours off.

SAMPLE 4
7.2 HOUR WORK DAY SCHEDULE

STEP 1
DETERMINE THE NUMBER OF STAFF REQUIRED ON THE UNIT

COVERAGE ON EACH SHIFT	MONDAY TO FRIDAY	SATURDAY TO SUNDAY
Day 0730 – 1512	3	3
Day 0830 – 1612	3	2
Evening 1530 – 2312	2	2
Evening 1630 – 0012	2	2
Night 2330 - 0712	1	1
Night 0030 - 0812	2	2

(a) Calculate the total number of hours of coverage required in a week.

13 shifts x 5 days x 7.2 hours = 468.0 hours
12 shifts x 2 days x 7.2 hours = 172.8 hours
640.8 hours

(b) Divide the total hours of coverage each week by 34.483.

640.8 hours of coverage divided by 34.483 work hours = 18.583 staff required.

STEP 2
DETERMINE THE FRAMEWORK OF THE ROTATION

For the purpose of this example, this unit will be split into two separate but complementary rotations. The first shall consist of day and evening shifts while the second shall consist of day and night shifts.

***Rotation #1 (7.2)* – DAY AND EVENING SHIFT SCHEDULE**

(a) There will be 18 weeks in the rotation.

(b) With an 18 week rotation, the rotation will repeat itself 2.9 times in one year:
(52.2 weeks / year divided by 18 weeks / rotation = 2.9 rotation / year)

(c) There will be 86 shifts in the rotation:
(18 weeks x 34.483 hours = 620.694 hours divided by 7.2 hour shifts = 86.207 shifts)

***Rotation #2 (7.2)* – DAY AND NIGHT SHIFT SCHEDULE**

(a) There will be 14 weeks in the rotation.

(b) With a 14 week rotation, the rotation will repeat itself 3.729 times in one year:
(52.2 weeks / year divided by 14 weeks / rotation = 3.729 rotation / year)

(c) There will be 67 shifts in the rotation:

(14 weeks x 34.483 hours = 482.762 hours divided by 7.2 hour shifts = 67.05 shifts)

		M	TU	W	TH	F	S	S	M	TU	W	TH	F	S	S
***ROTATION #1 (7.2)* – DAY AND EVENING SHIFT SCHEDULE**															
FT	**1**	D2	D2			E1	E1	E1	E1	E1	E1			D1	D1
	2	D1	E1	E1	E1			D1	D1	D1	D1	D1	D1		
	3		D1	D1	E2	E2	E2	E2			E2	E2	E2	E2	E2
	4	E2	ST		D1	D1			D2	D2	D2	D2	D2	D2	
	5		E2	E2	E2	E2			E2	E2			E1	E2	E2
	6	E2	E2	E2			D1	D1	D1	E1	E1	E1			D1
	7	D1	D1	D1	D1	D1			ST	D1	D1	E1	E1	E1	
	8			E1	E1	E1	E1	E1	E1			D1	D1		
	9	ST	D2	D2	D2	D2	D2			E2	E2	E2	E2		
PT	**1**	E1	E1				D1	D2						E1	E1
	2	E1				ST	E2	E2	E2						
	3			D2	D2	E2								D2	E1
***ROTATION #2 (7.2)* – DAY AND NIGHT SHIFT SCHEDULE**															
FT	**1**	D1	D1	D1	D1				ST	N2	N2	N2	N2	N2	N2
	2			D2	D2	D2	D2	D2	D2			N1	N1	N1	N1
	3	N1	N1			D1	D1	D1	D1	D1	D1			D1	D1
	4	N1	N1	N1	N1				D2	D2	D2	D2	D2		
	5	N2	N2	N2	N2				ST	D2	D2	D2	D2	D2	D2
	6			N1	N1	N1	N1	N1	N2			D1	D1	D1	D2
	7	D2	D2			N1	N1	N1	N1	N1	N1				ST
PT	**1**				ST	N2	N2	N2							D2
	2	D2					D2	D2	N1	N1	N1				
	3											N1	N1	N1	N1
COVERAGE															
	D	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	E	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	N	3	3	3	3	3	3	3	3	3	3	3	3	3	3

D1 = 0730-1512 D2 = 0830-1612 E1 = 1530-2312 E2 = 1630-0012 N1 = 2330-0712 N2 = 0030-0812

1. "ST" denotes Statutory Holiday. In rotation #1 for regular part-time employees, two statutory holidays would have to be dropped as the rotation provides for two statutory holidays every eight weeks (52 ÷ 8 = 6.5 * 2 statutory holidays = 13 statutory holidays per year).

CALCULATIONS

***Rotation #1 (7.2)* – DAY AND EVENING SHIFT SCHEDULE**

52.2 weeks / year divided by 18 weeks / rotation = 2.9 rotation / year

86 shifts x 7.2 hours = 619.2 hours

619.2 hours x 2.9 rotations = 1,795.68 hours worked / year

1,795.68 – 1,800 = 4.32 hours short / year

***Rotation #2 (7.2)* – DAY AND NIGHT SHIFT SCHEDULE**

52.2 weeks / year divided by 14 weeks / rotation = 3.729 rotation / year

67 shifts x 7.2 hours = 482.4 hours

482.4 hours x 3.729 rotations = 1,798.869 worked / year

1,798.869 – 1,800 = 1.131 hours short / year

Calculation Sheet For Extended Work Day
Compressed Work Week Schedules/BCNU

Rotation #1

Facility: _____

Ward/Unit: _____ No. of Employees: 9 Full-Time

Minimum number of work hours per year	1,879.200	
Less entitled stats (11 stats x 7.2 hrs)	- 79.200	
The total number of required hours per year	1,800.000	A
Number of weeks per rotation	18	B

# of shifts	86	at	7.2	hours = 619.2	hours
# of shifts		at	7.5	hours =	hours
# of shifts		at	11	hours =	hours
# of shifts		at	11.25	hours =	hours
# of shifts		at	11.5	hours =	hours
# of shifts		at		hours =	hours
# of shifts		at		hours =	hours

Total Hours Worked			619.2	C
Exact number of weeks per year			52.200	
Divided by B number of weeks, per rotation		÷	18	
Equals times rotation must be worked in year (to 3 decimal places)			2.900	D
Total hours per rotation	C		619.2	
Multiplied by number times rotation worked per year	D	x	2.900	
Equals total hours scheduled per year			1,795.68	
Deduct required hours	A	-	1,800.000	
* Difference (Maximum 12 hours)		±	- 4.32	

* This difference in time can be made up by scheduling the RN to work, or by giving the time off, whichever is appropriate to the calculation.

This initial imbalance in hours will be dealt with in the following manner (enter your intention):

Time owing by employees will be made up with an in-service (for example).

Calculation Sheet For Extended Work Day
Compressed Work Week Schedules/BCNU

Rotation #2

Facility: _____

Ward/Unit: _____ No. of Employees: 7 Full-Time

Minimum number of work hours per year	1,879.200	
Less entitled stats (11 stats x 7.2 hrs)	- 79.200	
The total number of required hours per year	1,800.000	A
Number of weeks per rotation	14	B

# of shifts	67	at	7.2	hours =	482.4	hours
# of shifts		at	7.5	hours =		hours
# of shifts		at	11	hours =		hours
# of shifts		at	11.25	hours =		hours
# of shifts		at	11.5	hours =		hours
# of shifts		at		hours =		hours
# of shifts		at		hours =		hours

Total Hours Worked			482.4	C
Exact number of weeks per year			52.200	
Divided by B number of weeks, per rotation		÷	14	
Equals times rotation must be worked in year (to 3 decimal places)			3.729	D
Total hours per rotation	C		482.4	
Multiplied by number times rotation worked per year	D	x	3.729	
Equals total hours scheduled per year			1,798.869	
Deduct required hours	A	-	1,800.000	
* Difference (Maximum 12 hours)		±	- 1.131	

* This difference in time can be made up by scheduling the RN to work, or by giving the time off, whichever is appropriate to the calculation.

This initial imbalance in hours will be dealt with in the following manner (enter your intention):

SECTION III

PROCEDURE FOR IMPLEMENTING EXTENDED WORK DAY AND COMPRESSED WORK WEEK SCHEDULES

BRITISH COLUMBIA NURSES' UNION AND HEALTH LABOUR RELATIONS ASSOCIATION (Now the Health Employers Association of British Columbia)

Effective September 1, 1988

INDEX

PART I
Types of Work Schedules

A. **7.2 Hour Work Day Schedule** – 7.2 hour shift schedule covered by the scheduling provisions of the Collective Agreement.

B. **7.5 Hour Work Day Schedule** – 7.5 hour shift schedule covered by the scheduling provisions of the Collective Agreement.

C. **Extended Work Day Schedule** – Workday schedules with a single shift length (i.e., 11 hour, 11.25 hour or 11.5 hour shift schedule) covered by Parts II and III.

D. **Two Part Work Day Schedule** – For wards / departments / units where one group of employees works a schedule of one length (i.e. 7.5 hour shifts) and one group of employees works the second schedule of another shift length (i.e. 11, 11.25 or 11.5 hour shifts), covered by Parts II-A and II-B and Parts III-A and III-B.

E. **Combined Work Day Schedule** – For wards / departments / units where the employees all rotate through a schedule which is composed of two (2) or more shift lengths (i.e. 7.2 hour, 7.5 hour, and 11 hour shifts), covered by Parts II-A and II-B and Parts III-A and III-B. Generally, the standard extended work day schedule and the 7.2 hour work day schedule should be mutually exclusive blocks.

F. **Non-Standard Work Day Schedule** – Usually for wards / departments / units that are not staffed on a 24 hour basis, covered by Parts II-C and III-C.

PART II

Introduction of Extended Work Day and Compressed Work Week Schedules

A. Change from Existing 7.2 Hour Shift to an Extended Work Day

The procedure to be followed by a health care organization for change from an existing 7.2 hour shift to a standard extended, two part and/or combined work day schedule is set out below.

Step **Action**

1. The request for a change of hours of work is to emanate from the employees in an identifiable ward / department / unit.

2. The work schedule to accommodate the extended work day or compressed work week is prepared and decided upon jointly by the organization and the employees at the local level.

3. The calculations for the proposed schedule are done using the Calculation Sheet for Extended Work Day / Compressed Work Week Schedule (see page 51). The calculations are to be done to three decimal places.

4. The employees must sign a Release of Overtime for Extended Work Day / Compressed Work Week Schedule (see page 51). The signature of 90% of all regular full-time and part-time employees working the schedule must be obtained.

5. Following agreement in principle of the proposed schedule the organization will send to HEABC (with a carbon copy to the BCNU office) a covering letter requesting the preparation of a Memorandum of Agreement by HEABC for the proposed schedule.

   This covering letter will be accompanied by the following documents:

   a. Release of Overtime for Extended Work Day / Compressed Work Week form including the signatures of 90% of all regular full-time and part-time employees working the schedule and the name of a Union contact.

   b. Calculation Sheet for Extended Work Day / Compressed Work Week Schedule.

   c. A copy of the proposed rotations that create the new schedule with the start and finish times of the shifts specified on the rotation(s). All statutory holidays shall be identified and recorded in ink in the nursing staff work schedules on the basis of 7.2 paid hours. Every effort shall be made to spread the statutory holidays off evenly throughout the year. (See Extended Work Day Memorandum – Article 39.07 of the NBA Provincial Collective Agreement.)

6. The criteria for the approval of new Extended Work Day applications is as follows:

   a. The employee will not be scheduled to work more than four (4) consecutive extended work day shifts.

   b. All off-duty days will be consecutive unless requested by the employee and agreed to by the employer.

   c. There will be at least 48 hours off between sequences of shifts.

d. The annual imbalance of hours worked is to be brought to the attention of the employee (see calculation sheet). This annual imbalance shall not exceed 12 hours.

e. Statutory holidays must be incorporated into the work schedule during off duty days.

7. Upon receipt of the request and all documentation from the organization, HEABC will review the application and, if in agreement with the proposed schedule, will prepare a Memorandum of Agreement to vary the terms of the Collective Agreement for the ward / department / unit requesting the extended work day or compressed work week. The Memorandum will be submitted to BCNU for signature.

8. No change on the work schedule may be implemented until the organization has received the approval of both parties.

B. Opening of a New Ward / Unit Using the Extended Shift Schedule

The procedure to be followed by the organization for the opening of a new ward / department / unit using the extended shift schedule. New wards / departments / units are those where no staff are in place.

Step **Action**

1. The calculations for the proposed schedule are done using the Calculation Sheet for Extended Work Day / Compressed Work Week Schedule (see page 51). The calculations are to be done to three decimal places.

2. The organization will send to HEABC (with a carbon copy to the BCNU office) a covering letter requesting the preparation of a Memorandum of Agreement by HEABC for the proposed schedule.

This covering letter will be accompanied by the following documents:

a. Calculation Sheet for Extended Work Day / Compressed Work Week Schedule.

b. A copy of the proposed rotations that create the new schedule with the start and finish times of the shifts specified on the rotation(s). All statutory holidays should be identified and recorded in ink in the nursing staff work schedules on the basis of 7.2 paid hours. Every effort shall be made to spread the statutory holidays off evenly throughout the year. (See Extended Work Day Memorandum – Article 39.07 of the NBA Provincial Collective Agreement.)

c. The employer shall provide a separate document outlining why it requires approval prior to opening the new ward / department / unit and the anticipated opening date.

3. The criteria for the approval of new Extended Work Day applications is as follows:

a. The employee will not be scheduled to work more than four (4) consecutive extended work day shifts.

b. All off-duty days will be consecutive unless requested by the employee and agreed to by the employer.

c. There will be at least 48 hours off between sequences of shifts.

d. The annual imbalance of hours worked is to be brought to the attention of the employee (see calculation sheet). This annual imbalance shall not exceed 12 hours.

e. Statutory holidays must be incorporated into the work schedule during off duty days.

4. Upon receipt of the request and all documentation from the organization, HEABC will review the application and, if in agreement with the proposed schedule, will prepare a Memorandum of Agreement to vary the terms of the Collective Agreement for the ward / department / unit requesting the extended work day or compressed work week. The Memorandum will be submitted to BCNU for signature.

5. The employer upon receiving the necessary approvals shall:

   a. Post the new vacant positions pursuant to the posting provisions of the collective agreement. The posting shall contain the scheduled hours of work.

   b. Successful applicants shall complete Part V "Release of Overtime for Extended Work Day / Compressed Work Week British Columbia Nurses' Union".

   c. If the signature of 90% of all regular full-time and part-time employees working the schedule is not obtained within 28 days of opening the new ward / department / unit, the extended work day schedule shall be cancelled.

   d. The ward may then opt for either a 7.2 hour shift or a new application shall be submitted pursuant to Part II of this document. Either shall be implemented no later than 90 days following the cancellation date.

Note: All approvals by BCNU prior to the opening of new wards / departments / units shall be on a "without prejudice" basis.

C. Establishing Non-Standard Extended Shift Schedule

The procedure to be followed by the organization for implementing a non-standard work day and compressed work week schedule for:

a. Units having special staffing needs or unusual periods of operation which cannot be accommodated using other accepted rotations (e.g., renal units, Central Supply, PAR).

b. Units carrying out special procedures requiring additional staff for very specific periods of time (i.e., less than a full extended work day).

Step **Action**

1. In addition to the documentation requested in Part II, all requests for Non-Standard Rotation Status must be accompanied by a submission outlining the following:

   a. The reason(s) for requesting non-standard rotation status.

   b. An explanation of why the ward's needs cannot be met by a standard rotation.

2. Upon receipt of such a completed submission for Non-Standard Rotation Status, the parties will:

   a. Advise the organization of acceptance or rejection of the submission.

   b. Prepare and process the application as per Part II with the following exceptions:

      i. Each special rotation memorandum will be marked "Non-Standard Rotation Status".

      ii. Each special rotation memorandum will be accompanied by the conditions of acceptance.

3. Each rotation will be granted on a "without prejudice" basis for the exclusive use of the ward designated.

PART III

Revisions to Existing Extended Work Day and Compressed Work Week Rotations

If a ward or unit wishes to change an approved extended work day schedule, the procedure to be followed is:

A. Substantive Changes

For revisions to approved extended work day schedules that involve substantive changes (e.g., the length of the extended work day is being varied) the application must be accompanied by:

1. Release of Overtime for Extended Work Day / Compressed Work Week form including the signatures of 90% of all regular full-time and part-time employees working the schedule and the name of the Union contact.
2. Calculation Sheet for Extended Work Day / Compressed Work Week Schedule.
3. A copy of the proposed rotations that create the new schedule with the start and finish times of the shifts specified on the rotation(s). All statutory holidays shall be identified and recorded in ink in the nursing staff work schedules on the basis of 7.2 paid hours. Every effort shall be made to spread the statutory holidays off evenly throughout the year. (See Extended Work Day Memorandum – Article 39.07 of the NBA Provincial Collective Agreement.)

No change in the work schedule may be implemented until the organization has received the approval of both parties.

B. Non-Substantive Changes

For revisions to approved extended work day schedules that do not involve substantive changes (e.g., the addition of staff to an existing schedule), the application must be accompanied by:

1. Calculation Sheet for Extended Work Day / Compressed Work Week Schedule.
2. A copy of the proposed rotations that create the new schedule with the start and finish times of the shifts specified on the rotation(s). All statutory holidays shall be identified and recorded in ink in the nursing staff work schedules on the basis of 7.2 paid hours. Every effort shall be made to spread the statutory holidays off evenly throughout the year. (See Extended Work Day Memorandum – Article 39.07 of the NBA Provincial Collective Agreement.)

If HEABC and BCNU approve of the proposed change, the parties will each notify the organization of their approval.

C. Changes to Non-Standard Schedules

Any change to an approved non-standard rotation is to be viewed as a new application and the procedure in Part II is to be followed.

PART IV
Cancellation of an Approved Rotation

In the event that the organization, the employees, HEABC or BCNU wish to cancel an approved rotation, 28 days' notice in writing must be served to the other party with copies to BCNU and HEABC.

The cancelled rotation will continue to be worked until either: (a) a new application is submitted pursuant to Part II of this Manual; or (b) mutual agreement is reached on a new rotation. Mutual agreement should occur within ninety (90) days following the day of notice to cancel the rotation (or another mutually agreed to date).

The employer can implement a new rotation if the parties fail in their attempt to reach mutual agreement on a rotation. The six steps involved in reaching mutual agreement are contained at page 20.

If the employees wish to cancel an approved rotation, there must be 90% agreement among the affected employees to discontinue the rotation.

PART V
Release of Overtime for Extended Work Day / Compressed Work Week

BRITISH COLUMBIA NURSES' UNION

(Type of Work Schedule Requested: _____)
See Part I

We, the undersigned, employed in the _____ Ward / Department / Unit, of the _____ organization, agree to participate in an extended hours of work rotation **and** approve of the attached extended work day rotation.

The proposed rotation provides for an extended work day / compressed work week. We understand that overtime rates will apply for work in excess of _____ hours, _____ minutes, and _____ hours, _____ minutes in accordance with the scheduled hours in the attached rotation.

We further understand that this extended work day schedule may be discontinued by ourselves or the organization on 28 days' notice to the other party if the extended hours of work rotation is found unsatisfactory. We will continue to work in the "cancelled" rotation until either (a) we submit a new application for an extended work day or compressed work week schedule; or (b) mutual agreement is reached on a new rotation (which should occur within ninety (90) days following the date of notice to cancel the rotation). The employer can implement a new rotation only if the parties fail in their attempt to reach mutual agreement on a new rotation.

Signature	**Printed Signature** *(Use Black Ink)*	**Status**

Union Contact (Steward): _____ Date: _____

PART VI

Summary of Procedures for the Implementation of a New Shift Rotation

A new work schedule is prepared and decided upon jointly by the health care organization and BCNU members at the local level.

The calculations for the proposed schedule are done using the Calculation Sheet for Extended Work Day / Compressed Work Week Schedule (copy on following page). The calculations are to be done to three decimal places.

Employees must sign a Release of Overtime for Extended Work Day / Compressed Work Week Schedule (Part V above). The signatures of ninety (90) percent of all regular full-time and regular part-time employees working in a schedule with shifts of greater than eight (8) hours in length must be obtained. In obtaining signatures for schedules less than eight (8) hours in length, only a simple majority of employees in the ward / department / unit need to sign the overtime waiver form.

Following agreement in principle on the proposed schedule, the organization will send to HEABC, with a copy to BCNU, a covering letter requesting the preparation of a Memorandum of Agreement by HEABC for the proposed schedule. The covering letter should be accompanied by the following completed documents:

- Release of Overtime for Extended Work Day / Compressed Work Week. Include the required percentage of signatures of regular employees, the proposed hours of work, the name of the organization, and the name of the ward / department / unit.
- Calculation Sheet for Extended Work Day / Compressed Work Week. Ensure calculations are done to 3 decimal places and that the initial imbalance of hours does not exceed 12 per year.
- A copy of the schedule. The schedule should indicate one full rotation.
- A new rotation cannot be implemented until the new rotation has received the approval of both BCNU and HEABC.

Calculation Sheet For Extended Work Day / Compressed Work Week Schedules/BCNU

SAMPLE

Facility: _____

Ward/Unit: _____ No. of Employees: _____

Minimum number of work hours per year	1,879.200	
Less entitled stats (11 stats x 7.2 hrs)	- 79.200	
The total number of required hours per year	1,800.000	A
Number of weeks per rotation		B

# of shifts	_____	at 7.2	hours =	_____	hours
# of shifts	_____	at 7.5	hours =	_____	hours
# of shifts	_____	at 11	hours =	_____	hours
# of shifts	_____	at 11.25	hours =	_____	hours
# of shifts	_____	at 11.5	hours =	_____	hours
# of shifts	_____	at _____	hours =	_____	hours
# of shifts	_____	at _____	hours =	_____	hours

Total Hours Worked		C
Exact number of weeks per year	52.200	
Divided by B number of weeks, per rotation ÷	_____	
Equals times rotation must be worked in year (to 3 decimal places)		D

Total hours per rotation	C		_____
Multiplied by number times rotation worked per year	D	x	_____
Equals total hours scheduled per year			_____
Deduct required hours	A	-	1,800.000
* Difference (Maximum 12 hours)	±		

* This difference in time can be made up by scheduling the RN to work, or by giving the time off, whichever is appropriate to the calculation.

This initial imbalance in hours will be dealt with in the following manner (enter your intention):

_____

_____

SECTION IV
Recommended Readings

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Carskadon, M.A., and W.C. Dement. "Cumulative Effects of Sleep Restriction on Daytime Sleepiness", Psychophysiology, Vol. 18, No. 2, 1981.

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