



# ACKNOWLEDGE

**Resident wellness matters.**



SNEAK PEEK

01

Executive  
Summary

02

Background

03

Foundational  
Principles +  
Committee  
Membership

04

Policy  
Implementation

05

Governance,  
Responsibility &  
Accountability

# Acknowledge Executive Summary

## Fatigue is an occupational risk in residency training.

Medical residency training, like many occupations with demanding work hours, poses a safety risk to trainees; fatigue is one of these risks. In the past, and in some current situations, residents have been scheduled for duty periods of 24 or more consecutive hours without restorative sleep. At the centre of debate regarding resident duty hours have been concerns regarding the negative implications of such hours worked by residents on their physical, mental, and occupational health (NSC 2013).

Evidence from multiple studies evaluating the effects of fatigue on healthcare worker performance indicate that fatigue increases the risk of medical error, compromising patient safety while increasing

the risk to the personal safety and wellbeing (The Joint Commission, 2011). Whether it is a motor vehicle accident post-call or a treatment error made while on duty, evidence shows that chronic sleep deprivation leads to errors; residents and physicians are just as vulnerable to the effects of fatigue as the rest of the population (Asch et al, 2017). Efforts to minimize this risk cannot be undertaken by addressing resident duty hours alone, and in their 2013 report the National Steering Committee on Resident Duty Hours recommended that a one-size-fits-all approach to resident duty hours will not be effective or appropriate in Canada (NSC, 2013). Therefore, the shift to **managing fatigue related risk** during residency training is essential to supporting the dual role of learner and care provider.



**Acknowledge. Act. Adapt**  
Fatigue Risk affects us all.

# Background

**This *FRM Toolkit Resource* is** the first national resource for Canadian postgraduate medical education.

It is intended to provide a non-prescriptive framework, designed to assist clinical learning environments, programs and institutions in developing their own local FRM policies and mitigation strategies. The FRM Toolkit seeks to uphold and maintain the highest safety standards for both patients and learners, while ensuring that the management of fatigue risk is a shared responsibility among all those in medical education. It is important to note that the guidelines in this toolkit are not one-size-fits-all and the guidelines should be adapted to suit local resources and contexts.

## Causes of Fatigue

- ▶ **PHYSICAL**
- ▶ **EMOTIONAL**
- ▶ **SOCIAL AND CULTURAL ISSUES**

Causes of fatigue are often described in dimensions as fatigue cannot be attributed to a single cause. Below are some of the key physical, emotional, and social/cultural causes of fatigue that a physician may experience.

### Physical

#### ▶ Circadian Rhythm

The circadian rhythm is a behavioural, physical and mental functioning cycle that follows the near-24-hour biological clock which uses natural cues, such as daylight, to make us feel awake during the day and sleepy at night (National Institutes of General Medical Sciences, 2017). Acting against the circadian system feels like jet lag. It creates feelings of fatigue, and reduces your ability to perform physical and mental tasks effectively (Fifteen Minute Consultation: Farquhar, 2017).

The effects of fatigue are most apparent when working in the latter half of the night, often in a state of acute sleep deprivation. Physicians fight their body's natural instinct to sleep during the circadian low (Medical and Genetic Differences in the Adverse Impacts of Sleep Loss on performance: Czeisler, 2009; Fifteen Minute Consultation: Farquhar, 2017).

### ► Amount and Quality of Sleep

Sleep is necessary to restore mental and physical function (Fifteen-minute consultation: Farquhar, 2017). As a result, a low amount or poor quality of prior sleep can cause feelings of fatigue. If an individual gained less than 5 hours of sleep in the 24 hours before beginning a shift, then they are more likely to be significantly impaired performing common tasks (Managing Fatigue: Dawson and McCulloch, 2005). Sleep loss at this level can lead to 'decreased efficiency, instability, recent memory deficit, difficulty in thinking, depersonalization, and inappropriate humor' (Physician Fatigue: Ramsay, 2000).

### ► Shift Length/Rotation

Long or extended shifts reduce the opportunity to sleep (Strategies Used by Healthcare Practitioners to Manage Fatigue Related Risk: Ferguson et al., 2013). A reduction in shift length, however, manages physical, but not cognitive, fatigue (Managing Fatigue: Dawson and McCulloch, 2005). There is some evidence that the traditional overnight call schedule, in which a physician would complete 15-23 hour shifts every 9-10 days, causes more fatigue than a night float rotation, in which a physician would complete 9 hour shifts for five consecutive nights (Systematic Review: Reed et al., 2010). Similarly rapidly rotating schedules reduce the opportunity to

catch up on sleep, thereby increasing the chance of fatigue (Health consequences of shift work and insufficient sleep: Kecklund and Axelsson, n.d.).

### ► Careless use of Countermeasures

Although fatigue mitigation strategies, such as the use of caffeine or naps, can be beneficial in counteracting the effects of fatigue, their careless use can also increase feelings of fatigue. Whilst caffeine can improve alertness temporarily, its effects can last for up to six hours after digestion (Time to wake up: Hilditch et al., 2016; Fifteen Minute Consultation: Farquhar, 2017). Using caffeine towards the end of a shift will therefore reduce the ability to sleep after work. Similarly, naps are encouraged during shifts as they could improve alertness and responsiveness (Management of Physician Fatigue: Canadian Medical Association, 2014). A longer nap, however, could increase the chance of experiencing sleep inertia when you wake up from a deeper sleep. A physician needs to be alert at a moment's notice and, following a nap, we experience grogginess or 'sleep inertia' (Time to wake up: Hilditch et al., 2016). A physician must take steps to ensure that they do not unintentionally exacerbate feelings of fatigue.

## Emotional

Stress syndrome is described as 'common' amongst graduate physicians (Graduate medical training, learning, relationships, and sleep loss: Papp et al., 2006). Stress and fatigue are reciprocal as both can cause and be a consequence of the other. Stress can cause sleep loss and sleep loss may lead to a fatigued physician (Physician Fatigue: Ramsay, 2000). Sleep loss, however, also increases feelings of stress (Physician Fatigue: Ramsay, 2000).

## Social and Cultural Issues

Physician culture may exacerbate feelings of fatigue. A study of Anesthetists in the UK showed that some doctors and nurses objected to rest periods during night work and the Canadian Medical Association highlights that fatigue is not a weakness (A national survey of the effects of fatigue: McClelland et al., 2017; management of Physician Fatigue: Canadian Medical Association, 2014). This reveals that fatigue is not always treated seriously by physicians (Strategies Used by

Healthcare Practitioners: Ferguson et al., 2013). Physician culture can increase levels of fatigue by pressuring physicians to work when exhibiting symptoms of sleep deprivation (Health Worker Fatigue: Dubeck, 2014). Dawson et al. describe fatigue-related incidents as a systematic failure to prevent a chain of causal events (Fatigue Proofing: 2011). Without thorough mechanisms in place to recognise and mitigate the effects of fatigue, organizational structure is a major barrier in combating physician fatigue (Strategies used by healthcare practitioners: Ferguson et al., 2013).

## Consequences of Fatigue

### Physical Consequences

Fatigue impacts a physician's health and wellbeing (Systematic Review: Reed et al., 2010). Kecklund and Axelsson found a relationship between fatigue and an increased chance of occupational accidents, obesity/weight gain, Type 2 diabetes, and coronary artery disease, as well as breast, prostate, and colorectal cancer (Health Consequences of Shift Work: n.d.). Farquhar corroborates these findings, linking fatigue to an increased risk of cardiovascular disease, diabetes and obesity, and reduces the effectiveness of the immune system (Fifteen Minute Consultation: Farquhar, 2017). The Canadian Medical Association highlights the relationship between work-related fatigue and many of these conditions (Management of Physician Fatigue: 2014). Sustained fatigue is therefore not conducive to a healthy lifestyle.

- ▶ PHYSICAL
- ▶ EMOTIONAL
- ▶ SOCIAL AND CULTURAL
- ▶ PSYCHOLOGICAL

### Emotional Consequences

As already demonstrated, the effects of stress and fatigue are reciprocal. A lack of sleep can lead to fatigue which increases feelings of stress (Physician Fatigue: Ramsay, 2000). Stress, however, can lead to a lack of sleep which in turn leads to increased feelings of fatigue (Physician Fatigue: Ramsay, 2000).

### Social and Cultural Consequences

A fatigued physician is more likely to get impatient or agitated, have increased irritability, and have difficulty getting along with others (The Myths and Realities of Fatigue: Cirios, 2009; Graduate medical training, learning, relationships, and sleep loss: Papp et al).

In turn, these fatigue-related behavioural changes can negatively affect personal and social relationships, as well as relationships with co-workers.

## Psychological Consequences

Fatigued individuals have a reduced ability to recognise specific emotions and report lower levels of empathy than well-rested individuals (Neurobiology of Sleep and Circadian Rhythms: Killgore et al., 2017). This puts a strain not only on social relationships, but can also alter the way a physician interacts with their co-workers and, crucially, their patients.

A fatigued physician has a reduced cognitive function (Fatigue, Risk, and Excellence: National Steering Committee on Resident Duty Hours, 2013). The cognitive impairments that a fatigued individual can be compared to a blood-alcohol level that is over the legal limit to drive after 24 hours of sustained wakefulness (Management of Physician Fatigue: Canadian Medical Association, 2014<sup>1</sup>). Not only does this reduce the ability of a physician to complete common work tasks, but it may also have a detrimental effect on patient safety and occupational health and safety (Physicians' Occupational Health & Safety Roles and Responsibilities: Public Services Health and Safety Association Ontario, 2012). These issues are discussed more fully, on the next page.

## Patient Safety

Whilst the relationship between resident duty hours and patient safety is unclear, fatigue is strongly linked to the occurrence of adverse events in medicine (Health Worker Fatigue: Dubeck, 2014). Although a tired doctor is not necessarily an unsafe doctor, the risk of an incident 'increases markedly after eight hours of duty' and at 12 hours it is almost double the risk at 8 hours (Fatigue, Risk, and Excellence: National Steering Committee on Resident Duty Hours, 2013; Management of Physician Fatigue: Canadian Medical Association, 2014). Fatigue therefore increases the risk of errors and incidents in regards to patient care (Managing Fatigue: Dawson and McCulloch, 2005; Physician Fatigue: Ramsay, 2000). Fatigue is revealed as a contributing factor in a significant number of physician errors, including mistakes with regards to medication and laboratory testing (Health Worker Fatigue: Dubeck, 2014). FRM practices are therefore necessary to improve patient safety and to continue to provide the best care possible to the Canadian population.



The Toolkit is intended as a resource for institutions of Canadian medical education and aims to help with the development of local FRM policies and the implementation of mitigation strategies. Specifically, this toolkit will be of use to local implementation committees.

<sup>1</sup>Williamson, A. & Feyer, A. (2000). Moderate Sleep Deprivation Produces Impairments in Cognitive and Motor Performance Equivalent to Legally Prescribed Levels of Alcohol Intoxication. *Occupational and Environmental Medicine* 57: 649 - 655. 13 Dawson, D. & Reid, K. (1997). Fatigue, Alcohol and Performance Impairment. *Nature* 388: 235

# Occupational Health & Safety

Fatigue impacts occupational health and safety. As a fatigued individual has a reduced capacity to perform tasks of 30 minutes or more (Fatigue and Safety at the Workplace: Government of Alberta, 2016), sleep deprivation therefore negatively impacts a physicians' performance at work (Resident Work Hours: Bhananker and Cullen, 2003; Medical and genetic differences: Czeisler, 2009; Cognitive Benefits of Sleep: Ellenbogen, 2005). A fatigued healthcare worker is more likely to fall asleep at work and suffer personal consequences, such as percutaneous needlestick injuries (The Myths and Realities of Fatigue: Sirios, 2009; Management of Physician Fatigue: Canadian Medical Association, 2014).

Worryingly for those in shift work industries, the impact of 17 and 24 hours of sustained wakefulness on performance deterioration have been compared to that of a blood alcohol level of 0.05% and 0.10% after 24 hours of sustained wakefulness (Management of Physician Fatigue: Canadian Medical Association, 2014). It is important to note that the maximum legal limit for blood alcohol level in Canada is 0.08% to drive (Ontario Ministry of Transportation, 2017; Dubeck, 2014; McClelland et al., 2017) and there have been multiple cases where fatigue has been a contributing factor in serious and fatal driving accidents after a night shift (Health consequences of shift work and insufficient sleep: Kecklund and Axelsson, n.d.; Fifteen Minute Consultation: Farquhar, 2017).

## Glossary

### Defining Fatigue and associated terms for the Canadian Medical Education Context

Fatigue is multidimensional in both its causes and manifestations, and is influenced by many factors: physiological (e.g. circadian rhythm), psychological (e.g. stress, alertness, sleepiness), behavioural (e.g. pattern of work, sleep habits) and environmental (e.g. work demand).

► ...essentially, fatigue is a subjective feeling of physical or mental tiredness that may impact functioning.  
(Adapted from RNAO, 2010).

TERM	DEFINITION
Alertness	Levels of sleepiness, which can vary widely from extremely low (ex. sleepy) to very high (ex. wide awake), the state of cognitive and physiological arousal, and responsiveness to environmental/situation conditions. (FRMS Resource Pack: Queensland Health, 2009).
Audit	Summaries of clinical performance (eg, based on review of charting or one-to-one observation of clinical practice) used to increase the target group's awareness of their and/or others' practice (Toolkit: Implementation of Clinical Practice Guidelines: Registered Nurses Association of Ontario, 2002).

TERM	DEFINITION
<b>Fatigue</b>	A subjective feeling of tiredness that is experienced physically and mentally. It ranges from tiredness to exhaustion, creating an unrelenting overall condition that interferes with individuals' physical and cognitive ability to function to their normal capacity. Its experience involves some combination of features: physical (e.g. sleepiness) and psychological (e.g. compassion fatigue, emotional exhaustion) (Adapted from RNAO, 2010).
<b>FRM – for the Medical Education Context</b>	Fatigue risk management is a set of ongoing fatigue prevention and mitigation practices, principles, and procedures integrated throughout all levels of the clinical and academic work environment, and are designed to monitor, ameliorate and manage the effects of fatigue and associated risks for the health and safety of healthcare personnel and the patient population they serve (FRM Task Force 2018).
<b>FRM System (FRMS)</b>	An FRMS is an integrated set of management practices, beliefs and procedures for monitoring and managing the risks posed to health and safety by fatigue. It is based in safety management system theory with an emphasis on risk management (Queensland Health, 2009).
<b>Fatigue Risk Register</b>	The fatigue risk register enables systematic documentation of the findings of the formal fatigue risk scan and the ongoing monitoring of current fatigue risk management activities (Queensland Health, 2009). The register may also house a catalogue of available assessment methods, list fatigue risks particular to the local practice setting, and control measures previously or currently in use.
<b>Fatigue Severity Scale (FSS) of Sleep Disorders</b>	A scale to measure fatigue comprised of nine statements concerning respondent's fatigue, e.g., how fatigue affects motivation, exercise, physical functioning, carrying out duties, interfering with work, family, or social life (Measures of Fatigue: Neuberger, 2003).
<b>FRM Local Working Group (LWG) or FRM Local Officer</b>	A FRM Local Working Group/Officer is a group or an individual responsible for oversight of the process by which fatigue risk is managed and monitored in the clinical practice and learning environment at a specific site (FRMS Resource Pack: Queensland Health, 2009; Transport Canada, 2011).
<b>Karolinska Sleepiness Scale (KSS)</b>	A scale used to measure the subjective level of sleepiness at a particular time during the day. On this scale subjects indicate which level best reflects the psycho-physical state experienced in the last 10 min. The KSS is a measure of situational sleepiness. It is sensitive to fluctuations. (Karolinska Sleepiness Scale: Akerstedt, 2012).
<b>Mitigation Controls/FRM Strategies</b>	Mechanisms or countermeasures established locally to effectively control or mitigate the risk of a fatigue-related incident.
<b>Nap</b>	Brief sleep episodes taken outside of the major sleep episode. Naps can vary in duration from 5 minutes to 4 hours, with varying restorative benefits depending on duration, time of the day taken, prior wake time and prior sleep (FRMS Resource Pack: Queensland Health, 2009).
<b>Prior Sleep</b>	The amount of sleep obtained prior to a specific time (eg. the start or end of a shift) (FRMS Resource Pack: Queensland Health, 2009).
<b>Prior Wake</b>	The amount of time spent awake prior to a specific period (usually assessed at the start and end of a shift). (FRMS Resource Pack: Queensland Health, 2009).
<b>Risk and Risk Assessment</b>	A risk is the likelihood of injury or illness arising from any exposure to a hazard. Risk assessment is a process to determine the likelihood and impact of injury or illness for those exposed to the hazard (National Code of Practice: Australian Medical Association, 2016).
<b>Sleep Inertia</b>	Sleep inertia is experienced shortly after waking, and presents as generalized grogginess/tendency to fall back asleep, with impaired cognition and motor performance that typically lasts 10-15 minutes (Time to wake up: Hilditch et al., 2016).
<b>Sleepiness</b>	A state of increased motivation to sleep. Difficulty in maintaining the alert state so that if an individual is not kept active and aroused, they will fall asleep (FRMS Resource Pack: Queensland Health, 2009).



# FRM Principles

**The following guiding principles** are intended to support the local development of policies, strategies and procedures for faculties, trainees and institutions.

With the purpose of establishing a foundation for FRM at a national level, the objective of the principles is to ensure that both patient safety and service provider safety are upheld, while remaining committed to exceptional medical education. These principles acknowledge the power differential that exists between trainees, senior clinical staff and the educational institution, and as such, responsibility for fatigue management is allocated accordingly. Implementation of risk management strategies and practices in each individual postgraduate medical education training environment will necessarily reflect the local context and will be designed and adapted to suit site-specific needs.

Future work will establish the pathway for successful implementation of local, flexible strategies and controls, and will elaborate on the development of outcomes-based FRM accreditation standards and indicators. The creation of a FRM Toolbox Resource, of which the FRM Principles are the foundation, will provide a series of non-prescriptive frameworks and an array of available FRM actions and options that will support clinical educators, institutions and programs in the creation of management and mitigation plans for fatigue risk.



## Guiding Principles



**1** Leaders of both educational institutions and clinical learning environments are responsible for ensuring that FRM is a priority and that healthcare providers and trainees can effectively contribute to the creation of a management plan.

**2** Every trainee bears a responsibility to self, to their peers, and to those they provide care for, to manage their own fatigue during training and as they transition into practice.

**3** All clinical training facilities must develop and implement an institution-wide FRM policy and also enable trainees and other healthcare providers to effectively contribute.

**4** All clinical institutions involved in clinical training must create a just culture learning environment that enables the reporting of fatigue-related incidents.

**5** All clinical institutions involved in training must support faculty and trainee development in FRM policies, practices, and procedures.

**6** All stakeholders to clinical FRM must collaborate on an evaluative process for Continuous Quality Improvement (CQI) of the local FRM approach, that includes a process for governance, performance evaluation, and review and audit functions.

### ▶ EXEMPLARY INDICATOR OF FRM



Clinical institutions participating in clinical training actively identify, collect, and disseminate good practices and innovative research in FRM to the medical education community.

**Acknowledge. Act. Adapt**  
Fatigue Risk affects us all.

# Options for FRM Actions

The following FRM Actions are intended as exemplars of available strategies and options that are linked to each role and principle, and are not exhaustive, mandatory or prescriptive. As each residency education program, institution and training site develops their respective FRM Plan, the established principles and corresponding strategies are intended to guide and support the equitable and balanced allocation of roles and responsibilities for trainees, clinical educators, programs, institutions, hospitals and training sites, employers, and accrediting bodies.

## ▶ PRINCIPLE 1

.....

### ROLES FOR LEADERS:

Leaders of both educational institutions and clinical learning environments are responsible for ensuring that FRM is a priority and that healthcare providers and trainees can effectively contribute to the creation of a management plan.

Leaders includes, but is not limited to: Clinical supervisors/Senior educational staff/Chief of Staff, Most Responsible Physician (MRP), Program Directors, Postgraduate Deans.

### OPTIONS FOR LEADERS

Establishment of a local FRM working group or a chief FRM officer

Formal obligation for leaders to report on established FRM practices and training to staff, including trainees, and the organization

## ▶ PRINCIPLE 2

.....

**TRAINEE ROLE:** Every trainee bears a responsibility to self, to their peers, and to those they provide care for, to manage their own fatigue during training and as they transition into practice.

### OPTIONS FOR TRAINEES

Conduct a fatigue self-assessment prior to/during call

Declare fatigue to supervisors and team

Ensure adequate rest, nutrition are obtained prior to call

All reasonable efforts should be made to avoid shifts in excess of 24 hours

Report fatigue related incidents via established reporting routes

Employ individual controls/fatigue risk countermeasures while on call (caffeine intake, napping/breaks, task variation, nutrition and hydration)

### ▶ PRINCIPLE 3

.....

#### CLINICAL TRAINING FACILITY ROLE:

All clinical resident training facilities must develop and implement an institution-wide FRM policy and also enable the trainees and other healthcare providers to effectively contribute.

#### OPTIONS FOR CLINICAL TRAINING FACILITIES

Incorporate and offer educational resources and information on fatigue prevention, mitigation and recognition strategies for trainees and healthcare providers	Establish a Taxi Reimbursement/alternative safe commuting program
	Provide a quiet/appropriate place to nap after completing a shift
Integrate/align FRM within existing health and safety policies	Establish clear Handover Protocols

### ▶ PRINCIPLE 4

.....

#### DUTY TO UPHOLD REPORTING PRACTICES AND POLICIES:

All clinical institutions involved in clinical training must create a just culture learning environment that enables the reporting of fatigue-related incidents.

#### OPTIONS FOR REPORTING PRACTICES

Establish reporting pathways to identify fatigue-related incidents within a just culture and a proactive clinical learning environment
Support declaration of fatigue to team, team double-checking, for both trainees and senior educational and clinical leaders
Ensure policies and procedures are aligned with just culture and professional practice standards, are reviewed regularly and are made available to all participants

## ▶ PRINCIPLE 5



**SHARED ROLE TO SUPPORT DEPLOYMENT & IMPLEMENTATION:** All clinical institutions involved in training must support faculty and trainee development in FRM policies, practices, and procedures.

### OPTIONS FOR FACULTY AND TRAINEE DEVELOPMENT

Offer educational and training workshops and resources	Incorporate physician fatigue content into curriculum for trainees and clinical educators/teachers
Align with OH&S programs/procedures	Incorporate FRM evaluation processes to determine if the system needs are being met
Create faculty development opportunities to support and engage faculty in FRM/mitigation	

## ▶ PRINCIPLE 6



### SHARED ROLE AND COMMITMENT TO CO-PRODUCE CQI:

All stakeholders to clinical FRM must collaborate on an evaluative process for CQI of the local FRM approach, that includes a process for governance, performance evaluation, and review and audit functions.

### OPTIONS FOR CONTINUOUS QUALITY IMPROVEMENT (CQI)

Develop outcomes-based procedures to assess and evaluate policy effectiveness
Ensure evaluation data is captured reliably & regularly
Support collaboration between institutions and respective local health authority to ensure alignment with FRM principles and practices



▶ **EXEMPLARY INDICATOR**

.....

**DUTY TO CONTRIBUTE TO DISSEMINATION OF GOOD PRACTICES:**

Clinical institutions participating in clinical training actively identify, collect, and disseminate good practices and innovative research in FRM to the medical education community.

**EXEMPLARY INDICATOR FOR FRM: OPTIONS FOR SHARING GOOD PRACTICES**

Promote research & innovation on fatigue-related implementation & evaluation strategies to address trainee/physician fatigue
Facilitate partnerships with organizations to conduct FRM related research
Incorporate FRM evaluation processes to determine if the system needs are being met
Share practices aimed at solutions for managing fatigue within the medical education community

# Fatigue Risk Project Membership 2018

## Task Force

### ▶ TOM MCLAUGHLIN

Task Force Co-Chair,  
Resident Doctors of Canada

### ▶ KEVIN IMRIE

Task Force Co-Chair,  
Royal College

GLEN BANDIERA University of Toronto

ASOKA SAMARASENA Memorial University of Newfoundland

CATHERINE CERVIN Northern Ontario School of Medicine

CHRIS WATLING Western University

DAVID DIX University of British Columbia

IRVING GOLD Resident Doctors of Canada

LORNE WIESENFELD University of Ottawa

LISA WELIKOVITCH University of Calgary

ANURAG SAXENA University of Saskatchewan

RAMONA KEARNEY University of Alberta

ROSS WALKER Queen's University

PARVEEN WASI McMaster University

CAITLIN LEES President, Maritime Resident Doctors

## FRM

Project Secretariat,  
Royal College

KEVIN IMRIE

JASON FRANK

TOM MCLAUGHLIN

SARAH TABER

LISA GORMAN

LISA CARROLL

## Expert Working Group FRM-EWG

### ▶ JASON FRANK

Key Facilitator,  
Royal College

**DIANE B. BOIVIN** Centre for Study and Treatment of Circadian Rhythms, Douglas Mental Health University Institute, Department of Psychiatry, McGill University

**JULIE MAGGI** University of Toronto, Assistant Professor Psychiatry

**TARYN TAYLOR** UWO, Assistant Professor, Dept of Obstetrics & Gynaecology, Scientist Centre for Education Research & Innovation, Schulich School of Medicine & Dentistry

**JACQUELINE BOOTH** Chief, Technical Program Coordination & Evaluation Transport Canada

**DREW DAWSON** Fatigue specialist, Director of the Appleton Institute, CQ University South Australia

**MITHU SEN** University of Western Ontario, Assistant Dean & Associate Professor of Medicine

**JANICE WILLET** Northern Ontario School of Medicine, Associate Dean, Faculty Affairs

**KAIF PARDHAN** Sunnybrook Health Sciences Centre & McMaster Children's Hospital

**SUSAN EDWARDS** University of Toronto

## National Advisory Committee FRM-NAC

**CATHERINE CERVIN**  
Northern Ontario School  
of Medicine

**PAUL DAGG** Interior Health

**DANIELLE FRECHETTE**  
Royal College

**SHIPHRA GINSBURG**  
University of Toronto

**KAIF PARDHAN** Sunnybrook  
Health Sciences Centre &  
McMaster Children's Hospital

**PAOLA FATA** McGill University

**ROBBIE SIDHU**  
University of Alberta

**CHRIS PARSHURAM**  
Sick Kids Hospital

**RAMONA KEARNEY**  
University of Alberta

**MAUREEN SHANDLING**  
Mt. Sinai

**IRVING GOLD**  
Resident Doctors of Canada

**PARVEEN WASI**  
McMaster University

**NAJMA AHMED**  
St. Michael's Hospital,  
University of Toronto

**LOUISE SAMSON**  
Collège des médecins  
du Québec

**FRANCINE LEMIRE**  
College of Family  
Physicians of Canada

**DAVID LAMB**  
Ministry of Health &  
Long Term Care

**DON EMBULDENIYA**  
Ministry of Health &  
Long Term Care

**KEN HARRIS** Royal College

**NANCY FOWLER** College of  
Family Physicians of Canada

**CHRISTOPHER SIMON**  
Advisor of Physician Health at  
Canadian Medical Association



# FRM Policy Implementation

## **This FRM Policy Implementation Guide**

is intended as a non-prescriptive resource to support the local development of an institutional or program-level policy for the management of fatigue risk in postgraduate medical education.

This guide is intended to be used in conjunction with the FRM Policy Template – a guideline for the development of an FRM policy document, that can be adapted by the institution or program.





## FRM Policy Development

The goal of any FRM Policy is to manage and proactively mitigate the fatigue-related risks specific to the clinical learning and practice environment. At its foundation, a policy to manage fatigue during residency training:

- ▶ Acknowledges that fatigue is a hazard in medical education
- ▶ Aligns with current organizational health and safety policy practices, including those outlined by the respective hospital site and Provincial Housestaff Organization (PHO)
- ▶ Aligns with the educational program goals in order to support the development of learner competencies
- ▶ Ensures the safety and wellbeing of residents, healthcare staff and the patient population they serve

## Recommendations for Implementation

The following recommendations aim to ensure that the FRM policy is reflective of your local context and that it aligns with the program or postgraduate office's existing health and safety policies and practices, and can be effectively implemented based on the resources available in your training context.

### ▶ The following recommendations are provided to support the FRM Policy development process in your local context:

- Ensure that staff and residents have the opportunity to be involved in and regularly contribute to the development of the FRM Policy, at its inception and during periodic review
- Launch a FRM Local Working Group or FRM Officer as a single point of contact in policy development, implementation and for ongoing monitoring and review
- Ensure senior leaders are informed and engaged with the process of developing FRM policies
- Emphasize and articulate at the outset of the policy document that senior staff/leaders are supportive of both developing and effecting FRM policy and procedures
- An institutional or program-level FRM Policy will be most effective when implemented in an integrated fashion
  - The FRM policy can be integrated alongside training/ education programs, the development of audit and compliance protocols or implementation of reporting systems
  - The FRM policy should also reference incident investigation planning and practices, as outlined in the section addressing *Continuous Quality Improvement and Evaluation: Audit and Compliance* on page 52 of the Toolbox
- Develop the policy in alignment with existing health and safety policy practices currently in place in your local institution, and verify that policies do not contradict one another

# FRM Policy Template

Approved (Date)	
Review Date	
Revised Date	
Approved By	

## Background/ Introduction

### Mission statement tailored to local context

This section introduces the rationale for FRM Policy development and implementation, and communicates the shared responsibility for and commitment to managing fatigue from a risk-based approach.

### ▶ Sample Content

Fatigue is a hazard in medical education that impacts residency training and workplace health and safety, with potential implications for patient safety. Fatigue is an inevitable aspect of 24/7 healthcare service and therefore is it not realistic to eliminate risk but rather to work collectively to mitigate the risk across the system. Successful management of fatigue risk is therefore the shared responsibility among all those who have a role within medical education. Within that shared responsibility, trainees have a key role in managing and reporting their own fatigue to their supervisors, peers and to the healthcare team. To support this, medical education leaders are accountable for ensuring practices are in place that enable and protect every trainee's ability to fulfill their role in the management of fatigue risk.

## Objective/ Purpose

### Tailored to local context

This section address the purpose of the policy, clearly stated and outlining what the policy aims to achieve.

#### ▶ Sample Content

The objective of this policy is to prevent, mitigate and manage the hazard of fatigue during residency training, and to promote health and wellbeing for physicians and for the provision of quality patient care.

## Definitions (may be tailored to local context)

TERM	DEFINITION
<b>Clinical Practice &amp; Learning Environment (also, the Clinical Training Site)</b>	Clinical Practice & Learning Environment (also, the Clinical Training Site).
<b>Continuous Quality Improvement (CQI)</b>	Structured process to improve all aspect of care and service continually; ongoing study to improve performance. (Medical Dictionary for the Health Professions and Nursing, 2012). For FRM, CQI will explicitly entail the promotion and sharing of information, and communicating learnings from incidents as they occur (See page 55: <i>Facilitating FRM Infrastructure: Knowledge Sharing and Best Practices</i> ).
<b>Fatigue</b>	A subjective feeling of tiredness that is experienced physically and mentally. It ranges from tiredness to exhaustion, creating an unrelenting overall condition that interferes with individuals' physical and cognitive ability to function to their normal capacity. Its experience involves some combination of features: physical (e.g. sleepiness) and psychological (e.g. compassion fatigue, emotional exhaustion) (Adapted from RNAO, 2010).
<b>Fatigue Risk Management (FRM)</b>	A set of ongoing fatigue prevention and mitigation practices, principles, and procedures integrated throughout all levels of the clinical and academic work environment, and are designed to monitor, ameliorate and manage the effects of fatigue and associated risks for the health and safety of healthcare personnel and the patient population they serve (FRM Task Force, 2016).
<b>FRM Officer/Local Working Group (LWG)</b>	Group or individual responsible for oversight of the process by which fatigue risk is managed and monitored in the clinical practice and learning environment.

## Scope

This section articulates who the policy applies to, and the conditions under which the stakeholders are accountable to the policy.

### ▶ Sample Content

This policy applies to all postgraduate trainees of (institution name), for the duration of all activities associated with the performance of their trainee duties.



## Key Roles & Responsibilities

- ▶ **PERSONAL HEALTH & SAFETY**
- ▶ **WORKPLACE/ OCCUPATIONAL HEALTH & SAFETY**

- ▶ See section on [Governance, Responsibility & Accountability](#), page 26 in the Toolbox

This section clearly outlines the respective roles and shared responsibilities for trainees, educators, leaders, clinical training sites/employers and universities/institutions, and the responsibility for alignment with respective PHO service agreements. This section will also describe the responsibility the employer has to trainees, whether the employer is the hospital/clinical training site or the university. To help define the roles, responsibilities within the FRM policy can be described under the following headings:

### ▶ Personal Health & Safety

- Responsibility of the Program and/or the Clinical Training Site
- Responsibility of the Resident/Trainee

### ▶ Workplace/Occupational Health & Safety

- Responsibility of the Program and/or the Clinical Training Site
- Responsibility of the Resident/Trainee

## Procedure

This section will outline the details of how fatigue will be identified, managed, mitigated and reported on within your organization.

- ▶ The procedure **may** include details describing:
  - Processes for communication
  - Practices around service hours and scheduling/rostering
  - Practices around safe vehicle travel for clinical or academic purposes
    - Align these practices with existing resident travel policies (where present), that may include post-call travel or long distance travel
  - Reporting practices to ensure fatigue is effectively monitored
  - Protocols to ensure staff and trainees are educated and trained on the effects of fatigue and how to manage fatigue in their context

## Related Resources/ Other Information

### Tailored to local context

This section will detail relevant information, links or resources for trainees or staff that may be useful in orienting and educating your team about fatigue, its effects on performance, wellbeing and health overall.



# Governance, Responsibility & Accountability

**Everyone has a shared responsibility for managing fatigue-related risks** and maintaining safety in the clinical practice and training environment.

To ensure a FRM plan or strategy will be prioritized and effective, it is necessary to establish a local governance structure that clearly outlines the roles and responsibilities of key organization leaders, including Hospital Administrators, Decanal Team, Postgraduate Medical Education Offices, Program Directors, and clinical and educational supervisors, as well as learners. An important component of any governance structure is clearly defined mechanisms of accountability.

Accountability for FRM will vary based on locally available resources, personnel and care delivery settings. While autonomy for the establishment of a governance structure that is reflective of the local context rests with each training site, the roles and responsibilities within should be ultimately fortified by a commitment to both learner and patient safety, as outlined in the FRM Foundational Principles.

## Recommendations for Allocating Responsibility

Certifying colleges have a responsibility to mandate safety standards and requirements, and conduct audits to ensure compliance. In situations where an organization does not comply with regulations or safety is improperly managed and results in an incident or accident, the organization and its leaders could be held legally liable.

**LEARNERS** have a responsibility to obtain sufficient sleep and to identify when they have not been able to do so or believe they are at risk of making a fatigue-related error. Learners are responsible for reporting any situation where they observe fatigue-related risks posing a threat to their own or to patient health and safety. Incident or event reporting is to be confidential and for the purposes of maintaining a safe learning environment, therefore residents should feel safe in voicing and reporting any fatigue related risks they observe.

**MANAGERS & SUPERVISORS** have a responsibility to create a work environment that reduces fatigue-related risks, provide adequate sleep opportunities, and take appropriate action if an employee is not fit for work. Supervisors also have a responsibility to ensure that incident and accident reporting is conducted in a safe and confidential manner, such that learners do not fear reprisal when reporting.



Although each member of these groups has specific roles and responsibilities, to ensure the health and safety of patients, staff, and learners, the successful implementation of an effective FRM plan requires the development of a 'just' safety culture in which fatigue risk management is the norm. An openly communicative working environment, including non-punitive incident reporting and investigations with a focus on continuous quality improvement is a prerequisite to obtaining open feedback about FRM policies and programs and for identifying any fatigue-related incidents, errors, or near misses.

Consideration for accommodation of learners with disabilities should be given, including efforts to ensure that those who have been diagnosed with sleep disorders or conditions that impact sleep are entitled to the same opportunities as those learners without disabilities. The duty to accommodate medical learners with special needs can be managed and evaluated on a case-by-case basis and at the local level and at the discretion of the individual program. Ultimately, any accommodation arrangement should not compromise or interfere with the wellbeing and safety of patients, learners and staff. Consultation and alignment with local PGME policies and regional human rights legislation regarding the duty to accommodate learners with disabilities is an important step in integrating a just and equitable FRM plan.



## FRM Roles & Responsibilities

- ▶ CERTIFYING COLLEGES
- ▶ HOSPITAL ADMINISTRATORS
- ▶ DECANAL TEAM
- ▶ CLINICAL EDUCATORS & SUPERVISORS
- ▶ PROGRAM DIRECTORS
- ▶ LEARNERS
- ▶ OVERSIGHT & MONITORING
- ▶ FRM LOCAL WORKING GROUP (LWG) OR OFFICER

The subsequent section describes a recommended set of responsibilities for each role within the postgraduate medical education system. These are not prescriptive, but do provide a framework on which to base the organization of accountability and governance within the local practice and working environment.

### ▶ Certifying Colleges (RC, CMQ, CFPC)

- Establish education and accreditation standards and requirements
- Evaluate compliance with established FRM policies, procedures and safety training
- Audit non-compliance/evaluate compliance

### ▶ Hospital Administrators

- Allocate resources to support the implementation of a FRM plan
- Work with the Postgraduate Deans and Program Directors to identify a person or group of people to develop a FRM policy appropriate to the local context
- Ensure the FRM policy complies with national and provincial/territorial policies and health and safety policies
- Support the implementation of the FRM policy
- Ensure medical and clinical staff under their supervision comply with the FRM plan
- Work with schedulers to ensure duty schedules provide sufficient opportunity for rest and recovery between shifts
- Investigate where appropriate, fatigue related accidents/incidents
- Participate in the continuous evaluation, monitoring, and improvement of residency programs and address issues affecting residence program quality

### ► Decanal Team

- Allocate resources to support the implementation of a FRM policy
- Ensure FRM policies and practices meet accreditation standards
- Work with Program Directors to develop a FRM policy appropriate to the local context
- Ensure medical and clinical staff under their supervision comply with the FRM plan
- Ensure FRM measures are appropriate
- Prioritise allocation of resources to reduce highest levels of fatigue risk
- Ensure processes are developed to respond to reports of fatigue-related incidents, errors, and/or behaviours in an appropriate manner
- Participate in the continuous evaluation, monitoring, and improvement of residency programs and address issues affecting residence program quality

### ► Clinical Educators & Supervisors

- Participate in FRM training and education
- Incorporate educational resources and information on fatigue prevention, mitigation, and recognition strategies
- Identify and report fatigue related risks to the FRM Local Working Group (LWG)
- Ensure learners under their supervision comply with the FRM strategy or plan

### ► Clinical Educators & Supervisors (cont'd)

- Advise program directors of barriers preventing the effective management of fatigue-related risks
- Arrive at shift in a state fit to safely conduct duties
- Report when they have not been able to obtain sufficient sleep or believe they are at risk of making a fatigue-related error
- Respond to declarations of fatigue in a manner that upholds patient and learner health and safety
- Respond to reports of fatigue-related incidents, errors, and/or behaviours appropriately and as per program/institution policy responsibly
- Appropriately supervise learners and actively promotes the safety and wellness of patients and learners
- Utilize appropriate Fatigue Risk Mitigation Strategies when Learners experience fatigue and take appropriate action if a Learner is not fit for duty
- Ensure there are effective centralized policies addressing fatigue risk management
- Participate in the continuous evaluation, monitoring, and improvement of residency programs and address issues affecting residence program quality

### ► Program Directors

- Work with Postgraduate Dean to develop a FRM policy and ensure its implementation
- Monitor faculty, staff, and learners to guarantee participation in FRM training and education
- Participate in FRM training of residents and faculty
- Incorporate educational resources and information on fatigue prevention, mitigation, and recognition strategies in program
- Ensure FRM measures are appropriate
- Prioritise allocation of resources to reduce highest levels of fatigue risk
- Monitor compliance with the FRM Policy
- Advise postgraduate deans of barriers preventing the effective management of fatigue-related risks
- Ensure suitable processes are in place to respond to reports of fatigue-related incidents, errors, and/or behaviours in an appropriate manner via the FRM Local Working Group and/or appropriate risk management committee
- Participate in the continuous evaluation, monitoring, and improvement of residency programs and address issues affecting residence program quality

### ► Learners

- Arrive at shift in a state fit to safely conduct duties
- Use time outside of work to obtain adequate rest and to ensure fitness for work
- Report when they have not been able obtain sufficient sleep or believe they are at risk of making a fatigue-related error
- Collectively identify and report context-specific fatigue related risks to the Fatigue Risk Management Local Working Group
- Individually report specific errors and fatigue-related behaviours or situations that may present a fatigue-related risk
- Complete all training required by the local FRM strategy
- Employ appropriate Fatigue Risk Mitigation Strategies
- Participate in the continuous evaluation, monitoring, and improvement of residency programs and address issues affecting residence program quality

### ► Oversight & Monitoring

Depending on the size and structure of the training context, it may be useful to convene either a Local Working Group or Officer responsible for oversight of the FRM plan in place. This body can also choose to employ a Fatigue Risk Register (described below) as a means of monitoring the fatigue risk particular to the local training site. While this group/individual and the mechanisms by which they operate and monitor fatigue can be designed and adapted to suit the site-specific needs, a description of the role of this group is provided below, along with the key elements that can be included in a Fatigue Risk Register.

## ► FRM Local Working Group (LWG) or Officer

To help implement a FRM plan, a FRM Local Working Group/FRM Officer role can be established to oversee the management of fatigue-related risk specific to the local training context. The LWG or officer plays a central role in establishing a culture in which fatigue risk management is well received and accepted as a normal practice within the workplace. The LWG would regularly assess and improve upon existing FRM policies and practices to ensure procedures remain relevant to the local context and that best practices suitable to the context are in place. This role also functions as a conduit between the staff, learners and administrators in identifying priorities and areas for improvement in the local FRM strategy.

The LWG may be comprised of key leaders who can provide insight into the management and operation of the facilities. The LWG should include, but is not limited to at least one member of each of the following groups:

- The institutional leadership;
- The program leadership;
- Faculty members; and
- Learners

The LWG responsibilities may include:

- Reporting regularly to program directors
- Liaising with the patient safety committee(s) and/or health and safety officer to ensure policies and procedures align and are consistent
- Designing and implementing site-specific FRM strategies, including conducting the assessment of risks inherent to a particular training context
- Continuously reviewing, monitoring and improving fatigue risk management practices based on developing operational needs and feedback (including collect documentation regarding the frequency and nature of threshold violations, fatigue report forms, and other reports as deemed necessary)
- Conducting investigations into fatigue-related accidents or incidents
- Ensuring that the act of reporting an incident or adverse event by learners or supervisors is protected and handled in a safe and confidential manner

## Governance, Responsibility, and Accountability: Key Tasks

- 1 Obtain high-level commitment across the facility to develop and implement FRM.
- 2 Establish support and resources to implement a FRM plan.
- 3 Identify a FRM Governance Officer and/or Local FRM Working Group to oversee the implementation of a plan for FRM, assess the risk of fatigue in the local context, outline the roles and responsibilities of managers, supervisors, and learners, develop FRM policies, and continuously monitor procedures.

“ We have a culture of long working hours, and the impact of fatigue has not been part of our consciousness. ”

Christopher P. Landrigan, MD, MPH Professor of Pediatrics, Harvard Medical School. Research Director, Boston Children's Hospital Inpatient Pediatrics Service Director, Sleep and Patient Safety Program, Brigham and Women's Hospital