

The Case of the Night Shift Stimulants

Case by Dr. Tamara McColl

Case & Questions

Dr. Tamara McColl

Objectives:

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Expert Commentaries

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"I can't believe Dr. Shaw didn't show up for his shift!" chuckled George. "He probably slept through his alarm. It's harder for the old guys to work night shifts..."

Sam looked around the department. It was a busy night and they were off to a rocky start. The night shift attending, Dr. Shaw, was nowhere to be found and the evening attending was waiting anxiously for the arrival of the on-call staff, Dr. Rivers.

Sam and George, both emergency medicine residents, had cases to review. They were seated by computers, waiting for Dr. Rivers. George was continuing to joke about the possible scenarios leading to Dr. Shaw's absence, and was starting to get on Sam's nerves. He suggested that maybe Dr. Shaw had stopped by the roadside to rescue a stray kitten.

Sam rolled her eyes and sighed, "I'm going to check if Dr. Rivers has made it in yet." She wandered over to the physician office and punched in the code. She was immediately met by a bleary-eyed Dr. Rivers. He looked like he had just rolled out of bed.

"Oh! you made it!" chirped Sam, excited to see him. He was one of her favourite staff physicians. Dr. Rivers was one of the younger doctors in the group and was well-versed in the latest evidenced-based medicine. He loved to teach and always found creative ways of making shifts educational with post-it pearls, practice oral cases, ECG cases, or bedside teaching. Dr. Rivers rubbed his eyes and ran a hand through his hair.

"I was definitely not expecting to get called in tonight. I'm exhausted. Just worked two nights in a row at Riverside Emergency, so I was hoping to get a good sleep tonight. No rest for the wicked, right? Why don't you get your cases and charts organized and I'll meet you out there in two minutes."

Sam was just about to exit the office when she realized she should grab an evaluation sheet while she was in the room rather than coming back for it later. She made her way to the back of the office and then stopped abruptly. Dr. Rivers took two pills out of a Ziploc bag and put them in his mouth.

"Sorry! I just came back to grab an evaluation sheet. You sick or something?" she asked with a skeptical tone.

"Oh no. Um, I just take these once in a while when I really need to wake up for a shift and coffee isn't cutting it." Dr Rivers laughed nervously. "It's no big deal, really. It's only Adderall, nothing dangerous. I don't take them often at all."

Sam smiled politely.

"Yeah, no big deal."

She grabbed the evaluation sheet and walked back to the department, thinking about the encounter.

"I wonder if the other doctors use stimulants to stay awake? It's probably pretty common among shift workers. I've been finding it harder and harder to deal with multiple night shifts as well. Maybe I should try something like that..."

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Questions for Discussion

1. How should Sam deal with the situation of finding her attending physician taking stimulants before a night shift? Is it normal practice? Should she tell someone?
2. What strategies can shift-workers incorporate into their routine to offset the challenges of working nights?
3. What safety issues arise from this case? How can a department better protect the well-being of its staff and residents when it comes to sleep deprivation and burnout?

Competencies

ACGME	CanMEDS
Professional Values (PROF1) Team Management (ICS2)	Professional Collaborator Leader

Intended Objectives of Case

1. Discuss the role and nature of reporting substance use. Consider different substances.
2. Describe an approach to enlist additional help when faced with a reporting dilemma.
3. List specific ways that we can prepare for night shifts and prevent sleep deprivation.
4. Identify at least 2 safety issues from this case.

Coffee with a Side of Adderall: Sleep Deprivation Among Shift Workers

by Lisa Thurgur MD, MSc, FRCPC(EM), FRCPC(Tox)

The *Case of the Night Shift Stimulants* highlights several important issues in emergency medicine and is relevant to physicians at all stages of training. Whether you're a medical student, resident, new staff or you've been part of the emergency-shift-club for decades, this case discussion will hit home.

The first discussion point in this case is the use of stimulants by Dr. Rivers to counteract fatigue during his night shift - their side effects, the ethical questions around their use and Sam's dilemma of finding out her staff takes these substances. We will also discuss the effects of sleep deprivation on emergency physicians and tips to try to mitigate this. And finally we need to address the culture around poor sleep habits, and fatigue - how do we teach our junior learners about this? Who can Sam talk to about issues surrounding wellness, substance use and burnout and how can she shape her view of substance use in relation to her career as a shift-worker?

Stimulant use and safety risks

Stimulants come in many forms. Some are legal and some are not. Some are socially acceptable, and some are not. When you need to stay up at night, what differentiates that third cup of coffee from a methylphenidate tablet? Well, their stimulant effects may be similar but their side effect and addiction profiles as well as their social acceptance certainly do differ.

With a quick Google search of "stimulants that help you stay awake on a night shift", you will find substances that do not require a prescription like caffeine, energy drinks, and nicotine; those that do require prescriptions such as Adderall (amphetamine and dextroamphetamine), Modafinil, and methylphenidate; and those that are illegal such as cocaine, crystal meth and ecstasy. Yes, all of these will keep you awake during a night shift. Are they all recommended? Absolutely not.

Adderall is used to treat attention deficit hyperactivity disorder (ADHD) and narcolepsy. Amphetamines such as Adderall stimulate the release of catecholamines like norepinephrine and dopamine. The side effects of Adderall vary widely among individuals and depend on the amount used but can include symptoms such as insomnia, dry mouth, loss of appetite, hypertension, tachycardia, erectile dysfunction, diaphoresis and irritability. The risk of developing an addiction is low when Adderall is used as prescribed at low daily doses, such as those used for treating ADHD; however, the routine use of Adderall in larger daily doses poses a significant risk of addiction.

Amphetamine abuse is defined as non-medicinal use of amphetamines for euphoria, well being, sharpening of attention and increased levels of energy.¹

It is perceived that individuals who work irregular or rotating shifts such as emergency physicians frequently use a variety of stimulants and sedatives to offset shift-change-related mood and performance decrements. Contrary to this belief, a recent study by Shy et al found that although residents report the use of several classes of hypnotics to aid in shift work, the use of prescription stimulants appears rare, and is notably less common than the use of sedatives and non-prescription stimulants.²

Several small studies suggest that modafinil is more effective than placebo for improving alertness in people doing shift work, but that taking modafinil significantly increases sleep latency.³ No studies have been published describing effects of long-term use. While people doing shift work may wish to try modafinil, they should be aware that other non-pharmaceutical methods of improving alertness are also valuable.

Stimulants and caffeine can boost performance acutely but do not address the underlying sleep deprivation and thus are not a viable long-term solution. Furthermore, concern over the side effects, addiction and performance degradation with current pharmacologic interventions makes their safe use discouraged.

Sam should feel that there are many people she can talk to about what she experienced and that it is not normal practice for staff physicians to take prescription stimulants before a night shift. Potential people for her to talk to about this situation include her Chief Residents, Program Director, or Program Mentor. If her program is fortunate enough to have a Wellness Director, this would be a valuable resource to her, or she should feel comfortable approaching her University Wellness office. She should know that this is not necessarily normal practice.

Rules, Regulations and Responsibilities

Unlike the aviation industry, our Canadian Medical Associations do not have clear rules or guidelines on what substances are permitted or prohibited before a shift and for what time period prior to a shift. Pilots and Air Traffic Controllers are not permitted to drink alcohol or be under the influence of any substance within 8 hours before or during a shift. Medical Colleges are not that explicit with timeframes but have stated that physicians should recognize their capacity to provide competent clinical care and should ensure they are clinically fit to do so. The

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American Medical Association (AMA) Code of Medical Ethics⁹ section E-8.15 entitled “Substance Abuse” states that “It is unethical for a physician to practice medicine while under the influence of a controlled substance, alcohol, or other chemical agents which impair the ability to practice medicine.” This statement, however, does not define what “under the influence” means. These prohibitions rest on concerns regarding impairment of motor skills as well as impairments in judgment when under the influence of any substance that could put patients and physicians at risk.

Ethical concerns that can be raised include the potential harm done to patients or physicians while using stimulants; colleagues’ and patients’ perceptions of stimulant use by physicians; and medical students’ and residents’ perceptions of stimulant use by their supervisors and mentors and how this might affect their personal health and wellness in their careers.

Challenges of Night shifts

Sleep has a profound effect on the brain’s prefrontal cortex, home of advanced cognitive processes such as decision-making and problem solving – all very handy skills for a physician. While there are mixed findings about the effects of sleep deprivation and fatigue on physician performance and patient outcomes, doctors should nonetheless reflect on their approach to night shifts and how to best address the risks. Medicine has always been a 24/7 endeavour with physicians routinely working long hours, day and night. Fatigue and availability of resources can present challenges when working at night, but physicians can take steps to mitigate the risks to themselves and their patients.

Some strategies that shift-workers can incorporate into their routine to offset the challenges of working shifts include optimizing circadian-friendly schedules. This could involve working no more than 8-hour shifts, minimizing consecutive nights to one or two, having 24 to 48 hours off after night shifts, and favouring forward rotating shifts. Proper sleep hygiene is also important and involves using a sleep-friendly room with blackout blinds and white noise, trying anchor sleep and avoiding caffeine, alcohol or drugs before sleep. Modulating circadian rhythms can be improved by exercise and the use of bright lights during awake periods. Reducing stress, educating friends and family about shift work issues and the priority of sleep, eating a balanced diet and keeping regular mealtimes can help promote a healthy life and work style that will help minimize ill effects. Finally, minimizing caffeine use and avoiding the use of sedatives or stimulants can also help the body’s ability to tolerate shift work.⁶

Protecting Wellness

Although data from non-medical fields suggest that sleep deprivation leads to poor job performance, this link has not yet been definitively established in medicine.⁷ Despite this, promoting interventions designed to combat medical errors and to encourage physician health and well being should be at the forefront of all emergency departments. The Canadian Medical Association has issued a policy statement on the Management of Physician Fatigue.⁶ It includes a number of valuable recommendations and states that strategies must address physician fatigue at individual, organization or institution, and system levels.

Emergency Departments should consider fostering a Wellness Director within their group. This role could help prioritize personal and system strategies to face the challenges of shift work and reduce burnout.

We need a culture shift in our workplace. If we don’t continue to chip away at our collective delusion that burnout is the price we must pay for success, we’ll never be able to restore sleep to its rightful place in our lives. The good news is that more and more Chiefs of Emergency Departments are realizing that what’s good for their employees’ well being is also good for patients’.

Summary

Fatigue and sleep deprivation are common among shift workers and emergency physicians. Stimulants can boost performance acutely but do not address the underlying sleep deprivation or health of Dr. Rivers and thus are not viable long-term solutions. Furthermore, concerns over side effects, addiction and performance degradation with current pharmacologic interventions makes their use as a safety practice unlikely.

Fatigue among medical personnel may not be fully remediable and the reality is that emergency physicians who work night shifts will be tired. Although the link with fatigue seems intuitive, strategies to combat the challenges of working nights exist and should be incorporated into doctors’ health and work style. Finally, the ultimate solution for health care organizations will likely require a systems-based approach that focuses on physician wellness with the goal of minimizing medical error and maximizing patient safety. Sam should know that it is not routine to take prescription stimulants before a night shift and that there are many resources available to her to help guide her future practice to reduce fatigue and avoid burnout.

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About the Expert

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Overcoming Sleep Deprivation: A Debate on Stimulant Use in Shift Workers

by Taryn Taylor MD, PhD, FRCSC

“There remains considerable commitment in the medical profession to a tradition of self-sacrifice and dedication that requires physicians, in the supposed interests of patient care, to survive and function on little or no sleep.”

Owens JA, Veasey SC, Rosen RC. Physician, heal thyself: sleep, fatigue, and medical education. Sleep. 2001 Aug 1;24(5):494

In the *Case of The Night Shift Stimulant*, a resident witnesses her supervising Emergency Physician, Dr. Rivers, taking Adderall to help combat fatigue during his third consecutive night shift.

It's tempting to dismiss the actions of Dr. Rivers as wrong and entirely problematic, but this case deserves a more thoughtful consideration for three reasons:

First, the use of prescription stimulants is not uncommon in our field. A recent survey of medical students revealed that 10.1% reported nonmedical prescription stimulant use.¹ The most commonly reported substances include methylphenidate (Ritalin), amphetamine salts (Adderall), modafinil (Provigil) and, of course, caffeine. Second, the problem Dr. Rivers faces is one most of us know all too well. Who among us hasn't wished for a magic pill that would give us the stamina to persevere in spite of sheer exhaustion? Third, this case gives us a chance to reflect on how we deal with fatigue in medicine.

Let's first address the most concerning aspects of stimulant use in this case. As a central nervous system stimulant, Adderall is approved for the treatment of ADHD. It is not approved as an antidote to sleep deprivation. This raises the troubling question of how Dr. Rivers acquired the medication. Most potential scenarios raise alarms, since he either obtained it without a prescription, got a prescription under false pretences, or found a doctor who willingly prescribes Adderall for the treatment of fatigue. Additionally, not long ago, Health Canada temporarily removed Adderall XR from the Canadian market due to 20 reported sudden cardiovascular deaths in both pediatric and adult patients taking this medication at therapeutic doses for ADHD.² Presumably this was due to Adderall's sympathomimetic effects. Some experts have voiced concerns about long-term stimulant use, including unknown cardiovascular effects³ and

the risk of addiction and withdrawal, particularly with off-label usage.⁴

Taking into consideration the potential ethical and medical concerns, it's worthwhile to ask ourselves what would lead a reasonable, educated, and otherwise responsible physician to start relying on Adderall to stay awake during the night shift. Would we feel less uneasy if Dr. Rivers was using caffeine tablets or downing cup of coffee to stay awake? Society openly accepts and endorses caffeine intake as a means of staying awake, despite side effects of tremor, tachycardia, gastrointestinal distress, and dependency. There is certainly empirical evidence that a well-timed dose of caffeine can improve a fatigued individuals' performance on simple cognitive tasks.⁵ Unfortunately, working a night shift in the Emergency Department is more than a simple cognitive task requiring increased vigilance; sleep deprivation can render a person impaired in more complicated ways, by mimicking a prefrontal cortex lesion.⁶ At Dr. Rivers' level of sleep deprivation, caffeine, our current socially-acceptable drug of choice, simply may not cut it.

Unlike Adderall, modafinil is a non-amphetamine stimulant that is FDA-approved for shift-work sleep disorder.⁷ Despite its unknown mechanism of action, researchers are avidly exploring what the drug can do. After 24 hours of wakefulness, general surgery residents who received modafinil outperformed their unmedicated peers on a battery of cognitive tests, though their psychomotor performance did not improve.⁶ In a different study, modafinil improved the performance of sleep-deprived subjects on cognitively complex visual humour tasks.⁸ Sceptics question the relevance of these findings beyond the laboratory while others worry that the use of stimulants, like modafinil, might lead individuals to overestimate their alertness and take greater risks.⁹ There are interesting signals in the data, but there is clearly more research to be done before we could suggest modafinil to Dr. Rivers.

We could argue that Dr. Rivers has a moral imperative to do whatever he can to overcome his fatigue and optimize his clinical performance for the safety of his patients, even if that means taking a prescription stimulant. Goold and colleagues provide reassurance that this logic is unlikely to hold up in a court of law, partly because our understanding of the relationship among sleep deprivation, fatigue and clinical performance is murky at best.¹⁰ Without question, sleep is the most effective, proven treatment for fatigue-related impairment. But stimulants are

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easier to come by. There are those who fear that the very perception of this moral imperative could lead to coercion, or worse, a reality where prescription stimulant usage is institutionalized as the new norm.¹¹ For example, the military has implemented protocols involving modafinil for long-haul Air Force pilots if other fatigue management strategies are insufficient.¹² How do we protect the rights of individuals who, for medical, cultural or religious reasons decline stimulant usage in our context? Will those individuals be held to a different standard of care or become ineligible to work extended shifts?

For too long, we have accepted the notion that fatigue is an individual and inevitable burden within medicine.¹³ We have long overlooked the responsibility of the system in creating predicaments such as the one faced by Dr. Rivers. A more productive approach may be a fatigue-proofing approach that sees the individual as one layer in a multi-layer system.¹⁴ From this perspective, fatigue-proofing means reflecting honestly on the hours that we work and considering how best to self-regulate before such regulations are imposed upon us. This might include policies that exclude more than two consecutive night shifts, even as a back-up physician. Fatigue-proofing also considers how the system can be used to compensate for individual fatigue. For example, an anesthetist once told me that he routinely changes the parameters on his anesthetic equipment when working a night shift so that they will alarm earlier. The precious moments he gains by doing so gives him more time to think and respond. Colleagues overseas have also described a system called "bleep-filtering" which is intended to limit the number of non-urgent, potentially unnecessary, interruptions for the on-call physician.¹⁵ While these strategies avoid prescription stimulant use, there remains a lack of empirical data supporting their efficacy.

In my opinion, the most compelling truth that should repel us from institutionalizing and embracing prescription stimulants comes down to this: We are human and sleep is a basic human need. Recent headlines suggest that many of us are struggling with burnout, no doubt exacerbated by rampant fatigue and sleep deprivation.¹⁶ Rather than finding pharmacologic ways to circumvent this, it's time to turn our brilliant minds toward other innovative solutions and re-examine the assumption that sleep deprivation or fatigue is an unavoidable reality when practicing medicine.

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About the Expert

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Physician, Take Care of Thyself!

by Marco Sivilotti MD, MSc, FRCPC, FACMT, FAACT

"Is it OK if I grab a quick bite to eat?" [Medical student to attending six hours into shift]

"*Medice, cura te ipsum*" [Attending replies without looking up from computer screen]

Often translated as "physician, heal thyself," the Latin verb *curare* in this ancient axiom also connotes "taking care of" oneself. Since few diseases in antiquity had true cures, the recommendation to take care of one's own condition so as to better care for others is probably closest to the intended message. While experts debate the Hebrew or Greek origins of the proverb, its directive of self-care is an enduring principle of physician wellness.

What is Sam's responsibility?

Fatigue - like distraction - can impair in a dose-dependent fashion, not unlike psychoactive stimulants themselves. Alarming, it is often difficult to recognize this impairment in ourselves. *Medice, cura te ipsum* is necessarily limited by our capacity for objective self-diagnosis, an oxymoron at the best of times, and all the more unreliable while "under the influence" of fatigue. Hence Sam is obliged to bring forward her concerns, including a provisional diagnosis of prescription medication misuse as well as possible drug diversion or self-prescription of a controlled substance. She should review this complex case with George, her attending physician.

Of course, raising such concerns is more easily said than done.

Sam's medical training may have given her some techniques for dealing with difficult situations, but her respect for a popular attending, her vocation for the healing arts, and her own preconceived notions surrounding substance abuse may all be tested. In return, we can hope that Sam's personal growth will take her one small step closer to the Oslerian virtue of *aequanimitas* in the process of caring for Dr. Rivers and for his future patients. She should anticipate the almost pathognomonic difficulty that Dr. Rivers will experience in accepting her provisional diagnosis. Finally, for a glowing end-of-shift evaluation, she should firm up the diagnosis and initiate care before midnight strikes!

Is Dr. Rivers simply being a responsible clinician?

We might reasonably ask whether Dr. Rivers is, in fact, doing the responsible thing by diagnosing and treating his own fatigue.

While impairment due to fatigue has not been well studied in attending physicians, sleep disruption in trainees is estimated to be comparable to losing up to a year of residency training.¹ Perhaps *extremis malis extrema remedia* ("desperate times call for desperate measures"), and Dr. Rivers is simply doing what is best for patient care?

The Greek version of our guiding proverb, *ἰατρὲ, θεράπευσον σεαυτὸν* (transliteration: *latre, therapeuson seauton*), uses a verb that evokes a sense of therapeutic treatment. In modern times, this action has become nearly synonymous with administering a drug - or four - to treat every real or imagined ailment. So a therapeutic trial of a drug may be just what the doctor ordered when following the thematic proverb to heal oneself. Moreover, Dr. Rivers' second-line therapy for fatigue, amphetamine, has a long and rich history as a performance-enhancing drug. It is widely prescribed and could be considered safe, even for children. Countless students on every university campus misuse amphetamines hoping to enhance exam performance. Even today, soldiers and military pilots are administered such stimulants to stave off fatigue and promote vigilance. Of course, the high abuse potential of amphetamine also has a long and rich history, being first recognized shortly after this practice was introduced during World War II.

The short-term efficacy of a drug is often easy to demonstrate, while the long-term harms are notoriously difficult to acknowledge, especially by the patient. Dr. Rivers' own words echo those familiar to anyone who has counselled patients with substance misuse. "*I don't take them often at all... nothing dangerous... when I really need...*"

Are we hypocrites?

Perhaps we might worry that our ritualistic celebration of caffeine, our favourite licit stimulant, renders us vulnerable to charges of hypocritical moral absolutism. Stimulants acting at the adrenergic receptors are probably just "a little stronger" than adenosine antagonists like methylxanthines, right? Aren't we on a pharmacologically slippery slope when we discuss receptor tachyphylaxis, dependence and tolerance?

In a recent anonymous survey, five out of six emergency medicine attendings and residents self-reported using medications including caffeine to increase alertness at work, suggesting that many of us rely on stimulants to combat fatigue on shift.² One in nine admitted to using "prescription alertness medications." It should serve as a caution that, in the same study,

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two in five respondents reported having forgotten the ride home from work, and one in three had fallen asleep while driving within the preceding three months.

Do psychostimulants really enhance performance in emergency medicine?

Here's a spoiler alert: there are no "smart drugs." (Here's a second spoiler alert: no "smart phones" either, yet. Not even clever phones, although that promise is more likely to materialize.) Caffeine may help with the drive home, but running an emergency department is a far more complex task, and the cognitive demands are greater than those needed for landing a plane. A century of neurocognitive task performance studies has shown that boosting the rather primitive domain of alertness detracts from the higher cortical functions of prioritizing, integrating and learning for all but the most monotonous tasks.³

To illustrate, a recent randomized placebo-controlled trial of stimulants in recreational chess players identified changes in behavior but no improvement in performance.⁴ Specifically, methylphenidate, modafinil, and caffeine at modest doses resulted in slower play in the most complex phase of play, the middlegame, and more games lost on time control. Thinking "deeper" is not necessarily better in chess nor in emergency medicine because time matters. In this way, winning at chess may be a more relevant outcome measure than, for example, time needed to intubate a mannequin when studying impairment. So, although a "harmless" pill can widen your palpebral fissures, it won't make you a better chess player, nor will it make you a better emergency doctor.

What responsibility do we have for the culture of fatigued clinical performance?

There is a culture around pushing the limits of fatigue inherent to shift work.

Emergency physicians contribute to this culture explicitly and implicitly. Dr. Rivers is burning the candle at both ends, and by being on call surrendered any control over his recovery from the

circadian abomination of the second of two consecutive night shifts. We should embrace the positive aspects of our night shift duty, and indeed feel proud to serve while others sleep.⁵ Still, we must remember to care for ourselves and each other if we are to be entrusted with our patients' care.

Healing requires so much more than merely giving (or taking) a drug. It is up to us to be at our best while on duty: fed, rested, drug-free, and on task.

Curate ut valeatis! *

* Take care so that you are well!

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About the Expert

Dr. Marco Sivilotti is a Professor of Emergency Medicine, and of Biomedical and Molecular Sciences at Queen's University in Kingston, Ontario, Canada. He completed residency training in emergency medicine at McGill, and fellowship training in medical toxicology at the University of Massachusetts. He still pulls the odd night shift, but only if just back from Europe (i.e. six hours ahead—try it!). He also serves as medical consultant to the Ontario Poison Centre, but is contemplating jettisoning those night calls as well. His only MVC was one minute from home when awoken from deep sleep to come in early for a night shift 25 years ago, predating his caffeine dependence.

Curated Community Commentary

By Alkarim Velji MD, FRCPC (candidate)

This month's case highlights the issues surrounding the use of stimulants among shift workers. In our case, Sam, an emergency medicine resident, meanders into the staff backroom and sees Dr. Rivers, a respected staff physician, taking Adderall to stay alert for his third consecutive night shift. Sam is left wondering whether she needs to discuss her attending's off-label use of prescription stimulants with anyone and whether other doctors use stimulants to stay awake for night shifts. Discussion this week focused on three key points:

1. Whether Sam should discuss her concerns about her attending's off-label use of Adderall
2. How emergency medicine physicians are using stimulants and sleep facilitating substances in general
3. General strategies for optimizing sleep without using prescription aids

Case respondents generally felt that Sam should discuss her concerns with a colleague. Olga states that, in her experience, she would have been comfortable discussing her concerns with her program director. Canadoc takes a more conservative stance that if any physician has concerns about colleagues abusing drugs, including prescription stimulants, these concerns should be discussed with the College of Physicians and Surgeons.

The fact that our commenters felt that Dr. Rivers use of prescription stimulants warrants concern is interesting considering the percentage of shift workers who use these stimulants regularly. Olga shared the results of a survey she conducted that asked emergency medicine physicians about their use of stimulants and sleep facilitating substances. The vast majority of respondents (97%) used caffeine (*Editor's note: Coffee is life*) and a smaller percentage used Adderall (4%) or modafinil (3%). Canadoc's perception is that more physicians use modafinil than we realize but with prolonged use, escalating doses are required to gain effect. To compensate for the use stimulants, Canadoc's

Contributors

Thanks to the participants (in alphabetical order) for all of their input:

Canadocs
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colleagues then need to use a sleep facilitating substance. This behavior fosters a cycle of prescription drug use that is difficult to break. The results from Olga's survey support Canadoc's belief. Her survey showed that 23% of respondents use a sleep facilitating substance regularly and 28% sometimes do. Similarly, Daniel Ting linked us to a [CJEM study](#) that looked at the use of sleep facilitating substances in emergency medicine physicians. The results of this study are similar to those of Olga's. They found that 34% of respondents use sleep facilitating substances. The use of these substances increases when physicians are missing pre-shift naps.

Olga clearly points out that being alert and well rested is essential for patient safety. Being fatigued adversely affects decision making and can contribute to patient harm. The impact of fatigue is also discussed in this [BMJ Editorial](#) linked to us by Teresa Chan. It suggests that there is a growing culture of sleeplessness in developed nations. To combat our ever-growing sleep debt, several strategies have been suggested:

- Prior to a night shift, nap for approximately ninety minutes
- Practice good sleep hygiene
 - Avoid screens and sunlight in the morning following a night shift
 - Blackout blinds, white noise machines, weighted blankets, cool rooms are all helpful
- Follow your own circadian rhythm - you do not need to force yourself to stay up late the day before a night shift in an attempt to 'flip to nights'
- Respect daytime sleep

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- Consider canceling commitments on the day following a night shift. Who can possibly function if they worked all night and then must go to a meeting at noon?
- Plan to have anchor sleep – a time when you are going to be asleep regardless of the shift you are on.
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Many of these suggestions are reflected in [this infographic by BMJ](#). In fact, this commentator suggests that you consider printing and hanging it in your department!

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About

The Medical Education In Cases (MEdIC) series puts difficult medical education cases under a microscope. We pose a challenging hypothetical dilemma, moderate a discussion on potential approaches, and recruit medical education experts to provide their insights. The community comments are also similarly curated into a document for reference.

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Purpose

The purpose of the MEdIC series is to create resources that allow you to engage in “guerrilla” faculty development – enticing and engaging individuals who might not have time to attend faculty development workshops to think about challenging cases in medical education.

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