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Introduction of Night Float System in OBGYN Residency Program

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ABSTRACT

The night float system was officially introduced in July 2011 as a solution to maintain resident duty hours within ACGME work hours guideline. The survey which was conducted on residents shows that the overall opinion of the transition from a traditional call system to a night float call system was generally positive. More than half of the residents expressed a preference for the new system.

BACKGROUND

The Obstetrics and Gynaecology Division of KK Women's and Children's Hospital (KKH), a tertiary teaching hospital which handles the highest volume of OBGYN cases in Singapore, counts the training of future specialists as one of its key roles. Singapore's medical training and provision of medical care has mostly been based on the UK's healthcare system so far. In the last two years, there has been a change in the way specialists are being trained in Singapore due to the need for a structured and competency-based training program to enhance the competency of specialists in Singapore[1]. The hospital changed its OBGYN specialty training program to the Accreditation Council for Graduate Medical Education International (ACGME-I) residency program in July 2011.

The ACGME-I sets mandatory standards in the teaching of its core competencies, having standardized evaluations, residents' training hours and structured curricula[2]. It recognizes the fatigue and potential decrease in patient safety during the provision of medical care by residents with long working hours. As such, the ACGME-I mandates work hour restrictions on the residents. A resident cannot exceed eighty hours of duty in a week and the call schedule needs to provide the resident with one day off in seven days. Each continuous on site duty should also be less than twenty-four hours per shift with a minimum rest period of ten hours between shifts. The traditional 24 + 6 hours call system (Table 1) our Division was employing could not fulfill these requirements. Hence, our Division modified our call system to include a night float system, with the aim to fulfill this requirement of work hours restriction as well as to optimize duty hours, improve patient safety, educational objectives and work-life balance in the Division.

AIM

The night float system has been used by some institutions as a strategy to decrease the burden of calls on the resident quality of life (QOL) and many hospitals in the United States with ACGME residency programs[3] provide for night coverage with the use of a night float system to meet the mandatory work hours restrictions. We wanted to provide post call clinical relief and hypothesized that shorter duty hours could lead to

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better QOL[4] and less fatigue for the residents. Our aim was to examine the benefits and disadvantages of a night float system in our Division, from the perspective of the residents. We sought to examine the impact of the night float system on the overall training opportunities and quality of learning the residents receive.

METHODS

Various permutations of the call coverage were examined[5] and a trial run of the night float was implemented in April 2011. The night float was introduced to ensure continuous 24 hour coverage of all critical clinical service areas (Table 2) i.e. the Labor Ward, the 24 Hours' Women's Emergency Clinic and Operating Theatres. Each resident on the night float performed the duties over this month-long period. The night float residents worked nightly from Sunday to Thursday nights, with no patient care duties between Friday mornings and Sunday nights. This allowed them to have a prolonged period of rest over the weekend. The non-night float residents were rostered in turns to manage the critical clinical service areas during the daytime and weekends. We assessed the impact of the night-float system by conducting a survey of the residents to evaluate their opinions. This survey was undertaken at the conclusion of the month-long trial. Each resident was handed out an anonymous questionnaire which covered topics such as sleep, workload and emotional well-being. This enabled us to specifically assess the satisfaction and workability of the system. The perceived benefits and problems associated with a night float system were also highlighted.

RESULTS

Out of the 24 residents surveyed, 16 respondents (75%) agreed that there was increased opportunity for rest (Table 3). Also, 16 respondents (75%) agreed that they were more alert and could concentrate better during work. While 9 respondents (38%) were neutral, 11 respondents (46%) also agreed that the night float rotation had overall improved the continuity of care on patients. While there is some reduced family time for those on the night float, this is more than compensated by the reduced work hours overall.

A total of 17 respondents (70%) had better emotional well-being and a similar percentage also could handle the stress and workload better whilst on duty. The majority, 16 respondents (66%) indicated that they felt night float rotations should be part of residency training. Most of the respondents (79%) expressed they preferred the new night float system over the traditional call structure.

DISCUSSION

As expected, the overall opinion of the transition from a traditional call system to a night float call system was generally positive, with more than half expressing a preference for the new system. Benefits included better abilities to cope with the new duty hours, enabling an improved learning situation and more opportune use of training[6]. Being fresh from rest, the residents on night float duties were more alert and had sharper clinical assessments compared to the mental and physical fatigue they suffered with the old call system. This translated to providing optimal and quality care to the patients during patient reviews and during surgeries. The reduction in fatigue also contributed to increased enthusiasm amongst the residents in learning and greater involvement in the follow up and progress of the patients they managed.

This survey also highlighted some difficulties the residents faced whilst adapting to the new call system. The main concerns shared were the duration of the night float rotation was too long (four weeks) and fatigue began to set in two weeks into the rotation. The residents felt the benefits diminished third week into the rotation as the prolonged nocturnal functioning affected their work-life balance and they became subject to a misalignment between work duties and the endogenous circadian rhythm[7]. The respondents also shared that the night float hours should be capped at twelve hours per call. Their feedback was taken in consideration and at the official induction of the night float system in July 2011, the duration of each night float rotation was amended to two weeks instead of four weeks. Bridging calls (Table 4) were introduced to ensure coverage of the duties between the day team and the night float team, with a handover time stipulated at 8pm to 9pm. The implementation of bridging calls allowed the night float residents to report for work at 8pm, hence shortening their night float duration nightly to a 12-hours shift from the previous 16-hours shift they performed during the trial run of the system.

CONCLUSION

The pilot night float program was carried out in April 2011 and it was officially introduced in July 2011. This survey highlights the night float rotation as a solution to maintaining resident duty hours within ACGME work hours guidelines. Residency programs should constantly monitor closely the impact of the night float rotation on resident well-being and patient safety and aim to periodically re-evaluate its usefulness with feedback from the participants of the system.

Table 1. Old night call system

Old 24 + 6 system	Normal working hours	Night calls	Off call	Duration of continuous on-site duty
Weekdays (mon – fri)	8am – 4.30pm	4.30pm – 8am (next day)	12.30pm onwards (next day)	28 - 30 hours
Weekends (sat, sun & public holidays)	8am – 8am (next day)		12.30pm onwards (next day)	28 – 30 hours

Table 2. Trial night float system

Trial night float system in April 2011	Normal working hours	Night floats	Off duty	Maximum duration of continuous on-site duty
Weekdays (mon - thurs)	8am – 4.30pm	4.30pm – 8am (next day)	8am onwards (next day)	16 hours
Fridays	8am – 4.30pm	4.30pm – 8am (next day)	8am onwards (next day)	24 hours
Saturdays & public holidays	8am – 8am (next day)		8am (next day)	24 hours
Sundays	8am – 8pm	8pm – 8am (next day)	8am onwards (next day)	12 hours

Table 3. Overall results of the 24 residents surveyed

	Positive (%)	Neutral (%)	Negative (%)
Q1: I get better or more sufficient rest/sleep overall			
	75%	4%	21%
Q2: I can learn better at work and am happy with the learning opportunities			
	58%	29%	13%
Q3: I can follow up the patients I see on a daily basis better			
	46%	38%	16%
Q4: I am more alert and can concentrate at work			
	75%	17%	8%
Q5: I am ok with the financial returns (i.e. Monthly pay)			
	42%	25%	33%
Q6: My emotional well-being is better			
	70%	9%	21%
Q7: I can better handle the workload and cope during duty hours.			
	71%	29%	0%
Q8: I would want night float to be part of my training			
	66%	17%	17%
Q9: Do you prefer a night float system instead if the old call system?			
	79%	4%	17%

Table 4. Implemented new night float system (from July 2011)

New night float system	Normal working hours	Bridging calls/ Half calls	Night floats	Off duty	Maximum duration of continuous on-site duty
Weekdays (mon - thurs)	8am – 4.30pm	4.30pm – 9pm	8pm – 8am (next day)	8am onwards (next day)	12 - 13 hours
Fridays	8am – 4.30pm	4.30pm – 8am (next day)	-	8am onwards	24 hours
Saturdays & public holidays	8am – 8am (next day)			8am (next day)	24 hours
Sundays	8am – 8pm		8pm – 8am (next day)	8am onwards (next day)	12 hours

REFERENCES

1. *Tagore S, Chern B, Goh SL, Tan LK, Kwek K, Tan KH. Specialist training in obstetrics and gynecology in Singapore: transition to structured residency program. Journal of Graduate Medical Education. 2012 Jun;4(2):272-5.*

2. *Accreditation council for graduate medical education-international. ACGME- International advances speciality program requirements for graduate medical education in obstetrics and gynecology. http://www.acgmei.org/web/requirements/specialtyprs/obstetricsgynecology.pdf.*

3. *Hayman AV, Tarpley JL, Berger DH, Wilson MA, Livingston EH, Kibbe MR. Association of VA surgeons. How is the department of veterans affairs addressing the new accreditation council for graduate medical education intern work hour limitations? Solutions from the association of veterans affairs surgeons. Am J Surg. 2012 Nov;204(5):655-62.*

4. *Zahrai A, Chahal J, Stojimirovic D, Schemitsch EH, Yee A, Kraemer W. Quality of life and educational benefit among orthopaedic surgery residents: a prospective, multicentre comparison of the night float and the standard call systems. Can J Surg. 2011 Feb;54(1):25-32.*

5. *Kee CL, Goh WP, Yap ES, Chan YC. Impact of a newly introduced medical officer night-float on-call system in a medical department in Singapore. Singapore Med J. 2011 Jan;52(1):60-2.*

6. *Jasti H, Hanusa BH, Switzer GE, Granieri R, Elnicki M. Residents' perceptions of a night float system. BMC Med Educ. 2009 Aug 3;9:52.*

7. *Schaefer EW, Williams MV, Zee PC. Sleep and circadian misalignment for the hospitalist: a review. J Hosp Med. 2012 Jul;7(6):486-96.*