The Effects of Residents’ Work-Hour Restrictions on the Occurrence of Medication Errors: An Opinion from the Institute for Safe Medication Practices (ISMP)

February 1, 2016

The mission of the Institute for Safe Medication Practices (ISMP) is “To advance patient safety worldwide by empowering the healthcare community, including consumers, to prevent medication errors.” One of the ways we accomplish our mission is to collaborate with governmental agencies and other healthcare stakeholders. To this end, the ISMP supports restriction of resident work hours if this restriction is directly related to a decrease in sleep deprivation and increase in resident alertness during performance of clinical duties that includes prescription and medication ordering and administration.

Since there are many steps that involve cognitive and physical performance tasks required for proper medication administration by residents, errors can be made at any one of these required steps. Primarily cognitive tasks include the choice of specific medication and the appropriate dose. Mixed cognitive/physical performance tasks include the act of ordering the medication (whether by electronic, written, or verbal instruction) and in some cases (e.g., code situations, anesthesia/sedation delivery, etc.) direct administration of the medication by the resident. The detrimental effects of sleep deprivation on performance of these cognitive and physical performance tasks are well known, and include reduced accuracy, diminished ability to recognize a mistake at the time it occurs, impaired communication skills, and reduced hand-eye coordination, to name but a few. A natural inference is that impairment in any of these capabilities will lead to an increased likelihood that a resident will commit a medication error that will lead to patient harm.

Ample research exists to demonstrate the direct relationship between sleep deprivation and its impairment of task performance required of medical residents. However, it is worth noting that we have identified several studies that have, directly or indirectly, examined the relationship between sleep deprivation and medication errors. (1-8)

Our support of resident work-hour restrictions is also based on the premise that these restrictions do not in any way decrease education and performance of procedures designed to strengthen knowledge and skills that enhance medication safety. In other words, the hours that are removed from a resident’s schedule to accommodate official work hour restrictions should not be unduly proportioned to time normally devoted to education (or simulation) about safety practices that include avoidance of medication errors.

Sincerely,

Michael R. Cohen, RPh, MS, ScD (hon), FASHP
President, ISMP

Allen Vaida, PharmD, FASHP
Executive Vice President, ISMP

Russell H. Jenkins, MD
Medical Director Emeritus, ISMP

Ronald S. Litman, DO
Medical Director, ISMP
References: