

# What's New in the Patient Safety World

## August 2015

### More Stats on the Weekend Effect

We've done numerous columns showing that adverse patient events and mortality are higher for patients admitted on weekends, commonly referred to as "**the weekend effect**". Now a new study quantifies the problem across multiple countries.

Researchers ([Ruiz 2015](#)) analyzed records of emergency and elective admissions from metropolitan teaching hospitals in four countries participating in the Global Comparators (GC) project (England, Australia, USA and the Netherlands) over a period of 4 years (2009–2012). Their main finding was that mortality outcomes vary within each country and per day of the week in agreement with previous analyses showing a 'weekend effect' for emergency and elective admissions.

The adjusted odds of 30-day death following elective surgery remained significantly high when surgery took place on a Friday, Saturday and/or Sunday compared with a Monday procedure.

In the US the adjusted odds ratio of 30-day mortality was roughly 2.5 times higher on Saturdays and Sundays for elective procedures and 11-13% higher for emergency procedures compared to Mondays.

Dutch hospitals were also found to have a "Friday" effect (higher mortality rates for procedures done on Friday compared to Monday). Interestingly, English and Dutch hospitals had lower mortality rates on Tuesdays compared to the US. Some difficulties comparing results between countries were due to differences in coding practices or to difficulty in distinguishing between elective and emergency admissions in some countries. The proportion of "riskier" procedures also differed by day of week from country to country.

The study did not address the factors contributing to the weekend effect. In our many previous columns on the weekend effect or after-hours effect we have pointed out how hospitals differ during these more vulnerable times. Staffing patterns (both in terms of volume and experience) are the most obvious difference but there are many others as well. Many diagnostic tests are not as readily available during these times. Physician and consultant availability may be different and cross-coverage by physicians who lack detailed knowledge about individual patients is common. You also see more verbal orders, which of course are error-prone, at night and on weekends. And a difference in

non-clinical staffing may be a root cause. Our December 15, 2009 Patient Safety Tip of the Week “[The Weekend Effect](#)” discussed how adding non-clinical administrative tasks to already overburdened nursing staff on weekends may be detrimental to patient care. Just do rounds on one of your med/surg floors or ICU’s on a weekend. You’ll see nurses answering phones all day long, causing interruptions in some attention-critical nursing activities. Calls from radiology and the lab that might go directly to physicians now go first to the nurse on the floor, who then has to try to track down the physician. They end up filing lab and radiology reports or faxing medication orders down to pharmacy, activities often done by clerical staff during daytime hours. Even in those facilities that have CPOE, nurses off-hours often end up entering those orders into the computer because the physicians are off-site and are phoning in verbal orders. You’ll also see nurses giving directions to the increased numbers of visitors typically seen on weekends. They even end up doing some housekeeping chores. All of these interruptions and distractions obviously interfere with nurses’ ability to attend to their clinically important tasks (see our Patient Safety Tips of the Week for August 25, 2009 “[Interruptions, Distractions, Inattention...Oops!](#)” and May 4, 2010 “[More on the Impact of Interruptions](#)”).

As noted in the accompanying editorial, the Ruiz study really just reconfirms that the weekend effect exists in multiple countries ([Lilford 2015](#)). It does not address the reasons. Lilford and Chen discuss several ways we might learn more about the causes of the weekend effect, most of which are not likely to be of much use. However, they do note that the English National Health Service will be measuring the impact of increasing consultant coverage over weekends and also looking at differences in the routes via which patients are admitted.

Previous work shows that the weekend effect is complex and involves both patient-related factors and quality of care factors. While we may not be able to do much about the patient-related factors, there remains much we can do about the quality of care factors.

**Some of our previous columns on the “weekend effect”:**

- February 26, 2008 “[Nightmares....The Hospital at Night](#)”
- December 15, 2009 “[The Weekend Effect](#)”
- July 20, 2010 “[More on the Weekend Effect/After-Hours Effect](#)”
- October 2008 “[Hospital at Night Project](#)”
- September 2009 “[After-Hours Surgery – Is There a Downside?](#)”
- December 21, 2010 “[More Bad News About Off-Hours Care](#)”
- June 2011 “[Another Study on Dangers of Weekend Admissions](#)”
- September 2011 “[Add COPD to Perilous Weekends](#)”
- August 2012 “[More on the Weekend Effect](#)”
- June 2013 “[Oh No! Not Fridays Too!](#)”
- November 2013 “[The Weekend Effect: Not One Simple Answer](#)”
- August 2014 “[The Weekend Effect in Pediatric Surgery](#)”
- October 2014 “[What Time of Day Do You Want Your Surgery?](#)”

- December 2014      [“Another Procedure to Avoid Late in the Day or on Weekends”](#)
- January 2015      [“Emergency Surgery Also Very Costly”](#)
- May 2015          [“HAC’s and the Weekend Effect”](#)

**References:**

Ruiz M, Bottle A, Aylin PP. The Global Comparators project: international comparison of 30-day in-hospital mortality by day of the week. *BMJ Qual Saf* 2015; 24: 492-504  
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Lilford RJ, Chen Y-F. The ubiquitous weekend effect: moving past proving it exists to clarifying what causes it. *BMJ Qual Saf* 2015; 24: 480-482

<http://qualitysafety.bmj.com/content/24/8/480.full>



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