

# What's New in the Patient Safety World

## November 2015

- **FDA Safety Communication on Tramadol in Children**
- **Starving Our Patients?**
- **Medications Most Likely to Harm the Elderly Are...**
- **Hand Hygiene: Paradoxical Solution?**

### **FDA Safety Communication on Tramadol in Children**

The use of opioids in children, particularly use of codeine after tonsillectomy, has been associated with dangerous outcomes (see our What's New in the Patient Safety World columns for September 2012 "[FDA Warning on Codeine Use in Children Following Tonsillectomy](#)", March 2013 "[Further Warning on Codeine in Children Following Tonsillectomy](#)" and May 2014 "[Pediatric Codeine Prescriptions in the ER](#)"). These described cases of death and serious adverse effects in children treated with codeine following adenotonsillectomy for obstructive sleep apnea. Those cases led to the FDA issuing a safety alert ([FDA 2012](#)) and additional cases led to a subsequent black box warning for products containing codeine ([FDA 2013](#)).

Now the FDA has issued a "safety communication" on the use of tramadol in children ([FDA 2015](#)). Tramadol is available under the brand names Ultram, Ultram ER, Conzip, and also as generics. Tramadol is also available in combination with the pain reliever acetaminophen under the brand name Ultracet and as generics. The FDA announced it is investigating the use of tramadol in children aged 17 years and younger, because of the rare but serious risk of slowed or difficult breathing and that this risk may be increased in children treated with tramadol for pain after surgery to remove their tonsils and/or adenoids. The announcement notes the FDA is evaluating all available information and will communicate its final conclusions and recommendations to the public when that review is complete. The FDA notes that tramadol is not FDA-approved for use in children but that data show it is being used "off-label" in the pediatric population.

The problem originally noted for codeine was that there are genetic variations that cause some people to be "ultra-rapid metabolizers" of codeine, which leads to higher concentrations of morphine earlier. The new FDA safety communication suggests there may be a similar issue for tramadol. The FDA notes some people have genetic variations that cause tramadol to be converted to the active form of the opioid faster and more

completely than usual. These people, called ultra-rapid metabolizers, are more likely to have higher-than-normal amounts of the active form of the opioid in their blood after taking tramadol, which can result in breathing difficulty that may lead to death. They cite a case of a 5-year-old child in France who experienced severely slowed breathing requiring emergency intervention and hospitalization after taking a single prescribed dose of tramadol oral solution for pain relief following surgery to remove his tonsils and adenoids. The child was later found to be an ultra-rapid metabolizer and had high levels of the the active form of the opioid, O-desmethyltramadol, in his body.

The FDA notes that health care professionals need to be aware of this and consider prescribing alternative FDA-approved pain medicines for children.

A recent meta-analysis of complications of adenotonsillectomy in children ([De Luca Canto 2015](#)) showed that the most frequent complication was respiratory compromise (9.4%), followed by secondary hemorrhage (2.6%). Moreover, it revealed that children with OSA (obstructive sleep apnea) have nearly 5 times more respiratory complications after adenotonsillectomy than children without OSA. So all healthcare workers, as well as parents, need to be aware of the dangers of opioid use in children after adenotonsillectomy, and particularly with codeine or tramadol.

Our May 2014 What's New in the Patient Safety World column "[Pediatric Codeine Prescriptions in the ER](#)" showed that codeine continues to be prescribed to children in significant numbers, at least in children seen in the emergency room.

Not only are opioids risky in some children but even when prescribed for appropriate indications they may be overprescribed. A recent study ([Yaster 2015](#)) presented in abstract form at the Anesthesiology 2015 annual meeting showed that 60% of opioids prescribed for children after surgery go unused and are not properly disposed of. They found that a 10-14 day supply was typically prescribed and filled but that the average use was only 5 days, resulting in substantial accumulation of unused opioids. Almost half of those households also had adolescent siblings who might be at risk of abusing these prescription opioids.

It's pretty clear that guidelines and provider education have been inadequate in stopping use of codeine in children. If you do educational interventions, remember that **stories are better than statistics**. Be sure to include descriptions of cases in the original literature of 3 deaths and one near-miss case of respiratory depression related to codeine ([Ciszkowski 2009](#), [Kelly 2012](#)). But remember that **education and training are what we consider to be weak actions**. In our March 27, 2012 Patient Safety Tip of the Week "[Action Plan Strength in RCA's](#)" we included some [slides](#) to help you remember which actions are strong and which are weak. **Forcing functions** and **constraints** that make it difficult to order or prescribe codeine for children are much more likely to be successful.

So when it comes to opioid use in children you need to consider use of other tools to limit the risks. If you are using CPOE or electronic prescribing systems, alerts could be triggered by the age of the patient and/or the procedure (adenotonsillectomy) to warn the

prescriber of the risks of codeine or tramadol. Rather than a “soft” stop you might consider a “**hard**” stop in such cases, requiring the prescriber to make a phone call to the pharmacist if he/she wishes to prescribe codeine or tramadol despite the warning. And, in view of the findings in the Yaster study, you might also consider limits to the amounts of opioids prescribed for children. These are evolving issues that pit tradeoffs in convenience vs. safety and undoubtedly we’ll hear more in the future.

**Some of our previous columns on opioid safety issues in children:**

- September 2012 “[FDA Warning on Codeine Use in Children Following Tonsillectomy](#)”
- March 2013 “[Further Warning on Codeine in Children Following Tonsillectomy](#)”
- May 2014 “[Pediatric Codeine Prescriptions in the ER](#)”

**References:**

FDA (Food and Drug Administration). FDA Drug Safety Communication: FDA evaluating the risks of using the pain medicine tramadol in children aged 17 and younger. FDA Safety Warning. September 21, 2015  
<http://www.fda.gov/drugs/drugsafety/ucm462991.htm>

De Luca Canto G, Pachêco-Pereira C, Aydinöz S, et al. Adenotonsillectomy Complications: A Meta-analysis. *Pediatrics* 2015; 136(4): Published online September 21, 2015  
[http://pediatrics.aappublications.org/content/136/4/702?sso=1&sso\\_redirect\\_count=1&nfstatus=401&nftoken=00000000-0000-0000-0000-000000000000&nfstatusdescription=ERROR%3a+No+local+token](http://pediatrics.aappublications.org/content/136/4/702?sso=1&sso_redirect_count=1&nfstatus=401&nftoken=00000000-0000-0000-0000-000000000000&nfstatusdescription=ERROR%3a+No+local+token)

Yaster M, Park PS, Hsu A, et al. Physicians Dispense More Opioid than Needed to Treat Pediatric Pain: A Prospective Cohort Study. *Anesthesiology* 2015 from the American Society of Anesthesiologists (ASA): Abstract 1056. Presented October 24, 2015  
<http://www.abstractsonline.com/Plan/ViewAbstract.aspx?sKey=39e1cf49-6892-4085-86a5-dd575b524336&cKey=eb4cff0f-39e8-4d4e-ba09-9915ea79825f&mKey={068F2AC3-1187-43D5-B2B7-75DD8592418D}>  
as reported in:  
<http://www.newswise.com/articles/pediatric-patients-prescribed-more-opioids-than-needed-for-pain-after-surgery-study-finds>

Ciszkowski C, Madadi P, Phillips MS, Lauwers AE, Koren G. Codeine, ultrarapid-metabolism genotype, and postoperative death. *N Engl J Med* 2009; 361(8): 827-828  
<http://www.nejm.org/doi/full/10.1056/NEJMc0904266>

Kelly LE, Rieder M, van den Anker J, Malkin B, Ross C, Neely MN, et al. More codeine fatalities after tonsillectomy in North American children. *Pediatrics* 2012; 129:5 e1343-e1347; published ahead of print April 9, 2012  
<http://pediatrics.aappublications.org/content/129/5/e1343.abstract?sid=f3662934-1587-4e08-9852-3cd0fdbf34b5>

Print “[November 2015 FDA Safety Communication on Tramadol in Children](#)”

## Starving Our Patients?

Two of our most popular columns were our April 2011 What’s New in the Patient Safety World column “[Harm from NPO Orders](#)” and our August 6, 2013 Patient Safety Tip of the Week “[Let Me Sleep!](#)”). In the former we discussed how NPO orders often remain in effect for inappropriate periods, as noted in a study from the National Patient Safety Agency in the UK ([NPSA 2011](#)). In the latter we discussed how so many factors in the hospital interfere with patients getting a night’s sleep.

Apparently we’re not the only ones concerned about these “under the radar” issues. Martin Makary and colleagues just published a viewpoint paper on how sleep deprivation and starvation are happening to our hospitalized patients ([Xu 2015](#)). They begin by describing an elderly woman with pneumonia who had poor oral intake for several days prior to admission and then gets made NPO during a prolonged period between arrival in the ED and ultimate arrival to the hospital floor. She is then kept NPO for an anticipated procedure, which gets delayed in scheduling. Ultimately she is not fed for 3 days in the hospital plus the 3 days prior to arrival for a total of 6 days with suboptimal intake and then she just got jello and soup!

They go on to describe how we underappreciate malnourishment in the hospital setting and how malnutrition has an impact on morbidity and mortality, adverse events like falls, and hospital length of stay. They cite important trends such as reducing the period of

fasting prior to anesthesia and limiting fasting as part of the ERAS (Enhanced Recovery after Surgery) protocols in vogue for gastrointestinal surgery.

They have practical recommendations such as using multimodal analgesia in order to reduce opioid use that might delay the return of bowel function post-op (or cause nausea and vomiting that might impair oral intake). Importantly they note all staff should be educated and empowered to question NPO status frequently.

In our April 2011 What's New in the Patient Safety World column "[Harm from NPO Orders](#)" we recommended you do a simple audit on several units to see (a) how many patients are on "NPO" status and (b) why are they "NPO" and (c) are their nutritional, hydration, and medication needs being met. You may identify gaps and identify communication barriers. You may also identify other related issues. For example, you may find a patient has a central line in place for hydration or parenteral alimentation that is no longer necessary (because they are capable of feeding) yet puts them at risk for nosocomial bacteremia (CLABSI).

And in our August 25, 2015 Patient Safety Tip of the Week "[Checklist for Intrahospital Transport](#)" we discussed how many inpatients who are transported for diagnostic imaging or other studies may be made NPO prior to transport and then no one remembers to restart their oral intake and oral medications upon return from that procedure. Having those items addressed in your "Ticket to Ride" (intrahospital transport checklist) should help prevent unnecessary delays in your patients resuming oral intake and oral medications.

We're also intrigued about the possibility of using tools from another recent study to alert us to inadequate feeding in some patients. Hooper and colleagues tested several osmolality equations to identify patients who were dehydrated ([Hooper 2015](#)). Though their patients were not hospital inpatients, the clinical lab variables used in the study are readily available on almost all hospital inpatients. It would be easy to set up a script to be run in the background that would trigger an alert in the EMR that a patient was likely dehydrated. Conceivably that might be one way to remind us that we forgot to rescind the "NPO" order on our patient.

Xu and colleagues then go on to describe all the things that prevent inpatients from getting a good night's sleep. We discussed those in detail in our August 6, 2013 Patient Safety Tip of the Week "[Let Me Sleep!](#)". Waking patients at night for vital signs that may not be important in some patients, lack of coordinating nursing and phlebotomy visits, and others are important remediable factors in addition to those that reduce ambient noise. Avoiding waking patients for vital signs if their risk is low (eg. if they have a low MEWS score) should be a logical consideration. We also described the Somerville Protocol ([Bartick 2010](#)) which resulted in a 38% reduction in patients noting sleep disruption due to hospital staff and a 49% reduction in patients receiving prn sedatives (actually a 62% reduction for patients aged 65 and older). That protocol consisted of 10 components:

1. "Quiet Time" designated as 10PM to 6AM

2. Timing of “routine” vital signs changed to 6AM, 2PM and 10PM
3. Getting physicians to understand the difference between daily, BID, TID, QID vs. q24 hours, q12 hours, q8 hours, q6 hours
4. Avoid standing diuretic doses after 4PM
5. Avoid blood transfusions during Quiet Time where possible
6. Use of a noise detection device in the nursing station
7. Lullaby over the PA system at 10PM to alert patients, staff, visitors, etc. to Quiet Time
8. Timer to dim hallway lights automatically at 10PM
9. Nurses perform a bedtime routine before Quiet Time (vital signs, bedtime meds, toilet patient, ensure IV bag won’t empty at night, close patient door, etc.)
10. Avoid antecubital IV catheter site where possible (easier to occlude flow here and set off alarm at night) and even avoid nighttime IV fluids if possible

It’s been just over 2 years since Harlan Krumholz described the “Post-hospital syndrome—an acquired, transient condition of generalized risk” ([Krumholz 2013](#)). He described that recently hospitalized patients experience a period of generalized risk for a range of adverse health events and called this a post-hospital syndrome, “an acquired, transient period of vulnerability”. He suggested that the “the risks in the critical 30-day period after discharge might derive as much from the allostatic and physiological stress that patients experience in the hospital as they do from the lingering effects of the original acute illness”. This state leaves patients vulnerable to readmission, often for conditions different from that of the index hospitalization. He went on to describe some of the likely factors contributing to this reduction of functional reserve, including metabolic derangements, disturbed sleep patterns, nutritional factors, cognitive factors, pain and other discomforts, etc.

Sometimes we get so busy addressing complex clinical issues that we forget to attend to the simplest necessities of life – eating and sleeping. Attending to those can improve both medical outcomes and patient satisfaction.

### **References:**

Xu T, Wick EC, Makary MA. Sleep deprivation and starvation in hospitalised patients: how medical care can harm patients. *BMJ Qual Saf* 2015; doi:10.1136/bmjqs-2015-004395 Published online 8 September 2015  
[http://qualitysafety.bmj.com/content/early/2015/09/08/bmjqs-2015-004395.short?g=w\\_qs\\_ahead\\_tab](http://qualitysafety.bmj.com/content/early/2015/09/08/bmjqs-2015-004395.short?g=w_qs_ahead_tab)

NPSA. National Patient Safety Agency (UK). Risk of harm to patients who are nil by mouth. February 14, 2011  
<http://www.nrls.npsa.nhs.uk/resources/?entryid45=94854>

Hooper L, Abdelhamid A, Ali A, et al. Diagnostic accuracy of calculated serum osmolarity to predict dehydration in older people: adding value to pathology laboratory reports. *BMJ Open* 2015; October 22, 2015  
[http://bmjopen.bmj.com/content/5/10/e008846.short?g=w\\_open\\_current\\_tab](http://bmjopen.bmj.com/content/5/10/e008846.short?g=w_open_current_tab)

Bartick MC, Thai X, Schmidt T, et al. Decrease in As-needed Sedative Use by Limiting Nighttime Sleep Disruptions from Hospital Staff. *Journal of Hospital Medicine* 2010; 5(3): E20–E24  
<http://onlinelibrary.wiley.com/doi/10.1002/jhm.549/abstract>

Krumholz HM. Post-hospital syndrome—an acquired, transient condition of generalized risk. *N Engl J Med* 2013; 368(2): 100-102  
<http://www.nejm.org/doi/full/10.1056/NEJMp1212324>

**Print “[November 2015 Starving Our Patients?](#)”**

## **Medications Most Likely to Harm the Elderly Are...**

...antibiotics!!! At least for patients in primary care. Not the drug category we’d have suspected. We would have predicted opiates, anticoagulants, or diabetes drugs as the most likely offenders. But a new study from New Zealand found medications to be the number one cause of harm to ambulatory patients age 65 and older and antibiotics the most common offenders ([Wallis 2015](#)).

New Zealand is unique in that it has a “no-fault” accident insurance for medical issues. Wallis looked at treatment injury claims in that database from 2005 to 2009. Medication-related injuries accounted for 34% of all claims and 72% of serious and sentinel injuries. Second on the list were injuries related to minor surgical procedures (15%) but these caused no serious injuries. Interestingly, failure or delay to diagnose or treat accounted for only 3% of all injuries but, as we’d expect, accounted for a larger percentage of serious or sentinel injuries (12%).

But the surprising finding was that the antibiotic category accounted for 51% of all medication injuries and 39% of serious or sentinel injuries. Only 9% of the medication

injuries likely involved error. 91% involved allergic or idiosyncratic reactions without likely occurrence of error.

The study was not able to determine the likelihood that injuries were preventable. However, given the nature of most of the medication injuries, the strategy most likely to prevent them would be to avoid prescribing them in the first place. And for antibiotics, in particular, there may well be opportunity to prescribe fewer of them. Particularly in the elderly, who are likely on multiple medications, antibiotics may often interact with one or more of these other drugs. We know some of them can interact with warfarin. We also know that some of them can prolong the QTc interval, thereby predisposing to torsade de pointes (see our June 29, 2010 Patient Safety Tip of the Week “[Torsade de Pointes: Are Your Patients at Risk?](#)”). And they can certainly predispose patients to infections with drug-resistant organisms or C. diff.

A US study ([Shebab 2008](#)) found an estimated 142,505 visits annually were made to US EDs for drug-related adverse events attributable to systemic antibiotics. Antibiotics were implicated in 19.3% of all ED visits for drug-related adverse events. Allergic reactions accounted for 78.7% of visits. The authors suggest that minimizing unnecessary antibiotic use by even a small percentage could significantly reduce the immediate and direct risks of drug-related adverse events in individual patients.

Antibiotic stewardship programs have proven to be successful in hospitals at reducing antibiotic resistance (see or October 14, 2014 Patient Safety Tip of the Week “[Antibiotic Stewardship](#)”). But are there examples of antibiotic stewardship programs in ambulatory care?

There is a paucity of high-quality studies addressing this issue. A systematic review found low- to moderate-strength evidence suggesting that antimicrobial stewardship programs in outpatient settings improve antimicrobial prescribing without adversely effecting patient outcomes ([Drekonja 2015](#)). This review concludes that effectiveness depends on program type. Most studies were not designed to measure patient or resistance outcomes and data regarding sustainability and scalability of interventions are limited.

One study showed that an antimicrobial stewardship intervention on antibiotic prescribing for pediatric outpatients improved adherence to prescribing guidelines for common bacterial acute respiratory tract infections ([Gerber 2013](#)).

An excellent review of the state of ambulatory antibiotic stewardship programs ([Gangat 2015](#)) notes that the vast majority of antibiotics are prescribed in the ambulatory setting and that about 10% of ambulatory visits include a prescription for antibiotics. The authors also note that inappropriate outpatient antibiotic prescribing has been tied to bacterial resistance in inpatients as well. Inappropriate antibiotic prescribing includes not only their use in conditions which do not require antibiotics, but also use of broad-spectrum antibiotics where narrow-spectrum would be better, use of some combination antibiotic regimens, failure to de-escalate antibiotics once culture and sensitivity results are

available, and unnecessarily prolonged courses of antibiotics. They further discuss potential components of ambulatory antibiotic stewardship programs, including education (clinicians and patients), evidence-based guidelines and algorithms and clinical pathways, and clinical decision support.

CDC certainly thinks there is a place for antibiotic stewardship in outpatient settings ([CDC 2015](#)). They note that over half of antibiotic prescribing in outpatient settings is unnecessary, and most of this inappropriate use is for acute respiratory infections, such as pharyngitis, sinusitis, or bronchitis. Antibiotics are also the most common cause of adverse drug events (ADEs) in children, accounting for 7 of the top 15 drugs leading to pediatric ADE-related emergency room (ER) visits. In adults, ADEs account for 1 out of 5 ADE-related visits to the ER.

CDC also notes that harm can be reduced by improving antibiotic prescribing. For example, a 10% decrease in inappropriate prescribing in the community can result in a 17% reduction in *Clostridium difficile* infection.

A recent report in CDC's Morbidity and Mortality Weekly Report (MMWR) called for a more community-wide coordinated effort to prevent the spread of drug-resistant pathogens ([Slayton 2015](#)). The authors noted that individual hospitals and nursing homes have their own programs for reducing such spread, including both interrupting transmission and improved antibiotic stewardship. But they noted that such individual facility efforts do not account for the importance of inter-facility spread and postulated that better community-wide coordination by such facilities would lead to even better outcomes. The study used two computer simulation models, one in a 10-facility network and another in a 102-facility network, using carbapenem-resistant Enterobacteriaceae (CRE) as a test case. They concluded that a coordinated effort, as opposed to just improving efforts at individual facilities, would lead to a 74% reduction in CRE acquisitions over a 5-year period in the 10-facility network and a 55% reduction over 15 years in the 102-facility network model. The coordinated effort would include sharing of data among facilities, likely through public health departments.

It's interesting that the above models did not include enhanced efforts at the ambulatory levels of care. We know that some antibiotic-resistant organisms, like MRSA, are becoming much more prevalent among ambulatory patients. It would seem logical that any community-wide effort to coordinate the fight to reduce antibiotic resistance would need to include the ambulatory care sector as well.

And the National Quality Forum has recently announced a new initiative on antibiotic stewardship ([NQF 2015](#)). An antibiotic stewardship action team will provide guidance and feedback on current antibiotic stewardship metrics, recommend best practices for incorporating antibiotic stewardship into accountability programs, and assess tools and resources to support stewardship.

And, of course, inappropriate antibiotics for the elderly are not limited to ambulatory and acute care settings. Up to 75% of nursing home patients are also inappropriately given

antibiotics ([CDC 2015a](#)) and CDC has recently recommended that all nursing homes implement its “Core Elements of Antibiotic Stewardship for Nursing Homes” ([CDC 2015b](#)).

So maybe it’s not so surprising after all that the medications most likely to harm the elderly are...antibiotics!!!

### **References:**

Wallis KA. Learning From No-Fault Treatment Injury Claims to Improve the Safety of Older Patients. *Ann Fam Med* 2015; 13(5): 472-474  
<http://annfammed.org/content/13/5/472.full>

Shehab N, Patel PR, Srinivasan A, Budnitz DS. Emergency department visits for antibiotic-associated adverse events. *Clin Infect Dis* 2008; 47(6): 735-743  
<http://cid.oxfordjournals.org/content/47/6/735.full>

Drekonja D, Filice G, Greer N, et al. Antimicrobial Stewardship in Outpatient Settings: A Systematic Review. *Infection Control and Hospital Epidemiology* 2015; 36(2): 142-152  
<http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=9541519&fileId=S0899823X14000415>

Gerber JS, Prasad PA, Fiks AG, et al. Effect of an Outpatient Antimicrobial Stewardship Intervention on Broad-Spectrum Antibiotic Prescribing by Primary Care Pediatricians. A Randomized Trial. *JAMA* 2013; 309(22): 2345-2352.  
<http://jama.jamanetwork.com/article.aspx?articleid=1696098>

Gangat MA, Hsu JL. Antibiotic stewardship: a focus on ambulatory care. *South Dakota Medicine* 2015; Special Issue: 44-8.  
[https://www.sdsma.org/docs/pdfs-new\\_site/Journal/2015/Special%20Issue%202015%20-%2020150326.pdf](https://www.sdsma.org/docs/pdfs-new_site/Journal/2015/Special%20Issue%202015%20-%2020150326.pdf)

CDC. Outpatient Antibiotic Stewardship. 2015  
<http://www.cdc.gov/getsmart/community/improving-prescribing/outpatient-stewardship.html>

Slayton RB, Toth D, Lee BY, et al. Vital Signs: Estimated Effects of a Coordinated Approach for Action to Reduce Antibiotic-Resistant Infections in Health Care Facilities — United States. Morbidity and Mortality Weekly Report (MMWR) 2015; 64(30): 826-831 August 7, 2015

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6430a4.htm>

NQF (National Quality Forum). New NQF Initiatives Address High-Priority Healthcare Issues. 2015

[http://www.qualityforum.org/New\\_NQF\\_Initiatives\\_Address\\_High-Priority\\_Healthcare\\_Issues.aspx](http://www.qualityforum.org/New_NQF_Initiatives_Address_High-Priority_Healthcare_Issues.aspx)

CDC. CDC Recommends All Nursing Homes Implement Core Elements to Improve Antibiotic Use. September 15, 2015

<http://www.cdc.gov/media/releases/2015/p0915-nursing-home-antibiotics.html>

CDC. The Core Elements of Antibiotic Stewardship for Nursing Homes. 2015

<http://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html>

Print “[November 2015 Medications Most Likely to Harm the Elderly Are...](#)”

## **Hand Hygiene: Paradoxical Solution?**

You glove up when you interact with patients on contact precautions, don't you? That's common sense. But is it evidence-based? Could we actually be doing more harm than good by using gloves?

The WHO (World Health Organization). Save Lives: Clean Your Hands Campaign ([WHO 2009a](#)) includes the following statement about gloves and hand hygiene: “The impact of wearing gloves on adherence to hand hygiene policies has not been definitively established, since published studies have yielded contradictory results. However, the recommendation to wear gloves during an entire episode of care for a patient who requires contact precautions, without considering indications for their removal, such as an indication for hand hygiene, could actually lead to the transmission of germs.” ([WHO 2009b](#)).

Our January 5, 2010 Patient Safety Tip of the Week “[How’s Your Hand Hygiene?](#)” discussed The Joint Commission Center for Transforming Healthcare [multi-hospital project on hand hygiene](#). In that project among the list of causes for failure to clean hands were:

- Wearing gloves interferes with the process
- Perception that hand hygiene is not needed if wearing gloves

Now a recent study actually challenges the practice ([Cusini 2015](#)). Cusini and colleagues assessed compliance with hand hygiene during contact precautions before and after eliminating mandatory glove use. They found that hand hygiene compliance increased from 52% to 85% in patients on contact precautions after the policy change (during the same period hospital-wide hand hygiene compliance increased from 63% to 81% but the relative increase was significantly higher in the contract precautions group). The authors conclude that eliminating mandatory glove use in the care of patients on contact precautions increased hand hygiene compliance in their institution, particularly before invasive procedures and before patient contacts. They do, however, recommend that further studies on the effect on pathogen transmission are needed before current official guidelines on the topic be revised.

We’re not quite ready to remove gloves from contact precautions but the Cusini study certainly is of interest in two regards. First, it reaffirms that gloves are a barrier to hand hygiene compliance. And it would suggest that additional studies with actual patient outcomes and infection transmission rates are needed.

Very interesting.

### **Some of our other columns on handwashing:**

January 5, 2010	“ <a href="#">How’s Your Hand Hygiene?</a> ”
December 28, 2010	“ <a href="#">HAI’s: Looking In All The Wrong Places</a> ”
May 24, 2011	“ <a href="#">Hand Hygiene Resources</a> ”
October 2011	“ <a href="#">Another Unintended Consequence of Hand Hygiene Device?</a> ”
March 2012	“ <a href="#">Smile... You’re on Candid Camera</a> ”
August 2012	“ <a href="#">Anesthesiology and Surgical Infections</a> ”
October 2013	“ <a href="#">HAI’s: Costs, WHO Hand Hygiene, etc.</a> ”
November 18, 2014	“ <a href="#">Handwashing Fades at End of Shift, ?Smartwatch to the Rescue</a> ”
January 20, 2015	“ <a href="#">He Didn’t Wash His Hands After What!</a> ”
September 2015	“ <a href="#">APIC’s New Guide to Hand Hygiene Programs</a> ”

### **References:**

WHO (World Health Organization). Save Lives: Clean Your Hands Campaign. Why, How & When? Revised August 2009  
[http://www.who.int/gpsc/5may/Hand\\_Hygiene\\_Why\\_How\\_and\\_When\\_Brochure.pdf?ua=1](http://www.who.int/gpsc/5may/Hand_Hygiene_Why_How_and_When_Brochure.pdf?ua=1)

WHO (World Health Organization). Glove Use Information Leaflet. Revised August 2009  
[http://www.who.int/gpsc/5may/Glove\\_Use\\_Information\\_Leaflet.pdf](http://www.who.int/gpsc/5may/Glove_Use_Information_Leaflet.pdf)

Joint Commission Center for Transforming Healthcare. Hand Hygiene Project.  
<http://www.centerfortransforminghealthcare.org/projects/detail.aspx?Project=3>

Cusini A, Nydegger D, Kaspar T, et al. Improved hand hygiene compliance after eliminating mandatory glove use from contact precautions - Is less more? American Journal of Infection Control 2015; 43(9): 922-927  
<http://www.ajicjournal.org/article/S0196-6553%2815%2900607-0/abstract>

Print “[November 2015 Hand Hygiene: Paradoxical Solution?](#)”

Print “[November 2015 What's New in the Patient Safety World \(full column\)](#)”

Print “[November 2015 FDA Safety Communication on Tramadol in Children](#)”

Print “[November 2015 Starving Our Patients?](#)”

Print “[November 2015 Medications Most Likely to Harm the Elderly Are...](#)”

Print “[November 2015 Hand Hygiene: Paradoxical Solution?](#)”



The  
Truax  
Group  
Healthcare Consulting  
[www.patientsafetysolutions.com](http://www.patientsafetysolutions.com)

<http://www.patientsafetysolutions.com/>

[Home](#)

[Tip of the Week Archive](#)

[What's New in the Patient Safety World Archive](#)