By Barry P. Chaiken, MD, FHIMSS

Say No to Paper

Paper came one pill away from killing my 91-year-old mom. Only through luck did we dodge a medical error that could have extinguished a life that survived the Great Depression, World War II, polio epidemics, the birth of two children, the Cold War, the loss of her husband, and more than 60 years of employment. Up until her admission on May 7th, she had never experienced being an ill patient in a hospital. Although her first admission went smoothly, the second proved almost fatal.

Mom was admitted to a hospital affiliated with her cardiologist located in Westchester, New York, a location close to the home of my sister, a trained endocrinologist with more than 20 years of clinical experience. After treatment for an upper respiratory infection, urinary tract infection, and symptoms of viral pericarditis, Mom was discharged to my sister's home. Soon afterwards, I transported Mom to my home in Boston while my sister attended to work responsibilities abroad.

After a week of rest, Mom returned to Westchester for continued recuperation with my sister. Unfortunately, her condition worsened after a few days, leading her physician to re-admit her to the hospital. At the conclusion of a few days of further tests and treatment, she was transferred to the hospital's co-located rehabilitation facility for several days to continue her treatments in a less acute care setting. Due to the lack of availability of required therapy over the upcoming Memorial Day weekend, we collectively decided to have Mom discharged to my sister's home where she could receive better care.

Holiday Weekend Dangers

As Mom suffered from new onset of intermittent atrial fibrillation, the physicians prescribed Pradaxa, a anticoagulation therapy drug that greatly reduces the probability of stroke in patients suffering from atrial fibrillation. Pradaxa, a relatively new drug, offers advantages over drugs such as Coumadin as it does not warrant biweekly blood tests.

The decision to discharge my mom on the Friday before a holiday weekend immediately proved problematic. Pradaxa at the 75mg dose was unavailable in several pharmacies in the area around the hospital. All promised they could obtain the drug by Tuesday afternoon, a timeframe much too late for her. Keeping Mom in the rehabilitation facility for 3 extra days just to keep her on her medication seemed both wasteful and not in her best interests.

The Event

Over a 2-hour period, working with a very helpful social worker in the hospital, we convinced the outpatient hospital pharmacy to fill a prescription for the drug. While my sister prepared Mom for discharge, I rushed down to the pharmacy with the paper prescription for 75mg of Pradaxa. In a non-air conditioned sitting area on a 90°+ day, I waited for almost 20 minutes as the pharmacist manually filled the prescription. With the prescription bag in hand, I rushed up to meet my mom and sister to help them prepare for discharge.

I handed the prescription to my sister who promptly opened the packaging and looked at the bottle of meds. "This is wrong", she shouted. "Mom should be on 75mg not 150mg."

Although the prescription was written correctly, the pharmacy dispensed the wrong dose. Knowing my mom had just dodged a potentially fatal medication error, I promptly returned to the pharmacy with the incorrect medication in hand and explained to the pharmacist what had happened. All color left his face as he began to apologize profusely. He had just experienced a sentinel event that required immediate and complete reporting.

According to the Joint Commission,

> *A sentinel event is an unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof. Serious injury specifically includes loss of limb or function. The phrase, "or the risk thereof" includes any process variation for which a recurrence would carry a significant chance of a serious adverse outcome. Such events are called "sentinel" because they signal the need for immediate investigation and response (www.jointcommission.org/sentinel_event.aspx).*

Anatomy of an Error

Reviewing the sequence of events surrounding the medical error, it becomes clear how it occurred. Although the handwritten prescription was legible and correctly written for 75 mg of Pradaxa, the pharmacist mistakenly selected an unopened, 60-capsule bottle of Pradaxa 150 mg to fill Mom's prescription. He then placed the medication in a sealed paper bag, attaching the prescription receipt to it. Had the hospital been equipped with ePrescribing and an electronic medication administration system, the system would have immediately alerted the pharmacist of the dosing error. The scanned barcode on the bottle of 150 mg of Pradaxa would not have matched the expected barcode of a bottle of 75 mg capsules.

Approximately 10 days later my mom again required admission to a hospital. Not wanting to repeat our experience obtaining care from a hospital whose processes are mostly based on paper, we followed the direction of her internal medicine physician, a computer-literate specialist who has utilized an electronic medical record in his solo practice for several years. He admitted Mom to a digitally oriented facility that provides him with a physician portal, allowing him to better track his patients during admissions and after discharge.

Being Digital

Our experience in the emergency department of this digital hospital contrasted greatly with that in the paper driven facility. Upon arrival, my mom received a barcoded band on her arm that was twice checked with her upon application, and again later by the treating nurse practitioner. An electronic medication administration system scanned my mom, the clinician, and each medication before administration. The treating clinician shared the results of my mom's chest X-ray on a high-resolution monitor at the nurse's station, and showed us her latest laboratory values when they returned from the lab and appeared within her electronic medical record. Transparency of my mom's care could not have been better.

For more than 25 years, I have focused my career on healthcare quality improvement, patient safety, and access to care. Everything I worked on existed in the abstract—faceless patients and unemotional numbers. After my experience in May and June of 2011, my work has taken on a much more personal meaning. Professionals pushing their hospitals to achieve HIMSS EMR Adoption Model Stage 7 deserve recognition. Clinicians striving to eliminate paper from their offices as they embrace EMRs and ePrescribing deserve recognition. Policy makers, researchers, and informaticists defining "meaningful use," deploying clinical decision support, or developing healthcare information technology best practices deserve recognition.

Going forward I will never allow anyone I know to be treated in a facility that bases its medical care on dangerous paper-based processes. Nor should any American ever be subjected to such inferior care. If we continue our efforts to promote and properly deploy healthcare information technology, this soon will be true. PSQH

Author's Note: Dr. David M. Lans of New Rochelle, New York, deserves special recognition for his deployment of electronic medical records in his solo practice, completed years before the enactment of the HITECH Act. In addition, Lawrence Hospital Center in Bronxville, New York, deserves special recognition for its embrace of all things that define a 21st century digital hospital.

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