

One Dose, Fifty Pills

Lawrence Smith, MD | November 1, 2005

[View more articles from the same authors.](#)

The Case

A middle-aged man was admitted to the medical service of a teaching hospital with suspected vasculitis. When the initial diagnostic studies failed to provide a definitive diagnosis, the team decided to treat the patient empirically with high-dose steroids.

When discussing the patient on morning rounds, the senior resident instructed the intern quite clearly to “give the patient one gram of steroids.” After rounds (and some quick math), the intern ordered:

“Prednisone 20 mg tabs 50 pills PO x 1 now”

After receiving the written order, the pharmacist contacted the intern to clarify the order. She suggested to the intern that the one gram of steroids probably was supposed to be given in an intravenous form. The busy and harried intern stated firmly that he wished to give the patient fifty 20-mg pills. When the pharmacist persisted in questioning the order and gently suggested the intern may want to contact his senior resident for clarification, the intern refused and replied, “You can give it with a tablespoon of Maalox.”

The patient was brought fifty 20-mg pills of prednisone and became angry and frustrated as he swallowed pill after pill. He developed mild nausea and heartburn while taking the prednisone.

The following day, upon review of the medication record, the senior resident found the error. The oral prednisone was stopped, and the patient was correctly given a gram of intravenous methylprednisolone (Solu-Medrol). He eventually recovered from his vasculitis and was discharged in a stable condition.

The Commentary

This case could easily be characterized as simply a humorous event associated with residency training. One can envision this story being retold with much laughter in the hospital cafeteria because of the seeming lack of common sense it demonstrates (and, of course, because the patient experienced minimal harm). However, it also

may be a cautionary glimpse into the tenuous balance between residency training and patient safety.

Inherent in care in a teaching hospital is the fact that interns and residents, often the immediate caregivers to patients, are less experienced, less expert, less efficient, and perhaps more prone to medical errors. Despite this seeming risk, comparative studies actually report better quality of care for most conditions at teaching hospitals, albeit at higher cost.(1-3) The etiology of the advantage is unclear but may be secondary to better access to specialized services, better adherence to evidence-based medicine, or improved physician availability.

Notwithstanding these potential virtues, this case demonstrates that residents often have gaps in knowledge and experience that may place patients at risk. Such gaps can be overcome with both supervision and clinical maturation (after all, that is what residency is for). Since the latter accrues only over time, supervision is critical, particularly during early training. Against that background, this troubling case exposes how the unique culture of residency education, as well as the long-standing tradition of resident autonomy, are often at odds with patient safety.

Let's look closer at the culture that allows an intern, clearly unsure of the specifics of a therapeutic intervention for an uncommon disease, to forge ahead despite his lack of knowledge and a warning from another trained professional that his decision might be in error. Highly relevant to this case is the "hidden curriculum" in medical education.(4) This term refers to the set of influences functioning at the level of organizational structure and culture, including, for example, implicit rules that permit trainees to survive the institution. These rules often take the form of customs and rituals, and they are usually taken for granted by virtually everyone. Within residencies, the hidden curriculum is one of intense loyalty to team, coupled with enormous respect for hierarchy and for specific roles within that team. Further, needing and requesting help from colleagues is often seen as failure. It is unclear whether the intern in this case feared humiliation if he requested help. However, it would not be surprising if such a fear was responsible, at least in part, for his failure to seek assistance even after it was recommended. Unfortunately, pride and shame can take precedence over patient safety.

Many residency programs also have a culture of devaluing input from non-physician professionals. Whereas experienced physicians might well have heeded the warning of the pharmacist or taken the advice of experienced nurses, young physicians in training, probably due to their own insecurity and their intense dependence on the resident team as the center of their professional life, may find it extremely difficult to take advice from non-physicians. In addition, housestaff in teaching hospitals are often paged or called by non-physician professionals, especially from the nursing staff, about non-urgent issues—those related to minor deviations from “hospital usual practice,” discharging a “legal obligation” to report minor patient issues to a physician, or focused on reducing “unnecessary” nurse/aide/phlebotomist workload during the day. It may be difficult for house officers to separate trivial queries from serious ones, and they may struggle with the “cry wolf” phenomenon. In our program, having a senior nurse and chief resident occasionally monitor “calls” has improved the quality of nurse-resident communication.

Let us now turn to the issue of autonomy. How can an intern believe that he shouldn't call his senior resident or attending when a pharmacist, whose primary role in the hospital is to reduce medication errors, questions the medication order? Autonomy and physician (not just housestaff) independence have long histories in western medicine.(5,6) Physicians have consistently prized autonomy in clinical decision-making. There is no question that autonomy within those areas that require clinical experience and judgment (often referred to as “the art of medicine”) should be valued in our medical system. This would include the sorting of patient data, interpretation and weighting of the data, framing the clinical issues in the context of the individual patient, and making decisions in the face of uncertainty. However, if physicians are not following evidence-based medicine or, moreover, are harming patients as they exercise their independence, the autonomy should be curtailed in the name of safety and quality.

In resident education, supervision and monitoring of the quality of care can be accomplished by two primary mechanisms: system-based oversight and direct attending supervision. Specific system-based interventions that have been effective include computerized physician order entry (7), clinical decision-support systems (8), and having clinical pharmacists round with teams in the ICU.(9)

Implementation of system-based oversight must be balanced with the need to promote education and a sense of autonomy for the housestaff. That is, computerized orders and decision support must be user-friendly and not simply viewed as a “hassle” by busy residents, nor be so prescriptive that residents never learn to think on their feet. Moreover, any system-based oversight must be educational; for example, when an intern is directed not to give warfarin with Dilantin, he or she should have easy access to a link that outlines the drug interaction.

Beyond system-based interventions, what is the right amount of attending supervision of residents? In considering this question, it is important to recognize that it is essential that physicians in training feel absolutely responsible for their patients. That element of emotional learning (10) is critical to physician development. If attending physicians are “micromanaging,” or if system-based changes severely limit resident decision making, new physicians may not learn to accept ultimate responsibility for patient care or function quickly and decisively in the midst of clinical uncertainty.

To meet these goals, the skilled supervisor provides what I call “close supervision from afar.” The attending should know everything that happens to the patient and collect enough of the primary data to be sure of its accuracy yet remain in the background unless absolutely necessary. That way, the learners feel complete personal responsibility for their patients. The degree of close supervision must be based on an assessment of the skills, knowledge, and clinical maturity of the specific learners and cannot be generalized to one-size-fits-all. It is critical that the attending not correct differences in style or legitimate alternative approaches to a patient but, rather, reserve corrective interventions to true clinical errors. Differences in approach should be discussed with trainees as colleagues, not mandated from the “top.”

Under the real-world pressures of increasingly stringent billing and compliance regulations and the moral imperative for patient safety, the days of “resident-run” services with minimal oversight are coming to a close. Teaching hospitals should actively strive to strike a balance between preserving the housestaff autonomy needed for educational development and the need for patient safety. How can this be accomplished? First, attempts should be made to change the hidden curriculum of resident education, striving to create an

environment where young physicians are comfortable asking for help and willing to recognize and respond to the expertise of all members of the care team. Toward this end, some specific cultural training, such as that found in crew resource management programs, might be valuable. Second, system-based interventions can preserve patient safety and educate housestaff while hopefully preserving a sense of physician autonomy. In a different culture and system, the error in this case may have been avoided—the intern would have respected the pharmacist’s expertise or called for help when there was a question about the order. Or maybe the computer would have balked at the order for fifty 20-mg pills and redirected the intern.

The answer to this seeming conflict of autonomy versus patient safety is in creating a culture where everyone looks critically at clinical outcomes, focuses on best patient care, and actively addresses the priorities of clinical autonomy, clinical judgments, and evidence-based medicine. We need an environment in which young physicians are comfortable asking for help, are willing to recognize and respond to the expertise of all members of the care team, and see patient safety systems as supporting their goals of providing better patient care—not as hassles in an already over-loaded workday. Ultimately, the goal must be to create a culture that allows physicians to comfortably ask for help when they are beyond their area of competence while preserving the intense personal sense of commitment and responsibility for the quality of care of their patients.

Take-Home Points

- Striking the appropriate balance between autonomy and supervision represents one of the greatest challenges of physician education.
- Many training programs have a “hidden curriculum” that overvalues autonomy and loyalty to the team and underappreciates the input of non-physician professionals.
- The effective supervising physician provides “close supervision from afar.”
- As we improve both human and systems-based supervision (ie, through computerized order entry), it will be vital to retain

trainees' personal sense of responsibility for their patients.

Lawrence Smith, MD Chief Academic Officer Senior Vice-President
for Academic Affairs North Shore-LIJ Health System

References

1. Taylor DH Jr, Whellan DJ, Sloam FA. Effects of admission to a teaching hospital on the cost and quality of care for Medicare beneficiaries. *N Engl J Med.* 1999;340:293-299. [[go to PubMed](#)]
2. Ayanian JZ, Weissman JS. Teaching hospitals and quality of care: a review of the literature. *Milbank Q.* 2002;80:569-593. [[go to PubMed](#)]
3. Kupersmith J. Quality of care in teaching hospitals: a literature review. *Acad Med.* 2005;80:458-466. [[go to PubMed](#)]
4. Hafferty FW. Beyond curriculum reform: confronting medicine's hidden curriculum. *Acad Med.* 1998;73:403-407. [[go to PubMed](#)]
5. Reinertsen JL. Zen and the art of physician autonomy maintenance. *Ann Intern Med.* 2003;138:992-995. [[go to PubMed](#)]
6. Pont EA. The culture of physician autonomy; 1900 to the present. *Camb Q Healthc Ethics.* 2000;9:98-119. [[go to PubMed](#)]
7. Kuperman GJ, Gibson RF. Computer physician order entry: benefits, costs, and issues. *Ann Intern Med.* 2003;139:31-39. [[go to PubMed](#)]
8. Kawamoto K, Houlihan CA, Balas EA, Lobach DF. Improving clinical practice using clinical decision support systems: a systematic review of trials to identify features critical to success. *BMJ.* 2005;330:765. [[go to PubMed](#)]
9. Leape LL, Cullen DJ, Clapp MD, et al. Pharmacist participation on physician rounds and adverse drug events in the intensive care unit. *JAMA.* 1999;282:267-270. Erratum in *JAMA.* 2000;283:1293. [[go to PubMed](#)]
10. Phelps EA. Emotion and cognition: insights from studies of the human amygdala. *Annu Rev Psychol.* 2006;57:27-53. [[go to PubMed](#)]

This project was funded under contract number 75Q80119C00004 from the Agency for Healthcare Research and Quality (AHRQ), U.S. Department of Health and Human Services. The authors are solely responsible for this report's contents, findings, and conclusions, which do not necessarily represent the views of AHRQ. Readers should not interpret any statement in this report as an official position of AHRQ or of the U.S. Department of Health and Human Services. None of the authors has any affiliation or financial involvement that conflicts with the material presented in this report. View AHRQ Disclaimers

Save

 Save to your library

 Print

Share

 Facebook

 Twitter

 LinkedIn

 Copy URL

Cite

 Citation

[Submit Your Case](#)

Related Resources From the Same Author(s)

Assessment of physician sleep and wellness, burnout, and clinically significant medical errors.

January 13, 2021

WEBM&M CASES

Mobility Lost in the ICU

October 1, 2011

[View More](#)

Related Resources

WEBM&M CASES

A Fatal Twist in Pseudohyperkalemia

August 28, 2024

WEBM&M CASES

Infection After Carpal Tunnel Surgery

August 28, 2024

[View More](#)