
E. Harvey Estes, MD

Learning Is a Community Affair

A handwritten signature in black ink that reads "E. Harvey Estes". The signature is written in a cursive, flowing style with a long horizontal stroke at the end.

This essay, in slightly altered form, was originally presented as part of a symposium, *The Teaching Legacy of Eugene A. Stead Jr., MD*, on October 26, 2008.

A visitor at ward rounds at Duke Hospital in 1945, the year before Dr. Eugene A. Stead became chairman of the Department of Medicine at Duke, would have found the teaching ward “locked down,” with no visitors or unnecessary staff allowed. The beds were all uniformly made up, as for a military inspection, with the head nurse in full charge of maintaining quiet and order. All nonessential patient care activities were suspended. It would be apparent that this was a special event with the chairman and senior physician, Dr. Frederick Hanes, in charge. No medical students were allowed, and no interns; only residents were permitted. Case presentations were made by a resident physician, followed by discussion by Dr. Hanes, all in a very formal manner.

This pattern was so ingrained that when Dr. Stead, upon his arrival, directed Dr. John Hickam to change it to the pattern they had followed at Emory, Hickam seriously questioned whether or not this would be accepted. Dr. Stead insisted, and it was accomplished without major incident. The new pattern was the same as that experienced by all subsequent Stead house officers: All learners joined the faculty member assigned to conduct rounds—medical students, PA students, interns, residents, visiting faculty, nurses, and anyone else who wished to join were packed around the bed. The youngest learner assigned to the chosen patient introduced the patient to the faculty member and presented the case history, physical findings, and lab data. The faculty member would ask questions of the patient, check critical findings, and begin the discussion. The flow of rounds varied with faculty members, but Dr. Stead was likely to drape his frame over the head of the bed and continue the discussion at the bedside. Others would retire to the “office,” much preferred by all attendees, since most could sit in a more comfortable setting.

I need not describe these rounds further. Most of you have been there and done that! The crucial point that I would like to call to your attention is the fact that all learners were there together, and all participated, young and old, neophytes and old hands. In fact, all were learners together. Stead was clearly in charge, but he was always a participant, not an autocratic leader (a distinction not always apparent to the junior participant!). The composition and style of the participating group, and the routine and outcome were carefully and deliberately orchestrated for the purpose of training doctors (this was sometimes rendered as training “men,” but that sexist descriptor belies the fact that Stead welcomed women from the start).

The Genesis of Stead’s Rounding Style

Where did this style of teaching rounds originate? Stead gives credit to Soma Weiss, his mentor at Boston City Hospital. “Soma had the wisdom to listen to his young staff who described what

was known about the disease. He listened to the patient, and asked questions about what was not known about the disease. In the course of the discussion, Soma elected to bring back more information about certain aspects of the problem, and encouraged others to explore areas that had been defined by the discussion. He created a pool of knowledge to which each contributed, and from which each extracted.”¹

Stead’s paragraph is a good place to start analyzing the utility and genius of this style of teaching. “He listened to his young staff, who described what was known about the disease.” Stead expected each participant to do his or her own research about the problem under discussion. He expected each participant to know the established facts and theories about the illness, and to become familiar with textbooks and the library. Next he “listened to the patient, and asked questions.” Stead often commented on Weiss’s interest in the presenting complaint of the patient and collecting information about the ways in which similar complaints could be caused by a wide variety of conditions. Stead continued this legacy. Woe unto the student or resident who brushed away a vague or implausible complaint! The focus was on the patient, not the illness, and the family and socioeconomic circumstances in which the patient lived were as important as the disease.

A very important point was that Weiss asked about what was not known about the disease. This was a critical feature of Stead’s rounds. I recall a case that illustrates this point well. He saw a very obese man on rounds in the mid-1950s, noting in the course of analyzing the problem that the patient slept a lot and that his electrocardiogram showed right axis deviation and other features, suggesting right ventricular hypertrophy. At that time I was in charge of reading electrocardiograms at the Veterans Administration Hospital. He sent the student over with the ECG, asking for a consultation. I had no explanation for the signs of right heart disease either, so I wrote my old mentor Dr. Robert Grant, then at the National Heart Institute, asking him whether or not he had encountered

such an ECG. He recalled one other case, adding that the findings had reverted to normal when the patient lost weight. This led to discussions and a lot of laboratory research, culminating in a paper by Herb Sieker, Henry McIntosh, George Kelsner, and me, describing the pathological physiology of the reversible cardiopulmonary syndrome now known as Pickwickian syndrome.² Sieker was the first person to present the pathophysiology of this syndrome at a national meeting,³ but others beat us to the draw by publishing the first full paper, and they clearly “aced” us by using the colorful Dickensian name by which it is now known.⁴

Answering Rounds or Questioning Rounds?

In the generation of teachers before Weiss and Stead, emphasis was on the description of disease, making an accurate diagnosis, and recommending treatment. Stead's predecessor at Emory and Grady Hospital, James E. Paullin, was typical of this breed. Paullin was, incidentally, the Stead family's personal physician when he was growing up, and was both loved and respected by Stead. His rounds were similar to those of Hanes at Duke in that they were authoritarian rounds, a stage for displaying the knowledge and skills of the senior physician, and dependent on his reputation and experience. Therapeutic choices were few, and the mechanism of action of most treatments was obscure. The experience of the teacher was the basis of his authority, and the information he dispensed was not to be questioned but accepted with the intention that it be absorbed and used as is.

Contrast this to the Weiss/Stead tradition. They expected all learners (including the chief) to be participants, exploring on their own what was already known about the disease, but then engaging in discussion that sought gaps in knowledge, and questioned current assumptions and conclusions. Questions posed in order to provoke thinking were used in place of statements to be committed to memory. As often as not, the answers to these questions were not known to Stead or anyone else. The purpose was to stimulate library research, questioning of experts, or going to the physiological laboratory. The result was

an ever-expanding pool of knowledge, to which all contributed, from which all extracted, and all had fun thinking together. At Stead's rounds, various intellectual positions were clarified and solidified by making a five-cent wager; this nickel bet was a device that led everyone, including the lowest level student, to challenge the “old man”—and to occasionally win!

The composition of the teaching/learning group was important. Students of all levels and types, interns, residents, and faculty were there together. The upper levels had been previously selected by Stead and were well aware of their role in the team. Stead considered the interaction between the students, interns, and residents to be more important than the faculty-student interaction.⁵ The intern and resident had the satisfaction and benefits of teaching, and the student and other junior level learners had the advantage of exposure to teachers that they did not mind quizzing. The function of the faculty was to set the expectations for the outcome and to add to the mix. Everyone was both teacher and learner. No member of the group, junior or senior, was permitted to “opt out” of the discussion. All could be, and were, pulled into the discussion by questions and requests for opinions.

Stead emphasized that there are two effective ways to learn: by doing, and by teaching. Little honor was given to mere memorization of facts or regurgitation of received information. Memorized content is quickly erased, and only information that is used and proved useful is permanently imprinted and retained. Because we learn more when we teach than when we are taught, the structure and setting of rounds was designed to allow all to care for patients and to teach while learning to think and accumulate new knowledge. Stead's rounds were a place in which both doing (caring for patients) and teaching were in full use, for the education of all.

The Learning of Doctoring

The primary objective of the process was to train individuals in how to care for the sick patient, and how to learn in the complex and ever-changing world of medical care. Stead

specifically noted that he had no intention of teaching about all diseases, or the best way to treat this disease or that disease. He prepared individuals to approach a patient problem, ask questions, and learn, constantly enlarging their knowledge pool for a whole professional lifetime. He judged the success of the system by the things that happened after the student and teacher parted ways, and by the attitudes and behavior that the students carried into their careers as independent caregivers.

There was no thought of steering a student to a specific specialty, or to a specific activity, such as a career in teaching or research. Stead often noted that his department produced no single product. He recognized the variability in ability, proclivities, and aims of students, and his objective was to train them all. Many specialists in surgery, obstetrics, psychiatry, and other medical fields have recognized the benefits of his teaching. He produced many successful academic leaders and many superb practitioners of medicine, both generalists and specialists. The point is that the system prepared them all for successful careers.

But we must recognize that the system prepared them to be doctors—professional caregivers who made themselves available to individuals with problems, and who helped their patients in solving their problems. The patient and his/her problem was always the central focus of the process. Research was a means to an end, not an end unto itself. Stead recognized that medical schools and teaching hospitals have an obligation to provide the personnel required in providing health services to the nation; as early as the mid-1970s he expressed his concern that research was becoming a primary objective of medical education rather than one of an interlocking triad of objectives (along with patient care and teaching).⁶ He recognized that this evolution had occurred as a result of the success of research. Research generated financial support, and this brought research-trained physicians, whose career was in the laboratory rather than in patient care, to positions of leadership in medical centers. To quote Stead:

“They are producers of new knowledge rather than of men.”

He also recognized that the explosive growth in the research leg of the triad was a result of financial investments. The expansion of research facilities, research equipment, and personnel was phenomenal, especially when compared to that of teaching facilities and personnel. Adding to the imbalance is the current payment system for medical care, which affords high rewards for technical procedures, low rewards for cognitive services, and no rewards at all for abstract thinking. The question is: Can today’s medical educational institutions afford the investment of time required for the obviously successful “thinking rounds” of the kind that Stead provided and advocated? This is a question that deserves discussion and debate. How can we alter the reward system to promote the return of balance to the system?

A Synoptic View

Learning as a community affair is a concept best seen in the teaching hospital and in teaching rounds at the bedside. Within this setting, the following components are essential:

All levels of learners work and interact together in a shared teaching-learning exercise.

While there is a hierarchy of experience among the group, all share and contribute to the learning experience.

Learners at all levels are an essential component, providing all with an opportunity to teach and work in a setting in which the junior learner is not afraid to ask.

The emphasis is always on what is *not* known, with an expectation that all will seek an answer from reading the literature, from asking experts, and if necessary by experimentation; answers are to be brought back and shared by all.

There is no obligation to teach about all diseases, or to have an encyclopedic knowledge of anything, but there is an obligation to question, and to constantly seek information about gaps in personal knowledge.

There is a hierarchy of importance among the objectives of this group exercise. Serving the patient by helping solve his/her problem is clearly the highest. Enlarging the pool of useful working information, for the individual and the group, is next. Research is the principle means of adding to the pool of information, but it is a means to that end, and third in rank order. In other settings, such as the research laboratory, this hierarchy might be reversed.

The emphasis is on thinking, not on memorization or an encyclopedic collection of information.

Each learner is recognized as having a unique set of abilities, ambitions, and preferences, which are to be recognized and respected. No single set of learner characteristics is better than another. Everyone benefits from exposure to this teaching environment. All career objectives are respected and served equally.

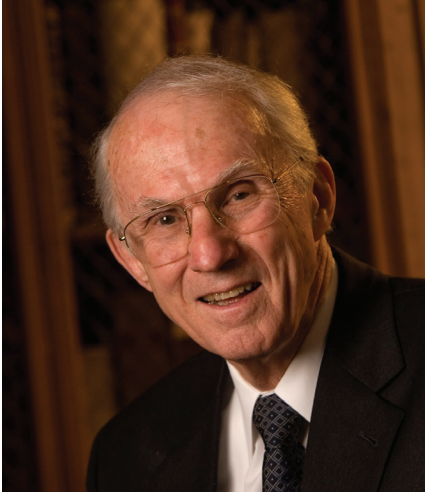
Time and circumstances change all things. As previously mentioned, there is no current payment mechanism for support of thinking rounds, so they have largely disappeared from the scene. Today, residents and attending physicians pursue separate “work rounds,” racing to get the day’s work done and to satisfy the requirements for payment. Neither students nor the process of producing the practitioners required for care of the population are prime concerns. Procrustean regulations, such as those mandating the maximum length of time the intern/resident can remain in the hospital, make

the Stead rules almost impossible to follow. Can the Stead system be replicated today? We know it works, and most of those who experienced it feel that it is a superior system for educating medical practitioners. Can we achieve the same results with other systems?

We should remember that Stead credited Weiss, his chief, with the teaching system he used to such great effect. It is clear that this teaching method can function and produce results independently of the unique leadership of Eugene Stead. The constraints to the method within the present hospital/educational system are largely created by the structure of our reward system, which could be changed by a single act of Congress. If we document and record the advantages of the system, we may be able, at a future time and place, to again observe the benefits it brings to the patient, to the physician, physician assistant, nurse, and other learners who aspire to provide care to the sick.

References

1. Stead EA Jr: *A Way of Thinking; A Primer on the Art of Being a Doctor* (Haynes BF, ed). Durham, NC. Carolina Academic Press, 1995, p. 64.
2. Estes EH Jr, Sieker HO, McIntosh HD, Kelsner GA: Reversible cardiopulmonary syndrome with extreme obesity. *Circulation* 1957;16:179.
3. Sieker HO, Estes EH Jr, Kelsner GA, McIntosh HD: A cardiopulmonary syndrome associated with extreme obesity (abstract). *J Clin Invest* 1955;34: 916.
4. Burwell CS, Robin ED, Whaley RJ, Bickelman AG: Extreme obesity associated with alveolar hypoventilation; a Pickwickian syndrome. *Am J Med* 1956;5:811.
5. Wagner GS, Cebe B, Rozear MP: *E.A. Stead Jr; What This Patient Needs Is a Doctor*. Durham, NC. Carolina Academic Press, 1978, p. 4.
6. *Ibid.* p. 53.



Harvey Estes followed two of his mentors, Eugene Stead and James Warren, from Emory to Duke, arriving in Durham in 1952. Estes completed his residency (1952-1953) and fellowship (1953-1954) at Duke, and joined the Division of Cardiology faculty in the Department of Medicine in 1954. In 1966, he became the first chair of the Duke Department of Community and Family Medicine, retiring to emeritus status in 1989. Three of his five children attended Duke.