

The Case Presentation

Stumbling Blocks and Stepping Stones

KURT KROENKE, M.D., Maj., M.C.

That a physician created Sherlock Holmes makes perfect sense. Like Doyle's detective, doctors search for data. Yet merely gathering data is not enough. Collection of the facts must be succeeded by documentation and transmission of the facts. Doctors need the triple skills of interview and examination, writing, and speaking. The latter is the most public of the three. The history and physical examination are a private hour between doctor and patient. Then, what's written is for the record and, if so desired, for scrutiny. But what they need to know to help us with our patients, doctors usually hear. Be it bedside, conference room, or phone, they call upon us to "present." Case presentation, so universally required, is poorly taught. Early training is essential. Evaluation requires recognition of common weaknesses. Eight stumbling blocks are addressed, and means to overcome them, stepping stones, are considered.

Cornfields (The Content). Data must be gathered, recorded, and presented. To a degree, these are kindred skills, sharing a common order and fundamental content. They differ not in detail but in density of detail. The oral presentation is but an overture of melodies common to all three, an abstract of more strenuous clinical efforts. Our initial encounter with the patient is like coming upon a farmer's field: there are acres of information. The patient seldom speaks in medical terms nor sorts out eloquently what's medically pertinent. Through history and physical examination, we isolate the cornstalk from the entire field of signs and symptoms. Yet all is not recorded. The chart is not a transcript of the interview but rather, like an ear of corn, an extract. Last, there is the oral presentation. What has been written now is maximally condensed—the kernel, and nothing more. Effective presentations walk the tightrope between completeness and concision. Falling in either direction can be fatal. The medical student's initial efforts are too complete. Whether by memory or by notes, a recitation of the chart should be discouraged. Like congressional minutes, the written record is there if we need it. What the eye can read, the ear need not hear.

What the ear can hear should be a synopsis, pages contracted to a paragraph. From cornstalk to cob to kernel describes the doctor's dealings with data as investigator, author, and orator. What takes 40 minutes to gather and 10 minutes to read might be heard in five minutes or less. The truth is not lost but compressed.

Peregrination (The Order). The presentation should be orderly as well as compressed. "Peregrination" means wandering from place to place, particularly in a foreign land. Case presentations are often desultory. The student perambulates from history to hospital course to laboratory data to pieces of the physical examination. Although content should contract as we proceed from writing to speaking, the order remains immutable. SOAP is the order: Subjective, Objective, Assessment, and Plan. Abide by these pigeonholes. Abnormalities found on the physical or on the laboratory studies all too often intrude upon the history of present illness. There is an urge to "fast forward" the tape and incorporate such data prematurely. Resist this temptation. Condense the chart—don't rearrange it.

Disorder creates two problems. First, the listener ineluctably wanders. A to-and-fro narration taxes the heartiest concentration. Second, the speaker backtracks. Describing the physical examination, he recalls a piece of history deleted, absentmindedly. Proceeding to the laboratory studies, he recollects a forgotten nevus, an echo of prior auscultations. Jumping ahead strains the listener. Leaping back enervates the speaker.

There is a global, a segmental, and a subsegmental order. Globally, the order is SOAP. Furthermore, each of these four segments has an intrinsic order. Subjective consists of the present illness, past history, and review of systems. Objective data are reported in three successive steps: physical, laboratory, and procedural. Assessment derives its order through the problem list, which separates and ranks the diagnoses. Plans are of two types: diagnostic and therapeutic. Order underlies even the subsegments of the presentation. The present illness, beginning

From the Department of Medicine, Brooke Army Medical Center, San Antonio, Texas. Requests for reprints should be addressed to Dr. Kurt Kroenke, Box 523, Beach Pavilion, Fort Houston, Texas 78234.

with an introductory statement, proceeds to a chronology of the chief complaint, then to its current characterization and, finally, to the pertinent positives and negatives. The physical examination is reported, as performed, in a head-to-toe fashion. Laboratory data may be presented as the simple and routine followed by the complex and more invasive. At any level, order may collapse: objective data interspersed throughout the history; the history of present illness presented in a nonchronologic fashion; the physical examination reported as a random event. Attention to order allows your listeners to reflect on the data itself without simultaneously having to rearrange it. Haphazard sequence ruins the best of stories.

Equal Time (The Focus). A democracy prides itself on equal time. From minority groups to third-party candidates, all may have a voice. Effective presentations are not so democratic. The time allotted to presenting various elements of data is not proportionate to the effort spent in gathering or recording them. Collection and transcription are exhaustive tasks. Besides the pertinent, we include the normal and the peripheral as well. When we present, however, our intent is cogency, not completeness. Presenting subjective data, for example, we emphasize the present illness. It is more than equal to the past medical history or to the review of systems. On a problem list of five, it is more than 20 percent. Even in patients with multiple plots, the chief complaint is this week's episode. In a presentation of five minutes, it deserves two or three. Illnesses as a child, the intricacies of a family history, or a review of systems should be recorded but not reported. The noncontributory donates little. Data played back without editing are more background noise than song.

With objective data, likewise, present what is relevant. Do not recite verbatim the fine print of your write-up. Avoid prolix descriptions of retinal arteries or integument. Spare your listeners euglycemia, P-R intervals, and the 20 values of a chemistry profile. Focus on findings that were abnormal or, if normal, related to active problems. Regarding the remainder of the findings, a simple statement that they were normal is sufficient.

In summary, an artful presentation contains the right facts in the proper order selectively emphasized. As speakers, we must reduce the size of, organize, and prioritize our data.

Anarchy (Subjective). Why is the patient here? To answer this is a sovereign goal. Your theme should be the chief complaint. Its explication, like a monarch's story, involves a christening, lineage, reign, and royal family. The *christening* is your opening line. A presentation should begin, like any story, with a title. The "title," in this instance, is a single statement with five elements: age, race, sex, complaint, and duration ("This was a 63-year-old white man with chest pain for two hours"). Often, through excitement or disorder, the introduction is omitted. The play begins without identifying the players.

The *lineage* is the symptom's past. Behind the illness

lies a history. With angina, we travel back to the first twinge of pain. With vaguer symptoms, origins too may be vague. At times we must begin from when the patient last felt normal. Chronology, however, is crucial. The time machine delivery, where the speaker begins now, traces backwards, and skips ahead, leaves listeners lost in space.

The *reign* is the symptom's present, its characteristic quality, quantity, and modifying factors. Quality requires adjectives ("burning, heavy, stabbing pain"; "tarry, pencil-thin stools"; "nonproductive cough") as well as geography (location and radiation). Quantity pertains to intensity ("mild-moderate-severe"; "1+ to 4+"), duration, and frequency of a symptom. Modifying factors are things that increase, decrease, or otherwise change a symptom, and may include position, movement, medications, meals, and time of day, to name a few.

The *royal family*, identified by review of systems, consists of pertinent positives and negatives surrounding the chief complaint. These symptoms, risks, and variables associated with the present illness can color it by their presence or absence. The patient with angina might relate fatigue and palpitations, while denying dyspnea, orthopnea, or edema. Although a smoker and diabetic, the patient may be free from hypertension, high cholesterol levels, and familial risks.

The present illness portrayed, you've made your point. Cover the remainder of subjective data quickly. In oral presentations, the past history is but a sketch, a list of other illnesses, operations, habits, and medications. Excessive detail here dilutes your major message. The review of systems should, with few exceptions, be deleted. What is relevant you've mentioned in the present illness. The rest is for the written record only.

Accountant (Objective). Something happens as we leave the history. Data harden. Relying no longer on patient truthfulness or recall, we turn instead to what the body expresses through a stethoscope or test tube. Because we derive the data ourselves through powers of examination and technology, and because it is more quantifiable, we tend to overstate the physical examination and laboratory results. The accountant in us ticks away the laboratory numbers, relates stepwise the details of our examination. Less is better. The earlier principles of content, order, and focus can be our guide.

Essence is the content—kernels without the cob. Highlight the abnormal. The normal should be bypassed, accepted in good faith. Neurologic examinations can be intricate; the telling of their results need not be. Examinations of the head and the heart have many aspects; the narration of their findings can be succinct. Retinal and tympanic anatomy, physiologic splitting and points of maximal impulse, stereognosis, and two-point discrimination only occasionally deserve much commentary.

Focus on two things: the abnormal and the system of chief complaint. Even what's abnormal requires judg-

ment. Minor or peripheral aberrations may be deleted without narrational detriment. Scarred tympanic membranes, seborrheic keratoses, and Heberden's nodes contribute little to the discussion or work-up of a patient admitted for chest pain. The write-up contains them. Your attending or consultant need not hear about them. Regarding the system of chief complaint, more detail is permissible. Given a patient admitted for chest pain, present the fine points of your cardiac examination findings, both the normal and the abnormal. In a patient with multiple sclerosis or a stroke, a systematic neurologic report is in order. Finally, an opening statement containing the vital signs and a general description of your patient should routinely introduce your narration of the physical examination findings.

Order is the tie that binds. As you perform the physical examination and transcribe its results in a head-to-toe fashion, so also present it. Compress the content and focus on the abnormal and the area of complaint, but do not jump around. The audience will appreciate your sense of direction, and data will be remembered.

There are three types of objective data: physical, laboratory, and procedural. They should be presented in this order. The principles of content and focus outlined for the physical examination apply to the other two areas as well—the essential data only, relating particulars that are abnormal or, if normal, pertinent to the complaint. The potassium level is low? Say so, without the trappings of a normal sodium, chloride, and bicarbonate level. A patient expresses chest pain? Describe fully the electrocardiographic findings, and suffice it to say that “the electrolyte levels, complete blood count, results of urinalysis, prothrombin time, and results of chest radiography were normal.” With respect to laboratory data, the order of presentation is less critical than for physical data, although a format reduces the risk of unintentionally leaving out important numbers. One method would be to move from the simple and routinely ordered to the more complex and occasionally performed tests. For example, one might report the findings on urinalysis, blood studies, electrocardiography, radiography, and finally the other tests. Use your chosen format regardless of the patient. Conclude then with the third area of objective data, the procedural. Examples of such data include the results of lumbar punctures, thoracenteses, Swan-Ganz catheterizations, endoscopy, and venography. To clarify this method of presenting objective data, a patient admitted with chest pain might be presented as follows:

This was a thin white male, diaphoretic and in moderate pain, with blood pressure 110/70 mm Hg, pulse 96 beats per minute and regular, respirations 24 per minute, and temperature 98°F. Results of examination of the head, eyes, ears, nose, and throat were unremarkable except for moderate retinal arteriolar narrowing and arteriovenous nicking. Carotid pulses were full without bruits; jugular venous pressure was not elevated. Lungs were

clear to auscultation. The point of maximal impulse was not displaced. First and second heart sounds were normal and there was a soft fourth heart sound gallop, but no third heart sound, murmurs, clicks, or rubs. Abdominal examination revealed normal bowel sounds and no organomegaly, aneurysms, or bruits. Distal pulses were normal, except for an absent dorsalis pedis pulse on the left. There was no edema. Results of genital, rectal, musculoskeletal, skin, and neurologic examinations were normal except for absent ankle reflexes and diminished vibratory sensation. Laboratory data included a normal urinalysis result, complete blood count, prothrombin time and partial thromboplastin time, and creatinine, glucose, and electrolytes, except for a potassium of 3.2 meq/liter. Blood gas values with the patient breathing room air included a pH of 7.46, oxygen tension of 72 mm Hg, and carbon dioxide tension of 30 mm Hg. Electrocardiography revealed sinus tachycardia, a normal axis, occasional premature ventricular contractions, and some S-T segment elevations in leads V₁ through V₄ with reciprocal, inferior lead depression. Chest radiography showed a normal-sized heart without pulmonary congestion. A Swan-Ganz catheter was inserted through a right subclavian approach. The wedge pressure was 18 mm Hg; the cardiac output, 4.2 liters per minute; and the systemic vascular resistance, 1,400 dynes/second/cm⁵.

To summarize, objective data need not consume much time. The listener will be pleased by the crispness, the pertinence, and the sequence of your numbers. The subliminal accountant is best suppressed.

Gestalt (Assessment). The detective work is done—interrogations; fingerprints; testimony sustained or overruled. Yet data cannot heal. Assessment must transform it into diagnosis. Diagnosis leads to action, be it tests to clarify or treatment to rectify a problem. Assessment can be fraught with several errors. The first is tunnel vision—diagnostic closure before the case is closed. Pyuria blinds us to the fever's other causes. Alcohol umbrellas many woes. Beware the easy explanation, the initial hunch. Be patient. Whereas roundsmanship entices us to lay our cards down early, experience teaches us to see the other hands first. As ruled-out diagnoses fold, the right one wins.

A second error is succotash—disparate elements of data lumped into a single stew. Occam's razor is overused. Lawrence Weed retrieved us from such gestalt. His problem list compels us to consider all the facts. Our minds are stretched. Differentials, not conclusions, should be sought. A problem list is heuristic. Never final, it challenges us to explication, therapy, or follow-up. Five principles contribute to its efficacy.

Start from the top. Some lists are nominal (grocery lists; lists of an organization's members), items grouped without priority. A problem list, however, should be ordinal. Its sequence parallels our concerns. The presenting problem is often first on the list. If uncertain, ask: “What brought this patient here?” Remaining problems are

prioritized according to severity, acuteness, and activity. The potential for morbidity; a problem just acquired; a chronic illness flaring up—all may move a problem higher on the list.

Second, *draw a line*. Although long with problems, the list can still be dichotomous. At the top are the problems that require our present attention. The remainder, because they're chronic, minor, stable, or quiescent, may, for the time being, be ignored. They are listed but not addressed. Solving the current crime is work enough.

Third, *don't commit yourself*. A patient comes to you with signs and symptoms, not with discharge diagnoses. "Chest pain" is more expansive than "rule out myocardial infarction"; "jaundice," broader than "possible cholecystitis." State the present illness, not its future solution. Properly pursued, it will be captured soon enough.

Fourth, *don't split hairs*. Consolidate related problems. A single "micronodular cirrhosis" is preferable to a pentad of "jaundice," "ascites," "elevated prothrombin time," "variceal bleeding," and "hypoalbuminemia." Unnecessary splitting obscures the forest with trees.

Fifth, *serve stew sparingly*. The opposite of splitting, lumping can also be abused. Blending what's still undiagnosed is risky. Problems not yet clarified are best kept separate. Palpitations and weight loss might together suggest hyperthyroidism, but do not merge them before the serum thyroxine measurement returns. Taken together, these five guidelines vitalize the problem list. As stepping stones, they help to overcome gestalt.

Ellipsis (Plan). Thought gives way to action. The view turns forward; the tense, future. Until our plan, we work with past or present data, sculpting it into diagnoses. We now proceed from the chalkboard to the field. Plans for action fall into two broad categories: diagnostic and therapeutic. Straightforward though it seems, too often this becomes the most formless segment of the presentation. The speaker trails off, ellipsis-like, inviting dialogue where monologue is not quite finished. Planning becomes a team effort prematurely. It is better to state your case in its entirety. The arrows of debate fly truest where first a target has been established. Conclude your presentation with intended tests and treatment. Then let opinions rage.

Hospital course is an uncomfortable shoe, fitting poorly in any of the four segments of SOAP. Occurring after initial data collection, it may modify assessments and plans in an ongoing fashion. Where should it be inserted? If consistent with your initial assessment, it might conveniently be presented after it, as addenda, prior to your plans. If conflicting with your initial assessment, it might be reported before it, as additional data in support of your altered assessment. The site can vary and is clearly somewhat arbitrary. What's important is to identify the data that represent hospital course and to present it intact, not scattered throughout the presentation like so much buckshot.

Orphans (Odds and Ends). Nothing is perfect. Just as few diseases follow the textbook, few cases fit neatly into the four boxes of SOAP without some Procrustean manipulations. Jagged edges, odds and ends, must be fit in where most appropriate. A common problem is finding a home for "orphan" data. Where do you insert laboratory data obtained on an outpatient basis? When should you mention the physical findings from the emergency room, or the results of a procedure performed on the wards? Often, these are inserted prematurely in the history of present illness. It is better to report them with kindred data—physical with physical, laboratory with laboratory—regardless of their origin. A brief reference to such data is sometimes required in the history to explain an admission or a certain course of action. But the reference should be passing, elaboration deferred until the "turn" for the physical finding and the laboratory data comes around. An admission prompted by anemia may permit the hematocrit in the history. Stool guaiac results, however, should be reported with the physical examination findings; the red cell indexes, findings on peripheral smear, and bilirubin level, with other laboratory data; the results of nasogastric aspiration or endoscopy, with other procedural data. Patience is rewarded. The listener listens best to data that are homogeneous and anticipated. A history cluttered with heart sounds and hemoglobin levels is difficult to digest. Unexpected data crowd the concentration. It is work enough to weave a differential as the history unwinds without, at the same time, trying to factor in a third heart sound gallop or S-T segment elevation. It's like studying for an examination while watching television: neither the textbook nor the program is fully comprehended. Furthermore, data are processed most effectively in juxtaposition to similar data. Old hematocrits compared with emergency room hematocrits compared with hematocrits following hydration on the wards portray a clearer story. An old myocardial infarction on prior electrocardiography sheds light on current premature ventricular contractions. Infusing the subjective narration with objective data contaminates the present illness while enervating the physical examination findings.

Finally, even as outlined, presentations demand flexibility. The suggested framework is more suitable for students in training than for the harried practitioner. At its fullest, it is a vehicle for formal rounds, not hasty hallway consultations. Even in teaching rounds, styles may vary. Some attendings prefer to be told the subjective and objective data only. This is followed by a visit to the bedside and, subsequently, a group discussion of differential diagnoses and plans. Nevertheless, the format suggested is a pragmatic one: in length, neither soporific nor skimpy; in content, both essential and focused; in order, adhering to a standard sequence regardless of the illness. Both medical education and patient welfare hinge on what physicians hear. Let us help them in the arduous task of listening.