The Teaching Physician

for those who teach students and residents in family medicine

Volume 4, Issue 1 **January 2005**

POEMs for the Teaching Physician

Single Oral Dose Dexamethasone Effective for Even Mild Croup

Question: Does a single oral dose of dexamethasone improve outcomes for patients mild croup?

Setting: Emergency department

Design: Randomized controlled trial (double-blinded)

Allocation: (Concealed)

Synopsis: While we know that steroids improve outcomes for children with moderate or severe croup, it isn't clear whether children with milder symptoms also benefit. Since many of the patients we see with croup in primary care have mild symptoms, this is an important question. The authors identified children presenting with less than 72 hours of a seal-like, barking cough and a low score (2 or less) on a validated 17 points croup score. The score assigns points for inspiratory stridor, retractions, impaired air entry, cyanosis, and impaired consciousness. Children with signs of epiglottitis, bacterial tracheitis, foreign body, chronic pulmonary disease, recent varicella, and recent steroid treatment were excluded. Children were randomly assigned (allocation concealed) to receive either 0.6 mg/kg dexamethasone or placebo, with a maximum total dose of 20 mg. The placebo was concocted to have a similar appearance and flavor to the active drug. Parents were telephoned on days 1, 2, 3, 7, and 21. The primary outcomes were return to a health care provider within 7 days of enrollment and continued symptoms on days 1, 2, and 3 based on the telephone interview. Analysis was by intention to treat. A strength of the study was the detailed cost analysis, considering both costs to the government that pays for medical care and to the family that has to care for the child and perhaps miss work.

Of 2,901 patients initially assessed for eligibility, 720 met inclusion criteria and were randomized. Follow-up was excellent, with 348 in each group available for the day 3 telephone symptom evaluation. The group was 61% male, with an average age of 35 months, and a mean duration of fever and barking cough of less than a day. Children who received dexamethasone were less likely to return for care within 7 days (7.3% versus 15.3%, $P<.001$, absolute risk reduction [ARR] 8.0%, number needed to treat [NNT] 13). This benefit was consistent across groups, although it appeared to be greatest in younger children and those with spasmodic croup symptoms. Children receiving dexamethasone had lower croup scores on day 1, although this advantage disappeared by day 3, at which time most patients had fully recovered whether or not they were treated with steroids. There were no significant adverse events attributed to the dexamethasone.

Bottom line: A single oral dose of dexamethasone 0.6 mg/kg improves short-term symptoms and reduces the likelihood that a child has to return for additional care. It was well tolerated, and considering the well-documented benefits of steroids in children with more-severe disease, steroids in some form should be the standard of care for all children with croup.
LOE: 1b*

Source article: Bjornson CL, Klassen TP, Williamson J, et al. A randomized trial of a single dose of oral dexamethasone for mild croup. N Engl J Med 2004; 351:1306-13.

Patients Who Can't Afford Medications Won't Tell You

Question: Will patients tell their physicians if they cannot take their medications as prescribed because they can't afford them?

Setting: Population-based

Design: Cross-sectional

Synopsis: This study started with a US-wide telephone and e-mail survey of adults who were offered WebTV and

free Internet access in return for answering Web-based surveys each month. In other words, these 40,000 people were willing and able to regularly use the Web and were more likely to be white, older, and have some college education, as compared with people who chose not to respond. Of this group, the investigators identified 660 older adults with chronic illnesses who also reported they took less than the prescribed dose of their medications because of the cost. These people represented 17% of the respondents who took chronic medications. Of these, only 33% reported that they had told their clinician they were planning to take less of their prescribed medication because of the cost. Non-white patients and those without at least some college education were less likely to tell their clinician. The most common reason reported for not talking about medication cost is that no one asked them (66% of people had not talked about cost with their clinician). Other reasons included embarrassment (46%), did not think it was important enough to discuss with their clinician (45%), and not enough time during their visit (31%). Respondents reporting that they talked with their clinician said that their clinician responded by giving them samples (91%), expressed symptathy (73%), or changed their medication to a less-expensive alternative (69%). Patients were infrequently (30%) offered information about drug payment programs. The respondents felt that talking about their medication costs was helpful, with 72% reporting that their clinicians were helpful morst or all of the time.

Bottom line: One third of older adults with chronic illnesses who cannot afford their medications may not tell their clinician. Of those who have talked with their clinician about their problems with drug costs, most (72%) found the conversations helpful, although one in three reported that their prescriptions were not changed to generically available or less-expensive alternatives. These results prompt two recommendations: (1) find out the cost of drugs you commonly prescribe (check www.pillbot.com) and (2) ask your patients whether they are having difficulty paying for the medications they need.
LOE: 1b-*

Source article: Piette JD, Heisler M, Wagner TH. Cost-related medication underuse. Do patients with chronic illnesses tell their doctors? Arch Intern Med 2004; 164:1749-55.

* LOE—level of evidence. This is on a scale from 1a (best) to 5 (worst). 1b for an article about treatment is a well-designed randomized controlled trial with a narrow confidence interval.

Mark Ebell, MD, MS, Michigan State University, Editor

The Teaching Physician is published by the Society of Teachers of Family Medicine, 11400 Tomahawk Creek Parkway, Suite 540, Leawood, KS 66211. 800-274-2237, ext. 5420. Fax: 913-906-6096.
tnolte@stfm.org
STFM Web site: www.stfm.org
Managing publisher: Traci S. Nolte

The Teaching Physician is published electronically on a quarterly basis (July, October, January, and April). To submit articles, ideas, or comments regarding *The Teaching Physician*, contact the appropriate editor:

POEMs for the Teaching Family Physician
Mark Ebell, MD, MS—ebell@msu.edu

Information Technology and Teaching in the Office
Richard Usatine, MD—usatine@uthscsa.edu

Clinical Guidelines That Can Improve Your Care
Caryl Heaton, DO—heaton@umdnj.edu

Teaching Points—A 2-minute Mini-lecture
Alec Chessman, MD—chessmaw@musc.edu

Information Technology and Teaching in the Office

Incorporating PDAs Into Your Clerkship

By Richard Usatine, MD, and James Tysinger, PhD, University of Texas Health Science Center at San Antonio

Handheld computers are changing the way family physicians practice and teach medicine. Using a personal digital assistant (PDA) can enhance the practice of medicine and decrease the risk of errors in clinical settings.[1] PDAs may be used to look up immunization schedules, to perform a mini-mental status exam, to look up the best evidence-based medicine approach to treating a disease, or to look up the recommended empiric antibiotic regimen. PDA software also allows students to:

- Determine accurate drug doses
- Check for drug interactions
- Find toxicology information
- Access multiple drug databases
- Calculate pediatric drug doses
- Check immunization schedules
- Calculate obstetrical information including Bishop Scores and estimated due dates

A number of medical schools now require students to own and use a PDA during the clerkship year. While requiring students to own a PDA is an important step, it is not enough to truly make them use the power of this device. As clerkship faculty, we can teach students to use the PDA to do more than simply provide information at the point of care. For example, at the University of Texas Health Science Center at San Antonio, students are required to have a PDA in third year but may choose any brand or platform. We teach sessions on how to best use the PDA in the Clinical Foundation to the third year at two levels (for beginners and more-advanced students). During these sessions, we provide software recommendations for Palm OS and Pocket PC.

First, if it doesn't already do so, convince your school to require students to own a PDA in the third year. The requirement makes students eligible for financial aid to purchase them. This allows all students to have access to this important tool for learning and practicing medicine and allows you to include the PDA in required curricular activities. Second, clerkship directors can incorporate the PDAs into didactic sessions, clinical experiences, and clerkship examinations.

PDAs in the Classroom

Small-group, case-based learning can be a great setting to encourage students to use PDAs in the classroom. Whether presenting clinical cases on paper or with PowerPoint or using standardized patients, you can encourage students to use their PDAs to look up information and to make clinical decisions. For example, if the simulated case deals with pharyngitis, the faculty member would suggest that the students use their PDAs to look up the clinical decision-making rules on MedRules or InfoRetriever to help determine if the pharyngitis is secondary to group A beta-hemolytic strep. You can also encourage faculty to ask students to use their PDAs to solve clinical problems or look up information during interactive lectures. This approach works best if the faculty can identify PDA solutions to the clinical problems discussed in their sessions.

PDAs on the Exams

We all know that tests and the desire to become the best doctors they can be motivate students. It is relatively easy to incorporate an open PDA portion into a final clerkship exam. Whether your final clerkship exam is locally developed or is the National Board of Medical Examiners Specialty Exam, you can always add a section that requires students to use a PDA to answer some clinical questions. For example, at our school, we have 12 final exam questions that students must use a PDA to answer.

We tell the students at the beginning of the clerkship that they must load three types of programs to their PDAs to prepare for the exam. Each type of program is available free or at low cost to users regardless of the platform of their PDA. This year, the software includes Shots 2004, ePocrates (or a comparable drug database), and MedMath or Archimedes (or a comparable medical calculator). These same programs are brought up in the didactics so students get practice with them in the required curriculum. The students bring out their PDAs for this portion of the exam and then must put them away for the remainder of the examination. We bring one extra PDA with the appropriate software loaded to deal with unexpected PDA crashes.

Knowing that they must be facile with these programs, students are more likely to use them in the clinical setting so that they will be prepared for the exam. This helps promote higher-quality health care and learning in the clinical setting through the excellent knowledge management tools that are available for the PDA. Students are then encouraged to look up drug interactions and accurate drug dosing while caring for their patients. The more often they do this in the clinical setting, the more likely they will be to avoid drug errors and perform better on the exam.

PDAs in Clinical Settings

Clinical preceptors can also encourage students to use their PDAs in the clinics and on the wards. Preceptors who do not own PDAs may find a student's ability to look up a drug dose or possible adverse reaction to be extremely helpful. In fact, preceptors may enjoy a quick answer from a student with the PDA and not want to return to the old method of looking up drug information in a big PDR (*Physicians' Desk Reference*). Hopefully, preceptors who have been waiting to purchase a personal PDA may see the benefits of making the plunge and ask the students about which PDA to purchase. Students, residents, and attending physicians can then share free PDA software and discuss where to find the best new programs.

Of course, the PDA is only as powerful as the software it contains. There's so much free software available these days that many programs can be acquired free from the Internet. Also, clinical faculty should ask their clerkship office about the software they might download at no cost from their medical school's Web site. For example, clinical faculty at the University of Texas Health Science Center at San Antonio (UTHSCSA) can download InfoRetriever from our library's Web site after the clerkship office submits their names to the library.

Some physicians have expressed concerns that students with their PDAs will no longer learn the content of clinical medicine because they can look up information so easily. This is similar to the fears that were expressed in the 1970s about calculators being used in math classes. Medical students are just as likely to remember what they look up in their PDA as much as if they had looked up the information in a medical textbook. It is well known in educational psychology that learners are more likely to retain knowledge that will be applied in the future—especially when the knowledge is learned in the setting in which it will be applied. Therefore, the use of the PDA at the point of care is a perfect approach for efficient and effective learning.

As teachers, we can practice and model using evidence-based medicine by using PDAs and Internet-based tools in our clinical settings and classrooms. The PDA is one tool for learning and practicing evidence- based medicine. Of course, we can also use other systems that can be obtained on the Internet. For example, none of us would counsel a patient traveling to a Third World country without viewing the Centers for Disease Control and Prevention Web site on travel medicine. The easiest way to view this is a full-size laptop or desktop computer with a fast connection to the Internet. While there are a number of PDAs that are wireless, the screen size and speed would not be a match for a fast connection to the Internet on a full-size screen.

Training the Doctors of the Future

The best doctors of the future will have great communication and interpersonal skills, have an outstanding fund of knowledge, and know where to look up information quickly to extend or confirm their existing knowledge. They also will use clinical decision-making tools that have been validated by randomized controlled trials. These doctors will be as facile with their PDAs and the Internet as they are with their stethoscopes. Learning to find and apply information from the PDA or Internet is a skill that everyone in medicine can learn and use in clinical settings.

In summary, the clerkship year is a great time to build the skills that students will need for high-quality medical practice and lifelong learning. Once armed with the ability to find and critically appraise information, our students can become the kind of doctors we hope to train. Of course, we must still model and encourage humanism. Information management without kindness and caring is not enough to create excellent physicians.

Reference

1. Grasso BC, Genest R, Yung K, Arnold C. Reducing errors in discharge medication lists by using personal digital assistants. Psychiatr Serv 2002; 53(10):1325-6.

Richard Usatine, MD, University of Texas Health Science Center at San Antonio, Editor

Clinical Guidelines That Can Improve Your Care

A Look at Two Guidelines on Obesity

By Caryl Heaton, DO; UMDNJ-New Jersey Medical School

With the New Year here and our dietary indiscretions (hopefully) behind us, it might be useful to look at what we actually know about the diagnosis and management of obesity. This comparison of two of the best sources of guidelines, the United States Preventive Services Task Force (USPSTF) and the Institute for Clinical Systems Improvement (ICSI), highlights the strengths and weaknesses of each.

First, a limitation of the USPSTF guideline on "Screening for Obesity in Adults":[1] it only addresses screening, and it only addresses adults. The Task Force has the strictest standards for recommendations and, therefore, there isn't much encouraging news here. It states that there is a useful screening measure for obesity, the BMI (body mass index), and this measurement should be used to assess obesity. It recommends screening all adult patients for obesity and offering intensive counseling and behavioral interventions to promote sustained weight loss for obese adults (B recommendation). Intensive counseling was defined as more than one person-to-person (individual or group) session per month for at least the first 3 months of the intervention. The results of intensive counseling produced an average weight loss of 3–5 kg in 1 year. There is insufficient evidence to recommend for or against moderate- or low-intensity counseling and behavioral strategies to promote sustained weight loss in obese or overweight adults (I recommendation). A medium-intensity intervention was defined as a monthly intervention, and

Table 1

Recommendations From the ICSI "Prevention and Management of Obesity"

Comorbid Conditions	***Body Mass Index (BMI)***			
	Ages 25–30	***Ages 30–35***	***Ages 35–40***	***Ages 40+***
0	Lifestyle changes and behavioral management. Consider drug therapy.	Lifestyle changes and behavioral management. Consider drug therapy.	Lifestyle changes and behavioral management. Consider drug therapy and/or surgical evaluation.	Lifestyle changes and behavioral management.
One to three minor comorbid conditions	Lifestyle changes and behavioral management. Consider drug therapy.	Lifestyle changes and behavioral management. Consider drug therapy and/or surgical evaluation.	Lifestyle changes and behavioral management. Consider drug therapy and/or surgical evaluation.	Lifestyle changes and behavioral management.
Major comorbid conditions OR > three minor comorbid conditions	Lifestyle changes and behavioral management. Consider drug therapy. (The FDA approves drug therapy only for BMI >27)	Lifestyle changes and behavioral management. Consider drug therapy.	Lifestyle changes and behavioral management. Consider drug therapy and/or surgical evaluation.	Lifestyle changes and behavioral management. Consider drug therapy and/or surgical evaluation.

Minor Comorbid Conditions	Major Comorbid Conditions
• Cigarette smoking • Hypertension (BP ≥ 140/90) or current use of antihypertensives • LDL cholesterol > 130 mg/dL • HDL cholesterol < 40 mg/dL • Pre-diabetes* • Family history of premature coronary artery disease • Age ≥ 65 years for males • Age ≥ 55 years for females or menopausal females	• Increased waist circumference; > 40 men, > 35 female • Established coronary artery disease - History of myocardial infarction - History of angioplasty - History of coronary bypass grafting surgery - History of acute coronary syndrome • Peripheral vascular disease • Abdominal aortic aneurysm • Symptomatic carotic artery disease • Type 2 diabetes mellitus • Obstructive sleep apnea

ICSI—Institute for Clinical Systems Improvement

* The term *pre-diabetes* has recently been adopted by the American Diabetes Association and refers to those who have a fasting plasma glucose of 100 mg/dL to 125 mg/dL inclusive, as well as those with a 2-hour post 75 gram oral glucose tolerance test value of ≥ 160 mg/dL to 200 mg/dL.

Treatment recommendations are meant only to be broad indicators: treatment should be individualized.
Lifestyle changes are the cornerstone of management of overweight and obesity. See guideline for more information.

anything less frequent was a low-intensity intervention. So, this doesn't give us too much to work with. We have two unlikely possibilities—refer for intensive counseling or, even more unlikely, start an intensive counseling program through the office.

The Task Force guideline mentions that Orlistat (Xenical®) and Sibutramine (Meridia®) can produce a "modest" weight loss of 2.6–4.8 kg, which can be sustained for up to 2 years if the medication is continued. It also states that "There is fair to good evidence to suggest that surgical interventions such as gastric bypass, vertical banded gastroplasty, and adjustable gastric banding can produce substantial weight loss (28 to > 40 kg) in patients with class III obesity" (BMI > 40). It recognizes a 0.2% mortality and a re-operation rate of up to 25% for these procedures. However, it makes no recommendations on medications or surgery.

Contrast this with the ICSI Prevention and Management of Obesity.[2] It takes the available evidence and makes specific recommendations based on a patient's BMI and comorbid conditions (Table 1). It also gives explicit recommendations on nutrition, physical activity, behavioral management, pharmacologic therapy, and surgery. Highlights are described in Table 2, but each section is worth reading, especially the section on surgical management. It gives a comprehensive review of gastric procedures and the pros and cons of each.

Compared to the Task Force, the ICSI guideline does not have as rigorous a system for applying the evidence to its recommendations. It lumps evidence from randomized controlled trials (good evidence) with consensus reports (expert opinion, not considered great evidence), but at least it gives us practical advice about what to do. For those of us who are developing practice registries to measure quality, it also gives us the suggested outcomes to measure (Table 3). We can use the ICSI Guideline to advise patients, for example, on which surgical procedure might be the "best" option and which patients should avoid gastric procedures altogether (pages 36–48 of the guideline).

In addition to medication and surgery, the ICSI guideline also clearly emphasizes diet, exercise, and behavioral management for long-term man-

Table 2

Highlights From the ICSI "Prevention and Management of Obesity"

Measurements
- Ensure that every patient has a BMI calculated and recorded annually and is educated about risk status.
- Waist circumference of ≥ 40 inches in a male or ≥ 35 inches in a female gives an additional independent risk.
- Screen for depression, eating disorder, and medications that cause weight gain (anti-diabetic meds [try Metformin or Acarbose], psychotropic meds [try Ziprasidone and Aripiprazole], and antiseizure meds [try Lamotrigine and Topiramate]).

Nutrition
- Encourage five servings of fruits or vegetables, ≥ 35 grams of fiber, and ≤ 30% calories from fat per day.
- Provide accurate information on portion and serving sizes. Provide tips on managing social situations.

Physical Activity
- At the very least, all patients should do at least 10 minutes of physical activity above what they are currently doing and gradually increase until they participate in at least 30 minutes of physical activity on most days.
- Patients who are unable to participate due to arthritis or physical injury should be referred for further evaluation.
- As a general rule, sitting at rest burns 1 kcal/minute, that's 1,440 kcal/day. One pound of body fat contains 3,500 kcals.

Behavioral Management
- Identify behaviors that lead to eating and weight gain.
- Have patients weigh themselves weekly and keep a diary of their physical activity and food intake.

Medications
- Sibutramine and Orlistat are safe for most patients when carefully monitored and part of a long-term program for weight management that includes proper nutrition and physical activity. Most patients lose only 2–10 kg, yet some lose much more.
- Short-term use of drugs has generally not been found to be effective, yet most weight loss is in the first 6 months of therapy, and the safety and effectiveness of treatment greater than 2 years is not known.
- Sibutramine has been associated with a mean increase in systolic or diastolic blood pressue of 1–3 mm Hg and increase in heart rate of four–five beats/minute in normotensive patients or patients with controlled hypertension.

Surgery
- Bariatric surgery is indicated in carefully selected patients with a BMI ≥ 40 or a BMI ≥ 35 who are at very high risk.
- Trials show 16% weight loss with surgery at 6 years compared to an increase of 0.8% for nonsurgical management.
- Comorbidities can be drastically reduced, including diabetes, hypertension, incontinence, sleep apnea, and many others.
- Surgery can fail in up to 20%–21% of patients (but looking at it in reverse, this suggests that it is successful in 80% of patients).

ICSI—Institute for Clinical Systems Improvement
BMI—body mass index

Table 3

Other Highlights

- The National Institutes of Health (NIH) provides a body mass index (BMI) calculator at www.nhlbisupport.com/bmi and a table at www.nhlbi.nih.gov/guidelines/obesity/bmi_tbl.htm.
- Switching from two regular 12-ounce sodas to two diet sodas or water each day is a calorie savings of 30 pounds per year.
- Measures for quality in obesity treatment might include: (1) Percentage of patients who have their BMI documented in the medical record, (2) percentage of patients with BMI > 25 who have documentation of nutrition, exercise, or lifestyle changes in the record, and (3) percentage of patients diagnosed with obesity who have maintained a stable or lower BMI within a 12-month period.
- BMI growth charts are available from the Centers for Disease Control for children ages 2–20 years at www.cdc.gov/nchs/data/nhanes/growthcharts/set1clinical/cj41c024.pdf and www.cdc.gov/nchs/data/nhanes/growthcharts/set1clinical/cj41c023.pdf.

agement. A weight-gain questionnaire and a dietary diary are available from the American Medical Association at www.ama-assn.org/ama1/pub/upload/mm/433/weight.pdf. There is advice on how to write an exercise prescription, a recommended procedure for more than 20 years. Start with frequency—three times per week at minimum; most regimens are 5 or more days a week to get a physiologic benefit. Duration should ideally be 30 minutes, but multiple short bouts of 10 minutes of exercise have achieved "cardiovascular improvements and weight loss." The goal is 150–300 kcal per day, remembering that a pound of body fat contains 3,500 kcal (and can sustain 35 miles of walking in the average person). Finally, it is clear that those who continually self monitor their weight, nutrition, and activity do better than those who do not.

References

1. Screening for obesity in adults: recommendation and rationale. Ann Intern Med 2003;139(11):930-2. www.guideline.gov/summary/summary.aspx?doc_id=4118&nbr=3163&string=obesity.
2. www.icsi.org/knowledge/detail.asp?catID=29&itemID=1916 Released November 2004.

Caryl Heaton, DO, UMDNJ-New Jersey Medical School, Editor

Teaching Points—A 2-minute Mini-lecture

Leg Weakness in a Man From Appalachia

By Rick Ricer, MD, and C. Jeffery Jacobson Jr, PhD, University of Cincinnati

Editor's Note: The process of the 2-minute mini-lecture is to get a commitment, probe for supporting evidence, reinforce what was right, correct any mistakes, and teach general rules. In this scenario, Dr Rick Ricer (Dr R) works with a third-year student (MS3) who has seen a patient with leg weakness.

MS3: Our patient is a 56-year-old Caucasian male, bank president, who is back in to see you today because of increasing weakness of his legs over the past few weeks. He does not complain of any pain, and his joints are fine. He is not short of breath. No dyspnea, chest pain. He doesn't feel tired in general, and he's sleeping well and waking up refreshed. No symptoms of depression or general fatigue, no history of anemia or problems with the thyroid, heart, or lungs. He states the real reason he came in is because he can no longer walk up the steps into the bank. He has never had this problem before and denies problems with his arms, problems with swallowing, or double vision. He does have dry eyes, worse recently. He has lost about 10 pounds over the last month without dieting. His physical is normal except for weakness in his quads. Sensation is intact, and upper extremity strength is normal.

Dr R: I really wanted you to see him and interview him, because his presentation and diagnosis are so unusual. I saw him a day or two ago and asked him to follow up after getting some studies. And I asked him to come at the end of the day so that we could take enough time. Though his presentation is unusual, it's worth working through the basics. A lot of what we do in family medicine is taking care of common concerns and problems and understanding the patient's point of view. Occasionally, though, you'll see something unusual, and you have to be ready to see it as something unusual. Let's say you were seeing him without me, for the first time. What would you do?

MS3: I'm sorry, but I would have to look in a book.

Dr R: Don't be sorry. That's what I did! Or I suppose you could use a PDA (Personal Digital Assistant)?

MS3: Actually, I did look in my PDA and used the program InfoRetriever.® I couldn't find anything under the search terms "weak" or "weakness," but I did find some information under "myasthenia." I then simplified the search to "mya" and came up with more information. But I didn't have time to read through everything.

Dr R: Great. I looked in MDConsult® on-line yesterday and refreshed my memory about the differential diagnosis. (opens up MDConsult on desktop computer) I just want you to know that you've done the most important steps so far—you recognized that the presentation is unusual, you took it seriously, and you looked for more information. And you changed your search method based on the results—excellent. So, to summarize your findings, he has weakness of the proximal legs bilaterally? And no other neurologic symptoms? You didn't mention his DTRs (deep tendon reflexes).

MS3: They were hard to get for the knees and ankles. I don't know if that's me or the patient.

Dr R: I couldn't get those DTRs either. They certainly weren't hyperreflexic. Why is this important? What are you considering for a diagnosis at this point?

MS3: I was thinking myasthenia gravis, but it doesn't quite fit.

Dr R: Any other thoughts?

MS3: No, I kind of go blank after myasthenia.

Dr R: Good thought. You mentioned already other broad areas that you considered, but discounted. No depression, anemia, heart or lung problems, hypothyroidism. By focusing on the one diagnosis, myasthenia gravis, you are saying it's a problem with . . . ?

MS3: The muscles or the nerves—or both?

Dr R: Perfect. Absolutely. He has a muscular and/or neurological process. It seems to be just the proximal muscles of the legs. Before I looked in MDConsult, I initially considered polymyalgia rheumatica, though he is a little young for this, and there is no pain or involvement of the proximal upper extremity muscles. But, honestly, I couldn't remember much else, because I don't deal with this problem every day. It's not an upper motor neuron problem because . . .

MS3: His reflexes are decreased?

Dr R: Right. Look here in this book, and let's run through the differential listed. Let's run through primary muscle problems: it could be polymyositis or dermatomyositis. Are there any skin rashes or dark circles around his eyes?

MS3: No.

Dr R: So that's less likely. Muscular dystrophy is a possibility. Does he have any family history of anything like this?

MS3: No.

Dr R: Has a previous examination shown any weakness?

MS3: He hasn't had an examination in years. He says that his wife comes here

regularly, but he's been healthy, so he never came in.

Dr R: And Guillain-Barré syndrome?

MS3: It says here that he should have pain and some sensory changes.

Dr R: Social history?

MS3: He lives with his wife of many years. He was born and raised in this town. His father worked in the coal mines until they shut down. He is on no medications but does take ginseng and saw palmetto. He doesn't drink alcohol but smokes two cigarette packs per day since age 14.

Dr R: Good for you for asking about OTCs and herbs. It sounds like you have a knack for getting to know your patients in terms of their relationships and upbringing. The smoking history worries me. Does he have any lung complaints?

MS3: On my Review of Systems, he does admit to a "smoker's cough" and every once in a while has specks of blood in the sputum.

Dr R: Have you ever heard of Eaton-Lambert or Lambert-Eaton syndrome?

MS3: It was back in my second year of medical school. Something to do with nerves or muscles?

Dr R: (smiles) It's a myasthenia syndrome associated with small-cell lung carcinoma. We talked about primary muscle diseases like polymyositis, primary nerve problems like Guillain-Barré, but there are neuromuscular junction problems like myasthenia gravis. Lambert-Eaton syndrome is rare but could explain his symptoms. Supposedly, unlike myasthenia, strength can improve briefly with contraction. But I couldn't get that information from this man. What tests would you want to order?

MS3: Well, to cover all the differential, I would order a CXR, ESR, CPK, and aldolase.

Dr R: That's a good start. Here's a list right here in this book. We might also consider an EMG, muscle biopsy, and an edrophonium challenge test. I got a chest X ray and have a CT of the chest scheduled, but here is what the chest X ray showed. (probable cancer)

MS3: It probably is that Lambert-Eaton syndrome. I don't understand. This is a person with a college education. Why would he smoke, and why would he wait so long to come in to see the doctor?

Dr R: Do you remember some of your cultural competency lectures?

MS3: Barely. I thought those were pretty much a waste of time.

Dr R: Well, this is a good example of experiencing cultural difference where you might least expect it. We are in a small town in Appalachia. If you look at some of the research that's been done, you'll see that communities like this one in many parts of Appalachia have a high prevalence of tobacco use, both smoking and smokeless or oral tobacco. As you know, the vast majority of smokers start well before age 20. Therefore, he was hooked on nicotine well before he went to college. You will see a high prevalence of tobacco use, even in highly educated people, in these communities.

MS3: But why would he stay away from the doctor for so long?

Dr R: Excellent question. I think that understanding other cultures can help here, too. In his case, there are a couple of cultural patterns that might play a role. Especially among rural Appalachian families who have traditionally lived off the land, there can be a fierce independence that shows itself as fewer visits to the doctor. Also, many Appalachian communities have traditionally been "doctor poor" communities, and people have had to learn to take care of themselves. As you've noted, there is some reliance on herbal remedies. I read in one book that in many of the company coal towns, doctors were provided by the coal companies. And because these doctors didn't always have the best interests of the workers in mind, many workers and families came to mistrust them. So there can be many cultural/historical factors that contribute to what you observe—that a well-educated man coming out of this background might not behave as we expect. Some people will only come to the doctor if they are extremely ill. There also seems to be less emphasis on prevention than you might see in other cultures, which helps to explain why he hasn't had an examination in years.

MS3: So this is what is meant by "cultural competency?"

Dr R: This is all part of it, as I see it.

MS3: I guess cultural competency can be important. I never realized how local cultural norms and histories could be so different even within the same racial-ethnic group.

Dr R: Perhaps you learned more today than just Eaton-Lambert Syndrome. You learned a little bit about a different culture. Which do you think will help you with the most patients in the future?

MS3: All right, all right . . . the cultural competency stuff.

Dr R: Remember, this isn't cultural stereotyping. Not all Appalachians use tobacco products. Not all Appalachians use herbal cures. Not all Appalachians wait to see the doctor. Many Appalachians believe highly in preventive care. Every patient is an individual. Now you get a chance to learn about giving bad news.

Alec Chessman, MD, Medical University of South Carolina, Editor

Excerpted from "For the Office-based Teacher of Family Medicine"

Teaching Learners to Use Mirroring: Rapport Lessons From Neurolinguistic Programming

By John Clabby, PhD, and Robert O'Connor, MD, Department of Family Medicine, UMDNJ-Robert Wood Johnson Medical School.

(Fam Med 2004;36(8):541-3.)

There is a renewed emphasis on the need to teach and assess communication skills. The Association of American Medical Colleges encourages both medical schools and residencies to include communication skills in their curricula.[1,2] In addition, the Federation of State Medical Boards, the National Board of Medical Examiners, and the Educational Commission for Foreign Medical Graduates have collaborated to develop the US Medical Licensing Examination-Step 2 Clinical Skills, which includes an assessment of students' ability to establish rapport and communicate with patients.[3,4] In the Kalamazoo Consensus statement, participants in the Bayer-Fetzer Conference on Communication in Medical Education concluded that "a strong, therapeutic, and effective relationship is the *sine qua non* of physician-patient communication."[5]

An important aspect of developing therapeutic relationships with patients is the building of rapport. Teaching learners to build rapport presents a number of challenges. One is that there is not a clear consensus on what constitutes positive rapport building. In one study, faculty examined the same videotape segment of a rapport-building exchange and had divergent observations of the quality of the rapport building, ranging from positive to inadequate and even negative.[1] A second challenge is that faculty are not consistent in evaluating a learner's rapport-building skills across an encounter. In this same study, 72% of the faculty identified specific rapport skills demonstrated in the early phase of the interview, but only 25% were able to identify those same rapport-building skills later in the same interview.[1]

Neurolinguistic programming (NLP) offers a mirroring approach that office-based teachers can use to teach learners how to build rapport with their patients. Neurolinguistic programming resulted from John Grinder and Richard Bandler's detailed observations and analysis of the words, voice tone, and body language used by expert therapists to establish rapport and effect changes in others. These expert therapists included Milton Erickson, a hypnotherapist and psychiatrist; Fritz Perls, a psychotherapist; Virginia Satir, a family therapist; and Gregory Bateson, an anthropologist and social psychologist.[6] In their observations, Grinder and Bandler noted that Ms Satir matched her predicates (verbs, adverbs, and adjectives) to those used by her clients.[7] Further study revealed that such mirroring was common to the artistry used by all four experts in communication. Mirroring techniques, both physical and verbal, can easily be adapted into the methods in which learners interview patients and take their histories.

Physical Mirroring

As a post-polio patient, Dr Erickson was severely restricted in his movements, yet as a physician, he was a master at building rapport by subtly mirroring his patients' body language. In mirroring his patients, he would not directly imitate the patient but would simply tilt his head at an angle similar to the angle of his patient's and/or respond with body movements comparable to those performed by the patient. It is important for the learner to understand the difference between imitating and mirroring. In response to the patient who crosses his/her left leg over the right, the imitator will duplicate the patient's movement by crossing his/her left leg over his/her right. However, the physician practicing physical mirroring will do the opposite by crossing the right leg over the left, as if the patient was looking in a mirror. In teaching learners to use physical mirroring techniques, office-based teachers should remind learners that a key aspect of physical mirroring is to be subtle and inexact since being obvious may decrease rapport. Therefore, the physician's mirroring should lag behind the patient by a few seconds to several minutes.

Verbal Mirroring

In casual conversation outside the office, doctors often nod their heads and say "Okay," "I see," "Uh huh," etc. When they repeatedly use this in the office to confirm they have heard what the patient just said, they may appear disingenuous and lose a valuable opportunity to build rapport. In contrast, some degree of quietness on the part of the physician can be soothing. In addition, maintaining an appropriate amount of eye contact that is considered respectful in the patient's culture may demonstrate the doctor's interest in the patient.

In addition to these helpful interview techniques, there is more to the teaching of verbal mirroring. It is important for the learner to understand the difference between paraphrasing and verbal mirroring. Paraphrasing involves editing and summarizing the patient's words and, therefore, it risks distorting what the patient says. Verbal mirroring occurs when the physician approximates the patient's voice tone and repeats the patient's last few words or word and occasionally uses a slight questioning inflection. This mirroring process avoids distorting the patient's words and encourages the patient to say more.

The usefulness of verbal mirroring can be demonstrated by considering

how a physician interviews a patient who presents with a cough. An interview in which the physician simply nods his/her head or states "Okay" may go as follows:

Doctor: Do you have any major medical problems?

Patient: No, I'm pretty healthy.

Doctor: Okay. (and/or head nod) Ever have any surgeries?

Patient: Never.

Doctor: Okay. (and/or head nod) Do you have any allergies to medicine?

Patient: Not that I know of.

Doctor: Okay. (and/or head nod). Do you smoke any cigarettes?

Patient: Oh, my goodness, no. Never.

Doctor: Okay. (and/or head nod). Do you drink any alcohol?

The patient sees the same slight head nods and hears the same "Okay" to questions about allergies, smoking, and alcohol use. Up to this point, the doctor may appear more interested in going through a standard list of questions than in understanding the patient's real concern.

Now assume this doctor uses physical and verbal mirroring with a questioning inflection of his/her voice tone. This encounter may go as follows:

Doctor: Do you have any major medical problems?

Patient: No, I'm pretty healthy.

Doctor: You're pretty healthy. (pause) Ever have any surgeries?

Patient: No . . . never.

Doctor: Never? (pause) Do you have any allergies to medicine?

Patient: None that I know of.

Doctor: None. (pause) Do you smoke any cigarettes?

Patient: Oh, my goodness, no. Never.

Doctor: Never? (pause)

Patient: Never. My father was just diagnosed with lung cancer, and he smoked all his life.

This is an example of how mirroring can lead to better rapport and more-effective communication with the patient. When the patient says, "Oh, my goodness, no. Never," the doctor has no idea why the word "never" was used. By physically mirroring and then saying the word "never" and pausing, it reminds the patient of the emotion underlying him/her to say "never." This creates an opportunity for the patient to explain if the "never" was significant. When the patient elaborates by disclosing his/her father's diagnosis of lung cancer, the interview becomes infinitely more productive.

Conclusions

Office-based teachers can easily teach learners to include physical and verbal mirroring techniques in their patient encounters since it requires only a slight adjustment on the part of the physician. Although patients may give benign answers for many questions, the use of this approach will enable the learner to discover information and emotions that are critical to patients' care. As a result, learners may build better rapport with their patients, and this is the bedrock on which effective physician-patient communication is built.

Corresponding Author: Address correspondence to Dr Clabby, Robert Wood Johnson Medical School, Department of Family Medicine, One Robert Wood Johnson Place, MEB-Room 276, New Brunswick, NJ 08903. 732-235-8642. Fax: 732-246-8084. clabbyjo@umdnj.edu.

References

1. Buyck D, Lang F. Teaching medical communication skills: a call for greater uniformity. Fam Med 2002;34(5):337-41.
2. Association of American Medical Colleges. Contemporary issues in medicine: communication in medicine. Washington, DC: Association of American Medical Colleges, 1999.
3. Makoul G. Communication skill education in medical school and beyond. JAMA 2003; 289:93.
4. US Medical Licensing Examination Web site. www.usmle.org. Accessed April 30, 2004.
5. Participants in the Bayer-Fetzer Conference on Physician-Patient Communication in Medical Education. Essential elements of communication in medical encounters: the Kalamazoo consensus statement. Acad Med 2001;76:390-3.
6. O'Connor J, McDermott I. Thorsons principles of NLP. San Francisco: Thorsons, 1996.
7. Steinbach A. Neurolinguistic programming: a systematic approach to change. Can Fam Physician 1984;30:147-50.