

Chapter 2

How to Create a Teaching Script for a Chalk Talk



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Introduction

This book provides teaching scripts for 48 chalk talks on a variety of inpatient and outpatient internal medicine topics. We hope that the teaching scripts will be exceedingly useful, but ultimately, we aspire to encourage readers to create their own teaching scripts to use and share. Creating a teaching script can seem like an intimidating proposition. In this chapter, we provide guidance to clinical teachers on how to create their own teaching scripts.

Choosing the Topic

Uncertainty over your own level of content mastery is a common barrier to clinical teaching. Lack of confidence in recalling the names of salient clinical trials, the mechanism of action of drugs, or the pathophysiology once learned in medical school (but long forgotten) can discourage clinicians from taking on important teaching topics. In reality, you know much more than you think you do, and in the realm of practical knowledge, you will have much more to share with the learners than you anticipate. It takes less work than you might expect to fill in any knowledge gaps in order to create an effective teaching script, and taking the additional step of creating a teaching script will push you to better understand the topic.

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When creating a teaching script (or selecting one to use from this book), consider the following questions:

- What are some common scenarios that you encounter in your clinical work?
- What are recurring clinical decision points that you consider on a regular basis?
- Are there high-risk scenarios that are important to emphasize in your teaching?
- Are there situations that are commonly confusing to learners or may have been previously confusing to you?
- What are common misconceptions that you have encountered in your interactions with learners?

In addition, consider what clinical experiences your learners may have been exposed to and may be interested in learning more about. If on an inpatient or outpatient teaching service, teaching about medical conditions for patients recently seen together is often a great source of teaching topics.

Get Started by Creating a “Hook” and Defining Learning Objectives

Once you have a general idea for a chalk talk, start the script with an interesting opener—our recommendation is a brief clinical vignette. Think about classic presentations for your clinical topic. Rare variations may seem more interesting, but they may be less helpful to early learners who are starting to build their own “illness scripts” based on your teaching. Once you have established the patient presentation, formulate the two or three most important learning objectives that you want learners to take away from the talk. The SMART framework [1, 2] can help you create effective learning objectives:

- **Specific:** describes what the learner will be able to do as a result of your talk.
- **Measurable:** the objectives are tangible—they can be observed or counted.
- **Action-oriented:** behavior change or acquisition of knowledge, skills, or attitudes (in contrast to passive words such as “learn,” “know,” or “understand”).
- **Reasonable:** realistic expectations for the learner in terms of the scope of the talk and the stage of the learner.
- **Time-bound:** achievable within the time allotted to teach.

Well-crafted learning objectives can help frame your learners’ thinking before your talk and provide context for your learners to apply their knowledge. Table 2.1 provides some examples of good and suboptimal learning objectives.

Table 2.1 Good and suboptimal learning objectives

Examples of good learning objectives	Examples of suboptimal learning objectives
By the end of this talk, learners should be able to: <ol style="list-style-type: none"> 1. Define sepsis by SIRS and qSOFA criteria 2. Risk stratify patients with sepsis 3. Describe the initial treatment strategies for sepsis 	<ol style="list-style-type: none"> 1. Learn about sepsis (<i>too passive</i>) 2. Take care of patients with sepsis (<i>too broad, unreasonable, and unlikely to be achieved in the scope of a chalk talk</i>)

Table 2.2 Strategies for delivering content in a chalk-talk [3]

Discuss clinical reasoning	Explain complex physiologic principles	Prepare to discuss calculations or methods	Compare and contrast
Do you have a specific patient case that you'd like to discuss? You can go through the case like a morning report. Even with a simple structural organizer like a list, you can number the list (e.g., diagnostic criteria), or rank the list (e.g., sorting from most common to least common, or ranking a differential diagnosis from most likely to least likely). If you want to focus on clinical reasoning, consider emphasizing methods and approaches over facts.	Physiologic principles often work well with frameworks, drawings, and visual organizers. You can use chalk talks to discuss feedback loops and interactions. It can be helpful to evolve your concepts, such as explaining normal physiology and then transitioning to explaining abnormal pathophysiology.	Chalk talks are a great way to demonstrate specific calculations or methods, such as analyzing an arterial blood gas. Even if you're an expert at the calculations, create sample problems and prepare all the math and analyses in advance. This will ensure that your talk is accurate and fluent, and will allow you to focus on teaching the concepts and answering learner questions during the talk.	You can use charts or lists to compare and contrast clinical syndromes (e.g., Crohn disease vs ulcerative colitis) or management strategies (e.g., different antibiotic regimens). You can also compare and contrast old guidelines and new guidelines.

Determine the Most Salient Content and Start Organizing the Flow of the Talk

Once you have established your learning objectives, you are ready to create the content of your chalk talk. There are many ways to present your content, including the suggestions below. Use whichever strategies are most appropriate for your topic and your audience. While creating content, try to keep your information concise and high-yield, always considering how it relates to the learning objectives. Resist the urge to stray too far from your learning objectives or to provide excessive detail. For interested learners, you can always provide supplemental information with a hand-out, or send them journal articles with the evidence basis. Table 2.2 provides four

important strategies to help guide and effectively deliver your content. Other key points to remember are as follows:

Consider your audience If teaching learners of different levels, earmark certain concepts depending on the level of training (e.g., ask one type of question to the medical student and another to the senior resident).

Use frameworks and visual organizers Create frameworks to help improve your learners' recall. Does your topic lend itself to any visual organizers like diagrams, tables, graphs, or flowcharts? Whenever possible, find ways to order, sort, and enumerate information. The more visually clear and appealing your information, the more you will take advantage of the chalk talk format.

Create take-home points These are not the same as your learning objectives, but rather one or two "must knows" or "don't forgets." Ask yourself, "What are the crucial things that I want them to remember from this talk?"

Map Out the Chalk Talk

Now that you have considered the key content needed to accomplish the learning objectives, start to draw out the talk, using your clinical vignette as the starting point. At this stage it is normal to go through several iterations. The rest of this book provides many examples of potential ways to organize a chalk talk. Again, always link the content to your learning objectives.

Create your beginning template Create a rough outline, including placeholders for what you can draw before the talk starts and what you will populate during the talk [3]. What content should already be on the board before you begin speaking? It can be very helpful to write your learning objectives on the board in a corner to help structure your learners' thinking throughout the talk. You can even create placeholders and pre-draw parts of your talk before you begin. Do you have any graphs or tables? You can draw blank x and y graph axes, or you can label an empty table. You should aim to structure your board, not clutter it. What will you explain verbally? What will you write down? Try your best to have your highest yield points written out.

Decide when to ask questions As you've laid out your content, you can pinpoint specific places where you'll want to elicit learner participation (e.g., a learner-generated differential). Are there specific questions you want to ask? Should you designate certain questions for specific learner levels? Again, consider that you can discuss some ideas verbally, while others you will also write down. Don't rely exclusively on asking questions to populate the chalk talk—some of the content can be directly provided by you.

Get creative Consider using color to emphasize points (e.g., underline) or create contrast (e.g., draw different plots on a graph, or comparing and contrasting normal and abnormal feedback loops). This can improve the visual interest and clarity of your talk.

Evaluate your talk visually Step back and imagine what your talk would look like on an actual whiteboard (or chalkboard, or projected screen). Is it legible? Is it cluttered? Do you need to reassess?

Narrow the Scope of Your Talk as Appropriate for the Time Frame and the Audience

Teaching scripts will inevitably start out lengthier than intended. Fortunately, the script can easily be tailored for the amount of time available. One practical way to do this is by providing more information (such as in the opening clinical vignette) and narrowing the learning objectives.

For example, the learning objectives for a chalk talk on microscopic hematuria with a vignette describing a 62-year-old man presenting with a urine dipstick positive for blood may be:

1. Demonstrate an approach to microscopic hematuria.
2. Distinguish between glomerular and nonglomerular hematuria.
3. List risk factors for bladder cancer.

The teaching script for these objectives would be rather lengthy, as shown in Fig. 2.1. You can narrow the scope of the talk by deciding to emphasize a limited aspect of the case and by listing just two learning objectives:

1. Demonstrate an approach to microscopic hematuria.
2. List risk factors for bladder cancer.

Figure 2.2 shows this abbreviated teaching script, which could practically be accomplished in less than 10 min. To further narrow the teaching script, you can give more information in the clinical vignette and create a more discrete teaching point that you want to emphasize. For example:

Learning Objective

1. Suspect cancer if a man has blood in his urine.

Vignette: A 62-year-old man is presenting with a urine dipstick positive for blood. He has no other symptoms. He has smoked 1 pack of cigarettes per day for 40 years.

The teaching script for this highly condensed chalk talk is shown in Fig. 2.3.

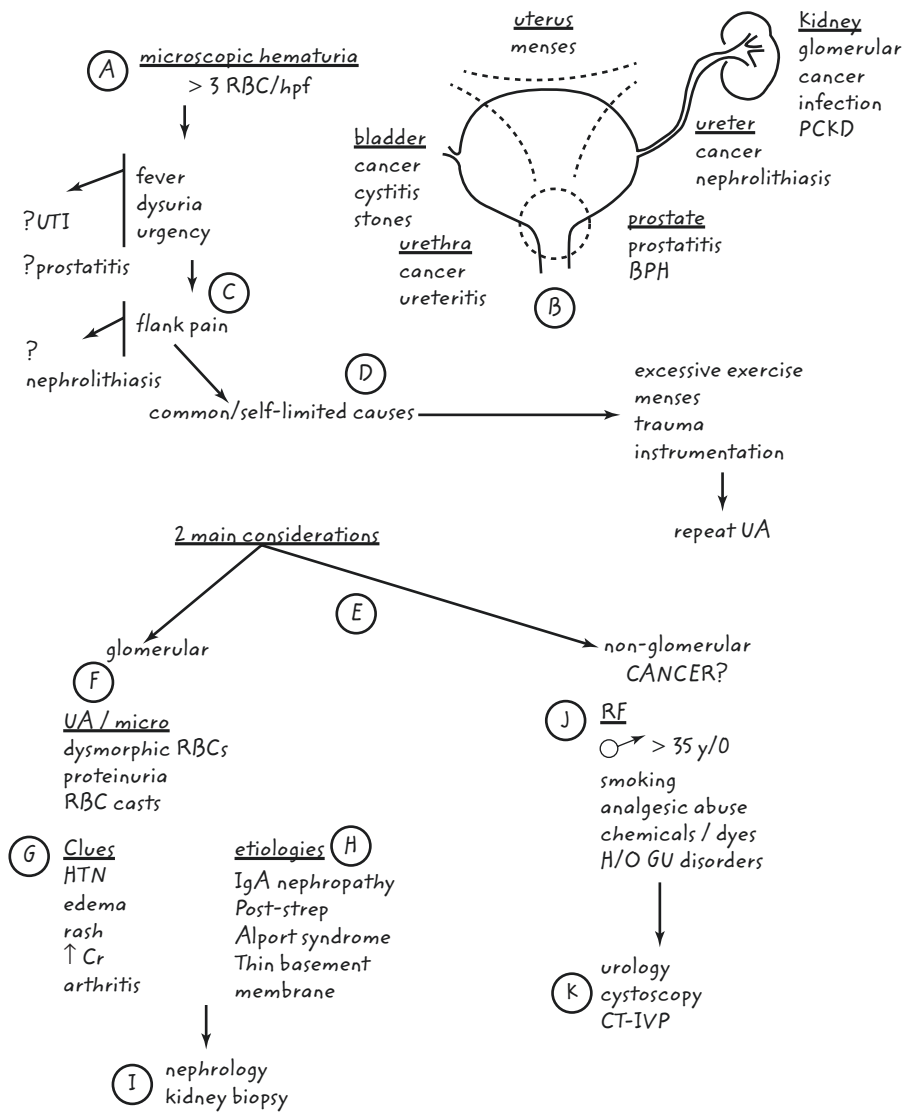


Fig. 2.1 Full-length chalk talk example for microscopic hematuria

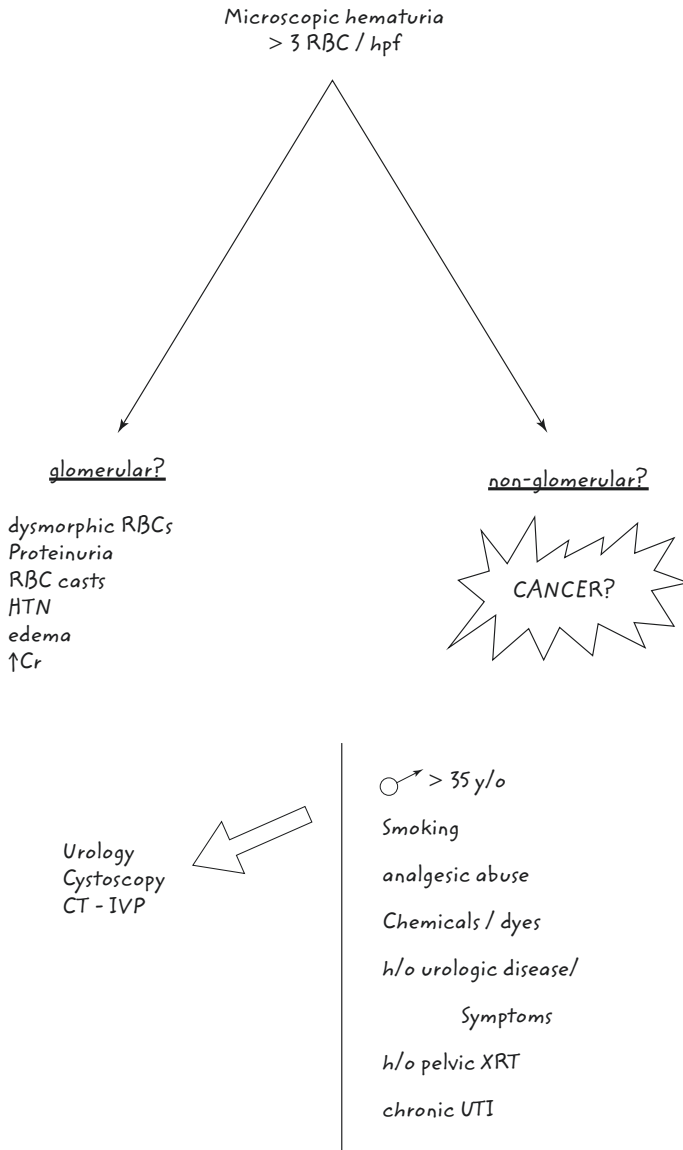


Fig. 2.2 Chalk talk trimmed to emphasize two objectives

Microscopic hematuria
>3RBC / hpf
○ ⁺ > 35 y/o
Smoker



? Cancer



Urology
Cystoscopy
CT - IVP

Fig. 2.3 Minimal chalk talk for one key point about microscopic hematuria

Practice!

If possible, run through your whole talk aloud. At a minimum, draw and redraw the script on a piece of paper or a whiteboard. While practicing, take the time to write legibly and leave pauses for eliciting learner questions. Time how long it takes and then trim the content as needed.

Resources

1. I-TECH. Writing good learning objectives. I-TECH technical implementation Guide #4. 2010.
2. Doran GT. There's a SMART way to write management's goals and objectives. *Manag Rev.* 1981;70(11):35–6.
3. Berger GN, Kritek PA. How to give a great “chalk talk”. In: Mookherjee S, Cosgrove EM, editors. *Handbook of clinical teaching*. Cham: Springer; 2016. p. 77–84.