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# Bedside teaching

*"William Osler 1849-1919*

**Medicine is learned by bedside, not in the classroom"**



# Strengths of Bedside Teaching

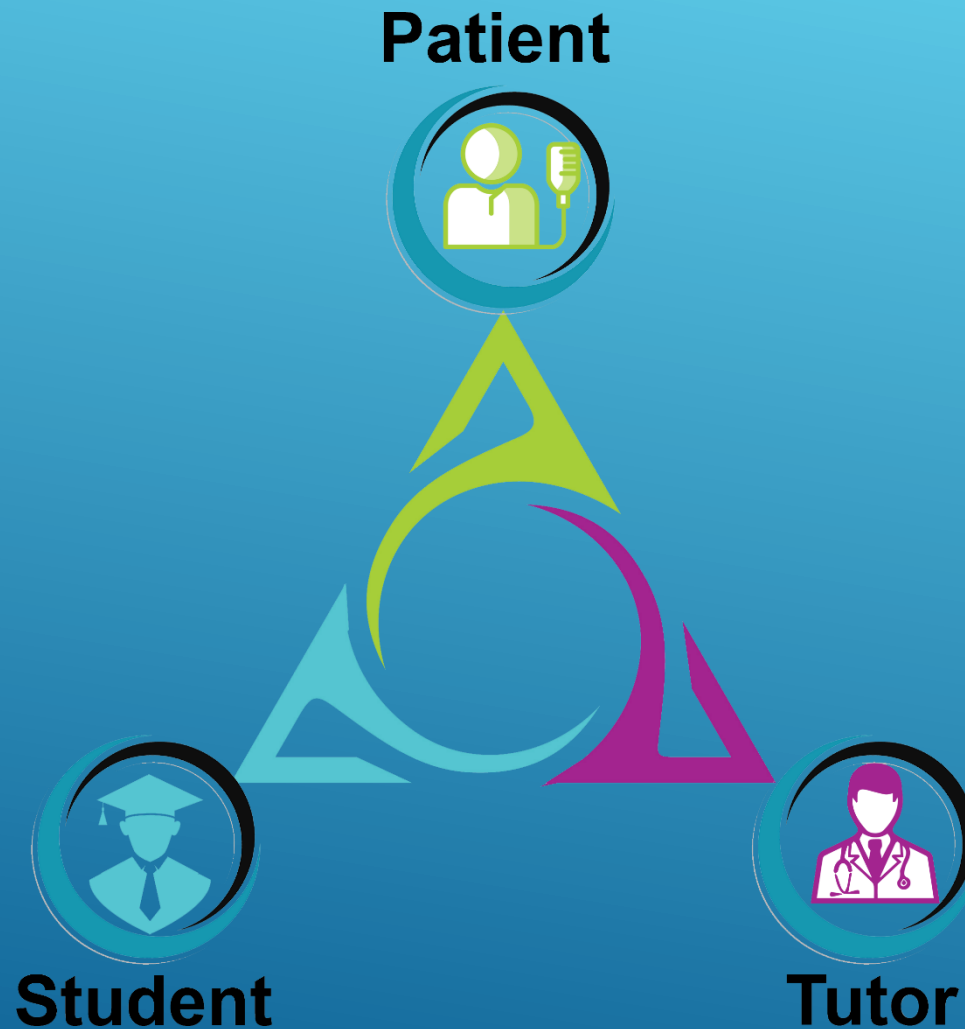
- ▶ Real problems
- ▶ Motivation due to active participation and relevancy
- ▶ All aspect of a doctor
- ▶ All essential attributes



# Learning opportunity in BST

- Skills
- Communication
- Clinical reasoning
- Patient investigation & management
- Data interpretation & retrieval
- Professional skills
- Practical procedure
- Transferrable skills
- Attitude & ethics

# The 'learning triad'





# Patients



➤ Before the session,

- **patients** should be **informed** and have the **opportunity to decline** to participate without feeling coerced.
- Patients should be **adequately briefed** about the goals of the session and who **the participants** will be.

# Patients



- During the session,
  - patients should be **actively engaged** in the discussion and encouraged not only to **participate in providing clinical data** but also as **teachers** and **role models** for clinical learners

# Patients



## ➤ Afterwards,

- patients should be asked to give some feedback to students.
- Do not forget to thank patients for taking part and to clarify any confusions that may have been created.

# Students

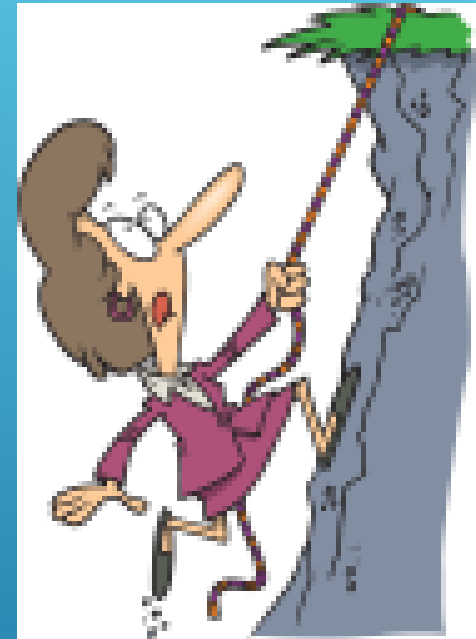


- ❖ Real clinical venues, with patients and other interdisciplinary staff present, can seem quite intimidating at first.
- ❖ Between two and five students is probably the optimal number for bedside teaching.
- ❖ Students should comply with the medical school's directives on appropriate appearance and behaviour and, if unaccompanied by a clinical tutor, should introduce themselves to staff and patients clearly stating the purpose of their visit.

# Challenges of clinical teaching

## Students

- ▶ Learners of different abilities and levels
- ▶ Increased numbers
- ▶ Not prepared for clinical learning



# Challenges of clinical teaching

## Environment

- ▶ Physical environment not ‘teaching friendly’
- ▶ Requirements of infection control
- ▶ Lack of space



## Patients

Fewer patients (unavailable; shorter hospital stays; too frail or sick)

Consent and confidentiality

# Challenges of clinical teaching

## TEACHERS

- ▶ No training in teaching and learning
- ▶ Unfamiliar with the curriculum
- ▶ Not knowing the students
- ▶ Poor rewards and recognition
- ▶ Competing demands (patient care, administration, research,
- ▶ wanting a 'life')
- ▶ Time pressures



# Common problems with clinical teaching

- ! Lack of clear objectives or expectations
- t Focus on factual recall rather than reasoning and skills
- Teaching pitched at wrong level
- Learners not actively involved
- Inadequate supervision **and lack of feedback**
- ! **Little opportunity for reflection**
- Teaching by **humiliation**
- Patients not properly consented
- ! Lack of respect for **dignity of patient**
- ! Lack of congruence or continuity with rest of the curriculum

**What is your role in this situations?**



# Tutors



➤ **Preparation is critical** to a successful clinical teaching session and may include **enhancing clinical skills**, establishing **educational goals**, **orienting patients ahead of time** and being **prepared to deal with unpredictable incidents** that may arise.

# Improving Clinical Teaching

- ❗ Planning (plan the teaching, inform the students, keep a record)

What am I teaching?



How will I teach it?

Who am I teaching?

How will I know  
Of the students  
Understanding?

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# Tutors



## ➤ Appropriate knowledge

- Knowledge of medicine
- Knowledge of patients
- Knowledge of the context
- Knowledge of learners
- Knowledge of the general principles of teaching

## ➤ Appropriate skills

## ➤ Appropriate attitudes

# Improving Clinical Teaching



- Set a good example
- Involve the student
- Early involvement of the student
- Observe the student
- Provide a good teaching environment
- Concentrate on clinical problem solving

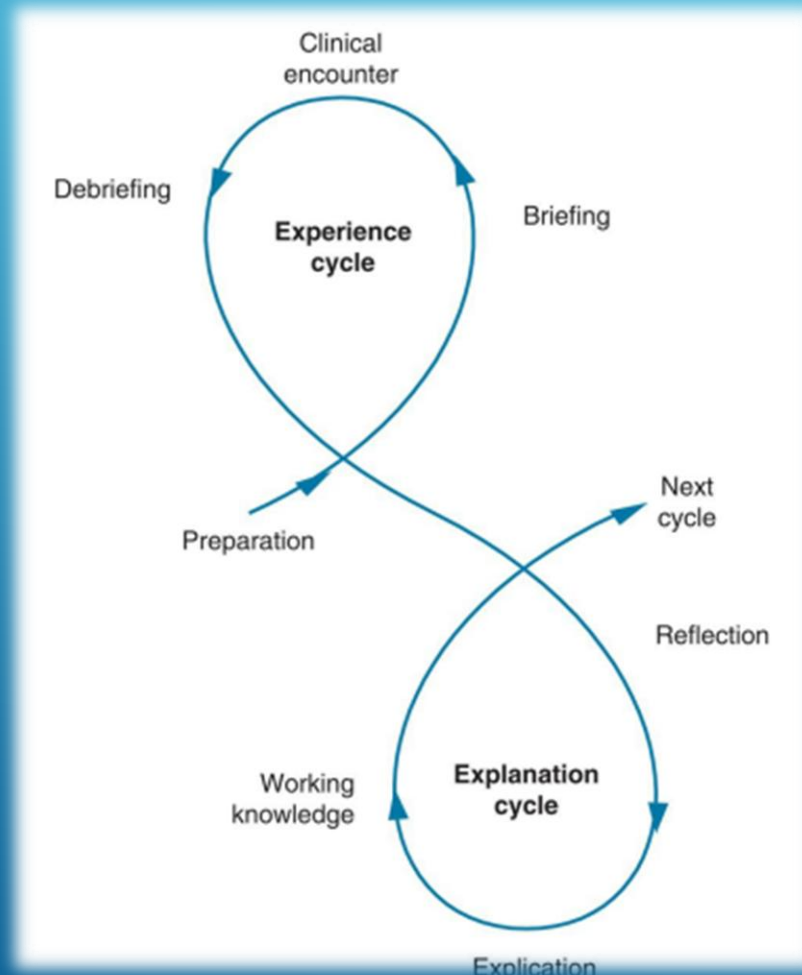
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**Medicine is learned by bedside, not in the classroom!**

*"William Osler 1849-1919*



# strategies for bedside teaching: Cox's cycle

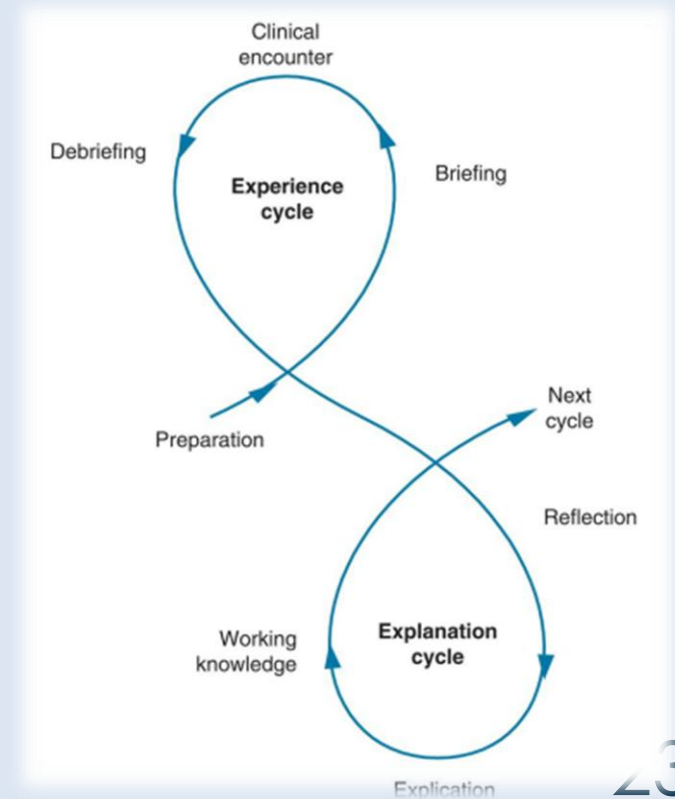


Bedside teaching  
model. (Modified from  
Cox, 1993.)

# 12 strategies

## Before , During , After

- Preparation: Suitable patients
- Orientation: Introduction
- Observation:
- Instruction
- Summarize
- Debriefing
- Feedback
- Reflection
- Preparation again



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# Models for BST

- \*Apprenticeship (Shadowing a junior Dr.)
- \*Patient-centered model
- \*Grand rounds
- \*Business ward rounds???
- \*Teaching ward rounds
  - Demonstrator model*
  - Tutor model*
  - Observer model*
  - Report-back model*
- \*Clinical conference ???
- \*Training ward ???

# MiPLAN

- **M:** meeting between teacher and learners
- **I:** five teaching behaviours at the bedside
- **PLAN:** algorithm for teaching after bedside presentations

# MiPLAN

- **M:** meeting between teacher and learners
- **I:** five teaching behaviours at the bedside:
  - **introductions:** introducing the team to patients
  - **in the moment:** focused listening
  - **inspection:** observation of patient and engagement of entire team
  - **interruptions:** minimizing them
  - **independent thought:** encouraging clinical reasoning

# MiPLAN

- **M:** meeting between teacher and learners
- **I:** five teaching behaviours at the bedside
- **PLAN:** algorithm for teaching after bedside presentations:
  - **patient care:** clarification of clinical findings, role modelling
  - **learners' questions:** responding to questions
  - **attending's agenda:** teaching points, referring to relevant literature
  - **next steps:** debriefing, feedback, questions for further learning

# Apprenticeship (*Shadowing a junior Dr.*)

## Final yr medical program (*UK*)

- Observing good practice.
- Formulating management plan
- Doing ward tasks.
- Increased confidence
- Learning is experiential and informal

Limitation: Lack of structured learning objectives.



# SNAPPS Model: A Six-Step Framework for Clinical Reasoning

**SNAPPS** is a mnemonic that stands for:

| Step                 | Description                                                                                     |
|----------------------|-------------------------------------------------------------------------------------------------|
| <b>S – Summarize</b> | Briefly present the patient's history and clinical findings.                                    |
| <b>N – Narrow</b>    | Narrow the differential diagnosis to 2–3 possibilities.                                         |
| <b>A – Analyze</b>   | Compare and contrast the differential diagnoses using clinical reasoning.                       |
| <b>P – Probe</b>     | Ask the preceptor questions about uncertainties, alternative approaches, or areas of confusion. |
| <b>P – Plan</b>      | Propose a management plan for the patient's condition.                                          |
| <b>S – Select</b>    | Choose a case-related topic for self-directed learning and follow-up.                           |

### **Educational Purpose:**

- Encourages **active learning** and **clinical reasoning**.
- Shifts the student from passive reporting to **engaged discussion**.
- Promotes **self-directed learning** and **critical thinking**.

### **Ideal Setting:**

- Outpatient clinics or ambulatory care rotations.
- Time-limited teaching environments where concise, structured interaction is essential.

### **Role of the Preceptor:**

- Acts as a **facilitator**, not just an evaluator.

| مرحله                                                               | توضیح                                                                  | مثال بالینی                                                                                                                     |
|---------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>S (Summarize) خلاصه‌سازی - S</b>                                 | دانشجو شرح حال و یافته‌های بیمار را به صورت خلاصه ارائه می‌دهد.        | «بیمار ۴۵ ساله با درد شکم در ناحیه اپی گاستر، تهوع و کاهش اشتها از دو روز پیش مراجعه کرده است.»                                 |
| <b>N محدود کردن تشخیص‌های افتراقی - N (Narrow the Differential)</b> | دانشجو ۲ تا ۳ تشخیص افتراقی محتمل را بیان می‌کند.                      | «تشخیص‌های احتمالی شامل زخم معده، پانکراتیت، و گاستریت هستند.»                                                                  |
| <b>A (Analyze the Differential) تحلیل و مقایسه - A</b>              | دانشجو دلایل انتخاب هر تشخیص را توضیح می‌دهد و آن‌ها را مقایسه می‌کند. | «درد اپی گاستر و سابقه مصرف NSAID ها به نفع زخم معده است، اما نبود درد منتشر و آنزیم‌های نرمال پانکراتیت را کمتر محتمل می‌کند.» |
| <b>P (Probe the Preceptor) پرسش از استاد - P</b>                    | دانشجو درباره نکات مبهم یا چالش برانگیز سؤال می‌پرسد.                  | «آیا در گاستریت هم ممکن است درد به این شدت وجود داشته باشد؟ و چه زمانی آندوسکوپی را توصیه می‌کنید؟»                             |
| <b>P (Plan Management) پیشنهاد طرح درمان - P</b>                    | دانشجو یک برنامه درمانی اولیه ارائه می‌دهد.                            | «پیشنهاد می‌کنم آزمایش خون، تست هلیکوباکتر، و شروع درمان با PPI انجام شود.»                                                     |
| <b>S (Select a Learning Issue) انتخاب موضوع برای یادگیری - S</b>    | دانشجو یک موضوع مرتبط با بیمار را برای مطالعه بیشتر انتخاب می‌کند.     | «می‌خواهم درباره تفاوت‌های بالینی بین زخم معده و گاستریت مطالعه کنم.»                                                           |

## مثال بالینی:

بیمار خانم ۳۰ ساله با شکایت درد پهلوی، تب و تکرر ادرار به درمانگاه مراجعه کرده است.

### – خلاصه‌سازی (Summarize the case)

دانشجو: بیمار خانم ۳۰ ساله با درد پهلوی سمت راست، تب ۳۸/۵ درجه، و تکرر ادرار از دو روز پیش مراجعه کرده. در معاینه، حساسیت در ناحیه پهلوی دارد.

♦ هدف: ارائه خلاصه‌ای دقیق و منظم از شرح حال و یافته‌ها.

### – محدود کردن تشخیص‌های افتراقی (Narrow the Differential)

دانشجو: تشخیص‌های احتمالی شامل پیلونفریت، سنگ کلیه، و سیستیت هستند.

## – 3A ♦ تحلیل و مقایسه تشخیص‌ها (Analyze the Differential)

دانشجو:

«وجود تب و درد پهلوی بیشتر به نفع پیلونفریت است. سنگ کلیه معمولاً بدون تب است و درد شدیدتری دارد. سیستیت بیشتر با سوزش ادرار و بدون درد پهلوی همراه است.»

♦ هدف: مقایسه منطقی تشخیص‌ها با استفاده از شواهد بالینی.

## – 4P ♦ پرسش از استاد (Probe the Preceptor)

دانشجو:

«آیا در موارد مشکوک به پیلونفریت، همیشه نیاز به تصویربرداری هست؟ و در چه شرایطی بستری توصیه می‌شود؟»

♦ هدف: تشویق دانشجو به پرسش‌گری و روشن‌سازی نقاط مبهم.

## – 5P پیشنهاد طرح درمان (Plan Management)

دانشجو:

«پیشنهاد می‌کنم آزمایش ادرار، کشت ادرار، و شروع آنتی‌بیوتیک خوراکی انجام شود. اگر بیمار تهوع یا استفراغ داشت، بستری و درمان تزریقی را در نظر می‌گیریم.»

♦ هدف: تمرین تصمیم‌گیری درمانی و مسئولیت‌پذیری بالینی.

## – 6S انتخاب موضوع برای یادگیری (Select a Learning Issue)

دانشجو:

«می‌خواهم درباره تفاوت‌های درمانی پیلونفریت ساده و پیچیده مطالعه کنم.»

## **One-Minute Preceptor Model**

- A five-step teaching framework for busy clinics:
  - Get a commitment
  - Probe for supporting evidence
  - Teach a general principle
  - Reinforce what was done well
  - Correct mistakes
- Efficient and highly adaptable.

## Ideal Situations:

- Outpatient clinics** or ambulatory care settings Where time is limited and patient flow is high.
- During clinical rotations** When supervising medical students or residents one-on-one.
- Teaching in real-time** While reviewing cases, making decisions, or discussing patient management.
- When learners present cases** You can quickly assess their reasoning and provide targeted feedback.
- To promote active learning** It shifts the learner from passive reporting to engaged clinical thinking.

• 🖐 پنج گام مدل One-Minute Preceptor با مثال بالینی

• □ گرفتن تعهد از دانشجو (Get a Commitment)

• هدف: دانشجو را وادار کنیم تا نظر بالینی خود را بیان کند.

مثال :

استاد: «به نظر تو علت تب و سرفه این بیمار چیست؟»

دانشجو: «فکر می‌کنم ممکن است پنومونی باشد.»

• ♦ این مرحله باعث می‌شود دانشجو مسئولیت تصمیم‌گیری را بپذیرد و تفکر بالینی‌اش را فعال کند.

•

## • **▣ بررسی دلایل دانشجو (Probe for Supporting Evidence)**

• **هدف:** درک منطق و استدلال دانشجو برای تشخیص یا تصمیم‌اش.

**مثال:**

استاد: «چه یافته‌هایی باعث شد به پنومونی فکر کنی؟»

دانشجو: «صدای کراکل در ریه‌ها، تب بالا، و عکس رادیوگرافی که نشان‌دهنده تراکم در لوب تحتانی است.»

♦ این مرحله به استاد کمک می‌کند تا سطح دانش و نحوه تفکر دانشجو را ارزیابی کند.

## • **▣ آموزش یک اصل کلی (Teach a General Principle)**

• **هدف:** انتقال یک نکته آموزشی کوتاه و کاربردی.

**مثال:**

استاد: «در بیماران مسن، پنومونی ممکن است بدون تب یا با علائم غیر اختصاصی ظاهر شود. پس همیشه به تغییر وضعیت ذهنی یا ضعف عمومی توجه کن.»

♦ این مرحله باعث تثبیت یادگیری و انتقال دانش قابل استفاده در موارد مشابه می‌شود.

#### 4 تقویت عملکرد مثبت (Reinforce What Was Done Well)

• هدف: تشویق رفتارهای درست و تقویت اعتماد به نفس دانشجو.

مثال :

استاد: «خیلی خوب بود که از یافته‌های بالینی و تصویربرداری برای رسیدن به تشخیص استفاده کردی. این نشون می‌ده که خوب داری تفکر بالینی رو تمرین می‌کنی.»

• این مرحله باعث انگیزه‌بخشی و تثبیت رفتارهای مطلوب آموزشی می‌شود.

#### 5 اصلاح اشتباهات یا نکات قابل بهبود (Correct Mistakes)

• هدف: اصلاح برداشت‌های نادرست یا تکمیل دانش ناقص.

مثال :

استاد: «فقط یادت باشه که در بیماران دیابتی، علائم پنومونی ممکنه خفیف‌تر باشه و باید به علائم غیرمعمول هم توجه کرد.»

• این مرحله باید با احترام و حمایت انجام شود تا دانشجو احساس امنیت و رشد کن

# Patient-centered model

- **Certain number of patients**
  - Admit & follow up.
  - Presenting patients on ward rounds.
  - Comment on lab-results & X-rays .
  - Practice physical exams & communication skills.
  - Follow to surgery or home context.



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# Grand rounds



- Consultant-led ward round/side room presentation.
- Senior clinicians, junior doctors, trainees, other health care professionals (Multi professional interaction)
- More complex patients .... Students don't understand.  
Students remote from decision making & little interaction with clinicians & patients.



# Teaching ward rounds

- *Demonstrator model (Junior students)*
  - *Clinician demonstrates history & physical exams.*



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# Teaching ward rounds

- *Tutor model left side (senior students)*
  - *Students takes history & physical exams , Clinician critiques them.*



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# Teaching ward rounds

- *Observer model*
  - *Clinician observes students during history taking & physical exam, feedback at the end discussion.*

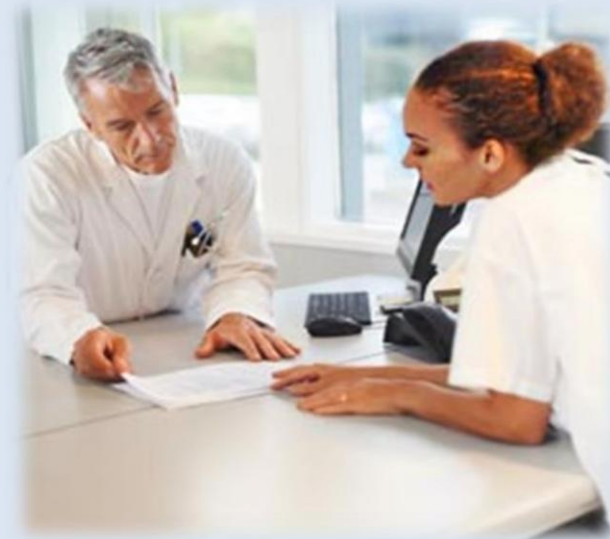


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# Teaching ward rounds



- *Report-back model*
  - *Students take history & physical exams without supervision, then report to tutor in tutorial room.*

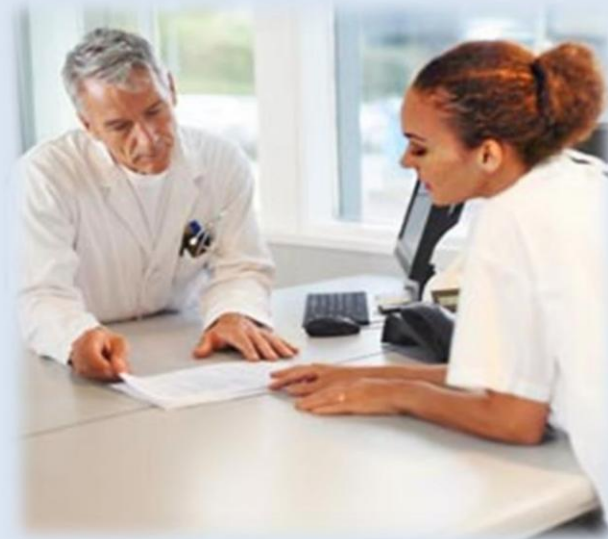


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# Teaching ward rounds



- *Report-back model*
  - *Students take history & physical exams without supervision, then report to tutor in tutorial room.*



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# Teaching and learning in Operating Room



# The Briefing, Intraoperative Teaching, Debriefing Model for Teaching in the Operating Room

## Briefing

This is a **short (2- to 3-minute)** interaction at the **scrub sink**. The purpose of the interaction is to assess the needs of the learner, to cause the learner to assess her own learning needs, and to jointly establish learning objectives to guide both learner and teacher.

Ideally, the learner establishes her own objectives for the operation. The teaching surgeon assists by prompting and guiding the formulation of the objective.

The attending surgeon starts the conversation with a brief question about goals for the operation or previous experiences. Learning objectives can follow from this brief needs assessment.

## Example

**“Tom, you’ve probably done 100 laparoscopic cholecystectomies. What do you have left to learn in the performance of this procedure?”**

**“I want to work on my efficiency. I end up having to reposition the instrument in my left hand too often, so I want to work on positioning of the fundus grasper.”**

This briefing took place at the scrub sink, and took less than 5 minutes to accomplish. By setting objectives at the beginning of the operation, the preceptor served to focus the attention of the learner, and also created a mechanism to guide his own teaching during the operation.



# The Briefing, Intraoperative Teaching, Debriefing Model for Teaching in the Operating Room

## Intraoperative teaching:

The objectives set in the briefing focus the intraoperative teaching. Although other standard forms of intraoperative communication will still be present (ie, the attending physician will still coach and guide the learner through the operation), the **focus of most of the didactic talk will be on the one or two learning objectives set** for this operation. This ensures that the teaching is not simply a nonspecific flow of talk, but instead, discussion focused on mutually shared learning goals.



## Example

“Tom, can you talk me through your decision-making process as you position your left hand? What will help you with your goal of working on efficiency?”

“I need to choose a spot with the left-handed grasper to be able to expose the triangle of Calot adequately, but still be able to see the other areas for dissection.”

Later: “So how many times have you had to reposition your left hand?”

“Only three times—that’s really good for me.”

“That’s great. What do you know now about how to do the initial positioning?”

“It needs to be low enough to be able to expose the triangle of Calot, but the positioning needs to allow me to start dissecting the liver bed without moving it too many times..



## The Briefing, Intraoperative Teaching, Debriefing Model for Teaching in the Operating Room

### Debriefing

After the operation is finished, ideally during the closing, the preceptor and the learner debrief about the encounter.

The debriefing consists of four elements: **reflection, rules, reinforcement, and correction.**

Because the debriefing is focused specifically on the intraoperative teaching, which is focused on objectives set at the beginning of the encounter, it is short. In our example, debriefing the learner during the closing took less **than 5 minutes.**

**Debriefing** begins with the attending physician asking the learner to reflect on his or her performance and attainment of stated objective. This allows the preceptor to understand the perspective of the learner, and to diagnose any problems the learner is having with his perception of the encounter. Most importantly it requires the learner to assemble his own thoughts about what was learned during the encounter..

## Example

““Tom, how do you think you did with your goal of positioning your left hand appropriately?”

“I think I did well this time. Just focusing on it seemed to help.”

“I agree. Your time to complete the case was very good, which was, in part, because of your efficiency with positioning.”

The learner should leave the encounter with some rule to guide future practice. Ideally, it is a rule the Learner has formulated based on dialogue with the attending physician.



## Example2

**Briefing at the scrub sink begins with a needs assessment:**

“Shannon, what has been your experience with laparoscopic cholecystectomy?

Have you ever scrubbed on one before?”

“No, this is my first.”

“OK. Because this is your first, I want you to focus specifically on how the pathology you observe logically leads to the symptoms the patient presented with.”

During the operation, the attending physician asked the student to discuss what would happen to this particular patient if he refused operation, what the student would do if this was her patient and showed up in the emergency room with right upper quadrant pain, and how to identify postoperatively the complication of a bile leak versus a collection of blood. All of this intraoperative teaching was focused specifically on the potential symptoms and sequelae of untreated pathology.

During the debriefing, the attending physician asked the student to reflect on what she had learned in the operation, to state a rule about differentiating biliary colic from acute or chronic cholecystitis, reinforced the student's understanding of anatomy, and corrected her approach to dealing with a postoperative complication in the emergency room.

# Alternatives to traditional clinical teaching

## ❗ Clinical skills laboratories

- Simulators
- Simulated patients
- Computers
- Video recording



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# Is education only limited to teaching?

