

**"Knowledge and Skills to Avoid Misdiagnosis: Assessing Residents Entering University of Michigan."**

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John W. Gosbee, MD, MS  
University of Michigan Health System

[jgosbee@umich.edu](mailto:jgosbee@umich.edu)

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**Patient Safety Baseline Assessment**

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- **For first year residents**
- **OBJECTIVES:** Assess baseline skills and knowledge
  - In support of ACGME competency-related curriculum
  - Target and fix deficiencies from med school curricula variability
- Accomplished in conjunction with
  - UMHS Office of Clinical Affairs
  - All residency programs with interns
  - Department of Medical Education and Grad Med Education
  - Several safety and/or education experts around US (e.g., Mayo, NBME, Penn, SUNY Stonybrook)

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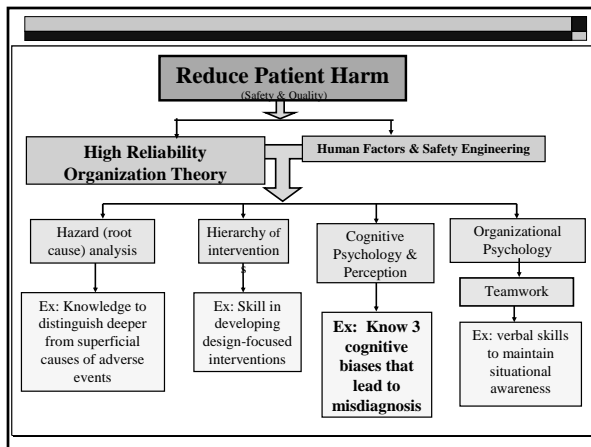
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Goals & Patient Safety Stations					
	Quiz	Detect-Fix	Team-work	Hand-off	Diagnosis
ACGME Systems Based Practice	X	X	X	X	
ACGME Practice Based Learning	X				X
High Reliability Theory	X	X	X	X	X
Safety/Human Factors Engineering	X	X			X

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Program	Interns 2008	Interns 2009	Interns 2010 (so far)	Instructors
Family Medicine	9	8	10	4
Internal Medicine	46	47	24	12
Surgery	8	16	8	4
Pediatrics	4	14	20	10
OB/GYN	2	6	6	4
Emergency Medicine	NA	14	TBD	4
Psychiatry	NA	12	12	4
Pathology	NA	8	8	3
Anesthesiology	NA	19	8	4
<b>TOTAL</b>	<b>68</b>	<b>135</b>	<b>96 (so far)</b>	<b>49</b>

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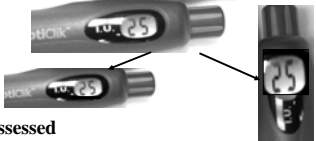
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### Example Station: Detect-Fix Hazard



➤ You prescribed an insulin pen to a diabetic patient  
➤ After a few weeks of using it, they bring it to you to show you something odd about the number display



**Learning Objectives Assessed**

- Ability to detect design features that make confusion & adverse events more likely
- Attitude that adverse events reflect more than carelessness or training deficits
- Ability to develop re-designs to address confusing aspects of a clinical setting

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## Diagnosis Station

- Learning Objectives Assessed**
  - Ability to use of differential diagnosis
  - Ability to use of reflection
  - Attitude that diagnostic confidence will vary for patient presentations
  - Knowledge of cognitive biases that lead to misdiagnosis
  - Knowledge of countermeasures to biases and misdiagnosis habits

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## Prompting Video

- 80 second vignette (not a real patient)
- Intern watches at a desk before interacting with the instructor/assessor
- Instructor is attending or chief resident
  - They are trained with 3 standard videos of varying levels

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## Role Play the Diagnosis Station

- Each of you has the assessment instrument
- We will role play up front (2 min)
- After we are done, discuss your score with person next to you (1 min)

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Assessment Instrument – Item Scores		
<b>PART ONE (presenting the patient)</b>		
How many diagnoses did they state?		
	Yes	No
Discusses SUPPORTIVE evidence for their diagnoses		
Discusses CONTRARY evidence for their diagnoses		
States urgency of ruling out the diagnoses with near term risk		
Discusses further testing to narrow the diagnostic list		
<b>PART TWO</b>		
2 or more pitfalls that lead to misdiagnosis with <u>general or vague</u> terms		
2 or more pitfalls that lead to misdiagnosis with <u>formal</u> terminology		
Lists 2 or more <b>countermeasures</b> to avoid misdiagnosis		

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Assessment Instrument – Global Score				
1	2	3	4	5
Poor		Average		Excellent
- Their performance is <u>BELOW</u> the level expected of a <u>new intern</u> - Vague presentation - Unclear and uneven thought process related to diagnosis - Plan is not systematic or organized		- Presentation is at the level expected of a <u>new intern</u> - Thought process towards diagnoses was partly clear and understandable - Plan is partially organized		- Their performance is that expected of a <u>practicing clinician</u> - They performed well enough that there would be no need for training

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Findings to Date
<input type="checkbox"/> Global Score (Missing data, N=78) <ul style="list-style-type: none"> <li>■ Mean = 3.8</li> <li>■ SD = 1.1</li> <li>■ This is muddy data due to lack of agreed standards</li> </ul>
<input type="checkbox"/> Item Scoring <ul style="list-style-type: none"> <li>■ Simple means or aggregates are less useful</li> <li>■ Item by item % are likely most helpful</li> </ul>

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Findings to Date – Item Scores (mostly 2009)	
<b>PART ONE (presenting the patient)</b>	
	<b>% Yes</b>
Differential Diagnosis (3 or more)	62%
Discusses SUPPORTIVE evidence for their diagnoses	85%
Discusses CONTRARY evidence for their diagnoses	69%
States urgency of ruling out diagnoses with near term risk	71%
Discusses further testing to narrow the diagnostic list	92%
<b>PART TWO</b>	
2 or more <b>pitfalls</b> that lead to misdiagnosis using any terms	86%
2 or more <b>pitfalls</b> that lead to misdiagnosis with <b>formal</b> terminology	0%
Lists 2 or more <b>countermeasures</b> to avoid misdiagnosis	78%

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- Lessons Learned**
- We are much more lenient when face-to-face
    - Early on, almost anything qualified as “yes”
  - After increasing and formalizing instructor training
    - Initial reluctance goes to gracious thanks
    - Surprised how “off” they are when given feedback
  - Diagnosis is revered and ignored

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- Impact to Date**
- Changed or Added Patient Safety Curriculum**
    - Cautious rethinking of reliance on informal teaching
    - Some addition to conferences, morning reports, M&Ms
  - Indirect faculty development of assessors, who incorporate into their teaching**
  - Coordination with existing training/simulations**
    - Program-specific teamwork or handoff simulations
    - ACLS, PALS, “the world”!

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## Next Steps

- Continue improving faculty assessor training
  - Online training videos
- Continue standard setting (but at what level)
  - What we have...
  - What programs want...
  - What "we" want...
- "Spread the word" (and techniques)
  - Workshops

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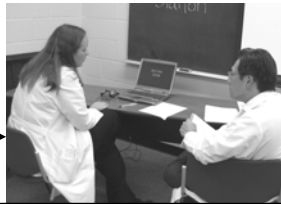
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## Summary Lessons



**"Seeing" Safety Hazards Takes Practice**

**Learning to Think in New Ways is Often a One-to-One Exercise**



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