

APPENDIX B COGNITIVE HUMAN FACTORS

When preparing case rounds for discussion, it is important to be aware of cognitive human factors: the way we process information and make decisions. The table below includes questions to consider when conducting an educational case round. 'NO' to any question implies a cognitive human factor is worth discussing during an educational case round.

TABLE 1. POTENTIAL COGNITIVE HUMAN FACTORS

Cognitive Factor	Question	If NO , then consider these solutions:	Other resources
Decision Making	Do we have safeguards ¹ against decision making bias and shortcuts?	<ul style="list-style-type: none"> • Determine the type of bias that may have or can occur (Table 2) • Discuss the influence of bias in any decision making process, especially diagnoses • Use a diagnostic process that is more robust to bias: <ol style="list-style-type: none"> 1. Gather sufficient information 2. Develop a differential diagnosis 3. Consider the worst case scenario. 4. Carefully review any conflicting information. 5. Test alternative hypotheses. 6. Get a 2nd opinion --- take advantage of your team 7. Reconsider your diagnosis if the patient is not responding as expected 	<ul style="list-style-type: none"> • The Canadian Medical Protective Association Website • The Canadian Medical Protective Association Practice Guide • Clinical Reasoning Toolkit • Improving Diagnosis in Healthcare Book
Sensation	Is important information easy to gather through the senses?	<ul style="list-style-type: none"> • Identify the reason(s) that information is not easy to detect (e.g., too noisy, visual clutter) • Increase the relative strength of critical stimuli (e.g., increase volume on critical alarms, increase task lighting to improve readability, reduce ambient noise) • Consider how the design of the work environment may impact information reaching someone's senses 	<p>For noise management:</p> <ul style="list-style-type: none"> • Sound Control in the Healthcare Environment <p>For lighting improvements:</p> <ul style="list-style-type: none"> • Lighting at work <p>For work environment design improvement opportunities email: humanfactors@ahs.ca</p>

¹Safeguards help reduce decision making 'uncertainty' and may include: information is available, decision support tools, standard protocols, clinical practice guidelines, a team decision making culture, receiving feedback on decisions, having sufficient time to make a good decision, etc.

Perception	Is important information easy to understand and interpret?	<ul style="list-style-type: none"> • Determine if the design of the information could be improved • Consider whether an assumption or the presence of pre-existing knowledge may influenced the perception of information 	For information design improvement opportunities email: humanfactors@ahs.ca
Attention	Do we have mechanisms in place to minimize distraction?	<ul style="list-style-type: none"> • Identify and remove all sources of distraction (e.g., interruptions, noise, visual distractions, etc.) • Add mechanisms to both prevent distraction (e.g., policies, protocols, 'do not' disturb vests, staff training, etc.) and help people recover from distraction (e.g., use checklists, implement standard work, etc.) 	<ul style="list-style-type: none"> • Human Factors Recommendations for Mitigating Distractions and Interruptions in Health Care
	Have we reduced the amount of multi-tasking or divided attention that is required?	<ul style="list-style-type: none"> • Reduce the need for multitasking through simplified job design or staffing 	
Memory	Do we have protocols in place to make sure nothing is forgotten?	<ul style="list-style-type: none"> • Create protocols that reduce the amount of information that people need to remember: <ul style="list-style-type: none"> ○ Create a checklist ○ Develop reminders ○ Group information in a meaningful way (i.e., chunking) 	<ul style="list-style-type: none"> • The Checklist Manifesto: How to Get Things Right • What Makes a Good Checklist