A Guide to Cognitive Process and Error Proofing

Mistake Proof Y/N	Cognitive Classifications	Requirement(s) for the Countermeasure	Cognitive Bias Categories	Cognitive Process Leading to Cognitive Error	Contributing Factors to the Cognitive Error	Possible Countermeasures to the Cognitive Error	Miscellaneous	Cultural Issues
No	**Meta-Cognition** • Thought processes applied to identify solutions to complex situations. • Example: aggressive medical treatment vs palliative care	• Judgment Decisions • Knowledge • Experience • Critical Thinking	• Anchoring • Aggregate Bias • Framing Effect • Multiple Alternatives • Triage Cuing • Overconfidence	• Correct intent • Thoughtful deliberation • No clear right or wrong action	• Training • Norms/Culture • Habits • Biases • Communication style	• Cognitive restructuring • Self inspection • Self review and verification • Clinician staff review • Debriefing	When should I question my judgment? Risk vs Benefit Ratio	• Organizational culture assessment is lacking • Assessment review could outline improvement opportunities • Information is shared on a need-to-know basis • Strategic planning/decision making is top-down versus collaborative • Organization is not consistently patient-centered • Organizational goals are not clear • Varying sub-cultures exist in the organization (union vs. non-union, clinician vs. non-clinician) • A learning culture is not well supported in the organization (team PDCA) • Constructive conflict isn't part of the organizational decision making process • Lack of accountability • Resistance to change exists in the organization
Maybe	**Knowledge Based Action** • Reliance on knowledge and experience • No routines/rules available for handling situation • Individuals are required to know fundamental principles • Examples: recommending lower vs high risk procedures, billing adjustment to improve customer service, adjusting personal behaviors to improve patient satisfaction	• Judgment Decisions • Best Practice • Critical Thinking	• Unpacking principle • Anchoring Effect • Diagnosis Momentum • Consistency Bias • Framing Effect	• Correct Intent • Wrong Deliberation • Wrong Action	• Norms/Culture • Interruptions • Lack of knowledge or experience in situation • Not seeking guidance • Lack of communication	• Huddles • Team Interaction • Clinical review • Successive Inspection • Socratic method • Improved standardization of information sharing	How can I learn better judgment? Better Critical Thinking	
Yes	**Rule-Based Action** • Parameters that activate a set of behaviors or actions. • If symptom X then rule is Y. If problem is Y then do Z • Operators not required to know underlying principles of the system • Examples: standing orders for insulin, vaccines, lack of identification when checking-in	• Known parameters • Known action • Best practice • Standard Work	• Forgetfulness • Error due to misunderstanding, identification, or lack of experience • Inadvertent errors • Intentional errors	• Correct Intent • Minimal Deliberation • Wrong Action	• System or process does not support action • Defect in the skill set leading to the rule • Interruptions • Conflicting processes within the system • Internal rules	• Mechanical Trap • Successive Checks • Know how the rule will impact other areas or other rules • Proper equipment to implement the rule • Error free skill-based actions (clean)	When do we make a "rule" and circumvent critical thinking? Cost vs Benefit Ratio Rule based actions can lead to new cognitive errors → critical thinking is needed	
Yes	**Skill-Based Action** • A technical act with little or no conscious attention needed. • Examples: drawing blood, checking a patient in, standard rooming, making a patient bed	• Known action • Best practice • Standard Work	• Framing effect	• Correct Intent • No Deliberation • Wrong Action	• No variation • No judgment required • Alternatives not considered • Best practice is known	• Mechanical Trap • Source Check • Successive Checks • Competency measures • Training		