TreatSafely

Minimizing Error

Maximizing Quality

CHECKLISTS

An effective safety barrier

Session Objectives

- To discuss the role of checklists in healthcare
- To discuss considerations for implementing effective checklists
- 5 W's (why, where, when, who, what)
- To describe the process for creating better/safer workflows with checklists

Checklists - Why

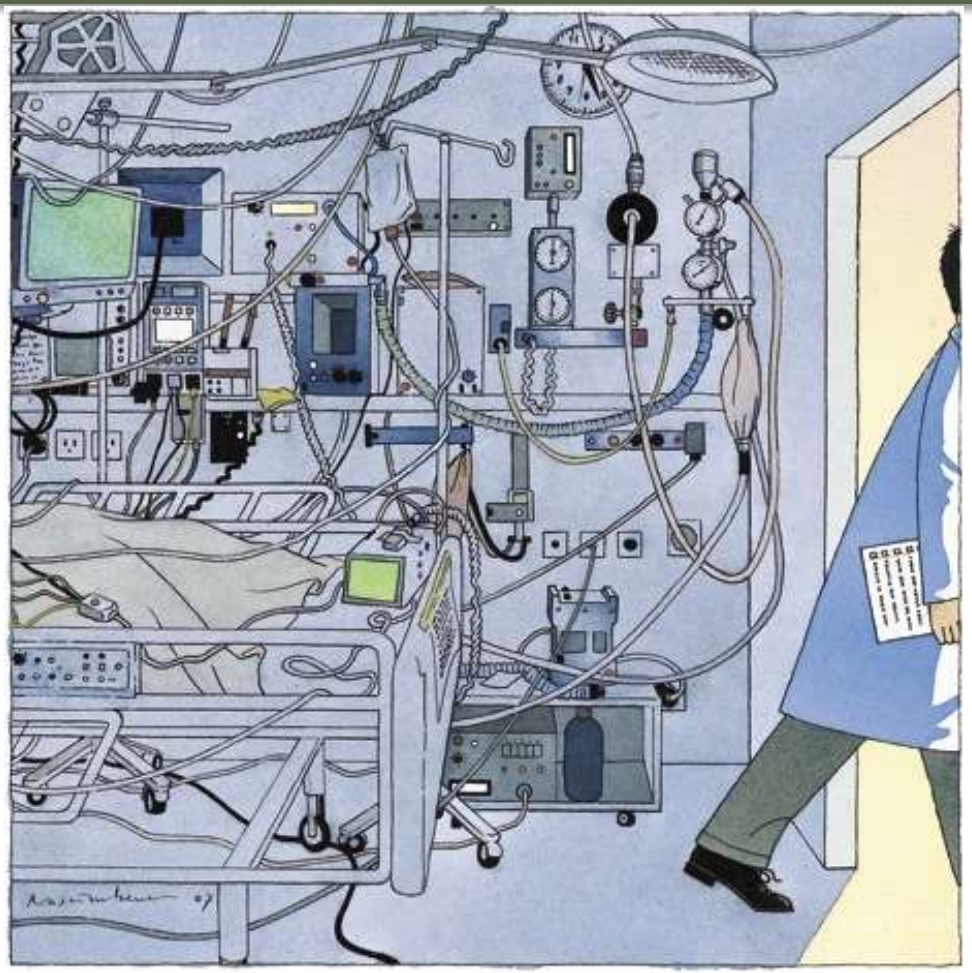
- Memory aid for minimum necessary steps
  - Make the minimum set of steps explicit
- Enable process verification
- Enable higher level of performance
  - Couple checklists with performance standards
- Instructional checklists
  - Generally more detail and steps more explicit

Checklists - Why

- **Complexity**.
- **Multidisciplinary team**.

"To handle complexity, we've split up the tasks among various specialties"

"The biggest source of serious error in this business is a failure of communication"



Checklists - Why

- Simple checklists at Johns-Hopkins reduced line infection rates from 11% to 0%
- The same model was deployed statewide in Michigan
- During the initial 15 months in Michigan, it was estimated that the checklist saved 1500 lives and $175 million

Checklists - Why

- THE ODDS:
  - ~200 steps per patient
  - ~400 patients per year
  - ~20 repetitive tasks (per fx)
  - ~30 fx/patient
  - ~0.1% failure rate – 1 in a 1000

Annual number of missed\failure steps =
(200*400+20*30*400)*0.001 = 320 (minor or major)

Checklists - Why

Table 2. Ranking of QM tools based on the effectiveness, in part following the suggestions of ISMP.[13]

0. Environment problem correction (Not tool)
- Sound Control
- Visual Control
- Cleaning
- Neatening
- Isolation
- Environmental Design

1. Forcing functions and constraints
- Interlock
- Barriers
- Computerized order entry with feedback

2. Automation and computerization
- Bar codes
- Automate monitoring
- Computerized verification
- Computerized order entry

3. Protocols, standards, and information
- Check off forms
- Establishing Protocol / Clarify Protocol
- Alarms
- Labels
- Signs
- Reduce similarity

4. Independent double check systems and other redundancies
- Redundant measurement
- Independent review
- Operational Checks
- Comparison with standards
- Increase monitoring
- Add status check
- Acceptance test

5. Rules and policies
- External Audit
- Internal Audit
- Priority
- Establishing / Clarify Communication Line
- Staffing
- Better Scheduling
- Mandatory Pauses
- Repair
- PMI (Preventive Maintenance Inspection)
- Establish and Perform QC and QA (Hardware and Software)

6. Education and Information
- Training
- Experience
- Instruction

Checklists – Where, When, Who, What

- The tough part is determining Where, When, Who, and What
- Need to separate between
  - Ticklists (Tick fever) – BAD
  - Checklists – GOOD
- Need a process to make 4 W's effective

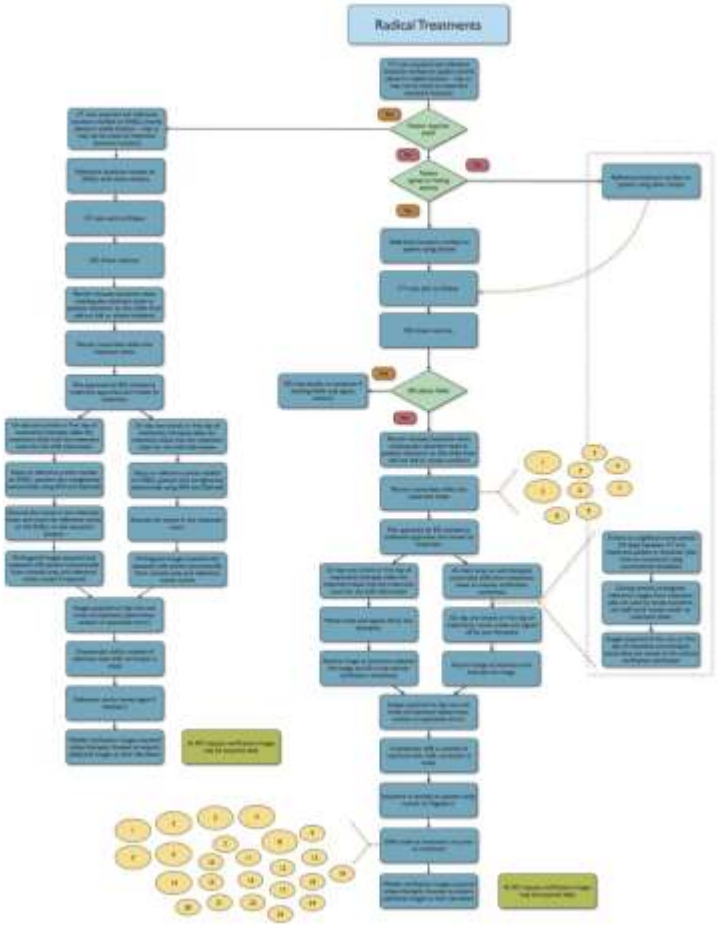
"In complex processes, after all, certain steps do not always matter"

DMAIC Cycle

Checklists – Where, When, Who, What

1. Map your workflows
2. Overlay incidents (errors/near misses) and critical steps/items – Where, When
3. Study and design a checklist – Who, What
4. Implement
5. Monitor and study
6. Go back to 2

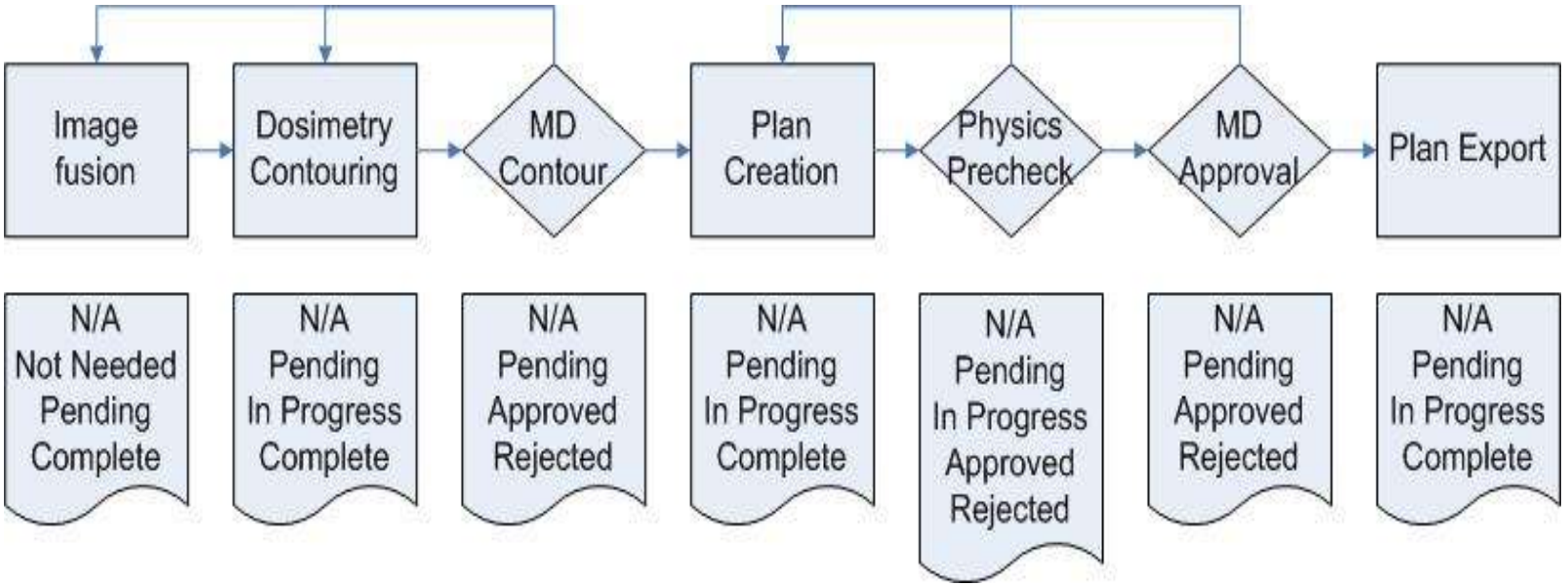
Checklists – Where, When, Who, What



Possible checklist locations

- Initiation of work (simulation, planning, treatment, etc.)
- Completion of work
- Approval tasks (treatment plans, OR procedures, etc.)
- Instruction checklists

Analyzed Workflow

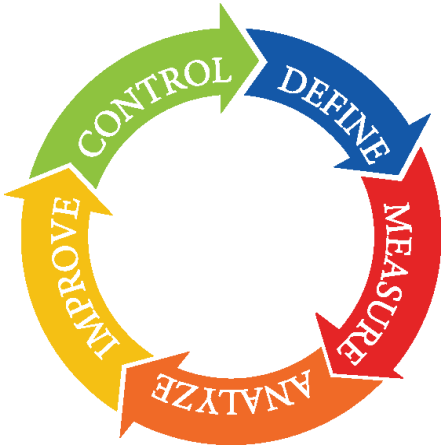


Failed items

- Items that are identified as failing/not done with checklist
  - Should be captured through ILS (all are near misses)
  - Unique opportunity to identify problem areas
  - Quantitative data on checklist effectiveness

Rejections

- Plans, MUs, port films, QAs, etc.
- Should be captured – they indicate failures
- Rejections should not be considered a part of the normal process
- All rejections are near-misses



Cost of rework

Sigma Level	DPMO	Error as %	Quality Yield	Cost of Quality/Cost of Poor Quality as % of Total Operating Cost
2	308,537	30.8%	69.0%	Uncompetitive
3	66,807	6.7%	93.3%	24-40%
4	6,219	0.6%	99.4%	15-20%
5	233	0.0233%	99.98%	5-15%
6	3.4	0.00034%	99.9997%	World Class

Implementation

- Introduce checklists to reduce variability and ensure compliance
- Track items identified by checklists
- Analyze the data
- Determine to maintain, alter, or discontinue existing checklists

Summary

- Checklists have demonstrable efficacy in many fields
  - Should be created with care
- Effective use requires maintenance "Must pause to sharpen the ax"
- Checklists greatly enhance compliance but not necessarily performance – need a safety culture to ensure performance

Acknowledgements:

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