Process Mapping

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Disclosures

- Board member, Center for the Assessment of Radiological Sciences (CARS); a not-for-profit center devoted to technology assessment, quality and safety

Learning Objectives

➢ To understand why process maps are useful in the clinical environment.

➢ To become familiar with a few examples of process maps.

➢ To learn several important tips for creating useful process maps.

Process Maps in context

➢ **Process Mapping** helps us to understand the details of the patient's clinical pathway.
➢ **Failure Modes and Effects Analysis** helps us to prioritize failure modes for further analysis.
➢ **Fault Tree Analysis** helps us to identify:
  ➢ possible systemic program weaknesses
  ➢ where to put barriers and checks.
➢ **Quality Management** uses these tools to help build a safer system.

TG 100 risk based QM development

Process Mapping

Failure Modes and Effects

Detect

Failure Modes → Effects

Cause

Fault Tree Analysis

Quality Management
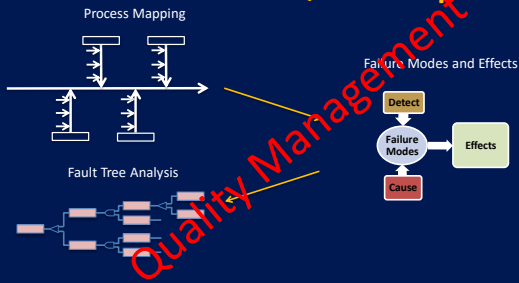
What is a Process?

➢ A process is a series of steps or actions performed to achieve a specific purpose.
  ➢ process has inputs and outputs
➢ A process can describe the way things get done.

➢ All clinical workflows involve many processes.

What is a Process Map?

➤ A pictorial representation of the sequence of actions that comprise a process.

Process Maps are used to

➤ Document processes.
  ➤ Provide a reference to discuss how things should be done
  ➤ Describe and understand the clinical workflow
➤ Analyze and improve on processes.
  ➤ Identify areas of complexity and ambiguity
  ➤ Identify failure modes and areas of re-work
  ➤ To generate ideas for safety barriers
  ➤ Illustrate process improvements

Why is Process Mapping Important?

➤ It provides an opportunity to learn, standardize, and improve clinical processes
  ➤ Clinical processes if not clearly documented can be ambiguous and subject to multiple interpretations

You don't learn to Process Map, you Process Map to learn". Myron Tribus Quote

What are the Benefits?

➢ Immediate benefits
  - ➢ Improving communication – everyone is on the same page!
  - ➢ Harmonizing clinical practice and ensuring that everyone operates with a shared model.
  - ➢ Improving efficiency. Workflow inefficiencies can become obvious when mapped out visually

Preparing to Process Map

- ➢ Assemble the Team.
- ➢ Agree on which process you wish to process map.
- ➢ Agree on the purpose of the process.
- ➢ Agree on beginning and ending points.
- ➢ Agree on level of detail to be displayed.
- ➢ Start by preparing a narrative outline of steps.
- ➢ Identify other people who should be involved in the process map creation, or asked for input, or to review drafts as they are prepared.

Process Mapping

➢ Select a process – key step
  - ➢ Scale is important
  - ➢ Start with a small simple process
  - ➢ Realistic opportunity to make improvements
  - ➢ After becoming experienced move on to complex processes

Day 1 Treatment: position patient for treatment
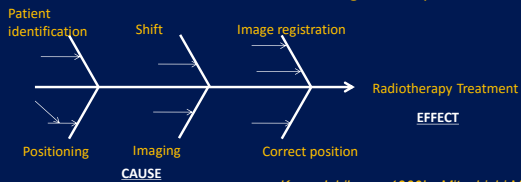

Day 1 Treatment: position patient for treatment

Sub-Process
- ➢ Patient Identification
- ➢ Positioning patient in the immobilization device
- ➢ Shift patient to treatment isocenter
- ➢ Imaging for treatment position verification
- ➢ Image registration and correction vector (x, y, z)
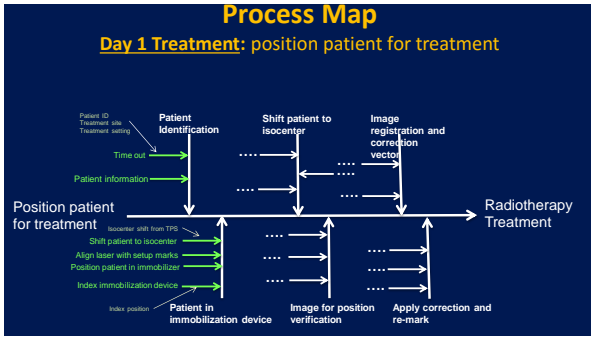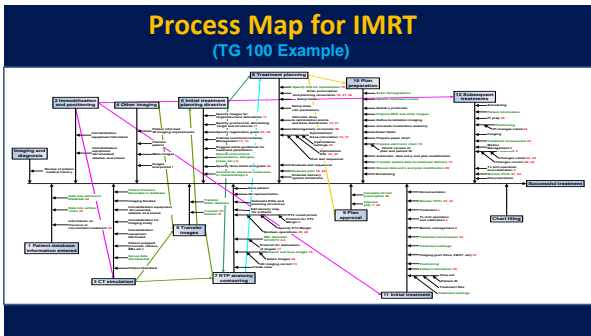- ➢ Apply correction vector and Re-mark

Process

Ishikawa or "Fishbone" Diagram

- ➢ General use is as a cause-effect tool
- ➢ Can be used to show the variables that go into a process

Patient identification   Shift   Image registration

Radiotherapy Treatment

EFFECT

Positioning   Imaging   Correct position

CAUSE

Kaoru Ishikawa, 1960's, Mitsubishi Motors

Process Map
Day 1 Treatment: position patient for treatment

Process Map for IMRT
(TG 100 Example)

Symbols Used to Process Map

Start & End: An **oval** is used to show the materials, information or action (inputs) to start the process or to show the results at the end (output) of the process.

Activity: A **box or rectangle** is used to show a task or activity performed in the process. Although multiple arrows may come into each box, usually only one arrow leaves each box.

Decision: A **diamond** shows those points in the process where a yes/no question is being asked or a decision is required.

Process Map of Patient Setup

Process flow diagrams

Process Maps – Why Bother?

Process Map of Conference Approval

CAUTION........
Choose the right level of detail. A process map that is too general loses its utility, while one that is too detailed becomes unmanageable and staff lose the big picture.

Useful, Usable Maps and Diagrams

What's important in designing process maps?

1. In healthcare it is customary to look at processes from the patient's perspective
2. For clinical processes a **multidisciplinary team** is necessary for the development of a valid map
3. The number of sub-processes identified should be the **smallest number** to meet the objective

Useful, Usable Maps and Diagrams

What's important in designing process maps?

4. The users of the map should have the **same understanding** of the meaning of the sub-processes.
5. Choose the right level of detail. A map that is too general loses its utility, while one that is too detailed becomes unmanageable and staff lose the big picture.
6. Don't get hung up on fancy graphics. There is value in the **process of creating the map.**

Closing Thoughts

- Brainstorming and Affinity Diagrams can be used to identify processes you wish to Process Map.
- There is no single right way to Process Map. It is a tool to standardize clinical workflow to minimize mistakes
- Process Maps can be used in a variety of settings outside Quality Improvement, such as:
  - Orienting new employees
  - In-service presentations
- Brainstorming possible process changes
- Creating or revising policies and procedures that support the process
  - Creating measures
  - Identifying logical outcomes of a process