MODULE 4: Quality Improvement Tools and their Application in KQMH

Unit 4.3: Tools for Continuous Quality Improvement and their Application

Part 5: Fishbone Diagram
Objectives

• Understand the cause–effect relationship in root cause analysis

• Apply the fishbone diagram to explore all the possible causes of a problem
Content

• Components of the fish bone diagram
• Constructing the fish bone diagram
• Analysis of the fish bone diagram
Cause & Effect Analysis
Cause & effect analysis / diagram

• Also called Fishbone diagram / Ishikawa diagram
• A cause–effect diagram helps a team organize theories for systematic review
• Answers the question “Why” for given problem
• The diagram challenges team members to come up with theories by asking: why?
• It must be presided by a study of how things are currently (Situation analysis)
Cause and effect analysis / diagram

• **Definition**: The cause and effect diagram is a tool generally used to gather all possible root causes.

• The **ultimate goal** being to uncover the root cause(es) of a problem.
**Cause & effect analysis diagram**

- The **specific problem** is usually stated as a **negative outcome ("effect")** of a process
  - late transfer of patients from the inpatient facility to skilled nursing facilities
- The diagram is a **visualization of relationships** between the outcome of a particular system or process
  - the major categories of that system or process (the main branches) and causes and sub-causes (sub-branches off main branches).
Cause-and-effect analysis / diagram

- Start with the outcome (problem statement) on the right of the paper, halfway down, draw a horizontal line across the middle of the paper with an arrow pointing to the outcome.
- Determine and define the major categories which describe the system or process under review, e.g.,

<table>
<thead>
<tr>
<th>5 Ps: (or)</th>
<th>5 Ms or</th>
<th>Hard</th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
<td>Manpower</td>
<td>Soft</td>
</tr>
<tr>
<td>Provisions</td>
<td>Materials</td>
<td>Life</td>
</tr>
<tr>
<td>Policies</td>
<td>Machines</td>
<td>Environment</td>
</tr>
<tr>
<td>Procedures</td>
<td>Methods</td>
<td>Management</td>
</tr>
<tr>
<td>Place</td>
<td>Measurements</td>
<td></td>
</tr>
</tbody>
</table>
Basic layout of cause and effect diagrams

Manpower (People) → Methods (Procedures) → Materials (Policies) → Environment → Machines (Plant) → EFFECT
Cause & effect analysis

M: Management
S: Soft
H: Hard
E: Environment
L: Life
Why are injections frequently discarded due to damage or false use?

- Undecided ordering system
- Wrong transfer of prescription
- Unstable stock condition
- Similar name of injection
- Hard (material, machine)
- Narrow space for preparation
- Too many injections
- More than one depository
- Ineffective use of prescription card
- Misunderstanding
- Dropping
- No confirmation of expiration of injection
- Environment

Why are injections frequently discarded due to damage or false use?
Why does this happen?

- No confirmation of expiration of injection
- Poor management of inventory
- Prescription card missing
- Misunderstanding
- Difficult abbreviations
- Similar name of injections
- Too busy to check
- Job interruption by patient’s call
- Narrow space for preparation
- Too many articles in the preparation box
- No exclusive arrangement for injections
- No use of the exclusive tray
- No exclusive shelf for drug
- Difficult picking the article from drug cart
- Dropping
- Misunderstanding
- No exclusive box for depository of cards
- Prescription card missing
- No exclusive shelf for drug
- Difficult picking the article from drug cart
- Narrow space for preparation
- Too many articles in the preparation box
- No exclusive arrangement for injections
- No use of the exclusive tray
- Misunderstanding
Example of cause–effect diagram

• The effect: delay in lab test results, is stated in a box at the right of the diagram, and an arrow points to the box.
• Five major categories of causes are indicated by branches extending diagonally from the arrow: materials, equipment, people, measurement and procedures.
• For each major category, possible causes are written on smaller branches extending from the diagonal lines.
Practicum Case 1: Main Hospital store

Main Hospital store section had problems of:

- goods haphazardly arranged within store instead of being stored as per procedure. Eventually goods pile, become redundant and there is overstocking. With such a situation pilferage could not be controlled.
Case 2: OPD

Outpatient Department (OPD) had problem of:

- delays in starting consultations and inconsistent flow of patients into consultation rooms that led to patients overcrowding and making many complaints.
Case 3: CSSD

Central Sterilization Supply Department (CSSD) had problem of

• many redundant sterilizing instruments, trays and packs on the shelves. These also expire and need to be resterilized.
Thank You