UNIT – IV CLINICAL ENGINEERING PROGRAM INDICATOR

Clinical engineering: program services, Program database – Clinical Engineering Program management, Program indicator, Managing clinical engineering performance using program indicators – Indicator management process.

Clinical Engineering Program Management

After determining the services provided and defining the database, the management practices must be decided.

Successful clinical engineering departments define their mission, vision, values, and goals, making sure that they should support the opinion of the parent organization.

- A mission statement describes the services that the department provides to the organization.
- The vision statement describes the direction in which the department is going.
- A value statement and definition of excellence help to define what is important to the department.
- Goals then can be developed, integrating the mission, vision, and values.

Strategic planning is very important for a clinical engineering department to be successful. It helps to understand where the department is now, find problems that need to be fixed, and plan for the future. This process is not easy. It needs careful thinking to match the available resources with what the department and the organization need. Good planning depends on having accurate information about how the department is performing and how its resources are being used. **Indicators** are tools that help measure how well services are being provided. They can show areas where the department can improve and allow comparison with other organizations to find more ways to do better. These tools help create plans to reach the department's goals.

Even though a department may have general goals, it's important to set clear and specific goals so everyone knows what to focus on. These goals can change over time because of new issues or challenges the organization faces. It's important for the staff to understand how these goals were made and how they can work towards achieving them.

To see if progress is being made, tools that measure performance are needed. Good indicators help track how well the department is doing, where improvements are needed, and how it compares with others.

Monitoring Department Performance: Indicators can be used to monitor the services provided by staff members, teams, and the department. Indicators should be accurate and objective. They can range from simple tallies (e.g., the number of jobs completed), totals(e.g., the number of hours spent doing specific tasks), or percentages (e.g., the percentage of available time spent performing specific tasks). There is a tight linkage among individual, team, and department performance.

As indicator data are made available, they can become a tool to prioritize and schedule pending activities, keeping everyone focused on what is important.

Quality Improvement Opportunities: While running the department, problems will come up. These problems are often found when the program's measurements don't meet the expected levels or when patterns show something is wrong. At that point, the department can start a quality improvement process. This means clearly defining the problem, looking at possible solutions, choosing the best one, and putting a plan into action to fix it. After the solution is in place, the program's measurements are used to check if the solution is working well.

External Comparison: sometimes we may get a chance to compare program indicators used in other organisations. This is called benchmarking, and it helps the department learn from the best practices of other organizations. It's important to clearly define the measurements used for this comparison so they are fair and accurate. If the measurements are defined the same way across different departments, the differences found (called a gap analysis) can help point out areas where improvements can be made. (i.e., differences in program indicator values obtained among facilities) can identify opportunities for improvement.

4. Clinical Engineering Program Indicators

It is important to have correct data.. By identifying a minimum data set required to define the services provided, one can reduce the difference in data collected by different staff members. After appropriate training, every staff member should be able to effectively identify the clinical engineering services provided and to document it properly.

Without complete data the analysis becomes problematic. This information in the database becomes very important to help getting data about department and staff performance as well as the services provided. Importance of these information increased as problems are resolved. In order to use these data effectively, a program that utilizes indicators to monitor clinical engineering services performance must be designed and implemented.

An indicator is a clear, measurable sign that shows how well something is being done. It is reliable if different people can get the same result from the same data. It is valid if the result helps find ways to improve quality. An indicator can be positive (for example, the number of IPMs (inspection and preventive maintenance) completed in a month) or negative (the number of IPMs not completed in a month). In both cases, it gives useful information for further study.

An indicator can assess different aspects of performance, including timeliness, efficiency, productivity, efficacy, safety, or customer satisfaction. With time, the reliability and validity of program indicators should evolve to the highest level possible.

An indicator can be used to measure and monitor different steps of a process.

- It can be used to assess the outcome of a specific process, such as the number of anesthesia machine.
- IPMs completed in a year. It also can be used to assess specific steps or results obtained during a process.
- One example would be the number of infusion pump repairs in a year that took over two weeks to complete because parts were not available.

Indicators can be grouped into two main types:

- **Sentinel event indicator**: This shows a rare but serious problem, usually linked to safety. Example: a piece of equipment fails and causes harm to a patient.
- **Aggregate data indicator**: This shows performance by looking at many events. It can be:

  1.Continuous variable indicator: measured on a scale, such as the number of IPMs planned each year.

  2.Rate-based variable indicator: measured as a proportion or ratio.

  - *Proportion example*: number of IPMs completed ÷ total IPMs scheduled.
  - *Ratio example*: number of repairs ÷ 100 hospital beds.

There are many indicators available to check how well clinical engineering is working. But trying to measure everything can cause problems. Choosing the right indicators needs good planning and review. Indicators are only one part of

performance management, and they should change over time as processes become better understood.