

Healthcare Performance Measurement

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MHA623
Healthcare Quality

Lecture 4



Intended Objectives

1. Define the concept of performance measurement and its role in decision-making within healthcare settings.
2. Explain the attributes of effective information, including accuracy, relevance, and consistency, in performance measurement.
3. Discuss the measurement, assessment, and improvement cycle for enhancing organizational performance.
4. Identify the significance of patient experience measures and Key Performance Indicators (KPIs) in assessing healthcare quality.

Introduction to Measurement

- **Definition:** The process of gathering information to support decision-making.
- **Everyday Analogy:**
 - A car dashboard displays essential data like speed, fuel levels, and engine health.
 - Enables informed decisions: When to refuel, adjust speed, or address mechanical issues.

Introduction to Measurement

➤ Purpose of Measurement

■ Key Goals:

- Understand the current situation.
- Make decisions to improve outcomes.
- Identify and mitigate risks (e.g., running out of fuel).

Introduction to Measurement

➤ Attributes of Effective Information

- **Accuracy:** Data must be correct and reliable.
- **Relevance:** Only meaningful data should be included.
- **Example:**
 - “**Check engine**” light as accurate but misunderstood if it malfunctions.
 - **RPM gauge** may not be relevant to all drivers.

Introduction to Measurement

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➤ Interpreting Information

■ Challenges:

- Understanding metrics like kilometers/hour instead of miles/hour.
- Ensuring consistent units for comparison (e.g., fuel efficiency).



Measurement in Quality Management



Measurement in Quality Management

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- **Definition:** Using data to monitor and improve organizational performance.
- **Applications:** Costs, quality, efficiency, productivity, and customer satisfaction.
- **Analogy:** Works like a car dashboard guiding improvements.

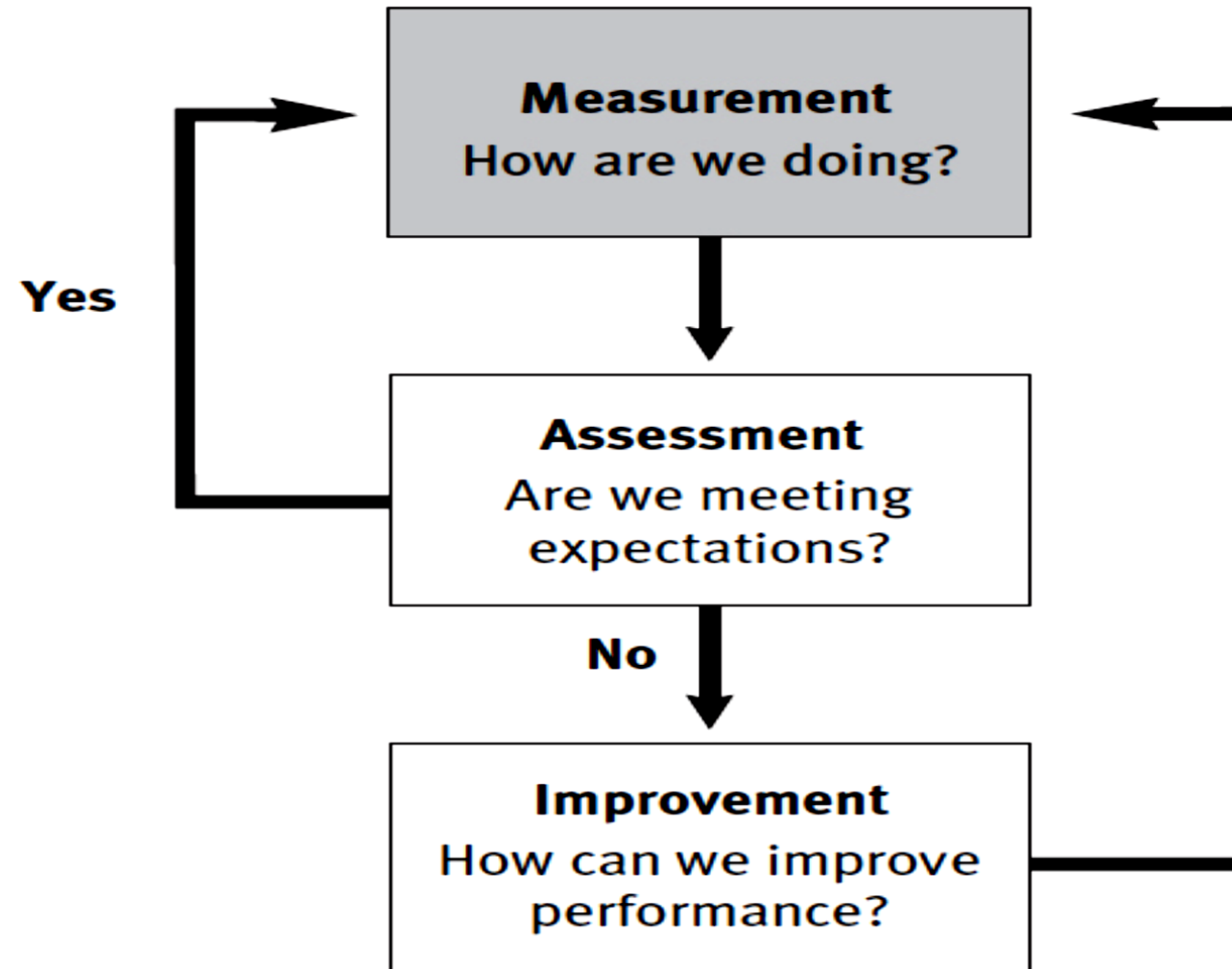
Measurement, Assessment, and Improvement Cycle

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➤ Steps in the Cycle:

1. **Measure Performance:** Gather data.
2. **Assess Performance:** Determine acceptability.
3. **Implement Improvements:** Adjust processes as needed.



*Basic characteristics of
good measurement
practices*



1. Accuracy in Performance Measurement

- **Definition:** Correctly capturing what is intended.
- **Example:**
 - Recording **exact patient sign-in times** for accurate wait time analysis.

2. Validity of Measures

- **Definition:** Refers to the extent to which a healthcare measurement tool or method accurately measures what it is intended to measure.
- **Example:**
 - **Feedback question:** “Rate the quality of customer service.”
 - **Issue:** Patients may interpret “customer service” differently.
- ✓ *Validity ensures relevance to specific performance goals.*

3. Usefulness of Performance Measures

A. Relevance:

- **Focus:** Data should provide actionable insights.
- **Example:** Demographic data's limited utility unless tied to clinic performance.

B. Avoiding Irrelevant Data:

- **Focus:** Select data aligned with organizational goals.
- **Example:** Overloaded billing system with unhelpful statistics.



4. Ease of Data Interpretation

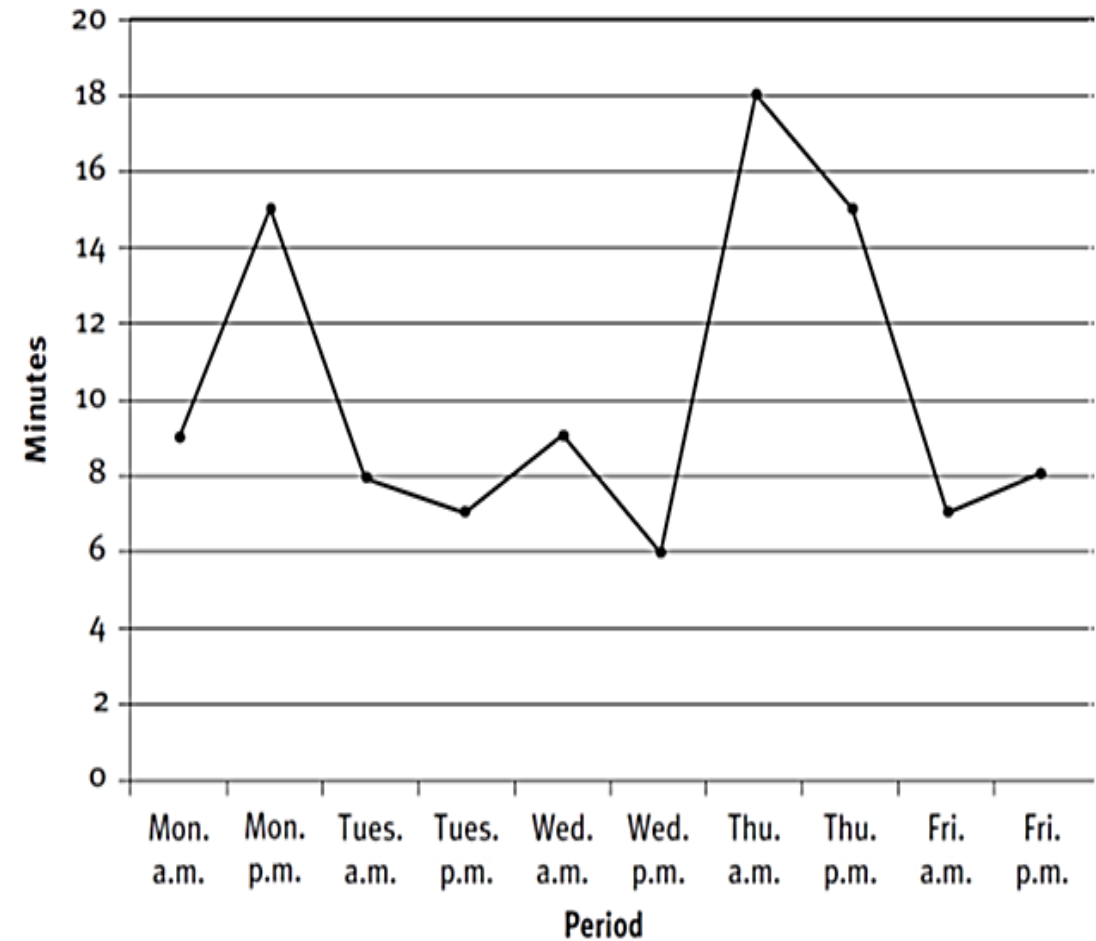
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➤ Best Practices:

- Simplify complex datasets.
- Use visual aids like graphs for clarity.

Line Graph Showing Average Patient Wait Times



5. Importance of Consistency

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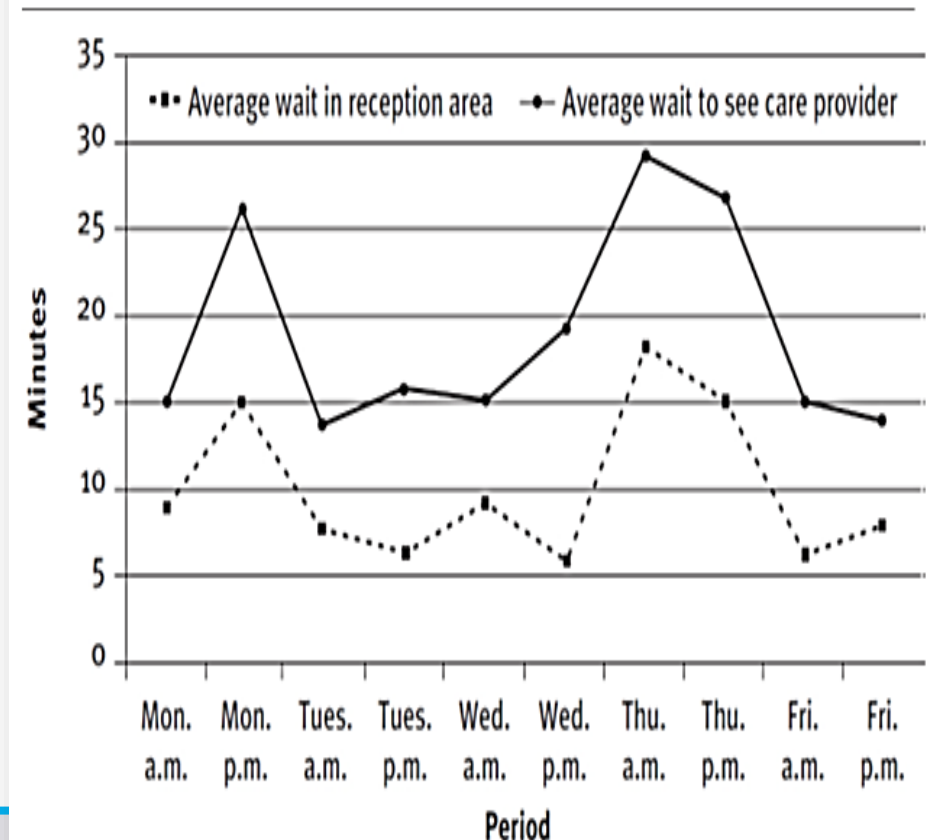
➤ Uniform Data Reporting:

- Essential for comparing trends.

➤ Example:

- Changing the definition of waiting time endpoints affects analysis.

Line Graph Showing Two Measures of Patient Wait Times



Patient Experience Measures



Patient Experience Measures

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➤ Definition:

- Patient experience measures combine **process indicators** (what was done during care) and **outcome indicators** (the results of the care provided).

➤ Why It Matters:

- These measures help assess the quality of care **from the patient's perspective**, influencing overall satisfaction and trust in healthcare systems.

Patient Experience Measures

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➤ Examples:

- ***Effectiveness of pain management:*** Were patients' pain levels adequately addressed during their stay?
- ***Communication on medications:*** Were the purposes, side effects, and administration instructions clearly explained to the patient before use?

Key Performance Indicators (KPIs)



Key Performance Indicators (KPIs)

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➤ Definition:

- KPIs are performance measures derived from **evidence-based standards** or **expert consensus** (when evidence is unavailable).

➤ Purpose:

- Act as **indicators or alerts** rather than direct measures of quality.
- Highlight **areas needing improvement** in processes and outcomes of care.

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**How can I determine
the suitable KPIs for
my healthcare facility?**



Areas to select KPIs from

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- **High volume:** Diagnostics or procedures.
- **High risk:** For patients, employees, or infrastructure.
- **Problem prone:** According to daily operations.

What about KPIs Selection Criteria?

Validity

- Does the KPI measure what it is supposed to measure?

Reliability

- Does the KPI provide a consistent measure?

Explicit evidence base

- Is the KPI supported by scientific evidence or the consensus of experts?

Acceptability

- Are the KPIs acceptable?

What about KPIs Selection Criteria?

Feasibility

- Is it possible to collect the required data and is it worth the resources?

Sensitivity

- Are small changes reflected in the results?

Specificity

- Does the KPI actually capture changes that occur in the service for which the measure is intended?

Relevance

- What useful decisions can be made from the KPI?

Types of KPIs



Input KPIs:

Measure assets & resources.

Ex: Funding for training.



Process KPIs:

- Measure the efficiency or productivity of the business processes.
- Ex: Door to Cath lab. time.



Outcome KPIs:

- Measures benefits of performance as an outcome of a business activity.
- Ex: Employees' satisfaction rate.

BSC perspectives	Indicators		Indicators	
Finance (F)	F1	Ratio of total revenue to total costs	F6	Current cost per bed
	F2	% Deductions of hospital	F7	the ratio of capital expenditures to current costs
	F3	Average hospitalization expenditures	F8	the cost of drugs and materials
	F4	Average outpatient expenditures	F9	%Personnel costs of total costs
	F5	Average expenditures per bed per day	F10	Total fixed cost for per Bed occupancy
Internal Process (P)	P1	average Length of stay	P15	Wrong-site surgery
	P2	Bed Turnover Interval	P16	Leaving a foreign object during surgery
	P3	Bed occupancy	P17	Medication errors
	P4	bed turnover	P18	wrong in the type of blood group
	P5	Mortality rate	P19	Patient falls rate
	P6	Cancelled operations	P20	Hospital accidents prevalence rate
	P7	% Repeated surgeries	P21	Sentinel event rate
	P8	Discharge with Personal satisfaction	P22	Needlesticks and sharps injury
	P9	Hospital infection rate	P23	the legal complaint from a hospital
	P10	Clinical errors	P24	Doctors on-call at night
	P11	Readmission rate	P25	Waiting time for admission operation room
	P12	% Occupational accidents	P26	Mean Length of stay in emergency department
	P13	Pressure Ulcers rate	P27	Emergency Room (ER) waiting time
	P14	Medical errors	P28	Waiting time from triage to see doctor
Learning and Growth (G)	G1	Staff satisfaction rate	G6	the amount of the electronic medical record
	G2	Staff turnover	G7	number of days of sick leave to total employees ratio
	G3	Training expenditures per capita	G8	Employee absenteeism rate
	G4	key Jobs Contains substitute	G9	Rate of employee sick-leave
	G5	Average hours of Internet use		
Customer (C)	C1	The facilities for families and visitors	C4	Other Stakeholders satisfaction
	C2	Patients satisfaction percentage	C5	Social satisfaction
	C3	Rate of Patient complaints		

Average Daily Census

$$\frac{\text{Total service days for the unit for the period}}{\text{Total number of days in the period}}$$

Average Length of Stay

$$\frac{\text{Total length of stay (discharge days)}}{\text{Total discharges (includes deaths)}}$$

Percentage of Occupancy

$$\frac{\text{Total service days for a period}}{\text{Total bed count days in the period}} \times 100$$

Hospital Death Rate (Gross)

$$\frac{\text{Number of deaths of inpatients in period}}{\text{Number of discharges (including deaths)}} \times 100$$

Gross Autopsy Rate

$$\frac{\text{Total inpatient autopsies for a given period}}{\text{Total inpatient deaths for the period}} \times 100$$

Net Autopsy Rate

$$\frac{\text{Total inpatients for a given period}}{\text{Total inpatient deaths minus unautopsied coroners' or medical examiners' cases}} \times 100$$

Hospital Autopsy Rate (Adjusted)

$$\frac{\text{Total hospital autopsies}}{\text{Number of deaths of hospital patients whose bodies are available for hospital autopsy}} \times 100$$

Fetal Death Rate

$$\frac{\text{Total number of intermediate and/or late fetal deaths for a period}}{\text{Total number of live births + intermediate and late fetal deaths for the period}} \times 100$$

Neonatal Mortality Rate (Death Rate)

$$\frac{\text{Total number of newborn deaths for a period}}{\text{Total number of newborn infant discharges (including deaths) for the period}} \times 100$$

Maternal Mortality Rate (Death Rate)

$$\frac{\text{Total number of direct maternal deaths for a period}}{\text{Total number of obstetrical discharges (including deaths) for the period}} \times 100$$

Caesarean-Section Rate

$$\frac{\text{Total number of caesarian sections performed in a period}}{\text{Total number of deliveries in the period (including caesarian sections)}} \times 100$$

			Department: Radiology
Rad.	Measure: % compliance with TAT of routine x-ray Radiological investigations		
	Dimension: Timeliness	Data collection methodology: Retrospective	Target: 100%
Numerator: Total No. of routine x-ray radiological investigations compliant with specified time frame		(+) included: All routine x-ray investigations compliant with specified time frame (-) Excluded: none	Data Source: HIS
Denominator: Total No. of routine x-ray radiological investigations		(+) included: All routine x-ray investigations done (-) Excluded: none	
TAT: Turnaround Time Time frame: (start: Start of X-ray examination) (Finish: Reporting X-ray result)			
Rationale:	Related JCI standard:		Related Departments:
Through this indicator we can monitor timeliness of the care provided in radiology department.			Radiology Nursing
Type of measure	Data Reported as / Frequency		Benchmark:
process indicator	Monthly		
Sample size: 58 Cases	Data collection tool		Data collection plan

[illegible]

Where

- Data will be collected in pharmacy department.

Who

- Data will be collected by Officer/ pharmacist in-charge (indicator co-ordinator) of the pharmacy department.

How frequent

- Monthly data collection.

Who should verify

- Data will be verified by Head of pharmacy department.

How to collect

- Data is suggested to be collected from ***High Alert Medications monitoring sheet***

Hospital KPI Dashboard Depicting Total Patients

This slide focuses on hospital KPI dashboard which covers patient satisfaction, operational costs, available staff, average wait time and patients, treatment plan of doctors with divisions such as cardiology, dermatology, gynecology, etc.

Length of Stay



Total Patients

50,876

Patients Admitted **42,456**



Operational Cost

\$16,456K

Avg Cost per Patient **6,2K**



Doctors

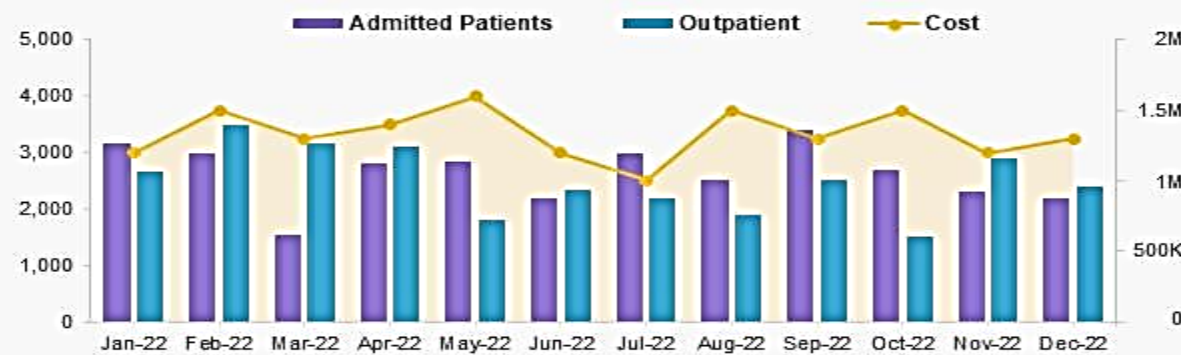
Average patients per Dr per Month

27.46

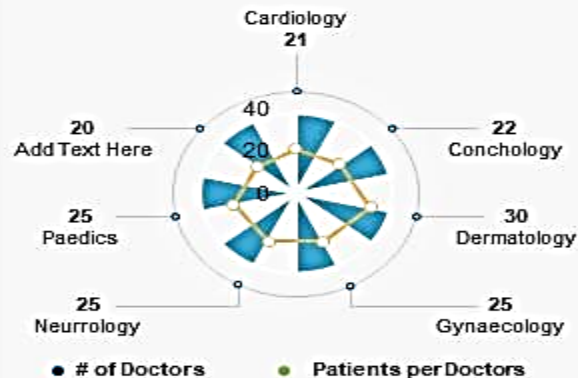
Admission by Division



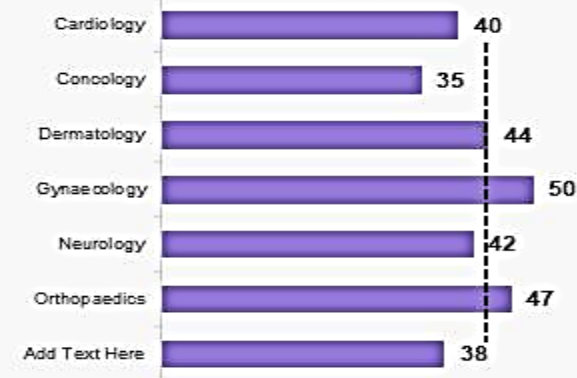
Admission vs Cost Over Time



Available Staff per Division



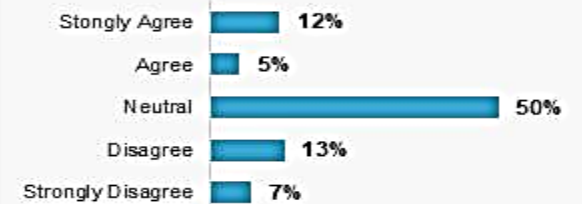
Average Wait Times by Division



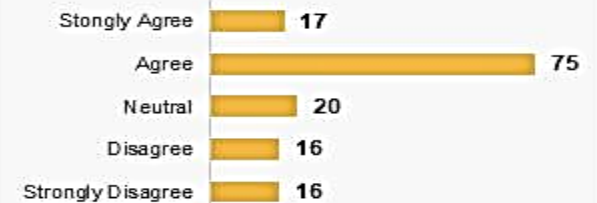
Overall Patient Satisfaction



Doctor's Treatment Plan



Confidence in Treatment



Wrap Up

1. Performance measurement is crucial for monitoring and improving healthcare quality and efficiency.
2. Effective measurement relies on accurate, relevant, and consistent data aligned with organizational goals.
3. The measurement, assessment, and improvement cycle guides continuous quality enhancements.
4. Patient experience measures evaluate both process and outcome indicators to ensure holistic care quality.

Wrap Up

5. KPIs serve as alerts, highlighting areas for improvement in processes and outcomes.
6. Selecting suitable KPIs involves focusing on high-volume, high-risk, or problem-prone areas within the organization.
7. Best practices include simplifying data interpretation and using visual tools for clarity.
8. Consistency in data reporting is essential for meaningful trend comparisons and reliable performance evaluations.



Thank You