

# Indicator Management

PINAR BOL

Quality Management Unit

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# Measurement and assessment

- Person, system, object
- specific features
- degree of having
  - numbers and symbols
- measurement results
- comparison with the criteria
- arrive the decision
  - Namely
- Measurement- identification process
- Assessment- comparison

# Benefits of measuring

- achieve aims
- discover of problem
- understanding of process

## Measurement

- Not estimation – objectif data

# Definitions

Indicators;

- As measures that assess a particular health care process or outcome
- As quantitative measures that can be used to monitor and evaluate the quality of important governance, management, clinical, and support functions that affect patient outcomes
- As measurement tools, screens, or flags that are used as guides to monitor, evaluate, and improve the quality of patient care, clinical support services, and organizational function that affect patient outcomes

# History

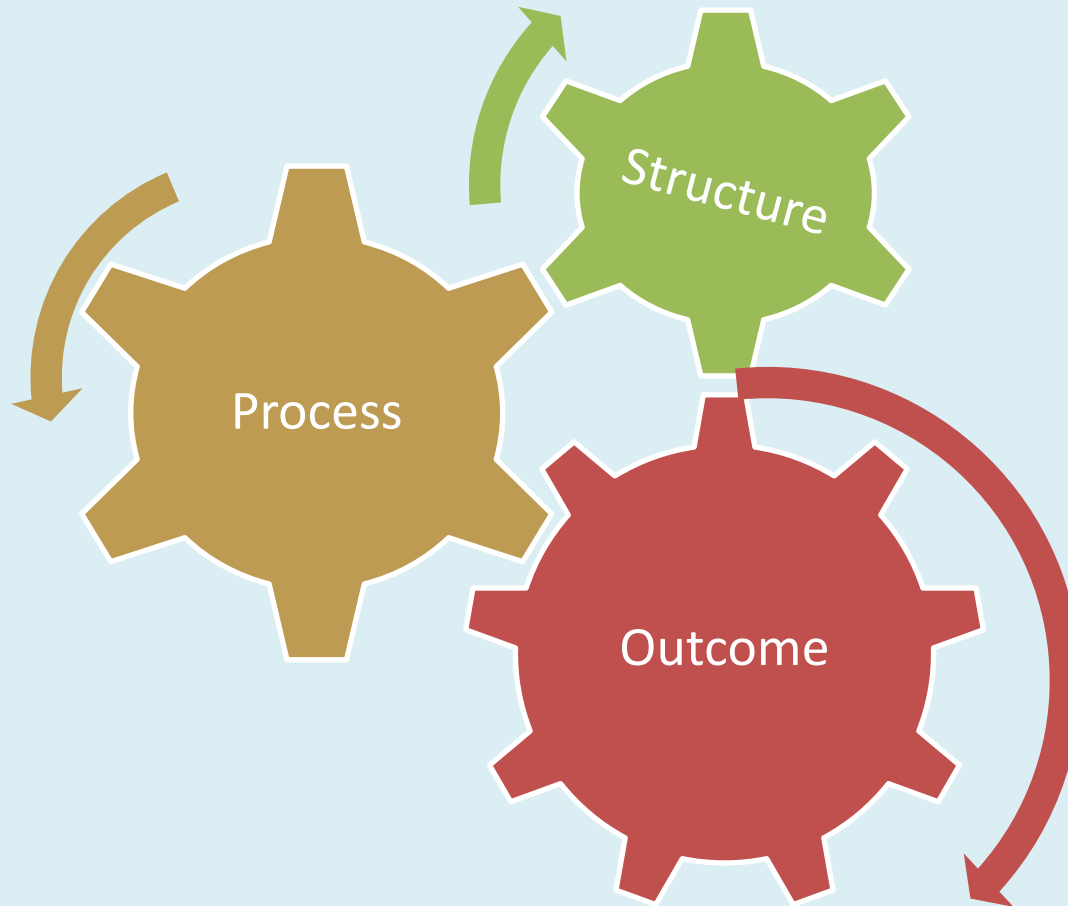
- Florence Nightingale- 20th century
- Institute of Medicine-IOM- 1999«To Err is Human»
- ✓ that preventable medical errors in hospitals result in as many as 98,000 deaths per year
- ✓ preventable medication errors occur at least 1.5 million times per year;
- ✓ on average, only 55% percent of recommended care is delivered.

# Purposes of indicator measurement and monitoring

Main purpose- patient safety

- Document the quality of care,
- Make comparisons (benchmarking) over time between places(e.g. hospitals),
- Make judgments and set priorities
- Support accountability, regulation and accreditation,
- Support quality improvement,

# Donabedian's Model





# Structural indicators

- ‘Structure’ refers to health system characteristics that affect the system’s ability to meet the health care needs of individual patients or a community.
- Structural indicators describe the type and amount of resources used by a health system or organization to deliver programs and services, and they relate to the presence or number of staff, clients, money, beds, supplies, and buildings.

# EXAMPLE

- Proportion of specialists to other doctors
- Access to specific technologies (e.g. MRI scan)
- Access of specific units (e.g. stroke units)
- Clinical guidelines revised every 2nd year
- Physiotherapists assigned to specific units

# Process indicators

- Process indicators assess what the provider did for the patient and how well it was done.
- Processes are a series of inter-related activities undertaken to achieve objectives.
- Process indicators measure the activities and tasks in patient episodes of care.

# EXAMPLE

- Proportion of patients with diabetes given regular foot care
- Proportion of patients assessed by a doctor within 24 hours of referral
- Proportion of patients treated according to clinical guidelines

# Outcome indicators (The Five Ds)

- Outcomes are states of health or events that follow care, and that may be affected by health care.
- An ideal outcome indicator would capture the effect of care processes on the health and well being of patients and populations.

# Outcomes can be expressed as 'The Five Ds' :

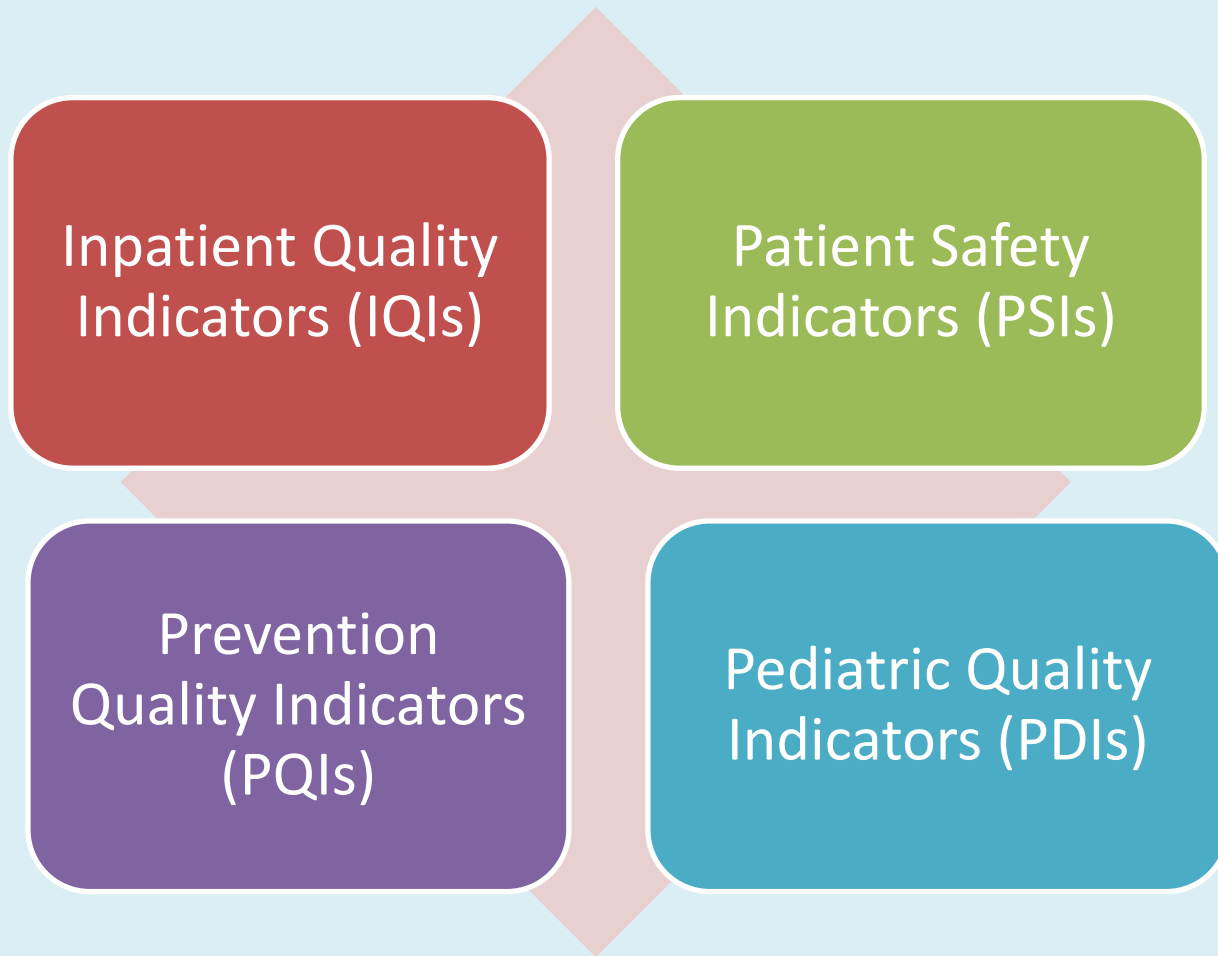
- Death: a bad outcome if untimely,
- Disease: symptoms, physical signs, and laboratory abnormalities,
- Discomfort: symptoms such as pain, nausea, or dyspnea,
- Disability: impaired ability connected to usual activities at home, work, or in recreation,
- Dissatisfaction: emotional reactions to disease and its care, such as sadness and anger.

# Agency for Healthcare Research and Quality (AHRQ)

- 1994; Healthcare Cost and Utilization Project (HCUP)
- 2001; AHRQ Quality Indicators (AHRQ QIs).

[http://www.qualityindicators.ahrq.gov/Modules/pqi\\_overview.aspx](http://www.qualityindicators.ahrq.gov/Modules/pqi_overview.aspx)

# AHRQ maintains four sets of QIs:





# Inpatient Quality Indicators

- The Inpatient Quality Indicators (IQIs) are a set of measures that provide a perspective on hospital quality of care using hospital administrative data.
- There are 32 IQIs reflecting the quality of care provided in hospitals. The indicators fall in four categories.

# Inpatient Quality Indicators-1

- The 1st category; inhospital mortality rates for seven specific medical conditions.
- The 2nd category; inhospital mortality rates for eight surgical procedures.
- The 3rd category; utilization rates for eleven procedures for which there is potential for overuse, underuse, or misuse
- The 4th category; indicators of the hospital-level volume for six complex procedures for which research suggests a positive impact of case volume on patient outcomes

# IQIs

Esophageal Resection Mortality Rate

Hip Fracture Mortality Rate

Pancreatic Resection Mortality Rate

Bilateral Cardiac Catheterization Rate

Acute Myocardial Infarction Mortality Rate

Congestive Heart Failure Mortality Rate

Acute Stroke Mortality Rate

Pneumonia Mortality Rate

Cesarean Delivery Rate

# Prevention Quality Indicators

- The Prevention Quality Indicators (PQIs) are 14 indicators that can be used with hospital inpatient discharge data to identify quality of care for "ambulatory care sensitive conditions."
- These are conditions for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease.
- The PQIs are population based and adjusted for covariates.
- They provide insight into the community health care system or services outside the hospital setting.

# PQIs

Chronic Obstructive Pulmonary Disease Admission Rate

Hypertension Admission Rate

Low Birth Weight Rate

Urinary Tract Infection Admission Rate

Bacterial Pneumonia Admission Rate

Dehydration Admission Rate

Rate of Lower-Extremity Amputation Among Patients With Diabetes

Congestive Heart Failure Admission Rate

# Patient Safety Indicators

- The Patient Safety Indicators (PSIs) are 27 indicators that providing information on potential in hospital complications and adverse events following surgeries, procedures and childbirth.
- The PSIs can be used to help hospitals identify potential adverse events that might need further study; provide the opportunity to assess the incidence of adverse events and in hospital complications using administrative data found in the typical discharge record; include indicators for complications occurring in hospital that may represent patient safety events; and, indicators also have area level analogs designed to detect patient safety events on a regional level.

# PSIs

Death in Low-Mortality Diagnosis Related Groups (DRGs)

Death Among Surgical Inpatients With Serious Treatable Complications

Foreign Body left in During Procedure

Iatrogenic Pneumothorax Rate

Postoperative Respiratory Failure Rate

Postoperative Pulmonary Embolism or Deep Vein Thrombosis rate

Transfusion Reaction

Birth Trauma—Injury to Neonate

# Pediatric Quality Indicators

- The Pediatric Quality Indicators (PDIs) are 18 indicators that can be used with hospital inpatient discharge data to provide a perspective on the quality of pediatric healthcare.
- Specifically, PDIs screen for problems that pediatric patients experience as a result of exposure to the healthcare system and that may be amenable to prevention by changes at the system or provider level.
- This PDIs focus on potentially preventable complications and iatrogenic events for pediatric patients treated in hospitals, and on preventable hospitalizations among pediatric patients.



# PDIs

Pressure Ulcer Rate

Pediatric Heart Surgery Mortality Rate

Transfusion Reaction

Gastroenteritis Admission Rate

Asthma Admission Rate

Iatrogenic Pneumothorax Rate

Pediatric Heart Surgery Volume

Foreign Body Left During Procedure

# Key characteristics of an ideal indicator

Indicator is based on agreed definitions, and described

indicator is highly or optimally specific and sensitive,  
exhaustively and exclusively

Indicator is valid and reliable

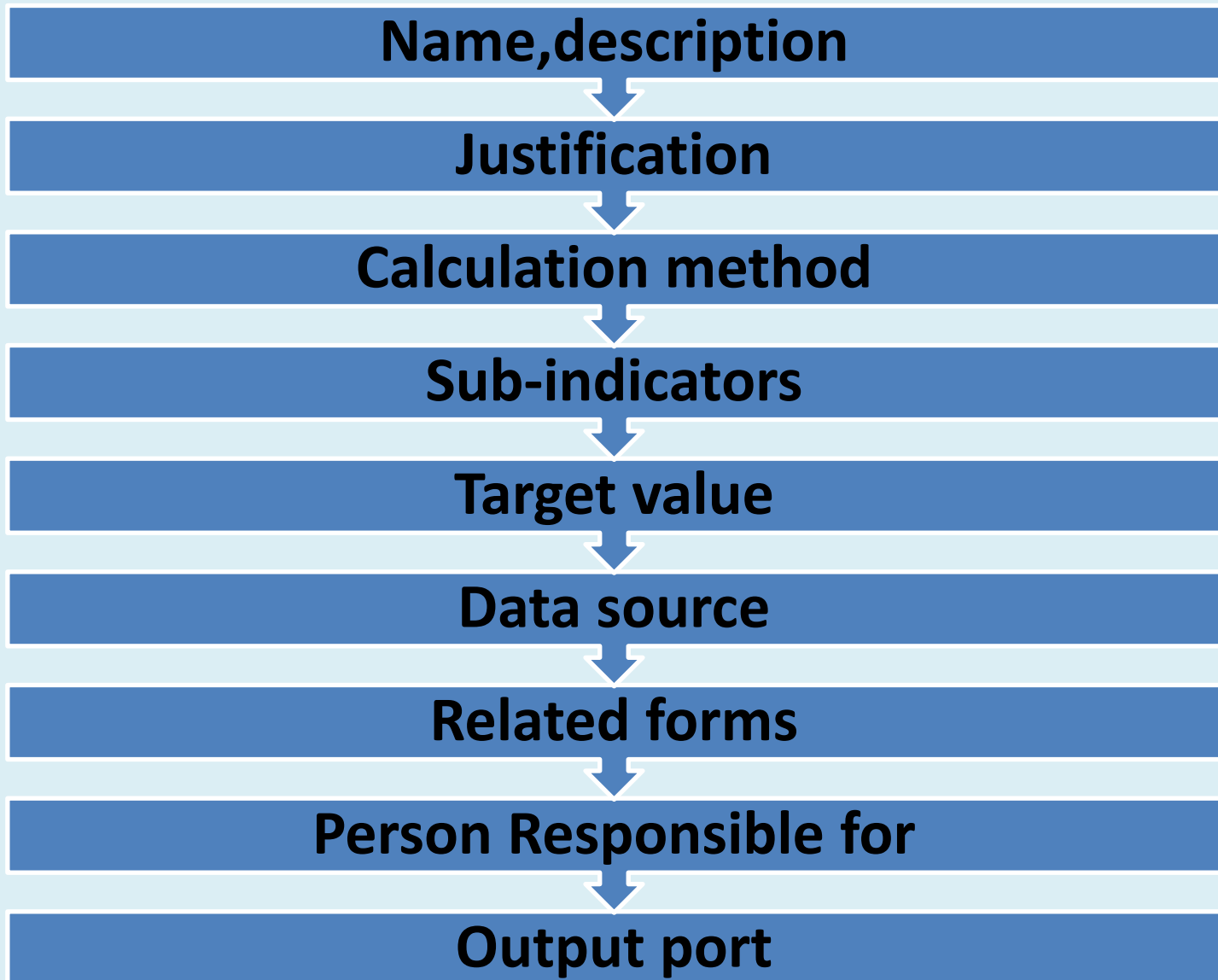
Indicator discriminates well

indicator relates to clearly identifiable events for the user  
(e.g. if meant for clinical providers, it is relevant to clinical  
practice)

indicator permits useful comparisons

indicator is evidence-based

# Indicators Management Identity Card



## Rate of operating table use

<b>Definition</b>	Efficiency of use of the operating theatre for elective and emergency surgery
<b>Justification</b>	Reduce patient waiting times, efficient use of hospital resources
<b>Calculation method</b>	Total duration of surgery performed on the table / total working hours X 100
<b>Sub-indicators</b>	The period between the two cases per operating table
<b>Target value</b>	
<b>Data source</b>	Hospital information management system, or written records
<b>Related forms</b>	Operating Table Operating Ratio Monthly Data Analysis Form Operating Table Operating Ratio Data Collection Form Operating Table Operating Ratio Annual Data Analysis Form
<b>Data collection period</b>	Monthly
<b>Data analysis period</b>	3 months
<b>Person Responsible for</b>	Physician and nurse responsible for operating room
<b>Output port</b>	Efficiency, effectiveness
<b>To be considered</b>	Operating time: the time taken between the patient enters and leaves the operating room.

# Turkey -Hospital Service Quality Standards-2011

- Standards were built on a model composed of 5 sections being horizontal and vertical in the section system and designed in a way to cover all departments of the agency.
- Vertical Sections include Institutional Service Management, Health Service Management, Support Service Management, Indicator Management while the horizontal section includes Patient and Occupational Safety

# QUALITY INDICATORS

- Indicator card shall be prepared.
- Monitorization shall be performed based on the indicator card.
- Periodical analyses in relation to the indicator shall be performed.
- Corrective preventive activity shall be initiated when required.

# HQS- Indicators

- Stab wounds
- Staff exposed to spillage of blood and bodily fluids
- Mortality rates in the intensive care unit
- Pressure ulcer rates in the intensive care unit
- Hospital infection rates in the intensive care unit
- Surgical site infection rates
- Rate of fall patients
- C-section rate
- Rate of operating table use

# HQS- Indicators-2

- Rate of rehospitalization at the intensive care unit
- Number and ratio of patients re-applying to the emergency department within 24 hours with the same complaint
- Number, rate and diagnoses of patients being referred to another healthcare center
- Length of stay of patients staying in the observation room



# HQS- Indicators-3

- Duration of arrival of the consultant/attending physician called to the emergency department
- Compliance between cytologic and pathologic diagnosis shall be evaluated and compliance rates
- The rate of nurse rotation among departments
- The rate of fully completed patient files
- The rate of polyclinic room number per physician
- Proper use of antibiotics in surgical prophylaxis

- "first do no harm"

- Thank you