

# Introduction to Healthcare Operations

# Introduction to Healthcare Operations Management

*(Key concepts, goals, and tools for managing the delivery of health services)*

## 1. What Is Healthcare Operations Management (HOM)?

| Aspect     | Description                                                                                                                |
|------------|----------------------------------------------------------------------------------------------------------------------------|
| Definition | The systematic design, planning, execution, and control of processes that create and deliver health?care services.         |
| Scope      | Patient flow, capacity planning, supply chain, staffing, quality & safety, information systems, and financial performance. |
| Goal       | Provide high?quality, safe, and patient?centered care while maximizing efficiency and controlling costs.                   |

## 2. Core Principles

| Principle               | Why It Matters                                                                                              |
|-------------------------|-------------------------------------------------------------------------------------------------------------|
| Value-Based Care        | Aligns operations with outcomes that matter to patients and payers.                                         |
| Process Orientation     | Treats every clinical or administrative activity as a repeatable process that can be measured and improved. |
| Lean Thinking           | Eliminates waste (e.g., waiting, over-processing, excess inventory) to streamline care delivery.            |
| Demand-Supply Matching  | Balances patient demand with resources (staff, beds, equipment) to avoid bottlenecks.                       |
| Continuous Improvement  | Uses data-driven cycles (Plan-Do-Study-Act, Six Sigma DMAIC) to refine processes.                           |
| Patient-Centered Design | Structures workflows around the patient journey rather than around departmental silos.                      |

### 3. Key Elements of the Healthcare Operations System

| Element | Typical Activities | Typical Metrics |
|---------|--------------------|-----------------|
|---------|--------------------|-----------------|

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|                                     |                                                           |                                                         |
|-------------------------------------|-----------------------------------------------------------|---------------------------------------------------------|
| <b>Capacity Planning</b>            | Bed allocation, operating room scheduling, ICU planning   | Occupancy rate, turnover time, elective surgery backlog |
| <b>Patient Flow Management</b>      | Admission, triage, transfer, discharge                    | Length of stay (LOS), wait times, throughput time       |
| <b>Supply Chain &amp; Inventory</b> | Procurement, storage, distribution of drugs, devices, PPE | Stockout frequency, inventory turnover, cost per case   |
| <b>Workforce Management</b>         | Scheduling, skill mix, overtime, training                 | Labor productivity, absenteeism, patient-to-nurse ratio |
| <b>Quality &amp; Safety</b>         | Clinical pathways, infection control, error reporting     | HCAHPS scores, readmission rate, adverse event rate     |
| <b>Information Systems</b>          | EMR/EHR, scheduling software, analytics platforms         | Data accuracy, system uptime, decision support usage    |
| <b>Financial Management</b>         | Cost accounting, revenue cycle, budgeting                 | Cost per DRG, cash flow cycle, margin by service line   |

## 4. Common Process Frameworks

| Framework                          | Main Steps                                                                        | Typical Application                            |
|------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------|
| <b>Lean Value Stream Mapping</b>   | Identify value-adding steps ? Map current state ? Design future state ? Implement | Reducing registration wait times               |
| <b>Six Sigma DMAIC</b>             | Define ? Measure ? Analyze ? Improve ? Control                                    | Reducing medication errors                     |
| <b>Theory of Constraints (TOC)</b> | Identify constraint ? Exploit ? Subordinate ? Elevate ? Repeat                    | Managing bottleneck in the imaging department  |
| <b>Patient Journey Mapping</b>     | Capture touchpoints ? Highlight pain points ? Redesign flow                       | Enhancing outpatient clinic experience         |
| <b>Balanced Scorecard</b>          | Financial, Customer, Internal Process, Learning & Growth perspectives             | Aligning strategic goals with operational KPIs |

## 5. Data & Analytics in HOM

| Data Source | Analytic Technique | Decision Support |
|-------------|--------------------|------------------|
|-------------|--------------------|------------------|

# Introduction to Healthcare Operations

**Electronic Health Records (EHR)**

Predictive modeling (e.g.,

Admission

## Management

readmission risk)

planning

**Operational Logs** (e.g., RFID, bed  
management)

Process