

HOSPITAL EFFICIENCY / RESOURCE ALLOCATION

When Hospital Capacity Becomes a Constraint

The Economics of Operational Flexibility

EXECUTIVE KEY INSIGHT

High hospital utilization is not always a sign of efficiency. Some reserve capacity may have economic value because it preserves the ability to absorb variation, reduce congestion and protect timely access. The relevant goal is **usable capacity when and where it is needed**.

Why this matters

Emergency arrivals, lengths of stay and discharge timing vary. Staffing and diagnostic availability also change. When a hospital operates close to its effective capacity, routine variation can trigger delayed admissions, pressure on emergency departments and disruption to planned care. Capacity planning must therefore consider variability as well as average utilization. [1,2]

The economic perspective

In ICHEPI's economic interpretation, operational flexibility has **option value**: a deployable bed, staffing arrangement or transfer pathway preserves the ability to respond when conditions change. That ability may be valuable even when it is not used continuously.

The planning question is how to balance the cost of resources against the expected costs of waiting, congestion and disruption. Theoretical modelling shows why optimal capacity depends on local costs and patient flows rather than a universal occupancy target. [4]

What the evidence suggests

Utilization involves a trade-off

Simulation and queueing research link high occupancy with greater risk of access problems. The balance varies with demand, length of stay and the size of the bed pool; 85% is not a universal optimum. [1,2]

Flow depends on the whole pathway

A systematic review of 92 studies identified long lead times, poor capacity coordination and inefficient transfers as major barriers. Staffing, routines, planning and information systems all matter. [3]

Jordanian evidence adds context

A study of 480 staff in five Jordanian hospitals reported a positive association between operational flexibility and hospital performance. This observational finding does not establish causality. [5]

IMPLICATIONS FOR DECISION-MAKERS

Plan for responsiveness

Assess the value of flexibility alongside its cost.

- 1 Reframe efficiency**
Read occupancy alongside waiting, delayed transfers, cancelled activity and staffing constraints. Utilization alone cannot establish efficient performance.
- 2 Make flexibility deployable**
Consider adaptable staffing, coordinated discharge, flexible clinical spaces and transfers. A bed is usable only when staff and supporting services are available.
- 3 Compare flow and capacity options**
Assess better coordination alongside capacity expansion. Persistent shortages may still require more staff, beds or other resources.
- 4 Evaluate the marginal trade-off**
Ask whether expected reductions in waiting and disruption justify the extra cost. Use local data and test uncertainty.

What we should not conclude

This Insight does not justify a fixed occupancy benchmark or large amounts of idle capacity irrespective of cost.

The appropriate balance depends on demand variability, service configuration, workforce constraints, access goals and the cost of congestion relative to additional capacity. [2,4]

The option-value framing is a conceptual interpretation, not an empirical estimate of the financial return from reserve capacity.

The decision lens

What level and configuration of capacity can sustain timely care when demand changes, at an acceptable total cost?

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Suggested citation: ICHEPI. When Hospital Capacity Becomes a Constraint: The Economics of Operational Flexibility. **ICHEPI Research Insights**. RI-2026-01. October 2026.

A focused synthesis and economic interpretation of selected literature; no original empirical analysis.