This set of web pages are the companion to Chapter 12—Scheduling and Capacity Management in *Healthcare Operations Management*.

Matching the supply of goods or services to the demand for those goods or services is a basic operational problem. In a manufacturing environment, inventory can be used to respond to fluctuations in demand. In the healthcare environment, safety stock can be used to respond to fluctuations in demand for supplies (see Chapter 13), but it is not possible to inventory healthcare services. Capacity, therefore, must match demand. If capacity is greater than demand, resources are underutilized and costs are high. Idle staff, equipment, or facilities increase organizational costs without increasing revenue. If capacity is lower than demand, patients experience long wait times or find another provider.

To match capacity to demand, organizations can use demand-influencing strategies or capacity management strategies. Pricing and promotions are often used to influence demand and demand timing; however, these methods often are not a viable strategy for healthcare organizations. In the past, many healthcare organizations used the demand-leveling strategy of appointment scheduling; more recently, many have moved to advanced access scheduling. Capacity management strategies allow the organization to adjust capacity to meet fluctuating demand and use part-time employees, on-call employees, cross-training, and overtime. Effective and efficient scheduling of patients, staff, equipment, facilities, and jobs can help match capacity to demand and ensure that healthcare resources are used fully.
This chapter outlines issues and problems faced in scheduling, and discusses tools and techniques that can be used in scheduling patients, staff, equipment, facilities, and jobs. Here is a breakdown of the chapter’s main topics:

- Staff scheduling
- Job/operation scheduling and sequencing rules
- Patient appointment scheduling models
- Advanced access patient scheduling
- Using Arena to model scheduling

The author invites readers’ comments, recommended readings, website suggestions, and any other material to be added to this webpage for this chapter or any other chapters. Please click here to send an e-mail. Be sure to include “Healthcare Operations Management” in the subject line.

**Downloadable Resources**

*PowerPoint*
A PowerPoint presentation of the key points of Chapter 12 is available here:

Chapter 12.ppt

*Examples and Problem Data from the Text*
The following files have been used to create the examples in the text:

Staff Scheduling LP Example ([C12 Staff Scheduling LP example.xls](#))

VVH Scheduling—Base Model ([Scheduling—Advanced Access—5—Base Case.doe](#))

VVH Scheduling—Improved Model ([Scheduling—Advanced Access—5—Optimized Model.doe](#))

The following files are available to complete the problems in Chapter 12:

Problem 1 Riverview UCC LP Data ([C12 Problem 1 Riverview UCC LP problem data.xls](#))
Problem 2 Sequencing Rules Data (C12 Problem 2 Sequencing Rules data.xls)

Websites of Interest

Tutorials
Microsoft Excel® Solver—from Microsoft

Linear Programming Graphic Tutorial—nice flash tutorial for linear programming

References


———. 2007b. "Optimal Outpatient Appointment Scheduling Tool."

