

# Altoona Regional Health System

## Hospital staff scheduling



### Objective

Altoona Regional Health System is the primary provider of medical services in central Pennsylvania. It includes the Home Health Agency, the medical practices of more than 300 physicians, and two hospitals with more than 500 licensed beds. Scheduling staff at the hospitals used to be so complex that it was often described as a “nightmare.” It was done centrally, with input from the different departments, and then revised at the department level to accommodate employees’ requests. This meant the main staffing office rarely had an accurate schedule for the employees, and overtime costs often got out of hand. Moreover, improper staffing put the quality of the hospitals’ medical care at risk.

### Solution

Care System’s CareWare application has put an end to Altoona Regional’s scheduling nightmare. Using ILOG CPLEX, the leading mathematical optimization product, CareWare generates solutions that meet most of the hospitals’ constraints for mandated staffing levels, best practices, union rules and employee preferences. It assigns personnel fairly, with the objective of minimizing overtime and other costs while maximizing the quality of medical care. Both employees, who include more than 750 nurses, and patients have expressed greater satisfaction, and the main staffing office always has the most up-to-date schedule.

**ILOG Product: ILOG CPLEX**

- **Industry:** Healthcare
- **Application Name:** CareWare
- **Geographic Coverage:** Worldwide
- **Benefits:**
  - ▶ Better staffing with less overtime and happier employees
  - ▶ Safer medical care



Changing the rules of business™

## Proper staffing at hospitals

A hospital is a 24x7 operation. Keeping it going can require scheduling thousands of employees to work hundreds of different shifts. Adding to the complexity are clinical standards for care, union regulations on what employees can do and overtime compensation, and team requirements based on skills. Altoona Regional's last computer-based rostering system required users to build schedules manually. Clinic managers, supervisors, department directors and other members of management had to set aside time to work together to assemble schedules that were later changed extensively at the department level, often leaving shifts over- or understaffed.

CareWare runs the scheduling process for both Altoona Regional hospitals. Each month, CareWare creates unit schedules that respect all the constraints for the facilities. On a daily basis, CareWare lets managers make schedule changes for their employees online, and the updates automatically go to the main staffing office. CareWare also gives the main office tools for monitoring employees and addressing staffing problems immediately, and for planning hiring and training.

## Benefits

CareWare helps Altoona Regional maintain its high standards for medical care by properly staffing its hospitals and minimizing costs. It also:

- Prevents burnout among the nurses and other staff members
- Helps management find available staff to fill shifts
- Increases staff autonomy with self-service features for submitting time-off requests, trading shifts and sending electronic messages
- Supports the payroll process for paying hourly workers
- Assures prospective employees that they will be fairly scheduled
- Interfaces with Siemens INVISON, and Kronos Time and Attendance

## About Altoona Regional Health System

**Altoona Regional Health System was formed in 2004, bringing together the Altoona and Bon Secours hospitals and affiliated companies. A charitable, not-for-profit organization, it serves more than 20 counties in central Pennsylvania, and has over 300 physicians and 2,700 nurses, technicians and other employees. Learn more at [www.altoonaregional.org](http://www.altoonaregional.org).**

## About Care Systems

**Care Systems empowers healthcare organizations to cut costs and optimize business practices through unique software systems and consulting services. CareWare Staff Schedule Optimizer helps maximize workforce productivity and enhance staffing effectiveness in large healthcare enterprises. Care Systems is a division of Planmatics, Inc. Learn more at [www.caresystemsinc.com](http://www.caresystemsinc.com).**

## ABOUT ILOG'S OPTIMIZATION PRODUCTS

More than 1,000 commercial customers, including 160 members of the Global 500, use ILOG optimization tools and engines to solve the world's most challenging planning and scheduling problems. ILOG optimization products are also used by a majority of the leading supply chain management software vendors, as well as in research programs at over 1,000 universities around the world, making the products the "gold standard" for performance and solution quality in the operations research community. For more information and a complete list of customer references, please visit <http://optimization.ilog.com>.

## ABOUT ILOG

ILOG delivers software and services that empower customers to make better decisions faster and manage change and complexity. Over 2,500 global corporations and more than 465 leading software vendors rely on ILOG's market-leading business rule management system (BRMS), optimization and visualization software components, to achieve dramatic returns on investment, create market-defining products and services, and sharpen their competitive edge. The BRMS market share leader, ILOG was founded in 1987 and employs more than 700 people worldwide.

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**“The CareWare nurse scheduler directly impacts the lives of patients, nurses and medical staff. The scheduling engine had to be fast, robust and reliable. The best mathematical programming software is ILOG CPLEX, and at the core of CareWare, it delivers the best scheduling solutions possible.”**

– R. Thomas Zeek  
 Director

Nursing Information Systems  
 Altoona Regional Health System

