



BOLD PLANS, BIG RESULTS

Leveraging a way up to 50-percent energy-cost reductions

BY B. ALAN WHITSON

According to the American Hospital Association, energy accounts for 2.1 percent of the typical hospital's operating costs. As such, it has not been a hot topic in the debate about healthcare reform. One explanation is that almost every finance class any hospital executive has ever taken treats energy as a fixed cost. However, the reality is very different. The latest ASHE – IFMA Healthcare Council Benchmark study reveals a surprisingly large variation in the utility costs per patient discharge. Utility costs per patient discharge for the mean hospital in the study are 35.5 percent larger than the median hospital. The median is 52.5

percent higher than the 25-percentile. Neither climate zone nor cost of utilities can account for this much divergence.

Why is this so critical? One of the key cost control strategies in healthcare reform is for insurance companies to reimburse hospitals on the same schedule used by Medicare and Medicaid. The problem with this is the government only pays 80 percent of the hospital's costs for the service provided. Moreover, energy costs are expected to double or more over the next 20 years.

We need a radical change in thinking about energy in healthcare. This includes believing a 50-percent reduction in energy costs is achievable. Reducing

energy cost by 50 percent will increase the typical hospital's total margin by 17 percent or more — now that will get a CEO's attention.

Creating leverage with systematic approach

A systematic approach to energy efficiency provides the best results, since small-performance improvements in one area can lead to larger savings in other areas. This creates leverage, which multiplies the financial and engineering impact of every dollar invested and increases the total return.

“By the very nature of how hospitals use energy, making investments to

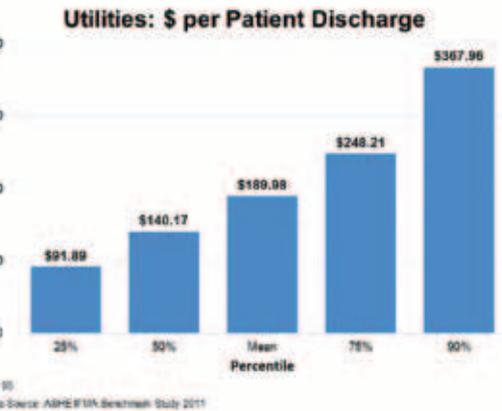
reduce energy costs is a rock-solid strategy,” says Brian Weldy, vice president of engineering and facility management at HCA and a vice president on the IFMA Healthcare Council Board. “The key is to create a good balance between fine-tuning the operations of existing building systems, and a well-conceived capital re-investment plan for your facility infrastructure. The wonderful thing about making energy-saving improvements is that these efforts boost the reliability of building systems, and improve indoor air quality. Lighting upgrades not only save money, but also enhance the aesthetics of interior spaces. Overall, energy conservation helps enhance the patient care environment and makes for a happy CFO.”

Each stage of the following approach creates leverage for upgrades in subsequent stages. This approach ensures the greatest possible energy and cost

savings with the minimum amount of capital invested. The five stages are:

1. Retro-Commissioning: This offers insight into how the hospital’s systems are performing and how closely it operates as the engineers originally intended. Specifically, it identifies improper equipment performance, equipment or systems that need to be replaced and operational strategies for improving building-systems performance. This information becomes the foundation for defining the scope of work and preliminary budgets for the remaining four stages.

2. Lighting Upgrades: This can include new light sources, fixtures and controls. The lighting system has a significant impact on other building systems, affecting heating and cooling loads and power quality. For example, 80 percent of the energy used by a



fluorescent lamp becomes heat, only 20 percent of the energy converts into light. Lighting is the third largest area of energy use in the typical hospital. Updating to state-of-the-art lighting can reduce energy use by 70 percent or more and provide better visual acuity.

3. Supplemental Load Sources: Building occupants and electronic equipment are secondary contributors

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to energy consumption in buildings. They can affect heating, cooling, and electric loads. By carefully analyzing these sources and their interactions with HVAC systems, equipment size and future upgrade costs can be reduced. Another secondary load source is the building envelope: walls, roofs, windows, and sealants. Water leaks, air infiltration, insufficient or poorly installed insulation can affect heating and cooling loads. This creates an opportunity for mold and its negative impact on indoor air quality and patient safety.

4. Air Distribution Systems: These systems bring conditioned air for heating or cooling to building occupants, and directly affect both energy use and occupant comfort. Since the number of air changes per hour is so high in hospitals, demand management systems have a tremendous upside by reducing the air change rate when a room is unoccupied. The use of displacement ventilation in patient rooms is another important breakthrough. Items such as fan belt alignment and the type of filter used can have a dramatic impact on indoor air quality, energy use and maintenance cost.

5. Properly Sizing HVAC Systems: Following the steps in the first four stages can reduce heating and cooling loads. This reduction, coupled with the fact many HVAC systems are oversized, means it is possible to justify replacing an existing system with one that is sized properly or retrofitting a system so it operates more efficiently. In addition to saving energy, proper sizing can reduce noise, lower the first costs for equipment and optimize equipment operation, often leading to lower maintenance costs and longer equipment lifetimes.

Finding the money

Cash on hand and the ability to borrow are the typical funding sources used by many hospitals. However, a little digging can uncover other funding sources:

- > Utilities rebates and incentives;
- > Supplier financing programs;
- > On-bill financing from the utility company;
- > Grants and donations;
- > Since the ROI on energy-saving projects is considerably higher than other risk-adjusted investments, some investors have provided term loans to hospitals as an investment. Possible funding sources include pension funds, foundations, insurance companies and sovereign investment companies.

Renewable energy

Renewable energy is not as cost effective as the traditional power infrastructure. To spur demand for renewable energy various federal and state agencies have created incentive programs. Many of these incentives were designed for entities that pay income taxes, while the majority of hospitals are nonprofit organizations. As a result, the financial mar-

ketplace has created financial products that address this issue. This provides a unique financial opportunity for hospitals to use renewable energy at competitive prices and have investors pay for creating a renewable energy infrastructure. One of the key benefits of these deals is ownership of the infrastructure eventually transfers to the hospital.

According to Andrew Pines, a managing director in Citi's Healthcare Finance Group, "Opportunities exist for health systems to utilize renewable energy sources to reduce and hedge future energy costs by teaming with a partner to monetize the federal and state incentives for renewables. Citi has invested considerable capital in assisting health systems to accomplish these goals and contribute to a clean energy economy."

It's time to be bold

Step outside of your comfort zone and participate in the next ASHE-IFMA Healthcare Council Benchmarking Study. Benchmarking allows identification of opportunities to add value, avoid dead ends, discover best practices to implement and validate successes. You can also take it to the next level and see how peers in other industries address similar issues. You will be amazed at what you can learn from the semiconductor industry about infection control, from the financial industry about information technology or how Navy SEAL teams effectively employ teamwork and goal setting.

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