

THE Value Initiative

Members in Action: Implementing Operational Solutions

Edgerton Hospital and Health Services – Edgerton, WI *Geothermal Energy System Improves Care and Saves Money*

In the *Members in Action* series, AHA will highlight how hospitals and health systems are implementing new value-based strategies to improve health care affordability. This includes work to redesign the delivery system, manage risk and new payment models, improve quality and outcomes and implement operational solutions.

Overview

Edgerton Hospital and Health Services, an 18-bed critical access hospital (CAH), is the first hospital in Wisconsin and the first CAH in the country to install a geothermal system, which relies on the earth's natural temperature to heat and cool buildings. The project is part of the hospital's overall mission to be an exemplary "healthy village" model of health care. Edgerton, WI, has a population of approximately 5,000 people and is 30 miles southeast of Madison, WI.

The hospital's commitment to energy efficiency, environmental stewardship and high sustainability progressed significantly when it built the replacement hospital in 2011. The new facility replaced the old Edgerton Hospital, which began in the home of a local nurse in 1918.

Looking to reduce its carbon footprint, hospital officials researched solar, wind and geothermal options to heat and cool the 60,000-square-foot campus. They determined geothermal power would produce the best results. The hospital used six drilling rigs to install 293 wells at a depth of 285 feet as part of an \$850,000 ground-loop

Impact

The geothermal system paid for itself in six years; that is nine years ahead of schedule. In the old facility, monthly costs for electricity and natural gas were \$13,500 and \$14,000, respectively. In the new hospital, monthly electricity costs are \$15,000 and natural gas costs are \$450, resulting in the hospital no longer needing to budget for fluctuations in natural gas prices. In addition to the cost savings, the geothermal system reduced the hospital's energy use by 40% when compared with other hospitals its size. The financial savings help this independent rural hospital with its bottom line so it can meet the health care needs of the local community.

The back-up generator has been triggered only a couple of times over six years when the entire community suffered a power loss.

Though no data are available, hospital officials have anecdotal evidence that the cleaner environment, with less particulate matter and the ability to let fresh air in patient rooms, results in fewer respiratory infections for patients and staff. In addition, they estimate the high patient satisfaction scores related to climate and environment are partially the result of patients having control over the temperature of their rooms.

"Patients have total comfort in their rooms," said Jim Schultz, chief executive officer. "We are dealing with the whole patient experience." Schultz said Edgerton's example breaks the paradigm that energy-intensive hospitals harm the environment. "We put a lot of time and thought into this. We don't just want to be a provider – we want to be a model. We are marrying conventional medicine with health and healing."

The hospital earned a Special Citation award from the Wisconsin Green Building Alliance in recognition of its design, sustainability and leadership. In addition, some 40 health care providers from other facilities visited Edgerton to see how they can replicate the energy-saving measures in their communities.

geothermal system that transfers heat below the earth's crust. The system uses no fossil fuels, except to run the back-up generator. A statewide energy consortium provided financial incentives.

The geothermal system is part of the hospital's larger effort to create a healthy village. Other efforts include:

- Patient room windows that open;
- Natural light in patient areas;
- Green roofs;
- Environmentally friendly building materials;
- Water-efficient landscaping;
- Individual temperature controls in patient rooms;
- Healthy diets for patients and employees, incorporating fresh produce from the area;
- Paperless electronic medical records;
- All-digital technology;
- Natural habitat walking trails;
- A healing garden; and
- ENERGY STAR appliances.



Lessons Learned

Hospital officials regret not installing geothermal heating coils under the helipad and the sidewalks when the new facility was constructed. Keeping the surfaces clear of ice and snow during brutal Wisconsin winters requires resources to plow the walkways and apply salt.

Future Goals

Officials are working now to replace the lighting with LED fixtures. Energy-efficient lighting is more common now than when the hospital was built, and many utility companies offer subsidies to keep LED costs manageable. The hospital also is researching solar and wind power as options to meet electricity needs, possibly rendering it independent from utility companies in the future.

Contact: Jim Schultz, Chief Executive Officer

Telephone: 608-884-1651

Email: jimschultz2@EdgertonHospital.com