Key messages

» Access to reliable energy in healthcare facilities (HCF) is essential to achieve the goal of universal health coverage.

» On-site renewable energy generation in HCFs can improve access to healthcare services, especially in rural, developing world settings.

» In developed countries, hospitals are among the most energy-intensive buildings.

» By reducing its own carbon footprint, the health sector can show how climate change mitigation produces concrete health benefits.

» Decision-makers from the energy, health and other sectors must work together to prioritize clean energy access and energy efficiency in HCFs around the world.
Introduction

Energy is essential for providing quality healthcare services in every society. A reliable supply of energy is particularly critical to keeping hospitals and healthcare facilities (HCFs) functioning.

In developed countries, hospitals and HCFs are the most energy-intensive institutional buildings outside of the hotel industry. This energy consumption leaves a large environmental footprint, including emissions of air pollutants such as particulate matter and nitrogen oxides.

In the developing world, however, many HCFs lack access to energy. These facilities are often the only source of basic healthcare services and life-saving interventions in rural and remote areas. If they don't have reliable electricity, they cannot power basic medical devices, illuminate operating and examination rooms, sterilize equipment to prevent infection, or refrigerate vaccines and medicines and blood for transfusions.

This presents a twin challenge for the health sector: reducing environmental impact of healthcare service delivery in high-income countries (HICs), while rapidly increasing access to clean modern energy in HCFs in low- and middle-income countries (LMICs). These challenges present an opportunity to improve health outcomes and generate wider social dividends. Meanwhile, the global health sector can serve as a model for other sectors, by greening its own operations and deliver “climate-smart” healthcare.

Clean energy for universal health coverage

Investing in energy access for HCFs is essential for realizing multiple objectives of the sustainable development agenda. HCFs are one of the key service delivery platforms for achieving the universal health coverage target of SDG 3. Universal health coverage means all individuals and communities receive the health services they need, including prevention, treatment, rehabilitation and palliative care. Bringing more people into HCFs is also a central strategy for achieving the Global Strategy for Women’s, Children’s and Adolescents’ Health, which aims to end preventable maternal and child deaths by 2030.

Modern energy provision is a critical enabler of universal access to health care in multiple other ways. Fighting the growing global epidemic of noncommunicable diseases (NCDs) will also require complex interventions that demand more energy, such as imaging equipment for cancer detection. Facilities with electricity access may better attract and retain skilled health workers, especially in rural areas. Electricity also enables mobile health applications, and facilitates public health education.
Challenges and gaps

Lack of access to energy remains a significant yet widely overlooked obstacle to improving healthcare delivery in parts of the world. A 2013 review found that only 28% of HCFs in 11 sub-Saharan African countries had reliable electricity access; a quarter of HCFs had no access to electricity at all. Grid failures, volatile fuel costs and generator malfunctions pose constant challenges to those HCFs with some access to electricity.

**Healthcare facilities with no electricity access (2013)**

The falling costs of solar PV, LED lights and other technologies will not close this access gap. To ensure quality care, staff in HCFs must be trained to operate and maintain energy systems. HCFs must also be able to afford them. In many countries, markets for providing energy services to HCFs are not well developed. Innovative business models and new policy incentives are needed to expand them.

Broader understanding of the synergies between energy access and health service delivery is also required. Few studies have systematically examined the impacts of energy access on health service provision and treatment outcomes. Better data collection can facilitate research into the linkages between reliable electricity access and major global public health priorities such as improving maternal and child health.

Greening the health sector faces key obstacles. These include information barriers, (such as methods for measuring carbon and air pollution emissions from HCFs), financial barriers (such as greater focus on high upfront costs of energy efficiency than on long-term savings), and institutional barriers (such as balancing immediate challenges with perceived long-term demands of addressing the health sector’s contribution to climate change).

Priorities and opportunities

Decision-makers from the energy, health and other sectors can help close this energy-for-health access gap by recognizing it as a “nexus” issue. Clean and efficient energy systems can improve the delivery of healthcare services in developing and developed countries alike. Powering HCFs with clean sources of energy, coupled with energy efficiency measures, will lower emissions of air pollutants and reduce operating costs. In remote settings, on-site renewable energy systems can supply basic electricity for lifesaving procedures that might not otherwise be feasible. These systems also promote resilience in the event of wider disruptions to the energy grid or energy supply chain.

Policy-makers can ensure that HCF energy needs are appropriately articulated in the context of national energy plans and strategies. They can also support incentives and market-based service delivery models, to encourage the development of local service industries to sell and support energy systems targeted to HCFs.
Meanwhile, the health sector has a significant role to play in fighting climate change, by greening its own operations. The health sector is well positioned to be an effective change agent, leverage the trust placed in it by the public and leading by example. The health sector can also shape and influence broader markets, by making its procurement processes and criteria more sustainable.

The health sector can also do more to advance the concept of “climate-smart hospitals.” New energy-efficient design techniques can turn hospitals and HCFs into models for low-emissions, and climate-resilient infrastructure, demonstrating best practices for maintaining critical services during emergencies such as natural disasters and electrical grid failures. A promising example can be found in the Smart Hospital Initiative of the Pan-American Health Organization (PAHO), which helps HCFs in the Caribbean – a region prone to hurricanes and vulnerable to rising sea levels – to improve their resilience to natural disasters, adapt to climate change, decrease their carbon footprint, and improve their environmental sustainability.

The way forward

Decision-makers from the energy, health and other sectors must work together to prioritize clean energy access and energy efficiency in HCFs around the world.

Greening healthcare infrastructure can contribute to universal health coverage, while lowering air pollution and GHG emissions from a key sector of the global economy. Expanding access to reliable energy in HCFs is an urgent priority, because it is essential to quality providing healthcare. Indeed, it will be difficult, if not impossible, to achieve SDG 3 and its target of universal health coverage without a concerted effort to improve energy access in HCFs.