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Commentary

Earth health and human health

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INTRODUCTION

Rapid deterioration in the earth's health due to climate change is a danger to billions of human beings' health in this century.[1] Large scale damage to Earth's natural systems such as those caused by weather change, ocean acidification, land degradation, water scarcity, overfishing, and biodiversity loss, undo the development made in improved human health over the past few decades. Humankinds unsustainable ways endanger prosperity of generations. World Health Organization (WHO) estimates that between 2030 and 2050, adverse climate changes may result in an additional 250,000 deaths annually. According to estimates, every year, environmental degradation results in 174–234 times as many premature deaths as violent conflicts. Three main ways by which climate change impacts health are:[2]

Direct impact

Heat and cold: rise in deaths from heat exhaustion and deaths from cold. Floods and storms: deaths (by drowning), wounds and infections. Ultraviolet radiation: rise of skin malignancies, and harm to the eyes (cataracts).

Indirect impact by altering ecosystems

Vector-borne and other infectious diseases: increased cases of malaria, dengue, Lyme disease, tick-borne encephalitis and other infectious diseases.

Food and water-borne infections: rise in infection from rotavirus infections, parasites, enteric viruses found in food, and water-borne pathogens (like cholera).

Air quality: rise in deaths attributable to air pollution, rise in illnesses linked to allergens, and rise in premature deaths linked to elevated ozone exposure levels.

Impacts via economic and social disruption

Nutrition: an increase in malnutrition (underweight, stunted growth).

Occupational health: health risks for workers (heat-strokes, vector-borne infections).

Violence and conflict: weather-related disasters leading to reduced access to food, water, or shelter resulting in an increase in conflict-related deaths and injuries.

The potential benefits from mitigating steps for an Earth-friendly solutions are substantial, not just to human health but also social and economic benefits.

ROLE OF HEALTH SECTOR IN MITIGATING DAMAGE TO EARTH'S HEALTH

Sustainable development goals address human rights and well-being through understanding that a healthy Earth is integral to the basic human rights, including the rights to life, health, food, water and sanitation, and quality of life. The Earth's environmental health problems are putting extra pressure on, and eroding the capacity of an already stretched health care systems. Paradoxically, the health care industry itself contributes to the same environmental health problems, which it attempts to address. The health care industry is a significant contributor to the pollution around the world. The carbon footprint of the National Health Service (NHS) in England is estimated to be more

than 18 million tons of CO_2 annually, or 25% of all emissions from the public sector.[3]

The health care industry must understand how climate change will affect the services it provides. By investing in healthier buildings, going green, and implementing sustainable operations, the health care industry can promote sustainability, greater health equity, and better Earth's environmental health and meet the health and sustainability-related development goals. The health care industry has a major role to play in mitigation efforts to save health of planet Earth because it is having a big impact on the climate. The health care industry can save costs and achieve considerable health, environmental, economic, and social co-benefits by implementing the following initiatives:

Leadership

Leaders should advocate: a) a multidisciplinary sustainability task force for the creation and implementation of environmental health policies for the good of society through disease prevention education; b) research on the relationship between environmental pollution and human health outcomes; and c) work with governmental and non-governmental organizations to develop and operate environmentally sustainable healthcare facilities.[4]

Energy efficiency

Health care industry uses a lot of fossil fuel energy for example in heating water, keeping indoor air temperatures and humidity levels, lighting, ventilation. Following actions can be taken to increase energy efficiency: a) Using renewable energy sources, to lower greenhouse gas emissions. b) create green buildings for healthcare institutions with the greatest possible use of natural ventilation and daylighting c) use green roofs and certain pollutant-absorbing plant species to improve air quality; d) recycle waste products whenever feasible; e) put in place an appropriate waste disposal system; f) use locally sourced, sustainable building materials; and g) reduce energy consumption by raising awareness and educating healthcare professionals.[5]

Waste management

The following types of healthcare waste are produced by the health care industry : a) waste similar to household waste (kitchen waste, packaging, green waste, etc.); b) infectious waste potentially hazardous to human health or the Earth's health; c) chemical and radioactive wastes, including cleaning products, pharmaceuticals, heavy metals, and laboratory chemicals; and d) hospital wastewaters that contain more hazardous materials, a variety of chemicals, and drug-resistant pathogens than home sewage.[6]

Water management

A large amount of water is needed by the health care industry for: a) cleaning surgical instruments and other equipment; b) running vacuum pump systems; c) operating medical air and compressor equipment; d) operating water treatment systems for kidney dialysis; e) providing therapeutic baths and treatments; and so on.

Water efficiency should focus on utilizing the least amount of water feasible. Water conservation refers to reducing waste. The following water management plan is advisable: water-efficient fixtures and technologies, cultivate drought-tolerant plants, repair leaks as soon as possible, and monitor and regulate water use. Water conservation will also be impacted by rainwater collecting and water recycling for non-drinking purposes.[7]

Food

Food waste accounts for 12% of all solid waste. By making changes to their food service menu and procedures, the health care industry can lessen its carbon footprint and enhance the well-being of both their staff and patients. The alterations listed below are advised: Hospital food should only contain a limited amount of meat. Fast food should be avoided. On-site food production should be encouraged. Food waste should be composted. Finally, buying local and organic vegetables should be encouraged.[8]

Transportation

Transportation contributes significantly to air pollution (18% of carbon emissions), especially in metropolitan areas where it has a substantial negative influence on public health. The transportation needs of the health sector are extensive due to hospital fleets, delivery trucks, and staff and patient mobility.[8]

The actions listed below will aid in reducing emissions related to transportation: a) Hospital staff encouraged to use bicycles, carpools, or public transportation. b) Telemedicine for vulnerable patients to reduce travel-related carbon footprint. c) Provide medical care close to public transportation infrastructure to reduce the number of vehicle miles travelled by patients, staff, and visitors. d) Using hybrid, electric, or alternative biofuel vehicles for hospital vehicles will optimize energy efficiency. e) Use and promote the services of vendors who employ fuel-efficient vehicles.

DISCUSSION

One health approach aims to optimize and sustainably balance the health of people, animals, and Earth's ecosystems through an integrated and unifying approach. It is a tried-and-true method for developing policies and working across sectors to prevent the emergence and re-emergence of zoonotic and vector-borne diseases, ensure food safety and sustainably produce food, lower the rate of

antibiotic-resistant infections, and address environmental issues to improve the health of people, animals, and the environment in general.[9]

One health is a lifestyle that promotes sustainable coexistence on our planet. In One Health, everyone has a part to play.[9] Adopting the idea of environmental sustainability in the health care industry also means changing the industry's culture. Leading in this aspect by the top leadership is necessary for a cultural shift to be successful, and it must be supported by all staff levels. The health care industry cannot create an ecologically sustainable culture without leadership, coordination, education, and responsibility.

Healthcare professionals are in a good position to influence healthcare organizations, norms, and regulations as well as improve clinical practices and other aspects of the system to advance sustainability. The '5R concept' can be followed by the environmental sustainability teams.[10] Reduce: waste, non-sterile gloves, bed linens, isolation gowns, and other unneeded supplies. Carefully use energy sources. Reuse: when possible, choose for reusable items including airway equipment, PPEs, blood pressure cuffs, pulse oximeters, linen, and reprocessed equipment. Recycle: metal, glass, paper, plastic, etc. Rethink: using the principles of the circular economy: eliminate waste and pollution, maintain materials and goods in use, and see processes, procedures, and regulations through the lens of sustainability. Research: a fact-based manual for constructing an environmentally sustainable transition to zero carbon emissions and implementing sustainable quality improvement.

In addition, the team could also: promote: eco-friendly staff travel, online attendance at meetings and conferences, public transportation, or active transportation like cycling; promote to the organization, industry, and government the use of renewable energy sources, environmentally friendly products, and sustainable building designs; report: gather information, keep track of it, and provide updates to governance groups in order to meet objectivesl communicate and cooperate: with communities, governmental organizations, and environmental networks; educate: spread the phrase "Less is more" and encourage people to make wise decisions, as well as educate on healthcare, environmental sustainability, and climate change.

The leadership in the health sector will need to exercise creativity and go beyond incremental efficiency gains in order to disentangle patient outcomes from resource utilization and develop a service that is both adept at meeting urgent clinical demands and health-promoting. The following guidelines will support clinical practice that is sustainable.[11] Disease prevention and health promotion: medical professionals should focus on preventing diseases and address the social, economic, and environmental factors that influence health; empower and educate patients so they may take a more active part in their own health management, which will improve clinical team coordination; lean service delivery implementation yields both concrete and intangible benefits, such as decreased costs, waiting times, and procedural errors, as well as higher patient happiness, better healthcare delivery, and higher patient motivation; use medical technologies that have less of an environmental impact; applying Zen philosophy: become a minimalist and essentialist. Clinical expertise, patient values, and evidence-based medicine are all integrated in a professional and compassionate manner when treating critically ill patients and their families. Regretfully, over intervention that results in iatrogenic injury often occurs in the name of evidence-based medicine.[12]

CONCLUSION

Addressing the human health and Earth's health crisis requires us to expand our conception of health to include a societal, political, and ecological perspective. The health care industry should a) break free from the tunnel vision that it only treats illnesses; b) incorporate sustainability in all its processes and c) aim to improve not only illness but also enhance health, both for humans as well as that of the Earth.

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