



REPORT OF AN INTERNATIONAL WEBINAR TRANSFORMING INDIAN HEALTH FACILITIES TO BE CLIMATE-SMART/ENERGY-EFFICIENT





TABLE OF CONTENTS

INTRODUCTION 5 OBJECTIVES OF THE WEBINAR 5 ABOUT THE ORGANIZERS OF THE WEBINAR 5 HIGHLIGHTS OF THE WEBINAR **6** NUCLEUS POINTS FROM THE WEBINAR 7 ■ SPEAKERS 7 ■ PRIVATE HEALTHCARE INSTITUTIONS 11 ■ SWEDISH GREEN ENERGY SOLUTIONS 12

- PUBLIC HEALTH-CARE INSTITUTIONS 14
- OPEN HOUSE DISCUSSION 15

LEARNING/ACHIEVEMENTS FROM THE WEBINAR 16 WAY FORWARD 17

The world is facing a climate crisis, with wildfires, droughts, floods, landslides, and such unforeseen disasters becoming common while global warming continues to grow rapidly. The environmental impact of healthcare varies from country to country around the world but, it tends to be low in developing countries. Healthcare facilities can mitigate their contribution to climate change and provide environmentally sustainable healthcare services on an ongoing basis by becoming resilient to the effects of climate change and its related emergencies. The aim of building climate-resilient and environmentally sustainable health-care facilities is to enhance their capacity to protect and improve the health of their target communities amidst an unstable and changing climate. This is an important component of universal health coverage. The focus on research and development investments, particularly to aid development in diagnostics and monitoring, lacks behind. Hence, it is the need of the hour to engage and partner with health facilities in India to make them energy and climate-smart. To achieve this goal, MAMTA Health Institute for Mother and Child, India, and Nordic Center for Sustainable Health-Care, Sweden, are partnering and successfully conducted an international webinar: Transforming Indian Health Facilities to be climate-Smart / Energy – Efficient on 19th of Oct 2021 virtually.

solutions.



6 FIGHTING CLIMATE CHANGE CALLS FOR INNOVATION, COOPERATION, AND WILL POWER TO MAKE THE CHANGES THAT THE WORLD NEEDS" — PRIME MINISTER, INDIA

The international webinar was hosted to accelerate the knowledge-led dialogues between the thematic experts and administrative leaders. It was a platform to exchange experiences around the latest and most compatible energyefficient solutions in the healthcare set-ups. The myriad of information-sharing and knowledge-building sessions would benefit the Public/Private health institutions for a more strategic response for transformation and energy-efficient



ABOUT THE ORGANIZERS OF THE WEBINAR



Dr. Sunil Mehra

NORDIC CENTER FOR SUSTAINABLE **HEALTHCARE (NCSH), SWEDEN**

NCSH aims to raise the status and awareness around sustainable healthcare, boost innovations and investments around the same and further bring back word-class solutions and ideas to the Nordics while at the same time delivering the Nordic solutions and knowledge to the world. Daniel Eriksson, the founder of NCSH, has worked in sustainable healthcare for almost 15 years and has extensive experience in the area. He has built a wide network at the national and international levels and has participated in numerous projects related to sustainable healthcare. Johannes Brundin, the co-founder of NCSH, has a background in electrical engineering, cleantech, along with experience in export and business development. The platform aims to promote energy and climate-smart healthcare in the Nordics and at the international level.

MAMTA HEALTH INSTITUTE FOR MOTHER AND CHILD, INDIA

It is a not-for-profit organization with its head office in Delhi and interventions spread across 19 states of India and neighboring countries of South and Southeast Asia. It has touched over 5 million lives across 100 districts of India through more than 150 projects in the last two decades. MAMTA works mainly through community interventions, systems strengthening, and policy initiatives. Strengthening the evidence base for its scalability is one of its core competencies. Rights, equity, and gender equality are at the center of its work. In the recent past, engagement with the private sector to inform public health outcomes has become one of its key strategies.

DR. SUNIL MEHRA, the Executive Director of MAMTA, has a rich experience of over 40 years in public health. He has been actively involved in discussions and meetings around climate change and the need to develop environment-friendly solutions for sustainable health system. A team of doctors, scientists, and professionals, which includes Dr. Shantanu, Dr. Suresh Rathi, Mr. Pawan Verma, Dr. Annesha Acharjee, and others, are working in this direction to generate evidence for climate-smart solutions and operationalize the activities of this proposed project.

L THIS WEBINAR IS A KNOWLEDGE SHARING AND LEARNING PLATFORM WITH THE GOAL OF MAKING INDIAN HEALTH SYSTEM REACH A ZERO-EMISSION LEVEL AND LEARN FROM SWEDEN ABOUT THEIR SOLUTIONS AND HOW CAN WE ADAPT THEM IN THE INDIAN CONTEXT"

HIGHLIGHTS OF THE WEBINAR

Understanding the needs and situation of health facilities in India with respect to sustainability and energy-efficiency

Initiatives undertaken by the public and private sector to create sustainable hospitals

NUCLEUS POINTS FROM THE WEBINAR



Daniel Eriksson

DANIEL ERIKSSON, described the aims of his organization. NCSH aims to raise the status and awareness of sustainable healthcare; boost innovation and investments in sustainable healthcare; bring world-class solutions and ideas to the Nordics and deliver Nordic solutions and knowledge to the world. He added that Sustainable Healthcare is a new industry and has innovations and research areas. It entails building sustainable hospitals and using sustainable health care solutions, cleantech, MedTech, life sciences, etc. NCSH has over 120 members from 17 countries. The center provides guidance and helps connect with companies that provide solutions for sustainable hospitals, such as smart digital solutions like e-health, ambient-assisted living/care technology, personalized care products, etc. All such solutions result in good environmental performance, sustainability and bring useful applications for healthcare. Karolinska Hospital in Sweden is one of the many examples of sustainable hospitals the country is building.

Showcasing energyefficient solutions of the Swedish companies for sustainable health facilities

Commitment of the policy makers towards transforming Indian health facilities into climate-smart and energy-efficient

■ SPEAKERS



Nordics are good because they have holistic circular views on this. Most hospitals work with all environmental issues. Sustainable healthcare is identified as one out of four export strongholds of Sweden.

HOLISTIC -**CIRCULAR**

- Most hospitals work with all environmental issues
- Understanding of end of life supply chain etc
- Top 5 % in everything not best in anything.





44 NORDICS ARE GOOD BECAUSE THEY HAVE HOLISTIC CIRCULAR VIEWS ON THIS. MOST HOSPITALS WORK WITH ALL ENVIRONMENTAL ISSUES. SUSTAINABLE HEALTHCARE IS IDENTIFIED AS ONE OUT OF FOUR EXPORT STRONGHOLDS OF SWEDEN.

He added that hospitals are a part of the ecosystem, and we need to work on bringing innovations that address system solutions. There are nine types of innovations that can help transform hospitals into sustainable facilities. These include:





Process-oriented that focus on improving production or delivery methods

Products-oriented that focus on improving products





Outcome-driven

Organization-oriented that work on new ways in which people manage and state resources





Disruptive innovations that displace established companies

Innovative business models that work on new ways of service delivery models

8



Incremental-oriented that focus on small improvements in existing products/services



Breakthrough innovations that bring a paradigm shift in technology and science



Service-oriented innovations that introduce new or significantly improved service



Dr. Gautam Bhattacharya



Ms. Anita Mahajan

DR. GAUTAM BHATTACHARYA, Minister Counsellor at Swedish Embassy, said that the world is coming out of a terrible pandemic. So the convergence of climatic sustainability and health is apt for this moment. This convergence is crucial for Indo-Swedish collaboration in the future. He emphasized the importance of multiplicity and contextualization of the healthcare innovations according to the Indian environment. He emphasized the need to keep health systems and the planet sustainable. Swedish private players like Astra Zeneca are already active in India, and many other companies are heading their way to India. To push sustainability and strengthen Indo-Swedish collaboration, we can engage with stakeholders like Business Sweden, the Swedish government, private players, MedTech companies, etc. To support this move, the Swedish government has doubled ODA funding.

Active collaboration is ongoing with Indian players, like the establishment of the Innovation center at AIIMS, Jodhpur. He categorically mentioned that Swedish companies need to understand and try and adapt to the environment of India. Local solutions need to be developed for their effective reach to customers and businesses. Selling Swedish technology off the shelf will not help, so work towards adapting solutions to the local environment.

MS. ANITA MAHAJAN, Director Health Services, State of Himachal Pradesh, was speaking on behalf of Shri Amitabh Awasthy (Secretary Health). She said that Indo-Swedish collaboration has been going for more than a decade on various issues, such as climate change, midwifery, sexual and reproductive health, public health, geriatric innovation hub, etc. MAMTA has worked in the past with the Himachal government and Swedish institute on strengthening youthfriendly services. She added that Himachal has extremes of temperatures and difficult terrains and is vulnerable to climate change. The state government is working in this direction and has developed a state action plan.



Malin Fijen Pascay

MALIN FIJEN PASCAY is the chair of the climate and sustainability committee in region Stockholm. She said that the region Stockholm looks after 26 municipalities in Stockholm and the area surrounding it. The key responsibilities within the area include health and medical care (local health care, doctors, and hospitals), regional development and spatial planning, culture, and public transport. The region worked on strengthening digitalization, including ehealth and mHealth, during the time of the pandemic. The region is investing in psychiatry care.



Professor Sanjeev Mishra

The climate and sustainability committee is responsible for leading, supporting, and coordinating Stockholm's strategic and long-term sustainability work, including environment, climate, and social sustainability. The committee has been following up on the regional climatic roadmap and collaborating with municipalities, businesses, and organizations within Stockholm county.

epidemiology.

In India, we don't talk about green hospitals. We have a limited number of green hospitals in India. We need to start from the top leadership/administration if we are committed to climate goals. The green hospital concept needs to be implemented across the country. We need to engage with doctors and make them aware of the climate challenges and green hospitals to ensure their contributions. Try and work with environmentalists, public health specialists, doctors, and academicians. Green hospital's concept should not be limited to tertiary institutions and be extended to primary health facilities and community health centers.

4 A LOT OF GREENHOUSE GAS EMISSIONS COME FROM HEALTHCARE BUILDINGS, AND THE ENERGY CONSUMPTION IS VERY HIGH DURING BUILDING HEALTHCARE FACILITIES AS WELL AS WHILE USING THEM"

With 2.4 million inhabitants in the area, region Stockholm has a budget of 113 billion Swedish kroner in 2021. Out of 113 billion Swedish kroner, 68 billion are meant for health and medical care, 11 billion are for public transport. The region had developed an investment plan of 112 billion Swedish kroner for 2021-2030. The region emphasized reducing greenhouse gas emissions in the last three decades. The greenhouse emissions have been reduced by 50% in 2011 from 1990 and reduced further by 55% in 2021. Within the framework of climate mitigation with healthcare, the region has reduced emissions through anaesthetic gas, nitrous oxides, and patient meals, and the use of sustainable textiles. The region has shifted to 98% renewable fuel and uses biogas-driven ambulances and electric vehicles. The new buildings adhere to green building certification, improve energy performance to more than 30% and use climate impact construction material. And in the existing buildings, they focus on reducing energy consumption by 14% and use >95% of renewable energy.

PROFESSOR SANJEEV MISHRA, Director AIIMS Jodhpur, highlighted the collaboration between AIIMS, Jodhpur, and Sweden, and Indo-Swedish innovation hub. He added that climate affects us all and affects disease patterns and

We have a problem that doctors are engaged only after hospitals are developed, and they are asked to work in them. It is the need of the hour to bring doctor-engineer dialogues where doctors need to be engaged right from the beginning while hospitals are built. He reiterated the discussion that we should look at local solutions for sustainability, and Swedish companies ought to work around building products and services suited to the Indian environment. Indo-Swedish innovation hub can be used as a test-bed for the same.

AIIMS Jodhpur is located in Rajasthan, which receives plenty of sunlight, and sunlight can be a source of renewable energy. In AIIMS Jodhpur, 20% of energy is generated through solar panels. The institute is working towards adopting energy-efficient and cost-effective solutions. He added that the institute is doing small-small things for climate change and making the facility climate-friendly. It is working on effective biomedical waste management, water conservation policy, electronic medical record system, and obtaining inputs from the hospital committees.



Johannes Brundin

OHANNES BRUNDIN, the co-founder of Nordic Center for Sustainable Health-care, said that they had been given a mission by Swedish Energy Agency to develop a platform for internalization for energy and climate-smart healthcare. The purpose of this platform is to generate projects sharing knowledge and information about innovations, energy, and climate-smart solutions for hospitals. Besides, NCSH aims to spread Nordic ideas on sustainable healthcare with the purpose of decreasing energy consumption by hospitals so that there is a reduction in cost and carbon-di-oxide emission that leads to healthier people. NCSH needs to collaborate with international partners to make a change. Sweden has only 10 million inhabitants, and even if it goes 100% carbon neutral, it won't contribute much globally. Hence, Sweden needs to collaborate with other countries to leave an impact globally. NCSH aims to collaborate with India to use Swedish and Indian innovations for Indian hospitals.

The center does collaborate with the local partners, like MAMTA, for organizing webinars and conferences. NCSH does delegations to other countries, does study visits, and goes to different hospitals to see how in practice, they are working and solving different challenges they are facing. They have

6 DOCTORS WORKING AT ALL LEVELS OF INSTITUTIONS, PRIMARY, SECONDARY OR TERTIARY, DO REALIZE THAT CLIMATE AFFECTS DISEASES, DISEASE PATTERNS, THEIR EPIDEMIOLOGY, AND IT AFFECTS US ALL"

Mr. Karthikeyan

MR. KARTHIKEYAN, CII green business center, New Delhi, said that India has a vast outlay of the private healthcare sector, which is providing various levels of care. CII has been working on the concept of green buildings and implemented many projects related to it, such as residential buildings, commercial buildings, airports, metros, etc. Started in 2001-02 with a small green building, that is, CII own building, it has worked on over 6800 projects and closely working with over 160 hospitals. He added that green building means it is resource-efficient and provides comfortable space for occupancy. The green hospital is a step further, i.e., apart from being resource-efficient, it has the healing infrastructure to reduce hospital-acquired infections and wastes. CII has developed a green healthcare rating system, a tool that facilitates hospitals to implement the green and sustainability concept. The tool addresses various concepts such as the healing infrastructure to maintain indoor air guality, healing architecture with patient-centric design, improved air quality with fresh air exchanges, and reduced probability of air-born transmission of infections like COVID. Mr. Karthikeyan highlighted that we need to focus on healing infrastructure that enhances daylight, has a patient-

been doing webinars nowadays, e.g., With YALE university, they invited American hospitals and showcased Swedish solutions; similarly, in CANADA, they held a conference of over 160 delegates from 100 different hospitals.

The center also does a report series on different technologies that can be used in hospitals (Swedish innovations in Sweden and Nordic hospitals), e.g., ventilation, geothermal energy, lighting, nitrous oxide destruction, etc. They have developed a website called www.worldsgreenesthospitals.org to showcase different climate-smart solutions for hospitals. NCSH invites hospitals to initiate dialogue between India and Sweden on energy and climate-smart hospitals. The center is working actively with NGOs, development agencies, public or private healthcare, research and development departments of the universities, and enterprises. Johannes highlighted that we need to learn from each other, use test-beds like in AIIMS, Jodhpur, and together we can move forward.

PRIVATE HEALTHCARE INSTITUTIONS

centric design, and patients should be comfortable. The infrastructure should strengthen patient recovering rates and faster recovery compared to the conventional infrastructure. The key aspects of resource-efficiency include reduced energy and water consumption and waste management in hospitals.

In conventional hospitals, there is an average consumption of 400-450 units/m²/year. However, green hospitals with energyefficiency measures have a consumption of 180-270 units/m²/ year. So there is a 30-35% decrease in energy consumption in green hospitals. Similarly, water consumption in conventional hospitals is 250 litres/bed and is reduced to 125 litres/bed in green hospitals. Biomedical waste management is also a critical aspect. There are regulations available for their effective management, and CII has gone to the extent of looking at energy recovery from waste. CII has been working with hospitals like Apollo, Reliance, and Railways, etc., to implement these measures. He further added that CII has been working closely with Swedish Energy Agency. There have been multiple exchanges of information and technologies between the two.



Dr. Nirmal

DR. NIRMAL, President of Private Practitioners in Surat, Gujarat, said that they do understand the impact of climate change and the need for smart and energy-efficient hospitals. Nearly 75-80% of healthcare in India is provided by private hospitals. There has to be a good collaboration between the private and public health systems in terms of a partnership to achieve the targets. We need to have green architecture and effective biomedical waste management. He added that majority of the private hospitals concentrate on therapeutic care, but they need to focus on preventive health care as well. So we need to focus on good drinking water, a good sewage plan, and better immunization services. The average length of stay in hospitals should be the bare minimum, and we need to minimize investigations, whether diagnostics or imaging. He hoped that Indo-Swedish collaboration would definitely help in this regard.

MAIOR GENERAL NARESH VII – Hinduja Hospitals, Mumbai, said that the hospital has 500 patient beds and is a multispecialty hospital with specialty surgical beds. They are making continuous efforts to reduce carbon footprints. They have taken initiatives like converting all operation theaters into green theaters and got the certification as well,

and introduced all energy-efficient equipment (medical or engineering). They have been carrying out energy audits annually by authorized agencies. In addition, they have changed the lighting system from conventional lights to CFL a few years ago and now changed from CFL to LED bulbs, which has resulted in a 30% reduction in energy consumption. They have replaced core refrigerant R22 with R410, which is clean and doesn't harm the ozone layer. The use of anaesthetic nitrous oxide gas has been drastically

SWEDISH GREEN ENERGY SOLUTIONS



Per Olsson

indoor design.

44 IT IS IMPORTANT WHEN DESIGNING THE BUILT ENVIRONMENT TO WORK WITH HOLISTIC FOCUS WHEN IT COMES FOR SUSTAINABILITY ASPECTS AND HAVING A TOO MUCH NARROW FOCUS WILL NOT TAKE US TO THE GOALS BY 2030 AND TOO MUCH NARROW FOCUS WILL LEAVE A NEGATIVE IMPACT ON OTHER GOALS."

Major General Naresh Vij

reduced. The hospital has a sewage treatment plant where all the sewage from the toilets is cleaned by the plant before putting into the municipal corporation drain. An organic composter has been installed in the hospital in which wet waste is degraded by the composter.

PER OLSSON, Head of Sustainability, LINK Arkitectur, emphasized designing sustainable hospitals. Sustainability is high on LINK Arkitectur's agenda. He said that LINK Arkitectur designed the first net carbon neutral place. The organization has 1 million m² of hospital design going on at the moment. While designing buildings, we need to have a holistic focus as a narrow focus will have a negative impact on the goals. Securing holistic focus through design frame is crucial to optimize as per different needs and views. Buildings built some 30-40 years ago were built with the thought of energy-efficiency, but were are not suitable for the indoor environment like daylight. Major environmental challenges of the buildings are that more than 40% of the carbon emission comes from the building industry and mining industry. They generate a huge amount of waste. The sustainability focus of the architecture is on building resource-efficient and climatesmart architecture. Net-zero carbon emission buildings engage various stages of the life cycle, such as from materials to constructions to energy. We need to use a material that is reusable and can be recycled and are not in conflict with

The organization focuses on incorporating efficient designs that use new materials, low carbon materials, fossil-free materials, and are cost-effective, i.e., limiting the use of resources, having flexibility, and long lifetime of the structures/hospital buildings. Energy-efficient designs are very much about creating comfortable buildings with low energy usage and low building envelope in relation to low carbon emission, but it might be in conflict with a good indoor environment. So there should be a right balance between the two. The easiest and most cost-effective way to lower carbon emissions is by using fewer resources. In larger projects,

we work with moving away from resource-intense heavy concrete and brick materials towards low carbon-emitting construction that has resource usage. The most important aspect to securing a long lifetime of hospital buildings is to design good qualities in well-functioning healthcare. Healing architecture and the overall effectiveness of the healthcare facilities are important to achieve this from a sustainability perspective. The organization focuses on three major actions, including creating a built environment to achieve ecological well-being of patients with low risk of infections, improved working environment for the people working in hospitals and making them productive and engaged, and a built environment with its effect on logistics and has cost-effective and optimized healthcare. So that hospitals can be developed in resource-efficient ways.



Ludvig Lindstrom

LUDVIG LINDSTROM, Swedish Energy Agency, said that we need to focus on strong targets for energy efficiency and reduce the impact on the environment. He emphasized Indian-Sweden collaboration to work with and come up with various solutions to achieve climate-smart health care systems. There are pillars of sustainability, namely environment, economy, ecology. Swedish Energy Agency aims to have no net greenhouse gas emissions by 2045, 70% fewer emissions from transport by 2030 compared to 2010, 100% renewable electricity by 2040, and 50% more efficient use of energy in 2030 compared with 2005. Swedish Energy Agency is the largest research financing agency in the area of green energy. The agency focuses on international collaborations and multi-bilateral cooperations that target climate-supporting innovations in cleantech. There are 200 companies in Swedish Energy Agency start-up portfolios. The government has invested around 90 million Euros. Sweden accounts for 0.1% of the global greenhouse gas emissions, but Sweden intends to contribute a much larger part of the climatic solutions. India-Sweden Innovations Accelerator (ISIA) program focuses on the innovative business of renewable energy and energy efficiency between India and

WEDISH ENERGY AGENCY IS THE AGENCY ESTABLISHED TO ACTUALLY MANAGE THIS TRANSITION TO SUSTAINABLE ENERGY SYSTEMS AND MANAGE THIS SECTOR."



- ISIA - the backbone

- R&I DST and SEA



PUBLIC HEALTHCARE INSTITUTIONS

DR. ARUN GUPTA, President of Delhi Medical Council, spoke on behalf of the state government. He said that Delhi had seen a new government six years back that is very innovative and has an open mindset and zeal to work for the environment. Mr. Satyendra Jain is the health minister of the state government. The government has recently designed seven new hospitals that have over 7000 beds. All these hospitals have been designed in an energyefficient way. The government has around 500 primary health centers/Mohalla Clinics, and all operate in a 100% digitalized way. These clinics receive over two crore patients annually. These clinics don't use paper at all and hence, save energy and forests. All hospitals in Delhi are equipped with a water harvesting system. Water is conserved for future purposes. It is mandatory to install sewage treatment plants in all the hospitals in Delhi. The water is not leaked directly into drains. Hospitals have been given subsidies and technical know-how to install solar panels. Biogas generated in hospitals is used for hospital purposes.



Dr. Arun Gupta



India-Sweden Innovations' Accelerator - connected initiatives and how these experiences can contribute to sustainable healthcare

Swedish Energy Agency – in India

Swedish Energy targets and how they relates to the work in India

Sustainability by Sweden – Showroom





Sweden. It is backed by Swedish Energy Agency. Business Sweden and Confederation of Indian Industries-Green Business Center are program leaders. Over 50 Swedish companies have been introduced in India under the ISIA program since 2013. Interaction with over 800 Indian companies and over 30 Swedish companies have established collaborations in India to date. Over 50% of the companies introduced into the Indian market are still active.





Prof. Vikas Desai

PROFESSOR VIKAS DESAI (Former Additional Director - Family Welfare, Govt of Gujarat) was excited to tell that public health is also considered as a part of resilience building for climate resilience. As it is known that health is one of the outcomes, but it is more appealing outcomes when it comes to climate resilience. We need to consider health and climate resilience together. Dr. Vikas is working in Surat with the urban health and climate resilience center of excellence under the execution of Surat Municipal Corporation. It is a learning body and provides support for research, for training, workshops, networking, and advocacy to the Surat Municipal Corporation. Climate has already been on their agenda. Gujarat is situated on a seashore, and they face climate emergencies. Primary health centers or urban health centers are increasing in large numbers. They may not be huge, but cumulatively, they can make a significant contribution to climate resilience. We need to consider Public-Private partnerships for climate resilience.



Dr. Ashish Naik

DR. ASHISH NAIK, Deputy Commissioner, Health and Hospitals, Surat Municipal Corporation, Surat, said that Surat is one of the leading municipalities known for renewable energy usage in India. Surat Municipal Corporation has an energy-efficiency cell, which takes care of the activities in Surat. Their health systems incorporated water harvesting systems along with solar panels, minimizing the energy consumption through the installation of biogas plans, electric transport, and incorporating energy-efficient ways. Around 50% of energy consumption is catered by renewable sources. Around 50 health centers are accredited by National Accreditation Board for Hospitals. These measures are mandatory to achieve climate-smart health care systems.



Mr. Paramhans



Ms. Poornima Prabhakaran



Dr. Singh



Anant Mandelia

MR. PARAMHANS pointed out two things that were not discussed during the sessions, i.e., heat generation and radiations emitted from radioactive machines/equipment and the use of diesel generators in case of short electricity supplies in the states. These things do generate pollution and affect the environment. He suggested that we can use solar panels on the rooftops and landscaping to generate power for electricity consumption.

MS. POORNIMA PRABHAKARAN from the Center for Environmental Health, PHFI, said that the concept of climatefriendly healthcare is there already on the ministry of health and family welfare agenda. The national program on climate change is very much focused on green and climate-resilient healthcare. Two important pillars of this program are climate adaptation, i.e., to prepare healthcare to deal with additional disease burdens arising out of climate change, and mitigation, which aims to reduce carbon footprints.

consumption.

44 PUBLIC HEALTH IS ALSO CONSIDERED PART OF RESILIENCE BUILDING FOR CLIMATE RESILIENCE."

OPEN HOUSE DISCUSSION

DR. SINGH highlighted that we need to build climateresilient health system as a part of academics/curriculum in the MBBS course for medical students.

ANANT MANDELIA presented a case study of his hospital. He planted a rooftop solar systems in Feb 2019 in their 300-bedded multi-specialty hospital. The panel covered 5600 m² of the roof area and produced 540000 units of electricity per year. Because of the panel, they could save 502000 kg of carbondi-oxide, 3780 kg of sulfur di-oxide, and 2300 kg of nitrous dioxide. This was installed on an OPEX-based system with no money invested into it. Also, they replaced all CFL bulbs with LED bulbs. As a result, they could reduce the 1.5% cost of their electricity bill. Solar panels constitute 16% of the total energy

19

To conclude, Johannes Brundin thanked all the speakers for educating and inspiring sessions. He was impressed to hear about the different projects running in India. He said that we are sitting on valuable pieces of puzzle and need to learn from each other. NCSH is planning to have a face-to-face meeting in 2022 with a delegation of academicians, corporates, and hospitals from Sweden to India. Dr. Shantanu, Deputy Director, MAMTA HIMC, thanked everyone for being a part of this 2-hour session. He emphasized that the learnings from today's sessions should be translated to concrete actions in the future.

WAY FORWARD

Nordic Center for Sustainable Healthcare (NCSH) and Mamta Health Institute for Mother and Child have organized the webinar to introduce the stakeholders and the concerned personalities to come up together, to find and understand the scope and interest along with the best way to implement innovative ideas for achieving climate-resilient health systems. We are eagerly waiting for the active participation and involvement from each stakeholder to come up with an investment/ Implementation plan for achieving the goal of climate-smart health care systems in India with the collaboration of NCSH and MAMTA, respectively.

► LEARNING/ **ACHIEVEMENTS FROM THE WEBINAR**

From the webinar, this has been understood; though work for climate-resilient health care system has been started, this needs a full force implementation work in every sector to achieve the goal of climate-smart health care systems.

We have seen how and in what ways Swedish agencies have achieved these goals and what can be incorporated in the context of India jointly implementing resiliency and decarbonization strategies within the health sector. Climatesmart health-care can reduce emissions. This will strengthen the health sector as well as communities while ensuring access to clean-independent energy, safe water, clean transport, and clean waste disposal mechanisms. This approach can form a foundation from which health care can contribute to broader policy initiatives aiming at both global climate and health goals.

Most of the presentations reiterated that Swedish solutions need to be customized to the Indian environment. The Swedish companies have to research and rework their products to make them locally adaptable to the Indian climate. Other highlights from the webinar are:

Strengthening the capacity of health staff



Improving awareness and capacity of the community





Promoting inter-sectoral and international collaboration

Strengthening scientific research

44 GREEN BUILDING IS A BUILDING THAT IS RESOURCE-EFFICIENT AND PROVIDES COMFORTABLE SPACE FOR OCCUPANCY AND GREEN HOSPITAL IS A STEP FURTHER THAT IS APART FROM BEING RESOURCE-EFFICIENT, IT PROVIDES A HEALING INFRASTRUCTURE TO THE PATIENT AND REDUCES HOSPITAL-ACQUIRED INFECTIONS."



Developing and refining regulations, policies, and mechanisms



Developing and implementing early warning systems



Adapting health services to improve management of climatesensitive diseases

AN INTERNATIONAL WEBINAR: TRANSFORMING INDIAN HEALTH FACILITIES TO BE 'CLIMATE-SMART/ENERGY-EFFICIENT'

19th October 2021

PROGRAM

Time (CEST)	Торіс	Speakers
10:55	Start of the Webinar	
11:00	Welcome address and background context of the Webinar	Dr. Sunil Mehra, Executive Director, MAMTA HIMC
11:05	What is Sustainable HealthCare and why is Nordics the world leader in this area?	Daniel Eriksson, Founder, Nordic Centre for Sustainable Healthcare
11:10	Inaugural Talk – I	Mr. Gautam Bhattacharyya, Minister Counsellor, Deputy Head of Mission, Embassy of Sweden, New Delhi
11:20	Inaugural Talk – II	Mr. Amitabh Awasthy, Health Secretary, Government of Himachal Pradesh, India
11:30	Stockholm: The leading County of Sweden in Sustainable HealthCare	Malin Fijen Pascay, Chair of the Climate and Sustainability Committee in Region Stockholm
11:40	Keynote address	Professor Sanjeev Misra, Director - AlIMS, Jodhpur
11:50	Indian Swedish Collaboration on Energy and Climate-Smart HealthCare	Johannes Brundin, Co-founder of Nordic Centre for Sustainable Healthcare
12:00	Thought leadership/experience sharing from private sector health care institutions, India - I	Private Health Care Institutions Mr. Karthikeyan – CII – New Delhi Mr. Manu Kapila – Fortis Hospitals Dr. Nirmal Choraria, President, Private Doctors Association, Surat Major General Naresh Vij - Hinduja Hospital
12:15	Designing Sustainable Hospitals	Per Olsson, Sustainability Manager, Link Arkitektur
12:25	Sustainability impact of adopting Swedish green energy solutions to the Indian market	Ludvig Lindström, Swedish Energy Agency
12:35	Thought leadership/experience sharing from public sector healthcare institutions, India – II	Public Health Care Institutions Dr. Arun Gupta, (Delhi Government) Prof. Vikas Desai, (Former Additional Director- Family Welfare, Govt. of Gujarat) Dr. Ashish Naik (Deputy Commissioner, Health and Hospital, Surat Municipal Corporation, Gujarat)
12:50	Open House Discussion	
13:00	Concluding Remarks and Vote of Thanks	Johannes Brundin, Co-founder of Nordic Centre for Sustainable Healthcare and Shantanu Sharma (Deputy Director, MAMTA HIMC)









MAMTA Health Institute for Mother and Child

B-5, Greater Kailash Enclave-II, New Delhi-110 048, India t +91-11-29220210 / 220 / 230 | f +91-11-29220575

www.mamta-himc.org mamta@yrshr.org MamtaHIMC
mamtaHIMC/ in mamta-himc-b81590b8