

Saving *lives* Sustainably GLOBAL FORUM 2020





Third Saving Lives Sustainably: Sustainable Production in the Health Sector

Global Forum 2020

A CALL FOR UNITED ACTION TO RECOVER BETTER AFTER COVID-19 WITH SUSTAINABLE PRODUCTION AND PROCUREMENT OF HEALTH COMMODITIES

الهيئة الصامة للضخاء والحواء Saudi Food & Drug Authority



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About the UN informal Interagency Task Team on Sustainable Procurement in the Health Sector (SPHS)

The SPHS brings together seven United Nations agencies (UNDP, UNEP, UNFPA, UNHCR, UNICEF, UNOPS, WHO) and three global health financial institutions (Gavi, The Global Fund, Unitaid) who are committed to introduction sustainable procurement in the global health sector. Through a transparent and inclusive engagement process and by leveraging its normative and market power, the SPHS is dedicated to lowering the environmental impact of its procurement, with the aim of improving human health and welling.

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Abbreviations and Acronyms

ADE	Acceptable Daily Exposure	OECD	Organisation for Economic
AE	Adverse event		Cooperation and Development
AIDS	Acquired Immunodeficiency Syndrome	PPE	Personal Protective Equipment
AMR	Anti-Microbial Resistance	OHS	Occupational Health and Safety
ARV	Antiretroviral	PSM	Procurement and Supply Management
API	Active Pharmaceutical Ingredient	PV	Pharmacovigilance
CCC	Command and Control Center	QA	Quality Assurance
C02	Carbon Dioxide	RBC	Responsible Business Conduct
CDC	Disease Prevention and Control	SES	Social and Environmental Standards
EHS	Environmental Health and Safety	SDG	Sustainable Development Goals
EU	European Union	SFDA	Saudi Food and Drug Authority
eVIN	Electronic Vaccine Intelligence	SHiPP	Sustainable Health in Procurement
	Network		Project
FA0	Food and Agriculture Organization	SIWI	Stockholm International Water Institute
	of the United Nations	SPHS	Sustainable Procurement
FDA	Food and Drug Administration		in the Health Sector
GAVI	Global Alliance for Vaccines	SPP	Sustainable Public Procurement
	and Immunization	SRA	Stringent Regulatory Authorities
GEF	Global Environment Facility	SHC	Sustainable Healthcare Coalition
GGHH	Global Green and Healthy Hospitals	TC0	Total Cost of Ownership
GHG	Greenhouse Gas Emissions	UN	United Nations
GF	The Global Fund	UNDP	United Nations Development
GMP	Good Manufacturing Practices		Programme
GPIH	Green Procurement Index Health	UNEP	United Nations Environment
HCW	Health Care Waste		Programme
HCWH	Health Care Without Harm	UNFPA	United Nations Population Fund
HCWM	Health Care Waste Management	UNHCR	United Nations High Commissioner
HIV	Human immunodeficiency virus		for Refugees
IL0	International Labour Organization	UNICEF	United Nations International
ITC	International Trade Organization		Children's Emergency Fund
ICCM	International Conference on	UNOPS	United Nations Office for Project
	Chemicals Management		Services
LCA	Life Cycle Assessment	UPOPS	Unintentional Persistent Organic
LGBTI	Lesbian, Gay, Bisexual, Transgender		Pollutants
	and Intersex	WB	World Bank
MERS-CoV	Middle East Respiratory	WT0	World Trade Organization
	Syndrome Coronavirus	WH0	World Health Organization
MRL	Maximum Residue Limits	ZPBF	Zambia Pharmaceutical Business
NCD	Non-Communicable Diseases		Forum
NRA	National Regulatory Authority	ZPPA	Zambia Public Procurement Authority

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Executive Summary

The 3rd Saving Lives Sustainably: Sustainable Production in the Health Sector Global Forum 2020 took place on the 18-19th of November as part of International Conferences Program, honouring G20 Saudi Presidency Year 2020. The event was coorganized by Saudi Food and Drug Authority (SFDA), G20 Saudi Secretariat, United Nations Development Programme (UNDP), Secretariat of the UN informal Interagency Task Team on Sustainable Procurement in the Health Sector (SPHS) and Health Care Without Harm (HCWH), and with support from the Swedish International Development Cooperation Agency (Sida). The Global Forum is an opportunity for global health sector stakeholders that consist of UN agencies, international organisations, governments, policymakers, multilateral financial intuitions, manufacturers, technical experts, academia, civil society organisations and others to explore the current sustainable consumption and production patterns and the latest public and private innovations on sustainable procurement and manufacturing of health commodities.

The theme of the Global Forum 2020 is titled—A Call for United Action to Recover Better After COVID-19 with Sustainable Production and Procurement of Health Commodities. The outbreak of the COVID-19 pandemic is a not only a global health crisis, but also has been defined as a severe economic, political, environmental and social crisis. With the immense pressure for the provision of adequate health care services, many countries have been unable to respond effectively to this emergency. This also includes with the adherence to the social, environmental and ethical dimensions in public health procurement and in the management of global health supply chains. Therefore, amongst with the COVID-19 pandemic crisis, the environmental and social issues in the health supply chain have escalated that include the respect of human rights, labour and gender in the supply chain, the use and disposal of health care products, handling of toxic chemicals in industrial processes, natural resource depletion and air pollution-which ultimately contributes towards the climate and biodiversity crisis.

In light of these interconnected issues, Sustainable Production and Consumption (SDG12), as highlighted in the inaugural WHO Global Strategy on Health, Environment and Climate Change, is the essential transformation needed to improve the lives and wellbeing sustainability through healthy environments and to prevent future pandemics and diseases before they occur. Therefore, given the mission of the SPHS to improve human health and the environment by leveraging health supply chains-global health sector stakeholders in partnership with suppliers and manufacturers hold the key potential to transition the global economy towards a healthier and more sustainable world. Also, it is important to recognize that in light of the pandemic crisis, despite the ongoing challenges in the provision of health care and with regard to human health and the environment, there has been identified opportunities for positive change. Hence, in light of these current observations, the opening session of the Global Forum asked the main question to the delegates-How can the world prepare for the next upcoming health crisis and how can we recover better from COVID-19?

The Global Forum 2020 was initiated by a high-level opening statement delivered from the Swedish Ambassador to the Kingdom of Saudi Arabia, WHO and UNDP Resident Representatives, Founder and President of Health Care Without Harm (HCWH) and the CEO of the Saudi Food and Drug Authority (SFDA). The opening session highlighted intersections between climate change and global health, and the necessary transitions needed for a recovery from the COVID-19 pandemic. This message was further highlighted through the keynote address where Dr. Mandeep Dhaliwal, Director of UNDP's HIV, Health and Development Group, raised the need to strengthen the resilience of the health sector through strong and dedicated actions towards environmental sustainability. She urged the global community to support efforts aimed at reversing planetary damage that can be done through scaling up smart climate actions, to decouple natural resource use from economic activity, and to look into new ways and opportunities for global partnerships and collaborations.

Throughout the course of the two days, the Global Forum 2020 explored several interdisciplinary themes that included medical devices and safety, responsible business practices, food safety risks assessments, drug safety and sustainable supply chains, supply chains and gender and innovations



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from the field. The Global Forum 2020 also hosted a practical discussion on the Sustainable Procurement Index for Health (SPIH) which is an environmental and social measurement tool and platform currently under development by UNDP, HCWH and Arup. The event concluded with a bold closing panel on enabling leadership for sustainability in the health sector where distinguished speakers raised the need for urgent policies that speak to the required actions on the ground that encompass preventative health care, systematic leadership and an enhanced global collaboration.

In summary of the discussions and event, the Global Forum 2020 reinforced the international efforts led by the Kingdom of Saudi Arabia during the G20 Summit to ensure a continuous sustainable development as well as to enhance the focus on the human and human needs in every and all aspects of life. A synopsis of the key main takeaways from the discussions of the Global Forum 2020 have been provided as follows:

A One Health response is needed to prevent future pandemics—a One Health response is a collaborative, multisectoral and transdisciplinary approach with the goal of achieving optimal health outcomes by recognizing the interconnection between human health and the natural environment. This requires collaboration efforts from local, regional, national and global levels with multiple sectors and stakeholders working together to achieve better public health outcomes and to prevent future pandemics, amongst with emerging environmental health issues and diseases. This also includes the need for a systematic and interdisciplinary leadership that compliments the One Health response and for a future investment in health care infrastructure as preventative measure for both public health and the environment.

- > The health sector urgently needs to innovate towards sustainable consumption and production—the health sector needs to innovate in order to gain efficiencies to achieve better health care outcomes and not to contribute toward further harm to public health and the environment. The COVID-19 pandemic has demonstrated how medical devices, health products and supply chains need to be more resource efficient to guarantee access and security to health care supply and not to contribute toward the misuse of natural resources and generating harmful waste. This showcases the need for better regulatory policies for responsible production and amongst with the available market opportunities in circular design for health care products, energy efficient clinical equipment, health care waste management and in industrial optimization.
- COVID-19 has escalated the need for an improved science, digitization and technology in the health sector and supply chain—the Global



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Forum has demonstrated how real-world evidence and data are essential to ensure the safety, efficacy and guality in the delivery of health care. This also includes the importance of centralized management systems, regulations, harmonized standards, guidelines and data in the health supply chain. The COVID-19 pandemic has created a historic acceleration towards the digitization of operations and by providing innovative technologies as health care solutions. Digitizing the health supply chain has demonstrated to provide substantial cost savings, transparency and accountability as a fundamental part of a resilient health system. Blockchain technologies can also further support evidence-based decision making for regulators, procurers and health care providers, with further opportunities for data generation, optimization and transparency in environmental and social responsibility.

> There is a need for better gender responses to ensure optimal health care and supply chain security—Women, girls and marginalized groups have suffered the most from COVID-19 and special policy measures are urgently needed from both governments and the private sector as a resolution to this issue. It is also recognized that there is a strong business case to invest in women's health as they represent as a majority in both of the frontlines of health care work and in labour intensive jobs in health care manufacturing sectors. Access to digital technology and the internet has also been identified as a major gap for women and girls, which has been a key resource used during the pandemic. There also needs to be more emphasis in focusing on LGBTIQ and inclusion of a more diversified gender data generation for better health outcomes.

There is a need for an enhanced global, region-> al and local collaboration and diversification in the health supply chain—COVID-19 is a collective challenge that is borderless and demonstrated the need for stronger partnerships and collaborations amongst multiple sectors and stakeholders. International, regional and local organisations need to work together and not to compete in the delivery of health care as lessons learned from the pandemic. Also, with the identified need and actions for the diversification and localization of supply chains to ensure the supply chain security in agriculture and health care, this demonstrates as a major health supply chain transformation and brings new areas of opportunities and challenges whether through global trade, regulations and/or sustainable development. This also showcases positive prospects for the incorporation of sustainability and for governments and new health care industries to start-off their practices on the right foot by embedding social and environmental policies, standards, tools and technologies that are readily available.

Key Results at a Glance

GLOBAL PARTICIPATION OF KEY STAKEHOLDERS



KEY HIGHLIGHTS IN GLOBAL FORUM 2020 CONTENT





GOAL 2: Zero Hunger
GOAL 3: Good Health and Well-being
GOAL 4: Quality Education
GOAL 5: Gender Equality
GOAL 6: Clean Water and Sanitation
GOAL 7: Affordable and Clean Energy
GOAL 8: Decent Work and Economic Growth
GOAL 9: Industry, Innovation and Infrastructure
GOAL 10: Reduced Inequality
GOAL 11: Sustainable Cities and Communities
GOAL 12: Responsible Consumption and Production
GOAL 13: Climate Action
GOAL 14: Life Below Water
GOAL 15: Life on Land
GOAL 16: Peace and Justice Strong Institutions
GOAL 17: Partnerships to achieve the Goal

Official Opening of the Global Forum 2020

https://youtu.be/ckhWYqPQnS4?t=1879

Day 1—November 18, 2020

Global Forum 2020 Facilitator: Dr. Hamoud Alnughaymishi, Head, Risk Communications, Saudi Food and Drug Authority (SFDA)

Opening Remarks:

- > H.E. Prof. Hisham Aljadhey, CEO, SFDA
- H.E. Mr. Niclas Trouve, Swedish Ambassador to > the Kingdom of Saudi Arabia
- Adam C. Bouloukos, Ph.D., Resident Representa-> tive, Kingdom of Saudi Arabia, UNDP
- Dr. Ibrahim El-Zig, Representative, Kingdom of > Saudi Arabia, Kuwait and Bahrain, WHO
- Gary Cohen, President and Co-Founder, Health > Care Without Harm (HCWH)

Keywords: COVID-19, Resilient Health Systems, G20, Supply Chains, Vulnerabilities, Opportunities, Market-shaping, Procurement Strategy, Supply Shortages, Partnerships, Good Practices, Standards, Climate Change, Environment, Toxic Chemicals, Solar Energy, Cost Savings, Health Care Waste, Carbon Footprint, Sustainable Production and Consumption, Policy and Regulations, Innovation.

The official opening sets the scene for the 2020 Global Forum to showcase the intersections between climate change and global health, and the necessary transitions to recover better from the COVID-19 pandemic. The Kingdom of Saudi Arabia advocates as a strong investor in the Sustainable Development Goals (SDGs) and this was translated into the vision for 2030 Agenda for Sustainable Development and as part of this side event for the G20 Summit. The witnessed economic and social disruption caused by the pandemic is devastating as tens of millions of people are risk of falling into extreme poverty. The number of undernourished people is currently estimated at roughly 690 million and could increase by 132 million by the end of 2020.

Summary of Key Messages:

> In Saudi Arabia, the world leaders will meet for the G20 Summit for the well-being of humanity, health of the planet and for a better recovery after COVID-19. The capital city of Riyadh in Saudi Arabia sets the stage for the G20 Summit to discuss the most important global issues for empowering people, maintaining the health of the planet and creating new ways to enhance human cooperation in the field of innovation.

- > The Forum will jointly explore how we can recover better after COVID-19 through Sustainable Procurement, Consumption and Production practices that will lay the foundations for the G20 Summit, amongst with the fundamental guestion—how can the world prepare for an upcoming health crisis? The pandemic has showcased the dire changed rules of life, the crippling of the economy and hindered the global access to food and medicines.
- > The pandemic has demonstrated vulnerabilities in the health supply chain. There is a need for health care systems that can adapt swiftly to new challenges and the global community needs to step up its efforts to ensure access to quality health care for all.
- Access to essential medical supplies such as > personal productive equipment (PPEs), mechanical ventilators and diagnostics for COVID-19 have been witnessed. Off-label prescriptions and stockpiling of several medicines have also hindered accessibility and increased the risk of the poor-quality medicines.
- > Global cooperation is needed more than ever for resilient health systems. As an example, Sweden and the Kingdom of Saudi Arabia collaborated in the coordination and planning to optimize ICU patient treatments which showcases international solidarity and cooperation during a time of crisis.
- Health care supply chains need to avoid harmful > production processes and with the improper disposal of products that contribute to climate change and environmental degradation. This is a growing concern witnessed during the pandemic, as the increased use of PPEs has caused unprecedented accumulation of health care waste globally.
- > There is a need to focus on the health sector's contribution to its overall carbon footprint and how we can collectively enable the health sector



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to deliver services without negatively impacting people's lives and that of the planet. There are many lessons from around the world that can be scaled up and replicated globally to decarbonize the health sector and the Global Forum 2020 shall provide experiences and suggestions on how this can be done.

- > Strong and resilient supply chains are essential for public health as they are a critical element of a well-functioning health system and are a vital input to advancing national and regional health security goals. Thus, the pandemic has challenged the supply of essential medicines and health products which compromises each country's achievements in universal health coverage and threatening progress towards the Sustainable Development Goals (SDGs) by 2030.
- Sustainable consumption and production modalities support companies to reduce the harm to workers, communities and the environment, as well as to save energy and natural resources. The strategic procurement method provides as a vital opportunity to achieve supply chain cost effectiveness, as WHO has estimated that by reducing unnecessary expenditure on medicines, countries

can save up to 5 percent of their total health expenditures.

- > The pandemic showcases incredible opportunities-there is a shined light on the essential role that the health supply chain plays in global health for the 7.8 billion people on our planet. We need to think about how we redesign our supply chains through the use of health care materials, manufacturing processes and product disposal with technologies and systems that can guarantee health care access that is sustainable.
- There is a need to establish standards for envi-> ronmentally responsible health products. While suppliers can proactively model these innovations in the marketplace, regulations are likely to inevitably change soon for low carbon processes and certain types of toxic chemicals with restrictions for different uses.
- > This meeting is a prelude for the G20 Summit and how it can model the kinds of values that are needed in the health sector for universal and equitable access, sustainable production and preventative health care—it is recognized these issues are all in fact integrated.

Keynote Address: Climate Crisis and Health

https://youtu.be/ckhWYqPQnS4?t=4361

Keynote Speaker: Dr. Mandeep Dhaliwal, Director, HIV, Health and Development, UNDP

Keywords: COVID-19, Health Sector, Action, Climate Crisis, Countries, Sustainable Consumption and Production, Biodiversity, Environment, Green House Gas (GHG) Emissions, Evidenced Based Policy, Nationally Determined Contributions (NDCs), Scalability, Natural Resource Decoupling, Sustainability, Innovative Finance.

Dr. Mandeep Dhaliwal's keynote speech highlighted the importance of collective efforts to strengthen the resilience of health systems and how sustainable production and consumption practices provide as a vital opportunity to improve the health of people and our planet. In order to improve public health and to reverse planetary damages, there is need for bold investments, partnerships, policies and actions that work for people and the environment as COVID-19 is a stark reminder that we are just one part of a complex ecosystem.

Summary of Key Messages:

> COVID-19 has shown the critical importance of scaling integrated development solutions which

can advance sustainability and equity. However, if we do not learn from our mistakes and take decisive action, we risk increasing the health sectors carbon footprint, escalating costs, and harming people and planetary health-we must not underestimate our collective challenge.

- UNEP's Emissions Gap Report of 2019 states > that the world needs to reduce emissions by 7.6 percent every year for the next decade to limit global warming to 1.5 degrees Celsius. According to the UNDP-UNFCCC NDC Outlook Report: The Heat is On, almost half of the world-75 nations representing 37 percent of global greenhouse gas emissions, are planning to take more climate action than promised in their national climate pledges. Meanwhile, 71 countries are still deliberating, which are some of the biggest greenhouse gas emitters, and 14 countries have indicated they have no plans to revise their nationally determined contributions.
- > We need to encompass new ways for government led multi-sectoral action and to develop new ways to finance climate smart sustainability solutions in the health sector. We know from the landmark Health Care Climate Footprint Report by Health





Care Without Harm (HCWH) and Arup-health care contributes to 4.4 percent of net global greenhouse gas emissions. As a part of this issue, the health sector purchases a broad range of products including chemicals, electronics, plastics, medical devices, energy generation technologies, laboratory reagents, anaesthetic gases, pharmaceuticals, personal protective equipment and food. The production packaging, transportation, use and disposal of these products therefore contributes to chemical contamination, resource depletion, biodiversity loss, air and water pollution and ultimately contributes to the climate crisis.

> There are three critical lessons to reflect on how we can build forward better and recover stronger from COVID-(1) To scale up climate smart actions that are equitable, just and aligned with the Sustainable Development Goals, (2) To decouple economic activities from environmental and social impacts and (3) To collaborate in ways that we never have before to address the climate crisis. We are all stakeholders with interlinked and interconnected fates and there is no opting out of the climate and biodiversity crisis-we must act together for the health of the people and planet.

Panel Discussion: Sustainable Health Supply Chains in the Context of COVID-19 and Beyond

https://youtu.be/ckhWYqPQnS4?t=8129

Moderator: Dr. Rosemary Kumwenda, Team Leader, HIV, Health and Development, UNDP Eastern Europe and Central Asia and SPHS Coordinator

Panelists:

- > H.E. Mr. Ahmed Alhakbani, Customs Governor, Kingdom of Saudi Arabia
- Don Mwangana, Principle Inspector, Zambia Medicines Regulatory Authority
- > Evghenii Alexandrovici Goloșceapov, Advocacy Director, Positive Initiative
- > Raja Sharif, Founder and CEO, FarmaTrust
- Fahad Alshebel, CEO, National Unification Procurement Company

Keywords: Procurement, Regulatory Authorities, Data Systems, Prevention, Challenges, COVID-19, Health Care, Medicines, Medical Equipment and Supplies, Health Care Workers, Suppliers, Manufacturing, GMP, Local Production, Quality Assurance, Inspections, Digitalization.

The outbreak of COVID-19 has disrupted the provision of adequate health care services and with this pressure, many countries have been unable to respond effectively to this health emergency. This also includes with the adherence of social, environmental and ethical dimensions in public health procurement. Therefore, this session explores the insights on how

sustainability should and can be followed in health emergencies, and with the perspectives on how this is handled through the various activities and work that has been conducted during the pandemic. The panellists were then asked a single question of "What challenges and opportunities were brought with the COVID-19 pandemic in concrete terms and what would you have done differently in a pandemic situation going forward?"

Overall, the panellists indicated that the pandemic brought about challenges for policymakers, regulators and innovators. There were also trade barriers, the human rights issues of equity of access to quality and affordable commodities and medicines, issues of access to PPE, ICU beds, ventilators and other critical health supplies. The panellists highlighted key points of what the future looks like, and this included (1) ramping up of local manufacturing was recognized as an essential aspect in order to secure supplies at national level, (2) digitalization of health processes is needed in order to ensure transparency and accountability to sustainability standards, (3) technology is essential to safeguard human life and to safeguard global health care to ensure that all countries worldwide have access to technology (4) there has to be concerted efforts and partnerships that are required to manage the global pandemic.



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Summary of Key Messages, Lessons Learned and Actions:

H.E. Mr. Ahmed Alhakbani—Paramount to the Kingdom of Saudi Arabia's challenges and opportunities during the pandemic was its ability to monitor and manage the health and safety of employees at the beginning of the pandemic. As a part of Saudi Arabia's Customs, they primarily worked with the health authorities to ensure the safety of the employees by facilitating digitization, accommodating remote work and managing the risks of trade and economic activities coming from border areas. Their operating model was also changed in order to allow for continuous goods to flow in and out of the country while mitigating risk through calculated risk assessments.

The Kingdom of Saudi Arabia also had worked on enhancing the transparency in a rapidly changing environment, considering on a weekly basis there were changes in regulation, processes and procedures issued from government. Therefore, they had updated their website with a continuous feed, in both in Arabic and English, to help investors in Saudi Arabia to deal with the rapid change in procedures and processes. Digitization and collaboration with government entities was also an imperative strategy by adding more online services that enables for customers to deal with Saudi customs remotely, amongst with the leverage of technology. Fahad Alshebel-As part of the Saudi Arabia National Unification Procurement Company, they worked closely with health regulatory authorities, suppliers and health care providers. They needed to respond quickly in order to meet the demands of the pandemic and hence, a committee was established within 24 hours. Demonstrated examples were highlighted on how the supplier base was leveraged in order to fulfil access to PPE, ICU beds, ventilators and other critical health supplies. This also included ramping up local production and to improve economies of scale in order to cover the demand with the help of the higher commission and regulatory authorities. This also had triggered the thinking on capacity and the capability of strategic stocks, and also to keep a contingency for any needs in the future.

Evghenii Alexandrovici Goloșceapov—Moldova faced many challenges as the public health procurement process did not use electronic systems during the COVID-19 pandemic, nor did it incorporate the integration of sustainability standards. It took health authorities many days to get the information from the stocks needed from health institutions and amongst with a no centralized database that had resulted in a public distress with the government. Thus, the Ministry of Health is planning to bring back the electronic system for health procurement and to fulfil open contract data for transparency, amongst to solve systematic issues and reporting rates of health institutions. This also includes



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to enhance Trade Related Intellectual Property Rights (TRIPS) flexibilities to increase competition in the market and also, the need for methodologies for lifecycle costs for medicines and medical devices. As highlighted in the official opening—there is a need for a pandemic ready health system.

Don Mwangana-As recognized by the Zambia Medicines Regulatory Authority, online systems are needed and this has been escalated due the pandemic to implement a system that allows for an online application of licences, certificates and payments for the distribution of medicines and health products. However, during the pandemic, it was recognized that connectivity proved as a challenge as not all clients have access to platforms and the internet. Also, with the increased demand in COVID-19 related health commodities, there was a need to increase the market supply of hand sanitizers and the Zambia Medicines Regulatory Authority created different incentives and mechanisms to facilitate a production in the local market. Also, as a regulatory authority, they did not have the guidance documents for the registration or inspection of hand sanitizer products and had conducted the necessary groundwork in order to provide capacity building on the issues related to GMP. Overall, the Zambia case demonstrates interesting perspectives of an integrated regulatory management system and how they reduced the impact of procurement during a pandemic from a regulatory perspective.

Raja Sharif-The technical ability to safeguard people's lives and to prevent shortages and wastage of medical products is currently available and accessible for Ministries of Health, regulators and hospitals. This is not only in Western countries, but also for lower-middle income countries. While blockchain technology allows for end-to-end tracking in real time of medical products, it also monitors the distribution and environmental aspects of the products at a granular level. This helps to eliminate counterfeit medicines by sealing the supply chain and also to enhance quality and to prevent shortages and waste by aiding with the demand side planning, as it is recognized there is an estimated US\$4 billion worth of medicines in the US that are wasted each year due to the expiration in warehouses. This also helps regulators to fully digitize the regulatory process with less paperwork and with trusted data and automation capabilities.

Blockchain technologies are also considered cheaper than other systems and are not fully operational at this point in time due the lack of awareness in the market. Blockchain essentially can change society by digitizing the procurement process, which enhances transparency and contributes towards efficiencies and optimization. Blockchain can also help eliminate corruption and aid with the protection of the environment by monitoring GHG emissions and reducing waste.

Parallel Sessions

A. Food Safety—Risk Assessment https://youtu.be/lewt96AHP6g

Moderator: Dr. Rashed Alarfaj, Executive Director, Monitoring and Risk Assessment, Saudi Food and Drug Authority (SFDA)

- > Mohammed Alhuthiel, Director, Risk Assessment, Saudi Food and Drug Authority (SFDA)
- > Dr. Tadesse Amera, Co-Chair, IPEN and Director, Pesticide Action Nexus (PAN)-Ethiopia
- > Dr. Maha Alturki, Associate Dean of Academic Affairs, College of Applied Medical Sciences, King Saud bin Abdul-Aziz University for Health Science (KSAU-HS)
- > Dr. Randah Miqbil Alqurashi, Assistant Professor, King Faisal University

Keywords: Pesticides, Chemicals, Food Safety, Risk Assessments, COVID-19 Pandemic, Systems, Exposure, Production, Immunity, Consumers, Academic Studies, Nutrition, Diet, Health, Impacts.

Food safety and nutrition is key element for a good and sustainable health system. As per WHO, over 200 diseases are caused by unsafe food and an estimated 600 million people get sick from unsafe food every year¹. Access to safe and nutritious food is key to sustaining life and promoting good health, amongst to keeping people healthy in midst of a global pandemic. Therefore, keeping all consumers healthy and safe is critical to surviving a pandemic and this panel discussion is designed to showcase the importance of science as a crucial component for a food safety paradigm, while highlighting the food safety challenges and how to improve immunity through nutrition.

The panellists had presented key points for this session that include: (1) There is no scientific evidence that COVID-19 can be transferred through food (2) The importance of capacity building for food risk assessments in the world and more specifically in developing countries, (3) Governments need to ensure the sustainable supply of sufficient, safe and nutritious food during and after the pandemic, (4) A One Health approach is needed to confront emerging diseases and antimicrobial resistance, (5) There is an need for an increase the public awareness on a balanced diet that includes all food groups and to follow the WHO guidelines to protect our immune systems. Overall, creating healthy and sustainable food systems are needed to produce an effective food economy and to deliver nutritious and safe food.

Summary of Key Messages, Lessons Learned and Actions:

The Role of Risk Assessment in Food Safety systems (Mohammed Alhuthiel) - Mr. Althuthiel presented the risk management activities conducted at the SFDA and what impact this had on food safety and security during the pandemic. It was highlighted in a recent study conducted in multiple countries that the current framework is not enough to guarantee food safety due to the lack of infrastructure and expertise, lack of data, new emerging risks and with the globalization of food supply. With the SFDA lessons learned from COVID-19, there is a need to focus on the domestic food supply chain and manufacturing, and to support local agriculture that is accessible, sufficient, safe and nutritious during and after the pandemic.

Food production also needs to reinforce basic food hygiene practices, to change the layout and design of food production lines, and to use automation to cope with physical distancing. Timely communication is key to maintaining food safety and security, and there is a high importance of an immediate scientific response to policy makers, consumers and stakeholders. Best practices include advanced coordination between government agencies in terms of food safety and security, to improve the standards and guidelines to cope with the situation, and to increase consumer awareness. Overall, it is advised that we need more reliance on science and scientific capacity building, and the need to implement a One Health approach to confront emerging diseases.

Pesticides used for food production as a health and safety issue (Dr. Tadesse Amera)-Dr. Amera presented the chemical risks from pesticides used for food production. All pesticides are potentially harmful to human health and can affect people in their application when they are consumed, with impacts that can be acute (immediate) or chronic (long-term exposure). There is also a recognized bioaccumu-



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lation in the human body and biomagnification of pesticides in food systems, which can lead towards harmful chronic impacts over time. There are also voluntary standards that are managed by the Food and Agriculture Organization (FAO) and WHO on Pesticide Management (JMPM) to avoid adverse health effects. These voluntary standards are used by governments and international risk managers such as the Codex Alimentarius Commission to establish Maximum Residue Limits (MRLs) for pesticides in food. There are also opportunities to reduce and eliminate pesticides, such as the resolution presented at the 4th meeting on the International Conference on Chemicals Management (ICCM) on agroecology in crop production, integrated pest management and organic agriculture. Therefore, food safety in relation to pesticides residue is recognised as a public health and environmental priority.

How Nutrition Can Help to Fight Against COVID-19 Pandemic (Dr. Randah Miqbil Alqurashi)— Dr. Alqurashi presented the immune system, the micronutrient demands of the immune system, the public awareness for preventing COVID-19 (current study) and guidelines to protecting our immune system. Worldwide, there is an estimated one million deaths among children under five years old due to deficiencies of Vitamin A and zinc, while 250 million preschool children are Vitamin A deficient. Micronutrients are important as they support the structure and function of mucosal cells, promote response to bacterial infections, stimulate a general immune responsiveness and protect against cell damage. However, no specific food group, supplement or natural health product can prevent people from catching COVID-19, but WHO does encourage people to eat a healthy balanced diet to support the immune system. A balanced diet that includes all food groups supports an effective immune system and may provide protection against infections, cancers and other diseases.

Current State of Evidence: Vitamin D and Immunity During COVID-19 (Dr. Maha Alturki)-Dr. Alturki presented on how the nutritional status may play an important part in different severe infections and in particular with COVID-19. Vitamin D is an essential nutrient that humans obtain through exposure to sunlight, diet and dietary supplements. It plays a vital and complex role in the immune system function and could prevent the cytokine storm and subsequent acute respiratory distress syndrome that is common in the cause of mortality in COVID-19. While there has been emerging literature and studies that showcase Vitamin D in the prevention or treatment of viral respiratory infections, the evidence has limitations. Therefore, the evidence to use Vitamin D supplements to treat or prevent COIVD-19 is insufficient and it is recommended to maintain a diet that contains a balance of vitamins to obtain an optimal and nutritional status.





B. Responsible Business Practices https://youtu.be/xhH-KUPFND0

Moderator: Dorin Rotaru, Health Programme Manager, UNDP Ukraine

- Dr. Fiona Adshead, Chair, Sustainable Healthcare Coalition
- Hitesh Upreti, Advisory Board Member, CPhI— Middle East & Africa
- Wazani Zulu, Manager, Regulatory & Compliance, Sterelin Medical & Diagnostics Ltd.

Keywords: Industry Practices, Public Procurement, Services, Sustainability, Systems, Health Impacts, Patients, Pharmaceuticals, Environment, Stakeholders, Private Sector, Quality Assurance, Research, Sustainable Development.

The COVID-19 pandemic has created a major disruption in the economy and in the operations of global businesses. These disruptions have created a wide range of impacts and with many businesses struggling financially. The COVID-19 crisis has also exposed major vulnerabilities in health care operations and supply chains linked to conditions of work and with an increased impact on the environment through the increased disposal and waste of medical commodities.

Therefore, it is recognized how companies respond to responsible business practices will have lasting reper-

cussions for the sake of the economy, society and the planet, and how we can recover better from COVID-19. The panellists had presented key points for this session that include: (1) We need to make sure that we work across the system in collaboration to encourage innovation-how do we bring people together to solve problems and to measure impact? (2) How sustainable are we in the lifecycle of the products? Research and development, manufacturing and production, distribution, use and disposal-what measures are we putting in to ensure sustainability? (3) The private sector has a significant impact on sustainability while digital technologies are contributing to the decrease of the health care costs and its environmental impact. Therefore, the panel concluded on how sustainability is embedded in all of us to ensure that we work towards a sustainable future-it is essential to put in all efforts to deliver the messages.

Summary of Key Messages, Lessons Learned and Actions:

A positive collaboration for greener health care bridging the private and public sectors (Dr. Fiona Adshead)—The Sustainable Healthcare Coalition (SHC) is a partnership of health care companies and other health agencies that are drawn together to address some of the most pressing sustainability issues in global health care. A primary focus has been in sustainability and digital health in order to measure environmental impact and there are great opportunities for collab-



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orations. Digital solutions are playing a larger role in health care delivery and can be a valuable part of delivering sustainability towards Net Zero Health Care.

Digital interventions can also improve the "bottom line," improve patient outcomes, reduce costs and are critical to monitoring and measuring environmental impact. The SHC is expanding on how circular economy principles can be applied to health care, how supply chains can play a role for sustainable health care systems, how life cycle assessments can be embedded in the use of plastics and how innovation can drive change. Case studies were presented from multiple health care companies amongst the release of the world's first guidance on how to measure the carbon footprint of pharmaceuticals and medical devices.

Responsible Business Practices: Sustainability in Procurement (Wazani Zulu) - Environmental sustainability involves making decisions and taking actions that are in the best interest of protecting the nature and preserving the capability of the environment to support human life. The Minister of Health of Zambia has achieved multiple milestones, which include introducing a bill (Public Procurement Bill of 2020) that mandates e-procurement by all spending agencies and ministries.

The Zambia Pharmaceutical Business Forum (ZPBF) works closely with the Zambia Public Procurement Authority (ZPPA) to ensure all tendering processes follow an open tender model that enables transparency, and amongst working with the Zambia Medicines Regulatory Authority (ZMRA) to ensure dossier submissions are made electronically. The ZPPA is planning to continue to scale-up the use of the e-GP System and to embed issues of sustainability into solicitation documents. The Zambia Ministry of Commerce, Trade and Industry has also identified the pharmaceutical sector as a priority sector for local development and are developing a five year strategic plan for local manufacturing.

Responsible Business Practices: A Pharmaceutical Industry Perspective (Hitesh Upreti)-The pharmaceutical industry is responsible for the discovery, development and production of drugs that are high quality, safe and effective. Some challenges and reflections for the industry include the fact that in developing markets, patients need to be educated to create awareness and access to latest developments across the world in health care. There is also a need to progressively shift from prescription drugs to other product segments and to health care delivery, and these shifts can be different by region.

With regard to primary care franchises, there is a need for a portfolio evolution towards specialty care products designed for highly profiled patient populations and backed by complex scientific and medical

data. Therefore, the industry needs to identify which business targets are genuinely attractive for major or new investments. The capacity issues in relation to the size of the health needs and market demand require private-public partnerships to address the full spectrum of public health issues, from basic patient access to care and to managing global health crises. Overall, it is advised that national strategies should be made to reduce inequalities in health, for countries to standardize pricing to enhance access and for governments and the private sector to plan together on priority areas for the industry with a clear roadmap for sustainability for the next five years. It is also important not to forget the responsibility of the industry and its impact on the environment-it is key to go beyond what is required as legal and to do what is right.

C. Medical Devices and Safety https://youtu.be/jzRubHG3P_U

Moderator: Dr. Mohammed Majrashi, Executive Director, Surveillance and Biometrics, Medical Devices Sector, Saudi Food and Drug Authority (SFDA)

- Faisal Ali M. Alshehri, Head, Medical Device Regulation and Standards, Saudi Food and Drug Authority (SFDA)
- Bader E. ALoufi, Head, Post-Market Clinical Evaluation, Medical Devices Sector, Saudi Food and Drug Authority (SFDA)
- Dr. Manish Pant, Chief, Health and Governance Unit, UNDP India

Keywords: Medical Devices, Standards, Manufacturers, Challenges, Safety, Market Dynamics, Documentation, Requirements, Guidelines, Quality Assurance, Risk, Compliance, Supply Chain, Facilities, Vaccines, Temperature, Government, Management, Digital Supply, Health Care Providers.

This session covered Medical Devices and Safety, and the replications of the COVID-19 pandemic. Industries, markets and businesses all over the world have been affected due to the pandemic and this impact has been profound within the medical device sector. Therefore, this panel session looked into the clinical processes that have taken place from different perspectives, the collaborations conducted to facilitate medical device access and also, what was done to ensure the availability and affordability of medical devices in the marketplace. The panellists presented key points for this session that include: (1) Harmonized standards are an important tool in the medical devices regulatory cycle in order to ensure safety and performance, (2) Best available research, opinion of clinical expertise and patient voices add a significant input towards a good post-market evaluation of medical devices (3) Digital supply chain systems are an essential element of building a resilient health care system and with a strong government ownership and empowerment of health care workers—the system can provide cost savings, transparency and accountability (4) Encouraging medical device innovation is essential to achieve a sustainable and high quality of health care.

Summary of Key Messages, Lessons Learned and Actions:

The Utilization of Medical Device Standards to Demonstrate Safety (Faisal Ali M. Alshehri)-The presentation highlighted the importance of standards, medical device lifecycles and SFDA efforts during COVID-19. A standard is a defined as a document that is established by a consensus of subject matter experts and approved by a recognized body that provides guidance on the design, use or performance of materials, products, processes, services, systems or persons. Guidelines are then used to help explain and share knowledge on the processes, requirements or applicable recognized standards. The SFDA recently developed guidance documents to cover Artificial Intelligence (AI) related topics as these are new areas that are not regulated in the market. They are also working on new documents to include cybersecurity, software, and 3D printing for medical devices.

The COVID-19 and SFDA Medical Device Efforts included temporary updates to ensure easier marketing authorization requirements and provided support to local manufacturers. They are in constant communication with local and national partners and are pleased to state they have a number of experts working with international organisations to develop a number of publications in line the with the characterization of PPE. Case studies on how standards were used during COVID-19 (medical masks, ventilators) were presented amongst other SFDA publications.

Post Market Surveillance Activities to Ensure the Safe Use of Medical Devices (Bader E. ALoufi)—The presentation elaborated on pre-market and post-mar-



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ket reactive and proactive activities, amongst efforts of the SFDA during the COVID-19 pandemic. According to WHO, there are two million different kinds of medical devices in the world market today and these products can be classified in about 22,000 generic devices or groups². Therefore, the primary question is how to ensure medical devices are safe and used safely—this requires a robust regulatory system.

The best practices and efforts conducted by the SFDA as a part of post market surveillance during the COVID-19 pandemic include conducting research to ensure the safe-use of medical devices, increasing the awareness regarding the best practices in utilizing PPE, delivering effective communication with the public and health care providers, and working closely with health care providers on issues regarding high demand devices.

Transforming the Vaccine Supply Chain in India (Dr. Manish Pant)—India has the world's largest immunization programme that vaccinates close to 20 million beneficiaries each year including the newborns, pregnant women and children under five. The vaccine supply chain in India has many challenges which mainly consist of the lack of real time visibility of stocks across all health facilities, the mismatch between demand and supply, and with the complexity of the supply chain. Hence, the Government of India was

2 https://www.who.int/health-topics/medical-devices#tab=tab_1

interested in digitizing the vaccine supply chain and had decided to address some of the main challenges for implementation that included low internet access, lack of functional computers and with the need for data entry operators.

Therefore, in order to bypass the broadband challenges, a smartphone technology, called Electronic Vaccine Intelligence Network (eVIN), was implemented to digitize the supply chain. The eVIN system is more than just a software, it is a human platform for managing the health supply chain. There are over 900 workers who support the system and work with government staff to ensure the vaccine supply chain is working properly. The system connects the central state, district and regional store as one architecture that provides a dashboard, actionable analytics and temperature monitoring in real time to help make informed decisions about stock and infrastructure management.

Some major impacts include the stock availability increasing to 90 percent across all critical control points, which means hard to reach areas have vaccine access with an 80 percent reduction in stockouts. The eVIN project has as a result transformed into a consumption-based procurement system. The project has also aided with gender equality as 50,000 health workers have been trained which comprises of more than 60 percent of women. They also have been introduced to digital technology and vaccine management, which has led to a greater empowerment of these workers.

D. Sustainable Procurement Index for Health Clinic https://youtu.be/JAmHp0wvgLQ

Moderator: Dr. Kristian Steele, Associate, Arup

- > Anna Tuddenham, Consultant, Arup
- > Terry Ellis, Senior Consultant, Arup
- Callum Newman, Associate Director and Group Leader for International Development, Arup

Keywords: Sustainability Project, Market Measuring Tool, Supply Chain, Organisations, Suppliers, Baselines, Health, Environment, Human Rights, Pilot Project, Sustainability Criteria, SDG Performance.

The Sustainable Procurement Index for Health (SPIH) is a globally established, recognized and adaptable measurement tool for policy makers, manufacturers, suppliers, procurers and health care facilities end users. It is designed to provide as an incentive for entities to improve their environmental and social sustainability record. There currently is no such measurement tool that exists to monitor greenhouse gas emissions, resource depletion, chemical/ toxic impacts on human health and the environment and amongst human, labour rights and gender equality. The ambition of the project is to facilitate sustainable procurement in the health sector by supporting the decision making of buyers and certainty for suppliers, to provide a robust and transparent method that communicates supply chain performance and to provide clear pathways for stakeholders to improve their performance.

Based upon feedback received by buyers and suppliers, the index will focus on a case during a specific activity (purchasing event) rather than as a market monitoring tool or supplier/contract performance tool. It aims to support in "shaping the market" by leveraging procurement events with long term potential to transition to a market-based labelling type of solution from both an organisational emphasis (baseline) performance and product focus. Key theme areas include Greenhouse Emissions (GHGs), Resources, Toxicity and Social Aspects with indicator levels, criteria and weighting that provides a scorecard. The SPIH will be available on the SPHS Platform. Buyers and suppliers who are interested in piloting the SPIH in January and February 2021, to contact Ian Milimo at Ian.Milimo@undp.org and Anna.Tuddenham@arup.com.

Global Forum 2020 Day Two

https://youtu.be/CcpD0pE0ED0?t=1220

November 19, 2020

Opening Panel Discussion: How Can We Better Prepare for the Next Public Health Crisis?

https://youtu.be/CcpD0pE0ED0?t=2741

Moderator: Dr. Jalal Alowaisi, President, Saudi Red Crescent Authority

- Amel Alfatih, Director General, Global Health, Federal Ministry of Health, Sudan
- Sanjay Kumar, Chief Materials Manager, Ministry of Railways, Government of India
- Dr. Jonathan E. Slutzman, Instructor in Emergency Medicine, Harvard Medical School and Massachusetts General Hospital
- Ramon San Pascual, MPH, Executive Director Health Care Without Harm SE Asia
- > Dr. Fayad Dandashi, CEO, Tamer Healthcare

Keywords: COVID-19, Health Care System, Supply Chain, Uncertainty, Resilience, Economy, Community, Mechanisms, Preparations, Scale, Collaboration, Equality, Resource Efficiencies, Planetary Health, Localization, Digitization.



Dr. Rosemary Kumwenda (UNDP) speaking at the opening session on Day 2 (© SFDA)

The opening panel discussion started with the initial question—*How can we better prepare for the next public health crisis?* This was then broken down into three subset questions:

- What is your insight about the current strategy from crisis management, including the whole cycle of mitigation preparedness, response, recovery and the resilience of the health care system?
- 2. What challenges did you face during the current pandemic crisis and what are the alternative approaches used or proposed as a solution for this challenge?
- 3. What are your key recommendations as a decision maker in order to be prepared to handle a future crisis?

Key and common themes that were discussed amongst the panellists in order to prepare for the next public health crisis include collaboration, environmental health, equality, digitalization, localization and resource efficiencies. Overall, the panellists highlighted key points of what the future looks like and this included: (1) Need a proactive and not a reactive response when it comes to delivering health care (2) Health care systems need to compliment and not compete with one another via local, regional and global areas (3) There is a need for an investment in public health infrastructure and for health care to be viewed as an investment, not an expenditure (4) A need for the diversification of supply chains, re-localization and repatriation of the supply chain and sourcing (5) Sustainable health care is resilient health care—it needs to include the health of the planet and to encompass equality (6) Digitalization, science and technology are important factors to strengthen the health care system in a post-COVID-19 era (7) There is a need to look into the reusability of medical devices and equipment in order to maintain supply security and to respect the environment.

Summary of Key Messages, Lessons Learned and Actions:

Dr. Jonathan E. Slutzman: (1) The greatest highlight was on public health infrastructure and how public health has been given a lower priority as a responsive or reactive health system, and not necessarily focusing on the preventative side. There have also been a number of challenges in how health care is being delivered and in particular with supply chain topics on the environmental footprint of health care services. Also, the just in time supplies modality that is perceived as an efficient use of resources has actually become a liability and this is due to the single use disposable culture making things worse for maintaining medical supplies and the environment. Competing health systems are also a challenge as opposed to the needed partnerships and collectively working together during a pandemic, amongst to make a better use of a national stockpile or regional stockpiles-the



H.E. Prof. Hisham Aljadhey, CEO, Saudi Food and Drug Authority at the Global Forum 2020 (© SFDA) H.E.

pandemic has certainly showcased vulnerabilities in how health care is delivered.

(2) The two biggest challenging factors include the pathophysiology and optimal treatment for the novel disease and how health care workers and their families keep safe at the same time. The limitations of available PPE through single use disposables that were not available due to constant changing supply chains had led to questions arising from clinical staff, amongst with the eroded confidence on the ability to provide optimal health care.

(3) Sustainable health care is resilient health care and if we can provide health care that is less harmful to our natural environment, then it will by extension also be more resilient to the shocks that we will inevitably face. This also includes with the diversification of supply chains, whether global or local, and with the durability of equipment that can be reused. There also is a need for a greater transparency in our public and private sector to restore confidence and to showcase how health care providers not providing care in an environment that could be harmful to them or their patients. There is also a need for a greater regional and international cooperativity considering future viruses and climate change do not respect borders.

Sanjay Kumar: (1) There are two fundamental issues that need to change in order to make the health care system more proactive and responsive to failures in the future—a health care system needs to be viewed as an investment and not as an expenditure and we

cannot separate the health of human-beings from the health of the planet.

(2) India had faced serious challenges as they recognized that they did not have the capacity to supply PPE and amongst with the escalation of prices-this was the number one item health care professionals required to provide vital care. As a result, the Indian government and local businesses had started working together in order to ramp up production through textile mills, which ultimately made India the second largest manufacturer of PPE within four months. While this is advised as not the best way to handle the supply chain during a pandemic, it is recommended for the future to focus on the digitization, diversification and localization of the supply chain as lessons learned from COVID-19. (3) There needs to be an investment in the research and analysis of evidence-based system and policy framework that can handle future crises. There is also a need for a communication strategy that can reach all populations and to avoid misinformation on the scientific understanding of the pandemic. Lastly, there is also a need for an investment in sectors and industries that not only bring benefit to the economy, but also to people and the planet as a part of the post COVID-19 recovery.

Amel Alfatih: (2) The uncertainty was the one of the biggest challenges which included how to conduct and follow the rapid case management, treatment protocols and consumption rates—the essential pace

of the pandemic. The human resources, movement of commodities during the lockdown was also a challenge, and with the expenses of maintaining large stockpiles. They are now looking into scaling and ratifying a legal engagement framework with the private sector to encourage local production, to look into a more rational use/ reusable PPE and to build capacity of human resources as lessons learned from the COVID-19 pandemic.

(3) Sustainability is actually about resilience that requires better planning at both the government, non-governmental level and across all stakeholders to build resilient action. Information sharing is also centre as the result of the uncertainty which requires more clarity and transparency amongst stakeholders to ensure a whole of government and society approach. Coordination is important between regions and nations and also to have the digital platforms support it, amongst with cleaner supply chains mechanisms. Lastly, there is a need for a better capacity development across all institutional levels and with a systematic consultation, dialogue and collaboration for an early preparedness action.

Ramon San Pascual: (1) There are three important lessons gathered from the pandemic that need to be considered which include the health care system, governance and human and environmental health. Many of the occupational health care systems were not prepared for the pandemic and it is important to recognize that health system resilience and equity are interrelated, which had heightened the pandemic failure. In terms of governance, local and national governments need to compliment and not to compete with one another. Lastly in terms of public health and the environment, the plastic pandemic has been escalated in South East Asia due to the COVID-19 crisis. (3) HCWH has recently released a statement titled Beyond COVID-19: Toward Healthy People, a Healthy Planet, Justice and Equity, which includes recommendations to ensure a better recovery. These recommendations include to focus on health equity and climate justice, health care strengthening and capacity building, and health incorporation in all policies to prioritize and ensure a successful recovery for societies.

Dr. Fayad Dandashi: (1) When looking at the course of the pandemic, there was definitely a lack of strategy and preparedness in the early days which required a lot of management from businesses, the human dimensions and the supply chain. The most important factor was to limit the transmission of the virus, to treat those who were affected and to boost the morale of the population and health care workers. From the corporate level, communication was key to colleagues and workers and this was managed by assembling a dedicated team with the authority and ability to make quick decisions.

(2) As integral to health care and the supply chain, the main challenges were how to ensure an uninterrupted supply to the health care system and solidarity across many segments while protecting the health of the workforce. As a lesson learned from COVID-19, the supply chain is now being reviewed for alternative solutions which is defined as the repatriation of the supply chain and with an inclination towards re-localization. This is in particular for critical industries and supply chain systems such as food, agriculture and health care.

(3) One of the most important factors is to envisage the world and how the global landscape will look again in the post-COVID-19 era. This includes de-globalisation and the repatriation of the supply chain and sourcing. A digital economy is also in the near future and this will have a large burden on regulators and policymaking. There also needs to be more spending on health care infrastructure across the global to be able to cope and prepare for the next pandemic, amongst with stress tests. Lastly, disruption in science and technology is also key to watch in areas for new vaccines, gene therapy, regenerative medicine, personalized medicine and predictive medicine.

Parallel Sessions

A. Drug Safety and Supply Chains https://youtu.be/luXIWLca3ZU?t=218

Moderator: Dr. Ali Al Shahrani, Executive Director, Pharmacovigilance, Saudi Food and Drug Authority (SFDA)

> Turki A. Al-Thunian, Bpharm, MClinPharm, MSc. Epi, PhD, Acting Director of the Research Informatics Department, Saudi Food and Drug Authority (SFDA)

- Dr. Abudaali Almutairi, Drug Safety Expert, Saudi Food and Drug Authority (SFDA)
- Nicolai Schaaf, Programme Manager, Stockholm International Water Institute (SIWI)

Keywords: COVID-19, Health Care System, Supply Chain, Pharmacovigilance, Real World Evidence, Data Science, Stakeholders, Safety, Quality Assurance, Databases, Antibiotics, Antimicrobial Resistance (AMR), Transparency, Good Manufacturing Practices (GMP), Platforms.

This scientific panel regarding drug safety and supply chains had provided an insight on the procedures for drug safety monitoring and how it maintains good public health outcomes. The panel also had elaborated on scientific driven tools used for drug safety and had shared endorsements that are used to ensure the safe use of medication. The panel had also provided a discussion on ensuring the entire supply chain of medicine is kept intact to avoid harm to people and to the planet. This is in particular with the issues of pharmaceutical pollution and antimicrobial resistance (AMR).

The panellists presented key points and recommendations for this session that include: (1) Real-world evidence is essential to maintaining better health outcomes (2) Pharmacovigilance and post-marketing activities are important to minimize the risks of medicinal and pharmaceutical products and vaccines, and especially during pandemics (3) Responsible production of antibiotics are crucial to improve global health outcomes and there is a need to have a policy in place to address these issues.

Summary of Key Messages, Lessons Learned and Actions:

Real World Evidence: A Saudi Regulatory Perspective (Turki A. Al-Thunian)—The presentation highlighted SFDA's efforts in building an infrastructure and realworld evidence in the Saudi health care system. Normally pharmaceutical companies have been responsible for providing data on the post marketing journey of drugs in the market, but recently regulators have started to initiate their own platforms to generate real world evidence due to the high relevance of data for the decision-making process. Real-world evidence is not only relevant from a safety perspective, but its relevance can be extended to other aspects of the drug journey that includes effectiveness, assessing drug shortages and assessing the risk factors that led to the shortage in the health care system.

Therefore in 2018, Saudi Arabia established the National Saudi Pharmacoepidemiology Database. Challenges the SFDA had faced to implement this system include on how adopting electronic health record systems are relatively new, to separate record systems within one hospital, how different hospitals use different coding systems and algorithms and amongst with the validation studies and data completeness. They have also tested to see if their electronic health care records are ready for advanced epidemiological analysis amongst with real-world evidence research methodologies in collaboration with researchers from the Netherlands and the United Kingdom.

Pharmacovigilance Department Initiatives: Recent and During COVID-19 (Dr. Abudaali Almutairi)-the presentation highlighted the history of the SFDA Pharmacovigilance (PV) department, the SFDA experience in ADE Reporting Promotion, Proactive Drug Safety Monitoring of AEs and the SFDA-PV Actions during COVID-19 Pandemic. In relation to lessons learned from COVID-19, this had impacted the workflow of different market authorization holders and the SFDA simplified the requirements by maintaining the compliance to the PV regulations as much as possible. They had accepted PV documents and dissemination of risk minimization measures via email, had flexibility in accepting extension requests and performed remote PV inspections for companies. Other actions included the inspection and evaluation of hand sanitizers through lab testing, whereas updates on safety were published on their website for product that didn't meet quality criteria. Also, in preparation for the upcoming COVID-19 vaccines, the pharmacovigilance department in collaboration with the other SFDA departments, regulatory bodies and Ministry of Health are working on creating a pharmacovigilance for the vaccine, amongst with an active plan for the surveillance to monitor the safety profiles of the vaccines.

Supply and Demand Side for Responsible Antibiotics Manufacturing (Nicolai Schaaf)—The presentation looked at the environmental impacts of pharmaceuticals and active ingredients, where antibiotics materialize as a risk to human health. Stockholm In-



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ternational Water Institute (SIWI) works in the areas of water governance and diplomacy to raise awareness of issues in relation to access to water challenges for international policy, which includes the field of water and pharmaceuticals. While clean water provides positive health impacts in terms of infection prevention and reducing the dependency of antibiotics, it is important to recognize that working with antibiotics carry a built-in risk to resistance.

Therefore, the responsibility of antibiotics, drug manufacturing, emissions and water pollution needs to be addressed due to the increased risk of antimicrobial resistance. SIWI is working with stakeholders from the pharmaceutical industry, the health care sector, the water sector, wastewater treatment and technology providers to understand who the stakeholders are and what is their responsibility. They have recently released a white paper on Reducing Emissions from Antibiotic Production (REAP) and have formed the Responsible Antibiotics Manufacturing Platform (RAMP). Current challenges that SIWI faces in relation to their projects in responsible pharmaceuticals include the nature of regulations in the pharmaceutical market, access to data transparency, complexities in the supply chain and the consensus in terms of manufacturing standards for emissions compliance. Thus, there is a need for a better access to information, transparency and collaboration between stakeholders in order to better understand the scale-of-risk for pharmaceutical emissions in the environment and to conduct appropriate risk management plans for pharmaceutical manufacturing.

B. Supply Chains and Gender https://youtu.be/xQ1B9Tz5g0U?t=717

Moderator: Lin Roger Li, Senior Manager, Strategic Sourcing, Sourcing and Supply Chain Department at the Global Fund to Fight AIDS, Tuberculosis and Malaria

Panelists:

- Margaux Yost, Manager, BSR (Business for Social Responsibility)
- Natalia Korchakova-Heeb, Managing Director, SDG.17 Consulting GmbH and Founder, PPPHealth4All
- Shama Karkal, CEO, Swasti; Chair, Asia Pacific Alliance on Sexual and Reproductive Health Trustee, Catalyst Foundation

Keywords: Gender, Women, Girls, LGBTIQ, Marginalized Groups, Health Access, Supply Chains, Systemic Issues, Workers, Pandemic, Policies, Workplace, Investments, Health Access, Communities, Health Products, Businesses, Data Science, Technology, Digitalization, Innovation.

COVID-19 represents as a fundamental threat to public health and the health supply chain. It is also important to recognize this has a serious impact on



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women, girls and marginalized groups that represent the backbone of the current and future global workforce. Therefore, this panel discussion addressed on how international organisations, governments, policy makers, businesses and civil society can respond to the gender dimensions of health and well-being and to further commit into taking on this responsibility.

The panellists presented key points and recommendations for this session that include: (1) Women, girls and marginalized groups have suffered the most from COVID-19 and special measures are needed from both government and the private sector to address these issues (2) there is a strong business case for both governments and the private sector to invest in women's health as an important part of the global economy and supply chain resilience (3) There needs to be more emphasis focusing on LGBTIQ and inclusion in gender data for better health outcomes (4) With COVID-19 and discussions on digitalization, it is important to recognize 327 million fewer women than men have a smartphone and can access the mobile internet (5) SPHS members shall advocate for gender equity policy making and facilitate creating space for women businesses along the health supply chain from the upstream production to the last mile delivery at the people and community level. Key Summary Messages, Lessons Learned and Action Points:

COVID-19 Impact on Women and Health Supply Chains (Natalia Korchakova-Heeb)—The presentation highlighted on the impacts of COVID-19 on gender and women. Some key facts include on how 70 percent of the health care workforce are women working in the frontlines of COVID-19, whereas they had risked their lives, their families and amongst having additional workloads to manage due to the crisis. 60 percent of women's employment is in the informal economy with few protections against dismissal and limited access to social protection. 16 percent of the global gender pay gap are leaving women more vulnerable to an economic downturn due to the pandemic and 84 percent of women business owners have seen a significant decrease in sales in 2020. Domestic violence has also increased by 25 percent with limited protection measures during the period of quarantine.

This raises the question—how can we support women? There is a clear business case to invest in women considering measures that support women benefits the economy when women are at work. Therefore, supporting measures should be conducted by governments to strengthen the policies and finance for women, and in particular during the COVID-19 crisis. Considering women are three times more likely to suffer from mental health problems than men, some best practices for businesses were presented on preventing stress during COVID-19 for women. Gender smart procurement is also an avenue to support women and multiple methodologies, guidelines, resources and tools were presented by the International Trade Centre (ITC), the Pharmaceutical Sup-

ply Chain Initiative (PSCI), United States Agency for International Development (USAID) and amongst a case study example from Chile.

Health Supply Chains (Margaux Yost)-There are approximately 100 to 90 million women in global supply chain jobs which constitute as workspaces where consumer products are cultivated, produced, created and traded. Also, women make up of 62 to 90 percent of the labour intensive jobs in the supply chain. As part of the BSR Women and Empowerment Practice Team, there is a programme focussed on women's empowerment that specifically caters to women workers with a low income. As this is an area overlooked by the donor community, this group is considered highly vulnerable with limited access to health, protection and with a low financial inclusion. Therefore, there is a strong business case for the private sector to invest in women's health and providing a healthy workplace that constitutes as a productive workforce with a less absenteeism from illness.

Women's health, security and equality are interlinked with the resilience and security of the global supply chain. A case study was presented from Ethiopia on a baseline assessment conducted on reproductive health and family planning of female workers for Ethiopia's new industrial parks. The findings from a COVID-19 Impact Worker Survey Report was also presented with data gathered from China, India, Viet Nam, Kenya Bangladesh and Egypt. The results showcase the growth of domestic violence, access to health, family planning service and products, financial issues, job losses, lack of nutrition and increase in anxiety and mental health issues. The aim of the report is to showcase the data points on the importance of women's health, well-being and to strengthen supply chains through gender initiatives as a part of the COVID-19 recovery.

People Centric Health Response (Shama Karkal)-There is a lack of recognition and contribution for the important role women play in the workforce and economy. There is also not enough discussion about gender and LGBTIQ, as they are also a vulnerable group with challenges in the access to health, well-being and equality. With data that has been provided by the World Bank on people living in poverty by sex and age, there is an identified issue as the LGBTIQ dimension is not included. There is also an identified cycle between health and poverty, whereas poorer and vulnerable communities are most likely affected from the COVID-19 pandemic.

As quoted by Reha Uzsoy, Purdue University, a health care supply chain is not just about getting products to consumers-it consists of multiple independent agents, such as insurance companies, hospitals, doctors, employers and regulatory agencies whose structures and objectives differ and in many cases conflict with one another. Women also form a large part of the human resources for health delivery services and are underrepresented in decision making in the health care sector. Also, according to an OECD Bridging the Digital Gender Divide Report-327 million fewer women than men have a smartphone and can access the mobile internet, which has been a key tool and resource that has been relied upon during the COVID-19 pandemic. Key recommendations and lessons learned include that there is a need for equitable health outcomes for all genders, to focus on local health supply chains and opportunities for entrepreneurship, and there is a need for a created space for women and other sexual minority groups to ensure they can contribute towards decision making, amongst having the right data for better health outcomes.

C. Innovators from the Field https://youtu.be/RQyR3_VPSBU?t=339

Moderator: Dr. Dao Khanh Tung, Programme Analyst, **UNDP** Viet Nam

- > Jeff Stottlemyer, Senior Manager, CLASP
- Muhammed Semakula, Senior Statistician and > Strategic Advisor in Rwanda Biomedical Center
- Ruth Stringer, Science and Policy Coordinator, > Health Care Without Harm (HCWH)
- Nizar Al-Hariri, President, National Industrial > Development Center, Saudi Arabia

Summary Keywords: Health Care Waste Management, Clinic Electrification, Renewable Energy Access, Efficiency, Medical Equipment, Standardization, Stakeholder Management, COVID-19 Response, Supply Security, Developing Countries, Project Management, Health Care, Hospitals, Data Science, Innovation, Circular Economy.

The environmental impact and high carbon footprint contributed by the health sector is well known and documented. Therefore, this session on innovators

from the field provided as an opportunity for innovators to share their ideas, tools, case studies and lessons learned to reduce the environmental impact of the health sector.

These are innovations that have been implemented and could be used on any aspects of health care that include energy efficiencies, digital health, water, sanitation, waste management, packaging and recycling.

The panellists presented key points and recommendations for this session that include: (1) Circular economy and waste management designs for the health sector can generate cost savings while reducing risk to human health and the environment (2) Energy efficiency is recognized as a key constraint to health outcomes (2) Innovations in energy efficient clinical equipment needs to be prioritized in order to improve health care solution designs, amongst with the development of standards and performance baselines (3) Robots demonstrate as an efficient and effective use of new technology for the monitoring, screening and protection of health care providers (4) The pandemic demonstrated the unique ability of quick government coordination and action in order to create new industries and meet health care supply demands.

Key Summary Messages, Lessons Learned and Action Points:

Bio digestion for pathological and biodegradable waste management in Tanzania (Ruth Stringer)-This project is part of the UN project on Reducing Unintentional Persistent Organic Pollutants (UPOPS) and Mercury Releases from the Health Sector in Africa, with project countries that include Ghana, Madagascar, Tanzania and Zambia. The project was funded the Global Environment Facility (GEF) and implemented by UNDP, HCWH and WHO, in collaboration with governments of each participating country. As a part of the project, alongside with the installation of non-incineration waste management for the hospitals and phasing out mercury, each country chose a particular innovation to pilot and to develop. Tanzania chose bio digestion, considering in a low income setting, pathological and organic waste can be very hard to dispose and can become infectious, contaminate groundwater and contribute towards greenhouse gases (GHG).

The project had started 10 years ago in Nepal which focused on food waste, and they had explored hos-

pital waste for future bio digestion projects. The technology was then transferred from Nepal to Tanzania's Mwanayamala Hospital in Dar es Salaam—a 250 bed hospital that conducts 60 deliveries per day, representing a large-scale hospital. The construction cost for the bio digestion unit was about US\$10,000 and the waste generated from the bio digestion unit would produce 2.5m³ gas each day that can be used for water heating and cooking. This produced gas is valued at about US\$2.20 per day in energy costs, and therefore represents a contributed economic bene-fit and value. While the project showcased a circular economy design for the health sector, it also reduced the risk to human health and the environment from hazardous waste.

Off-Grid Medical Equipment Innovation to Support Clinic Electrification (Jeffrey Stottlemyer)-This presentation was about the potential for innovation and design of medical equipment to support the electrification of clinics in areas where there is no connection to the electricity grid. 33 percent of health facilities across sub-Saharan Africa have unreliable access to electricity while 25 percent do not have any access to electricity at all. In rural India, more than 39,000 village-level health centres that serve collectively 230 million people lack electricity. Without energy, clinics cannot use diagnostic tools, maintain inventories and access information that is critical for patient care. This also has been exacerbated due to COIVD-19 and more investments have been focusing in the recognition of health and energy nexus for quality care.

Considering medical equipment is often left out of the conversation for clinical electrification, companies struggle to understand what types of medical devices should be included in their health energy solutions, or that are designed for renewable energy or in challenging environments. Demonstrated examples showcase how super-energy efficient applications lower the cost and expand health care service delivery simultaneously.

Identified technical and commercial challenges for off-grid medical equipment innovation include: the technological complexity, inefficient and inappropriate design, lack of guidance, immature regulatory frameworks, fragmented procurement and sectoral silos. It is therefore recommended to convene health and energy access stakeholder with explicit focus on



Fo UNDP Moldova 2020 COVID19 hospital (photo: UNDP)

medical equipment, to prioritize clinical equipment needs to improve health care solution design, to develop standards for off-grid medical equipment based upon performance baselines and to provide targeted support for medical equipment innovation.

Robot use in Rwanda to fight against COVID-19 (Muhammed Semakula)-Rwanda used digitization, technology and robots as one of the best strategies to tackle COVID-19 pandemic response. The robot project was conducted in collaboration with the Ministry of Health, Ministry of Youth and Culture and with UNDP Rwanda in order to reduce the COVID-19 related risks to health care providers. The Government of Rwanda realized that they needed the data science and IT solutions in order to solve all of the interventions from contract tracing, laboratory equipment and to provide guidance to help decision makers. Data science and IT solutions were not available in advance and they needed to think of each component of intervention to enable operation efficiencies. The main question asked was-how to reduce the risk of health care providers to be affected by COVID-19.

Rwanda has a very limited resource of health care providers in the country, and the idea to introduce robots came as a potential solution to reduce the contact of the patient and the health care provider. They also digitized the flow of lab collection samples to reduce human resources and to avoid the risk of contamination. The robots were used to protect health care providers at treatment centres, to minimize the contact times with confirmed cases and to reduce the visits by medical staff by half from four to two per day. The robots were also used in airports to speed up the mass screening of fevers for passengers (capacity of 50–150 per minute) and to deliver video messages and to detect people not wearing masks properly. Therefore, the robots demonstrate an efficient and effective use of technology for the monitoring, screening and protection of health care providers during a pandemic.

Innovators from the Field (Nizar Al-Hariri)—The presentation highlighted the challenges Saudi Arabia had faced during COVID-19 from an industrial and health supply chain perspective, how there were able to manage the crisis during the pandemic and also opportunities that came with it for innovation. The three main COVID-19 priority sectors that hit Saudi Arabia were food and beverage, medical devices and pharmaceuticals. The Saudi Medical Devices Market is about \$4.8 billion and has a 5 percent cumulative annual growth rate. Within a period of four months, the pandemic resulted in a dramatic boost in manufacturing production which included gloves, gowns, masks and N95. This required a very quick movement and government coordination in order to meet supply demands and also required a creation of new industries such as ethynyl alcohol. hand sanitizers and ventilators.

As a result of this crisis, the Government launched the Industry 4.0 initiative to assist in factory transformation by providing funding (loans up to 75 percent through the Industrial Digitalization Transformation) and a free readiness assessment. The Industry 4.0 initiative includes technological enhancements such as big data, internet of things, smart sensors and cloud computing in order to use an optimal resource utilization, reduced CO2 emissions, provision of high-skilled labour and automation to replace low-skilled workers. The Kingdom of Saudi Arabia is also conducting an industrial analysis for the localization

of production for pharmaceuticals and essential medicines due to the pandemic crisis and as a part of national security. Based upon the countries strong advantage in chemistry and chemical infrastructure, they are looking into how they can transform their industrial sector to produce a competitive pharmaceutical, biologics and vaccine industry to cater to the global marketplace.

Closing Panel: Enabling Leadership for Sustainability in the Health Sector: Moving Towards 2021

https://youtu.be/CcpDOpE0ED0?t=13800

Moderator: Dr. Adel Alharf, Vice President, Saudi Food and Drug Authority (SFDA)

- H.E. Dr. Hani Jokhdar, Deputy Minister for Public Health, Saudi Arabia
- Dr. Sami Alsager, Vice President of Operations, Saudi Food and Drug Authority (SFDA)
- Karen Conway, Vice President, Healthcare Value, Global Healthcare Exchange (GHX)
- Roberto Samayoa, Policy and Compliance, Procurement and Supply Management, PAHO/WHO

Summary Keywords: COVID-19, Leadership, Countries, Health Supply Chain, Quality Assurance, Monitoring, Testing Centres, Communication, Technology, Data, Scientific Protocols, Supply and Demand, Regulatory Flexibilities, Resource Utilization, Sustainability Criteria, Health Care System, Price, Collaboration, Recovery Financing.

The closing panel hosted an opportunity for health care leaders to provide advice on how best to support the world in its quest to recover better and stronger post COVID-19. Questions that the panellists were asked included: *"How should the world prepare to ensure a better positioning that does not neglect sustainability dimensions?" and "How do we build approaches for early warning and early responses to avoid an escalation into a major pandemic in the future?"*

The panellists presented key points and recommendations for this session that include: (1) We need to work and act now for the next pandemic in order to avoid unnecessary social and economic consequences (2) Sustainability is dependent upon the design of highly complex systems—we need leaders who are true systems thinkers (3) International and regional organisations need to work together and not to compete in the delivery of health commodities.

Dr. Hani Jokhdar-The Saudi Arabia Command and Control Centre (CCC) is a public health emergency centre that was established back in 2014 due to the outbreak of MERS-CoV epidemic, and currently operates for all infectious disease surveillance monitoring. As of 2019, the CCC included biological hazards and chemical hazards. During the COVID-19 pandemic, one of the biggest challenges the CCC faced in the beginning was in communications. This was a great lesson learned during the pandemic, and with the communications issues recognized from other countries in advance, the CCC strengthened their communications efforts to make sure everything was centrally controlled. This was conducted quickly in order to maintain the strength of the health care system, to avoid providing different sources of information to different hospital units and to gain the necessary assurance and trust by the population. The CCC has a centralized dashboard, technical guidelines and scientific protocols to be implemented on the ground, which had taken a tremendous effort due to the changes that had occurred from the pandemic. However, they felt they were successful in this endeavour as opposed to other countries as they already had a robust system in place.

Among the two most important success stories during the COVID-19 pandemic include the mass testing



Third Saving Lives Sustainably: Sustainable Production in the Health Sector Global Forum 2020 (© SFDA)

centres (Ta'akad) which have tested over 6.5 million people to date, and the fever clinics (tataman), as recognized and published in the Lancet. The fever clinics were planned and built within six days in June 2020 with over 236 clinics to defer patients visiting emergency rooms. To date, over 1.5 million patients visited the fever clinics and the clinics are planned to be in operation until 2021. They also have implemented the Takasai platform which is designed to track and trace all cases and the CCC has full control of this system.

Dr. Sami Alsager—The SFDA is responsible for protecting the public health by ensuring the safety of food and by ensuring the quality, safety and efficacy of medicinal products and medical devices. During the pandemic, this was challenging as there was a shortage of supply due to the unexpected high demand, shortage of raw materials and also with the restrictions imposed on transportation. Therefore, having the procedures for quality assured food, medicinal products and medical devices was not enough as the products were not available.

They had worked closely with the Ministry of Health and Center for Disease Prevention and Control (CDC) to monitor any signs of foodborne illness and to educate food workers and consumers on how to be safe and to keep food safe. The SFDA also provided regulatory flexibilities to avoid disruptions in the supply chain by establishing a mechanism for remote inspections to check compliance for Good Manufacturing Practice (GMP) and flexibilities for issuing guidance and extensions for essential products where there were no alternatives. One of the strategic initiatives by the SFDA to deal with future pandemics is to formulate a committee that is represented by health care providers, manufacturers, distributors and the National Unification Procurement company and local authorities to ensure the sustainability of supply. This also included a pharmaceutical raw material team that is responsible for encouraging the production of raw materials and they have succeeded in signing agreements with petrochemical companies and local manufacturers to start producing active pharmaceutical ingredients (APIs). The team has also identified a list of essential drugs and with the necessary alternatives to support health care professionals and health care providers.

Karen Conway—A critical enabler of a value-based health care system that delivers value for all stakeholders requires leadership at a system level. As some critical reflections, the output of any health care system should be in the production of optimal health care for all individuals, societies, organisations and for the planet. Also, health care operations can contribute towards poorer health as opposed to better health due to the high usage of energy, resources, carbon emissions and waste that can contribute towards chronic disease. In order to improve operations, it is recommended to start with the review of health care services, and the utilization of resources and health products that do not jeopardize health.

There is also a need for leaders who are true systems thinkers that are not experts in specific aspects of the system and respect the intricacies and interdependencies of the system. Leaders who also can convene across teams of experts, both formal and informal, who can respond to all sorts of interdependences. The end-to-end of the supply chain needs to be studied and analysed to understand where there are opportunities to increase sustainability. Price in procurement practices also needs to be broadened with criteria that takes the consideration of the total cost, quality, life cycle and sustainability.

Leaders need to bring together people from a variety of different disciplines to share their knowledge and support joint value creation, and to optimize their own circumstances while preventing the tragedy of the commons. Examples include localization, industrial 4.0 manufacturing and blockchain technologies. The pandemic has also given the unique opportunity to make a substantive change not only for the health supply chain, but also in the quality and output of the health care system. It has demonstrated the interconnected nature of the global environment and how we can choose to create a healthier and more sustainable world.

Roberto Samayoa—Out of all UN organisations, PAHO is number seven in expenditure with \$1.2 billion of expenditure for 2020 and about \$3.7 billion in expenditure next year. PAHO transitioned to a green procurement function in the last three years, which made it easy for the procurement team to work from home during the lockdown. The main challenges presented during the pandemic for PAHO procurement include severe limitations in the supply chain, increase in price for health expenditures, balancing COVID-19 with the demand for other health programmes, training of procurement staff on new medical supplies and equipment and working together with partners and stakeholders for the delivery of goods and services.

Innovations to aid with the delivery of goods and services that were applied by PAHO procurement include conducting operational excellence, supply chain mapping and optimizing processes. A collaboration platform was created where suppliers could upload their documents and member states and national regulatory authorities are able to view them efficiently through their smartphones. This streamlined the process from four days to a day, as part of the approval process. In relation to the release of the COVID-19 vaccines, countries need to be prepared—the release requires a global coordination and countries must focus on the equal, equitable and affordable distribution of vaccines and to avoid vaccine nationalism.

The COVID-19 response is also not limited to the purchasing of vaccines as all sectors of society must be included in the national responses which involves the government, private sector and civil society. International financial institutions must provide financing for the goods and restructure loans taking into account the COVID-19 emergency. International and regional organisations must also work together and not to compete in the delivery of aid. As for long-term solutions, countries must seek to develop national and regional sources of goods in the health sector.

Final Remarks and Closing of the Global Forum 2020

https://youtu.be/CcpDOpE0ED0?t=16735

> H.E. Prof. Hisham Aljadhey, CEO, SFDA

The Global Forum 2020 reinforced the international efforts led by the Kingdom of Saudi Arabia during the G20 Summit to ensure a continuous sustainable development as well as to enhance the focus on humans and human needs in all aspects of life. The recent discussion revolved around the theme recovering better from the COVID-19 pandemic. The theme effectively fits with the main elements of the G20—people empowerment, saving the planet and shaping new horizons to enhance human innovation and international cooperation.

The participants of the forum were vigilant to the importance of international and human cooperation to enhance and strengthen sustainable development in the health sector through the participation of various organisations and associations, as well as the presence of many members from the Saudi Food and Drug Authority (SFDA) that hosted the event with pleasure and with a great sense of responsibility.

The impact of the COVID-19 pandemic affected all sectors, including the health sector, and demanded critical tasks to reinforce the significant efforts by the G20 leaders who joined together in Riyadh, Saudi Arabia. The Kingdom of Saudi Arabia led and presented the discussion to work on the quality of supply chains and to combat the worldwide crisis of global warming to make our planet more sustainable and healthier.

Provided Guidance, Reference Materials and Tools

Climate Change, Planetary Health and the Environment

- > WHO Manifesto for a Healthy Recovery from COVID-19
- WHO Global Strategy on Health, Environment and Climate Change 2019
- > UNEP's Emissions Gap Report of 2019
- UNDP-UNFCC NDC Outlook Report: The Heat is on 2019
- HCWH, ARUP, Healthcare's Climate Footprint 2019
- > UNEP Global Resources Outlook Report 2019
- HCWH, Beyond COVID-19: Toward Healthy People, a Healthy Planet, Justice and Equity 2020

Digitization of the Supply Chain

- UNDP, Leveraging technology and innovation to advance accountability and public services delivery during Covid-19 in Europe and Central Asia. 2020
- > UNDP, Building a development programme that works: three lessons from eVIN 2019
- > OECD, Bridging the Digital Gender Divide 2018

Medical Devices, Drug Safety and Supply Chains

- SIWI, Reducing Emissions from Antibiotic Production 2020
- HCWH, Non Toxic Healthcare: Alternatives to Hazardous Chemicals in Medical Devices: Phthalates and Bisphenol A 2019
- WHO, Environmental Aspects of Good Manufacturing Practices: Points to Consider for Manufacturers and Inspectors in the Prevention of Antimicrobial Resistance 2019
- UNDP and HCWH, Chemicals of Concern to Health and the Environment 2018

Gender and Supply Chains

- UN Secretary General's Policy Brief: Impact of COVID-19 on Women 2020
- EBRD, Building back better for gender equality: Lessons from the EBRD Policy brief September 2020

- UN Women, Explainer: How COVID-19 Impacts Women and Girls 2020
- IFC, Investing in Women: New Evidence for the Business Case 2017
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- > UN Women, The power of procurement: How to source from women-owned businesses 2017
- ITC, Empowering Women Through Public Procurement 2014
- The Commonwealth, Gender, Trade and Public Procurement Policy, Kenya, India, Australia, Jamaica
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Sustainable Health Procurement Guidance and Tools

- > UNDP Sustainable Health Procurement Guidance Note 2020
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- SDU-NHS Ethical Public Procurement Workbook 2019
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- UNDP, Environmental Questionnaire for Suppliers and Manufacturers of Healthcare Products Tool 2018
- > UNDP, Health Procurement and Compliance with International Conventions on Chemicals 2017
- USAID Deliver Project, The Logistics Handbook: A Practical Guide for the Supply Chain Management of Health Commodities
- Weiss, Hajduk and Knopf, Step by Step to Sustainable Supply Chain Management. Practical Guide for Companies. Berlin: BMUB 2017.

Annex: Forum speakers, rapporteurs and organizers





















































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