Oral presentations

1 IDENTIFYING EMERGING AND COMPLEX CHALLENGES IN FOOD AND HEALTH SYSTEMS

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Promoting good nutrition is essential to tackle current and emergent health crisis. For instance, non-communicable diseases (NCDs) are responsible for about 70% of deaths globally, with high intake of sodium, red meat, refined sugars and/or ultra-processed foods and low intake of whole grains, legumes and fruits raking among the top dietary risks for NCDs related deaths. Diet also play an important role in emergent health crises, as illustrated during the Covid-19 pandemic, where those who are malnourished and/or present underlying NCDs have more severe and deadly outcomes. Despite that, limited progress is being made toward the United Nations Sustainable Development Goals (SDGs) on malnutrition and NCDs.

Nutrition is linked with other modifiable risk factors for chronic diseases such as physical activity, sleep, mental well-being, substance abuse (e.g., alcohol and smoking) and environmental factors. The complexity of foods and their constituents and the multitude of factors involved in the aetiology of NCDs make dissecting the relative contribution of risk factors and interventions on disease onset and progression a challenging task. Understanding the interrelation between traditional risk factors that are established already and lifestyle risk factors will allow us to offer a more holistic approach to human well-being. Rigorous and innovative research that harnesses the power of large datasets and multiple research methods is needed to support the development of coherent theories in nutrition and risk identification and management. It is also necessary to connect this innovative research with the complex needs of individuals and systems. For example, the Covid-19 pandemic has exacerbated food insecurity (i.e., not being able to access foods that are safe and nutritionally appropriate for one's health) in multiple ways, including disruptions at the system level, such as interruptions and delays across food chains and increased food prices or individual level, including job losses and lack of access to food. In the UK, research has shown that ethnic minorities groups, those limited by health problems/disabilities, food sector workers and households with children were at increased risk of experiencing food insecurity. In some parts of Africa, conflicts, displacements, and droughts are additional factors contributing to the high prevalence of food insecurity, further exacerbated during the Covid-19 pandemic. The idea that 'Nobody ever just needs food' highlights that addressing food insecurity and malnutrition requires multisectoral solutions to resolve underlying causes of the problem.

Public and private sectors play an important role in addressing the burden of malnutrition but goals and responsibilities must be transparent, focused on public benefit, and collaborative. Systems-based approaches where nutrition and health are prioritized should be also employed. While changes in systems, policies and services can be triggered by community demand and advocacy, education and training are necessary to promote capacity for change and sustained impact. Quality data on food, nutrition and health can support this behavioural shift through the identification of problems and gaps. There is a need to establish a data foundation which enables the development of a science-based approach upon which statistically backed actions can be derived. This is particularly difficult with nutrition where much is dependent on observational data and longitudinal cohorts are scarce. Advancing our knowledge through research partnerships and data sharing will allow us to provide convincing evidence to policy makers as well as the public. Ultimately, improving data literacy among relevant stakeholders is also needed to enable accurate interpretation and relevant action. Advancing our knowledge through research partnerships and data sharing will allow us to provide convincing evidence to policymakers as well as patients. Programs such as the NNEdPro's International Knowledge Application Network Hub in Nutrition (iKANN), can facilitate this collaboration, while also curating nutrition data, evidence and training resources.

2 PROMOTING RESILIENT AND SUSTAINABLE HEALTH AND FOOD SYSTEMS

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Food systems are a complex web of actors and activities involved from farm to fork on aspects of food production, processing, distribution, preparation, consumption and ultimately the management of food waste. Food systems and the choices made by food system actors are contributing to detrimental impacts on animal, human and planetary health including losses in biodiversity, exhaustion of natural resources, zoonoses, foodborne illness and occupational hazards (figure 1). Current food systems are also failing to protect individuals' and communities' food security, good nutrition, and health. Health systems also have an impact on climate change and natural resources degradation. For instance, if health systems were a country it would rank among the top 5 in terms of carbon emissions, with an estimated contribution of 4.4%.

Research has shown that there is an appetite to connect and transform food and health systems. For example, hospital settings can consider the use of locally grown foods, offer plant-based meals, use water and energy-saving kitchens and divert food waste from landfill. Realizing these activities can