Food security and safety are directly related to nutritional health outcomes, and limited access to adequate food intake can lead to underweight (e.g. wasting, stunting) or overweight conditions and negative health impacts. As a result of the 1996 World Food Summit, food security is defined as: “Food security exists when all people, at all times, have physical, [social] and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life” [1]. This definition describes the four elements of food security as food availability (sufficient production and supply of high-quality food), food access (adequate food supply at the household level), utilisation (biological process of food ingestion that influences nutritional health outcomes), and stability (consistent state of food availability, access, and utilisation) [1].

According to the United Nations (UN), an estimated 735 million people (9.2% of the global population) conveyed facing chronic hunger (when compared to 613 million in 2019), and 2.4 billion people expressed living with moderate to severe food insecurity (when compared to 391 million in 2019), in 2022 [2]. Also, the World Health Organization (WHO) reported that approximately 420,000 deaths and 600 million cases (1 in 10 persons) of food-borne illnesses each year result from ingesting contaminated foods [3]. This global burden is especially challenging for low- and middle-income countries (LMICs), with more than US $110 billion annual estimated losses from economic and health expenditure due to unsafe food [3]. Noting the multidimensional nature of food security, it is essential to understand the emerging risks to food systems, such as limited political commitment, climate or weather variability, urbanisation (e.g. loss of lands), health status (e.g. immune function to combat infectious diseases), consumer choices of convenient and pre-packaged foods (including fast foods), and economic access to food supplies [1].

The UN Sustainable Development Goals (SDGs) present the close connections of food security and safety to at least 12 of the 17 goals, namely poverty reduction (SDG 1), reduce hunger (SDG 2), optimal health and well-being (SDG 3), work productivity and economic prosperity (SDG 8), responsible production and consumption (SDG 12), and collective action and partnerships (SDG 17) [4,5]. To achieve these ambitious goals, food systems should apply the One Health concept (interconnectedness of humans, animals, and surrounding environments) and enhance multi...
sectoral coordination across scientific disciplines and sectors, which can ultimately incorporate evidence-based scientific findings into management and policy decisions, strengthen stakeholder communication and engagement, support safe domestic and international trade, and promote proactive systems to identify and respond to emerging risks [5].

Over the past decade, the road to ensure high-level commitments for endorsing global food safety led to the UN General Assembly’s adoption of Resolution 73/250 in 2018 and the World Health Assembly (WHA)’s approval of the Resolution WHA73.5 in 2020, declaring World Food Safety Day on 7 June (https://www.who.int/campaigns/world-food-safety-day/2024) [6,7]. This annual celebration, led by the WHO and the Food and Agriculture Organization (FAO) of the UN, offers a renewed focus on supporting high-quality food sources for health and well-being, sustainable development, agriculture productivity, and economic prosperity. The 2024 theme, “Food Safety: Prepare for the Unexpected”, presents an opportunity for community citizens (from consumers to producers) to reflect upon the collective responsibility of strengthening food systems as well as recognize existing challenges (e.g. extreme weather events like droughts and floods, reduced crop yield) that impact food access and availability across global communities.

To advocate for equitable and sustainable nutrition actions, global health leaders should first examine food and nutrition security across nations, such as the Global Nutrition Report (https://globalnutritionreport.org/) and Global Alliance for Food Security (https://www.gafs.info/home/), and analyse epidemiological trends and existing challenges of food systems facing communities. This valuable information can help leaders design relevant local and national initiatives that foster multi sectoral collaborations with community stakeholders and meet community needs. In this article, physicians from six countries – Argentina, Myanmar, Philippines, South Africa, Trinidad and Tobago, and Uruguay – provided a holistic view of local, national, and regional efforts to promote food safety through timely policy development, community outreach, and capacity building across their national health systems.

Argentina

Foodborne illnesses pose a significant public health challenge to health and well-being in Argentina, and the World Food Safety Day offers a call to act as guardians of life, committed to unravelling and eradicating the invisible threats that lurk in our food. Argentina, a country of 44 million residents, has a diverse geography and climatology regimes, serving as a major food producer and exporter for soybean and beef, but also other staple products (e.g. barley, cotton, maize, mate, rice, sorghum, sugar, tobacco wheat) [8]. The Government of Argentina has made strides in improving food safety, albeit economic crises over the past two decades, but existing challenges highlight the need for continued vigilance and action.

Over the past few years, the Government of Argentina has implemented various policies and programs to enhance food safety. In 2019, the Government of Argentina adopted the Food Emergency Law (Ley 27519 de Emergencia Alimentaria), valid until December 2022, which will permit a 50% increase (8,000 million Argentine pesos or US $135 million) in food assistance to the nation [9]. Also, in 2019, the National Food Security Plan (Plan Nacional de Seguridad Alimentaria, PNAS) was launched, with the aim of enabling access to complementary food resources for populations experiencing social and nutritional vulnerabilities, including children (less than 14 years of age), elderly, pregnant women, and persons with disabilities [10]. In 2021, the Promotion of Healthy Eating Law (Ley 27642 de Promoción de la Alimentación Saludable) was approved, which established the addition of health advisory labels (e.g. calories, saturated and total fats, sodium, sugars) on the front of food packages as well as the implementation of food and nutrition education in primary and secondary schools [11,12]. Also, in 2021, the “Argentina against Hunger” National Plan (Plan Nacional “Argentina contra el Hambre”) was adopted, which promoted wider access to the basic food basket distributions [13]. Finally, social leaders and municipalities have regularly supported community initiatives, such as the “Safe Foods” (“Alimentos Seguros”) campaigns, which help increase public awareness about proper food handling and preparation practices.

Furthermore, notable efforts have been made across the Americas region to support food and nutritional security. The Food Code (Codex Alimentarius) is a collection of food standards, guidelines, and codes, which is an essential element of the FAO and WHO Food Standards Program to safeguard consumer health and fair practices in food trade [14]. The Pan American Alliance for Nutrition and Development has fostered regional cooperations to address food safety and nutrition challenges [15]. Although these robust efforts are widely recognised, more work is needed to strengthen food safety regulations, improve health surveillance systems, and promote collaboration among stakeholders across the food supply chain.
On this international health day, physicians can continue to lead this global movement that advocates for elevated food safety standards across the Americas region and globe. Only when we conquer the dangers that exist on our plates can we fully celebrate the culinary arts as a true expression of health, well-being, and the joy of living. Together, we can promote a world where resilient systems ensure the integrity of every ingredient that reaches our tables, and every bite represents a celebration of nutrition, not a risk to our well-being.

**Myanmar**

In Myanmar, a country of 53 million residents and 135 ethnic groups, the agricultural sector represents the core of the national economy, including 32% of the gross domestic product, 56% of the labour force, and 21% of exports [16]. However, according to the World Food Programme, an estimated 2.8 million Myanmar citizens are recognised as food insecure in 2021 [17]. Since the start of the Myanmar coup on 1 February 2021, food insecurity and hunger have become even more widespread, further exacerbating conditions resulting from climate change and the coronavirus disease 2019 (COVID-19) pandemic, with potential risks for food insecurity to up to 3.4 million additional residents [17]. By obstructing assistance delivery and arresting humanitarian personnel, the military has denied food, water, and essential medications to the displaced population [18]. The combined rise in food products (e.g. rice, cooking oil) and fall in agricultural output has posed a danger to food availability for one-fifth of the 54 million residents [19]. Furthermore, Myanmar military and security use massive quantities of fossil fuels in their bombard aircraft and tanks, resulting in environmental disturbances like forest destruction, emissions of greenhouse and other poisonous gases, and damage to water infrastructure, as well as population exposures to harmful air, water, and soil quality.

The National League for Democracy (NLD), an influential pro-democracy party established in 1988, had supported a food sector reform in 2016. The strategic plan aimed to provide food and nourishment to food insecure regions, with the vision that Myanmar’s under-five children would have improved their nutritional status aligned with government goals by 2022 [20]. However, as part of this political crisis, the NLD’s food sector reform plan was halted, and hence there was a drastic reduction in agricultural production. Food security across the country is now jeopardised, and farmers are unable to return home to work their land due to the military-installed land mines on the premises [21]. Through military operations (e.g. using fighter planes to attack agricultural fields, setting entire communities on fire), farmers’ homes, possessions, and crops (e.g. rice, paddy, bean, pulse seeds) have been set ablaze and destroyed by the junta’s soldiers.

To date, Myanmar’s people continue to be targeted by Myanmar’s military and security forces, and humanitarian aid is needed through financial transfers, food distribution and nutrition programs, and livestock and fisheries restocking in regions damaged by Myanmar’s military and security forces [22]. As next steps, we put forward a plea to international organisations (including the WMA and Junior Doctors Network) and the wider community, to advocate for urgent localised action to strengthen food security and support for the Myanmar population.

**Philippines**

The Philippines, an island nation with a complex geography of the archipelago with more than 7,000 islands, alongside socio-economic disparities, has observed unique obstacles to food availability, access, utilisation, and stability for citizens. However, since 2020, the nation is taking strides through a variety of measures to ensure that every Filipino has access to adequate, nutritious, and sustainable food sources. To support this commitment, an inter-agency task force was established under Executive Order No. 101, dubbed the Zero Hunger Task Force (National Food Policy) on 10 January 2020, which focuses on ensuring the availability and accessibility of food for all Filipinos, as to eradicate hunger and achieve food security by 2030 [23].

Over the past decade, the Department of Agriculture (DA) has implemented several programs and projects to support food productivity and accessibility for the nation. First, the Comprehensive National Fisheries Industry Development Plan 2021-2035 was developed in 2016, to ensure the sustainability of marine resources and improve the livelihood of coastal communities [24]. Second, the Kadiwa ni Ani at Kita was launched in September 2019, as a market linkage between food producers and consumers that provided high-quality produce to consumers and ensured fair prices for farmers and fisherfolk [25]. Third, the “Plant, Plant, Plant Program” (“Ahon Lahat, Pagkaing Sapat, ALPAS, Laban sa COVID-19”) program was established in 2020, to promote the national agri-fishery industry through innovative technologies and farming and fishery practices, to support farmers, fishers, and consumers [26]. Fourth, the Philippine Integrated Rice Program was developed in 2020, to improve

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On this international health day, physicians can continue to lead this global movement that advocates for elevated food safety standards across the Americas region and globe. Only when we conquer the dangers that exist on our plates can we fully celebrate the culinary arts as a true expression of health, well-being, and the joy of living. Together, we can promote a world where resilient systems ensure the integrity of every ingredient that reaches our tables, and every bite represents a celebration of nutrition, not a risk to our well-being.
Achieving food security remains a challenge of food security. First, the Urban Agriculture Program was developed in 2020, to encourage city dwellers to start gardening in their backyards, empty lots, and even containers [28].

As the Government of the Philippines recognised early on that food safety, nutrition, and food security are inextricably linked, leaders enacted the inaugural Code on Sanitation of the Philippines (PD. 856) in 1975, to serve as a reference and guide for enforcing sanitation standards (including food establishments). More recently, the Food Safety Act of 2013 (RA 10611) established the foundation for implementing a farm-to-fork food safety regulatory system, which aimed to safeguard consumer health, promote fair trade practices, and enhance the global competitiveness of Philippine food products. It has achieved these goals by managing hazards in the food chain, implementing precautionary measures informed by scientific risk analysis, and aligning with international standards [29]. To support these food safety standards, a National Codex Technical Committee was established in 2005, and Presidential Proclamation No. 160 was adopted in 1999, to commemorate Food Safety Awareness Week each October [30]. Future directions include reassessing policy frameworks, establishing and strengthening partnerships to incorporate food safety into mainstream practices, ensuring protection against cross-contamination and foodborne illnesses, improving public education through comprehensive information dissemination, and acknowledging the pivotal role of food safety in achieving food security [31].

Indeed, the journey towards achieving food security in the Philippines is multifaceted, requiring concerted efforts from the government, private sector, civil society, and communities. By addressing the challenges in agricultural productivity, empowering local producers, adopting nutrition-sensitive approaches, and strengthening food supply chains, the Philippines is making significant progress toward the realisation of the SDG of Zero Hunger. As these efforts continue to evolve and expand, the nation moves closer to ensuring that every Filipino has access to safe, nutritious, and sustainable food, not just today, but for generations to come.

South Africa

Although South Africa, a country of 57 million residents, is recognised as Africa’s economic powerhouse, the Global Hunger Index was estimated at 13.0 (moderate) in 2023, on a scale of 0 (no hunger) to 100 (alarming hunger) [32] (https://www.globalhungerindex.org/south-africa.html). Based on the General Household Survey in 2021, the Statistics South Africa reported that an estimated 2.1 million households experienced hunger, 2.6 million had inadequate food access, and 1.1 million reported severe inadequate food access in South Africa [33]. As food insecurity is driven by socioeconomic inequalities, cheaper counterfeit foods (foods produced without safety standards) lack nutritional value and may contain harmful substances, as observed with documented reports of hospital admissions and child deaths [34,35].

The Government of South Africa has adopted two key policies and community actions to address the challenge of food security. First, the Foodstuffs, Cosmetics and Disinfectant Act 54 of 1972 establishes guidelines for manufacture, sale, and importation of food items, cosmetics, and disinfectants in South Africa. The government employs environmental health officers across each district, with primary responsibilities to inspect food products that are sold in formal and informal establishments. Second, the National Policy on Food and Nutrition Security for South Africa (2018–2023) was launched in 2017, to present a situation analysis, identify quantitative metrics to measure trends over time, and promote best practices to establish clearly [36]. Finally, the government of South Africa has clamped down on syndicates that manufacture counterfeit food by investigating and prosecuting cases of unregulated food production and sales. As clandestine factories continue to exist, coupled with the increased number of migrants who ship foods to their home countries, further actions are urgent to halt the production and sale of counterfeit foods from continuing to spread throughout the region.

Stronger food security in South Africa and the African continent is essential to ensure economic growth and promote food safety to all Africans. Without strong policies and law enforcement efforts to stomp out counterfeit foods, the African region can anticipate growing healthcare expenditure, especially related to non-communicable diseases (like cancers) management. Economic transformation policies have the potential to reduce inequalities and eradicate poverty.

Notably, doctors working in the public sector and non-governmental organisations have a fundamental role in identifying community members who experience hunger or malnutrition and referring them to relevant social programs. For example, doctors can partner with charitable organisations with missions relevant
for distributions of food resources to community members experiencing food insecurity and help alleviate need for themselves and their families.

Trinidad and Tobago

The Caribbean Public Health Agency (CARPHA) estimates that 1 in 49 persons in the Caribbean (or 142,000 persons) would be exposed and ill with foodborne pathogens each year. Notably, infants of ages 1–4 years account for 40% of these cases [37]. Globalisation increases the risk and spread of foodborne illnesses in Trinidad and Tobago, as it entails the spatial and temporal distribution of mass movement of persons and food products, ingredients, equipment, and supplies. Since the consumption of contaminated food products distributed throughout a region can have detrimental economic impacts on food corporations, such as massive recall programs, the economic and reputational impacts of foodborne illnesses are of significant national concern to Caribbean nations that depend on tourism.

As climate change is inextricably linked to food safety, Caribbean nations will need to implement adaptations that will strengthen food production and distribution systems and reduce risk of exposure to emerging foodborne pathogens, in order to mitigate microbial adaptation and antimicrobial resistance. This is further compounded by inadequate public health resources, including infrastructure and limited support for policy, legislation, and funding of public health initiatives to improve food safety. To prioritise food safety, the Republic of Trinidad and Tobago in collaboration with CARPHA and the Pan American Health Organization (PAHO) hosted two workshops in Trinidad and Tobago and Barbados in January 2024, in order to strengthen the Climate Resilient Food and Water Safety Plans for Trinidad and Tobago [38]. Also, Trinidad and Tobago leaders support the ongoing evaluation of the National Food Safety Policy of Trinidad and Tobago (2018–2023), as a policy that provides a harmonised approach amongst governmental agencies and key stakeholders, to achieve food safety and consumer health protection [39].

Across the Caribbean, physicians play an important role in reducing the spread of foodborne illnesses as individuals afflicted with the illness would first seek medical attention. Early warning signs can prompt physicians to alert other members of the health team to initiate an outbreak response and identify sporadic cases and clusters for prevention and control efforts. However, as laboratory capacity across LMICs may be limited to identify all microbiological (e.g. viruses, mycotoxins) and chemical agents (e.g. pesticide residues), physicians may be unable to properly treat the foodborne illness without understanding the microbiological and chemical aetiology. Furthermore, physicians also serve a secondary role as food safety educator, and their direct interactions educating patients on these potential risks is crucial.

As future steps, national authorities can advocate to strengthen regulatory compliance, food safety systems along the food continuum from farm to table, and educational food safety campaigns for consumers. They can also promote collaborative teamwork amongst all stakeholders including regulatory agencies, public health institutions, producers, processors, distributors, wholesalers, retailers, and consumers. Finally, medical training programs should consider incorporating food safety in the curricula or adding continuing education programs to emphasise food safety, to prepare physicians to manage outbreak scenarios and patient education in the clinical and community setting.

Uruguay

In Uruguay, a population with 3.5 million residents, food and nutritional insecurity represents a significant challenge. Findings from the National Household Income and Expenditure Survey reported that 14.6% of Uruguayan households (and 16.3% of the population) face a moderate or severe degree of food and nutritional insecurity [40]. There are higher documented rates of food security (15.6% moderate and 3% severe levels) in the capital city of Montevideo (departments of Artigas, Tacuarembó, Rivera, Cerro Largo, Treinta y Tres), and lower documented rates in the central and eastern regions (departments of Flores, Florida, Durazno, Lavalleja, Maldonado, Rocha) [40]. As data clearly reveal stark differences in food insecurity across Uruguay, further exploration of driving factors affecting this variation can lead to timely policies that can be developed and implemented to address these regional discrepancies.

Over the past decade, the Government of Uruguay has supported several national policies and plans to support access and availability of food resources for the population. In 2006, the Uruguay Social Card (Tarjeta Uruguay Social) (formerly, the Food Card) was approved, where home visits to populations experiencing socioeconomic vulnerability offered monetary benefits to help improve accessibility to food and other basic necessities [41]. In April 2023, the Uruguay's Ministry of Social Development (Ministerio de Desarrollo Social) adopted the Territorial Food Plan (Plan de Alimentación Territorial, PAT), which aims to expand the number of dining facilities of the National
Dining System (Sistema Nacional de Comedores) and deliver meals to low-income and marginalised communities. To support these initiatives, the Ministry of Social Development also educates residents on food safety and storage, to help extend the quality of food sources. As the program is operational six days a week (closed on Sundays), double portions are provided on Saturdays [42].

To reflect the Government of Uruguay's commitment to reducing nutritional and food insecurity among its population, additional efforts have promoted the search for self-sustaining and sustainable solutions to ensure that all citizens enjoy the full right to adequate nutrition. Within state policies, national leaders recognize the role of family farming to achieve Food Sovereignty in rural communities. This policy promotes the access to organic foods, nutritionally adequate to the requirements of the population, which can help reverse food and nutritional insecurity across the country. Leaders have met with farmers (including those with small and family farms) and collaborated on the implementation of specific trainings in economic financing and other forms of professional assistance, which not only increase food production, but also improve their quality of life. These resources benefit farmers and their families, as well as contributes to the strengthening of local economies and reducing dependence on food imports [43].

As physicians contribute to leading clinical care across health institutions, it is important to highlight the crucial role that nutrition professionals play in multidisciplinary teams dedicated to tackling food insecurity. Consequently, they collaborate with health teams to ensure that patients have access to safe and secure nutritional sources, balanced by sufficient quantity and high-quality nutritional value. Their expertise is an essential component of the health care team, where they help strengthen each individual's ability to maintain a healthy lifestyle through optimal nutritional intake and support the related targets of the 2030 UN Agenda for Sustainable Development.

### Conclusion

The World Food Safety Day offers a timely opportunity for global leaders to identify existing barriers that hinder the access and availability of high-quality and safe food sources across communities. Food systems are complex and involve diverse stakeholders, ranging from consumers to producers, requiring a holistic view to better understand the food chain (e.g. distribution, processing, retail, service), farming practices and post-harvest activities, and consumer behaviours (including food waste) [5]. Since food security and safety topics overlap with at least 12 of the 17 SDGs, leaders can collectively discuss emerging risks to food systems (e.g. impact of climate change on crop yield or pathogen transmission), brainstorm on sustainable solutions to promote equitable food systems (e.g. farm-to-table initiatives enhanced food systems monitoring), and develop relevant policies, partnerships, and community activities that prioritise nutritional health outcomes.

WMA members regularly contribute their clinical expertise to scientific discourse on diverse health topics that directly impact population health outcomes across their nations and geographic regions. In their clinical role, physicians can help identify patients experiencing food or nutritional insecurity, collaborate with the health care team, and connect patients with available community and state resources. For example, three specific clinical questions – *Within the past 12 months, have you felt anxious about running out of food before you were able to buy more food? Have you run out of food and were unable to buy more food? Have you obtained resources from a food bank?* – can help physicians maintain an open dialogue with patients, examine nutrition risks associated with social determinants of health, and create a safe environment by reducing shame or stigma [44]. Furthermore, in their academic role, they can encourage medical school administrators to incorporate food systems courses in existing curricula or continuing education courses and hence prepare future physicians to address emerging global health topics.

This collective article provides a comprehensive review of local and national policies, stakeholder engagement and risk communication, and public activities that increase awareness of foodborne risks (including antimicrobial resistance and zoonotic diseases) and drive community action to ensure proactive food systems for all ages. These collaborations exemplify the robust leadership across African, Americas, South-East Asian, and Western Pacific regions, highlighting novel policies and events that underscore the fundamental role of sustainable agriculture to ensure food security and safety and safeguard population health.

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