

## **Metabolic Disease Pandemic: Call for Action**

**Gundu HR Rao\***

*Emeritus Professor, Laboratory Medicine and Pathology, Director, Thrombosis Research, Lillehei Heart Institute, University of Minnesota, USA*

**\*Corresponding Author:** Gundu HR Rao, Emeritus Professor, Laboratory Medicine and Pathology, Director, Thrombosis Research, Lillehei Heart Institute, University of Minnesota, USA.

**Received:** July 27, 2020; **Published:** August 11, 2020

Metabolic diseases such as hypertension, excess weight, obesity, type-2 diabetes, and vascular diseases, have reached epidemic proportions worldwide [1-4]. These diseases contribute significantly, to the overall morbidity and mortality related to cardiovascular diseases and stroke. Vascular diseases have remained number one killers for over a century. Cardiovascular diseases are the most common noncommunicable diseases (NCDs) globally, responsible for an estimated 18 million deaths in 2017, of which more than three quarters were, in low-income and middle-income countries. Known metabolic risks, that promote the development of metabolic diseases include, oxidative stress, chronic inflammation, elevated blood pressure, insulin resistance, altered glucose and lipid metabolism, endothelial dysfunction and subclinical atherosclerosis. According to the experts, all these metabolic risks develop due to unhealthy diet, sedentary habits and poor lifestyle. Hence these diseases are called lifestyle disorders. Several studies have demonstrated that healthy diet, exercise and lifestyle changes, significantly reduce premature mortality due to vascular diseases [5-7]. However, no country has demonstrated reduction, or reversal of metabolic diseases. According to the then Director General, Dr. Margaret Chen, "As part of the 2030 Agenda for Sustainable Development Goals (SDGs), Member States have set an ambitious target, to reduce premature mortality from NCDs-including diabetes-by one third; achieve universal health coverage; and provide access to affordable essential medicines-all by 2030.

A Special report of the Secretary-General on SDGs, published by the United Nations in 2019, summarizes the progress made thus far: "The shift in development pathways, to generate the transformation required, to meet the Sustainable Development Goals by 2030, is not yet advancing at the speed or scale required". According to a recent report of the NCD Risk Factor Task Force, relative to that of 1980, all countries have showed an increase in the prevalence of diabetes in both the sexes, instead of any substantial decrease [8]. Sustainable Development Target 3.4 expects, a one third reduction in the prevalence of diabetes, relative to 2015 levels, to be achieved in member countries by 2030 [9]. But since 2011, and despite much exclamatory rhetoric, momentum behind efforts to mobilize action against NCDs has stalled (and that is putting it politely). Until 2015, the Millennium Development Goal agenda took priority, leaving NCDs a neglected bystander [10]. The 2009 H1N1 pandemic provided the first real test for the revised International Health Regulations (IHR). Ten years ago, the world learned a new acronym-SARS-Severe Acute Respiratory Syndrome, described by the World Health Organization as "the first severe and readily transmissible new disease to emerge in the 21<sup>st</sup> century. Currently, we have the unprecedented SARS-CoV-2 pandemic, "the mother of all the epidemics", spread in all the countries except Antarctica. The novel coronavirus pandemic has caused such a panic, confusion, mistrust, no IHR seems to be working in containing this virus. Probably, first time in our living memory, a pathogen has brought the world to its knees. This pandemic is a public health nightmare. International Health Regulations require, that all countries develop their own capacity to detect, assess, and respond to potential public health emergencies. Whereas, in the USA, that responsibility has been delegated to the states and counties.

The same logic of IHR applies to early detection, risk stratification and management of metabolic diseases. Having said that, we would like to clarify that we refer in this essay, 'metabolic disorder' in its broadest sense, inclusive of known disorders such as hypertension,

excess weight, obesity, type-2 diabetes and vascular diseases, not the usual 'metabolic syndrome' which is described as a cluster of any of the three risk factors. Regardless of whether metabolic diseases are considered separate entities, are cluster of metabolic abnormalities, individual risk factors that lead to the development of these chronic diseases, need to be identified and managed, to decrease their overall contribution to the morbidity and mortality associated with cardiometabolic diseases [11,12]. For an individual who has all these metabolic disorders, by and large, medical management includes, the use of anti-hypertensives, anti-glycemic drugs, and lipid altering drugs. Rarely clinicians consider management of various other risks, such as oxidative stress, inflammation, altered blood flow conditions, endothelial dysfunction and subclinical atherosclerosis, that contribute to the development of these chronic disorders. I urge the readers to refer to Global Action Plan for the Prevention and Control of NCDs 2013 - 2020. But it is worth remembering our present experience of how countries behave, during a pandemic and panic. Current US administration has withdrawn the support for the WHO, does not trust the Center for Disease Control (CDC) or the Food and Drug Administration (FDA). These organizations should do their best to regain their prestigious global status.

Noncommunicable diseases (NCDs) mainly cardiovascular diseases, cancers, chronic respiratory diseases and diabetes- are the biggest cause of deaths worldwide. More than 36 million die annually from NCDs. More than 90% of these premature deaths, occur in low-and middle-income countries. To strengthen national efforts, to address the burden of NCDs, the 66<sup>th</sup> World Health Assembly endorsed the WHO Global Action Plan for the prevention and Control of NCDs. 2013 - 2020. According to the executive summary, the Global Action Plan offers a paradigm shift by providing a road map, and a menu of policy options for the Member States, WHO, other UN organizations and intergovernmental organizations, NGOs and private sectors which, when implemented collectively between 2013 and 2020, will attain 9 voluntary global targets, including that of a 25% relative reduction in premature mortality from NCDs by 2025. Despite such reports, global shift in the burden of diabetes or for that matter in metabolic diseases, has not been reflected in the policy of donor countries and organization. Diabetes and the related metabolic diseases remain underfunded development issues. On the other hand, WHO estimates that China and India, two counties with highest incidence of diabetes, will lose USD 558 billion and USD 237 billion respectively, in foregone national income as a result of largely preventable deaths from diabetes, heart disease and stroke.

Thomas Friedman and Michael Bloomberg of RESOLVE Strategies, New York, wrote in their seminal article, "How to save another ten million lives", "Ten years ago, we suggested a way to prevent 100 million deaths from tobacco [13]". "This initiative with the WHO Framework Convention on Tobacco Control, led to the creation of MPOWER technical package. In the past decade this initiative has protected 3 - 5 billion people with the effective tobacco control strategies and prevented 30 million deaths [14]. As the work continues on tobacco control, today, along with global partners, they are launching a new cardiovascular health initiative-RESOLVE- to prevent an additional 100 million deaths [15]". We would like to see such initiatives developed for each of the metabolic diseases including hypertension, excess weight, obesity, type-2 diabetes and vascular diseases. Not just the development of initiatives, but a call for immediate action, and development of integrated strategies for early detection of the metabolic risks, robust management of the modifiable risks, and reduction or reversal of cardiometabolic diseases.

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**Volume 5 Issue 9 September 2020**

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