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# Glycemic Guardianship: World Health Organization Leads the Way

## ABSTRACT

The prevalence of diabetes is rapidly increasing globally in epidemic proportions, but many people with diabetes remain undiagnosed or untreated. In view of this escalating prevalence, the World Health Organization (WHO) has launched the Global Diabetes Compact (GDC) campaign to improve the diagnosis and management of people with diabetes. To this end, a set of diabetes coverage targets, focusing on 80% of people living with diabetes, to be achieved by the year 2030, were defined at the 75th World Health Assembly for the first time in May this year. These targets aim to achieve not just glycemic control, but also blood pressure and lipid management at all levels of the health care system. India has the second largest number of people with diabetes in the globe. In this article, we have proposed the concept of “glycemic guardianship”, which means activities carried out by the health care team and the health care system in partnership with the patient to ensure optimal care of diabetes. Recognizing and acknowledging our role as “glycemic guardians” of the nation will automatically pave the way to realize the targets set by the GDC.

**Keywords:** Diabetes, Global Diabetes Compact, coverage targets, World Health Assembly, glycemic guardians

The Global Diabetes Compact (GDC) is a campaign launched by the World Health Organization (WHO), on the 100th anniversary of the discovery of insulin, to improve prevention, treatment and care for diabetes. Marking a first, the 75th World Health Assembly recently (May 2022) voted upon a contemporary set of diabetes coverage targets, that are to be achieved by the year 2030. This puts a stamp of approval upon the aims of GDC.<sup>1</sup>

## GLYCEMIC GUARDIANSHIP

In concordance with the aims and objectives of GDC, we propose the concept of glycemic guardianship. Glycemic guardianship refers to the activities carried out by the health care team and health care system, to ensure optimal care of the person, or group of people, living with diabetes. Glycemic guardianship can be operational at a macro-(country/regional), meso-(health care system), or micro-(individual) levels. It is ideally

carried out in partnership with the person(s) living with diabetes. Glycemic guardianship benefits from well laid out aims, which facilitate effective and efficient accomplishment of goals. This has been bolstered by the WHO targets, which provide an umbrella for all actions related to glycemic guardianship.

## CHALLENGES AND RESPONSE

The five GDC targets cover screening and diagnosis, outcomes of care and access to affordable drugs as well as monitoring tools (Box 1). The targets reflect the need for comprehensive vasculo-metabolic management and cardiovascular risk reduction in persons with diabetes. Without specifically mentioning particular groups, they call for attention to pediatric as well as mid-life and geriatric diabetes.

India is no stranger to the impact of the diabetes pandemic. With the second largest population of diabetes in the globe to care for,<sup>2</sup> the country’s health care providers

**Box 1. Targets for Diabetes Coverage, 2030**

- Diabetes should be diagnosed in 80% of people living with the condition.
- Good glycemic control should be achieved in 80% of people diagnosed with diabetes.
- Blood pressure should be well-controlled in 80% of people diagnosed with diabetes.
- Statins should be taken by 60% of people with diabetes aged  $\geq 40$  years.
- Affordable insulin treatment should be accessible to 100% of people with type 1 diabetes.
- Affordable blood glucose self-monitoring should be accessible to 100% of people with type 1 diabetes.

work hard to screen, diagnose, manage and prevent the condition. The increasing prevalence of the disease, however, offsets the advances that have taken place in diabetes care and its delivery. This is the “Paradox of Plenty”, where plentiful diabetes counteracts the potential of plenty of drugs and interventions that are available to treat the condition.

Our policy makers and health care providers have understood that diabetes is now endemic in society, and have begun tailoring their responses accordingly. Diabetes care is embedded in the primary health care system, the National List of Essential Medicines, Indian Public Health Standards and the National Programme for Prevention of Non-Communicable Diseases.<sup>3-5</sup> Diabetes complications find mention in the Ayushman Bharat health insurance scheme,<sup>6</sup> though the basic uncomplicated treatment is not yet covered by it.

**THE FIVE TARGETS**

Every journey has a destination, and milestones are necessary to assess our progress towards our goal. A similar situation exists in health care and in diabetes management.

The five targets laid down by GDC provide a roadmap for the Indian health care system. The law of two-thirds still operates in Indian diabetes epidemiology,<sup>7</sup> and a majority of people with diabetes remain undiagnosed, untreated or uncared for. Emphasis on screening and treatment, including not only glycemic but also blood pressure and lipid management, at every level of health care, is required. Glycated hemoglobin (HbA1c), a target for individual health, helps in risk stratification, choice of therapy and assessment of adequacy of treatment.<sup>8</sup> Use of statins as prophylaxis for cardiovascular disease should be encouraged, along with other interventions.<sup>9</sup>

**SPECIAL FOCUS**

Special focus on persons living with type 1 diabetes is also needed.<sup>10</sup> Insulin and glucose monitoring are essential for life, and these must be provided to all

who need them. The Indian pharmaceutical industry is a world leader in manufacturing good quality drug at economical rates. Insulin is an essential drug, at national as well as WHO level and is now sold at Jan Aushadhi stores. Good quality glucose monitoring devices and ancillaries are also available, at economical rates. Integrated personalized diabetes management (IPDM) is being promoted, and glucovigilance has become an accepted part of diabetes care.<sup>11</sup>

**SUMMARY**

Ownership of this concept should be with all diabetes care providers. Once we accept and acknowledge that we are glycemic guardians of our great nation, we will automatically begin to guard our glycemic health. This, in turn, will ensure that we accomplish the goals set by GDC, and much more.

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### Study Reveals the Unhealthy Diets of Indian Teenagers

The study published in the journal *Current Developments in Nutrition*, showed that merely 1% of kids between the ages of 13 and 18 years could recall having consumed dairy products over the past 24 hours. The study also showed that the teenagers in Gujarat do not seem to be getting enough dairy staples, which are considered the building blocks of good health in children. The study funded by UGC examined the nutrition transitions among 937 children in the 13 to 18 age group from six states, i.e., Gujarat, Punjab, Maharashtra, Chhattisgarh, Assam and Tamil Nadu. The findings of the study were derived from two 24-hour diet recalls from the participants, and a Nutrition Transition Diet Score (NTDS) was used as an assessment index. Among all the states, the overall nutritional deviation was found to be the highest in children from Maharashtra, while the lowest was seen in Gujarat. In Gujarat, only 1% of the children surveyed stated that they had taken dairy products. On the other hand, only 2% enjoyed sodium-rich snacks. However, a significant percentage of children recalled eating fat-rich dishes (26%) and fried foods (30%).

In Tamil Nadu, a majority of children recalled eating foods with saturated fat (29%) and sodium-rich snacks (19%). Also, 4% added that they had sugar-sweetened beverages. In Maharashtra, a whopping 62% of the children claimed that they had bread, while 29% had added sugar to the food they were served. Only 11% remembered consuming dairy products. The study also pointed out those adolescents in Tamil Nadu had the highest daily energy intake at almost 2,045 kcal/day. Their diet had 314 g/day of carbohydrates, 54 g/day of protein and 64 g/day of fat. The study was conducted by Dr Nida Shaikh, a nutritionist from Georgia State University. She stated that in most cases, working parents, who are unable to provide home-cooked snacks, substitute them with packed/processed foods, resulting in metabolic syndrome among teenagers. Heart disease, stroke, and type 2 diabetes are a cluster of conditions that occur together, increasing the risk of heart disease, stroke, and type 2 diabetes.

(Source: <https://health.economictimes.indiatimes.com/news/industry/fat-sodium-sugar-study-lists-unhealthy-diets-of-Indian-kids/93564390>)

### Gel Developed from Spider Silk Protein Used for Biomedical Applications

Dr Anna Rising, research group leader at the Dept. of Biosciences and Nutrition, Karolinska Institutet (KI), stated that her team has developed a completely new method for creating a three-dimensional gel from spider silk that can be used to deliver different functional proteins. She added that the proteins in the gel are tightly cross-linked and mild so that they can be used even for sensitive proteins. In the future, the researchers hope to develop an injectable protein solution that forms a gel inside the body. The ability to design hydrogels with specific functions opens up a range of possible applications, such as the controlled release of drugs into the body. In the chemical industry, it could be fused with enzymes, a form of protein used to speed up various chemical processes. The new study showed that the N-terminal domain of the spider silk protein can change shape and transition to small fibrils. When incubated at 37°C, the protein solution was converted into a gel. In addition, it can be fused with functional proteins that preserve their function in the gel. The research was funded by the European Research Council (ERC) and the Novo Nordisk Foundation.

(Source: <https://health.economictimes.indiatimes.com/news/industry/scientists-develop-gel-made-from-spider-silk-proteins-for-biomedical-applications/93579827>)