

Brief Communication

Innovative strategies under changing diabetes barometer in building diabetes registry in Puducherry

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ABSTRACT

Diabetes is continuing to be a huge burden in India with more than 60 million people suffering from it. Managing the growing menace of diabetes, we need to establish proper system and strategy in place. Despite a wealth of literature on prevalence, reliable data on the registry of diabetes is lacking in most parts of the world including India. Without such data, the fight against diabetes is being driven in the dark. The current national or state initiatives in the collection of data are incongruent and call for a concerted approach to gather information and track progress. In this prospect, the initiative taken by Government of Puducherry in collaboration with Novo Nordisk Education Foundation is highly innovative as it ensures whole population coverage, introduction of unique identity for each people, automated data processing, and web-based information system along with effective diabetes management.

Key words: Automated data processing, diabetes, innovative strategy, unique identification

DIABETES: A GROWING MENACE

India has the dubious distinction of being the diabetes capital of the world. With about 60 million people with diabetes, and the number expected to reach 100 million by 2030, diabetes is a very real big threat to the country's economic and developmental goals. What is even more a matter of concern is the fact that despite an adult prevalence rate of 6.2%, only 6-7 million people are treated. The state of Puducherry with its rapid urbanization and progressive outlook is witnessing an increase in the number of people with diabetes. CURES study has estimated a secular rise in the prevalence of diabetes. Based on the CURES study,^[1] it was estimated that the prevalence of diabetes is to the tune of 18.43% among the population of 20 and above in 2011. This indicates a prevalence of 11.19% for the whole

population, which in turn translates a total of 130,000 diabetes population in the union territory of Puducherry. Moreover, three-fourth of the prevalent population is not diagnosed.

Non-diagnosis and treatment of diabetes in the early stage would lead to more number of complications and thus, have higher cost of treatment and low quality of life. Studies on cost of diabetes treatment show that 48% more cost for three or more complications, whereas absence of complication has 18% lower cost of treatment.^[2] Thus, it is imperative to have an early diagnosis and appropriate treatment for a better management of diabetes.

In the absence of an effective system, an early diagnosis and treatment of diabetes is limited and thus, desired results of disease progression are not achieved. Developing a system under the public private partnership mode would ensure a professionally managed system with all necessary government support for sustainability and desired outcome.

It is vital, therefore, for all concerned parties to get together and work towards bringing diabetes awareness, screening, and treatment to the common man.

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A scientific study in urban Puducherry has revealed that diabetes mellitus is an important public health priority requiring urgent preventive action, as there are about 97,752 persons who have either been diagnosed with diabetes or remain undiagnosed for the disease.^[1]

HEALTH SYSTEMS AT PUDUCHERRY AND HEALTH-CARE PRIORITIES

Puducherry has a far better health-care infrastructure as compared to the rest of India. Though, people of Karaikal, Mahe, and Yanam are 130 kms, 650 kms, and 950 kms away from Puducherry, the management of accessibility to health-care facilities is very well-planned and effective. Access to medical care is available for the people of the Union Territory within an average distance of less than 1.8 kilometers.^[3]

PHCs and CHCs in Puducherry are more effective in terms of accessibility, as a PHC in Puducherry covers a population of 8349, against 32,469 people being covered per PHC in India. This shows that the accessibility in Puducherry is four times better than the accessibility in India. Similarly, a CHC covers 81,000 population in Puducherry as compared to 244,000 population in India.^[4] Such accessibility in Puducherry has poised to ensure the high probability of success of any health-care program channelized through PHCs and CHCs. Managing the diabetes control program would be more effective as a PHC in Puducherry covers 6.74 villages, whereas this proportion is 26.81 for the whole country.

The Health Policy of Puducherry is one of the comprehensive policy critically addressing issues pertaining to preventive and curative problems. Health protection, promotion, and rehabilitation are priorities in a holistic manner by the government of Puducherry. The government has the following approach for optimal health achievement;^[3]

1. Ensuring availability, accessibility, and acceptability for the population;
2. Ensuring quality health-care by effective monitoring and evaluation;
3. Ensuring effective health-care provision;
4. Implementing preventive health-care programs.

Such vibrant health system and health policy helps in implementation of innovative health-care programs for benefit of the community. Since the diabetes has been proved to be a bigger problem in the coming days, it is imperative to have the control mechanism with effective monitoring and evaluation. Thus, a public private

partnership program for diabetes control is expected to bring the desired results.

NEED FOR AN EFFECTIVE INFORMATION SYSTEM

Despite a wealth of literature on prevalence, reliable data on the registry of diabetes is lacking in most parts of the world including India. Without such data, the fight against diabetes is being driven in the dark. Weak points in the diagnosis, effective treatment, and prevention of diabetes have to be identified, prioritized, and acted upon for future benefits. Otherwise, the losses due to direct costs to treatment and indirect costs to national economies can be massive. The knowledge of extent and effectiveness of current diabetes care has to be completely understood for improving the care process of the growing pandemic. Measuring the outcomes for comparison is key for improvements in the drawbacks of strategies, treatment methods, and care systems.

The current national or state initiatives in collection of data are incongruent and call for a concerted approach to gather information and track progress. After that, development of an international accord for measurable and comparable improvements in the diagnosis, effective treatment, and prevention of diabetes is needed. Delineating the appropriate data required for the public healthcare providers, policy- and decision-makers will enable sound investment for the future of diabetes care. The affected population would experience an improved quality of life. The savings to the health-care systems through avoidance of diabetes complications could be re-channelled, and the whole economy would benefit from a more productive workforce.

EFFECTIVE DIABETES MANAGEMENT OPTION

In Pondicherry, hospital-based study^[5] and few lay reports^[6] revealed that there is an increasing problem pertaining to diabetes. Community-based prevalence study in Puducherry among adults population showed that age, hypercholesterolemia, and family history of diabetes mellitus are the risk-factors.^[7]

The emerging situation requires an efficient health-care system with an expanded basket of choices. Dealing with the emerging era of life-style-based non-communicable diseases is going to be challenging.^[8] Despite several interventions in the health-care sector, the health system continues to be inadequate and insufficient to cover the population efficiently.

With India having high number of patients with diabetes in the world and several factors contributing for its high prevalence which include enhanced genetic susceptibility, lack of health awareness, poverty, sedentary life-style, obesity, stress or consumption of diets rich in fat, glucose and calories, there is an absolute need for taking an initiative to avoid or delay the onset of the disease and its associated complications. These initiatives can significantly reduce the impact of diabetes on patient's quality of life and improve his ability to function, which ultimately cuts down the economic burden by reduced loss of productivity.

Early diagnosis of the disease achieved through screening followed by appropriate treatment can yield dramatically improved outcomes. Spending health-care resources on treating diabetes or its complications can improve the effectiveness of diabetes care and will be far more cost-effective choice, where the annual health-care expenditure for enhanced diabetes treatment will be less than the spending needed to continue at the previous, sub-optimal level of care in India. These considerations complement the increasing resources of knowledge on the present state of diabetes care. These findings from the diabetes registry should help health-care policymakers and providers to close gaps and raise the overall level of care in developing countries like India.

Public subsidies extended to various NGOs have shown substantial social gains under different programs in the country such as National Blindness Control Program and National Leprosy Program. Evidence suggests that not-for-profit sector, particularly community-based organizations, seem to have had a beneficial impact on access, equity, and quality of services in rural and backward areas. In such context, a unique proposition in health-care in the form of Public Private Partnership was thought of as a novel strategy to bring desired results by synchronizing public goals with private sector commitments. The 'Changing Diabetes Barometer' (CDB) initiative, a public private partnership between NNEF and the government of Puducherry, is a response to this urgent and pressing need for intensive action against diabetes.

INNOVATIVE INITIATIVES UNDER CDB FOR BUILDING DIABETES REGISTRY

The CDB model has an innovative Measure-Share-Improve (MSI) approach. MSI is the base on which the CDB project would be functioning, and MSI should be a tool for continual development of the project at the community level. A good information

management system would ensure the effectiveness of MSI. CDB project would provide a diabetes registry at the different layers of health care system in Puducherry. The primary health centers being the first referral unit of the overall health-care system, a PHC-centric diabetes registry would provide all possible monitoring for diabetes and diabetes-related complications.

Whole population coverage

Puducherry being a small state, government of Puducherry plans to cover the whole population above 20 years for the screening of random blood glucose, blood pressure, body mass index, waist hip ratio. This would be the baseline for the diabetes registry in Puducherry.

Personalized identity card

All the people screened for diabetes and blood pressure would be assigned with an identity card having a unique identity number. The identity number would reveal the state, district, and PHC from where the person is registered for the diabetes management program. This allows the health-care professional to track the diabetes status of the person at any point of time. Under the CDB program, it would be made mandatory for the person to carry the identity card every time he or she visits to the PHC. This would ensure the data base update in the diabetes registry.

Automated data processing

Novo Nordisk Education Foundation in collaboration with government of Puducherry would be implementing an automated data processing system for creating the diabetes registry. The automated system would minimize the human error in the data processing by scanning the data collected in a scanner and Intelligent Character Recognizer software. Though, this is a costly affair, it is worth for the investment to make a state of art diabetes registry.

Web-based information access

Another strategy is to make the diabetes data available to all the stakeholders at all the times. CDB project is strategizing to make the diabetes registry available through a web-based application. A role-based access would be worked out for accessing diabetes database and customized reports to assess the situation.

All the strategies are being worked out to make the diabetes registry available to all the stakeholders. This would facilitate the decision makers to make a solid and informed decision for managing diabetes in the state of Puducherry. The CDB project went live in Puducherry with a mega diabetes exhibition and the screening program are being rolled out to all the PHCs.

With all the efforts, government of Puducherry in collaboration with Novo Nordisk Foundation would make a big change in diabetes management in the state of Puducherry.

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