

Changing Diabetes Barometer

Changing Diabetes in the Community

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Diabetes Landscape in India

- India has 6.13 crore people with diabetes and 8.3% prevalence; estimated to grow to 10.12 crores by 2030¹
- Mortality due to diabetes in 2011: 983,000 Indian adults²
- 77.2 million Indians have impaired glucose tolerance (risk to develop T2DM)³; 80.3% of type 2 diabetes patients have HbA1c >7% (greater diabetes severity)⁴
- The Asian Indian phenotype, lifestyle changes associated with urbanization and sedentary lifestyles contribute to the rise in diabetes in India⁵
- Total healthcare expenditure on diabetes is expected to rise by 72% between 2010 and 2030⁶

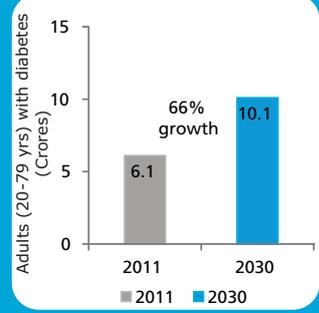
By 2030, 1 in 5 diabetes patients will be an Indian¹

Barriers in Diabetes Management

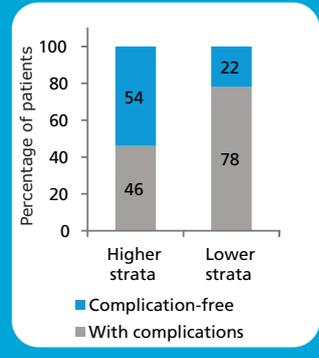
Studies demonstrate that the primary prevention of diabetes complications is possible by controlling risk factors such as hyperglycaemia, hypertension and hyperlipidaemia. However, due to barriers faced by patients, physicians and the healthcare system, effective management of diabetes is hindered leading to poor healthcare outcomes.⁸ Previous surveys have identified four barriers in diabetes management: education, access & finance, convenience & lifestyle, and safety of the drug.^{9,10}

To overcome these barriers in diabetes management, Novo Nordisk Education Foundation (NNEF) has taken the initiative to work with state governments to fight against diabetes at the community level through programs like 'Changing Diabetes® Barometer' (CDB).

Estimated Diabetes Prevalence in India¹



Complication Rates by Economic Strata⁷



Most Indian patients pay for healthcare costs out of their pockets¹¹

Education

Patients

- Low awareness of diabetes and its complications
- Lack of diabetes educators

Physicians

- Low awareness of diabetes and its complications
- Poor referral to specialists/Lack of qualified diabetologists

Access and Finance

Patients

- Affordability/access to healthcare and therapy
- Lack of team-based approach

Physicians

- Low public healthcare budget
- Poor healthcare resources and infrastructure

Convenience and Lifestyle

Patients

- Multiple daily doses, difficulty in administration
- Religious fasts, pain of insulin injection and self-monitoring devices

Physicians

- Delay in insulin initiation
- Concern about lifelong dependence on insulin

Safety

Patients

- Hypoglycaemic episodes
- Weight gain and other side effects

Physicians

- Concern about hypoglycaemia and weight gain
- Variability of current insulin therapies



Diabetes Care Trends in India^{9,10}

Patients

- 41% are unaware that diabetes is preventable
- 80% occasionally or never adhere to therapy
- 50% felt anxious after diagnosis of diabetes, 40-50% felt helpless
- 20-30% do not have access to diabetes care needs under one roof
- 1 in 5 are worried about ability to pay for medication
- 60% have never attended awareness sessions

Physicians

- Perceive significant barriers in practising evidence-based medicine
- Many do not suggest HbA1c testing
- In patients, where HbA1c was measured, less than half (47%) are informed of the glycaemic targets
- Only 8% patients are advised to self-monitor blood glucose at least once a week

Changing Diabetes[®] Barometer

CDB program is an NNEF initiative which aims to respond to the global diabetes pandemic by collecting and sharing data about diabetes care. In addition to collection of data, CDB encourages the measurement of outcomes and facilitates sharing of knowledge so that doctors, people with diabetes, and other stakeholders can integrate data and learn about context-specific solutions. It is aimed to drive improvement in diabetes care, save lives and reduce the economic burden on the healthcare system and society.

The main objective of the CDB program is to focus attention of the diabetes management initiatives on people with diabetes and quality care. The best way to do this is through measuring and sharing data and increasing awareness about the need for improvement in diabetes prevention, treatment, and care programs. Further-more, it will provide a context in which healthcare providers and payers can analyse the performance of their efforts, benefit from the example given by others and drive improvements in diabetes care.

Aims of CDB

Founded on the 'measure, share, and improve' paradigm, CDB program supports collection and sharing of important information on the burden of disease and effectiveness of interventions to combat it. This program aims to:

- Illustrate the link between quality of diabetes care, diabetes complications and socio-economic costs, thus providing all stakeholders with the opportunity to make informed choices
- Improve treatment by inspiring learning, based on measuring and comparing results so that all stakeholders develop a clear picture of the current quality of diabetes care in their country
- Inspire others to follow best practice examples

CDB in States

CDB has been launched and successfully operational in the states of Goa, Bihar and Gujarat. A Memorandum of Understanding (MoU) was signed with the respective state governments, paving the way for the launch of CDB program. The program aims to provide a platform for opportunistic screening for diabetes and register demographic and clinical information.



Goa

Launch Date : August 2008

Population screened* : 35,320



Bihar

Launch Date : April 2011

Population screened* : 1,68,598



Gujarat

Launch Date : June 2012

Population screened* : 10,200

*Data for all states till June, 2012

On-going Programs of Government of India

- In 2008, the Indian government launched a pilot phase of the National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke with the objective of prevention of noncommunicable diseases (diabetes, cardiovascular disease and stroke) by risk reduction, early diagnosis and appropriate management¹²
- The National Rural Health Mission was launched in 2005 to carry out necessary architectural correction in the basic healthcare delivery system in India. The goal of the mission is to improve the availability of and access to quality healthcare for people who are poor and residing in rural areas, especially, women and children¹³

There is a paucity of comprehensive data about diabetes and its treatment in India



Diabetes Mobile Screening Van



Podiatry Kit



Screening for Diabetes



Leadership Forum on CDB



World Diabetes Day Awareness Walk



Medical Officers Training

Phase I: Awareness and Diagnosis of Diabetes

- Launch of IMPROVE™ Control program–19th Sep, 2008
- Screening camps organized–105
- People reached–13,250
- Doctors/nurses trained on diabetes foot care–200
- Doctors/nurses trained on practical diabetology course–120
- Health centres involved–32
- Podiatry kits distributed–35
- Diabetes walk ~1,200 participants each year

Phase II: Capacity Building for Diabetes Management

- Awareness generation, opinion making–school children & public
- State-level meeting of health-care authorities and diabetes experts
- Households reached–72,785
- People reached–309,719
- Training: Anganwadi workers–1,260; diabetes educators–18
- Training and education-national (8) and international (8) faculties
- Continuing Medical Education (CME) sessions–6 and “Steno’s quality assurance tool” training
- Installation of walk-in coolers & HPLC for diabetes management

Phase III: Diabetes Registry

- Launch of diabetes registry
- No of screening centers–29
- Subjects with
 - Diabetes–7,817
 - Age 40-60 years–4,069
 - Age > 60 years–3,172
 - Macrovascular complications–1,090
 - Microvascular complications–1,436
 - Random blood sugar (≥ 200 mg/dL)–419
 - Diabetes family history–3,144
 - Waist hip ratio (WHR) (≥ 0.9)–793

CDB in Goa

NNEF in partnership with government of Goa has been running the CDB program since 2008. The MoU was signed on 28th Aug, 2008 to initiate the CDB program in Goa. It primarily involved activities such as creating capacity in healthcare resources, spreading awareness about diabetes and its complications, and creating linkages with Goa government in order to make Goa a model state in India with respect to diabetes care and treatment.

Aims of CDB in Goa

CDB was initiated in Goa with the following objectives:

- Initiate a Diabetes Control Program in Goa to improve diabetes treatment with focus on reducing complications
- Early diagnosis and treatment of persons with high risk of developing diabetes
- Work with the state government to change diabetes through comprehensive screening, awareness and treatment initiatives
- Prevent and control diabetes by improving therapy with focus on reducing complications
- Strengthen healthcare systems to tackle diabetes and improve quality of care by providing training to healthcare professionals (HCPs)
- Leverage existing global expertise of NNEF and channelize it through the government healthcare system
- Initiate diabetes registry for the state of Goa (only state in India to have a diabetes registry)
- To make Goa a model state with respect to diabetes care and treatment

Benefits Generated for the Community

The awareness and diagnosis program generated a positive impact on the overall health status of the community and improved the confidence of the public on government initiatives for public healthcare. The benefits generated from the Goa CDB program are listed below:

- Goa government announced provision of insulin and other modern drugs at no cost in government hospitals
- 1,148 estimated cases of secondary complications averted in Goa CDB program¹⁴
- Estimated societal gain of ₹ 3.67 crores in Goa CDB program¹⁴⁻¹⁷
- Goa is the first Indian state to have a diabetes registry initiated on 24th Jun, 2011
- HCPs skills were updated with courses on 'Diabetes Foot Care' and 'Practical Diabetology'
- 32 healthcare centres were upgraded with podiatry kits and education material
- CMEs were conducted by national and international faculty to ensure uniform approach for diabetes treatment

Reduction in Secondary Complications of Diabetes



1,148* cases of secondary complications averted in the screened population

*Estimation based on HbA1c reduction as per United Kingdom Prospective Diabetes Study (UKPDS)¹⁴

Cost Averted due to Reduced Complications



₹3.67[#] crores of estimated societal gain by averting complications in the screened population

[#]Estimation based on HbA1c reduction as per UKPDS and other references¹⁴⁻¹⁷



Practical Diabetology Course



Diabetes Foot Care Camp



Diabetes Education for Public Training for Anganwadi Workers



Launch of Foot Care Camp



Diabetes Education for Medical Officers

Outcomes of CDB in Goa

- Significant reduction in fasting blood glucose (FBG) and post-prandial blood glucose (PPBG) seen during follow-up
- Insulin users–FBG (from 159.63 mg/dL to 131 mg/dL) and PPBG (from 237.49 mg/dL to 201.58 mg/dL)
- Insulin + oral hypoglycaemic agents (OHAs) users–FBG (156.53 mg/dL to 134.15 mg/dL) and PPBG (from 235.33 mg/dL to 206.68 mg/dL)
- Reduction in FBG levels in insulin users corresponds to ~1% reduction in HbA1c
- No significant difference in FBG and PPBG between insulin users and insulin+OHA users suggests that regular follow-up improves diabetes management
- Prevalence of diabetes is seen in individuals who do not fit the "at risk" criteria; no significant association between family history and incidence of diabetes (p=0.323) or WHR >0.9 and microvascular diseases (p=0.520)
- In Goa, the diagnosis of diabetes is delayed resulting in the use of treatment modalities usually associated with severe diabetes

Message from Shri Sanjay Kumar, IAS



Sanjay Kumar, I.A.S
Secretary, Health
-cum-
Executive Director
Tele : 0612-2281232, 2290328
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State Health Society
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Sheikhpura, Patna-800014
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ed@statehealthsocietybihar.org
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I am happy to share that State Health Society (SHS), Bihar is associated with Novo Nordisk Education Foundation (NNEF) since 19th Apr, 2011 wherein we jointly launched the "Changing Diabetes Barometer" programme in Bihar to develop sustainable and innovative ways in managing the growing incidence of diabetes at the community level. The programme was started with a mega exhibition on Diabetes in Patna, to make people aware on the efforts of government to control diabetes. Since then NNEF with support of govt. has been working with an objective to improve the state of diabetes awareness and care. The programme has already been launched and running successfully in the districts of Patna, Bhagalpur and Nalanda. By now (13th Aug, 2012) the project team has screened & counselled about 187,000 people for diabetes, blood pressure, body mass index (BMI) and waist hip ratio (WHR).

It is hearting to note that NNEF in collaboration with SHS, Bihar has organised many awareness campaigns on diabetes during World Diabetes Day, Bihar Shatabdi Diwas and Health Minister's Swaasth Chetana Yatra. The programme has also facilitated the screening of glycosylated haemoglobin (HbA1c) in addition to various other planned interventions. It is a matter of concern to note that the sample of 6,923 persons tested for HbA1c have an average HbA1c value of 8.27%, which is definitely a high risk factor for long-term diabetic complications. This is the baseline over which the project will work on in the 2nd phase in building capacity among doctors and paramedics to clinically manage diabetes with modern guidelines.

However, it is also crucial to ensure that the diabetics are getting proper counselling along with necessary medication to reduce the disease burden and its complications. I am happy to note that the "Changing Diabetes Barometer" programme has improved the state of diabetes care in the three intervention districts of Bihar.



Shri Sanjay Kumar, IAS
Secretary, Health-Cum-Executive Director,

Message from Dr. N. K. Mishra



State Health Society, Bihar
राज्य स्वास्थ्य समिति, बिहार

परिवार कल्याण भवन, शेखपुरा, पटना 800014
Parivar Kalyan Bhawan, Sheikhpura Patna-800014,
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Diabetes is in the top agenda among all non-communicable diseases or most of the developing countries like that of India. SHS-Bihar and NNEF have been jointly working on a programme called "Changing Diabetes Barometer" for more than a year in three districts of Bihar. Through this programme, NNEF and SHS have taken several measures to create a high level of awareness about diabetes and its complications and have successfully reached more than 10 lakh people in these 3 districts and across the state by various print medias. This programme is a highly structured programme with the true objective of improving the level of diabetes care in the state by creating awareness among common public, healthcare professionals and by building capacity among doctors and paramedics to face the modern challenges of diabetes through various training programmes including training by international faculties from leading institutions like Steno in Denmark. In the 1st phase of the programme we have screened and counselled more than 187,000 people for diabetes, blood pressure, BMI and WHR and in the oncoming 2nd phase of the programme we will be enhancing skills of our doctors and paramedics to treat diabetes and its complication. I will rate the Changing Diabetes Barometer as one of the most successful programmes among several other programmes.



Dr N K Mishra
State Programme Officer
State Health Society, Bihar

Message from Dr. Lakhender Prasad



The growing incidence & high prevalence of diabetes has become a cause of concern in most of the developing countries and in particular India, which is said to be the diabetes capital of the world. It gives me immense pleasure to mention that we at Department of Health and Family Welfare, Bihar are associated with Novo Nordisk Education Foundation through State Health Society, Bihar to address this issue in Bihar. From the very first day of my getting in to this office in October, 2011 as the Civil Surgeon of Patna, "Changing Diabetes Barometer", Patna team have been constantly following up with me for various activities to create a high level of public awareness about diabetes. I have observed them organising activities like world diabetes day at New Gardiner Road hospital, blue lighting to Income Tax Circle and Central Excise Building during world diabetes day, Bihar Satabdi Diwas at Gandhi Maidan etc. In my routine and surprise visit to some of the PHCs I have seen the team screening common public for diabetes, BP, BMI, WHR and HbA1c in a structured way. They have been submitting me the screening figures from time to time. As on date they have screened more than 78,000 people in Patna district in various PHCs, blocks, residential apartments, residential colonies etc. The findings from this screening data are quite scary; the incidence of diabetes in the adult population above the age of 20 on an average is found to be 12.4%, however there is a large variation in the prevalence of urban and rural areas which is 15.3% and 8.6% respectively. Looking at such a high prevalence rate we have already opened a diabetes specialty clinic at New Gardiner Road hospital where the specialty OPD operates every Wednesday and "Changing Diabetes Barometer" screening team remain present to do the screening of everyone those who come for treatment. One more such Diabetes Specialty centre is planned at Danapur SD hospital and will be inaugurated on 4th September 2012. The project team is committed to build capacity among our doctors and paramedics shortly through various training programmes. I am sure that with the dedicated efforts of the "Changing Diabetes Barometer" project team, they will positively impact the level of diabetes care in Patna district and I commit my whole-hearted support for this noble effort for the community.

L. Prasad
25-8-12
(Dr. Lakhender Prasad)
Civil Surgeon cum
Patna, Chief Medical Officer
Patna (Bihar)

Message from Dr. Udai Shankar Choudhary



This is certify that Novo Nordisk Education Foundation under the aegis of State Health Society, Bihar is conducting various screening tests such as RBS, BP, BMI, WHR etc at diabetes camp organized by the same since 11th September, 2011 in various rural pockets of Bhagalpur district with full support and co-operation from Bhagalpur district administration and health officials. Novo Nordisk Education Foundation work has been found satisfactory and the organization is being appreciated for participation and contribution in community health.

U. Choudhary
23/9/12
C.S. cum Chief Medical Officer
Bhagalpur

Message from Dr. Jawahar Khan



As per latest study, approximately 6.1 crore patients of diabetes mellitus are there in India. It is expected that this figure will cross up to 10 crore by 2030. Diabetes has been classified as one of the non-communicable disease. Especially urban India seems to be in the grip of an epidemic of diabetes mellitus with latest government survey. Under the government's National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular disease and Stroke (NPCDCS), it has revealed that almost 6.5% of population is suspected to be suffering from diabetes. This result is based on screening of almost 75 lakh people across the country till date. So there is urgent need to control this epidemic of diabetes. Diabetes is slowly growing disease which is not clinically manifested early in the course of their evolution and thus are not detected early. Hence, the key to the control of epidemic of diabetes is through primary prevention.

I am very happy to know that State Health Society (SHS) and Novo Nordisk Education Foundation (NNEF), Bangalore have jointly introduced the Changing Diabetes Barometer (CDB) in Nalanda district in January, 2012. The main objective of CDB is to collect and share data to increase awareness and the need for improvements in diabetes prevention, treatment and care thereby saving human lives and reducing the economic burden on health care systems and society. I hope to estimate the prevalence of diabetes and pre-diabetes load, to scale up diabetes control measures and of increase awareness at various levels of government, civil society and the media under the CDB programme. I would like to thank NNEF who is carrying out this important research work which would be of immense use in planning and policy making through this newsletter.

J. Khan
31/7/12
Civil Surgeon cum Member Secretary
District Health Secretary, Nalanda



Mobile Diabetes Screening Van



World Diabetes Day Walk in Patna



Screening for Diabetes



Blue Lightening of Central Excise Building & IT Circle

Awareness and Diagnosis of Diabetes

- Exhibition on diet & education material, in Patna (20th-21st Apr, 2011), Bhagalpur (11th-12th Sep, 2011), Nalanda (29th-30th Jan, 2012)
- Blue lighting of Central Excise Building-11th-14th Nov, 2011, Patna
- Blue lighting of Central Excise Building-11th Nov, 2011, Patna
- World diabetes day awareness walk-14th Nov, 2011, Patna/Bhagalpur; >1,500 people participated & 800 screened
- Bihar Diwas celebration-22nd to 24th Mar, 2012, Gandhi Maidan, Patna; 1,832 screened

CDB in Bihar

NNEF in collaboration with the State Health Society, Government of Bihar initiated the CDB program. The MoU was signed on 8th Mar, 2011 to launch the pilot program in three districts of Bihar. The CDB initiative was planned to improve the quality of life of people with diabetes in Bihar and reduce costs associated with this progressive chronic disease and its concomitant secondary complications in the later stages of the disease.

Aims of CDB in Bihar

CDB was initiated in Bihar with the following objectives:

- Make Bihar a progressive state with respect to diabetes care and treatment
- Develop a diabetes atlas by incorporating temporal and spatial analysis of data collected during CDB programme
- Initiate a Diabetes Control Program to improve diabetes treatment with focus on reducing complications
- Work with the state government to change diabetes through comprehensive screening, awareness and treatment initiatives
- Leverage existing global expertise of NNEF and channelize it through government healthcare system
- Create and enhance capacity within existing healthcare networks to enable them to tackle diabetes
- Enable access to information tools and provide training to physicians for better diabetes management
- To conduct training programs to augment diabetes management skills in the HCPs, along with allied healthcare professionals in Bihar

In the first phase, screening was conducted in the urban and rural areas of the three districts of Bihar state namely Patna, Bhagalpur, and Nalanda for detection of diabetes and pre-diabetes among adults (age ≥20 years). The CDB program was started in April 2011 in Patna, September 2011 in Bhagalpur and January 2012 in Nalanda district.

Capacity Building for Diabetes Management

- 17th Apr, 2011-Orientation programme with civil surgeon of Patna, MOICs & program officers at DM's Office, Patna
- CMEs during 2011
 - 21st Apr, at Hotel Pataliputra Ashok for physicians of Patna
 - 9th Aug, at Hotel Chanakya for physicians of Patna
 - 12th Sep, at Hotel Bhawana for physicians of Bhagalpur
 - 3-day workshop on "Practical Diabetology" for 20 doctors and 17 paramedics at Hotel Marriot, Pune and Chandigarh

Diabetes Screening

- Screening camps-432
- Population screened-1,68,598
- New detection-4,590 (2.7%)
- HbA1c estimated-6,923 cases
- People with diabetes-19,588
- Diabetes detection rate-11.6%
- People with pre-diabetes-26,056
- Pre-diabetes detection rate-15.4%
- People with controlled diabetes -6,050 (40.3%)
- People with uncontrolled diabetes -8,948 (59.7%)
- *Estimated secondary complications averted in 3 districts-21,753 cases

*Estimation based on HbA1c reduction as per UKPDS¹⁴; Goa treatment protocol followed

Population with Diabetes Requiring Support from Government for Medication¹⁸⁻²⁰



Total population of 3 districts:
1,16,77,553



Population living below
poverty line (42.6%):
49,74,638



Population above 30 years of
age (36.4%): 18,10,768



Population with diabetes
(11.61%): 2,10,230

A 1% decrease in HbA1c, in diabetes cases screened in Bihar can help avert 21,723[§] cases of secondary complications

[§]Estimation based on the HbA1c reduction as per UKPDS¹⁴

Who is More Likely to be Diagnosed with Diabetes?#

- People >40 yrs–7 times more likely than those below 40 yrs
- Males–twice more susceptible than females
- Urban population–2.2 times more likely than rural population
- People with obesity (body mass index (BMI) ≥ 25)–3.03 times more likely than those with BMI <25
- 35% of the population–BMI ≥ 25
- Reducing BMI to <25 would reduce diabetes detection risk by 65%
- People with high WHR–4 times more likely than those with normal WHR
- 44% of population have high WHR
- normal WHR would reduce diabetes detection risk by 70%
- Smokers–2.3 times more likely than non-smokers

#The data is based on the analysis of 4,919 people screened in the month of June, 2012 in Bihar under the CDB programme.

District-wise Data of the Screened Population

Districts	No. of People Screened	Diabetes Detection Rates (%)	Pre-diabetes Detection Rates (%)
Patna	442	17.6	13.3
Bhagalpur	650*	55.2	10.4
Nalanda	3827	6.7	19.8
Total	4919	14.12	17.9

*Screening done at diabetes specialty OPD only; Data only for June, 2012

Outcomes of CDB in Bihar

- Overall detection rate of diabetes–11.61% (urban–15.8%, rural–7.6%); 12.58% in Patna, 11.5% in Bhagalpur and 9.5% in Nalanda district
- Newly diagnosed cases of diabetes–4,590
- Percentage of known cases with controlled diabetes–40%
- Detection rate of pre-diabetes–15.44%
- Phase I: Average HbA1c in 6,923 people screened–8.27%
- Due to affordability issues of drugs, most patients either never take medication or are casual users of OHAs
- Considerable population living below poverty line and above 30 years of age requires medication support from government of Bihar

Message from Shri P.K. Taneja, IAS




सर्वोच्च न्यायालय
P. K. Taneja (IAS)
Principal Secretary (PH & FW)
& Commissioner (PH, MS, ME & FW)

No. *(2011/2010) P.A.*
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Date : 13-8-12

I am very pleased to note the progress on the "Changing Diabetes Barometer" project in the district of Ahmedabad, Gujarat. It is indeed a great accomplishment to complete > 11500 screenings for diabetes and hypertension during the last 2 months across various PHCs/CHCs of Dascroi, Dholka & Bavala talukas of Ahmedabad.

Non-communicable diseases, especially diabetes has been a major challenge in our country and the prevalence is relatively higher in Gujarat. Novo Nordisk Education Foundation in collaboration with Department of Health & Family Welfare, Govt. of Gujarat is trying to build a system through which the diabetes treatment and management can be accessible, affordable and is made accountable. This project would also help in establishing a valuable database to track the prevalence rate of diabetes and understand diabetes better through various socio-demographic variables.

We know that we are having challenges in the timely diagnosis of diabetes. Currently only ~ 30% of these people are diagnosed and late diagnosis would involve high economic cost. Thus, it is very crucial for us to take immediate action to control the high economic cost of diabetes. I am confident that the CDB project would provide an innovative model for a sustainable diabetes management at the community level.

I wish all the success for the Changing Diabetes Barometer project in the state of Gujarat and assuring you of my support to tackle this global pandemic.



(P.K.Taneja)
P.K. Taneja (IAS)
Principal Secretary (PH & FW)
& Commissioner (PH, MS, ME & FW)

Message from Dr. H.K. Bhavsar



Dear Friends,

I am happy to note that the Changing Diabetes Barometer screening programme has been launched successfully in Ahmedabad district under the public private partnership between government of Gujarat and Novo Nordisk Education Foundation. The burden of non-communicable diseases is on an increasing spree and the prevalence of diabetes is growing significantly over the last few years.

Problems pertaining to diabetes are huge, with 62.4 million people with diabetes; India has one of the highest numbers of people with diabetes in the world. Currently only around 30% of these people are diagnosed further compounding the problem as late diagnosis would result in diabetic complications and also high economic cost. Thus it is imperative for all of us to take action sooner to control the economic burden of diabetes. By studying the primary data it seems that prevalence of diabetes is equally a problem in rural area, more over 70% cases are still uncontrolled in spite of taking treatment which is a matter of great concern. Gujarat is one of the state with high prevalence of diabetes and such an initiative is the right direction to manage diabetes as it provides complete management starting from diagnosis, education, awareness, diet, exercise counselling and treatment and moreover measuring the impact of such intervention in controlling diabetes. I am sure that this programme would help in augmenting the awareness by many folds and help the citizens in adopting the right measures to keep diabetes under control.

I am also happy to inform that >8500 patients as on date have already been screened for diabetes and blood pressure in Ahmedabad district across 13 PHCs of Dascroi & Dholka talukas. I am sure that this initiative started in collaboration with Novo Nordisk Education Foundation would add immense value in our endeavour of controlling the burden of non-communicable diseases in general and diabetes in particular. I wish all the success to the team for their untiring work in bringing a new success story in the healthcare system of Gujarat.


Medical Superintendent and
CDMO cum Civil Surgeon
General Hospital Sola
Ahmedabad, Gujarat

CDB in Gujarat

NNEF in collaboration with the government of Gujarat initiated the CDB program in June, 2012. As a part of its commitment to tackle diabetes, NNEF through the CDB program aims to educate the community and healthcare providers about diabetes, create capacity in healthcare resources and generate a sustainable model of cooperation with government of Gujarat in the field of diabetes management.



Inauguration of IEC Material for Awareness During the Diabetes Exhibition at Ahmedabad



Health Commissioner, Govt. of Gujarat Addressing People at Diabetes Exhibition, Ahmedabad

गुजरात सरकार एवं नोवोनोर्डिस्क एज्युकेशन फाउन्डेशन द्वारा डायाबिटीज एक्जीबिशन

अहमदाबाद, २ जून (संवाददाता)। गुजरात सरकार एवं नोवोनोर्डिस्क एज्युकेशन फाउन्डेशन के संयुक्त आयोजित डायाबिटीज एक्जीबिशन में शामिल होने की घोषणा की। प्रदर्शनी में सभी लोगों के लिए नि:शुल्क रक्त शर्करा परीक्षण एवं सुविधा उपलब्ध कराया जा रहा है। प्रदर्शनी में डायाबिटीज के बारे में जागृति, निदान तथा चिकित्सा के बारे में जानकारी दी गई। यहां पर एक डायाबिटीज का विशेषज्ञ भी उपलब्ध कराया गया। निदान डायाबिटीज होने पर भी स्वास्थप्रद जीवन जीने के बारे में जानकारी दी। इस अवसर पर पी. के. तनजा ने बताया कि वे गुजरात में डायाबिटीज के निदान एवं जागृति के बारे में एक कार्यक्रम आयोजित करेंगे।

2-day Mega Diabetes Exhibition held in city

Mobile Diabetes Van was also flagged

Ahmedabad. As part of the state-wide programme – Changing Diabetes Barometer Project – the department of Health and Family Welfare, Govt of Gujarat and Novo Nordisk Education Foundation (NNEF) launched a two-day exhibition on Diabetes in Ahmedabad on Saturday – Sunday. The first-of-its-kind exhibition was aimed at creating awareness about Diabetes management among citizens. The two-day event was inaugurated by Shri PK Tanna, Principal Secretary – examination, eye examination and their dietary and physician consultation was conducted at the venue. Mr. Malvika D'Souza Managing Trustee, NNEF said "The exhibition team made available information on diabetes awareness, detection and treatment for all those who visited. Display of diet and food items was also displayed in red, yellow and green zones." On the occasion a Changing Diabetes mobile van was also flagged off by Shri Vijay Nehra, Collector Ahmedabad.

Aims of CDB in Gujarat

CDB was initiated with the following objectives:

- Develop a diabetes atlas by incorporating temporal and spatial analysis of data collected during CDB programme
- Initiate a Diabetes Control Program to improve treatment of diabetes with focus on reducing diabetes complications
- Work with the state government to change diabetes through comprehensive screening, awareness and treatment initiatives
- Liaising with government healthcare system to leverage existing global expertise of NNEF in diabetes management
- Create a sustainable and innovative system for diabetes management through necessary collaboration with public health institutions in the state and country

In Ahmedabad, people educated beyond the 10th standard are twice more likely to have better control of their blood sugar⁵

⁵Based on data analysis of CDB Gujarat

Who is More Likely to be Diagnosed with Diabetes?*

- People >40 yrs of age–7.5 times more likely than those below 40 yrs
- People >40 yrs of age are 1.3 times less likely to have controlled diabetes
- Males–1.5 times more susceptible than females
- Urban population–1.3 times more likely than rural population.
- People with obesity (BMI ≥25) are 2 times more likely than those with low obesity
- More than 40% of the population have BMI ≥25
- Reduction of BMI to <25 reduces diabetes detection risk by 72%
- People with high WHR–3 times more likely than those with normal WHR
- 44% population have high WHR
- Normal WHR would reduce diabetes detection risk by 70%
- People who do not exercise–5.4 times more likely than those who exercise

*The data is based on the analysis of 1,464 people screened in the month of June, 2012 in Gujarat under the CDB programme.

Media Coverage of CDB Program in Gujarat

Panchayat-wise Data of the Screened Population in Ahmedabad*

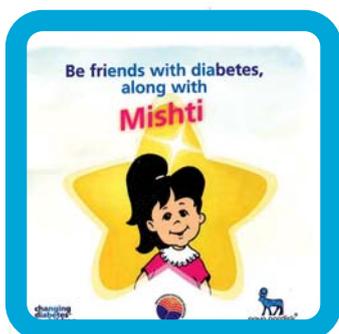
Place of Screening (District)	No. of People Screened	Diabetes Detection Rates (%)	Pre -diabetes Detection Rates (%)
Ahmedabad - Jilla Panchayat	295	14.6	12.20
Aslali	454	17.8	22.25
Nandej	469	16.0	16.84
Vahelal	246	16.7	14.63
Total	1464	16.4	17.2

*Data for the month of June, 2012





Soft toy NOTTI Designed for Education on Injection Sites for Children



Cover Page of the Book - 'MishTi'

CDiC - Training HCPs and Reach Out

Until now, expert faculty from International Society for Paediatric and Adolescent Diabetes (ISPAD) and Indian Society for Paediatric and Adolescent Endocrinology have conducted 1-day workshop across the country and trained 224 HCPs.

The key topics covered in the workshop were

- Diagnosis, medication and monitoring of T1DM
- Knowledge about chronic and acute complications and management of special situations
- Each participant was given a book titled, "Diabetes in Children and Adolescents", authored by eminent ISPAD faculties
- CDiC plans to reach out 500 doctors and 1000 nursing/support staff by 2014
- Activities like posters, launch functions, print media coverage, advertisement in relevant journals, etc. conducted to create awareness on the program
- The program aims that every child with diabetes should live a long and healthy life
- Reach-out at least 4000 T1DM children in India from the poor socio-economic strata

Summary of Children Registered and HCPs Trained Under CDiC

Children registered	3082
Children camps organized	53
HCPs trained	224



Educational Material on T1DM

Diabetes Updates in the Media

Popular articles on NNEF's initiatives on diabetes care and the collaboration of NNEF with state health authorities on CDB were published in national newspapers.

- 'India fast becoming world diabetes capital: Experts' in Times of India on 12th Nov, 2011
- 'Healthier lifestyle can help manage diabetes' in Times of India on 15th Nov, 2011
- 'Wealth erodes health, 15% rural folk are diabetic' in Bharat Yagnik on 27th Jul, 2012
- JAPI: April 2012 issue carried a note on the program
- Two major programs to improve awareness among HCPs in collaboration with ISPAD, ISPAE, AIIMS and Gujarat IMA are planned in November, 2012 to reach at least 300 plus doctors from across the country

With all these activities we are sure that NNEF will be able to make a very useful contribution in changing diabetes in children in India.

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