



# Bangladesh

## Diabetes Mellitus

# **Bangladesh Diabetes Mellitus**

**MedCOI**

**February 2024**



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# Acknowledgements

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The report has been reviewed by International SOS and EUAA.



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## Disclaimer

This report was written according to the EUAA COI Report Methodology (2023). The report is based on carefully selected sources of information. All sources used are referenced.

The information contained in this report has been researched, evaluated and analysed with utmost care. However, this document does not claim to be exhaustive. If a particular event, person or organisation is not mentioned in the report, this does not mean that the event has not taken place or that the person or organisation does not exist.

Furthermore, this report is not conclusive as to the determination or merit of any particular application for international protection. Terminology used should not be regarded as indicative of a particular legal position.

'Refugee', 'risk' and similar terminology are used as generic terminology and not in the legal sense as applied in the EU Asylum Acquis, the 1951 Refugee Convention and the 1967 Protocol relating to the Status of Refugees.

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The drafting of this report was finalised on 18 December 2023. Any event taking place after this date is not included in this report.





## Glossary and abbreviations

Term	Definition
<b>BADAS</b>	Diabetic Association of Bangladesh [in Bengali ‘Bangladesh Diabetic Somiti’]
<b>BDT</b>	Bangladeshi Taka
<b>BIHS</b>	Bangladesh Institute of Health Sciences
<b>BIRDEM</b>	Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders
<b>BUHS</b>	Bangladesh University of Health Sciences
<b>COPD</b>	Chronic Obstructive Pulmonary Disease
<b>CVD</b>	Cardiovascular Disease
<b>DGHS</b>	Directorate General of Health Services
<b>FAO</b>	Food and Agriculture Organization
<b>FY</b>	Financial Year
<b>GDM</b>	Gestational Diabetes Mellitus
<b>ICHRI</b>	Ibrahim Cardiac Hospital & Research Institute
<b>IDF</b>	International Diabetes Federation
<b>HIS</b>	Institute of Health Sciences
<b>IMC</b>	Ibrahim Medical College





Term	Definition
<b>MOHFW</b>	Ministry of Health and Family Welfare
<b>NCD</b>	Non-Communicable Disease
<b>NGO</b>	Non-Government Organization
<b>NHN</b>	National Healthcare Network
<b>OR</b>	Odds Ratio
<b>RVTC</b>	Rehabilitation and Vocational Training Centre
<b>T1DM</b>	Type 1 Diabetes
<b>T2DM</b>	Type 2 Diabetes
<b>TSH</b>	Thyroid Stimulating Hormone
<b>Upazila</b>	An administrative unit, which is a subdivision of a district formerly known as "thana". Bangladesh has 495 <i>Upazilas</i> .
<b>WHO</b>	World Health Organization





# Introduction

## Methodology

The purpose of the report is to provide information on access to diabetes mellitus treatment in Bangladesh. This information is relevant to the application of international protection status determination (refugee status and subsidiary protection) and migration legislation in EU+ countries.

## Terms of reference

The terms of reference for this Medical Country of Origin Information Report can be found in Annex 2: Terms of Reference (ToR). The initial drafting period finished on 06 October 2023, peer review occurred between 9-31 October 2023, and additional information was added to the report as a result of the quality review process during the review implementation up until 18 December 2023. The report was internally reviewed subsequently.

## Collecting information

EUAA contracted International SOS (Intl.SOS) to manage the report delivery including data collection. Intl.SOS recruited and managed a local consultant to write the report and a public health expert to edit the report. These were selected from Intl.SOS' existing pool of consultants. The consultant was selected based on their experience in leading comparable projects and their experience of working on public health issues in Bangladesh.

This report is based on publicly available information in electronic and paper-based sources gathered through desk-based research. This report also contains information from oral sources with ground-level knowledge of the healthcare situation in Bangladesh who were interviewed specifically for this report. For security reasons, all oral sources are anonymised.

## Quality control

This report was written by Intl.SOS in line with the European Union Agency for Asylum (EUAA) COI Report Methodology (2023),<sup>1</sup> the EUAA Country of Origin Information (COI) Reports Writing and Referencing Guide (2023)<sup>2</sup> and the EUAA Writing Guide (2022).<sup>3</sup> Quality control of the report was carried out both on content and form. Form and content were reviewed by Intl.SOS and EUAA.

The accuracy of information included in the report was reviewed, to the extent possible, based on the quality of the sources and citations provided by the consultants. All the

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<sup>1</sup> EUAA, Country of Origin Information (COI) Report Methodology, February 2023, [url](#)

<sup>2</sup> EUAA, Country of Origin Information (COI) Reports Writing and Referencing Guide, February 2023, [url](#)

<sup>3</sup> EUAA, The EUAA Writing Guide, April 2022, [url](#)



comments from reviewers were reviewed and were implemented to the extent possible, under time constraints.

## Sources

In accordance with EUAA COI methodology, a range of different published sources have been consulted on relevant topics for this report. These include: governmental publications, academic publications, reports by non-governmental organisations and international organisations, as well as Bangladeshi media.

In addition to using publicly available sources, two oral sources were contacted for this report. The oral sources are both medical doctors and they are anonymised in this report for security reasons. The sources were assessed for their background and ground-level knowledge. All oral sources are described in the Annex 1: Bibliography. Key informant interviews were carried out in June 2023.





# 1. Diabetes Mellitus

## 1.1. Definition

The World Health Organization (WHO) and the International Diabetes Federation (IDF) define the diagnostic criteria for diabetes as a fasting blood sugar level of greater than or equal to 7.0 mmol/l (126 mg/dl) and a 2-hour plasma glucose level of greater than or equal to 11.1 mmol/l (200 mg/dl).<sup>4</sup>

The American Diabetes Association's (ADA) lists the types of diabetes:

1. Type 1 diabetes (T1DM) (due to  $\beta$ -cell destruction, usually leading to absolute insulin deficiency)
2. Type 2 diabetes (T2DM) (due to a progressive loss of insulin secretion on the background of insulin resistance)
3. Gestational diabetes mellitus (GDM): Diabetes diagnosed in the 2<sup>nd</sup> or 3<sup>rd</sup> trimester of pregnancy, that is not clearly overt diabetes
4. Specific types of diabetes due to other causes:
  - (a) Monogenic diabetes syndromes
  - (b) Diseases of the exocrine pancreas, e.g. cystic fibrosis
  - (c) Drug -or chemical- induced diabetes
  - (d) Other rare causes<sup>5</sup>

A global review of the prevalence of diabetes notes that most studies do not report T1DM and T2DM independently and so it is often not possible to estimate the number of adults with T1DM and T2DM separately.<sup>6</sup> Most of the information found for this report is on T2DM.

## 1.2. Prevalence and incidence of diabetes mellitus

Factors, such as very fast socioeconomic change, urbanisation, sedentary lifestyle and changes in dietary habits, contribute to the increase of diabetes in Asia.<sup>7</sup> In 2015, a professor of Paediatrics at the Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders (BIRDEM), wrote that Bangladesh is facing 'an explosion in numbers of diabetics, particularly T2DM'.<sup>8</sup>

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<sup>4</sup> WHO/IDF, Definition and diagnosis of diabetes mellitus and intermediate hyperglycaemia, April 2006, [url](#), p. 12

<sup>5</sup> Profil, Answers for diabetes, Diabetes types, The diagnosis and classification of diabetes, 2023, [url](#)

<sup>6</sup> Cho, N.H., et al., IDF Diabetes Atlas: Global estimates of diabetes prevalence for 2017 and projections for 2045, 2018, [url](#), p. 280

<sup>7</sup> Bhowmik, B., et al., Increasing Prevalence of Type 2 Diabetes in a Rural Bangladeshi Population: A Population Based Study for 10 Years, February 2013, [url](#), p. 46

<sup>8</sup> Azad, K., Type 1 diabetes: The Bangladesh perspective, 2015, [url](#), p. 9



### 1.2.1. Type 1 diabetes (T1DM)

The IDF states that in 2022, the total number of individuals with T1DM in Bangladesh was 24 878. There were 5 719 individuals aged 20 years and under, 18 558 aged 20 to 59 years, and 617 aged 60 years and older.<sup>9</sup> Azad cites an IDF Atlas estimating that there were 4.2 new cases of T1DM per 100 000 children (0-14 years) per year, in 2013.<sup>10</sup>

### 1.2.2. Type 2 diabetes (T2DM)

The 2011 edition of the Bangladesh Demographic and Health Survey asked adults over 35 years old and the 2018 edition asked adults over 18 years old, questions about previous diagnoses of diabetes and whether they were taking medication to treat their diabetes.<sup>11</sup> Chowdhury et al. examined this data and found that the prevalence rates of T2DM across Bangladesh increased from 10.95 % in 2011 to 13.75 % in 2018. The highest increases (38 %) in T2DM prevalence was found among those aged 65-74 and then among the age group 45-54 (36 %). There was an increase in T2DM prevalence among people who are married (30 %), people who are currently not working (42 %) and rural areas (28 %).<sup>12</sup> The following changes were also reported:

- Gender: the prevalence rate of T2DM among women increased significantly from 11.25 % in 2011 to 13.81 % in 2018. The increase for men was not found to be statistically significant.
- Education: a significant increase in T2DM prevalence was also observed among adults with either no education or no secondary education.
- Geography: the highest-relative increase (54 %) in T2DM prevalence was in the Dhaka region followed by 53 % in the Khulna region.
- Socioeconomic status: T2DM prevalence among middle, richer and the richest individuals increased considerably by 48 %, 41 % and 33 %, respectively.
- Obesity: the prevalence of T2DM increased by 90 % among obese individuals; this rate decreased by 9 % among adults who were overweight but not obese.<sup>13</sup>

A systematic review of 22 studies using data covering 51 252 participants found that the prevalence rates of T2DM ranged from 4.5 % - 35 %. The final estimate of T2DM prevalence was 7.4 % after pooling results from separate studies.<sup>14</sup>

Chowdhury et al. note that the two most important risk factors for diabetes for all adults, irrespective of gender, residence, educational attainment and wealth index are age and being

<sup>9</sup> Ogle, G.D., et al., Type 1 diabetes numbers in children and adults, International Diabetes Federation, 2022, [url](#), p. 10 [The total figure does not equal the sum of the age group figures. The figures are quoted verbatim from the IDF report.]

<sup>10</sup> Azad, K., Type 1 diabetes: The Bangladesh perspective, 2015, [url](#), p. 9

<sup>11</sup> Bangladesh, NIPORT, Mitra and Associates, ICF, Bangladesh Demographic and Health Survey 2011, 2013, [url](#), p. 242; Bangladesh, NIPORT, USAID, Demographic and Health Survey 2017-18, October 2020, [url](#), p. 216

<sup>12</sup> Chowdhury, M.A.B., et al., Diabetes among adults in Bangladesh: changes in prevalence and risk factors between two cross-sectional surveys, August 2022, [url](#), pp. 1, 3

<sup>13</sup> Chowdhury, M.A.B., et al., Diabetes among adults in Bangladesh: changes in prevalence and risk factors between two cross-sectional surveys, August 2022, [url](#), p. 3

<sup>14</sup> Biswas, T., et al., Increasing prevalence of diabetes in Bangladesh; a scoping review, September 2016, [url](#), p. 7



overweight/obese.<sup>15</sup> Diabetes gradually increases the risk of heart diseases, stroke, renal failure and retinopathy, as well as increased morbidity and mortality rates, and poor quality of life.<sup>16</sup>

### 1.2.3. Gestational diabetes mellitus (GDM)

Mazumder et al. analysed the results of the 2017-2018 Bangladesh Demographic and Health Survey<sup>17</sup> and found the overall weighted prevalence of GDM in Bangladesh to be 35 %. The percentage of women aged 25 years or more who had GDM was 40 %. The prevalence of GDM among women living in urban areas was higher ( $p < 0.001$ ) compared to those in rural areas. Also, women from the highest wealth index appeared to suffer more from GDM compared to the other two wealth indexes ( $p = 0.025$ ). Women with GDM had more possibilities to be diagnosed early in their pregnancy (18 weeks), in comparison to women in the non-GDM group (24 weeks) ( $p < 0.001$ ).<sup>18</sup>

Begum et al. reviewed 8 studies with a total of 6 948 pregnant participants. Six studies were conducted in an urban setting, one in a rural setting and one in both settings. The studies were conducted between 2001 and 2017. This review found a pooled estimated prevalence of GDM in Bangladesh of 13 %.<sup>19</sup> As noted above, age and weight are important risk factors in GDM.<sup>20</sup> Begum et al. report that pregnant women who were over 30 years of age had a significantly higher prevalence of GDM than younger pregnant women (age <30 years): 18.31 % vs. 11.56. The prevalence of GDM in overweight or obese pregnant women was 20.45 %, which was significantly higher than that of women whose body weight was within the normal range (13.84 %).<sup>21</sup>

## 1.3. Healthcare organisation for diabetes mellitus

The identification and treatment of diabetes is provided at primary, secondary and tertiary levels of healthcare in the facilities of the Directorate General of Health Services (DGHS).<sup>22</sup> In December 2020, there were 15 954 primary level facilities (including community clinics) across Bangladesh.<sup>23</sup> The MOHFW has provided guidelines for the diagnosis and management of

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<sup>15</sup> Chowdhury, M.A.B., et al., Diabetes among adults in Bangladesh: changes in prevalence and risk factors between two cross-sectional surveys, August 2022, [url](#), p. 7

<sup>16</sup> Chowdhury, M.A.B., et al., Diabetes among adults in Bangladesh: changes in prevalence and risk factors between two cross-sectional surveys, August 2022, [url](#), p. 1

<sup>17</sup> Bangladesh, NIPORT, USAID, Demographic and Health Survey 2017-18, October 2020, [url](#)

<sup>18</sup> Mazumder, T., et al., Prevalence and Risk Factors of Gestational Diabetes Mellitus in Bangladesh: Findings from Demographic Health Survey 2017-2018, 2022, [url](#), p. 5

<sup>19</sup> Begum, R., et al., The prevalence of gestational diabetes mellitus in Bangladesh: a systematic review and meta-analysis, 2022, [url](#), pp. 608-609

<sup>20</sup> Chowdhury, M.A.B., et al., Diabetes among adults in Bangladesh: changes in prevalence and risk factors between two cross-sectional surveys, August 2022, [url](#), p. 7

<sup>21</sup> Begum, R., et al., The prevalence of gestational diabetes mellitus in Bangladesh: a systematic review and meta-analysis, 2022, [url](#), p. 609

<sup>22</sup> Source B, interview, 28 May 2023, Dhaka. Source B is a Line Director at NCD, DGHS. The person wishes to remain anonymous

<sup>23</sup> Bangladesh, MOHFW, Health Bulletin 2020, 2022, [url](#), p. 247

diabetes in Bangladesh.<sup>24</sup>

The Non-Communicable Disease (NCD) operational plan uses the primary healthcare system for the prevention of 'Major NCDs' through raising public awareness, referral and treatment, screening and early detection. 'Major NCDs' are diabetes, cardiovascular diseases (CVDs), chronic obstructive pulmonary disease (COPD) and cancer.<sup>25</sup> There are 300 designated 'NCD Corners' at district level, primary, and secondary health facilities, which are used to conduct courtyard meetings and health facility based interventions.<sup>26</sup>

## 1.4. Treatment facilities

Facilities for treating diabetes are located in the cities and in *Upazilas* in the country. These facilities are mostly part of the National Healthcare Network (NHN) under BIRDEM.<sup>27</sup> Local people know those as diabetic treatment centres. People are also diagnosed at dispensaries as well as by private practitioners.<sup>28</sup>

## 1.5. Diabetic Association of Bangladesh (BADAS)

BADAS is active across the country. Its mission is as follows:

- 'Provide total healthcare, including rehabilitation for all diabetics irrespective of gender, economic and social status, through different institutions of the Diabetic Associations of Bangladesh.
- Expand these services to provide affordable BADAS healthcare for all Bangladeshi through self-sustaining centres of excellence.
- Create specialised quality manpower (researchers, physicians, technicians, nurses and other related personnel) of high ethical standard.
- Develop leadership in healthcare through dedicated and transparent management system.
- Develop industries for manufacturing quality medicines and healthcare products.<sup>29</sup>

The Social Welfare department of BIRDEM was inaugurated when BADAS was established in 1956, and it has the following aims: to help the poor and destitute diabetic patients; and to rehabilitate the young diabetic patients.<sup>30</sup> In the financial year (FY) 2020-2021, BADAS disbursed BDT 781 million [approx. EUR 6 544 600 ] as free services to underprivileged populations through 60 affiliated associations and 16 sub-affiliated associations across the

<sup>24</sup> Bangladesh, MOHFW, National Guidelines for Management of Diabetes in Bangladesh, 2013, [url](#)

<sup>25</sup> Bangladesh, MOHFW, DGHS, 4th HPNSP, OP, Non Communicable Disease Control (January 2017-June 2022), April 2017, [url](#), p. 12

<sup>26</sup> Bangladesh, MOHFW, DGHS, Health Bulletin 2020, 2022, [url](#), p. 146

<sup>27</sup> BIRDEM General Hospital, n.d., [url](#)

<sup>28</sup> Source A, interview, 8 June 2023, Dhaka. Source A is a Professor at BIRDEM. The person wishes to remain anonymous

<sup>29</sup> BADAS, BADAS Mission, BADAS Vision, 2023, [url](#)

<sup>30</sup> BADAS, Statistical Yearbook 2020-2021, 2021, [url](#), p. 68





country.<sup>31</sup> In total, BADAS has 90 affiliated and sub-affiliated associations across the country<sup>32</sup> and these are regarded as referral centres for the treatment of diabetes. People aged 50 and older are tested for high blood sugar when they visit *Upazila* health complexes, outpatient departments of district hospitals, and medical colleges. These tests can also be conducted in community clinics and medical dispensaries. In each case, when the tested patients are found with high blood sugar, they are provided with treatment for diabetes and counselled to visit a nearby NHN centre<sup>33</sup> for treatment and advice.<sup>34</sup> The Diabetic Association of Bangladesh (BADAS) does not perform organ transplants that may be required as a consequence of diabetes disease complications.<sup>35</sup>

BADAS in FY 2020-21 provided free services to poor patients of total BDT 78 million [approximately EUR 653 622].<sup>36</sup>

BADAS institutes include the following:

- Bangladesh Institute of Research & Rehabilitation in Diabetes, Endocrine and Metabolic Disorders (BIRDEM)
- Rehabilitation and Vocational Training Centre (RVTC)
- National Healthcare Network (NHN)
- Ibrahim Cardiac Hospital & Research Institute (ICHRI)
- Ibrahim Medical College (IMC)
- Bangladesh Institute of Health Sciences (BIHS)
- Bangladesh University of Health Sciences (BUHS)<sup>37</sup>

The above mentioned institutes are sister organisations of BIRDEM, which are run independently, but are monitored by an overarching executive body.<sup>38</sup> Many of these are medical colleges which teach and train medical students: the Ibrahim Cardiac Hospital and Research Institute treats cardiac patients,<sup>39</sup> the Rehabilitation and Vocational Training Centre conducts training and provides rehabilitation training,<sup>40</sup> and the Health Sciences Institute and University has teaching and research programmes.<sup>41</sup> BIRDEM is the lead referral institute with 61 affiliated and 29 sub-affiliated NHN centres across the country to treat diabetes.<sup>42</sup>

BIRDEM and its subsidiaries, the NHN centres, adhere to standard procedures, tools and guidelines and follow the same standards for conducting tests and investigations for T2DM as the existing facilities. This includes health promotions related to insulin injection, regular

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<sup>31</sup> BADAS, Statistical Yearbook 2020-2021, 2021, [url](#), p. 24

<sup>32</sup> BADAS, Statistical Yearbook 2020-2021, 2021, [url](#), p. 239

<sup>33</sup> Bangladesh, National Health Care Network, An Enterprise of Diabetic Association of Bangladesh, n.d., [url](#)

<sup>34</sup> Source A, interview, 8 June 2023, Dhaka. Source A is a Professor at BIRDEM. The person wishes to remain anonymous

<sup>35</sup> Source A, interview, 8 June 2023, Dhaka. Source A is a Professor at BIRDEM. The person wishes to remain anonymous

<sup>36</sup> BADAS, Free Diabetes Health Care Delivery, Free Services of Last Five Years (BDT in lakh), 2023, [url](#)

<sup>37</sup> BADAS, Statistical Yearbook 2020-2021, 2021, [url](#), p. 9

<sup>38</sup> BADAS, Statistical Yearbook 2020-2021, 2021, [url](#), pp. 8-9

<sup>39</sup> BADAS, Statistical Yearbook 2020-2021, 2021, [url](#), p. 185

<sup>40</sup> BADAS, Statistical Yearbook 2020-2021, 2021, [url](#), p. 179

<sup>41</sup> BADAS, Statistical Yearbook 2020-2021, 2021, [url](#), pp. 210-217

<sup>42</sup> BADAS, Statistical Yearbook 2020-2021, 2021, [url](#), p. 239





recording of blood glucose and eye examination, reporting and keeping financial records. The staff of NHN all over the country are trained to achieve the standard.<sup>43</sup>

BIRDEM, the main campus of BADAS, has a medical college with several departments, including high-quality clinical services departments. These include departments for endocrinology, cardiology, surgery, ophthalmology, obstetrics and gynaecology, dentistry, diet and nutrition, dermatology, physical medicine and rehabilitation, respiratory medicine, and emergency and casualties.<sup>44</sup> Total yearly outpatient department patients' turnover has been: 2018-2019: 665 057, 2019-2020: 684 526 and 2020-2021: 700 882, respectively.<sup>45</sup>

## 2. Access to treatment

### 2.1. Treatment programmes

A report prepared for the World Bank summarised some of the ways in which care of diabetes mellitus and hypertension is provided in Bangladesh. This highlighted seven types of models of care including pilot projects for community-based primary healthcare which provide free and/or subsidised treatment for poor patients to subscription-based tele-medicine to care provided in specialist hospitals.<sup>46</sup>

A Line Director for non-communicable disease control at the DGHS reported that there is free treatment for type 2 diabetes for poor patients with Metformin, Gliciazide and Insulin, currently extended in the 334 *Upazilas* in the country.<sup>47</sup> Trainings and protocols are from DGHS with support from WHO. Recently, the programme was evaluated. The DGHS will further expand this free treatment programme.<sup>48</sup>

Government hospitals and other healthcare facilities have Social Welfare Departments, which can evaluate and certify individuals for exemption from payment of outpatient department or inpatient department charges, admittance fees, bed charges and laboratory charges, if they are unable to afford healthcare. Private facilities have no provision to exempt patients from payment for any hospital service charge.<sup>49</sup>

<sup>43</sup> Source A, interview, 8 June 2023, Dhaka. Source A is a Professor at BIRDEM. The person wishes to remain anonymous.

<sup>44</sup> BADAS, Statistical Yearbook 2020-2021, 2021, [url](#), p. 55

<sup>45</sup> BADAS, Statistical Yearbook 2020-2021, 2021, [url](#), p. 59

<sup>46</sup> World Bank, Hypertension and Type 2 Diabetes in Bangladesh: Continuum of Care Assessment and Opportunities for Action, June 2019, [url](#), pp. 24-26

<sup>47</sup> Source B, interview, 28 May 2023, Dhaka. Source B is a Line Director at NCD, DGHS. The person wishes to remain anonymous

<sup>48</sup> Source B, interview, 28 May 2023, Dhaka. Source B is a Line Director at NCD, DGHS. The person wishes to remain anonymous

<sup>49</sup> Source A, interview, 8 June 2023, Dhaka. Source A is a Professor at BIRDEM. The person wishes to remain anonymous



## 2.2. Typical route for diabetic patients

Usually, diabetes is diagnosed when patients are tested for their blood glucose while they suffer from other diseases. This is done either in primary healthcare centres, including in *Upazila* health complexes, or in district hospitals or medical college hospitals. There are 103 BADAS-affiliated diabetic centres in *Upazila* and district facilities across the country. Many patients who suspect they could be suffering from diabetes visit BADAS-affiliated diabetic centres in *Upazila* and district facilities in which they get tested for blood sugar and get treatment.<sup>50</sup>

Respective affiliated centres can refer those patients to BIRDEM, if it is considered needed. Waiting times for consultation depends on the day and on the total number of patients who have come to receive treatment; if the patient load is large, there can be delays. During the waiting time before the patients are seen by physicians, a health education programme is offered to raise awareness on how to change the lifestyle to improve diabetic conditions.<sup>51</sup>

## 2.3. Access to treatment and payment for patients

There is no coverage by social security support to cover the cost of drugs or laboratory tests. Patients can get access to treatment after they have completed their registration with the departments providing treatment. Regarding accessing treatment for diabetes mellitus, an interlocutor stated that there is no discrimination based on poverty status, geographical regions or caste.<sup>52</sup>

There is no insurance coverage for diabetes in Bangladesh and subsidies are not available, so there is a risk that patients from lower socioeconomic groups discontinue their treatment. A mixed-methods study at the Bangladesh Institute of Health Sciences (BIHS) collected survey data from 329 patients and conducted interviews to establish the cost burden of T2DM.<sup>53</sup> The average monthly total cost of treatment for T2DM was BDT 4 083.53 [EUR 34.17] per person with the cost of medication, at BDT 2 518.39 [EUR 21.07], accounting for most of the total.<sup>54</sup> More than 80 % of the patients aged 50 years or above miss their regular follow-up, and most of them are females who are from lower socioeconomic groups. Female patients were found to be more likely to miss their follow-up than male patients.<sup>55</sup>

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<sup>50</sup> Source A, interview, 8 June 2023, Dhaka. Source A is a Professor at BIRDEM. The person wishes to remain anonymous

<sup>51</sup> Source A, interview, 8 June 2023, Dhaka. Source A is a Professor at BIRDEM. The person wishes to remain anonymous

<sup>52</sup> Source A, interview, 8 June 2023, Dhaka. Source A is a Professor at BIRDEM. The person wishes to remain anonymous

<sup>53</sup> Saha, M., et al., Cost burden of type 2 diabetes mellitus (DM) in an urban area of Bangladesh: A hospital-based mix method study, 4 August 2020, [url](#), p. 2

<sup>54</sup> Saha, M., et al., Cost burden of type 2 diabetes mellitus (DM) in an urban area of Bangladesh: A hospital-based mix method study, 4 August 2020, [url](#), p. 6

<sup>55</sup> Saha, M., et al., Cost burden of type 2 diabetes mellitus (DM) in an urban area of Bangladesh: A hospital-based mix method study, 4 August 2020, [url](#), p. 8

## 2.4. Insurance and national programmes

In general, the government does not have any kind of insurance coverage for either diabetes mellitus or any other disease condition in the country. However, BIRDEM, the leading hospital for treatment of diabetes in the country, provides options for its permanent staff to get reimbursement of any amount for treatment of any diseases treated in the country. Non-permanent affiliated staff of other institutes, hospitals and universities under the umbrella of BADAS, other than BIRDEM staff, are not entitled to this health insurance coverage.<sup>56</sup> In BIRDEM, a total of 120 beds out of 692 beds are free where patients are totally exempted of any charge, including necessary laboratory investigations, medicine and treatment<sup>57</sup> and at its affiliate NHN, overseen by BADAS, 30 % of the patients are seen free of charge once attested for their level of income by the Social Welfare Department.<sup>58</sup>

## 2.5. Programmes funded by international donor programmes

There are a number of international organisations including World Diabetes Foundation (WDF) and International Diabetes Federation (IDF) that are affiliated with BADAS and its sister institute, BIRDEM.<sup>59</sup> Studies indicate that maintaining dietary guideline can assist individuals with diabetes in managing their personalised glycaemic control, lipid levels, and can also help delay and prevent complications in diabetic patients.<sup>60</sup>

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<sup>56</sup> Source A, interview, 8 June 2023, Dhaka. Source A is a Professor at BIRDEM. The person wishes to remain anonymous

<sup>57</sup> BADAS, Statistical Yearbook 2020-21, 2021, [url](#), p. 58

<sup>58</sup> Source A, interview, 8 June 2023, Dhaka. Source A is a Professor at BIRDEM. The person wishes to remain anonymous

<sup>59</sup> BADAS, Collaboration of BADAS with different International Organizations/ Universities, 2023, [url](#)

<sup>60</sup> American Diabetes Association, Diabetes Care, Lifestyle Management: Standards of Medical Care in Diabetes—2019, January 2019, [url](#), p. S48



### 3. Cost of treatment

Table 1. Prices for consultation<sup>61</sup>

Specialist	Public outpatient treatment price in BDT	Public inpatient treatment price in BDT	Private outpatient treatment price in BDT	Private inpatient treatment price in BDT	Reimbursement/ special programme/ free/ comments
Consultation by an internal specialist (internist)	200	400	400	800	Usually there is no exemption but the Social Welfare Department can recommend free or partial payment
Consultation by an endocrinologist	200	500	800	1500	Usually there is no exemption but the Social Welfare Department can recommend free or partial payment
Consultation by an ophthalmologist	200	400	800	1500	Usually there is no exemption but the Social Welfare Department can recommend free or partial payment
Consultation by a neurologist	200	500	800	1500	Usually there is no exemption but the Social Welfare Department can recommend free or partial payment
Consultation by a general practitioner	200	400	800	1500	Usually there is no exemption but the Social Welfare Department can recommend free or partial payment
Consultation by vascular surgeon (e.g. for diabetic foot)	150	500	800	1500	Usually there is no exemption but the Social Welfare Department can recommend free or partial payment

<sup>61</sup> Source A, interview, 8 June 2023, Dhaka. Source A is a Professor at BIRDEM. The person wishes to remain anonymous

**Table 2. Prices for treatments and diagnostic tests<sup>62</sup>**

	Public treatment price in BDT	Private treatment price in BDT	Reimbursement/ special programme/ free/ comments
<b>Laboratory research</b>			
<b>Blood glucose (incl.: HbA1C/ glyc.Hb)</b>	650	900	Usually there is no exemption but the Social Welfare Department can recommend free or partial payment
<b>Renal/ kidney function (creatinine, urea, proteinuria, sodium, potassium levels)</b>	Creatinine 280 Serum Urea 270 Serum Protein 220 Serum Sodium 250 Serum Potassium 250	Creatinine 700 Serum Urea 700 Serum Protein 300 Serum Sodium 500 Serum Potassium 500	Usually there is no exemption but the Social Welfare Department can recommend free or partial payment
<b>Laboratory research of thyroid function (TSH, T4, T3)</b>	TSH 750 T4 700 T3 700	TSH 1500 T4 1200 T3 1200	Usually there is no exemption but the Social Welfare Department can recommend free or partial payment
<b>Devices</b>			
<b>Blood glucose meter for self-use by patient</b>	1800	2 000 - 5 000	Usually there is no exemption but the Social Welfare Department can recommend free or partial payment
<b>Blood glucose self-test strips for use by patient</b>	300 for 20 strips	500 for 20 strips	Usually there is no exemption but the Social Welfare Department can recommend free or partial payment
<b>Treatment</b>			
<b>Clinical admittance in internal or endocrinology department (daily rates)</b>	1 500/night rent for general ward, 4 000/night for single room, 0/night free bed, VIP room 10 000/night	4 000/night rent for general ward, 8 000/night for single room, no free beds, VIP room 30 000/night and over	Usually there is no exemption but the Social Welfare Department can recommend free or partial payment

<sup>62</sup> Source A, interview, 8 June 2023, Dhaka. Source A is a Professor at BIRDEM. The person wishes to remain anonymous



	Public treatment price in BDT	Private treatment price in BDT	Reimbursement/ special programme/ free/ comments
Laser treatment of diabetic retinopathy	4 000 - 7 000	10 000 - 20 000	Usually there is no exemption but the Social Welfare Department can recommend free or partial payment

## 4. Cost of medication

In Table 3, the reference pharmacy is the BIRDEM Pharmacy in Shahbag, Dhaka.

**Table 3. Cost of medications<sup>63</sup>**

Generic Name	Brand name	Strength of unit	Form	Number of units in the container	Price per box in BDT	Place (pharmacy, hospital,...)
Dapagliflozin	Dapaglip™	5 mg	Tablet	30	480	Available at both hospitals and pharmacies
Empagliflozin	Emjard™	10 mg	Tablet	30	750	Available at both hospitals and pharmacies
Glibenclamide	Dibenol®	5 mg	Tablet	100	28	Available at both hospitals and pharmacies
Gliclazide	Diapro®	80 mg	Tablet	30	180	Available at pharmacies
Glimepiride	Amaryl®	1 mg	Tablet	30	207	Available at both hospitals and pharmacies

<sup>63</sup> Source A, interview, 8 June 2023, Dhaka. Source A is a Professor at BIRDEM. The person wishes to remain anonymous

Generic Name	Brand name	Strength of unit	Form	Number of units in the container	Price per box in BDT	Place (pharmacy, hospital,...)
Insulin, premixed: aspart (rapid acting) and aspart protamine (intermediate acting) like <sup>®</sup> Novomix	NovoRapid <sup>®</sup>	100 IU / ml	Injection pen	1	550	Available at pharmacies
Insulin: intermediate acting [12-24 hours]; insulin NPH/isophane like <sup>®</sup> Insulatard	Actrapid <sup>®</sup>	300 IU / 3ml	Injection pen	5	2 105	Available at pharmacies
Insulin: long acting[24 hours]; insulin detemir	Levemir Flexpen <sup>®</sup>	300 IU / 3 ml	Injection pen	5	6 915	Available at pharmacies
Insulin: long acting[24 hours]; insulin glargine like <sup>®</sup> Lantus	Lantus Solostar <sup>®</sup>	100 IU / ml	Injection pen	5	5 945	Available at pharmacies
Insulin: rapid acting[2-5 hours]; insulin aspart like <sup>®</sup> Novorapid	RapiLog™	100 IU / ml	Injection pen	1	450	Available at pharmacies
Insulin: rapid acting[2-5 hours]; insulin glulisine	Apidra <sup>®</sup>	200 IU / 2ml	Injection pen	5	3 750	Available at pharmacies
Insulin: rapid acting[2-5 hours]; insulin lispro	Humalog 100 <sup>®</sup>	100 IU / ml	Injection pen	5	3 360	Available at pharmacies
Linagliptin	Glitin <sup>®</sup>	5 mg	Tablet	20	400	Available at pharmacies
Metformin	Etform <sup>®</sup>	850 mg	Tablet	100	500	Available at pharmacies
Vildagliptin	Viglita <sup>®</sup>	50 mg	Tablet	100	600	Available at pharmacies

Note: Medication prices are not reimbursed by any public health insurance mechanisms.





# Annex 1: Bibliography

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Source B, interview, 28 May 2023, Dhaka. Source B is a Line Director at NCD, DGHS. The person wishes to remain anonymous.

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## Annex 2: Terms of Reference (ToR)

### Diabetes mellitus

**Note for drafters: These are guidelines on the information to be included. If one aspect is not relevant, e.g., there is no national institute to treat this disease or no international donor programme, there is no need to mention it. Keep the focus on treating medicine – preventive care can be mentioned but is of less interest to the target group.**

### General information

- Briefly describe prevalence and incidence of diabetes mellitus (epidemiologic data).
- How is the health care organized for diabetes?
- How is diabetes treated – at specific centres, in primary health care centres, secondary care / hospitals, tertiary care etc.?
- Which kinds of facilities can treat diabetes [public, private not for profit (e.g., hospitals run by the church), private for-profit sector]? Include links to facilities' websites if possible.
- How are the resources organized in general to treat patients with diabetes mellitus? Are there sufficient resources available to treat all patients?
- Is there a particular type of diabetes for which no (or only partial) treatment exists in the country?
- Is there a (national) institute specialised in treating diabetes?
- Are there any national or international plans or (donor) programmes for diabetes; if yes, could you elaborate on such programme(s) and what it entails?

### Access to treatment

- Are there specific treatment programmes for diabetes mellitus? If so, what are the eligibility criteria to gain access to it and what they contain?
- Are there specific government (e.g., insurance or tax) covered programmes for diabetes? If so, what are the eligibility criteria to gain access to it?
- Are there any factors limiting the access to healthcare for patients? If so, are they economic, cultural, geographical, etc.? Are there any policies to improve access to healthcare and/or to reduce the cost of treatments and/or medication? What is the number of people having access to treatment? Keep focus on e.g., waiting times rather than the exact number of specialists in the field.
- If different from information provided in the general section; is the treatment geographically accessible in all regions?
- What is the 'typical route' for a patient with diabetes mellitus (after being diagnosed with the disease)? In other words: for any necessary treatment, where can the patient find help and/or specific information? Where can s/he receive follow-up treatment? Are there waiting times for treatments (e.g., consultation by an endocrinologist, internist, laboratory research (blood glucose), etc)?



- What must the patient pay and when?
- Is it the same scenario for a citizen returning to the country after having spent a number of years abroad?
- What financial support can a patient expect from the government, social security or a public or private institution? Is treatment covered by social protection or an additional / communal health insurance? If not, how can the patient gain access to a treatment?
- Any occurrences of healthcare discrimination for people with diabetes?

## Insurance and national programmes

Include if relevant, otherwise delete section.

- National coverage (state insurance).
- Programmes funded by international donor programmes, e.g., UNICEF, Gates foundation, Clinton foundation etc.
- Include any insurance information that is specific for patients with diabetes mellitus.

## Cost of treatment

Guidance / methodology on how to complete the tables related to treatments:

- Do not delete any treatments from the tables. Instead state that they could not be found if that is the case.
- In the table, indicate the price for inpatient and outpatient treatment in public and private facility and if the treatments are covered by any insurance or by the state.
- For inpatient, indicate what is included in the cost (bed / daily rate for admittance, investigations, consultations...). For outpatient treatment, indicate follow up or consultation cost.
- Is there a difference in respect to prices between the private and public facilities?
- Are there any geographical disparities?
- Are the official prices adhered to in practice?
- Include links to online resources used, if applicable (e.g., hospital websites).

**Note: a standardised list of treatments was also included in the original ToR, as can be viewed in the report.**

## Cost of medication

Guidance / methodology on how to complete the tables related to medications:

- Do not delete any medicines from the tables. Instead, state that they could not be found if that is the case.
- Are the available medicines in general accessible in the whole country or are there limitations?
- Are the medicines registered in the country? If yes, what are the implications of it being registered?



- Indicate in the tables: generic name, brand name, dosage, form, pills per package, official prices, source, insurance coverage.
- Are (some of the) medicines mentioned on any drug lists like national lists, insurance lists, essential drug lists, hospital lists, pharmacy lists etc.?
  - If so, what does such a list mean specifically in relation to coverage?
- Are there other kinds of coverage, e.g., from national donor programmes or other actors?
- Include links to online resources used, if applicable (e.g., online pharmacies).

**Note: a standardised list of medication was also included in the original ToR, as can be viewed in the report.**

## NGOs

Include if relevant, otherwise delete section.

- Are any NGOs or international organisations active for patients with diabetes mellitus? What are the conditions to obtain help from these organisations? What help or support can they offer?
- Which services are free of charge and which ones are at a cost? Is access provided to all patients or access is restricted for some (e.g., in case of faith-based institutions or in case of NGOs providing care only to children for instance).



