

# Better Understanding the Context of **Diabetes** and **Universal Health Coverage**



## Country Case Studies

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## SUMMARY

This report presents the findings for country surveys looking at diabetes and Universal Health Coverage (UHC) in eight countries representing different geographic regions and income groups. In the lower income countries, availability of essential diabetes services is not assured, particularly for insulin supplies, glucose control and even for insulin itself. The existence of national noncommunicable disease (NCD) or diabetes programmes and inclusion in the essential service package or essential medicines list does not guarantee availability of diabetes services, especially at the primary healthcare (PHC) level. Likewise, theoretical cost coverage by health insurance systems does not guarantee effective service provision with minimal out-of-pocket payments. Insulin supplies and blood glucose self-monitoring devices are often, in practice, poorly covered by health insurance systems. Health providers in lower-income countries tend to limit service for costly supplies or impose substantial user charges. Thailand has successfully provided essential diabetes care services free of charge, fully funded by health insurance schemes, without any restrictions.

## Organisations and projects involved in this report

Health Action International (HAI) is a non-profit based in the Netherlands active in the area of access to medicines. Since 2015 Health Action International has co-led the Addressing the Challenge and Constraints of Insulin Sources and Supply (ACCISS) Study. This study has mapped out global and national barriers to access to insulin and, more recently, self-monitoring tools. The University of Geneva Faculty of Medicine, Division of Tropical and Humanitarian Medicine, is HAI's partner in the ACCISS Study. The Division has a specific focus on diabetes research and implementation projects globally. In 2023, with funding from the Swiss Agency for Development and Cooperation, the Division of Tropical and Humanitarian Medicine launched the NCD Policy Lab with the aim of bridging the knowledge and implementation gap between science and policy with a specific focus on insulin and diabetes. The P4H Network (the global network for social health protection and health financing) was also contributed to this report.

# 1. BACKGROUND

Universal Health Coverage (UHC) is included as an integral part of the health-related Sustainable Development Goals (SDG), as part of the World Health Organization's (WHO) Triple Billion Targets and is seen as a key element in guaranteeing access to affordable care to populations.<sup>1,2,3</sup> In parallel, the burden of NCDs is increasing and placing strain on health systems, communities, households and individuals both in terms of finance and management of these conditions.<sup>4,5</sup> Even in well financed health systems with established UHC systems and levels of achievements in regard to care, these strains are becoming significant due to increasing numbers of people with NCDs, ageing populations, and increasing costs of medicines and technologies.<sup>6</sup>

As part of efforts to overcome these challenges, WHO launched the Global Diabetes Compact in 2021, which includes “ensuring that all people who are diagnosed with diabetes have access to equitable, comprehensive, affordable and quality treatment and care”.<sup>7</sup> Statements around access to affordable medicines and care are also echoed in the SDGs, WHO's Global Action Plan on NCDs, and a 2021 World Health Assembly Resolution on diabetes: “Reducing the burden of noncommunicable diseases through strengthening prevention and control of diabetes”.<sup>8,9,10</sup>

The ACCISS Study has found high prices and low availability of insulin and related diabetes supplies, as well as various health system barriers that individuals face.<sup>11,12</sup> While many issues do remain, the ACCISS Study has also identified a few positive examples of low and middle-income countries (LMICs) that have included diabetes within their UHC benefit packages.<sup>13</sup>

Given these elements, it was evident that more research was needed to understand, within UHC benefits packages what countries were doing in terms of access to diabetes policies, treatment and care.

## For the purpose of this report, it is important to understand certain key elements:

**UHC:** In this report UHC is defined as the policy that ensures that all people in a country have access to the health services they need, when and where they need them, without financial hardship. It includes the full range of essential health services, from health promotion to prevention, treatment, rehabilitation, and palliative care.<sup>14</sup> Many countries implement government-funded and/or regulated UHC systems, which offer health care to almost every country citizen and ensure the care given is high-quality and affordable, in order not to inflict financial hardship on the individual. Health care through UHC programmes limits out-of-pocket payments, providing free or prepaid services with affordable co-payments to their citizens.<sup>15</sup>

**Health financing:** The arrangements that a country has to put in place to finance their health care system. These dimensions include: revenue sources and contribution mechanisms; pooling funds; benefit entitlement, design, and rationing; purchasing of health service benefits; and the governance of the above functions and policies.

**Social health protection:** A mandatory public measure that entails the establishment of a fund financed through prepaid contributions that enable cross-subsidisation among people with higher and lower incomes, younger workers and the elderly, as well as risk sharing across population groups based on need, and provides financial protection to individuals during the time of illness.<sup>16</sup>

## 1.1 Aims and data sources for this report

This report presents data from eight countries that provide varying levels of coverage for diabetes care. The aim of these case studies is to show what elements need to be in place for national coverage of a comprehensive service delivery package for diabetes. It also aims to show some of the barriers to this, particularly for LMICs. This report, along with a larger piece of work that presents overall global data on the intersection of UHC and diabetes, will document and inform the interlinkages between UHC and diabetes, and identify barriers and opportunities.

Data was collected via focal points of the P4H Social Health Protection network across different income level categories and continents.

## 2. RESULTS

Responses were provided for eight countries. (Table 1)

**Table 1.** Countries included in this report

Income Group	Country
High-income countries	Australia, Singapore
Upper middle-income countries	Kazakhstan, Thailand, Peru
Lower middle-income countries	Lao People's Democratic Republic (PDR), Mongolia
Low-income countries	Madagascar

Overall, Australia, Singapore and Thailand cover almost the entirety of their population with high quality<sup>a</sup> service coverage and limited out-of-pocket payments. Kazakhstan also provides access to its whole population with the recent introduction of the Mandatory Social Health Insurance scheme, though with lower effective service coverage and with higher out-of-pocket payments. Mongolia and Lao PDR have also introduced national health insurance funds covering theoretically a vast majority of the population, while Peru has also achieved high population coverage with public, private and community-based health insurances. Of these three countries, achievements of Lao PDR are more modest with lower effective population coverage, lower service coverage and higher out-of-pocket. Finally, Madagascar covers only a third of its population with social health protection, and still has poor service coverage and significant out-of-pocket payments, while is attempting to launch universal health protection scheme.

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<sup>a</sup> High quality is defined here as the percentage of population covered with a given service

## 2.1. Presence of NCD and diabetes policies and programmes

With regards to NCD programmes, all countries reported having one. However, only three countries reported having a diabetes specific programme (Australia, Thailand and Peru). Kazakhstan responded “somewhat” to having a diabetes programme. There was also a difference reported between having the programme document for NCDs or diabetes and having this programme being operational in practice (Figure 1). For example, Mongolia only had a NCD programme “on paper”.

**Figure 1.** Presence or not of NCD or diabetes program and its implementation



## 2.2. What services are included for diabetes

All countries report the inclusion of diabetes services in the Essential Health Service package in both policy and practice (Figure 1). However, not all countries include all elements of an essential diabetes package. Table 2 presents the availability of specific elements of the diabetes package from both policy and practice perspectives. The main element not included in the essential diabetes package relates to self-monitoring tools and diabetes related supplies.

**Table 2.** Elements included in policy and practice in the essential diabetes package

Elements of the essential diabetes package		Australia	Kazakhstan	Lao PDR	Madagascar	Mongolia	Peru	Singapore	Thailand
Initial diagnostic test	Policy								
	Practice								
Metformin	Policy								
	Practice								
Insulin	Policy								
	Practice								
Insulin supplies (syringes, pen needles, pump)	Policy								
	Practice								
Glucose Self-Monitoring Devices (meter, strips, lancets)	Policy								
	Practice								
Continuous Glucose Monitor (CGM)	Policy								
	Practice								
Complications	Policy								
	Practice								

Specifically looking at the availability of the essential package at different levels of the health system and the private sector at a policy level; the general rule seems to be that the higher the level the facility, the more of the essential diabetes elements are included. Many of the elements are not included at the level of primary health care (Table 3). In addition, there are noted differences in what the national policy states and what happens in reality (Table 4). For example, policies stating that the initial diagnosis should be available at primary health care level in Lao PDR, but mostly this was not found to be available at the primary care level. While in contrast availability of insulin in practice was found to be wider than what is stated in policy.



**Table 3.** Elements of the essential diabetes package included in policy for different levels and sectors of the health system

	Facility level/ sector	Australia	Kazakhstan	Lao PDR	Madagascar	Mongolia	Peru	Singapore	Thailand
Initial diagnostic test	Tertiary								
	Secondary								
	Primary								
	Private				?				
Metformin	Tertiary								
	Secondary								
	Primary								
	Private								
Insulin	Tertiary								
	Secondary								
	Primary								
	Private								
Insulin supplies (syringes, pen needles, pump)	Tertiary								
	Secondary								
	Primary								
	Private								

Table 3 continued.

	Facility level/ sector	Australia	Kazakhstan	Lao PDR	Madagascar	Mongolia	Peru	Singapore	Thailand
Glucose Self-Monitoring Devices (meter, strips, lancets)	Tertiary								
	Secondary				?				
	Primary								
	Private								
Continuous Glucose Monitor (CGM)	Tertiary								
	Secondary								
	Primary								
	Private								
Complications	Tertiary								
	Secondary								
	Primary								
	Private								

**Table 4.** Elements of the essential diabetes package included in practice for different levels and sectors of the health system

	Facility level/ sector	Australia	Kazakhstan	Lao PDR	Madagascar	Mongolia	Peru	Singapore	Thailand
Initial diagnostic test	Tertiary								
	Secondary								
	Primary								
	Private				?				
Metformin	Tertiary								
	Secondary								
	Primary								
	Private								
Insulin	Tertiary								
	Secondary								
	Primary								
	Private					?			
Insulin supplies (syringes, pen needles, pump)	Tertiary								
	Secondary								
	Primary								
	Private					?			

Table 4 continued.

	Facility level/ sector	Australia	Kazakhstan	Lao PDR	Madagascar	Mongolia	Peru	Singapore	Thailand
Glucose Self-Monitoring Devices (meter, strips, lancets)	Tertiary					?			
	Secondary				?	?			
	Primary								
	Private					?			
Continuous Glucose Monitor (CGM)	Tertiary								
	Secondary								
	Primary								
	Private					?			
Complications	Tertiary								
	Secondary								
	Primary								
	Private					?			

## 2.3. Cost of services for diabetes

Beyond the availability of services, it is important to see what costs are covered for the population. For NCDs in all countries except for Madagascar, NCD services are covered in both policy and practice. However, the free provision of diabetes services specifically was only present in Australia and Thailand in policy and practice. Peru had a policy on free provision, but this was not the case in practice. In looking at what services for diabetes were covered within the national health insurance or main insurance, Lao PDR covers limited services and Madagascar covers nothing for people with diabetes. (Table 5). One gap found relates to costs of self-monitoring devices not being covered. Specifically looking at type 1 diabetes (Table 6), the same situation as for diabetes overall is present, with Lao PDR and Madagascar providing limited services or nothing to this population. Meanwhile, in four of the eight countries, glucose self-monitoring devices are missing. Continuous Glucose Monitors are only included in (two) packages.

**Table 5.** Elements of the essential diabetes package covered by National Health Insurance or main insurance in policy

Elements of the essential diabetes package		Australia	Kazakhstan	Lao PDR	Madagascar	Mongolia	Peru	Singapore	Thailand
Initial diagnostic test	Policy								
	Practice								
Metformin	Policy								
	Practice								
Insulin	Policy								
	Practice								
Insulin supplies (syringes, pen needles, pump)	Policy								
	Practice								
Glucose Self-Monitoring Devices (meter, strips, lancets)	Policy								
	Practice								
Continuous Glucose Monitor (CGM)	Policy	?							
	Practice	?							
Complications	Policy								
	Practice								

**Table 6.** Elements of the essential diabetes package covered by National Health Insurance or main insurance in policy for people with type 1 diabetes

Elements of the essential diabetes package		Australia	Kazakhstan	Lao PDR	Madagascar	Mongolia	Peru	Singapore	Thailand
Initial diagnostic test	Policy								
	Practice								
Metformin	Policy								
	Practice								
Insulin	Policy								
	Practice								
Insulin supplies (syringes, pen needles, pump)	Policy								
	Practice								
Glucose Self-Monitoring Devices (meter, strips, lancets)	Policy								
	Practice								
Continuous Glucose Monitor (CGM)	Policy	?							
	Practice	?							
Complications	Policy								
	Practice								

In the countries studied different limitations are in place for certain elements of the diabetes package based on age.

**Kazakhstan:** Full availability of essential diabetes services, but limits are present with regards to insulin supplies and specific measures are in place for children with type 1 diabetes under the age of 18. Financial access to diabetes care is covered by free medical care and compulsory social health insurance. There are restrictions of insulin pump to people under 18 years old for diabetes type 1.

There are limited quantities of insulin supplies and glucose self-monitoring test strips and very specific measures are in place to explain the limits on quantities for people with diabetes. These limitations on whether a person gets a blood glucose meter and the number of strips they get is based on their treatment regimen. For those using insulin pens as their delivery device, there is also a limitation as to the number of pen needles they get per day.

**Thailand:** Limitations with regards to the initial diagnostic tests, which is only for people aged above 35 years of age.

**Mongolia:** No specific limitations are stated, but the key informants mentioned the overall issue of limited budgets and that this applies both to populations as well as quantities.

**Australia:** Limitation on quantity of metformin and insulin is reported.

**Peru:** In practice there are limitations with regards to insulin, insulin supplies and self-monitoring.

Countries with out-of-pocket expenditure reported in policies were: Australia (for metformin, insulin, glucose self-monitoring devices, continuous glucose monitors), Madagascar (all elements), Mongolia (metformin and -glucose self-monitoring devices), and Singapore (all elements). Only Peru reports that in practice most elements of the package require out-of-pocket payments in contrast to their policy, which states these elements should be free. In Mongolia, key informants mentioned the issue of co-payments for diabetes services and that this was a significant burden on individuals. Australia offers an interesting example of different co-payments for different elements of the essential package and for different populations. For metformin and insulin, co-payments were US\$30 per 60 days prescription or US\$7.30 for concession card holders. Co-payments for glucose self-testing were US\$15 for 100 strips for general patients, and US\$1.20 per 100 strips for concession card holders and free for Indigenous Australians. For Continuous Glucose Monitors, co-payments were \$32 per month for people over 21 who do not hold concession cards.

### 3. DISCUSSION

Australia, Singapore and Thailand have a comprehensive service delivery package in place for the management of diabetes throughout the different levels of care. Financial access is ensured, covered by social health protection systems free of charge (Thailand), with co-payments (Australia) or through prepaid insurance schemes with an affordable proportion of out-of-pocket payments (Singapore). All other countries face barriers to both availability of services and cost coverage. Peru has limited availability in glucose self-monitoring devices. The national free of charge programme for diabetes does not seem to be able to guarantee financial access without substantial out-of-pocket costs for insulin, supplies, glucose testing and complications. In Lao PDR, insulin and glucose self-monitoring devices are effectively mostly not available at primary care level. Despite being theoretically covered by the National Health Insurance (NHI) in public facilities, people mainly need to purchase insulin or glucose self-monitoring devices in the private sector due to the limited government subsidies to the NHI. The situation appears similar in Mongolia, noting that glucose self-monitoring devices is not covered by the national health insurance. In Madagascar, availability of diabetes services and financial coverage by the national insurance is not ensured outside the first line treatment.

Based on these eight country case studies we see that the four dimensions of UHC are not fully addressed for diabetes:

1. In some countries people with diabetes are not included in UHC coverage or there are limitations in terms of age.
2. Not all services needed for diabetes are covered, in particular, the tools for glucose self-monitoring are not included. This is an important gap that needs to be addressed. WHO now has global coverage targets for diabetes, which include: “100% of people with type 1 diabetes have access to affordable insulin and blood glucose self-monitoring”.<sup>19</sup> Costs of self-monitoring tools are significant for health systems and individuals.<sup>20,21</sup> Thus, these issues must be addressed to ensure their inclusion in a financially sustainable way in UHC packages.
3. Cost coverage in some countries is absent. This means that some people must pay for their diabetes care out of pocket, or pay co-payments. Additionally, in some situations, services that should be covered are not available resulting in out-of-pocket payments or going without. For example, insulin is not included in Madagascar and mostly not available in public primary care facilities in Lao PDR. Issues of availability and affordability of insulin in LMICs have been reported widely, but insulin being provided in health systems at an affordable price should be a global priority.<sup>11,12,22-24</sup>
4. Another overarching element is the availability of diabetes services at the PHC level. With the global push for NCD care to be delivered at primary level there needs to be a guarantee that diabetes services will be available. In many contexts diabetes care is lacking at PHC due to various reasons, meaning that vast numbers of the population who can only easily access this level of the health system lack access to the care and services they need.

These case studies confirm findings of previous studies that availability of essential diabetes services is not ensured in lower income countries, especially for insulin supplies, glucose self-control (self-test and continuous monitor) and even for insulin.<sup>25</sup> The existence of national NCD or Diabetes programmes, and inclusion in the essential service package or list the list of essential medicines is not enough and not a guarantee to ensure effective continuous availability of diabetes services, especially at PHC level.<sup>26</sup>

Likewise, the theoretic cost coverage of diabetes care by health insurance systems does not ensure effective service provision at no or limited out-of-pocket payments. Insulin supplies and glucose self-monitoring (self-test or continuous monitor and supplies) appears to be poorly covered by health insurance systems. In the surveyed countries, legal restrictions on target groups or quantities do not seem to be a major problem.

Thailand has managed to effectively provide free of charge essential diabetes care services fully funded by the health insurance schemes, without qualitative or target group restrictions. A previous case study prepared by the ACCISS Study highlighted how Thailand progressively introduced free insulin.<sup>13</sup> This could be an interesting model for other countries to follow.

This quick survey, conducted with key informants, is by no means representative of all countries and has limitations as to the data collected and the informants used to prepare the results. As follow-up, the organisations involved in this report are carrying out an in-depth analysis of existing data for all countries to assess trends in UHC for diabetes. However, some key lessons from this report will inform this larger piece of work and other next steps in gaining a better understanding of UHC within the context of diabetes (Box 1).



### Box 1 – Key lessons from country case studies

- Assess policies, but also see how they are implemented across different populations within a country
- Ensure inclusion of essential elements of the diabetes package in both policy and practice
- Evaluate the “universality” of availability of all elements at different levels of each country’s health system, different populations and age groups
- See alignment between what is covered, the quantities covered and clinical evidence

Due to the high and recurring costs associated with primary, hospital and personal care; needs for comprehensive diabetes care requirements and/or specificities of diabetes products/markets (such as insulin, glucose monitors and supplies); diabetes management is often inadequately covered by insurance or national services. These unique aspects of diabetes management may also contribute to the explanation of its inadequate institutional funding. While diabetes may have specific national policies and be included in Essential Medicines Lists, this does not guarantee secured public funding. This often leads to the unavailability of some services, rationing, balance billing, and high out-of-pocket expenses.

Considering the significant burden of diabetes in terms of services and costs, it would be more effective to integrate large-scale policies for free diabetes care into mature institutional social health protection systems. This approach is preferable to relying entirely on standalone projects or programmes primarily funded by donors. The approach to procurement of key diabetes products and supplies appears important, particularly in low-income settings. A centralised procurement of products (insulin, self-glucose testing supplies, lancets, etc.) can improve cost efficiency through negotiated bulk international purchasing, ensured effective availability of supplies and more easily incorporated donor funding. Decentralised procurement by the health providers can ensure longer term sustainability. A mix of centralised procurement of expensive products with good saving potentials (insulin, glucose tests, lancets) and decentralised procurement for other items (oral drugs, needles, etc.) might also be a good balanced approach.

A national programme with universal access to diabetes services in LMICs is not only a necessity for managing the increasing prevalence of diabetes but also a strategic investment for economic development and equity in health. Such a case needs to be developed globally, but also on a country-by-country basis .

# APPENDIX 1 – COUNTRY SURVEY FORM

Country Name	a	b	In Policy					In Practice					Comments (please provide substantial explanations and comments)		
			Initial diagn. Test	1st line drugs (Metformin etc)	Insulin	Insulin supplies (syringes, pen needles, pump)	Self-Glucose Test (meter, strips, lancets)	Contin. Glucose Monitor (CGM)	Complications	Initial diagn. Test	1st line drugs (Metformin etc)	Insulin		Insulin supplies (syringes, pen needles, pump)	Self-Glucose Test (meter, strips, lancets)
Position	c														
Organization	d														
Email	e														
Health supply	1	National Non-Communicable Diseases (NCD) Program?													
	2	National specific Diabetes program?													
	3	Diabetes services in the list of essential service package?													
	4	Diabetes drugs included in Essential Medicines List?													
	5	Availability at tertiary facilities?													
	6	Availability at secondary facilities?													
	7	Availability at primary care facilities?													
	8	Availability in private facilities?													
Social Health Protection	9	What type of UHC financing model?													
	10	NCDs covered by National Health Ins. or main insurances?													
	11	National free of charge Diabetes program?													
	12	Diabetes covered by NHI or main insurance?													
	13	Coverage also for Diabetes Type 1?													
	14	Limitations/Restrictions on target groups?													
	15	If yes, explain (eg only <18y for Type 1)													
	16	Limitations/Restrictions on quantities?													
	17	If yes, explain (eg X times/year; x items/year..)													
	18	% or amount OOP for diabetes services?													
	19	If yes, provide amount or % (x% of amount; flat amount; capped amount, etc)													

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