The Road to Free Insulin

GUYANA CASE STUDY

September 2017

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This case study is part of a series entitled "The Road to Free Insulin: Country Case Studies" that was created for the ACCISS Study. They are aimed at understanding the role of government, clinicians, and civil society in enabling insulin to be provided free of charge in some contexts.

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Addressing the Challenge and Constraints of Insulin Sources and Supply

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Background

Guyana is located in northern South America and is that continent's third smallest country. It is the only country in South America that designates English as an official language. (1) Guyana is a member state of Caribbean Community (CARICOM), Union of South American Nations (UNASUR) and the Pan American Health Organization (PAHO). (2)

Guyana reached upper-middle income classification status in 2015 (3) with a Gross National Income (GNI) per capita of US$4,090 (4) . Upper-middle income countries are classified as having a GNI per capita between $3,956 and $12,235 (5), which places Guyana at the low-end of the range. It was a low-income country from 1987-1996 and a lower-middle income country from 1997-2014. (3) Guyana experienced steady economic growth between 2005-2014; average growth was recorded at 4.7 percent but slowed to 3.1 percent in 2015 and 3.3 percent in 2016 (4). Due to economic growth, Guyana has "established a stable foundation for investments in health and other social sectors, which averaged 11 percent of gross domestic product (GDP) during 2006-2012."(2). It is anticipated that growth will be 3.6 percent in 2017-2019 (4).

Per capita income in Guyana was US$4,090 in 2015 (4). Comparatively, the mean per capita income for Latin America & Caribbean was US$8,959 (6).

The World Health Organization (WHO) and PAHO noted, in 2017, a high burden of non-communicable diseases in Guyana (1). In 2012, diabetes was the third leading cause of death, contributing to 8.8 percent of mortalities (600 deaths), following stroke (12 percent) and ischemic heart disease (14.2 percent) (7). In 2014, Guyana spent 5.2 percent of GDP on total health expenditure, equivalent to US$379 per capita. (8)

Guyana's Health Care System

Access to free health care and the Guyanese government's vision that its people should be healthy citizens of the Caribbean and Americas, have helped to set the national health policy agenda. (2,9) In 2006, access to free health care was codified through the addition of Article 24 to the Republic of Guyana Constitution: "every citizen has the right to free medical attention and also to social care in case of old age and disability" (9).

In 2013, the Ministry of Health (MoH) introduced the Health Vision 2020 to replace the 2008-2012 National Health Sector Strategy (2). Health Vision 2020 is "underpinned by the values of human rights, equity and solidarity in health as well as principles and approaches that emphasize individual empowerment, social participation, evidence-based planning, primary health care, and sustainable development" (2).

There are no specific health insurance schemes as "the government provides free universal health care through a multilevel healthcare system…coverage is provided for an estimated 80 percent of the population and includes free medications from the national formulary" (10). There is however a "National Insurance Scheme" that requires compulsory contributions for all government and private sector employees. This provides reimbursement for some health-related expenses, such as old age, sickness, injury, funeral and maternity benefits and also for some health-related expenses in the private sector (11). The National Insurance Scheme only covers workers and does not cover dependents. When components of care cannot be accessed in the public health system, or if a person chooses to seek medical attention privately, "coverage is provided, on a reimbursable basis, for selected services (e.g., consultations, hospitalization, overseas treatment, spectacles, dental care, surgery, and drugs)."(12). The MoH and International Diabetes Federation Life for a Child (LFAC) questionnaire respondent noted that for diabetes, the costs of insulin, care consultations, laboratory diagnostics, and oral medications are covered up to 80 percent. The costs of blood glucose testing strips are fully covered but only 12 strips per month are provided. If any illness is diagnosed after the age of 55, the National Insurance Scheme does not cover any associated medical costs.

The population distribution of Guyana is important to understanding health care delivery and issues around accessing free insulin.

Guyana's total population in 2012 was estimated at 746,955 (13), with 26.4 percent of the population living in urban settings and 73.6 percent rural settings (5). Comparatively, the average urban setting population in Latin America and the Caribbean was said to be 80 percent in 2013 (14). It has been noted that in Guyana, the "larger share of the population still live in rural and interior locations, some of which remain logistically challenging for social service delivery…while the incidence of poverty has declined since 1999, it remains particularly marked among Amerindian (indigenous people) and rural interior populations, children and young people below 25 years old" (2).

WHO has noted that in Guyana, health care delivery is highly regionalised "with the Ministry of Local Government and Regional Development undertaking responsibility for managing, financing and providing health services at the regional level through the Regional Democratic Councils (RDC) and the Regional Health Authorities (RHA)" (15). The MoH respondent noted this has not yet been fully operationalised and the Ministry of Local Government and Regional Development has been renamed the Ministry of Communities.

Figure 1. Health Institutions by Region (2)

Institution	Region											Total
	1	2	3	4	5	6	7	8	9	10	G-town	
Health Post	43	19	29	8	1	3	24	16	51	18	0	212
Health Centre	3	11	13	25	14	23	3	5	3	12	15	127
District Hospital	4	1	3	1	2	2	2	2	2	2	0	22
Regional Hospital	0	1	1	1	0	1	0	0	0	1	0	5
Private Hospital	0	0	0	0	0	1	0	0	0	0	6	7
National Referral Hospital	0	0	0	0	0	0	0	0	0	0	1	1
Regional Referral Hospital	0	0	0	0	0	2	0	0	0	0	0	2
Geriatric Hospital	0	0	0	0	0	0	0	0	0	0	1	1
Rehabilitation Centre	0	0	0	0	0	0	0	0	0	0	1	1
Diagnostic Centre[29]	0	1	1	1	1	0	0	0	0	0	0	4
Total	**50**	**33**	**47**	**36**	**18**	**33**	**29**	**23**	**56**	**33**	**24**	**382**

Source: Inspectorate Department, Ministry of Finance

Guyana comprises ten administrative regions (14). Figure 1, from the 2020 Health Vision Strategy document, shows health delivery institutions by region.

Health service delivery operates through five levels of care. Both Levels 1 and 2 "offer mainly primary health care services at the community and sub- district levels; Level 3 and 4 facilities provide services at the sub-regional (district) and regional levels; Level 5 consists of national level facilities. The national referral system is expected to work through, and with, these facilities to ensure that patients are moved to the appropriate level of care based on their health needs" (2). The MoH respondent noted that as of 2017, there are rehabilitation centres in each region and there are at least seven private hospitals in total, with six in Region 4 and one in Region 6.

Provisision of Free Insulin

The Guyanese government has provided free insulin in the public health sector since 1990. The MoH response indicated that human insulin is available in every institution where there is a chronic disease clinic. Such clinics are in all hospitals and in some health centres. We could not ascertain the number of health centres that had chronic disease clinics. Furthermore, the response indicated that even where health centres did have chronic disease clinics, the quantities of insulin may be limited.

When stock outs of insulin occur, the MoH respondent noted that all administrative regions are affected, with the hinterland Regions 1, 7, 8, and, 9 being more affected than urban regions. Regions 1, 7, 8 and, 9 "experience health outcomes below the national average" (2). However, it was noted by the MoH that there is a lower (diagnosed) prevalence of diabetes in these regions and that the people that do have diabetes manage their diabetes through oral medication results in lower insulin demand.

There are two levels of free insulin provision in Guyana. The first is the insulin provided to those adults, both with type 1 and type 2 diabetes, who are prescribed it. The second level is a special scheme implemented by the MoH that is reserved for young people with type 1 diabetes to ensure insulin that is always available.

Vials and cartridges of 100 IU/ml human insulin (short-acting, intermediate-acting and pre-mixed) are provided free by the MoH in Guyana, as part of provision of medicines through the national health service. There are no prescription fees.

Both the Guyana Diabetes Association (GDA) and MoH respondents noted that the maximum number of insulin vials or cartridges per month will vary from person to person. Hospitals will usually provide all the quantities required by the person with diabetes.

Those enrolled in the young person scheme collect their insulin every six months and adults generally collect theirs every three to six months. Children used to collect their insulin every three months at hospitals, but the system was changed to make sure that the young people's supply was restricted. Dose adjustments by physicians are catered for.

Most children are provided insulin in the preparations of pens; the MoH respondent noted 65 children are on pens and three are on vials. We were unable to ascertain the number of adults who receive insulin in pen preparation.

All persons with diabetes who need insulin and access the public health care system receive free insulin from the government. Need is defined by the patients who are prescribed insulin – there is a national register for young people with diabetes. There is also a national register for adults but it is sub-optimally maintained. There is no age capping for those receiving free insulin.

The MoH notes that "drugs and medical supplies are the largest component of the health other-charges budget, averaging 17 percent during 2007 – 2011" (2).

Insulin Procurement

In a South American Institute of Government in Health (ISAGS) UNASUR report, the Guyana MoH reported that in the Guyanese public health system, "drugs and medical supplies are purchased through many sources, including the UNICEF Procurement and Assembly Centre (UNIPAC), a unit of UNICEF that provides drugs and medical supplies to governments at a very competitive price" (11).

Insulin is procured through public tendering and supplied through certified distributors, usually from wholesalers. The purchasing costs of human insulin for adults were noted to be US$5-6 per vial (Biosulin, made in India). Young people that receive insulin through the special scheme are provided with regular (Novo Nordisk) and NPH (Eli Lilly) human insulin, with a number still on pre-mixed insulin (Novo Nordisk). The final tendering price could not be provided by the MOH respondent; the government does not publically release this information as this could potentially influence future tenders. The quotation purchasing price of 10ml vials for regular insulin is around US$13-14 and for NPH, it is US$18. 15mls (five 3ml cartridges) of NPH or regular costs US$30.

The MoH respondent was not able to say exactly how much human insulin is ordered per year for adults, due to restrictions on divulging this type of information. The amount ordered for young people is determined by the sum of the individual insulin regimens. Consumption forms are usually filled at the end of each month, and the sum of these plus ten percent is bought every year.

The government does not procure any analogue insulins. The MoH respondent noted the government has acknowledged the benefits of analogue insulin and in order to procure this type of insulin, the national formulary will require revision. This is due for revision in 2018.

Insulin Brands

Adults are provided mainly Biosulin insulin (MJ Biopharm Pvt. Ltd., India), with some also from Eli Lilly (USA), and Novo Nordisk (Denmark). Young people under the special scheme have access to Novo Nordisk and Eli Lilly insulin. LFAC is encouraging switching all young people remaining on mixed insulin to NPH and regular. The government is aware of this need but further physician education is required first. This is anticipated to commence in a planned LFAC/ISPAD (International Society for Pediatric and Adolescent Diabetes) workshop later in 2017.

We also note that LFAC sent an insulin shipment to Guyana in 2011. However, there was only one shipment as the Guyanese government informed LFAC that adequate provision of insulin had been achieved.

VAT and Other Taxes on Insulin

There is no VAT or any other import duties on insulin, or any of the medicines in the national essential medicine list.

Regarding VAT on other diabetes supplies, the Guyana Revenue Service's website devotes special attention to diabetes (16). It notes the following supplies have a special tax concession, known as zero-rating:

- *"glucometers (glucose blood test machines) needles and glucose blood strips made for use with such machines;*
- *"insulin syringes with needles and devices for the administration of insulin."* (16)

There are only two other non-medicine items with this exemption - namely spectacles prescribed by an optometrist in the treatment of the human eye and visual system, and crutches.

Supply Chain and Availability Issues

Although human insulin provision is free of charge, issues of availability and access pose challenges to those who need it. Insulin is accessible at the district and regional hospitals, district and regional referral hospitals and, only at some health centres with chronic disease clinics. Human insulin is stored in government pharmacies.

The MoH respondent noted that for the provision of free insulin to adults, there have been about four stock outs in last 18 months, citing that most stock outs have lasted a couple of weeks. The longest lasted three months. The respondent noted these stocks outs were due to gaps in the supply chain rather than funding gaps. The supply chain gaps were suggested to be due to shortage of staff in the public procurement office leading to a lack of personnel tracking delivery schedules. The respondent also noted that there have been no stock outs in the young people's scheme for three years. Previously, at MoH's request, LFAC provided insulin for one 12-month period (2011/12), such that all young people in Guyana had access free-of-cost, however LFAC have since been informed this is no longer necessary.

The GDA respondent noted more frequent insulin stock outs. These different perspectives are understandable, as NDAs can act as vessels for people living with diabetes advocacy and their perceptions may be shaped by anecdotal and lived experiences.

UNASUR noted in 2012 that in Guyana, "it is widely known that the supply and the distribution of drugs and medical supplies is an important bottleneck in the healthcare system…there are times of shortages as regards needs and the delivery is not always timely, causing wastes due to the poor management" (11).

Compounding the issue of insulin availability is the lack of diabetes prevalence data. This makes quantification and forecasting difficult, resulting in a persistent relative shortage of insulin, as noted by the MoH respondent.

Other Essential Diabetes Medicines and Supplies provided by Guyanese Government

Questionnaire respondents noted three oral hypoglycaemic agents are provided free of charge by the government: Metformin, Glicazide and, Glibenclamide.

In the public health system, blood glucose testing strips are not offered to those with type 2 diabetes or older adults with type 1. Young persons with type 1 diabetes receive 50 strips per month free. HbA1C diagnostic tools are only available in some regional hospitals in four administrative regions; where available, there is no out-of-pocket cost.

History of the Provision

All medicines on the National Essential Medicines list are provided free of charge, to those who access the public health system in Guyana. In this respect, the provision of insulin is not unique. Although the government has provided insulin for free since 1990, we believe there are several reasons why this policy was developed and has remained intact.

Political will is an important motivation. The WHO notes that within the Guyanese government, there is a "very high level of political commitment towards improvement of health services and health outcomes of the population." (15)

The Health Strategy 2020 notes "In 2011, the People's Progressive Party was elected to govern the country for another five years. The Party's Manifesto reaffirms the commitment of the Government to keeping the nation healthy including through a people-centred approach with continued emphasis on primary health care, universal access, and improved coverage" (2). Additionally, Article 24 in the Guyanese Constitution codifies the right to access free medical treatment (9). Guyana's steady economic growth and upgrade to upper-middle income status in 2015 has likely aided the continued provision of free insulin.

The public health system is financed by the "collection of general taxation and social security contributions...the funding through foreign aid, mainly in the form of subsidies, represents an important source of funding" (11).

Free insulin provision in Guyana dovetails with the United Nations 2030 Agenda for Sustainable Development.(17). Guyana is a member to UNASUR's South American Institute of Government in Health (11) which supports universality and equity in health. Guyana is also member of PAHO which is guided by universal health coverage themes (18).

The Health Vision 2020 strategy has been noted by questionnaire respondents to have bolstered the free provision of insulin to those in need as it has ensured that certain medications must be available. Its values support three pillars: that everyone in Guyana has the right to care, to promote equity in health, and, sustain solidarity in health (2).

Challenges

The shortage of staff in the public procurement office is a challenge in securing a steady flow of insulin. There can, and have been, frequent stock outs to due to lack of personnel tracking delivery schedules.

As discussed previously in this case study, access to insulin may be more difficult in rural areas. However, insulin is provided free of charge as long as it is available. More detailed information

was not available regarding what regions were more impacted than others. However, stockouts occur and they can also interrupt access to insulin in urban regions.

Deficiencies in baseline figures for diabetes prevalence makes quantification and forecasting difficult. The MoH has noted that adult prevalence estimates of six percent, based on older studies in other countries in the region, are no longer valid. A national NCD survey using the WHO STEPS (19) methodology has recently been conducted. Whilst the results are being analysed, substantially higher prevalence rates than past estimates are anticipated. This will require purchase and provision for larger amounts of insulin. Additionally, it is likely that type 1 diabetes incidence will rise as survival improves, resulting in more children, and later adults with type 1 diabetes.

Lessons Learned

In Guyana, the provision of free insulin in the public health service has been achieved since 1990.

This case study has established the circumstances that have enabled this provision platform. These include:

- the precedent of insulin provision (when available) at no cost to people requiring insulin since 1990 (an example of a 'locked-in' path dependency);
- political will to mandate access to essential medicines at no out-of-pocket cost;
- national financial stability;
- organised service delivery through provision at Chronic Disease Clinics within various health institutions;
- the existence of a special scheme, within the public health system, to ensure young people receive human insulin in the preparations of vials and cartridges; and
- the lack of import duties on human insulin.

Without economic growth, political will and commitment to universal and equitable health coverage, the provision of free insulin would likely not be possible.

The provision of insulin free of charge in the public health system is secure. However, challenges remain in ensuring the access to, and availability of, insulin. These challenges include:

- issues impacting procurement, including a lack of staff in the public procurement office which impacts delivery tracking;
- availability of chronic disease units in health facilities, that provide insulin, in rural regions of the country; and
- recent epidemiological surveillance/ incidence data for diabetes.

Guyana's experience with the provision of free insulin (albeit with some challenges to be resolved), offers useful examples for other low- and middle- income countries (LMICs) who also aim to achieve this. Additionally, other LMICs should be profiled who have, like Guyana, journeyed to providing free insulin. Profiling these different experiences with policy implementation, impetuses for provision, and challenges may demonstrate that the provision of insulin can be done in varying national circumstances.

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Annexes

ACCISS Case Study Questionnaire: Government Insulin Provision in Low and Middle Income Countries

Domain 1: Insulin Provision

1. Types of insulin provided by the public health service:

Type of Insulin	**Provided by government? (Yes/No)**	**Preparation (e.g., 10 ml vial or 3ml cartridge)**	
100 IU/ml short acting human insulin			
100 IU/ml long acting human insulin			
100 IU/ml pre-mixed human insulin			
100 IU/ml analogue insulin		**Preparation:**	**Type:**

2. How much insulin is provided on each prescription (maximum number of vials or cartridges of any specific type)
3. Is the insulin provided for free, or is there a prescription or other cost?
a. If yes:
b. What type of cost is it?
c. How much is it?
d. Does everyone pay or are some groups exempt?
e. Is this cost the same for all types of insulin provided by the government listed in Question #1, or is it different? If different, provide detail.
4. What proportion of those in need receive insulin from the government?
5. How is this need quantified?
a. *E.g., to those patients it is prescribed to, or from a national registry or patient lists*
6. Is government provision of insulin capped at a certain age for people with diabetes?
a. *E.g., insulin is provided for free or at a reduced cost until the diabetic beneficiary reaches 18 years of age*
7. Is the insulin provision part of a formal Health Insurance Scheme or is it just part of government provision through the national health service?

Domain 2: Budgets, Procurement and Supply

1. How is the health budget set to secure insulin provision? Is there a set quantity of insulin ordered each year? If known, state the quantity. *Or*, is it a matter of a set budget for insulin? If known, how much is set?
2. What kinds and brand of insulin are procured?
3. How is the insulin procured? (e.g., government pharmacy service)
4. Where is the insulin procured from?
a. *E.g., from the insulin manufacturer directly, from a wholesaler, or from a body such as the Pan American Health Organization….*
5. What quantity is ordered each year?
6. What price is paid per cartridge/vial?

Domain 3: Availability

1. Is insulin available to all on an uninterrupted basis?

2. If there are barriers to regular availability, what are the contributing factors?
a. E.g., stocks outs, procurement costs, etc.

Domain 4: Tracking Changes in Policy

1. When did the government start providing adequate insulin to those in need?
2. How did this change in policy come about?
a. Was it stimulated by moving to achieve Universal Health Care? Did it come about through advocacy from diabetes associations or others in civil society? Were there other factors?
3. Is the provision of insulin unique, or are there other medicines that are also provided to those in need by the government?
4. Is the provision of insulin aimed to be permanent? Or, is it on a pilot basis? If so, when will it be reviewed?
5. What strengths helped the change in policy become successful?
6. What were the difficulties encountered in implementing this change in health policy?
a. E.g., cost, political difficulties, public perception
7. How were these difficulties in implementation overcome?
8. What difficulties remain in continuing this provision?
9. 9. Are there any other diabetes supplies that are also provided by government, such as Metformin, Gliclazide, syringes, HbA1c tests or blood glucose testing strips?
a. If so, please explain how much is provided on each prescription. Please also explain when these changes in provision occurred and the strengths and difficulties in implementation.