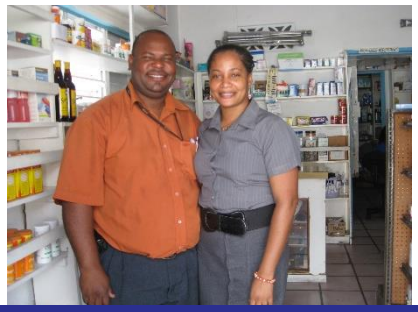

BARBADOS 2016/17 HEALTH SPENDING ESTIMATION: METHODOLOGY NOTE

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This publication was produced for review by the United States Agency for International Development. It was prepared by Karishmah Bhuwanee for the Health Finance and Governance Project.

The Health Finance and Governance Project

The Health Finance and Governance (HFG) Project works to address some of the greatest challenges facing health systems today. Drawing on the latest research, the project implements strategies to help countries increase their domestic resources for health, manage those precious resources more effectively, and make wise purchasing decisions. The project also assists countries in developing robust governance systems to ensure that financial investments for health achieve their intended results.

With activities in more than 40 countries, HFG collaborates with health stakeholders to protect families from catastrophic health care costs, expand access to priority services – such as maternal and child health care – and ensure equitable population coverage through:

- Improving financing by mobilizing domestic resources, reducing financial barriers, expanding health insurance, and implementing provider payment systems;
- Enhancing governance for better health system management and greater accountability and transparency;
- Improving management and operations systems to advance the delivery and effectiveness of health care, for example, through mobile money and public financial management; and
- Advancing techniques to measure progress in health systems performance, especially around universal health coverage.

The HFG project (2012-2018) is funded by the U.S. Agency for International Development (USAID) and is led by Abt Associates in collaboration with Avenir Health, Broad Branch Associates, Development Alternatives Inc., the Johns Hopkins Bloomberg School of Public Health, Results for Development Institute, RTI International, and Training Resources Group, Inc. To learn more, visit www.hfgproject.org

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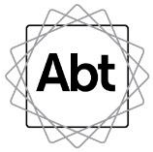

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BARBADOS 2016/17 HEALTH SPENDING ESTIMATION: METHODOLOGY NOTE

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1. CONTEXT AND JUSTIFICATION

Over the past five years, Barbados has been grappling with economic challenges while trying to provide universal health coverage for its population. Economic growth has been below 1 percent (except in 2016), the fiscal balance has been negative, and the government debt to Gross Domestic Product ratio has been over 100 percent, making Barbados one of the most indebted countries in the world. At the same time, an aging population, rising incidence of non-communicable diseases, and the population's desire for new and innovative treatments are contributing to increased health care costs. In addition, the country's income level makes it ineligible for concessionary lending from multi-lateral institutions and Global Fund for AIDS, Tuberculosis and Malaria (GFATM). Furthermore, United States government support for the HIV response, provided by PEPFAR, is scheduled to end within the next three years. These challenges are putting an increasing strain on a tax-based system for financing health care, where health spending fluctuates according to government revenues, with gaps being funded by households out of pocket.

The Ministry of Health and Wellness (MHW) needs sound health financing data to identify options to address the challenges highlighted above and to monitor whether policies are achieving their intended objectives. In this context, in 2014 Barbados conducted its first Health Accounts for fiscal year 2012/13. The intent was to understand, for example, who was funding health care and how that spending was used. For the HIV response, the ministry wanted to understand HIV spending to effectively plan for the upcoming reduction in external support, and to inform its HIV Sustainability Plan.

Since the 2014 Health Accounts, significant changes have created a need for updated information on health expenditure. The MHW is currently finalizing its health financing strategy, and is seeking updated health spending information to provide context and inform the strategy. Historic health spending data can:

i. Provide a useful proxy for current resources available for health; this proxy can be used to calculate potential future financial gaps

ii. Demonstrate the results that have been achieved with existing spending, in order to inform improvements in spending efficiency

Such analyses provide strong reference points for the MHW on how additional domestic resources could be mobilized and be used efficiently for the health sector.

In addition, the National HIV/AIDS Program is preparing a sustainability plan that will outline how Barbados will increase domestic resources for the national HIV response, and direct those resources efficiently to meet the needs of key populations. This updated analysis of health spending will help the National HIV/AIDS Program to understand where current funding is coming from (government, donors, etc.), where it is being spent, how much additional resources are needed, and how resources for HIV and AIDS are being used. It will help the MHW to understand (i) where it needs to assume greater costs related to the HIV response as PEPFAR programs end at the end of September 2018; and (ii) how future resources can be used efficiently to maximize the impact of HIV prevention, care, and treatment services.

In this context, USAID's Health Finance and Governance project (HFG) supported the MHW in 2018 in conducting a high-level estimation of health expenditure to provide an update to the 2012/13 Health Accounts.

2. SCOPE OF 2016/17 HEALTH SPENDING ESTIMATION

The estimation includes:

- Total health spending by key sources, e.g., government, household, and private sector (e.g., NGOs, employers, and insurance)
- Analysis of how health spending is distributed between different public and private health providers
- Analysis of how health spending is used to purchase different types of goods and services
- HIV and AIDS spending sources and allocations by provider type and type of service

The analysis of health spending was conducted for fiscal year 2016/17, the most recent year for which audited government data was available. Given the limited time and resources available[1], estimation of health spending was predominantly through existing (secondary) data. The use of secondary data necessitated that certain assumptions be made for spending by households and the private sector (see section 3.b, Key assumptions).

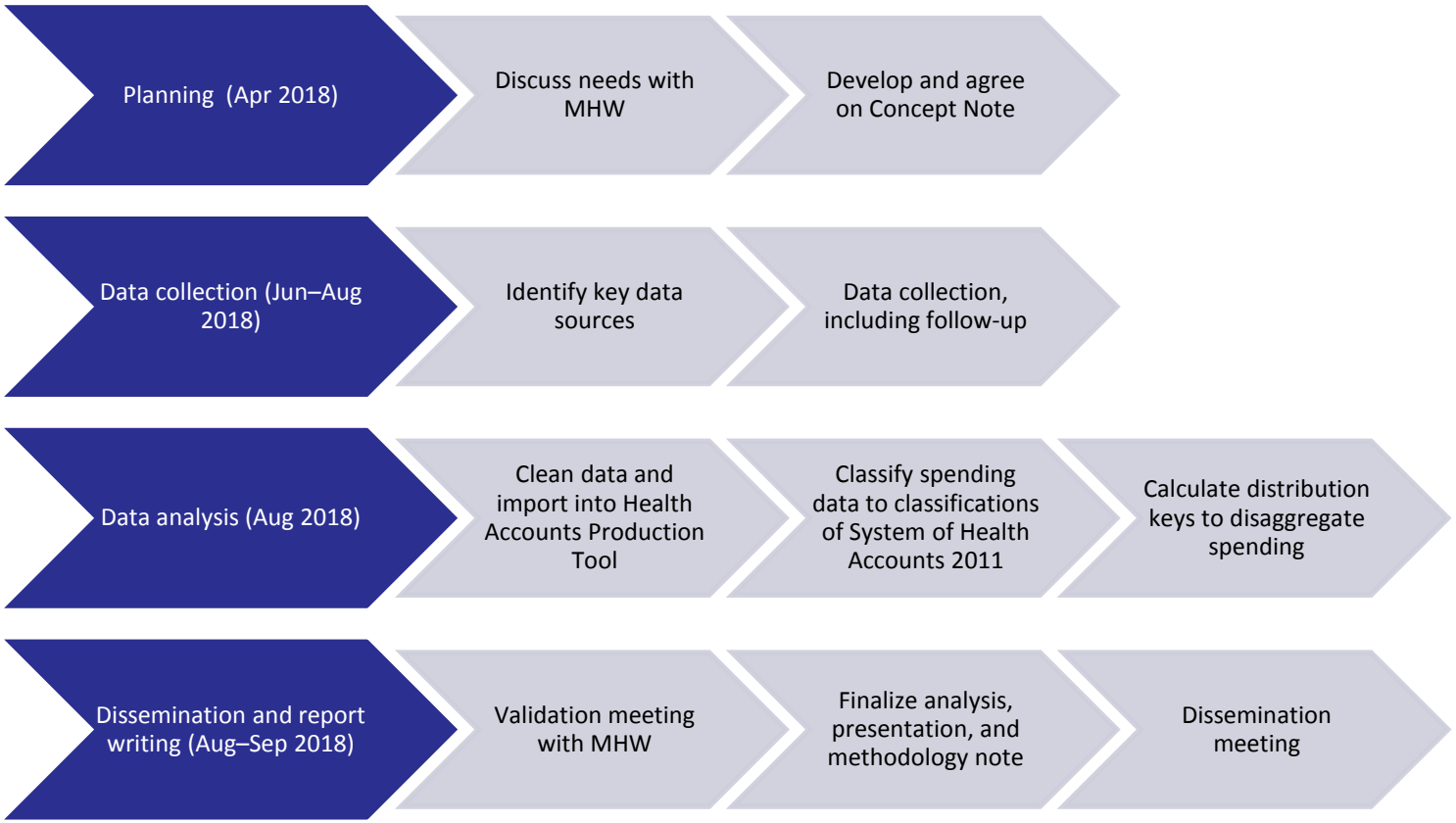
3. METHODOLOGY

The estimates of 2016/17 health spending used the System of Health Accounts 2011 framework[2]. This framework had also been used to conduct the 2012/13 Barbados Health Accounts. The 2016/17 health spending estimation was conducted between June and September 2018. Figure 1 shows key steps followed.

1 The study began in April 2018, and the global HFG project was ending in September 2018.

2 Bhuwanee, Karishmah. 2018. *Barbados 2016/17 Health Spending Estimation: Final Results*. Rockville, MD: Health Finance & Governance Project, Abt Associates Inc.

Figure 1. Key steps for estimating 2016/17 health spending[3]



[3] The software used to import and analyze the data, the Health Accounts Production Tool, was developed by WHO, USAID, and other partners. It is available free here: http://www.who.int/health-accounts/tools/HAPT/en/

3.1 Data sources

The key data sources used, including adjustments made to the data, are outlined in Table 1.

Table 1. Data sources and adjustments made

	Data Collected	Source of Data	Adjustments/Comments for 2016/17 Spending
Government	Government health spending	Appropriation Accounts (Ministry of Finance)	Some clarifications with individual ministries about what is health and non-health spending were required, e.g., prisons, police, Juvenile Center.
	Drugs spending	Barbados Drugs Spending (Barbados Drugs Service)	Confirm primary use of each drug to enable disaggregation of spending by disease.
	National Insurance—health spending	Barbados National Insurance Scheme	Ensure spending for medical expenses only (exclude income-support).
	Utilization data to disaggregate health spending	Queen Elizabeth Hospital, polyclinics, Ladymeade Reference Unit, Psychiatric Hospital, Bayview Hospital	Used to calculate distribution keys
Household	2016 Living Standards Survey (raw data and survey instrument)	Barbados Statistical Service	Living Standards Survey questions relate to spending in the last 30 days. This was adjusted for 12 months of spending.
	2010 Living Standards Survey (raw data and survey instrument)	Barbados Statistical Service	Used to compare household spending between 2012/13 Health Accounts and 2016/17 estimate.
NGOs	NGO spending from 2012/13 Health Accounts	2012/13 Health Accounts	Removed spending for NGOs that were no longer operating in 2016/17.
Donor	PEPFAR health spending	PEPFAR office (Barbados)	No adjustments made
Employers	Employers' health spending from 2012/13 Health Accounts	2012/13 Health Accounts (that was weighted to all employers in Barbados)	Adjusted for average annual inflation rate between 2012/13 and 2016/17.
Health Insurance	Insurances' health spending from 2012/13 Health Accounts	2012/13 Health Accounts (that was weighted to all health insurance policy holders in Barbados)	Adjusted for average annual inflation rate between 2012/13 and 2016/17.

3.2 Key assumptions and considerations for interpreting health spending results

Given that secondary data was used to conduct this estimation, certain assumptions had to be made.

1. **Private insurers:** By using private insurance spending for health from the 2012/13 Health Accounts data, the team assumed that no significant changes had occurred since 2012/13 in the benefit packages for health insurance and the number of health insurance policyholders. The Health Accounts used survey data to calculate the average health spending per health insurance holder, and then weighted this to the total number of health insurance holders in Barbados. However, an updated number of insurance holders in 2016/17 was not available from the Financial Services Commission. Therefore, the number of insurance holders from 2012/13 was again used for the weighting, which underestimates private health insurance spending.
2. **Private employers:** The 2012/ 13 Health Accounts used survey data to calculate the average health spending per employee and then weighted this to the total number of employees in Barbados. Because the Chamber of Commerce did not have an updated number of employees in 2016/17, using the number of employees from 2012/13 underestimates employer health spending.
3. **NGOs:** Adjusting 2012/13 Health Accounts data for NGOs assumed that the NGOs' activities and spending patterns had not changed significantly since 2012/13.
4. **Household survey:** The 2016 Living Standards Survey's Health Module asks the household where they sought care and, separately, how much they spent for health care. The following questions relating to health expenditure are asked:
    - 5.15: Where was your LAST visit to a medical practitioner made?
    - 5.20: Did you buy private medical services for yourself during the last 30 days?
    - 5.21: How much did you spend for these private medical services for yourself in the past 30 days?
    - 5.22: Did you buy other medical care services for yourself during the past 30 days?
    - 5.23: How much did you spend for these other medical care services for yourself in the past 30 days?
    - 5.24: Did you buy other medical products for yourself during the past 30 days?
    - 5.25: How much did you spend for these other medical products for yourself in the past 30 days?
    - 5.26: Did you buy medicines for yourself during the past 30 days?
    - 5.28: How much did you spend for medicines for yourself at a private or public source in the past 30 days?

    The questions relating to spending relate to which services were bought (e.g., medical services, medical products, medicines), but not to where the spending took place (5.15), which makes it difficult for the MHW team to determine household health spending by type of provider. For this purpose, the team assumed that spending had taken place at the provider that the household had last visited.
5. **Disaggregating non-earmarked health spending:** Some health spending is not always earmarked to a specific provider, service, or disease. In order to unpack such spending—e.g.,

salaries or general operating costs—and in accordance with the Health Accounts methodology, distribution keys were used to disaggregate spending to classifications such as type of provider, type of service, and disease. These distribution keys use health utilization data at different providers (hospitals, polyclinics, etc.), and weight these by their cost, as a proxy for how health spending is distributed. For example, to distribute hospital health spending by type of service (inpatient care, outpatient care, prevention services, etc.), utilization data for those same categories were collected, and weighted by cost, to derive proportions. To weight inpatient care by cost, the average length of stay was used as a proxy. The proportions derived were applied to the hospital spending.

4. CONSIDERATIONS FOR FUTURE HEALTH SPENDING ESTIMATIONS

4.1 Refine Living Standards Survey

The Living Standards Survey provides a methodologically sound and regular source of data to measure household health spending. In order to increase the accuracy of data on household health spending, it would be useful to adjust some of the health expenditure questions in the survey. Annex A provides the health expenditure module that is part of the Demographic and Health Survey (including interviewers' instructions). This module provides the basic health expenditure questions (and in their logical order) to provide a good estimate of the health spending as well as the disaggregation by provider and function, limiting the need for assumptions in the disaggregation. It is recommended that the MHW discuss this module in more detail with Barbados Statistics Service to see what changes are feasible and affordable to the Living Standards Survey.

The main elements to note in this module are:

- Questions about inpatient and outpatient visits are kept separate.
- For each of the inpatient and outpatient sections of the survey, the household member is asked where his or her last visit took place and how much he or she spent for this last visit. This avoids the need to assume where household's health spending took place.
- Since hospitalizations tend to occur more rarely than outpatient visits, it is generally recommended that the recall period for hospitalization spending be longer than for outpatient spending. Where a household member had an inpatient visit, the Demographic and Health Survey module asks for details on the visits and spending for each and every inpatient visit in the last *six* months, and spending for outpatient visits in the last 30 days.

4.2 Work with umbrella organization to collect private non-household data on a routine basis

Umbrella organizations such as the Chamber of Commerce are an important partner for the MHW in conducting health spending analysis. They can provide a cost-effective way to collect health spending data from their members (private employers) on a regular basis. For example, the MHW could explore ways that (i) employer health spending and (ii) data on number of employers and the number of employees could be captured through the Chamber of Commerce's existing communications with its members.

Similarly, the MHW may want to work closely with the Financial Services Commission to collect data on health insurance spending on a regular basis. Data on health insurance spending may be captured through the Financial Services Commission's existing communications with its members, and to obtain updated numbers on number of health insurance policyholders.

NGOs are very active in Barbados and play an important role in prevention work, especially for non-communicable diseases. The 2012/13 Health Accounts and 2016/17 update have relied on the NGO

surveys conducted by the MHW; the response rates these surveys achieved could be improved. For this reason, the use of these data underestimates NGO spending, especially for prevention and non-communicable diseases. Going forward, the MHW may want to think about how to collect data on NGOs' spending, and their activities, on a regular basis: this will help not only to coordinate the national health response but also to provide data with which to estimate health spending and conduct other analysis. For example, some countries have explored linking annual NGO registration on the condition that they submit annual reports, including spending information, to the government.

4.3 Ensure consistent recording and reporting of utilization data to facilitate disaggregation of health spending

During the 2016/17 health spending exercise, the level of detail for utilization data differed from that of the 2012/13 Health Accounts. Some utilization data were less detailed, and some more. This meant that disaggregation of health spending was not completely comparable in 2016/17 and 2012/13. The team understood that not all utilization data from 2016 had been transferred to the MedData system, and therefore the data available were incomplete. For example, in 2012/13 the team obtained detailed utilization data for patients who attended a polyclinic for diabetes (approximately 24,000), while in 2016/17 the data received for diabetes treatment was re-labelled as "Diabetes clinic" and amounted to only 4,000. For future health spending exercises, it is recommended that the MHW team work closely with the public health facilities to obtain complete utilization data, broken down by inpatient/ outpatient, and by diagnosis or ICD-10 classifications.

4.4 Conduct costing exercise to better understand cost of essential package of services

Furthermore, a comprehensive costing exercise by type of provider is needed to support the weighting of the utilization information for more-robust distribution keys. Such a costing study should cover all services provided at the provider, and should not be limited to a particular disease or type of service, so that the distribution key can be complete. Such accurate costing data can provide MHW the base information to inform future resource allocation decisions, as well as provide a strong distribution key to disaggregate health spending for future exercises.

ANNEX 1: SAMPLE HEALTH EXPENDITURE QUESTIONS FROM DEMOGRAPHIC HEALTH SURVEY FOR POTENTIAL INCLUSION IN LIVING STANDARDS SURVEY[4]

Inpatient Care

INPATIENT HEALTH EXPENDITURES

201	CHECK COLUMN 22 IN HOUSEHOLD SCHEDULE:	ONE OR MORE INPATIENTS ☐	NO INPATIENTS ☐ → 301	
202	CHECK COLUMN 22 IN HOUSEHOLD SCHEDULE. ENTER THE LINE NUMBER AND NAME OF EACH HOUSEHOLD MEMBER WHO WAS AN INPATIENT. Now I would like to ask some questions about the household members who stayed overnight in a health facility in the last six months. (IF THERE ARE MORE THAN 3 INPATIENTS, USE ADDITIONAL QUESTIONNAIRE).			
203	LINE NUMBER FROM COLUMN 22 IN HOUSEHOLD SCHEDULE	INPATIENT LINE NUMBER ☐☐	INPATIENT LINE NUMBER ☐☐	INPATIENT LINE NUMBER ☐☐
204	NAME FROM COLUMN 2 IN HOUSEHOLD SCHEDULE	INPATIENT NAME ______	INPATIENT NAME ______	INPATIENT NAME ______
205	Where did (NAME) most recently stay overnight for health care?	PUBLIC SECTOR GOVT HOSPITAL . 21 GOVT HEALTH CENTER ..... 22 GOVT HEALTH POST .... 23 OTHER PUBLIC SECTOR ______ 26 (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/ CLINIC .... 31 OTHER PRIVATE MED. SECTOR ______ 36 (SPECIFY) OTHER ______ 96 (SPECIFY)	PUBLIC SECTOR GOVT HOSPITAL . 21 GOVT HEALTH CENTER ..... 22 GOVT HEALTH POST .... 23 OTHER PUBLIC SECTOR ______ 26 (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/ CLINIC .... 31 OTHER PRIVATE MED. SECTOR ______ 36 (SPECIFY) OTHER ______ 96 (SPECIFY)	PUBLIC SECTOR GOVT HOSPITAL . 21 GOVT HEALTH CENTER ..... 22 GOVT HEALTH POST .... 23 OTHER PUBLIC SECTOR ______ 26 (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/ CLINIC .... 31 OTHER PRIVATE MED. SECTOR ______ 36 (SPECIFY) OTHER ______ 96 (SPECIFY)
206	What was the main reason for (NAME) to seek care this most recent time?	PREGNANCY/ DELIVERY ..... 01 ILLNESS .... 02 ACCIDENT/INJURY . 03 OTHER ______ 06 (SPECIFY)	PREGNANCY/ DELIVERY ..... 01 ILLNESS .... 02 ACCIDENT/INJURY . 03 OTHER ______ 06 (SPECIFY)	PREGNANCY/ DELIVERY ..... 01 ILLNESS .... 02 ACCIDENT/INJURY . 03 OTHER ______ 06 (SPECIFY)
207	How much money was spent on treatment and services (NAME) received during the most recent overnight stay? We want to know about all the costs for the stay, including any charges for laboratory tests, drugs, or other items.	COST ☐☐☐☐☐ NO COST/ FREE ..... 00000 IN KIND ONLY . 99995 DON'T KNOW . 99998	COST ☐☐☐☐☐ NO COST/ FREE ..... 00000 IN KIND ONLY . 99995 DON'T KNOW . 99998	COST ☐☐☐☐☐ NO COST/ FREE ..... 00000 IN KIND ONLY . 99995 DON'T KNOW . 99998
208	Did (NAME) stay overnight at a health facility another time in the last six months?	YES .... 1 NO .... 2 (GO TO 218)	YES .... 1 NO .... 2 (GO TO 218)	YES .... 1 NO .... 2 (GO TO 218)

[4] Out-of-Pocket Health Expenditure Module: Questionnaire and Interviewer's Module. USAID/ MEASURE. Available at http://dhsprogram.com/publications/publication-dhsqm-dhs-questionnaires-and-manuals.cfm

Outpatient Care

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
303	Now I would like to ask some questions about health care that (NAME IN 302) received in the last four weeks, without having to stay overnight. Where did (NAME) get care most recently without staying overnight?	PUBLIC SECTOR GOVERNMENT HOSPITAL ..... 21 GOVERNMENT HEALTH CENTER ..... 22 GOVERNMENT HEALTH POST ..... 23 MOBILE CLINIC ..... 24 FIELDWORKER ..... 25 OTHER PUBLIC SECTOR _____ 26 (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC ..... 31 PHARMACY ..... 32 PRIVATE DOCTOR ..... 33 MOBILE CLINIC ..... 34 FIELDWORKER ..... 35 OTHER PRIVATE MEDICAL SECTOR _____ 36 (SPECIFY) OTHER SOURCE SHOP ..... 41 TRADITIONAL PRACTITIONER ..... 42 OTHER _____ 46 (SPECIFY)	
304	How much money was spent on treatment and services (NAME) received from (NAME OF PROVIDER IN 303)? Please include the consulting fee and any expenses for other items including drugs and tests.	COST ..... [ ][ ][ ][ ][ ] DON'T KNOW 99998	
305	What was the main reason for (NAME) to seek care this most recent time?	FAMILY PLANNING ..... 01 ANTENATAL CARE/ DELIVERY/ POSTNATAL CARE ..... 02 MALARIA ..... 03 FEVER ..... 04 DIARRHEA ..... 05 HIV/AIDS/STD ..... 06 OTHER ILLNESS ..... 07 CHECK-UP/ PREVENTIVE CARE ..... 08 ACCIDENT/INJURY ..... 09 OTHER _____ 96 (SPECIFY) MISSING/DK 98	
306	Did (NAME) get care another time in the last four weeks from a health provider, a pharmacy, or a traditional healer, without staying overnight?	YES ..... 1 NO 2	→ 309
307	How many other times did (NAME) get care in the last four weeks?	NUMBER OF OUTPATIENT VISITS ..... [ ][ ]	
308	How many times was money spent?	NUMBER OF OUTPATIENT VISITS PAID MONEY ..... [ ][ ]	
		NO ..... 2 DON'T KNOW 8	→ 311
310	What is (NAME)'s main type of health insurance?	MUTUAL HEALTH ORGANIZATION/ COMMUNITY BASED HEALTH INSURANCE ..... 1 HEALTH INSURANCE THROUGH EMPLOYER ..... 2 SOCIAL SECURITY 3 OTHER PRIVATELY PURCHASED COMMERCIAL HEALTH INSURANCE ... 4 OTHER ..... 6 DON'T KNOW 8	
311	Sometimes people buy vitamins, medicines, and herbal remedies without consulting with a health provider, pharmacy, or traditional healer. They may also buy other health-related items such as band-aids/plasters, thermometers, or other medical devices, and so on without a consultation. In the last four weeks, how much money was spent on these types of health-related items for members of your household?	COST ..... [ ][ ][ ][ ][ ] NONE ..... 00000 IN KIND ONLY ..... 99995 DON'T KNOW 99998	

BOLD THINKERS DRIVING
REAL-WORLD IMPACT