



Addressing Poverty

A guide for considering poverty-related
and other inequities in health

Addressing Poverty

A guide for considering poverty-related and other inequities in health



This manual was made possible by support from the U.S. Agency for International Development (USAID) under the terms of Cooperative Agreement GPO-A-00-03-00003-00. The opinions expressed are those of the authors and do not necessarily reflect the views of USAID or the United States government.



Acknowledgements

Addressing Poverty – A Guide for Considering Poverty-Related and Other Inequities in Health was prepared by Karen G. Fleischman Foreit. Rachel Sanders conducted the secondary analyses presented throughout, and Bill Winfrey contributed to the conceptual framework. We also wish to thank James R. Foreit and Gustavo Angeles for their reviews and comments on earlier drafts and Mark Schreiner and Anthony Leegwater for providing additional information on the poverty measurement tools presented in Appendix 2.

Table of Contents

Applications for program planning and evaluation	1
CHAPTER 1: SETTING THE STAGE	3
Why health status is important for achieving the goals of United States Foreign Assistance	3
Why target assistance to the poor?	7
CHAPTER 2. HOW TO IDENTIFY INEQUITY IN KEY HEALTH INDICATORS	11
Using data from national surveys	11
Measuring poverty – who is poor?	11
Problems with the national quintile score – differences between urban and rural poverty	13
Are there inequities in health indicators?	16
CHAPTER 3. CONSIDERATIONS FOR PROGRAM DESIGN	21
Considerations for targeting assistance	21
Targeting strategies: geographic targeting vs. identification of individual recipients	22
Universal coverage in targeted geographic areas vs. individual targeting	24
How should targeted assistance be delivered?	27
CHAPTER 4. SELECTING APPROPRIATE INDICATORS TO MONITOR POVERTY-EQUITY STRATEGIES	29
Annual program monitoring	30
Monitoring program coverage and evaluating impact	32
BRIEF ANNOTATED BIBLIOGRAPHY	39
Appendix 1. Developing separate measures for urban and rural poverty	43
Appendix 2. Examples of questionnaires that can be used to monitor program utilization by the poor	57

Considering Poverty-Related and Other Inequities in Health

Applications for program planning and evaluation

The U.S. Foreign Assistance Framework added poverty reduction to its Goal in January 2007, but few USAID portfolios explicitly address the special health needs of the poor. This guide provides concrete, practical recommendations for USAID Mission Population, Health and Nutrition (PHN) teams that wish to consider, design, or refine activities to address poverty and/or other inequities in health. While the focus is on family planning and reproductive health, the principles discussed can be applied to any element within health. Existing information and data sources are cited whenever possible, not only those financed by USAID such as the Demographic and Health Surveys (DHS), Reproductive Health Surveys (RHS) and Operational Plan (OP) indicators, but also other widely collected sources such as social services mapping, national Health Information Systems, Multiple Indicator Cluster Surveys, World Bank Living Standards Surveys, household income and expenditure surveys, etc.

The guide is divided into four chapters followed by a short annotated bibliography. Chapter 1 is a brief overview of why health status is important for achieving the goals of United States Foreign Assistance. It provides key talking points to assist PHN teams to make the case for continued or increased funding for FP/RH activities within the Mission's overall portfolio and draws on both recent reviews of the literature in health and development as well as original research demonstrating feedback and linkages between poverty reduction and health.

Chapter 2 describes how country teams can use survey data to identify poverty-related inequalities in key health utilization indicators. Most recent DHS country reports include a national "wealth quintile" as a background characteristic of surveyed households and individuals.¹ However, they usually do not show how wealth varies by place of residence: urban households and respondents often cluster in the highest wealth groups, while rural households and respondents are found in the lower wealth categories. Further analysis of the data sets is strongly recommended to disentangle the effects of poverty and place of residence. These analyses use variables already in the data set and can be easily performed by anyone with a basic knowledge of statistics and access to software such as SPSS; the findings can assist PHN teams to decide if inequity reduction should be a priority concern and if so, which groups could be targeted.

Chapter 3 moves from measuring inequity to considerations for program design. Before determining which strategy to pilot test or scale up, PHN teams are encouraged to explore geographic, infrastructure, and operational factors that influence the ultimate success of interventions to reach the poor and underserved, such as physical access to service outlets, preparedness to provide quality services, and operational barriers to socially disadvantaged clients. The diagnostics described in Chapter 3 go beyond what is typically available in a DHS. PHN teams are encouraged to look for other existing data sources such as poverty mapping, health service inventories, situational analyses, etc., and to collaborate with other Mission program areas such as Economic Growth. For example, USAID has a Poverty Assessment Tool to measure the share of microenterprise clients who are very poor, which has been certified for use in more than a dozen countries.²

¹ All recent DHS data sets include a household wealth index, which will be described in Chapter 2. CDC has also added wealth quintiles to the RHS, but the data sets themselves tend to be less readily available.

² See <http://www.povertytools.org/>

Chapter 4 deals with selecting appropriate output, outcome, and impact indicators to monitor and evaluate strategies designed to reduce inequities. It suggests ways to disaggregate standard OP indicators to track progress in addressing inequity and offers suggestions for supplementing the OPs indicators with low-cost data that could be collected by implementing partners.

Taken as a whole, this guide covers the spectrum from priority-setting to monitoring and evaluation (M&E). Each chapter can also be used as a self-contained module, depending where a particular Mission is in its planning cycle. For example, Missions that are mid-course in priority programs may wish to refine their M&E plans to include inequity issues (Chapter 4). Missions that are planning new initiatives with NGO partners may find it useful to deepen their understanding of the local situation before selecting one or another intervention to pilot test (Chapters 2 & 3). Missions that are undertaking a portfolio review may wish to explore linkages and synergies between Health/Investing in People and other program areas (Chapters 1 & 2). Depending on the local situation, Missions may benefit from specific technical assistance for analysis, program design, and/or M&E.

Quick self-appraisal

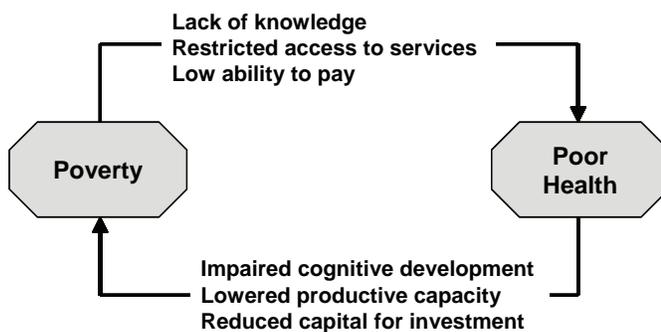
1. Is poverty reduction included as a high-level strategic objective in the country Strategic Plan or have any specific regions and/or groups been identified as extremely poor?
2. Does our FP/RH portfolio include any explicit objective(s) to reduce inequality or inequity in service use and/or health outcome?
3. If yes, how is it/are they expressed? (e.g., increase contraceptive prevalence among the poor, reduce the gap between urban and rural areas, etc.)
4. What data or information was considered for deciding on program strategies and activities? In selecting implementing partners (either bilateral or through a central mechanism)?
5. How do we track progress to measure that program inputs are being used by our priority groups/the people we have identified as being underserved?
6. What data or information was especially useful in making the case for including inequity as a portfolio objective? What additional information would have helped?
7. Looking to the next planning round, would I like to increase or add new resources to address inequity in FP/RH?
8. What data or information would help me make the case to the other health elements? To the Mission front office?
9. What synergies might be worth exploring with other Mission program areas? With other donors? For example, since poverty is often associated with woman-headed households and with post-conflict settings there may be opportunities for linking health-poverty initiatives with *gender* and/or *governance* projects.

Chapter 1: Setting the Stage

Why health status is important for achieving the goals of United States Foreign Assistance

“To help build and sustain democratic, well-governed states that respond to the needs of their people, *reduce widespread poverty* and conduct themselves responsibly in the international system.” Goal, Foreign Assistance Framework as of January 29, 2007 (emphasis added).

The association between poverty and other forms of social disadvantage and poor health status is well documented, and many of the causal pathways have been clearly described. The literature shows significant



linkages between health improvements and both improved national economic growth and improved household productivity and wages, leading some analysts to argue that “*the large effect improved health has on household incomes and economic growth makes it an important tool for poverty reduction.*”¹

Better health contributes to economic growth.²

Public health achievements, including controlling infectious diseases and decreasing child and infant mortality, and increasing life expectancy are important factors in achieving sustained economic growth. There is a positive correlation between life expectancy and the overall economic situation in the Latin America and Caribbean (LAC) region as measured by gross domestic product (GDP) per capita, without controlling for any other outside factors. Evidence suggests that the health of a population is one of the most significant drivers of economic growth. On average, it has been shown that one extra year of life expectancy raises the steady-state GDP per capita by about four percent.

Better health contributes to national economic growth through different mechanisms. Healthier children are more likely to attend school and miss fewer days of school, which increases their cognitive development and their earning potential as adults. An educated population is likely to be more productive. Healthy workers are more energetic and robust, have decreased absenteeism, and are therefore more productive and better paid than unhealthy workers. Better health also affects decisions about savings and expenditures over one’s lifetime. Saving for retirement only makes sense if people think they have a realistic possibility of reaching old age. Foreign direct investment is another determinant of economic growth. Because companies are hesitant to invest in countries where workers might contract infectious diseases that could lower productivity, foreign direct investment increases when a country has a lower disease burden.

¹ Bloom, DE and Canning, D. The health and poverty of nations: from theory to practice. *Journal of Human Development*, 2003, 4, 47-71.

² Taken from Issue Briefs: Latin American and Caribbean Health Programs Affect Economic Growth. Promoting Virtuous Cycles and Preventing Vicious Cycles. USAID, April 2007.

Poor health hurts economic growth.

Poor health can create a vicious cycle that depresses economic growth. A high-mortality environment characterized by a heavy infectious disease burden and/or high infant and child mortality creates a disincentive for parents to invest in education for the next generation, who may not survive to adulthood. Savings rates remain low as the prospect of retirement remains an elusive goal. At the national level, a heavy disease burden slows economic development, which is affected by the adult survival rates for various diseases, and high mortality rates and infectious diseases may also deter foreign direct investment.

The Caribbean subregion, for example, has the second highest adult prevalence rate of HIV/AIDS in the world, and the entire region has approximately 2 million people living with HIV. Tuberculosis costs the region an estimated \$1.8 billion a year and HIV/AIDS \$4.1 billion a year.

Sustained health improvements stimulate economic growth through virtuous cycles.

In what is known as “the virtuous cycle,” health improvements can stimulate economic growth, which in turn can lead to further health improvements. As these virtuous cycles evolve, countries initially focus on decreasing morbidity and mortality, which leads to increased life expectancy and improved economic growth. Continued human capital investments then work to ensure that health improvements are sustained and expanded. After initial declines occur in mortality rates, countries often focus on excluded populations to ensure that the economic benefits are shared throughout society.

While the overall health situation in the LAC region has improved, significant disparities remain between urban and rural residents and the richest and poorest segments of the population. Inequities in health care between the rich and poor and urban and rural populations affect the potential sustainability of past improvements in health care and are a threat to the virtuous cycle. Income inequality between the richest and poorest 10 percent of populations in USAID-presence LAC countries is twice that of Africa and in some countries is increasing. This inequity weakens economic growth, labor productivity, and the ability to compete globally. Significant inequalities in income and asset distribution mirror health inequalities and in and of themselves have been shown to impede economic growth.

Poor health impedes poverty reduction.

Health, poverty, and economic growth are closely related. The World Bank recognizes the importance of the relationship in its Poverty Reduction Strategy, which incorporates health as part of its debt relief program for heavily indebted poor countries (HIPC). For example, in **Honduras** most of the HIPC relief has been assigned to investment in human capital, especially in education and health. The Millennium Challenge Corporation (MCC) is currently investing substantial resources in Latin America in order to stimulate economic growth and reduce poverty. In order to receive MCC funding, **El Salvador, Nicaragua, Honduras, and Paraguay** have had to demonstrate a commitment to health through public expenditure on health and coverage of health services through immunization rates.

The World Bank describes the body as “the poor man’s main asset.” When illness strikes, the poor cannot earn money to provide food or medicine for themselves or others. On an individual level, a serious illness can be “catastrophic,” which is defined as requiring more than 40 percent of household income to be spent on health after basic subsistence needs are met. The underlying conditions that contribute to catastrophic payments include inability to pay, lack of health insurance, and health services requiring payment.

The evidence base supporting the causal links between reproductive health (RH) outcomes and poverty reduction is less robust than for other health conditions. A recent World Bank publication makes the case that failure to address poor women's reproductive health needs will undermine poverty reduction efforts and lays out an agenda for further research.

The case can and should be made for funding reproductive health care, including family planning, for poor women and men both as a right and as a means of helping them escape poverty. More evidence is needed to demonstrate that poor reproductive health outcomes do, in fact, undermine the chances of the poor to escape poverty. While common sense suggests that poor reproductive health outcomes—early pregnancy, unintended pregnancy, excess fertility (when actual births exceed desired fertility), poorly managed obstetric complications—adversely affect the chances of poor women, their children and families to escape poverty, the evidence base to support this argument is thin and the evidence that does exist could be more effectively marshaled. A stronger evidence base will support the appropriate inclusion of reproductive health in country-level poverty reduction strategies and in the allocation of poverty reduction funding.³

The Strategic Framework for U.S. Foreign Assistance focuses on five objectives that together address the underlying causes of persistent poverty, despotic governance, insecurity, and economic stagnation. Poverty is explicitly referenced in two objectives, Investing in People and Economic Growth.

- **Peace and Security:** These are necessary conditions for further political, economic, and social progress;
- **Governing Justly and Democratically:** Effective, accountable, democratic governance is a vital foundation for sustainable progress;
- **Investing in People:** Human capacity must be strengthened and poverty and disease addressed in order to promote and sustain success;
- **Economic Growth:** Economic progress and poverty reduction are critical underpinnings of sustainable development; and
- **Humanitarian Assistance:** The United States maintains its long-standing commitment to alleviate human suffering and respond to destabilizing humanitarian disasters.

The U.S. Foreign Operations Budget Request for Fiscal Year (FY) 2008 allocated 75 percent of the budget for Africa to Investing in People (IIP) and nearly half of the budget for East Asia and Pacific to IIP.⁴ However, despite numerous general references to the linkages between poverty and health, only two country requests, Kenya and Dominican Republic, explicitly included any mention of poverty in their health goals under IIP.⁵ Table 1.1 excerpts references to poverty-health linkages from the FY 2008 Budget Request.

³ Greene ME and Merrick, T. *Poverty Reduction: Does Reproductive Health Matter?* World Bank, 2005, pp 2-3.

⁴ See <http://www.state.gov/documents/organization/84462.pdf>. Congressional Budget Justification Foreign Operations, Fiscal Year 2008.

⁵ A desk review of Mission strategies and annual reports developed prior to the foreign assistance reorganization came to the same conclusion: fewer than one in ten country programs pointed to poverty, inequity, or vulnerability in their health portfolio design. W. Winfrey et al., *Poverty and equity in USAID strategic planning and performance monitoring*. Prepared for MEASURE Evaluation, February 2007.

Table 1.1. Poverty-health linkages in Foreign Operations Budget request⁶

General references to poverty and health status

... The health of Africans has deteriorated over the past decade because of the devastating interactions among poverty, conflict, and the rapid spread of HIV/AIDS and other infectious diseases such as tuberculosis and malaria. Poor health status has led to low productivity and perpetuation of poverty and inequity. ...

... [T]he United States aims to improve the quality and expand the scope of basic health and education services to reduce poverty and strengthen Ethiopia's development potential. ...

... [Ghana's] schools are inadequate, and quality health care is unavailable for many, particularly, for the poor and the disenfranchised. ...

... The major obstacle to Malawi's advancement is widespread and chronic poverty that fuels a vicious cycle of food insecurity, ill health (including a high HIV/AIDS prevalence rate), low labor productivity and weak economic growth. ...

... At 5.7 births per woman, Tanzania has one of the highest fertility rates in Africa as well as one of the highest rates of maternal mortality (578 per 100,000 live births). These factors dilute the impact of strong economic growth, making growth and poverty reduction difficult...

... Very short life expectancy, high levels of maternal mortality, relatively low literacy and large income inequality present severe problems for Zambia's development. USG assistance addresses the country's poor socio-economic conditions by promoting health and education, with a focus on increasing equitable access to quality basic education, strengthening maternal and child health, combating tuberculosis, and improving family planning and reproductive health. ...

... India's ability to achieve sustainable growth and reduce poverty depends greatly on its ability to stabilize its population growth, address the rise of infectious diseases such as HIV/AIDS, increase energy security, improve agricultural productivity, and promote economic opportunity. ...

... [In Brazil], a somewhat ineffective judicial system, an absence of the rule of law, and endemic infectious diseases in many poor corners of the country contribute to poverty and inequality, which in turn have fueled high levels of criminal violence. ...

... [Paraguay's] relatively slow growth, an undiversified economy, and a hostile business environment combined with high population growth have resulted in little reduction in poverty. ...

Explicit mention of poverty under Investing in People/Health

Kenya:

... Combating HIV/AIDS and malaria, maternal and child health, and family planning, account for the majority of programs under this objective. Given Kenya's high population growth rate, family planning is essential to ensure that poverty rates do not escalate. ...

Dominican Republic:

... U.S. assistance in this area will work to mitigate the devastating effects of poverty and help build a more equitable society by improving access to quality health care and primary education, encouraging greater grass roots support for investing in these areas. U.S. assistance will continue supporting Dominican health sector reform and implementation of the health component under the new social security system; maternal and child health programs; and tuberculosis detection and cure.

⁶ <http://www.state.gov/documents/organization/84462.pdf>. Congressional Budget Justification Foreign Operations, Fiscal Year 2008.

There is a similar paucity of guidance in USAID instructions on integrating a poverty focus into Operational Plans (OP) for health in general and reproductive health in particular. The December 2006 instructions for OP indicators list only three poverty-related indicators for the Investing in People objective:

Objective: Investing in people

- Percentage of the poor benefiting from social services and/or assistance

Program area: Social services and protection for vulnerable populations

- Percent of poor people receiving social assistance or services

Program element indicators

- Number of nationwide poverty/vulnerability mapping efforts being supported

Why target assistance to the poor?

Targeting assistance means restricting or focusing the intervention to a predefined group of individuals. Targeting is most commonly employed when the intended beneficiaries have not benefited from previous interventions, have been excluded from assistance, or otherwise show special disadvantages relative to other groups in the population.

- If resources are constrained, targeting helps ensure that public resources go to those who need them most.
- Targeting public assistance helps combat crowding out of the private sector. If the private sector is able to provide the needed goods or services at a reasonable price, targeting to the poor helps ensure that better-off individuals will use private sector outlets.

The following chapters of this manual attempt to help fill the gap between the overall recognition of poverty-health linkages and lack of specificity in designing and evaluating health interventions to meet the special needs of the poor. Most Missions will be able to use existing data sources (primarily the Demographic and Health Survey) to easily determine whether there are substantial poverty-related inequities in health status and/or health services utilization that they should address. Additional data sources will be needed to develop and implement an appropriate targeting strategy. Most of the OP annual reporting indicators for reproductive health can be disaggregated for poverty status and/or supplemented by low-cost surveys to determine the poverty levels of program beneficiaries. PHN programs in Missions with significant portfolios in Economic Growth, Agriculture, and Trade (EGAT), especially those that include micro-enterprise programs, may be able to make use of EGAT tools to measure poverty at the beneficiary level.

Defining terms

Poverty

The state or condition of having little or no money, goods, or means of support; condition of being poor; indigence.⁷

“Since its 1990 *World Development Report*, the World Bank’s “global” poverty measures have mainly been based on an international poverty line of about \$1 a day; more precisely, the line is \$32.74 per month, at 1993 international purchasing power parity. ... The international rural line is converted to local currencies using the Bank’s 1993 Purchasing Power Parity (PPP) exchange rates for consumption.”⁸

Inequality

Inequalities exist whenever two or more groups or individuals differ from one another.

Inequity

In a seminal paper, Whitehead (1990) defined health inequity as differences that are *unnecessary, avoidable, unfair, and unjust*.

“The crucial test of whether ... health differences are considered unfair seems to depend to a great extent on whether people chose the situation that caused the ill health or whether it was mainly out of their direct control.”⁹

Inequality vs. Inequity

By definition, all inequities involve inequality. However, not all inequalities imply inequity. This is where Whitehead’s criteria of *unnecessary, avoidable, unfair, and unjust* apply. To illustrate, consider the cases of mortality and fertility.

In many countries, children born to poor mothers are more likely to die before reaching their first birthday than children born to wealthier mothers. In developing countries, the principle causes of infant mortality are linked to low birth weight, immuno-preventible diseases, diarrhea, and acute respiratory infection. Since many of these causes can be easily avoided and since better-off families have better access to the means of prevention, poverty-related inequalities in infant mortality meet the criteria for inequity.

In many developing countries, poor women have more children than wealthier women. Should this inequality in fertility be considered inequity? That would depend on whether or not poor women want more children than wealthier women. If all women—regardless of economic status—are having only the children they want, then higher fertility among poor women would not be considered an inequity, only an inequality. However, because higher parity and shorter birth spacing are associated with higher infant mortality and other undesirable health outcomes, governments may still wish to address this poverty-related *inequality* through promotion of smaller family size norms.

⁷ *Dictionary.com Unabridged (v 1.1)*. Retrieved 9/25/2007 <http://dictionary.reference.com/browse/poverty>

⁸ Chen S. and Ravallion M, Absolute Poverty Measures for the Developing World, 1981-2004. World Bank Policy Research Working Paper 4211, April 2007. Page 6.

⁹ Whitehead M. The concepts and principles of equity and health. World Health Organization/Regional Office for Europe, 1990. EUR/ICP/RPD 414 7734r. Page 5.

Recap of Chapter 1

1. Health interventions in general and reproductive health interventions in particular, can be an important tool to eliminate poverty.
2. Few USAID country plans explicitly address poverty or other social inequalities in their health portfolios.
3. Addressing poverty-related inequities in health status may require targeted interventions.

Chapter 2. How to Identify Inequity in Key Health Indicators

Using data from national surveys

This chapter describes how to use data from the Demographic and Health Survey (DHS) to establish whether or not inequalities—and inequity—exist in health outcomes or service utilization. While the focus of these guidelines will be on poverty, the concept of inequity extends to any kind of social disadvantage, as per Braveman and Gruskin (2003).

... equity in health can be defined as the absence of systematic disparities in health (or in the major social determinants of health) between social groups who have different levels of underlying social advantage/disadvantage—that is, different positions in a social hierarchy. Inequities in health systematically put groups of people who are already socially disadvantaged (for example, by virtue of being poor, female, and/or members of a disenfranchised racial, ethnic, or religious group) at further disadvantage with respect to their health; health is essential to wellbeing and to overcoming other effects of social disadvantage.¹

Measuring poverty — who is poor?

Most definitions of poverty include the element of *money*, money that is available (or not available) to pay for goods and services; in other words, ability to pay. For the purposes of the analyzing poverty-related inequities in health status and use of health services, we would like to keep as close as possible to the economic aspect of poverty, and steer clear of including other background characteristics such as education in the measurement of poverty. In this regard, our measures of poverty differ from measures of socio-economic status (SES) that include education and occupation to estimate ability to pay.

We also want to ensure that our measurement of poverty does not include health status factors. Specifically, we should exclude access to health and other basic human services from the poverty measure. Such measures of poverty will differ from basic-needs or development indices, such as those used by UNDP. For example, the formula UNDP uses to compute its “Human Poverty Index” explicitly includes mortality (probability at birth of not surviving until age 40) and morbidity (proportion of children underweight for age).² Examining poverty-related inequities in health status with such a poverty index would be circular, since health status also appears in the definition of poverty.

Many measures of economic poverty draw on surveys of household consumption expenditures. However, Filmer and Pritchett³ argue that indexes based on household assets rather than current expenditures could also measure wealth, and demonstrated that the asset index was a better predictor of school enrollment than expenditure data. Following their reasoning, the DHS now routinely calculates indexes of household wealth from the data on construction (e.g. material of roof and/or floor), infrastructure (e.g. electricity, source of water) and durable goods (e.g. radio, television, bicycle, etc.) that have long been collected in the household interview. The box on the following page, excerpted from a DHS comparative report, describes how the household wealth index is calculated.

¹ Braveman P. and Gruskin S.. Defining equity in health. *Journal of Epidemiology and Community Health*, 2003, 57, 254-258.

² See UNDP Human Development Report 2005/Human Development Indicators. Available at http://hdr.undp.org/reports/global/2005/pdf/HDR05_HDI.pdf

³ Filmer D. and Pritchett LH. Estimating wealth effects without expenditure data – or tears: an application to educational enrollments in India. *Demography*, 2001, 38, 115-132.

Construction of the DHS Wealth Index⁴

There are several steps to the construction of the DHS wealth index, including determination of indicator variables and calculation of indicator weights and the index value, among others.

The selection of indicator variables is relatively straightforward. Almost all household assets and utility services are included. Generally, any item that will reflect economic status is used.

The determination of specific indicator variables is somewhat of an art, depending on knowledge of conditions in each country. Sometimes variables need to be removed from the set of indicators in order for the resulting wealth index to make sense. Such is the case for “having a dacha” in the Central Asian Republics. While the term “dacha” is used for the country house of rich Russian families, it can also represent a small cottage or even just a rural garden plot with a small shed that many poor families have as a means of extending their income. When “dacha” was included in the set of indicator variables for the Central Asian Republics, the resulting index changed sign, with wealthier people having lower (negative) index scores than poor people (positive). The anomalous relationship was investigated by consulting with country natives, who recommended excluding this variable. With “dacha” removed, the index righted itself.

DHS follows Filmer and Pritchett’s recommendation to use principal components analysis to assign the indicator weights. DHS uses the SPSS factor analysis procedure. This procedure first standardizes the indicator variables (calculating z scores); then the factor coefficient scores (factor loadings) are calculated; and finally, for each household, the indicator values are multiplied by the loadings and summed to produce the household’s index value.

The final DHS data set includes two wealth indexes: the household index value described above (*V191* in the standard recode file for recent surveys) and the national quintile score (*V190* in the standard recode file) calculated as follows. Each member of the household is assigned his or her household’s index value. Then, all the people represented in the entire sample are ordered by their scores, from lowest (poorest) to highest (wealthiest). This distribution is divided at points such that the first 20 percent are assigned to quintile 1, the second 20 percent to quintile 2, and so on, with the highest 20 percent to quintile 5. The resulting national quintile score is assigned to both the household and all its members. This is the wealth indicator shown in the tables of the DHS final reports.⁵ The Reproductive Health Survey (RHS) has recently begun to compute wealth quintiles using similar procedures as the DHS.⁶ However, the RHS of the individual data sets are not always easily accessible.

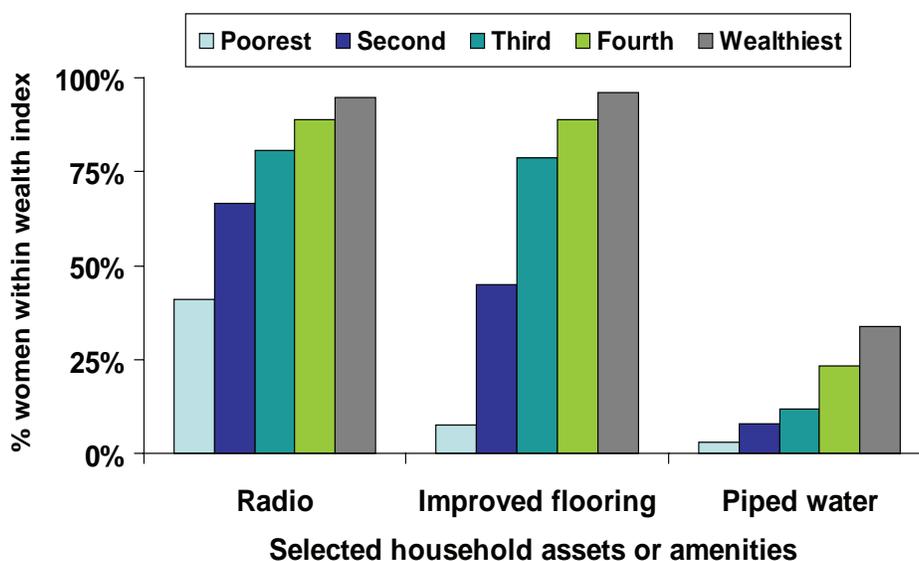
⁴ Taken from Rutstein SO and Johnson K. *The DHS Wealth Index*. DHS Comparative Reports No. 6, 2004.

⁵ It should be kept in mind that national quintile scores are only a ranking of relative wealth – households in higher quintiles are wealthier than households in lower quintiles. The quintiles have no *a priori* relationship to either socioeconomic status (SES) scores used by marketers or the national or absolute poverty lines. It is entirely possible that in a middle-income country only the lowest quintile is below the poverty line while in a low-income country the bottom three quintiles (or 60 percent of the population) are living in extreme poverty.

⁶ See Stupp PW, Daniels D and Ruiz A. 2007, *Reproductive, Maternal and Child Health in Central America: Health Equity Trends*, Centers for Disease Control and Prevention, Atlanta, GA, for a description of SAS procedures and estimation of confidence intervals. Earlier CDC reports included a socioeconomic scale with three categories (high, medium, low) of unequal sizes. For example, in the 2002 Albania survey, 1,940 female respondents were classified as “high” SES, 2,985 as “medium” and 772 as “low.” <http://www.cdc.gov/reproductivehealth/Surveys/Albania2002report/Final2002/Albania%202002%20final%20report%20Chp%201to5.pdf>

To demonstrate the relationship between the wealth index and several of its individual components, Figure 2.1 presents the percent of women in households with (1) a radio, (2) improved flooring, and (3) piped water—all according to the households' classification by national wealth index in Nigeria. No asset is owned by all households in any of the quintiles. It is impossible to conclude that all households in the highest quintiles have radios, piped water, cars, or any other asset or amenity. Rather, one would conclude that, on balance, women in households in the highest quintiles have a larger collection of assets and amenities than women in households in the lowest quintiles. More than 90 percent of women in the wealthiest households have radios, as opposed to slightly more than 40 percent for those in the poorest households. Less than 10 percent of women in the poorest households have improved floors, while more than 90 percent of those in the wealthiest households do. Although relatively few households have piped water, women in the wealthiest households are 10 times more likely than women in the poorest households to have it (34% versus 3%).

Figure 2.1. Nigeria DHS: Household wealth index and selected household assets or amenities.

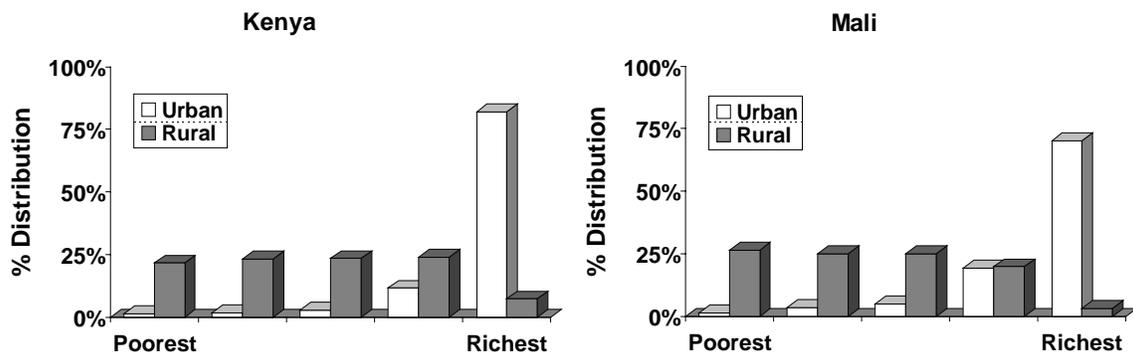


Problems with the national quintile score – differences between urban and rural poverty

Many household assets enumerated by the DHS are more associated with urban wealth rather than with rural wealth. For example, a moderately wealthy rural household in a remote area might not have electricity, not because of lack of means to purchase the service, but because electrical lines have not reached the village. Other characteristics might signify wealth in a rural household but poverty in an urban one. For example, the presence of a concrete floor in an urban residence might be a sign of relative poverty (where the majority of the households have tile or parquet), while it could be a sign of relative wealth in rural areas (where the majority of households have dirt floors).

Not surprisingly, national wealth quintiles are highly associated with place of residence. Urban households cluster in the richer quintiles, while rural households are distributed towards the poorer quintiles. Figure 2.2 shows extreme skews in recent surveys conducted in Kenya and Mali where 82 and 70 percent of urban women are classified in the wealthiest quintile, compared to seven and three percent of rural women, respectively.

Figure 2.2. Distribution of national wealth quintiles within urban and rural strata in two African countries.



Skews such as these mean that the breakdowns of health indicators by wealth quintile shown in the DHS country reports are heavily influenced by place of residence: in the examples of Kenya and Mali shown in Figure 2.2, virtually all of the women in the poorest quintile are rural and the vast majority of the women in the richest quintile are urban. Thus, any comparison of quintiles 1 (poorest) and 5 (richest) is essentially a comparison of the very poorest rural women with urban women as a group. This makes it impossible to determine how much of the apparent poverty-related inequalities at the national level are due to poverty and how much to place of residence.

The confound between relative wealth and place of residence cannot be resolved by cross-tabulating place of residence and national wealth quintile (i.e., comparing rural households in national quintile 1 with rural households in national quintile 5; or comparing urban households in national quintile 1 with urban households in national quintile 5). A further analysis of data from the 2003 Kenya DHS demonstrates how disaggregating the national quintile scores by place of residence could give misleading results; the analysis focuses on use of modern contraception, but similar findings could be obtained with other health indicators.

Kenya shows substantial poverty-related inequalities in modern family planning use at the national level: modern method use is 3.8 times higher among women in union in the richest quintile than in the poorest quintile. The overall pattern of increasing modern method use with increasing wealth is shown in the bars in Figure 2.3.

We then disaggregate the national quintile ranks by place of residence and compare rural women with rural women and urban women with urban women. The lines presented in the left-hand panel of Figure 2.3 show that as might be expected from the national breakdown, rural women in the higher national wealth quintiles are more likely to be using modern methods than rural women in the lower national wealth quintiles, and that urban women in the higher national quintiles tend to have higher modern method use rates than urban women in lower national wealth quintiles. However, despite the fact that overall modern method use among urban women is approximately 10 percent higher than among rural women, within each national wealth quintile, modern family planning use appears to be higher in rural areas than in urban areas. There is clearly something wrong with the residence-disaggregated national quintile scores.

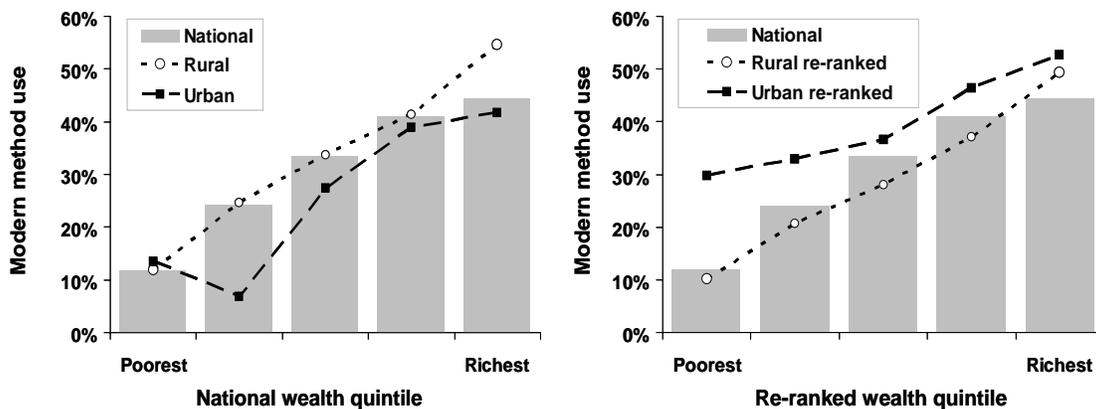
Recall that 82 percent of urban women were classified in the highest national wealth quintile, compared to only seven percent of rural women. Therefore, when we compare Quintile-5 urban women with Quintile-5 rural women, we are comparing nearly all urban women with a very small, select group of rural women. What

we should be doing is comparing the wealthiest 20 percent of urban women with the wealthiest 20 percent of rural women. This can be accomplished by re-ranking the urban and rural households into equal-size quintiles per stratum.

Since the DHS data sets include the national household wealth index, it is relatively straightforward to rank households and women within each residence stratum and divide them into stratum-specific quintiles.⁷ The redistributed quintiles preserve ordinal rankings within strata but change the threshold from one quintile to the next. Thus, the same wealth index value might be classified as urban quintile 3 and rural quintile 1 (see Appendix 1). When women in Kenya are re-ranked into residence-specific quintiles, less than half of the urban women classified in the richest national quintile remain in the richest urban-specific quintile, and 20% are reclassified in the second-poorest quintile.

The pattern of poverty-related inequalities in modern family planning method use in Kenya makes more sense when urban and rural women are divided into stratum-specific quintiles, as can be seen in the right-hand panel of Figure 2.3. National rates are presented in the bars and urban and rural rates are presented in the lines.

Figure 2.3. Examination of poverty-related inequalities in use of a modern family planning method: impact of re-ranking urban and rural households in Kenya.



Re-ranking the household wealth index separately for urban and rural households creates equal-size wealth groups within the urban and rural populations. However, it does not address the possibility that urban poverty might be *qualitatively* different than rural poverty—in other words, that poverty indicators and weights might be different in urban areas than in rural areas. Addressing this possibility would require performing separate principal components analyses (PCA) for urban and rural households; this option is not currently available in the DHS standard recode file. Appendix 1 compares separate PCA scores with re-ranked household wealth index scores for several recent DHS data sets. In most cases, the correlations between re-ranked wealth quintiles and separately computed wealth quintiles are fairly high and there are few substantial differences between the two computational methods and observed health inequalities.

Re-ranking the available DHS household wealth index values into separate urban and rural quintiles is easier than recalculating separate urban and rural indices and has the additional advantage of standardization. For the purpose of examining inequalities in health outcome at the aggregate level, we recommend re-

⁷ STATA and SPSS procedures for re-ranking urban and rural quintiles are presented in Appendix 1.

ranking the household wealth index into separate urban and rural quintiles, unless the Mission has reason to believe that re-ranking national wealth index values will produce erroneous results and can call on technical expertise to carry out new principal components analyses of the raw data.

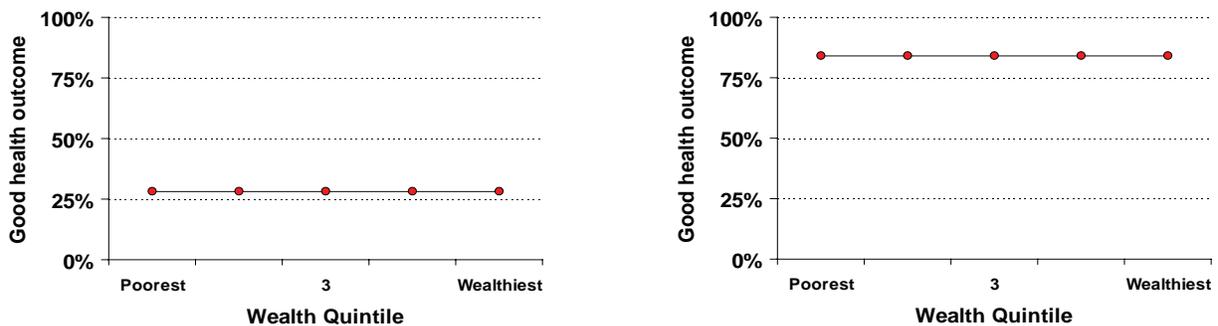
Are there inequities in health indicators?

National surveys contain a wealth of information about reproductive and maternal and child health and provide many Missions with their outcome and impact indicators. The country report tables often include national wealth breakdowns for these indicators. However, as explained above, we strongly recommend that Missions which wish to identify health indicators for targeted pro-poor interventions should first re-rank the household wealth index into separate urban and rural indexes and compare wealth groups within place of residence.

As a first step, most Missions will find it sufficient to cross-tabulate the health indicator(s) by wealth groups, being sure to separate out urban and rural populations, and then to look at the resulting line graphs. Keep in mind that small differences, especially between one quintile and the next one adjacent, are probably not statistically reliable, and that it is the shape of the line that is the most important.⁸ A horizontal line means there is no inequality by wealth; the more the line deviates from horizontal, the greater the likelihood that there are underlying inequalities that may warrant special interventions.⁹

Figures 2.4 and 2.5 demonstrate possible results of cross-tabulations of health outcomes (or service utilization by redistributed wealth quintile). “Good” health outcomes, plotted on the y-axis, could be percentage of births attended in a health facility, percentage of young children fully vaccinated, etc.

Figure 2.4. No poverty-related inequalities in health status.



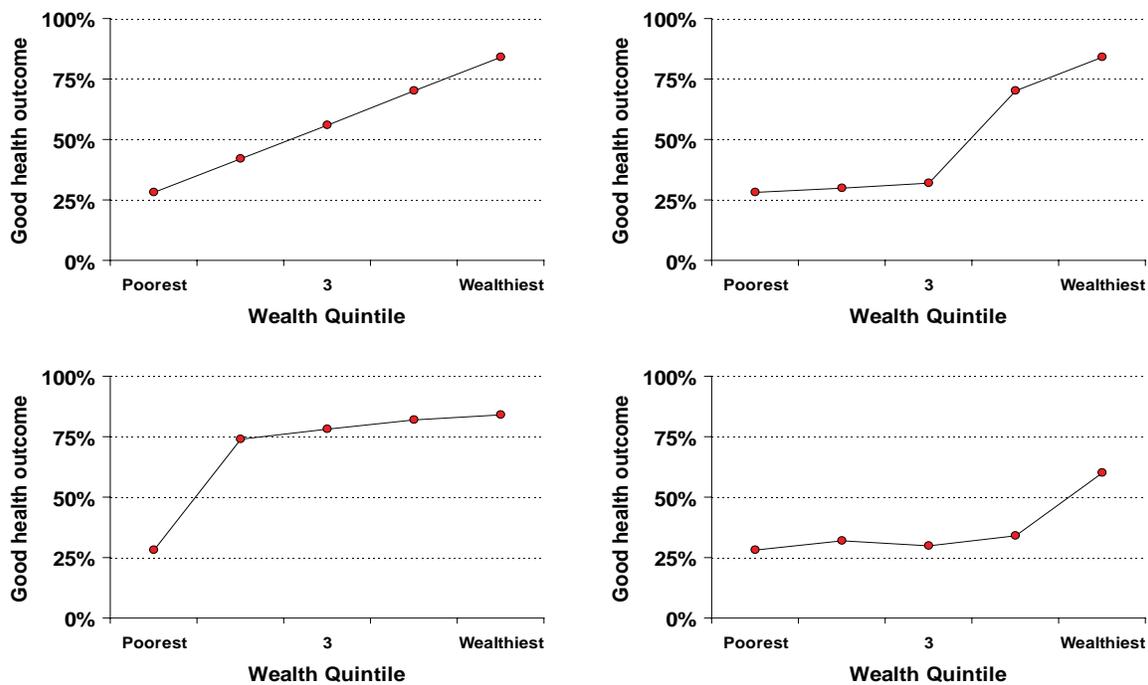
⁸ Confidence intervals could be computed for the distribution by quintile and would provide more reliable information on which between-quintile differences are statistically significant. Sample size usually will not be an issue (redistributed quintiles will be of equal size), but design error could be. Recent RHS reports include confidence intervals around national quintiles.

⁹ There also are a number of statistical measures of health equity. For example, the World Bank recommends the “concentration index,” which can take on negative to positive values depending on the relationship between wealth and the health indicator in question. If there are no wealth-related inequalities in the health indicator, the value of the concentration index is zero. Larger values denote increasing concentration of good or poor health outcomes in wealthier or poorer groups. See World Bank *Quantitative Techniques for Health Equity Analysis—Technical Note #7*, available at http://siteresources.worldbank.org/INTPAH/Resources/Publications/Quantitative-Techniques/health_eq_tn07.pdf, for a description of the Concentration Index, also http://siteresources.worldbank.org/INTPAH/Resources/Publications/Quantitative-Techniques/concentration_index.xls for an Excel workbook to compute the Index.

Figure 2.4 illustrates two hypothetical cases in which all wealth quintiles show similar health status. In the right-hand panel, some 80 percent of the population in all quintiles shows a good health outcome, high enough to achieve many health targets. This might suggest a general maintenance strategy. In the left-hand panel, less than 30 percent of the population shows a good health outcome, indicating widespread need to increase service utilization. However, because the rich and the poor suffer equally there is no poverty-related inequity and all are in need of interventions.

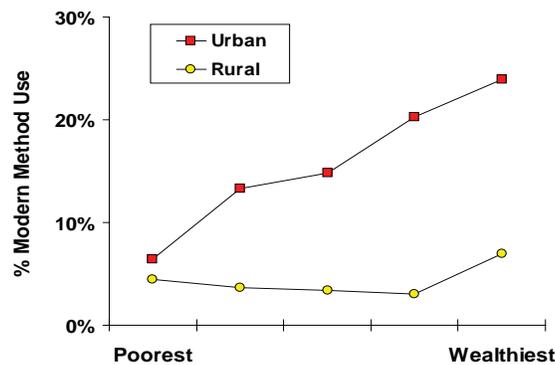
When poverty-related inequalities do appear, it is important to decide which quintiles warrant special attention. As shown in Figure 2.5, in some cases, only the poorest quintile may need targeted interventions; in other cases, as many as 60 or 80 percent of the population may be equally disadvantaged.

Figure 2.5. Possible patterns of poverty-related inequity in health status.



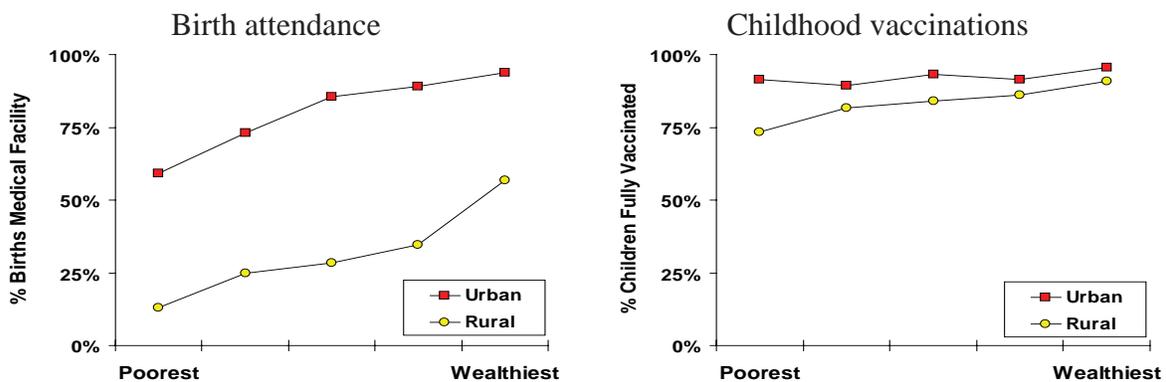
It is often illuminating to present urban and rural populations on the same graph; this can reveal whether poverty affects urban and rural people similarly or differently. Figure 2.6 presents use of modern family planning methods by wealth groups in urban and rural Mali. Note the pronounced slope in the urban population: method use is nearly four times higher in the wealthiest urban quintile than in the poorest urban quintile. At the same time, modern method use among the wealthiest rural quintile is no higher than the poorest urban quintile and shows very little variation across wealth groups in the rural areas. This pattern of results might suggest two strategic interventions: generalized family planning support in rural areas to boost method use across the board, and a more pro-poor targeted strategy in urban areas, concentrating on the poorest of the poor.

Figure 2.6. Modern Family Planning Method Use, Mali.



Similarly, it is often useful to compare different health outcomes or indicators side-by-side. Figure 2.7 presents two maternal-child health (MCH) indicators for Ghana: the percentage of most recent births attended in a medical facility and percentage of youngest children who have received all their vaccinations. Note both the pronounced urban-rural and wealth disparities in birth attendance, contrasted with the high levels of childhood vaccination coverage. This may point to infrastructure constraints leading to poor access to medical facilities for childbirth in rural areas, compounding the inability to pay for services. The higher and more uniform levels of childhood vaccinations may signal the success of door-to-door vaccination campaigns (which do not require fixed infrastructure). The only segment showing vaccination coverage less than the 80 percent Millennium Development Goal target are the very poorest quintile rural families, suggesting that very tightly focused interventions might be indicated for this group.

Figure 2.7. MCH Indicators, Ghana.



Recap of Chapter 2

1. National surveys such as the Demographic and Health Survey (DHS) and the Reproductive Health Survey (RHS) are an excellent starting point to determine whether and what kind of poverty-related inequities in health status and/or use of health services exist in a particular country or region.
2. The breakdowns by national wealth quintile presented in the DHS country report may hide or disguise urban-rural differences, which themselves are a form of inequity.
3. **The national wealth quintile scores should not be used to ascertain poverty-related inequities within urban and rural populations.** New rankings should be computed separately for the urban and rural strata using the household wealth index values found in the standard recode files.
4. If there are no differences across wealth groups, there is no inequity on that health measure. However, that does not necessarily mean there is no room or need for improvement, just that everyone is equally well-off or equally poorly-off.
5. Countries may show different patterns of poverty-related inequities between urban and rural populations and across different health indicators. Depending on the nature and degree of the differences and the scope of the Mission health portfolio, these may call for more nuanced intervention strategies than a single approach for all areas of the country and all health foci.

For example, if a given health indicator demonstrates inequity in one part of the country and no inequality in another part of the country, the Mission might decide to implement a focused pro-poor strategy in the part of the country that shows inequity and a generalized strategy in the part that shows no inequality. Similarly, if one health indicator demonstrates inequity while another indicator shows no inequality across wealth groups, the Mission might decide to focus its pro-poor interventions on selected priority health problems.

Chapter 3. Considerations for Program Design

Chapter 2 offered guidance for measuring poverty-related inequalities in health outcomes, disentangling the effects of poverty and place of residence, and determining whether poverty-related inequities warrant targeted approaches in health assistance. Chapter 3 assumes that the decision has been made to design and implement poverty-targeted approaches and addresses two operational issues: (a) identifying who should receive targeted assistance and (b) deciding how that assistance should be delivered.

Considerations for targeting assistance

- **Cost/feasibility of identification of recipients**
- **Data sources for identification**
- **Accuracy of identification**

It must be recognized that any targeting system will incur costs, including administering the screening and registration system and the potential to inadvertently screen out people who do in fact need assistance. The more difficult/onerous the task of classifying individuals as in need of targeted assistance, the less likely it is to be implemented and the more vulnerable it is to misuse or manipulation.

Second, detailed and reliable data are needed to determine who should qualify for services and who should not. DHS and other sample surveys, while providing adequate data to determine whether and where poverty inequalities exist, are generally inadequate to determine which households or individuals should be targeted for assistance. Identification of beneficiaries is usually made at the district or community level, while the DHS samples are representative only at the provincial or regional level. Furthermore, confidentiality and privacy protections preclude the use of DHS responses to identify program beneficiaries. Finer-grained sample surveys, census data and poverty maps may be available to identify geographic areas which have high concentrations of poor residents, but if case-by-case identification of the poor is wanted, there is no substitute for individualized data collection.

Finally, when resources are limited, program managers will strive to ensure that everyone who needs assistance receives it while not “wasting” program resources on those who do not need them. However, no identification system can be 100% accurate in discriminating between those who need targeted assistance and those who do not need it, which makes some degree of error inevitable. Two kinds of errors are possible (as shown in the shaded cells of Table 3.1 on the following page) — giving assistance to people who are not in need, and not giving assistance to those who are truly in need. We have labeled the first error “incorrectly *included* in assistance” and the second error “incorrectly *excluded* from assistance”.¹ Policy makers and program managers must weigh the implications of these competing errors and decide for each specific case which kind of error is the lesser of the two evils.

¹ Leakage is another term often employed to identify cases where subsidies or subsidized products wind up with people who do not need them. In some cases, leakage is implicated with deliberate malfeasance, such as public commodities which are siphoned off into retail outlets. “Incorrectly *included*” is meant to denote any direction to or capture of subsidies by those who are not most in need, whether such misdirection was intentional or not.

Table 3.1. Classification of need for and provision of assistance

Receive assistance	Need assistance	
	Yes	No
Yes	Correctly targeted for assistance	Incorrectly included in assistance
No	Incorrectly excluded from assistance	Correctly excluded from assistance

Targeting strategies: geographic targeting vs. identification of individual recipients

Two factors determine the efficiency of targeted assistance: the proportion of the population truly in need and the accuracy of the procedures employed to identify the individuals who need that assistance. To illustrate, consider two districts, each with 1,000 families: In district #1, 800 families need assistance and 200 families do not. In district #2, 250 families need assistance and 750 families do not. How should the program decide how to provide assistance?

Program managers could decide to give everyone assistance — universal coverage. This would ensure that there is no unmet need for assistance, but would also spend program resources on families who do not need them. Universal coverage is shown below in Scenario 1.

Scenario 1: Universal coverage					
District #1			District #2		
Receive assistance	Need assistance		Receive assistance	Need assistance	
	Yes: 800	No: 200		Yes: 250	No: 750
Yes: 1,000	Correctly assisted: 800	Incorrectly included: 200	Yes: 1,000	Correctly assisted: 250	Incorrectly included: 750
No: 0	Incorrectly excluded: 0	Correctly excluded: 0	No: 0	Incorrectly excluded: 0	Correctly excluded: 0

Because the two districts have different underlying patterns of need, providing universal assistance would result in different wastage. In *District #1*, 20 percent of the assistance could be considered “wasted” (of the 1,000 families who receive assistance, 200 did not need it). In *District #2*, 75 percent of the assistance could be considered “wasted” (750 of the 1,000 families who receive assistance did not need it). Is 20% wastage acceptable? Is 75% wastage acceptable? There is no single correct answer for all situations.

Alternatively, managers could decide to limit assistance to the number of families estimated to be in need of assistance and apply a poverty screen to determine which particular families qualify for assistance. At the aggregate level, a reasonably accurate poverty screen should correctly estimate the overall proportion of families that need assistance (i.e., it should correctly diagnose *District #1* as having 80% need for assistance

and *District #2* as having 25% need for assistance). However, at the individual level, the poverty screen will inevitably make some errors and incorrectly classify some specific families as not needing assistance and other families as needing assistance.² Suppose that the screen misclassifies 10 percent of the families needing assistance into the no-need category. Because the aggregate estimate of need should be correct, this means the same number of families will be incorrectly classified into the two error cells.

Scenario 2: Poverty screen (10% of poor families misclassified)					
District #1			District #2		
Receive assistance	Need assistance		Receive assistance	Need assistance	
	Yes: 800	No: 200		Yes: 250	No: 750
Yes: 800	Correctly assisted: 720	Incorrectly included: 80	Yes: 250	Correctly assisted: 225	Incorrectly included: 25
No: 200	Incorrectly excluded: 80	Correctly excluded: 120	No: 750	Incorrectly excluded: 25	Correctly excluded: 725

As shown above in Scenario 2, applying the results of the poverty screen reduces the total amount of assistance provided, from 1,000 to 800 families in *District #1* and from 1,000 to 250 families in *District #2*. Because the poverty screen is imperfect, in both districts, 10 percent of the families in need do not receive assistance and 10 percent of total assistance goes to families who do not need it.

However, if we analyze the results in the two districts a different way, we see that in *District #1*, 80 of the 200 families who were not in need received assistance anyway (40%), while in *District #2*, only 25 of the 750 families who were not in need received assistance (3%). In other words, applying the poverty screen in *District #2* reduces the rate of unneeded assistance³ from 100% under universal coverage to 3%, compared to a reduction from 100% to 40% in *District #1*.

This very simple example shows that there are costs and benefits associated with both universal access and individual targeting. The costs of universal coverage are higher total program costs, driven by the costs of providing assistance to those who do not need it. Targeted coverage reduces total program outlays, but at the cost of failing to provide assistance to some who do need it. In addition, there is always some cost associated with screening for poverty, both to the system and to potential recipients who may need to provide documentation of need. These costs may be considerable.

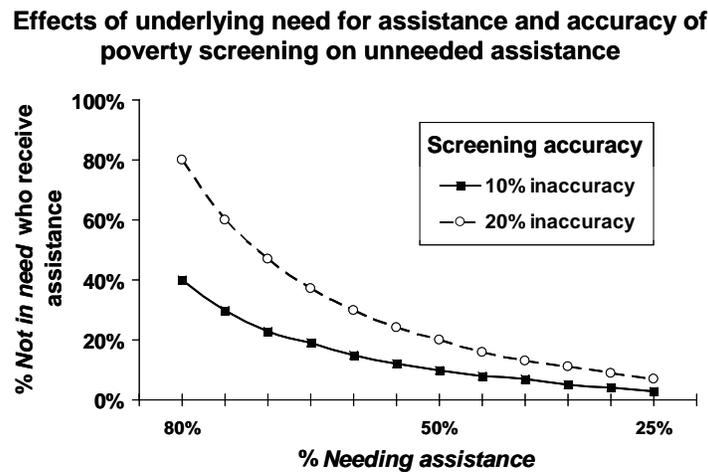
Table 3.2. Benefits and Costs Associated with Universal Access vs. Targeted Coverage

Option	Benefits	Costs
Universal access	<ul style="list-style-type: none"> Does not exclude anyone in need 	<ul style="list-style-type: none"> Greater total assistance Some unneeded assistance
Targeted coverage	<ul style="list-style-type: none"> Reduces total assistance Reduces unneeded assistance 	<ul style="list-style-type: none"> Some exclusion of those in need Cost of screening and ensuring compliance

² Compensating errors of this kind are common to poverty measurement.

³ This calculation of unneeded assistance is comparable to the epidemiological concept of false positives.

Figure 3.1. Effects of underlying need for assistance and accuracy of poverty screening on unneeded assistance.



Since no poverty screen can ever be totally accurate, the program must decide at what point providing targeted assistance to someone who does not need it outweighs failing to provide targeted assistance to someone who needs it. This gets to the heart of addressing poverty-inequity. *The greater the proportion of the population in need, the fewer the benefits to the program by individual identification.*

Figure 3.1 illustrates the trade-offs among underlying need for assistance, accuracy of screening, and provision of unneeded assistance. If the screening tool is 90% accurate and 80% of families need assistance, 40% of the families who do not need assistance will receive it anyway (example shown on page #23 in Scenario 2). The proportion of families not in need who receive assistance anyway would rise to 80% if the screening tool is only 80% accurate. All else being equal, individualized targeting can reduce unneeded assistance rates to less than the error rate of the targeting tool only in settings in which less than 50% of the population is in need of assistance. Two programmatically important conclusions can be drawn:

- a. *The less accurate the screening tool, the less the savings on unneeded assistance; and*
- b. *The greater the underlying need for assistance, the less the savings from individualized targeting.*

Universal coverage in targeted geographic areas vs. individual targeting

In Chapter 2, we saw that poverty is often more accentuated in rural areas; some countries may show pronounced regional differences as well. From the previous examples, we see that universal coverage becomes more attractive the higher the rates of underlying poverty are. Therefore, we recommend that Missions consider three questions in designing interventions to address poverty-inequity:

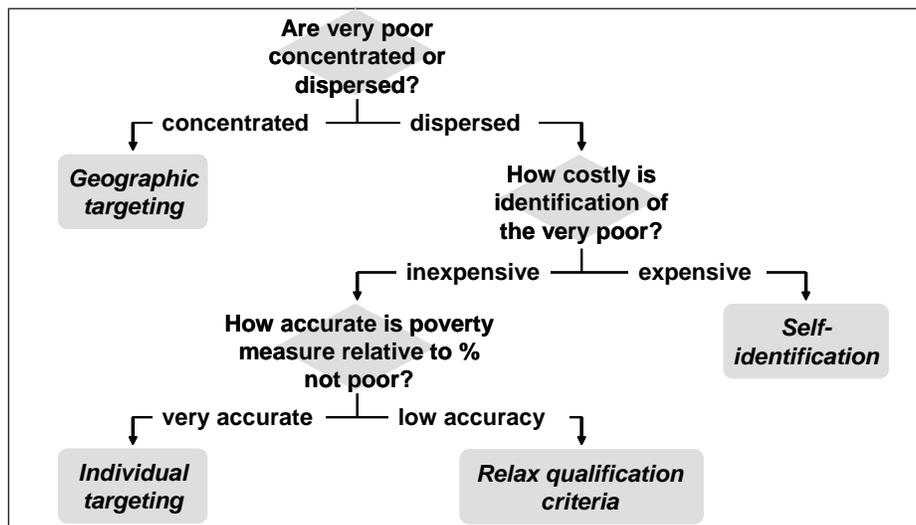
- (1) Are there geographic areas with high concentrations of people in need of assistance or are those needing assistance dispersed throughout the general population?
- (2) What is the cost and feasibility of identifying individuals in need of assistance?
- (3) How accurate are the identification procedures thought to be?

The flow chart presented in Figure 3.2 reduces identification options to three:

- **geographic** targeting (everyone resident in areas classified as poor is eligible for targeted assistance)
- **self-identification** (individuals may declare that they are in need of assistance without having to submit to elaborate certification procedures)
- **individualized** targeting through the application of specially-designed data collection and certification.

In practice, some identification systems, for example the conditional cash transfer program in Peru (described later in this chapter), combine elements of two or more options.

Figure 3.2. Determining eligibility for targeted assistance.



- We recommend geographic targeting whenever feasible: that is, if there are geographic areas with high concentrations of poverty, the entire area should be targeted and everyone resident within the area eligible for assistance.
- If the poor are scattered across the catchment area, some kind of individualized approach may be preferable to universal coverage. The individualized approach should consider the costs of administration relative to the costs of the benefits to be conferred. If the benefits are relatively modest (for example, fee waiver for basic services) and the personal and institutional costs of certification of poverty are high, then simple self-identification procedures might be warranted. The Romania family planning program, described below, is a case in point.
- Finally, the accuracy of the poverty screen or measure should be considered. Errors in screening will disqualify people in need of assistance from receiving it. Relaxing the qualification criteria will reduce the proportion of people incorrectly disqualified from assistance, at the cost of offering assistance to some who do not really need it.

Examples of identification strategies

Many countries have implemented procedures to identify poor individuals for special benefits. The degree of complexity of the certification process depends in large part on the cost or value of the benefit package, ranging from simple self-certification in Romania to obtain free contraceptives from government clinics to national procedures with stringent safeguards to participate in government cash transfer programs in Peru and Mexico. Three examples are presented on the following page.

Romania: self-certification of poverty status for free family planning from government clinics

Certification requires only a signed pledge stating that the beneficiary certifies that she is poor and does not have the funds to buy contraceptives. Government Order No. 248 approved self-certification of poverty status as valid documentary proof of eligibility. The Ministry of Health's "Technical Norms of the National Program for Child and Family Health" stresses that self-declaration suffices and does not need to be notarized.

Kenya: health worker certification of poverty status for vouchers for health services

The Kenya National Coordinating Agency for Population Development is testing a voucher scheme to enable poor clients to obtain selected reproductive health services from accredited public and private-sector service providers. Health and community workers screen potential beneficiaries using an 8-item checklist adapted for each participating community. The items include housing, access to health services, water sources and sanitation, cooking fuel, daily income, number of meals per day, security or garbage disposal, and rent or land ownership. Each item is scored from 1 to 3, and the item scores are summed to give a total from 8 to 24. Clients scoring 16 points or lower are eligible for vouchers. (See Appendix 2 for an example of the screening tool).

Peru: national certification for conditional cash transfer program. The JUNTOS program provides mothers of children under 14 in impoverished households a monthly stipend provided that they ensure that their children attend school and that they and their children use other public services. Selection for benefits follows the procedures described below:

1. JUNTOS Council of Directors selects program districts on the basis of poverty maps developed by the Ministry of Economy and Finance.
2. The National Statistics Institute (INEI) conducts household census/socio-economic evaluation in all designated districts.
3. Households are screened for eligibility criteria: pregnant women, widows, households with children under the age of 15.
4. INEI classifies eligible households as extremely poor, poor, or not poor.
5. INEI delivers final list to JUNTOS for confirmation of names and submission to National Bank.
6. JUNTOS delivers database to regional headquarters to start second level of approval.
7. Community Assembly for Communal Validation reviews the list of households for final approval.
8. Heads of approved household register with JUNTOS.
9. Registered households obtain forms showing use of health and education services.
10. The list of registered households is sent to the National Bank, which opens accounts for beneficiaries.
11. The list of registered households is widely distributed and publicly displayed in the community, schools, health services, and bank branch offices.

How should targeted assistance be delivered?

There are many possible reasons why poor women show lower use of health services and poorer health outcomes than non-poor women, and not all of them are linked to financial barriers or inability to pay. For example, poor women may be less aware that services exist. Cultural preferences and practices may inhibit women's mobility to leave the home or their willingness to seek care from male practitioners or service providers who belong to different ethnic or social groups. Physical accessibility is often a constraint in remote rural areas — not only point-to-point distance but also lack of roads and/or reliable transportation. Inconvenient hours of operation, waiting time, and congestion may also deter women from traveling long distances for services. For these reasons, we recommend that once the target populations are identified a situational analysis be conducted before any intervention is contemplated.

The first step of the situational analysis is to physically locate the poor and the service outlets. Paper maps are sufficient for the task and are usually easier to manipulate than computerized geographic information systems (GIS). Do not overlook routine travel patterns: women in outlying areas may find services located in far-away market towns that they frequent regularly are more convenient than closer services located in villages that they never visit. Also consider the nature of the service to be promoted: travel time is less of a constraint to utilization of non-emergency services such as vaccination or family planning than to obtaining trauma or emergency obstetrical care.

If existing service outlets are physically accessible, proceed to the second step of the situational analysis. This step should inventory the actual services that are provided and the outlet's capacity to attend more clients. Have staff been trained to provide the needed services? Do they have the required equipment and supplies? Are the services offered every day or only on certain days of the week? Are all clients who arrive during operating hours attended, or are people routinely turned away at the end of the day?

The third step of the situational analysis is to examine operational barriers that might constrain poor women's use of the facilities once they arrive. For example, if the facility operates only in the mornings, women from outlying areas may not be able to arrive early enough to be seen. Service delivery procedures—for example, requiring pelvic examinations for all family planning methods—may conflict with clients' cultural norms. Providers may charge non-authorized fees or direct clients to purchase commodities at outside pharmacies.

Figure 3.3. Steps in the situational analysis.

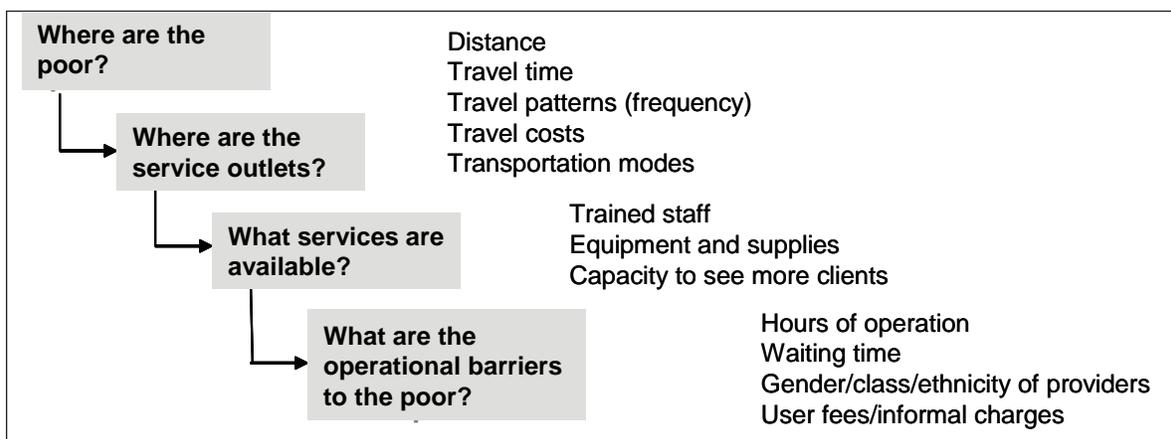
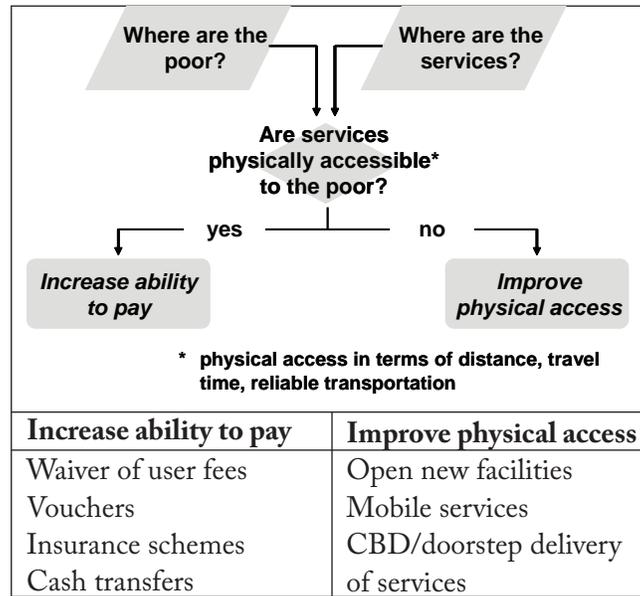


Figure 3.4. Selecting interventions to address poverty-related barriers.



The flow chart presented in Figure 3.4 considers interventions designed to reduce financial barriers to existing services versus interventions to bring new or additional services to populations in need. Other targeted interventions may also be indicated, such as behavioral change communication campaigns or sensitizing service providers to cultural practices, which could have powerful pro-poor effects while not designed to address purely financial barriers.

Note that some mechanisms such as community insurance schemes and conditional cash transfers may both increase clients' ability to pay and motivate improved physical access. Providers may be more willing to locate in underserved areas once residents have the wherewithal to pay for their services. Furthermore, cash transfers are typically part of a larger government poverty-alleviation strategy rather than focused narrowly on utilization of health services.

Recap of Chapter 3

1. The greater the proportion of the population in need of assistance, the less the benefits to the program by individual identification.
2. Geographic targeting (i.e., universal coverage within high poverty areas) is recommended wherever feasible.
3. Individualized targeting should weigh the costs of administering the screening relative to the costs of the services to be provided, as well as the accuracy of the screening procedures. Self-identification is often appropriate for low-cost services such as family planning.
4. If existing service outlets are physically inaccessible to target beneficiaries, the planned intervention should consider bringing new services into the area.
5. Interventions to stimulate use of service outlets by the poor will have no effect if the outlets are not prepared to attend them or to handle increased demand.
6. Many barriers faced by the poor can be effectively addressed by non-financial mechanisms.

Chapter 4. Selecting Appropriate Indicators to Monitor Poverty-Equity Strategies

Once a Mission has identified poverty-related inequities in health and designed and implemented strategic interventions to address them, it will want to monitor progress and evaluate results. Monitoring and evaluation answer two distinct but related questions: are our interventions reaching the right people (monitoring) and have they been sufficient to make a difference (evaluation). Monitoring should be conducted at short intervals and at least once a year; evaluating a program and/or demonstrating impact requires a longer time frame.

Just as different measures are appropriate to determine the extent of poverty-related inequalities in health status versus identifying which groups or individuals should be targeted for pro-poor interventions, different indicators are needed to monitor and evaluate program progress and results. Chapter 2 draws on the concept of relative wealth defined by quintile scores and disaggregated for place of residence. However, there is no fixed one-to-one correspondence between relative poverty and poverty level; depending on the country and place of residence, as few as one or as many as four quintiles may be considered “poor.”

To illustrate the distinction between poverty level and relative poverty, Table 4.1 presents poverty rates across selected developing countries using national poverty lines (which tend to be between the international poverty lines of \$1 and \$2 a day) and their corresponding quintiles. As expected, poverty rates tend to be higher in rural than in urban areas. Between-country differences are striking: in Egypt, Jamaica, and Sri Lanka rural poverty is largely confined to the lowest quintile, while in Bolivia, Guatemala, Madagascar, Mozambique, Sierra Leone, and Zambia rural poverty extends up through the second-wealthiest quintile (quintile 4). This strongly suggests that any hard and fast quintile cut-off across developing countries to identify who is poor and who is not poor would be of questionable validity.

Table 4.1 Comparison of absolute and relative poverty

Country	Year	% < National Poverty Line ¹			Poor Quintiles ²		
		Rural	Urban	National	Rural	Urban	National
Bangladesh	2000	53.0	36.6	49.8	1-3	1-2	1-2
Benin	1999	33.0	23.3	29.0	1-2	1	1
Bolivia	1999	81.7	50.6	62.7	1-4	1-2	1-3
Burkina Faso	1998	51.0	16.5	45.3	1-3	1	1-2
Cameroon	2001	49.9	22.1	40.2	1-2	1	1-2
Dominican Republic	1998	42.1	20.5	28.6	1-2	1	1
Egypt	1995–96	23.3	22.5	22.9	1	1	1
Ethiopia	1999–00	45.0	37.0	44.2	1-2	1-2	1-2
Ghana	1998–99	49.9	18.6	39.5	1-2	1	1-2
Guatemala	2000	74.5	27.1	56.2	1-4	1	1-3
India	1999–00	30.2	24.7	28.6	1-2	1	1
Jamaica	2000	25.1	12.8	18.7	1	1	1
Kenya	1997	53.0	49.0	52.0	1-3	1-2	1-3
Kyrgyz Republic	2001	51.0	41.2	47.6	1-3	1-2	1-2
Madagascar	1999	76.7	52.1	71.3	1-4	1-3	1-4
Malawi	1997–98	66.5	54.9	65.3	1-3	1-3	1-3
Mali	1998	75.9	30.1	63.8	1-4	1-2	1-3
Mauritania	2000	61.2	25.4	46.3	1-3	1	1-2

Country	Year	% < National Poverty Line ¹			Poor Quintiles ²		
		Rural	Urban	National	Rural	Urban	National
Mozambique	1996–97	71.3	62.0	69.4	1-4	1-3	1-3
Nepal	1995–96	44.0	23.0	42.0	1-2	1	1-2
Nicaragua	1998	68.5	30.5	47.9	1-3	1-2	1-2
Pakistan	1998–99	35.9	24.2	32.6	1-2	1	1-2
Peru	1997	64.7	40.4	49.0	1-3	1-2	1-3
Rwanda	1999–00	65.7	14.3	60.3	1-3	1	1-3
Sierra Leone	2003–04	79.0	56.4	70.2	1-4	1-3	1-4
Sri Lanka	1995–96	27.0	15.0	25.0	1	1	1
Tanzania	2000–01	38.7	29.5	35.7	1-2	1	1-2
Zambia	1998	83.1	56.0	72.9	1-4	1-3	1-4
Zimbabwe	1995–96	48.0	7.9	34.9	1-2	^a	1-2

¹ World Bank. 2005. World Development Report 2006: Equity and Development, Table A.1 Poverty.

² At least half of quintile below poverty line, assuming poverty is equally distributed within quintile.

^a Less than half the poorest urban quintile falls below the national poverty line.

Annual program monitoring

Missions are required to collect information for and report on Operational Plan (OP) indicators on an annual basis. Most of the standard OP indicators can be easily disaggregated to track progress in addressing inequity, and low-cost data can be collected to supplement them. Table 4.2 at the end of this chapter presents the entire list of 2007 OP indicators and possible poverty-related disaggregations.

Geographic targeting. Chapter 3 recommended geographic targeting—universal coverage within high-poverty areas—whenever feasible. Under geographic targeting, health facilities/service sites can be classified by location (poor/not poor). If service statistics are disaggregated by site, then program production can be disaggregated by poverty status. OP indicators appropriate for geographic targeting include the following:

- Couple years of protection (CYP) in USG-supported programs
- Number of USG-assisted service delivery points providing FP counseling or services
- Number of service delivery points reporting stock-outs of any contraceptive commodity offered by the SDP
- Number of health facilities rehabilitated
- Number of antenatal care (ANC) visits by skilled providers from USG-assisted facilities
- Number of people trained in maternal/newborn health through USG-supported programs
- Number of deliveries with a skilled birth attendant (SBA) in USG-assisted programs

Utilization of program offerings by the poor. Regardless of the specific targeting strategy, the basic objective of pro-poor interventions is to increase service uptake by the poor. In the first instance, this can be estimated by measuring what proportion of program clients are poor. While this does not translate directly into program coverage (the proportion of the poor who use services), increasing the numbers of poor clients is a necessary first step in reducing poverty-related inequity.

How can a program determine the proportion of its clients who are poor? A geographic targeting strategy may choose to adopt the simple assumption that anyone using a facility located in a high-poverty area is poor and disaggregate service statistics by location of service outlet (described above). Alternatively, programs may want to track the socioeconomic profile of their clientele by assessing individual clients' poverty status.

Chapter 3 presented several tactics that programs could adopt to increase clients' ability to pay, including fee waivers, vouchers, and insurance schemes. Correctly applied, any of these would identify a client as poor at the time of the visit and could be recorded in the daily log and reported on a regular basis both as a number count (e.g., the number of vouchers redeemed for family planning) and as a proportion (percentage of total family planning visits paid by voucher). However, this does not guarantee that all voucher-holders are truly poor nor does it capture the number of clients without vouchers who are also poor.

If the program wants to determine the proportion of its subsidy or services that is being captured by the poor, it should measure the poverty status of its clients at the time of the visit. Periodic sampling of clients presenting for services can monitor changes in the overall client profile. Depending on how the program is structured and what kind of generalizations it wishes to draw, the number of sampled sites can range from a single site (as in the case of a program operating a single clinic or hospital) to multiple, randomly-selected sites (e.g., to draw a profile of a geographic area such as a district).

Two operational criteria should be considered when selecting a measurement method for monitoring client characteristics:

- Feasibility (the instrument can be correctly administered as an interview taking no more than 5-10 minutes by local partners with minimal training and easily analyzed)
- Reasonably accurate/reliable (the instrument should be capable of detecting a difference of 10-15% in the proportion of clients who would be classified as "poor" across sites or over time)

Client intercept surveys using short, focused interviews meet these criteria and can yield reliable information for program monitoring and decision-making.¹ It is not necessary that the instrument correctly classify 100% of individual program beneficiaries, as long as the number of clients incorrectly identified as "poor" is roughly equal to the number of clients incorrectly identified as "not poor" (see Table 3.1 on page #22).

Designing client intercept surveys. The typical client intercept survey attempts to interview all clients presenting for services during a specified time frame; the greater the client volume, the fewer number of days needed to collect enough interviews for analysis.² Clients can be interviewed while they are waiting to see the service provider or after they have completed the visit. The advantage of interviewing in the waiting room is that it does not add time to the client's visit; the advantage of interviewing at exit is that the client can be asked about the services he/she has just received.

In either case, only a small number of questions should be asked, preferably close-ended (i.e. with pre-defined response categories). Close-ended questions are easier to administer, data enter, and analyze. Time per interview should be short, preferably no more than 10 minutes, especially for exit interviews. Many clients will already have spent considerable time traveling to the service and waiting to be seen and will be anxious to be on their way. A 10-minute interview usually means no more than 15 questions.

Interviewers should be trained to attempt to interview all clients waiting for or leaving the service. This reduces bias that might be introduced if the interviewers choose which clients to interview. Verbal consent should be obtained, assuring the client that his/her name will not be recorded and that he/she is free to refuse to be interviewed or to refuse to answer specific questions. Interviewing should be monitored to ensure that these procedures are followed.

¹ For example, see Foreit JR and Foreit K. The reliability and validity of willingness to pay surveys for reproductive health pricing decisions in developing countries. *Health Policy*, 2003, 63, 37-47.

² The greater the number of people interviewed, the more precise the estimate. As a general rule, most programs would want to interview at least 100 clients. The Poverty Assessment Tool recommends interviewing 200-300 clients.

The choice of questions to assess socioeconomic status is dictated by the local context and may vary from one part of the country to another. Reference periods should be as specific as possible—for example, instead of asking how often the client usually makes a particular purchase, it is better to ask how often he/she made it in the last week. Items that show marked seasonal fluctuations should be avoided; if they cannot be avoided or if they are of program interest (such as treatment for diarrhea), successive surveys should be conducted at the same time each year.

An increasing number of locally-tested instruments to identify poverty status are available from USAID microenterprise projects. The Microenterprise Results and Accountability Act of 2004 mandated USAID to develop and field test at least two low-cost poverty measurement methods and target half of microenterprise resources to clients who are “very poor”.³ Consequently, many country-specific poverty assessment tools can be downloaded from the internet and adapted for use by reproductive health programs.⁴ Sample questionnaires are provided in Appendix 2.

Monitoring program coverage and evaluating impact

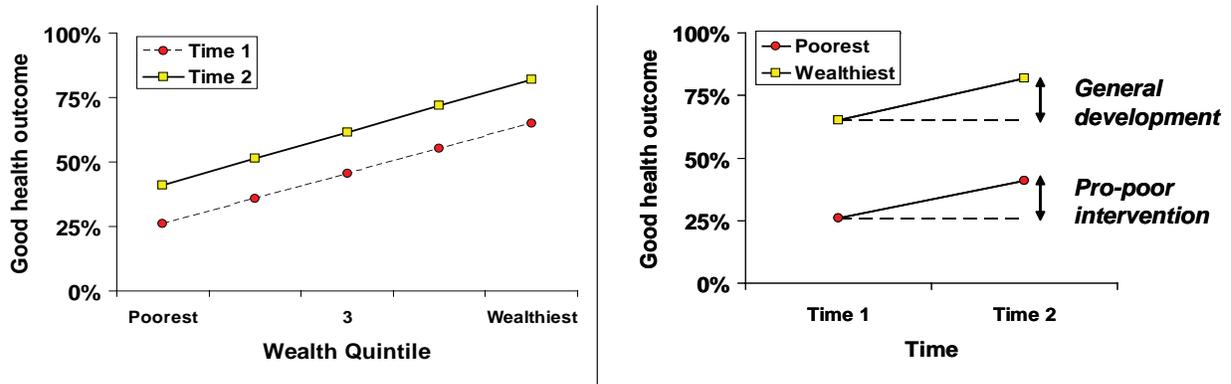
Many Missions use national surveys to track changes in health indicators such as contraceptive prevalence, childbirth delivery by skilled attendants, vaccination coverage, and fertility and mortality rates, etc. There is no reason in principle why the DHS or RHS could not be used to track changes in poverty-related inequities in health status and services utilization, but Missions should be aware of a few important limitations on using national survey results to measure change resulting from pro-poor interventions. First, large-scale surveys such as the DHS and RHS are conducted only infrequently, usually at five-year intervals. Second, survey estimates are representative at only fairly large geographic areas—typically national and regional or provincial. This is why the data cannot be used to identify individuals or communities. To the extent that Mission programs focus on geographic/administrative areas that are smaller than the sampling strata (for example, districts), program impacts may not be large enough to show up in the next national survey. Over-sampling (i.e., including a larger sample) of intervention areas can potentially compensate for the sampling issue, but this may be expensive and requires that over-sampling be employed in at least two surveys, one at baseline and the second at follow-up.

Third, general development trends may mask the impacts of the targeted interventions. Consider the left-hand panel of Figure 4.1 on the following page. The lower line presents poverty-related inequalities at baseline. The upper line presents the results of a follow-up survey. Note that all wealth groups have increased on the desired health outcome, but that the poverty-related inequalities are maintained. Should the Mission conclude that its targeted interventions had no effect?

³ The legislation identifies the “very poor” as “individuals (A) living in the bottom 50 percent below the poverty line established by the national government of the country in which those individuals live; or (B) living on less than the equivalent of \$1 per day (as calculated using the purchasing power parity [PPP] exchange rate method).”

⁴ See http://www.povertytools.org/USAID_Tools/USAID_Tools.htm#Tools for questionnaires and templates approved by USAID. Additional tools, many developed for the Grameen Foundation, USA, can be found at <http://www.microfinance.com/>

Figure 4.1. General development masking impact of pro-poor interventions.



It is possible that different factors were at work during the intervention period. Recall that even the wealthiest quintile did not show uniformly high health outcomes at baseline; they may have benefited from general economic development which made it possible for them to purchase more of the needed services from the private sector. On the other hand, targeted interventions to the poor could have raised their consumption of those services, while not to the level of the wealthiest quintile at time 2, but comparable to the levels of the second-wealthiest quintile at baseline. The right-hand panel of Figure 4.1 describes the two influences.

Simple baseline—follow-up comparisons cannot resolve this issue. Definitive attribution would probably require some kind of matched comparisons between comparable areas or populations that did and did not receive targeted interventions. However, finding matched comparison areas may be very difficult: many countries divide regions up by donor and assign certain areas to USAID and other, comparable areas, to another donor. Thus, the non-USAID areas might have received similar pro-poor interventions, albeit from another funding source.

Whether or not it is feasible, or even desirable, to conduct field experiments to evaluate the impact of targeted program interventions, all Missions can include poverty-specific measures in their annual OP reporting. Table 4.2 provides suggestions for specific OP indicators. If assistance is geographically targeted to specified poverty areas or outputs can be tracked by service delivery points that are known to be located in poor or non-poor areas, numeric results (numbers of people served) can be disaggregated by poverty location. Exit interviews can supplement service statistics to estimate the proportion of clients who are poor.

Recap of Chapter 4

1. While national surveys such as the Demographic and Health Survey (DHS) and Reproductive Health Survey (RHS) can help Missions decide whether or not to design and implement targeted interventions to the poor or other socially-disadvantaged groups, they are often inadequate to monitor program success.
2. With minimal added expense or effort, many annual OP indicators used to monitor program progress can be disaggregated to determine whether and/or how much of USAID program effort is reaching the poor.
3. Short, facility-based client exit interviews can be easily mastered by local partners to provide reliable information for program monitoring to see if targeted interventions are reaching their intended beneficiaries.
4. In many cases, evaluating program impact—i.e., attributing change to targeted interventions—may be neither feasible nor necessary.

Table 4.2. Possibilities for incorporating poverty-related measures into standard annual Operational Plan reports

Element: IIP – 1.7 Family Planning and Reproductive Health	
Indicator Title	Potential for Targeting and/or Linking to Inequity
Couple years of protection (CYP) in USG-supported programs	<ul style="list-style-type: none"> Classify outlets by location (poor/not poor) and disaggregate CYP by location
Number of people trained in FP/RH with USG funds	<ul style="list-style-type: none"> Classify trainees by areas served (poor/not poor) and disaggregate by area served
Number of counseling visits for FP/RH as a result of USG assistance	<ul style="list-style-type: none"> Classify outlets by location (poor/not poor) and disaggregate FP/RH visits by location Exit interviews with clients to determine poverty status
Number of people that have seen or heard a specific USG-supported FP/RH message	Mass-media promotion may be difficult to disaggregate by poverty status. Geographically-focused non-traditional media (e.g. street theater) may be possible to track by poverty status of the area.
Number of policies or guidelines developed or changed with USG assistance to improve access to and use of FP/RH services	<ul style="list-style-type: none"> Policies or guidelines that focus resources or other attention on poor and/or other underserved areas or groups
Number of new approaches successfully introduced through USG-supported programs	<ul style="list-style-type: none"> Operational approaches specifically designed to reduce barriers to access by poor and/or other underserved groups
Number of USG-assisted service delivery points providing FP counseling or services	<ul style="list-style-type: none"> Classify SDPs by location (poor/not poor) and disaggregate by location
Amount of in-country public and private financial resources leveraged by USG programs for FP/RH	Highlight and quantify leveraged financial resources that are consumed by the poor, for example, voucher schemes with specified and enforced eligibility requirements.
Number of service delivery points reporting stock-outs of any contraceptive commodity offered by the SDP	<ul style="list-style-type: none"> Stratify survey sample by location (poor/not poor) and disaggregate results by location
Number of USG program interventions providing services, counseling, and/or community-based awareness activities intended to respond to and/or reduce rates of gender-based violence	<ul style="list-style-type: none"> Classify outlets by location (poor/not poor)
Number of health facilities rehabilitated	<ul style="list-style-type: none"> Classify health facilities by location (poor/not poor) and disaggregate by location
Number of policies drafted with USG support (Number of improvements to laws, policies, regulations, or guidelines related to improve access to and use of health services drafted with USG support)	<ul style="list-style-type: none"> Policies or guidelines that focus resources or other attention on poor and/or other underserved areas or groups

Element: IIP – 1.7 Family Planning and Reproductive Health	
Indicator Title	Potential for Targeting and/or Linking to Inequity
Number of people covered by USG-supported health financing arrangements	<ul style="list-style-type: none"> • Conduct periodic surveys to assess whether insurance and/or subsidies are being captured by the poor • Monitor consumption of targeted programs, such as vouchers, available only to the poor
Number of USG-assisted service delivery points experiencing stock-outs of specific tracer drugs	<ul style="list-style-type: none"> • Stratify survey sample by location (poor/not poor) and disaggregate results by location
Value of pharmaceuticals and health commodities purchased by USG-assisted governmental entities through competitive tenders	Bulk purchases are typically made for the entire country or large geographic units. This indicator addresses the efficiency of government purchasing but not equity.
USG-assisted facilities provide staff with a written performance appraisal	These reforms should be applied system-wide, regardless of poverty status of clientele.
Assessment of USG-assisted clinic facilities' compliance with clinical standards	These reforms should be applied system-wide, regardless of poverty status of clientele.

Element: IIP - 1.6 Maternal and Child Health	
Indicator Title	Potential for Targeting and/or Linking to Inequity
Number of postpartum/newborn visits within three days of birth in USG-assisted programs	<ul style="list-style-type: none"> • Classify outlets by location (poor/not poor) and disaggregate postpartum/newborn visits by location • Exit interviews with clients to determine poverty status
Number of antenatal care (ANC) visits by skilled providers from USG-assisted facilities	<ul style="list-style-type: none"> • Classify outlets by location (poor/not poor) and disaggregate ANC visits by location • Exit interviews with clients to determine poverty status
Number of people trained in maternal/newborn health through USG-supported programs	<ul style="list-style-type: none"> • Classify trainees by areas served (poor/not poor) and disaggregate by area served
Number of deliveries with a skilled birth attendant (SBA) in USG-assisted programs	<ul style="list-style-type: none"> • Classify delivery sites by location (poor/not poor) and disaggregate deliveries visits by location
Number of people trained in child health and nutrition through USG-supported health area programs	<ul style="list-style-type: none"> • Classify trainees by areas served (poor/not poor) and disaggregate by area served
Number of women receiving active management of the third stage of labor (AMSTL) through USG-supported programs	<ul style="list-style-type: none"> • Classify delivery sites by location (poor/not poor) and disaggregate clients by location
Number of newborns receiving antibiotic treatment for infection from appropriate health workers through USG-supported programs	<ul style="list-style-type: none"> • Classify treatment sites by location (poor/not poor) and disaggregate newborns receiving treatment by location

Element: IIP - 1.6 Maternal and Child Health	
Indicator Title	Potential for Targeting and/or Linking to Inequity
Number of newborns receiving essential newborn care through USG-supported programs	<ul style="list-style-type: none"> Classify sites by location (poor/not poor) and disaggregate newborns receiving care by location
Number of children reached by USG-supported nutrition programs	<p>Note: check to see if these programs are designed to target poor or high-need areas</p> <ul style="list-style-type: none"> Classify program outlets by location (poor/not poor) and disaggregate children served by location Interviews with caretakers to determine poverty status
Number of cases of child pneumonia treated with antibiotics by trained facility or community health workers in USG-supported programs	<ul style="list-style-type: none"> Classify treatment sites by location (poor/not poor) and disaggregate child pneumonia cases receiving treatment by location
Number of children less than 12 months of age who received DPT3 from USG-supported programs	<p>Note: check to see if these programs are designed to target poor or high-need areas</p> <ul style="list-style-type: none"> Classify program outlets by location (poor/not poor) and disaggregate children served by location
Number of children under five years of age who received vitamin A from USG-supported programs	<p>Note: check to see if these programs are designed to target poor or high-need areas</p> <ul style="list-style-type: none"> Classify program outlets by location (poor/not poor) and disaggregate children served by location Interviews with caretakers to determine poverty status
Liters of drinking water disinfected with USG-supported point-of-use treatment products	<p>Note: check to see if these programs are designed to target poor or high-need areas</p> <ul style="list-style-type: none"> Classify program outlets by location (poor/not poor) and disaggregate children served by location Interviews with caretakers to determine poverty status
Number of cases of child diarrhea treated in USAID-assisted programs	<ul style="list-style-type: none"> Classify sites by location (poor/not poor) and disaggregate clients by location Exit interviews with clients to determine poverty status
Number of health facilities rehabilitated	<ul style="list-style-type: none"> Classify health facilities by location (poor/not poor) and disaggregate by location
Number of policies drafted with USG support	<ul style="list-style-type: none"> Policies or guidelines that focus resources or other attention on poor and/or other underserved areas or groups
Number of people covered by USG-supported health financing arrangements	<ul style="list-style-type: none"> Conduct periodic surveys to assess whether insurance and/or subsidies are being captured by the poor
Number of USG-assisted service delivery points experiencing stock-outs of specific tracer drugs	<ul style="list-style-type: none"> Stratify survey sample by location (poor/not poor) and disaggregate results by location

Element: IIP - 1.6 Maternal and Child Health	
Indicator Title	Potential for Targeting and/or Linking to Inequity
Value of pharmaceuticals and health commodities purchased by USG-assisted governmental entities through competitive tenders	Bulk purchases are typically made for the entire country or large geographic units. This indicator addresses the efficiency of government purchasing but not equity.
USG-assisted facilities provide staff with a written performance appraisal	These reforms should be applied system-wide, regardless of poverty status of clientele.
Assessment of USG-assisted clinic facilities' compliance with clinical standards	These reforms should be applied system-wide, regardless of poverty status of clientele.
Amount of private financing mobilized with a Development Credit Authority (DCA) guarantee	May be linked to water and sanitation.

Brief Annotated Bibliography

It is a daunting task to capture the essential references on poverty-related inequities in health, and given the pace of research and publication, any attempt to do so will be almost immediately out of date. The short bibliography below is intended to supplement the articles referenced throughout the preceding chapters and was assembled with three criteria in mind: the publication should be recent (2006–2008), available on the internet, and written in a manner accessible to program managers and policy makers.

Margaret Whitehead and Göran Dahlgren. 2006. Concepts and principles for tackling social inequities in health: Levelling up (part 1). *Studies on Social and Economic Determinants of Population Health No. 2.* Copenhagen: WHO Regional Office for Europe. <http://www.euro.who.int/document/e89383.pdf>

The vast literature on health equity can trace its lineage back to Margaret Whitehead’s clear and cogent writing of the early 1990’s. Written for policy makers and health care practitioners, these papers predate electronic archives and are available to only those fortunate enough to count on the services of a determined librarian. In 2006, the World Health Organization, which published the first Whitehead papers, invited Whitehead and Dahlgren to update their seminal work.

In non-technical language, the 2006 report lays out the basic concept of equity—termed “social inequities in health”—within a human rights framework. While the specific examples refer to Europe, the principles embodied therein are equally applicable to developing countries. The report ends with ten principles for policy action, of which four are especially relevant to the USAID mandate of Investing in People:

6. **Select appropriate tools to measure the extent of inequities and the progress towards goals.**
7. **Make concerted efforts to give a voice to the voiceless.**
8. **Wherever possible, social inequities in health should be described and analysed separately for men and women.**
9. **Relate differences in health by ethnic background or geography to socioeconomic background.**

Duff Gillespie, Saifuddin Ahmed, Amy Tsui and Scott Radloff. 2007. Unwanted fertility among the poor: an inequity? *Bulletin of the World Health Organization*; 85:100–107. <http://www.who.int/bulletin/volumes/85/2/06-033829.pdf>

The authors begin with Whitehead’s criteria for judging whether or not an inequality in health status can be considered an inequity:

- **It must be disproportionately present in a disadvantaged population relative to better-off population segments.**
- **It must be amenable to effective interventions.**
- **It must be undesirable.**
- **Interventions to relieve or lessen this condition are less available to the disadvantaged than to wealthier populations.**

They apply this equity lens to unwanted fertility as measured by the Demographic and Health Surveys. Cautioning that high fertility often arises from families’ desires for many children, they nevertheless advocate for mainstreaming reproductive health and family planning into the Millennium Development Goals. “Our analysis suggests that looking at family planning and fertility through an equity lens is

justified for those countries with joint inequalities in unwanted fertility and access to family planning. In other countries, where there is little or no unwanted fertility inequity and where high fertility among the poor contributes to other health inequities, greater emphasis should be given to the health benefits of birth spacing and couples' rights to reproductive health information and services.”

Lori S. Ashford, Davidson R. Gwatkin, and Abdo S. Yazbeck. 2006. *Designing Health and Population Programs to Reach the Poor*. Population Reference Bureau, Washington D.C. <http://www.prb.org/pdf06/DesigningPrograms.pdf>

This report brings together findings from the World Bank's Reaching the Poor Program and analyses of data collected by the Demographic and Health Surveys. It describes inequalities in health status, demonstrates that public health spending continues to favor those who are better off and sets out reasons why the poor receive less health care. The report argues that the barriers facing the poor can be overcome and provides descriptions of interventions that can benefit the poor and cases studies of successful programs. The final section gives an overview of approaches to measuring socioeconomic status of program beneficiaries.

Health Policy Initiative Project | Task Order 1. 2007. *Inequalities in the Use of Family Planning and Reproductive Health Services: Implications for Policies and Programs*. Washington DC. <http://www.healthpolicyinitiative.com/Publications/Documents/Inequalities%20in%20Use%20of%20Family%20Planning%20final%202-8-07%20bw.pdf>

This paper is intended to inform policy makers about the interrelationships among poverty, inequality, and use of family planning and maternal health services and to improve the effectiveness of reproductive health policies and programs. It presents analyses of 47 Demographic and Health Surveys published between 1996 and 2005. It ends with the implications of the analytic findings for policies and programs:

- **Inequalities in the use of reproductive health care services must be resolved to achieve rapid growth of their use by the population as a whole.**
- **Understanding how inequalities in service use change over time can inform the design of policy options and program strategies.**
- **Pro-poor policies and programs can be effective in reducing inequalities in family planning and maternal health service use.**
- **Pro-poor strategies that target service delivery improvement and expansion to poverty groups are critical where unmet need is concentrated among the poor and lower middle classes.**
- **Multisectoral policies and programming to delay age at marriage and contribute to fertility reduction are needed to address inequalities.**

Owen O'Donnell, Eddy van Doorslaer, Adam Wagstaff and Magnus Lindelow. 2008. *Analyzing Health Equity Using Household Survey Data: A Guide to Techniques and Their Implementation*. The World Bank, Washington D.C. <http://siteresources.worldbank.org/INTPAH/Resources/Publications/459843-1195594469249/HealthEquityFINAL.pdf>

This comprehensive guide is oriented to researchers and data analysts and presumes a fair amount of quantitative background. It aims to “...provide researchers and analysts with a step-by-step practical guide to the measurement of a variety of aspects of health equity, with worked examples and computer code, mostly for the computer program Stata.”

The book is organized into three major headings:

- I. Data issues and the measurement of the key variables in health equity analysis.**
- II. Quantitative techniques for interpreting and presenting health equity data.**
- III. Application of these techniques in the analysis of equity in health care utilization and health care spending.**

Each of the 19 chapters includes an overview of the topic, illustrative analyses, computer code, and a bibliography of key articles in the field. Chapter 2 is also useful for a less technical audience. It lays out the data requirements for various types of health equity analysis, summarizes the major types of data sources (ranging from surveys to routine information systems) and their advantages and limitations, and provides an overview of sample design.

M. Mahmud Khan and David Hotchkiss. 2006. *How Effective are Health Systems Strengthening Programs in Reaching the Poor? A Rapid Assessments Approach*. Bethesda, MD: Partners for Health Reform*plus* Project, Abt Associates Inc. http://www.phrplus.org/Pubs/Tech086_fin.pdf

This paper describes low-cost data collection procedures that can be used to identify the poor and provides illustrative questionnaires and descriptions of survey methodologies and analytic techniques. It also sets out indicators of health status that can quickly change in response to program interventions, "... preferably within three to four months after the initiation of the assessment study."

In addition to widely-used methods derived from income or expenditure surveys and analyses of household assets, amenities and housing characteristics, the paper mentions less well-known approaches such as asking local informants to identify the five most important indicators of extreme poverty in their area. In this approach, households responding yes to three or more of the indicators are classified as poor. An application in Bangladesh used the following five questions:

- **Household owns less than 0.5 acre of land?**
- **No wage earner in the household?**
- **Assets valued at less than 0.1 acre of land?**
- **Female-headed household with children?**
- **School-age children not attending school?**

Davidson R Gwatkin. 2007. 10 best resources on . . . health equity. *Health Policy and Planning*: 22:348–351. <http://heapol.oxfordjournals.org/cgi/reprint/22/5/348> (requires subscription to Health Policy and Planning Online)

A specialist on health and poverty and long associated with the World Bank, Gwatkin lists his personal "top-ten" references relevant to health policy makers and planners. The list includes conceptual overviews beginning with Whitehead, measurement of inequalities and inequities, explanations of the reasons behind observed inequalities and documentation of attempts to remedy them.

Appendix 1. Developing Separate Measures for Urban and Rural Poverty

As described in Chapter 2, questions about household assets, utilities, and dwelling characteristics can be combined to generate a composite index of household wealth, which can then be ranked and divided into quintiles. The analyses can be performed in SPSS (as factor analysis), STATA (as PCA-principal components analysis), or in SAS (PrinComp).

Both the Demographic and Health Surveys (DHS) and the Reproductive Health surveys (RHS) compute a single national wealth index and a single national quintile ranking. Because the assets associated with wealth tend to be more common in urban households than in rural households, urban households tend to concentrate in the wealthier quintiles and rural households in the poorer quintiles. In extreme cases such as Kenya and Mali, described in Chapter 2, there are very few urban households in quintile 1 and very few rural households in quintile 5. This means that any comparison of quintiles 1 and 5 is as much a rural-urban comparison as it is a wealth comparison.

To disentangle wealth and place of residence, separate scales for urban and rural households are needed, such that poorer urban households can be compared with wealthier urban households and poorer rural households can be compared with wealthier rural households. One way to construct separate wealth scales is to use the national wealth index but rank urban and rural households separately and calculate quintile cut-offs for each stratum. Measurement by re-ranking the national wealth index considers urban and rural poverty as *difference in degree*.

Re-ranking can be accomplished directly in STATA or by hand in SPSS using a frequencies analysis. The box on the following page contains STATA code for re-ranking urban and rural quintiles.

**STATA commands to re-rank national wealth index scores into separate rural and urban quintiles
DHS Individual Standard Recode File**

***put the factor scores into quintiles

```
rename v191 wlthindf
sort wlthindf
gen szweight=sum(zweight) if wlthindf >= -999999999 & wlthindf <= 999999999
egen mzweight=max(szweight) if wlthindf >= -999999999 & wlthindf <= 999999999
gen rf=szweight/mzweight if wlthindf >= -999999999 & wlthindf <= 999999999
gen wtstd5=1 if rf <= .2
replace wtstd5=2 if rf >.2 & rf <= .4
replace wtstd5=3 if rf >.4 & rf <= .6
replace wtstd5=4 if rf >.6 & rf <= .8
replace wtstd5=5 if rf >.8 & rf <= 1.0
```

***put the factor scores into quintiles, rural only

```
drop szweight rf mzweight
sort wlthindf
gen szweight=sum(zweight) if wlthindf >= -999999999 & wlthindf <= 999999999 & v102==2
egen mzweight=max(szweight) if wlthindf >= -999999999 & wlthindf <= 999999999 & v102==2
gen rf=szweight/mzweight if wlthindf >= -999999999 & wlthindf <= 999999999 & v102==2
gen rwtstd5=1 if rf >= 0 & rf <= .2
replace rwtstd5=2 if rf >.2 & rf <= .4
replace rwtstd5=3 if rf >.4 & rf <= .6
replace rwtstd5=4 if rf >.6 & rf <= .8
replace rwtstd5=5 if rf >.8 & rf <= 1.0
```

***put the factor scores into quintiles, urban only

```
drop szweight rf mzweight
sort wlthindf
gen szweight=sum(zweight) if wlthindf >= -999999999 & wlthindf <= 999999999 & v102==1
egen mzweight=max(szweight) if wlthindf >= -999999999 & wlthindf <= 999999999 & v102==1
gen rf=szweight/mzweight if wlthindf >= -999999999 & wlthindf <= 999999999 & v102==1
gen uwtstd5=1 if rf >= 0 & rf <= .2
replace uwtstd5=2 if rf >.2 & rf <= .4
replace uwtstd5=3 if rf >.4 & rf <= .6
replace uwtstd5=4 if rf >.6 & rf <= .8
replace uwtstd5=5 if rf >.8 & rf <= 1.0
```

```
rename v190 wealth
rename rwtstd wealth_rur
rename uwtstd wealth_urb
```

We illustrate the results of the re-ranking procedure with the Kenya DHS. Individual household wealth scores ranged from -124,756 for the very poorest household in the sample to 319,597 for the very wealthiest household.¹ As can be seen in Table A1.1, the cutoff value for national quintile 1 is between -86,520 (the highest score in the lowest 20% of the sample) and -86,496 (the lowest score in the second 20% of the sample). However, there are very few urban households with negative wealth index scores and very few rural households with positive wealth index scores. If we divide the rankings separately by place of residence, we obtain a cutoff for Quintile 1 of approximately 26,403 for urban households and -89,928 for rural households. Similarly, at the high end of the scale, the cutoff for Quintile 5 is approximately 184,796 for urban households and -30,922 for rural households. In other words, some households in the wealthiest 20% of the rural sample have wealth index scores that would place them among the poorest 20% of the urban sample.

Table A1.1. Household wealth index scores by quintile – Kenya

Quintile		National (original)	Urban (re-ranked)	Rural (re-ranked)
1	Low	-124746	-117910	-124746
	High	-86520	26326	-89938
2	Low	-86496	26480	-89919
	High	-73291	76493	-77440
3	Low	-73287	76550	-77440
	High	-44955	125254	-62655
4	Low	-44904	125443	-62644
	High	32185	184769	-30923
5	Low	32250	184824	-30921
	High	319597	319597	245693

An alternative to re-ranking the national wealth index is to directly compute separate wealth indexes for urban and rural households, using the same household characteristics and assets for both the urban and rural strata, but allowing the relative importance of each to vary between the strata. The box on the following page contains STATA code for computing separate principal components analyses (PCA) for urban and rural households in Egypt and then ranking each group into quintiles. Before attempting to compute separate wealth indexes for urban and rural households, the analyst should examine the frequency distributions for all possible household items and delete those variables which are either not included in the survey or for which there are large numbers of missing cases. The PCA routine will eliminate the entire case if even only one variable has a missing value. Failure to adjust the household items to be considered can reduce the final sample size by more than half and produce misleading results.

¹ The principal components analysis assigns a factor “weight” to each value of each asset or characteristic, such as having a dirt floor or a telephone. Some weights are positive (i.e. the asset or characteristic is associated with relative wealth) and some weights are negative (the asset or characteristic is associated with relative poverty). The household’s score is the sum of its assets and characteristics, each multiplied by its associated factor weight.

**** START WITH THE HOUSEHOLD SURVEY!**

****Creation of normalized household weights.

```
gen pweight=hv005/1000000
```

****Creation of weights that include correction for number of HH members.

```
gen pweight_mem=hv005*hv009
summ pweight_mem
gen meanwt=r(mean)
replace pweight_mem=pweight_mem/meanwt
drop meanwt
```

****Running pc separately for urban and rural quintiles

*dummy up drinking water source

```
tab hv201, gen(hv201)
```

*creates a whole series of variables which are hv201_1, etc. all equal zero except the response which is 1

```
rename hv201 xv201
```

*dummy up toilet

```
tab hv205, gen(hv205)
```

```
rename hv205 xv205
```

*dummy up floor

```
tab hv213, gen(hv213)
```

```
rename hv213 xv213
```

*dummy up wall material

```
*tab hv214, gen(hv214)
```

```
*rename hv214 xv214
```

*dummy up roof

```
*tab hv215, gen(hv215)
```

```
*rename hv215 xv215
```

*dummy up roof

```
tab sh119, gen(sh119)
```

```
rename sh119 xh119
```

*dummy up cooking fuel

```
tab hv226, gen(hv226)
```

```
rename hv226 xv226
```

*NUMBER OF ROOMS IN HOUSE NOT ASKED

*NO VARIABLE ON CONDITION OF HOUSE

```
pca hv201* hv205* hv206-hv212 hv213* hv221 hv226* hv225 sh117c sh117d sh117e sh117f sh117g sh117h
sh117i sh117j sh117k sh117l sh121 sh123b sh123c sh123d sh123e sh123f sh123g sh123h sh123i sh123j
sh123k sh123l sh123m sh127a sh127d sh128 sh130 if hv025==1 [aweight=pweight_mem]
score score_urb
```

```

drop szweight mzweight rf
sort score_urb
gen szweight=sum(pweight_mem) if hv025==1 & score_urb >= -9999999 & score_urb <= 99999999
egen mzweight=max(szweight) if hv025==1 & score_urb >= -9999999 & score_urb <= 99999999
gen rf=szweight/mzweight if hv025==1 & score_urb >= -9999999 & score_urb <= 99999999

gen new_urb=1 if rf >=0 & rf <= .2
replace new_urb=2 if rf >.2 & rf <= .4
replace new_urb=3 if rf >.4 & rf <= .6
replace new_urb=4 if rf >.6 & rf <= .8
replace new_urb=5 if rf >.8 & rf <= 1.0

pca hv201* hv205* hv206-hv212 hv213* hv221 hv226* hv225 sh117c sh117d sh117e sh117f sh117g sh117h
sh117i sh117j sh117k sh117l sh121 sh123b sh123c sh123d sh123e sh123f sh123g sh123h sh123i sh123j
sh123k sh123l sh123m sh127a sh127d sh128 sh130 if hv025==2 [aweight=pweight_mem]
score score_rur

drop szweight mzweight rf
sort score_rur
gen szweight=sum(pweight_mem) if hv025==2 & score_rur >= -9999999 & score_rur <= 99999999
egen mzweight=max(szweight) if hv025==2 & score_rur >= -9999999 & score_rur <= 99999999
gen rf=szweight/mzweight if hv025==2 & score_rur >= -9999999 & score_rur <= 99999999

gen new_rur=1 if rf >=0 & rf <= .2
replace new_rur=2 if rf >.2 & rf <= .4
replace new_rur=3 if rf >.4 & rf <= .6
replace new_rur=4 if rf >.6 & rf <= .8
replace new_rur=5 if rf >.8 & rf <= 1.0

pca hv201* hv205* hv206-hv212 hv213* hv221 hv226* hv225 sh117c sh117d sh117e sh117f sh117g sh117h
sh117i sh117j sh117k sh117l sh121 sh123b sh123c sh123d sh123e sh123f sh123g sh123h sh123i sh123j
sh123k sh123l sh123m sh127a sh127d sh128 sh130 [aweight=pweight_mem]
score score_all

drop szweight mzweight rf
sort score_all
gen szweight=sum(pweight_mem) if score_all >= -9999999 & score_all <= 99999999
egen mzweight=max(szweight) if score_all >= -9999999 & score_all <= 99999999
gen rf=szweight/mzweight if score_all >= -9999999 & score_all <= 99999999

gen new_all=1 if rf >=0 & rf <= .2
replace new_all=2 if rf >.2 & rf <= .4
replace new_all=3 if rf >.4 & rf <= .6
replace new_all=4 if rf >.6 & rf <= .8
replace new_all=5 if rf >.8 & rf <= 1.0

```

Table A1.2 presents weighting coefficients for urban and rural strata in Ghana, Kenya, and Mali. In Ghana, the observed wealth coefficient for carpet flooring was three times higher in urban areas than in rural areas. In Kenya, the poverty coefficient of a having a thatched roof was 24 times higher in rural areas than in urban areas. And in Mali, having an open well in the dwelling was associated with urban poverty and rural wealth. Measurement by computation of separate indices considers urban and rural poverty as *difference in kind*.

Table A1.2. Differential weightings of household assets and characteristics in computation of urban and rural wealth indices

	Household asset/characteristic	Scale coefficient	
		Urban	Rural
Ghana	Cooking fuel: charcoal	0.217	0.501
	Floor: carpet	0.363	0.110
	Sanitation: ventilated improved pit latrine	0.000	0.165
	Water: piped into dwelling	0.354	0.237
	Water: public tap	0.000	0.109
	Floor: ceramic tiles	0.185	0.079
	Sanitation: flush toilet	0.392	0.290
	Floor: terrazzo	0.185	0.085
	Asset: radio	0.170	0.078
	Cooking fuel: biogas	0.104	0.018
Kenya	Floor: cement	0.000	0.568
	Roof: grass, thatch, makuti	-0.018	-0.426
	Sanitation: flush toilet	0.507	0.182
	Cooking fuel: charcoal	-0.040	0.264
	Floor: concrete	0.264	0.010
	Floor: earth/ mud/ dung/ sand	-0.251	0.000
	Sanitation: no facility/ bush/ field	-0.009	-0.254
	Rooms for sleeping: 2	0.203	0.000
	Water: public tap	-0.129	0.057
	Floor: tiles	0.298	0.125
Mali	Floor: dung	0.013	0.231
	Sanitation: no facility/ bush/ field	-0.008	-0.223
	Sanitation: ventilated improved pit latrine	0.262	0.050
	Sanitation: flush toilet	0.370	0.170
	Cooking fuel: charcoal	0.425	0.225
	Water: open well in dwelling	-0.069	0.129
	Water: public tap	0.000	0.195
	Water: piped into dwelling	0.334	0.167
	Water: protected well in dwelling	-0.034	0.086
	Water: river/ stream	-0.051	0.052

Comparison of re-ranked vs. re-calculated wealth indexes

To assess the comparability of the two approaches to creating separate urban and rural wealth indexes, we analyzed standard recode files from seven recent DHS countries in sub-Saharan Africa (Ghana, Kenya, Mali), Middle East (Egypt), Asia (Nepal), and Latin America (Honduras, Peru).² We followed standard DHS weighting procedures and used the standard variable for place of residence (hv025). To re-rank the urban and rural wealth quintiles, we used the DHS standard variable for national wealth score (v191). The re-calculated urban and rural wealth quintiles used both standard and country-specific household characteristics, eliminating those which showed large numbers of missing cases. Three health outcomes were selected: current use of a modern contraceptive method among women in union,³ place of delivery of the last live birth in the last five years, and full DPT vaccination (at least three doses) of the youngest child between the ages of one and five years old.

Correlation between re-ranked and re-calculated wealth indexes. While calculation of separate urban and rural wealth indexes does in fact alter the composition of wealth between urban and rural households, many characteristics and assets showing positive associations with wealth in urban areas are also positively associated with wealth in rural areas, albeit with different weights. There are a smaller number of cases where the direction of the association changes. Therefore, overall, a positive correlation would be expected between the two poverty measures.

Table A1.3. Correlations between re-ranked and re-calculated wealth quintiles by country and place of residence

	Ghana	Kenya	Mali	Egypt	Nepal	Honduras	Peru
Urban	.94	.87	.95	.96	.94	.94	.94
Rural	.91	.83	.48	.93	.88	.94	.96

Because of the large sample sizes, all correlations were highly significant. As can be seen in Table A1.3 above, urban scores tended to be more highly correlated than rural scores and with the exception of the rural stratum in Mali, all between-measure correlations were over .8 (and most over .9). Across countries and strata (with the exception of rural Mali), the majority of women were classified in the same wealth quintile with both methods (analyses not shown).

While the two measurement methods are highly correlated, it is nonetheless possible that they could yield different inequalities in health outcomes. Figure A1.1 on the following page illustrates poverty-related inequalities on three health outcomes, comparing the two approaches to deriving residence-specific wealth quintiles: use of a modern family planning method, whether the last live birth was attended in a health facility, and whether the youngest child over the age of one year was completely vaccinated for DPT.

² All data sets were downloaded from the DHS Web site: <http://www.measuredhs.com/>

³ In these analyses, the lactational amenorrhea method (LAM) was *not* considered a modern method.

Figure A1.1. Poverty-related differentials in modern contraceptive use: urban areas.

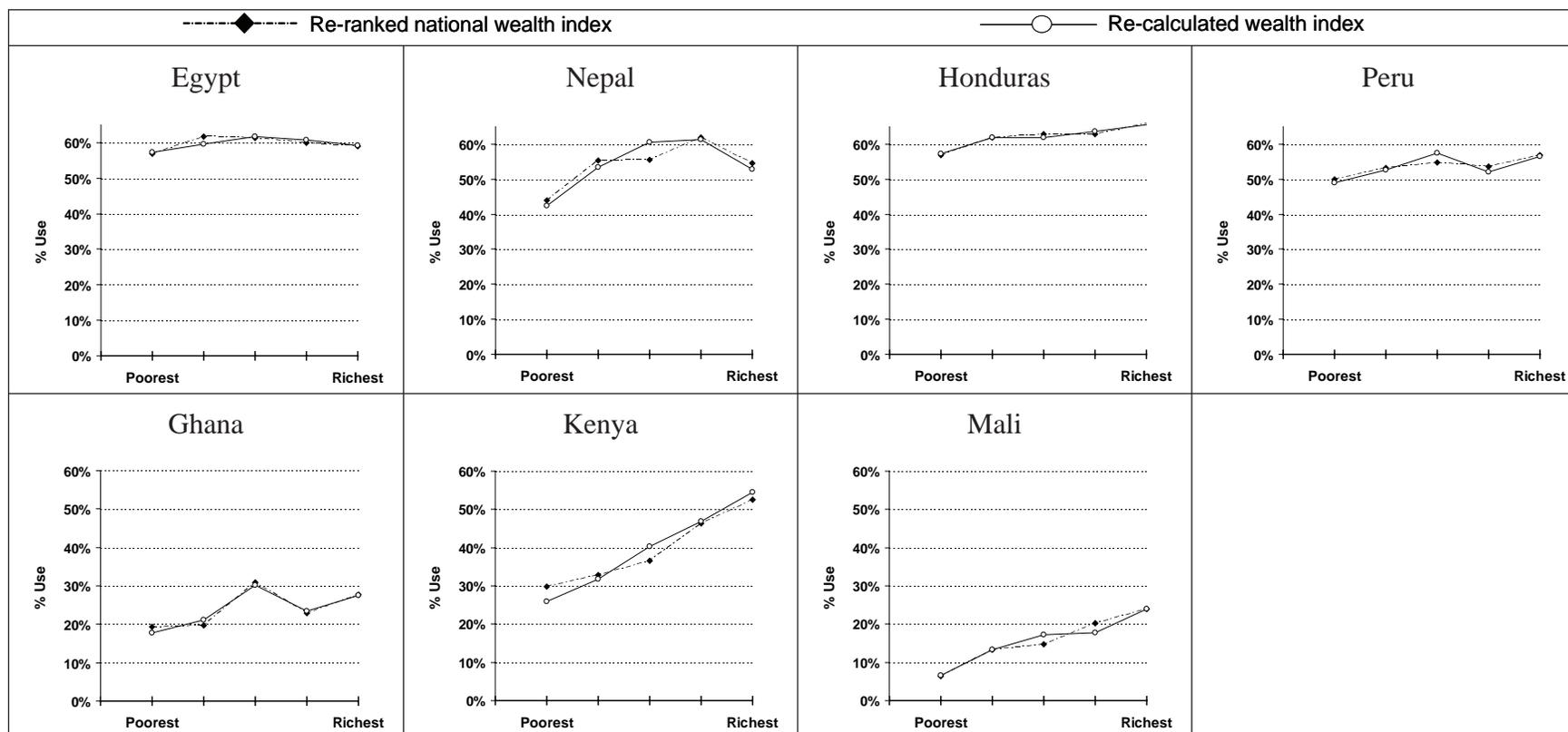


Figure A1.1. Poverty-related differentials in modern contraceptive use: rural areas.

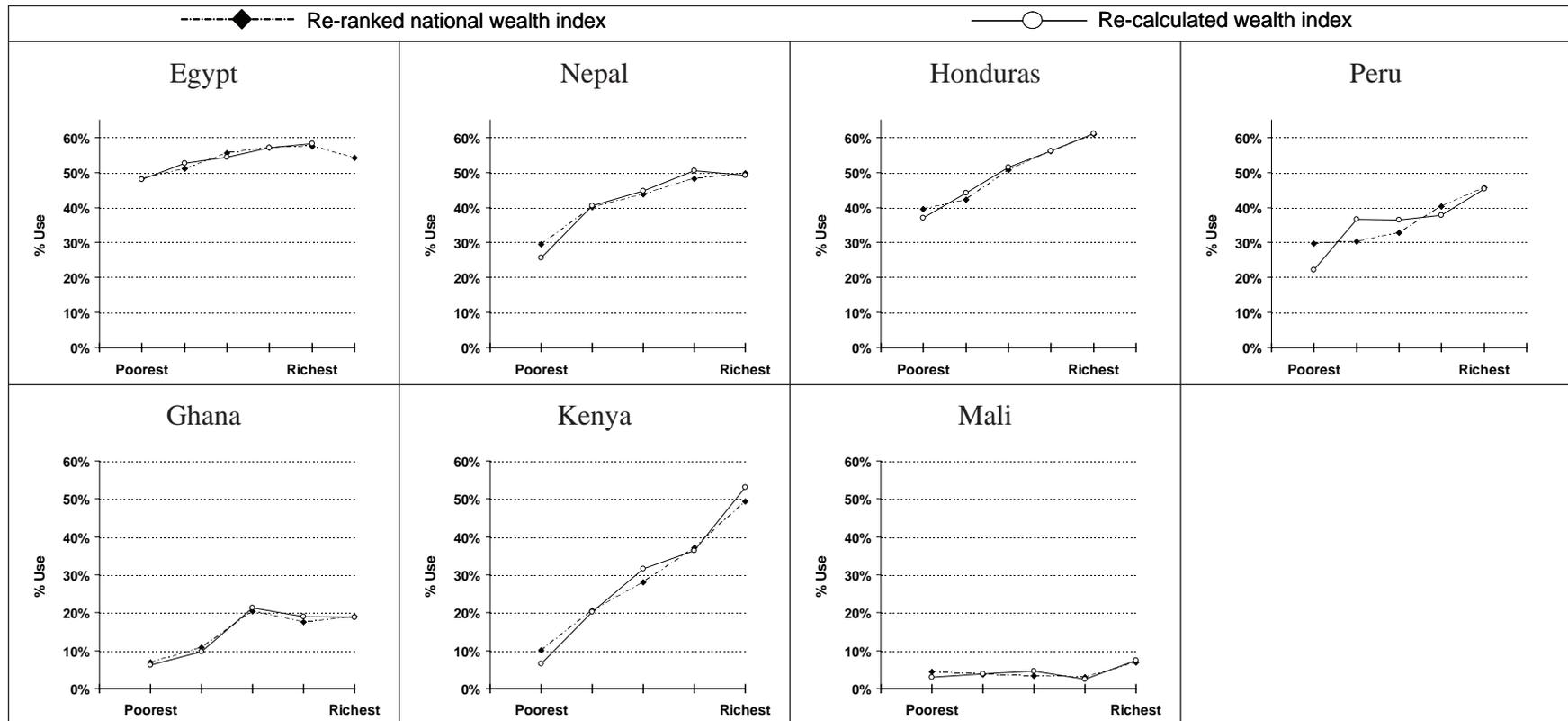


Figure A1.1. Poverty-related differentials in birth attendance in a medical facility: urban areas.

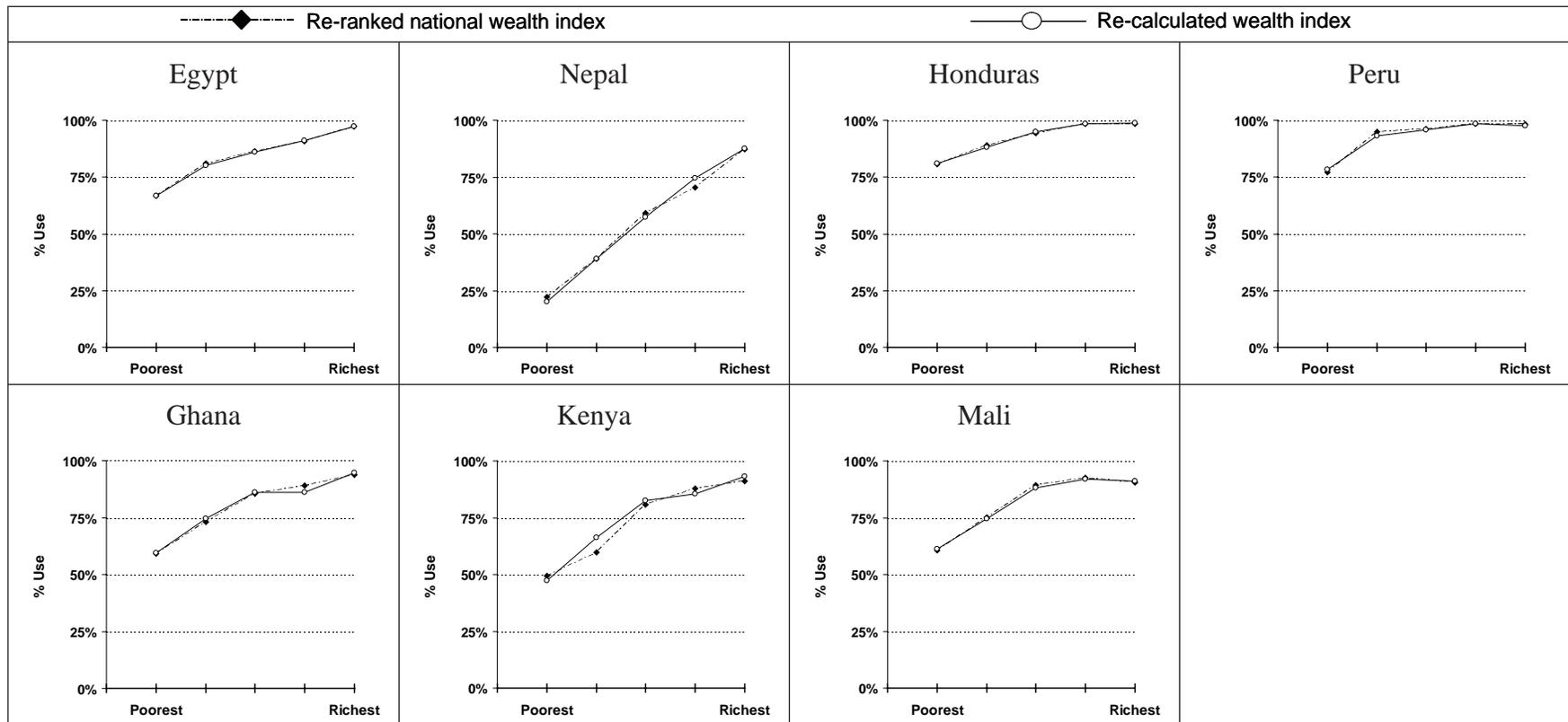


Figure A1.1. Poverty-related differentials in birth attendance in a medical facility: rural areas.

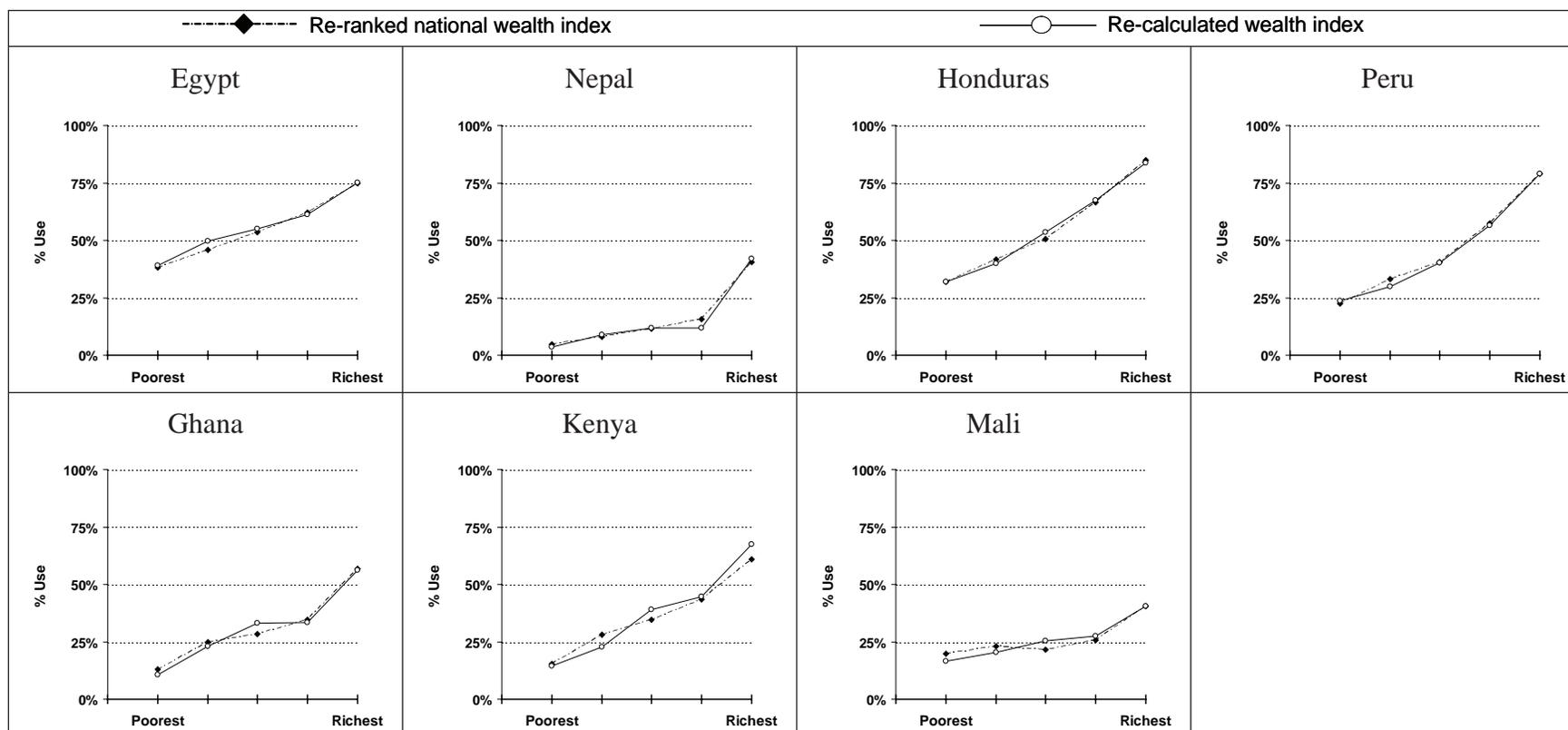


Figure A1.1. Poverty-related differentials in vaccination coverage (DPT-3): urban areas.

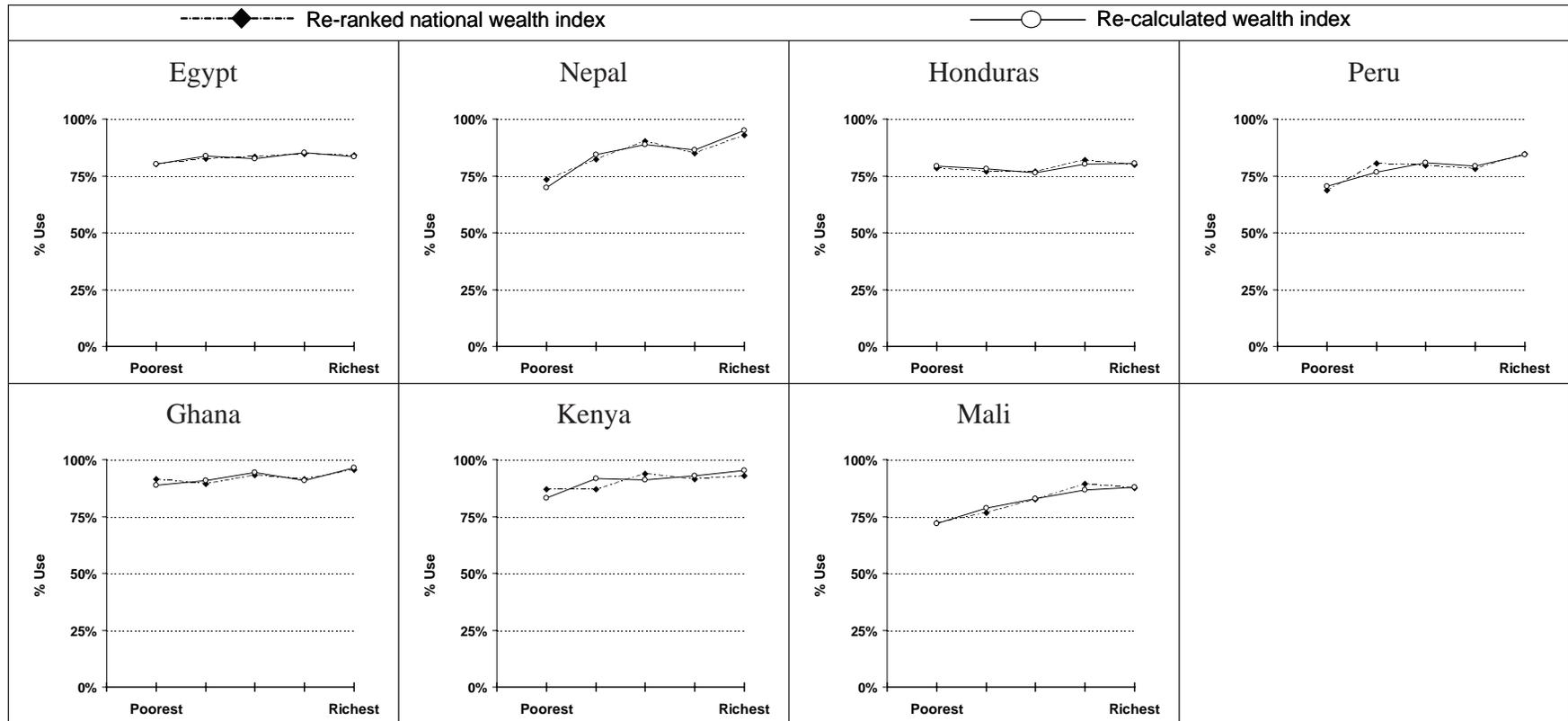
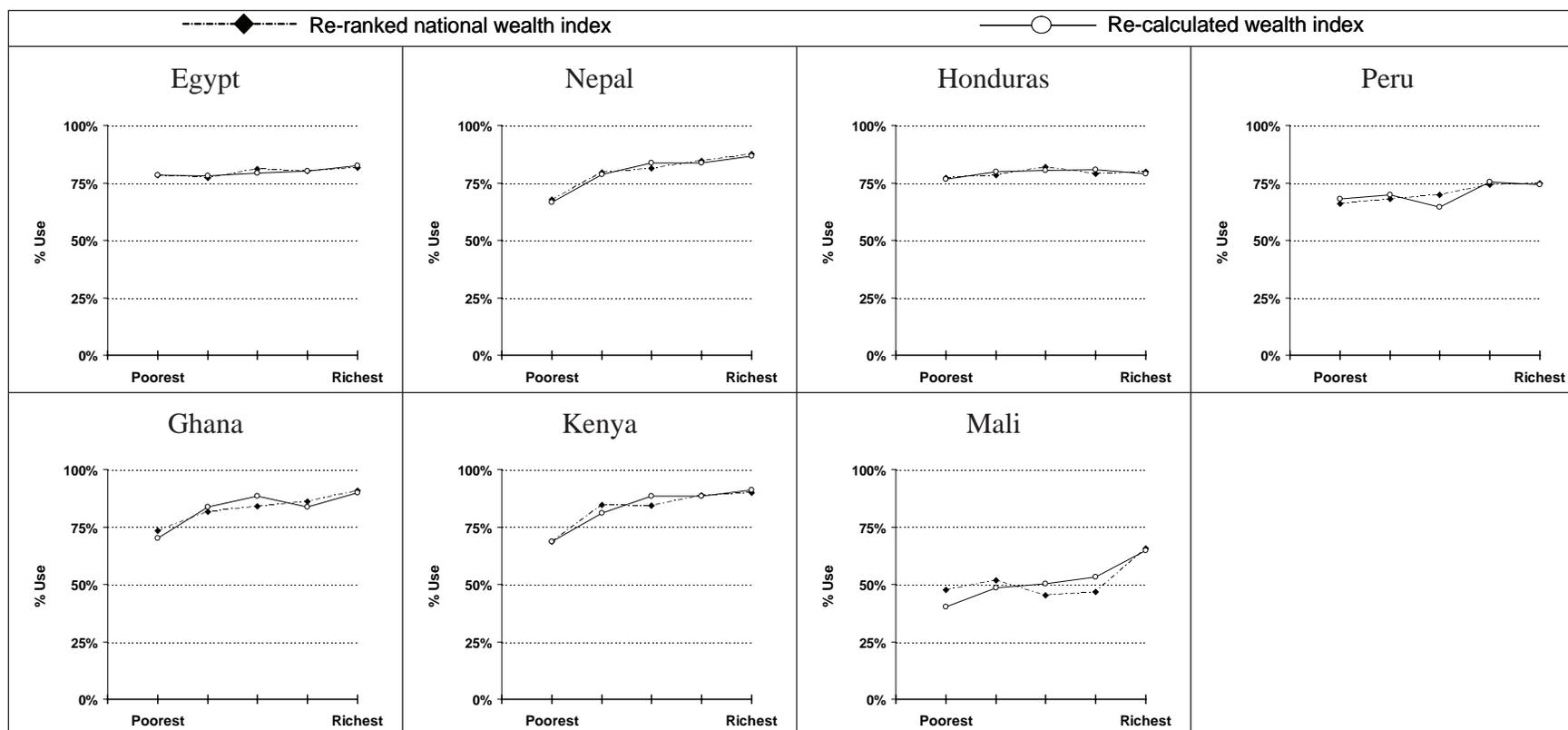


Figure A1.1. Poverty-related differentials in vaccination coverage (DPT-3): rural areas.



As can be easily seen, urban-rural and poverty-related differences are evident, but at the aggregate, the measurement method does not make an appreciable difference.^{4,5} In many cases, the two curves are virtually identical, and with the possible exception of vaccination coverage in rural Mali, changing from one measurement to the other would not change the interpretation of the results. Therefore, for the purpose of determining whether or not there are important poverty-related inequities in health outcomes overall, we do not recommend preparing separate urban and rural PCA wealth indexes unless there is some reason to believe that re-ranking the national wealth index would give erroneous results and the Mission can easily draw on outside technical expertise to perform the analyses.

⁴ Foreit K. et al. Simple improvements to urban/rural disaggregations of a popular standard of living index. Presented at International Seminar on Urbanization and Poverty in Africa: Evidence on linkages between urbanization, poverty and human well-being in Sub-Saharan Africa, Nairobi, Kenya, September 2007.

⁵ Schreiner also finds no evidence that indicators of poverty differ by place of residence. Schreiner M., 2006, Is One Simple Poverty Scorecard Enough for India? http://www.microfinance.com/English/Papers/Scoring_Poverty_India_Segments.pdf

Appendix 2. Examples of Questionnaires That Can Be Used to Monitor Program Utilization By the Poor

Monitoring attempts to determine whether program interventions are reaching the right people — specifically, the poor. The most direct way to determine the proportion of program clients who are poor is to interview them at the time they receive services. These client intercept surveys usually select household characteristics and/or assets that are known to be strongly associated with socioeconomic status and easy for the client to answer. Client responses are then scored and if the household is judged to be poor, the client is also considered to be poor.

Selecting which questions to ask and determining how to score them requires some amount of preparation. The more precise the classification is meant to be, the more preparation is needed. Most reproductive health programs will not have the resources to develop and validate a poverty measure against stringent economic indicators such as national or international income criteria. However, an increasing number of locally-tested instruments to identify poverty status have already been developed to assist microenterprise projects. Health program officers are advised to check first with their colleagues in Economic Growth and Trade (EGAT) as well as on the internet for measurement tools. Table A2.1 lists countries for which validated poverty measurement tools can be downloaded from the internet.

Table A2.1. Countries with validated poverty measurement tools (as of February 2008)

From http://www.povertytools.org/		From http://www.microfinance.com/	
Albania	Jamaica	Bangladesh	Mexico
Azerbaijan	Kazakhstan	Bolivia	Morocco
Bangladesh	Madagascar	Bosnia-Herzegovina	Pakistan
Colombia	Mexico	Haiti	Philippines
East Timor	Peru	India	
Ghana	Philippines		
Guatemala	Tajikistan		
Haiti	Uganda		
India	Vietnam		
Indonesia			

If a country program does not have access to a validated poverty measurement tool, or if the available tool(s) are inappropriate for use in a client intercept survey, it will be necessary to develop a new poverty measure or adapt one from a similar program. In these cases, the program will probably want to consult with local informants to select which items to include in the questionnaire. While the resulting tool will probably not measure poverty in precise economic terms, it may be entirely adequate to monitor how well the program or intervention is reaching relatively poorer clients. For example, an NGO in Ecuador that wanted to market its services to clients who had some disposable income used only two questions to determine that prospective clients were not among the poorest of the poor: (a) how often did the woman serve meat in the last three days, and (b) when was the last time she visited a hair salon and the price she paid.

Appendix 2 presents three questionnaires that have been used in the field to determine poverty. The first example from Kenya illustrates a *participatory approach* to assessing poverty developed by Marie Stopes International. It was used by a project distributing vouchers for reproductive health services. Each program site developed its own poverty checklist to be used by community workers to determine eligibility for a voucher. Selection of items and scores was by consensus among key informants. Interviews can be scored by hand.

The second example from Bangladesh is a *Progress out of Poverty Index* (PPI) designed by M. Schreiner for the Grameen Foundation and with the CGAP/Ford Foundation Social Indicators Project. It was derived from the Bangladesh 2000 Household Income and Expenditure Survey and used regression analysis to select 10 questions which classify clients as below or above the poverty line. The interview takes about five minutes. Questionnaires can be scored by hand or entered into a spreadsheet for analysis.

The third example from Peru is a *Poverty Assessment Tool* (PAT) available from the USAID Accelerated Microenterprise Advancement Project. Items and scoring procedures were derived by regression analysis of a national survey of household expenditures. The questionnaire comes with instructions and a template for data entry and analysis. The interview takes about 15 minutes. Automated scoring generates the percentage of interviewed clients who earn less than US\$1 per day per capita or are in the bottom half of the group below the national poverty line. Data analysis must be done by computer.

Table A2.2. Types of poverty measurement tools and their uses

Type of tool	What does it measure			Uses	
	Relative poverty	Absolute poverty	Statistical precision	Determining eligibility	Client profile
Participatory poverty measure	X		Unknown	X	X
Poverty Scorecard		X	High	X	X
Poverty Assessment Tool		X	High	Possible	X
Wealth quintiles (DHS)	X		High	Possible	Possible

Marie Stopes Kenya Poverty Grading Tool (Kisumu)¹

Indicator	Score <i>(circle appropriate score)</i>
Housing Level 1: mud or old iron sheet house Level 2: cemented mud house or iron sheet house, cemented floors Level 3: brick or stone house, cemented floors	1 2 3
Access to health services Level 1: herbalists, TBAs Level 2: public hospitals Level 3: private or NGO clinics	1 2 3
Water source Level 1: bore hole or river water for cleaning/washing and drinking Level 2: bore hold or river water for cleaning/washing, tap water for drinking Level 3: tap water for everything	1 2 3
Monthly rent Level 1: 300 KSh or less Level 2: 300 to 699 KSh Level 3: 700 KSh & over or ownership	1 2 3
Fuel for cooking Level 1: mura (saw dust) or firewood Level 2: kerosene or charcoal Level 3: electricity	1 2 3
Sanitation Level 1: flying saucer or bush Level 2: shared pit latrine Level 3: private pit latrine (not shared)	1 2 3
Daily income of interviewee Level 1: less than 100 KSh Level 2: 100-199 KSh Level 3: 200 KSh or more	1 2 3
Average number of meals per day Level 1: 1 meal or less Level 2: more than 1 meal, less than 3 meals Level 3: 3 meals or more	1 2 3
TOTAL	

Poor: 8-13 points
 Average: 14-16 points
 Better off: 17-24 points

This questionnaire was designed as an intake interview. Clients scoring in the “poor” and “average” ranges were eligible for fee waivers. It could also be used as an exit interview to provide a client poverty profile in terms of proportions classified as poor, average, and better off. The choice of items and scoring categories varied from location to location.

¹ See also <http://www.mariestopes.org/documents/Developing%20a%20participatory%20poverty%20grading%20tool%20-%20viewpoint.pdf>

Bangladesh poverty scorecard (http://www.microfinance.com/English/Papers/Scoring_Poverty_Bangladesh.pdf)

Indicator	Attributes					Points	
1. What type of latrine does the household use?			Open field	Kacha (temporary or permanent) or pit	Pacca	Sanitary or water-seal Pacca	
			0	7	12		
2. How many household members are 11 years old or younger?	4 or more	3	2	1	0		
	0	7	12	17	26		
3. Does any household member work for a daily wage?				Yes	No		
				0	7		
4. How many rooms does the house have (excluding ones used for business)?			1	2 or 3	4 or more		
			0	3	9		
5. Do all children ages 6 to 17 attend school?			No	No children ages 6 to 17	Yes		
			0	4	6		
6. Does the household own a television set?				No	Yes		
				0	11		
7. How many hectares of cultivable land does the household own?	Less than 0.34	0.34 to 0.99	1 to 1.99	2 or more			
	0	3	4	9			
8. What is the main construction material of the walls of the house?	Hemp/hay/bamboo or mud brick		C.I. sheet/ wood	Brick/cement			
	0		5	7			
9. Does the household own drawing room furniture?			No	Yes			
			0	9			
10. Does the house have a separate kitchen?			No	Yes			
			0	4			
Total:							

The Poverty Scorecard is calibrated from 0 to 100, and the percentage of people likely to be poor, i.e. below the international poverty line of \$1/day, is calculated for each 5-point range (0-4, 5-9, etc.), as shown for Bangladesh in the table below.

Score	Poverty likelihood for people with score in range (%)
0-4	93.0
5-9	94.6
10-14	94.6
15-19	89.8
20-24	76.0
25-29	76.7
30-34	59.4
35-39	51.4
40-44	38.3
45-49	26.2
50-54	14.3
55-59	5.7
60-64	5.1
65-69	6.7
70-74	1.9
75-79	3.7
80-84	0.3
85-89	0.0
90-94	0.0
95-100	0.0

The scorecard was originally developed as a quantitative tool for three purposes: (1) to measure poverty rates among program clients at a point in time, (2) to measure change in poverty rates among program clients over time, (3) to target program benefits to appropriate clients. The scorecard can also be used to calculate the poverty profile of program clients by multiplying the percentage of clients in each scoring range by the associated poverty likelihood for that range and taking the sum of the resulting percentages.²

² See also <http://www.microfinance.com/>

Client Assessment Survey – Peru (http://www.povertytools.org/USAID_Tools/Tools/Current_Tools/USAID_PAT_Peru_7-2007.xls)

Interviewer: Fill out the information below before the survey begins. Do not ask the respondent for this information.

Date of Interview

Interviewer (code)

Branch (code)

Location/Region

1=Lima Metropolitan; 2=Urban Coast; 3=Rural Coast; 4=Urban Highlands; 5=Rural Highlands; 6=Urban Lowlands; 7=Rural Lowlands

Client Location: Urban=0; Rural=1

Time in Program: Months

Client or ID #

<i>Field Supervisor</i>	
Date _____	Initials _____
<i>Data Processing Coordinator</i>	
Date _____	Initials _____
<i>Data Processor</i>	
Date _____	Initials _____

Interviewer: Introduce the survey to the respondent. Say: “Hello. My name is _____. I work for the organization _____. We are trying to learn a little bit more about the clients we work with, and so I have a few questions I would like to ask today. It should only take us about 20 minutes, and the answers you provide will be put together with answers from other households. All of your answers are completely confidential and your name will not be given with your answers. Are you willing to take some time to answer these questions today?” After he/she agrees, proceed with the dialogue below.

Interviewer: “I would like to ask you some questions about the people in your household. Let me tell you a little bit about what we mean by ‘household.’ For our purposes today, members of a household are those that live together and eat from the “same pot.” Each person contributes to and benefits from the household. It should include anyone who has lived in your house for 6 of the last 12 months, but it does not include anyone who lives here but eats separately. Do you have any questions about that?” Answer any questions the respondent has before proceeding.

Interviewer: Ask the respondent for the information in Columns A-E, as it pertains to each person in his/her household. Write the information down in the chart as he/she relays it to you. Say to the respondent: “Now I would like you to identify each person in your household and answer some basic questions about each person.”

1.	A. Household Member	B. Sex	C. Relation to household head	D. Age	E. Education (highest class passed)
		0= Female; 1=Male	1=Head; 2=Spouse; 3=Child; 4=Parent; 5=Grandchild; 6=Grandparent; 7=Other	(complete years)	Enter the following codes: Never attended or pre-school only=0; Primary attended=1; Primary completed=2; Secondary attended=3; Secondary completed=4; Superior no universitario (attended or completed)=5;
	1) Respondent				
	2)				
	3)				
	4)				
	5)				
	6)				
	7)				
	8)				
	9)				
	10)				

11)					
12)					
13)					
14)					
15)					

Interviewer: Skip the following section and return to fill in the answers after the interview. Do not ask the respondent these questions; fill in the answers from the information in the table above.

2. Number of people living in household (record total number of names from Column A above):
3. Age of Household Head (record age of person from Column D, who is household head in Column C):
4. Number of other household members (not including head) who have no education (number of persons with education code of 0 in Column E above):

Interviewer: "Now I would like to ask you a few questions about your house and some items you may own."

5. How many rooms are there in the house where you and your family live? Number
(Interviewer: Include detached rooms in same compound if same household. Exclude bathrooms, toilets, kitchen, and basement)
6. Do you have a telephone inside your house? (fixed landline, excluding community telephones)
 0=no,
 1=yes

Interviewer: For questions with multiple choice answers, do not read the answers. Ask respondent the question and match the answer to the option on the survey most similar. If respondent's answer is unclear, probe until you find an adequate answer.

7. What type of roofing material is used in your house?
 1. Leaves 3. Straw 5. Tiles 7. Brick/cement
 2. Jute stick 4. Bamboo/wood 6. CI sheet (corrugated tin)
8. What type of exterior walls does your house have?
 0. No walls (jungle) 2. Wood 4. Sticks with dirt 6. Bricks
 1. Woven jute stick 3. Adobe (lime bricks) 5. Stones with dirt
9. What is your primary source of drinking water?
 1. Dam, pond or river 5. Public well
 2. Rainwater collected at/near house 6. Untreated piped (river) water
 3. Water is trucked in 7. Treated piped water in residence yard (shared)
 4. Public borehole (open), Spring 8. Treated piped water in residence (own)
10. What kind of lock does the main entrance door of the house have?
 1. No lock 3. Key lock or simple padlock
 2. Wood or metal bar to close from inside only 4. Security key lock/metal frame with padlock
11. How many cars does your household currently own? Number
12. How many color TVs does your household currently own? Number
13. What is the total number of metal pots owned by your household? Number

Interviewer: The following two questions ask for both the number of an item owned and the total value. Put the number in the corresponding blank and the soles value in the corresponding box. If a respondent does not own an item, mark "0" in the soles value box.

14. How many tractors and trucks does your household own? _____
 What is their total resale value at the current market price? Soles

15. How many electric food processors does your household own? _____
 What is their total resale value at the current market price? Soles

Interviewer: Please make sure that the setting of the interview ensures confidentiality before beginning this section. Say: "I know that the following questions are sensitive. I assure you that the answers will not be shared with anyone else."

16. During the last 3 months, have you or anyone in your household received in-kind services from food aid programs (e.g., Vaso de leche, comedores, Desayuno Escolar, etc.)? _____

0=no,
1=yes

17. How many members of your household belong to a water/waste group? Number
 (water and wastewater groups, such as Junta de Administración de Agua y Saneamiento)

18. Do you, your spouse or anyone else in your household have a withdrawable savings account, checking account, a fixed-term deposit account, or any other type of savings account? _____

(If yes, then enter a "0" for the next question [#19] and end the interview)

0=no,
1=yes

19. Why do neither you nor anyone else in your family have a savings or checking account?

- | | | |
|------------------------------------|---|--|
| 0. Have an account | 3. Institutions are not safe | 6. There are no institutions available |
| 1. Too little income (cannot save) | 4. Interest rates are too low | |
| 2. No habit of savings | 5. Do not know where or how to get an account | |

Interviewer: Look over the survey to see if you have missed any questions. If you have, please ask those questions of the respondent. If not, it is the end of the interview. Remember to thank the respondent for his/her time in helping you answer these questions!

Now return to the questions in the box below the roster and fill in the answers.

The Web site³ provides the survey tool and the data entry template for Epi-Info. Data analysis is conducted automatically within Epi-Info and reports the percentage of surveyed clients meeting the extreme poverty criteria.

³ See <http://www.povertytools.org/>

MEASURE Evaluation
Carolina Population Center
University of North Carolina at Chapel Hill
206 West Franklin Street
Chapel Hill, NC 27516-3997
Phone: 919/966-7482
Fax: 919/966-2391
<http://www.cpc.unc.edu/measure>

Collaborating institutions:

- ✦ *Macro International Inc.*
- ✦ *John Snow, Inc.*
- ✦ *Tulane University*
- ✦ *Constella Futures*

