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Myriad of Health Care Financing Reforms in Zambia: Have the Poor Benefited?

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Abstract—Zambia has implemented a number of financing and organizational reforms since the 1990s aimed at increasing efficiency, enhancing equity, and improving health outcomes. This study reviews the distributional impact of these health reforms on enhancing equity at the regional level and for different socioeconomic groups. Data from three nationally representative household surveys were collected, and a benefit incidence analysis was conducted to determine the distributional impact over the period 2010–2015. The results show that distribution of subsidies and utilization of outpatient services at public health facilities in Zambia has consistently been in favor of urban provinces. Further, distribution of health subsidies across the ten provinces in Zambia does not correspond to reported illnesses in each province. The study also shows that utilization of outpatient services at public (hospitals and health centers) and private health facilities is generally in favor of the rich, and utilization of both inpatient and outpatient services at public and private health facilities benefits the rich more than the poor. And although the results show a pro-poor redistribution of benefits across income groups in 2015 compared to 2010 whereby the poorest two income groups received more than a 20% share of benefits in each quintile, the benefits were still lower than their health needs. This is contrary to the richest two income groups whose share of benefits was higher than their health needs in both 2010 and 2015. The study concludes that Zambia has not yet fully attained its long-term health reform vision of “equity of access to quality health care” despite years of successive health reforms. The study calls for the Zambian government to complement strategies on financial risk protection with deliberate supply- and demand-side actions in order to enhance equity. Improvements in long- and short-term planning and regular monitoring and evaluation are critical.
INTRODUCTION

Globally, countries pursue socioeconomic objectives aimed at fostering human capital development as a key instrument for sustained growth and development.\(^1\) To achieve this level of development, risk factors for poverty and deprivation particularly in the health, education, and water and sanitation sectors have to be eliminated. In the health sector, this is particularly important because health expenditure is prone to be catastrophic,\(^2,3\) and some studies show that the health sector is one of the major contributors to inequalities between the poor and wealthy.\(^4\) Therefore, assessing fairness in financing of health care, resource allocation, and impact of public policies on the poor is critical to monitoring and evaluating the attainment of health systems goals of (1) improved health status, (2) financial risk protection, (3) responsiveness to needs, and (4) client satisfaction. Since the 1990s, the government in Zambia has been implementing a number of financing and organizational reforms aimed at achieving these goals.\(^5,6\)

A summary of the key health reforms that have been implemented in Zambia between 1992 and 2017 is provided in Table 1. Though the form and depth of these reforms have been varying, the initial health reform vision of “equity of access to cost-effective quality health care as close to the family as possible (p. 2)” has remained the same.\(^9\) From Zambia’s health reform vision, intermediate health systems development objectives such as equity, efficiency, access, quality, safety, and coverage are prioritized.

One of the key health reforms that was implemented in the health sector in Zambia is the decentralization of health service provision in 1992–1993\(^10\) and establishment of an autonomous Central Board of Health (CBoH) in 1996 that took over the operational functions of the Ministry of Health (MoH).\(^6,10\) The functions of the MoH were restricted to policy development, norm setting, and regulation.\(^11\) As an implementing agency, the CBoH contracted hospital and district health boards at provincial and district levels to deliver health services through a

<table>
<thead>
<tr>
<th>Period</th>
<th>Organization</th>
<th>Finance</th>
<th>Financing Modality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992–1993</td>
<td>Devolution of health services</td>
<td>Pooling of government and donor funds for districtsMedical user fees introduced with exemptions for the poor</td>
<td>Country-wide</td>
</tr>
<tr>
<td></td>
<td>Sector-wide approach programming</td>
<td>Basic health care package Population-based resource allocation formula</td>
<td>performance-based contracting</td>
</tr>
<tr>
<td></td>
<td>CBoH created as an autonomous institution responsible for purchasing health services</td>
<td>Needs-based resource allocation formula</td>
<td>Performance-based contracting discontinued</td>
</tr>
<tr>
<td></td>
<td>Functions of Medical Stores Limited restricted to storage and distribution</td>
<td>Introduction of medical levy</td>
<td>Performance-based contracting discontinued</td>
</tr>
<tr>
<td>1998–1999</td>
<td>Functions of CBoH and MoH streamlined</td>
<td>Medical levy abolished</td>
<td>Performance-based contracting discontinued</td>
</tr>
<tr>
<td></td>
<td>Medical Stores Limited contracted out under a lease agreement</td>
<td>Medical user fees removed at the entire primary health care level</td>
<td>Performance-based contracting discontinued</td>
</tr>
<tr>
<td>2003–2004</td>
<td>Medical Stores Limited contracted out under a management contract</td>
<td>Medium-term expenditure framework</td>
<td>Performance-based contracting discontinued</td>
</tr>
<tr>
<td></td>
<td>Reorganization of sector-wide approach programming</td>
<td>Pooled funding extended to all levels</td>
<td>Performance-based contracting discontinued</td>
</tr>
<tr>
<td></td>
<td>Coordination mechanisms</td>
<td>Needs-based resource allocation formula</td>
<td>Performance-based contracting discontinued</td>
</tr>
<tr>
<td>2006–2007</td>
<td>Dissolution of CBoH</td>
<td>Introduction of medical levy</td>
<td>Performance-based contracting discontinued</td>
</tr>
<tr>
<td></td>
<td>MoH assumes role of provider, purchaser, and regulator</td>
<td>Medical user fees removed in all rural areas (2006) and peri-urban areas (2007)</td>
<td>Performance-based contracting discontinued</td>
</tr>
<tr>
<td>2011–2013</td>
<td>Transfer of the primary health care function from the MoH to the Ministry of Community Development</td>
<td>Medical user fees removed at the entire primary health care level</td>
<td>Performance-based contracting discontinued</td>
</tr>
</tbody>
</table>

Data sources.\(^5,7,8\)

**Table 1.** Key Health Reform Areas and Elements, Zambia: 1992–2017
nationwide performance-based contracting (PBC) arrangement that covered the entire public health system. Under this system, the CBoH used to make direct budget transfers to districts after satisfactory approval of quarterly performance audits and financial reports by a district basket steering committee that used to manage pooled government and donor funds. The rationale for implementing PBC was to enhance value for money and results focus given that Zambia was receiving a lot of donor support during the 1990s and early 2000s. PBC was abandoned in 2006 but reintroduced as results-based financing (RBF) in 11 districts between 2011 and 2014 and in 53 districts in 2018 with support from the World Bank.

The other major health financing reform that has been implemented in Zambia was the introduction of user fees in 1992 and abolition of user fees in rural areas, peri-urban areas, and all primary health care facilities in 2006, 2007, and 2012, respectively. Further, a needs-based resource allocation formula for allocating operational grants from the MoH headquarters to the districts has been in implementation since 2004. The process of developing a needs-based resource allocation formula has evolved since the 1990s. Before the health reforms of 1992, allocation of resources in the health sector in Zambia was based on historically adjusted budgets. In 1994, the MoH implemented a formula for allocating financial resources to districts based on district population size and density and hospital beds at different levels of care. This formula was later revised to include other factors such as the presence of a commercial bank and a second- or third-level hospital in the district, price of fuel, and proneness of a district to diseases such as cholera or dysentery. However, this formula did not comprehensively incorporate measures of “health need.” The latter was achieved in 2004 when a material deprivation index incorporating demographic, health, poverty, and other socioeconomic measures of deprivation or need was developed and integrated into the formula. The 2004 formula was revised in 2009 to make it more equity focused.

In addition to the health sector, the Zambian government has been implementing a number of fiscal policies and instruments aimed at targeting public spending to poor and vulnerable households to achieve a broader distribution of the benefits of economic growth. This is against the backdrop of strong economic growth between 2004 and 2014 that has not been commensurate with reduced poverty and inequality, particularly in rural areas. Social spending in Zambia includes public spending on health and education, social cash transfers, and subsidies for farming inputs, fuel, and electricity.

Though Zambia has implemented several health reforms and has a fiscal redistributive system including social expenditures and taxes, the impact of these reforms and policies on poverty reduction and shared prosperity have not been adequately evaluated, especially in the health sector. One of the analytical techniques that can be used to assess how public health spending is allocated and utilized across socioeconomic groups is benefit incidence analysis (BIA). In other words, BIA tracks the distribution of public resources across different socioeconomic groups and the extent to which different groups are utilizing or benefiting from public services. BIA is important for developing a pattern for total health expenditure among different providers in both the public and private sectors. Despite its importance in establishing the impact of fiscal policies on addressing inequities, most developing countries do not conduct BIA studies. This makes it difficult to establish a benchmark benefit incidence pattern, which is important for assessing past policies and designing and implementing remedial strategies if the intended goals are not met. In a few developing countries where BIA studies have been conducted, they are often limited in scope. For instance, a study by de la Fuente and others uses the commitment to equity methodology to evaluate the fiscal system in Zambia but does not compare the health benefits received with need for health care. Secondly, dominance tests were not conducted, and this makes it difficult to understand whether the distribution of the concentration curve is entirely pro-rich or pro-poor. In addition, the study uses a single year to evaluate the impact of fiscal policies and does not examine changes overtime. The other study that has examined beneficiary incidence of health care utilization in Zambia presents the situation for 2003 and 2007, and a trend analysis was not conducted.

This study assesses the distributional impact of the health reforms in Zambia on public spending on health care and equity across regions and income groups by using various nationally representative household surveys. By using multiple surveys, the study evaluates changes in the distributional impact of the health reforms over a period of time. The study hypothesizes that the various health reforms that have been implemented in Zambia have benefited the poor more than the non-poor. The study does not look at each individual health reform but examines changes in benefit incidence across different income groups over time. The ultimate objective of the package of health reforms in Zambia has been to improve financial risk protection and equity of access to health care, particularly for the poor, as outlined in the health vision. In this regard, the series of health reforms was planned to be integrated and progressive to
ensure a continuous process toward the desired effect. However, considering that enhancing financial protection and equity in access to health care services requires radical changes in health care financing, the Discussion section provides more details on the abolition of user fees and introduction of a needs-based resource allocation formula for district-level services.

**MATERIALS AND METHODS**

This study uses a repeated cross-sectional survey design and applies the traditional BIA methodology\textsuperscript{21,22} to assess the distribution of public subsidies and service benefits (utilization of health services). Listed below are the key steps and activities that were undertaken:

1. Using household expenditure as a measure of socioeconomic status, quintiles were constructed and used to rank the population by wealth.
2. Data on the utilization of health services were disaggregated by provider, level of health care, outpatient/inpatient, and socioeconomic status.
3. Unit costs for outpatient and inpatient services were calculated by using expenditure data, population, and utilization rates.
4. “Benefits” were calculated by expressing utilization of health services in monetary terms by multiplying utilization rates by unit costs for each socioeconomic group. The benefits were then aggregated across different types of health services for each socioeconomic group.
5. Comparing the distribution of health expenditures (subsidies) and benefits by province, providers, type of health services and for the different socioeconomic groups in order to determine differences in benefit incidence and with respect to need.

This study uses constant unit subsidies\textsuperscript{21} and adapts the generic formula below.\textsuperscript{19,22,23}

\[
X_j = \sum_{i=1}^{n} H_{ij} \frac{S_i}{H_i} = \sum_{i=1}^{n} \frac{H_{ij}}{H_i} S_i \tag{1}
\]

where \(X_j\) is the value of total health subsidy imputed to socioeconomic group \(j\); \(H_{ij}\) is number of health visits of group \(j\) to health facilities at level \(i\) (with \(i = \) health facility type); \(H_i\) is the total number of visits by different levels of health care by different income groups; and \(S_i\) is government recurrent net spending (less all private payments).

\[
\frac{S_i}{H_i} = \text{unit subsidy of funding health subsidy at level } i.
\]

The share of total health subsidy \((S)\) accruing to the groups is given by the formula below:

\[
x_j = \frac{\sum_{i=1}^{n} H_{ij} \left( \frac{S_i}{S} \right)}{\sum_{i=1}^{n} h_{ij} S_i} \tag{2}
\]

From this equation, the share of total health subsidy to each group is determined by two factors: (1) share of the group within the context of the total health visits at each level of care \((h_{ij})\) and (2) the share for each level of care in total health subsidy \((x_j)\).

From the first equation, the provincial or regional analysis is derived as follows:

\[
x_j = \sum_{k=1}^{n} \sum_{i=1}^{N} E_{ijk} \frac{S_k}{S} = \sum_{k=1}^{n} \sum_{i=1}^{N} \epsilon_{ijk} S_k,
\]

in which \(k\) refers to the region specified in the unit subsidy, and \(n\) depicts the number of provinces (regions) under consideration, which in this case is ten. An assumption made in the literature is that the unit subsidy \(S_{ij}\) is constant across all units of type \(i\).

**Data**

The primary data sets (sources) used to perform the BIA were the 2010 and 2015 Living Conditions and Monitoring Surveys (LCMS) and the 2014 Zambia Household Health Expenditure and Utilization Survey (ZHHEUS). The LCMS is a repeated nationally representative cross-sectional household survey that uses a two-stage stratified cluster sampling method to generate household and individual-level information.\textsuperscript{26,27} The LCMS is designed to provide data on living conditions and welfare (including poverty estimates) over time, and each survey includes modules on health, education, agriculture, household consumption and expenditure, economic and labor market activity, and so forth. The 2010 LCMS was administered to about 20,000 households and the 2015 LCMS was administered to approximately 12,260 households. Considering that the health modules in the LCMS are too general and do not contain adequate data on health choices and spending, Zambia conducted a nationally representative health sector–specific household survey in 2014 that generated comprehensive data on health expenditure and utilization. This study (the ZHHEUS) used a two-stage stratified sampling approach...
(similar to the LCMS) and gathered individual- and household-level information from 11,927 households. Because the 2010 and 2015 LCMS only reported outpatient visits, the ZHHEUS was used to examine beneficiary incidence for both inpatient and outpatient visits.

The three primary data sets were complemented by data from national health accounts and the Health Management Information System from which expenditure and utilization data were obtained. For example, data on utilization of health services were derived from the Health Management Information System and weighted by the number of users captured in the 2010 and 2015 LCMS and the 2014 ZHHEUS data sets. Population figures were obtained from the national census report for Zambia for 2010.

Computing Unit Subsidies and Need
Unit subsidies were estimated from actual government recurrent expenditure data as reported in the 2010, 2014, and 2015 national health accounts surveys that have been conducted in country by the Ministry of Health. To analyze benefit incidence by different socioeconomic groups, households were classified by quintile based on household expenditure levels. Expenditure was selected over income due to the reported unreliability associated with income measures in household surveys. The relative share of benefits received by each socioeconomic group was then calculated by using the convenient regression approach from which concentration indices were generated to describe the distribution of benefits. In addition, the multiple comparison approach was used to determine the dominant concentration curve and level of statistical significance. In this case, a positive concentration index would signify a pro-rich distribution of health care and a negative concentration index suggests a pro-poor distribution of health care. Lastly, comparison of benefits to “need” for health care has been recommended for BIA studies by McIntyre and Ataguba, who base their argument on the standard definition of health equity, which requires access to health services to be aligned to health needs. Health need is defined as a desire for health services by an individual that he or she is prepared to acknowledge. This definition of need assumes two conditions that are necessary for need to exist: (1) health services desired are necessary to attain an individual’s goal for better health and (2) the goal is sufficiently meritorious. Therefore, to estimate need, this study uses self-rated illness conditions from the 2010 and 2015 LCMS and the 2014 ZHHEUS.

RESULTS
Distribution of Health Subsidies and Outpatient Visits at Public Health Facilities by Province
Figure 1 (panel A) shows that four provinces (Luapula, Southern, Copperbelt, and Eastern) recorded a reduction in their share of total health subsidies in 2015 in comparison to 2010. The largest reduction in the share of health subsidies was in Copperbelt and Southern provinces at 7% and 5%, respectively. Eastern province received the highest share of total health subsidies from the government in 2010 and 2015 despite a two percentage point reduction between 2010 and 2015. This is followed by Lusaka and Copperbelt provinces, which ranked second and third overall, respectively. Outpatient visits at public health facilities also show a reduction in four provinces (Southern, Luapula, Copperbelt, and Eastern) in 2015 compared to 2010 (Figure 1, panel B). These four provinces had ranked highest in outpatient visits in 2010. The largest reduction in outpatient visits was observed in Eastern and Copperbelt provinces and the highest
gain of 3% was recorded in Lusaka and Central provinces. Eastern province ranked first in the overall share of outpatient visits for 2010 and 2015 and Lusaka and Southern provinces ranked second and third, respectively.

**Distribution of Total Subsidies in Comparison to Reported Illnesses at the Provincial Level**

To assess whether health subsidies are distributed in line with reported illnesses for health care at the provincial level in Zambia, the share of health subsidies for each province was compared with the share of the population reporting illnesses for each province. Data for this exercise were drawn from the 2014 ZHHEUS. The results show that distribution of health subsidies at the provincial level is not in line with reported illnesses in each province (Figure 2). Specifically, Eastern, Lusaka, and Copperbelt provinces received a greater share of the subsidies even though the percentage shares of the population reporting illnesses were significantly lower. All of the other seven provinces, which are predominantly rural, received a lower share of health subsidies despite having a larger share of the population reporting illnesses.

**Distribution of Outpatient and Inpatient Health Care Benefits by Income Groups**

Table 2 shows dominance test results for utilization of health services (or distribution of health benefits) across the various health providers and facilities. In 2010, mission health facilities were pro-poor with a concentration index of 0.114 (p < 0.05) and public hospitals and private health facilities were pro-rich with concentration indices of 0.058 (p < 0.01) and 0.324 (p < 0.05), respectively. In 2015, results from both the LCMS and ZHHEUS show that the distribution of benefits was pro-rich at public hospitals and private health facilities. For mission health facilities, the 2015 LCMS shows a pro-rich distribution of benefits with a concentration index of 0.093 (p < 0.1) and results from the ZHHEUS are statistically insignificant. However, at a 10% level of significance, results from the LCMS are barely statistically significant. On the other hand, the overall distribution of benefits at all public health facilities (hospitals and health centers) was even in 2010 with a concentration index of 0.014 (p < 0.01) but became pro-rich in 2014 with a concentration index of 0.046 (p < 0.05).

Using results from the 2014 ZHHEUS, health facilities are further broken down by provider and facility type and by outpatient and inpatient care. The benefit incidence test results are shown in Table 3. The results show that the distribution of benefits at all public health facilities (all types of hospitals and health centers) is generally pro-rich for both inpatient and outpatient services except for district hospitals and health centers, which are pro-poor for inpatient services with concentration indices of 0.09 (p < 0.1) and 0.179 (p < 0.01), respectively. Furthermore, though the results for beneficiary incidence for outpatient services at mission health facilities are statistically insignificant, results for inpatient services are pro-poor with a concentration index of 0.158 (p < 0.1). In addition, the distribution of benefits for both outpatient and inpatient services at private health facilities is pro-rich.

**FIGURE 2.** Distribution of Total Subsidies in Comparison to Reported Illnesses by Province
To further assess the distribution of health care benefits, we compared the need for health care with the benefits received by wealth quintile (Figure 3). Overall, there has been an improvement in the cumulative proportion of the population receiving benefits relative to their need (Figure 3). The lowest or poorest 60% of the population received a lower share of benefits relative to their share of need in 2010, but the situation improved in 2015 with only the poorest 40% of the population receiving a lower share of benefits relative to their share of need (Figure 3). Furthermore, the poorest 20% of the population received a much higher percentage share of benefits in 2015 (22.7%) compared to 2010 when they received 17% of the benefits. On the other hand, the richest 20% of the population received a much lower percentage share of benefits in 2015 (17.5%) compared to 2010 when they received 18% of the benefits. This suggests that inequities have reduced between 2010 and 2015. Even though there has a pro-poor redistribution of benefits in 2015 whereby the bottom 20% and 40% of the population received more than a 20% share of benefits in each quintile, the distribution of benefits is still inappropriate because the lowest two income groups have higher health needs. For instance, the poorest 20% of the population only received 17% of the benefits in 2010 despite having a 18.7% share of health need. In 2015, the percentage share of benefits for the poorest 20% of the population increased but the benefits (22.7%) were still less than the health need (23.6%). In addition, for the richest 20% of the population, the share of benefits received was relatively higher than their health needs in both 2010 and 2015.

**TABLE 2.** Benefit Incidence Test Results—Outpatient Services

<table>
<thead>
<tr>
<th>Provider/Facility Type</th>
<th>CI</th>
<th>SE</th>
<th>DT</th>
<th>CI</th>
<th>SE</th>
<th>DT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tertiary (level three) hospitals</td>
<td>0.523***</td>
<td>0.065</td>
<td></td>
<td>0.528***</td>
<td>0.044</td>
<td></td>
</tr>
<tr>
<td>General (level two) hospitals</td>
<td>0.385***</td>
<td>0.032</td>
<td></td>
<td>0.222***</td>
<td>0.033</td>
<td></td>
</tr>
<tr>
<td>District (level one) hospitals</td>
<td>0.091**</td>
<td>0.037</td>
<td></td>
<td>0.090*</td>
<td>0.052</td>
<td>+</td>
</tr>
<tr>
<td>Health centers</td>
<td>0.013</td>
<td>0.018</td>
<td>n-Dom</td>
<td>0.179***</td>
<td>0.022</td>
<td>+</td>
</tr>
<tr>
<td>All hospitals (levels one, two, and three)</td>
<td>0.214***</td>
<td>0.024</td>
<td></td>
<td>0.243***</td>
<td>0.015</td>
<td></td>
</tr>
<tr>
<td>All health facilities (hospitals and health centers)</td>
<td>0.046**</td>
<td>0.018</td>
<td></td>
<td>0.160***</td>
<td>0.017</td>
<td></td>
</tr>
<tr>
<td>All health facilities (inpatient and outpatient)</td>
<td>0.059***</td>
<td>0.018</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mission health facilities</td>
<td>0.106</td>
<td>0.068</td>
<td>+</td>
<td>0.158*</td>
<td>0.091</td>
<td>+</td>
</tr>
<tr>
<td>Private health facilities</td>
<td>0.686***</td>
<td>0.027</td>
<td></td>
<td>0.804***</td>
<td>0.071</td>
<td></td>
</tr>
</tbody>
</table>

CI = Concentration Index; DT = dominance test; n-Dom = nondominance; − the 45 degree line dominates (pro-rich); + = the concentration curve dominates (pro-poor). 
* p < 0.1. ** p < 0.05. *** p < 0.01.

**TABLE 3.** Benefit Incidence Test Results—Outpatient and Inpatient Services, 2014

<table>
<thead>
<tr>
<th>Provider/Facility Type</th>
<th>Outpatient</th>
<th>Inpatient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>CI</td>
<td>SE</td>
</tr>
<tr>
<td>Tertiary (level three) hospitals</td>
<td>0.523***</td>
<td>0.065</td>
</tr>
<tr>
<td>General (level two) hospitals</td>
<td>0.385***</td>
<td>0.032</td>
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<tr>
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<td>0.091**</td>
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<tr>
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<td>Mission health facilities</td>
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<tr>
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CI = Concentration Index; DT = dominance test; n-Dom = nondominance; − the 45 degree line dominates (pro-rich); + = the concentration curve dominates (pro-poor). 
* p < 0.1. ** p < 0.05. *** p < 0.01.
DISCUSSION

The aim of this study was to assess equity in the distribution of public subsidies and health benefits across the ten provinces (regions) and income groups. The study also establishes a baseline of results that can be used to benchmark the impact of future policy interventions. In particular, the results show a redistribution of public health subsidies and utilization of outpatient services across the ten provinces of Zambia between 2010 and 2015. Despite the gains and losses across the country, Southern, Copperbelt, Lusaka, and Eastern provinces remained the top four ranked provinces with regards to receipt of health subsidies and utilization of public health services. Furthermore, the results show that the distribution of subsidies and utilization of outpatient services at public health facilities in Zambia has consistently been in favor of urban provinces, with the exception of Eastern province, which is rural. These results are similar to findings in Zimbabwe where utilization of outpatient services by geographical regions is inconsistent and concentrated among the rich for central and provincial health services.  

Though Eastern province had the highest percentage share of the subsidies and outpatient utilization of health services, health outcomes in this province are among the poorest in Zambia as highlighted in subsequent demographic and health surveys. This suggests poor quality of health services in Eastern provinces and other rural areas, particularly for maternal health services. For example, urban women are more likely than rural women to be provided information about pregnancy complications, to be weighed, to have their blood pressure measured, and to have urine and blood samples taken during antenatal care. Gaps in service coverage raise questions on the effectiveness of the user fee removal policy that was designed to increase access and utilization of quality health care. Some studies find no evidence that removal of user fees has increased utilization of health care in Zambia, particularly for the poor. Further, service quality—a key factor in boosting utilization of health services—is low in Zambia and varied across provinces. This probably explains why the user fees removal policy has had minimal or no impact on increased utilization of health services in Zambia. Provision of low-quality antenatal services signifies low value for money and high opportunity costs for mothers who have to pay for transport or walk to the health facility for an incomplete service and a missed opportunity for the government to provide comprehensive and quality antenatal care services.  

The provincial-level analysis also suggests minimal impact of the needs-based resource allocation formula in addressing inequities in the distribution of operational grants at the district level in Zambia. Apparently, disease burden, poverty levels, and population size and density are some of the key elements of the district-level resource allocation formula that has been in use since 2004 (with modifications in 2009) in the public health sector in Zambia. Empirical studies that have evaluated the implementation of the formula have concluded that the formula has not been fully applied. This could be one of the reasons for the variations in the distribution of public health subsidies by province in Zambia. And since 2011, it is not clear how the Ministry of Health has been allocating public funds to districts. This is because a new formula should have been developed and applied in 2011 following an increase in the number of districts in Zambia from 72 in 2011 to about 110 in 2016.
This study also shows that the distribution of outpatient benefits at private health facilities and public hospitals has continually been in favor of the rich over the period 2010–2015. The distribution of benefits by mission health providers, which was pro-poor in 2010, appears to have changed to being pro-rich, but this result has weak statistical significance. Nevertheless, this may be indicative of a possible deterioration in access to health services by the poor over the years at mission health facilities. This is despite the fact that mission health facilities are funded by government and are located in rural areas where most of the poor people reside. This trend is similar to the distribution of overall benefits at all public health facilities (hospitals and health centers) that favored the rich in 2014 despite being evenly distributed in 2010. Further analysis of the distribution of benefits for both inpatient and outpatient services by providers shows that the rich benefit more than the poor at all public health facilities (level one, two, and three hospitals and health centers) and private health facilities. However, inpatient services for public district hospitals, public health centers, and mission health facilities are pro-poor.

Other studies that have been conducted in Zambia and in the African region show similar results. A study by the World Bank shows that total health care utilization (inpatient and outpatient) and outpatient utilization in Zambia were pro-poor in 2003 even though user fees were in place at this time. However, a follow-up World Bank study that was conducted in 2017 shows that overall per capita benefits at all public health facilities in Zambia were higher for richer households in 2015. During this period, user fees were not in existence and one would have expected the poor to have benefited more than the non-poor. In neighboring Tanzania, richer households benefit more from outpatient services at regional and referral public hospitals than poorer households. A study of child health outcomes in 56 low- and middle-income countries also shows persistence of inequalities between the poor and the rich over a period of time rather than contraction in the gap. This could be attributed to systematic constraints and long-term failures in the health sector, limited understanding of key constraints and failures, and inadequate policy response.

The study also compared health benefits with need for health care by province and across socioeconomic groups. The results show that the distribution of health subsidies by province is not in line with the share of the population reporting illnesses for each province. At the household level, results show a pro-poor redistribution of benefits across socioeconomic groups in 2015 compared to 2010. In other words, the benefits received by the poorest 20% of the population were much higher than those received by the richest 20% of the population. Further, the bottom 20% and 40% of the population received more than a 20% share of benefits in each quintile, which further shows that there has been an inequality-reducing effect across the socioeconomic groups in 2015 compared to 2010. Despite these positive gains, the distribution of benefits across different socioeconomic groups in 2015 is still inappropriate because the lowest two income groups still receive lower benefits in comparison to their health needs. This is contrary to the top two income groups (richest 40% of the population) where the share of benefits received was higher than their health needs in both 2010 and 2015.

The findings above could be attributed to the user fees removal policy. Though studies show that the removal of user fees had no effect on increasing utilization of health services in Zambia, the reform has contributed to enhanced financial protection through a 90% reduction in out-of-pocket expenditures in the population. However, the richest 50% of the population benefit more from income transfers that have been triggered by the user fees removal policy. Furthermore, patients and family members in Zambia still incur indirect costs when accessing health care, such as transport, food, accommodation for family members taking care of patients, and purchase of medicines not available at the health facility.

Notwithstanding the above, there is potential for more gains in equity in the future considering that access to health care was highly inequitable when the first set of health reforms was implemented in 1992 but the situation has been improving over the years. However, strategies on financial risk protection need to be complemented by both supply- and demand-side actions in order to have more impact. But inadequate supply of key inputs (i.e., drugs, health workers, infrastructure and equipment) and insufficient demand creation limit coverage and access to health services in Zambia. Another way of evaluating the impact of financing and organizational reforms is to look at how well Zambia has been implementing successive five-year National Health Strategic Plans and annual plans and budgets. Some studies show that translation of policies and national plans into annual action plans at all levels of the health system is weak. And though the annual planning process at the district level is the main vehicle for translating policies into action, the quality of the annual action plans in some districts is poor. In some districts, priority areas are not adequately planned for and implementation capacities are low.

The main limitation of this study is that BIA does not take into consideration opportunities at household, facility, and district levels. By focusing on recurrent expenditure...
data, the study also overlooks differences in the availability of key health service delivery inputs such as human resources, medicines and other essential commodities, infrastructure, and equipment. Secondly, by assuming that health services are homogeneous across all beneficiaries, the study ignores the fact that quality of health services often varies between different geographical areas and between rural and urban areas. Thirdly, by using constant unit subsidies, the study overlooks differences in costs of service provision at various levels of the health system and between rural and urban areas. As such, the study does not take into account an assessment of the efficacy or efficiency of the health services. Lastly, the study uses self-reported illness as a proxy for need but this measure could be inadequate.

CONCLUSION

The study concludes that Zambia has not fully attained its long-term health reform vision of equity of access to quality health care as close to the family as possible despite years of successive health reforms. The study calls for the Zambian government to complement strategies on financial risk protection with deliberate supply- and demand-side actions in order to enhance equity. The government should also ensure that policies and strategies are adequately translated and effectively implemented through successive five-year National Health Strategic Plans and annual action plans and budgets. Improvements in the annual planning process at the district level and regular monitoring and evaluation of the effectiveness of policies and plans at all levels are also critical.

NOTES

[a] Lusaka province recorded a three percentage point increase between 2010 and 2015.

[b] The Zambian government funds all mission health facilities under the Churches Health Association of Zambia through a monthly operational grant and salaries for health workers. Churches Health Association of Zambia health facilities enjoy the same privileges as government health facilities.

DISCLOSURE OF POTENTIAL CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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