

GLOBAL HEALTH: POLICY, ECONOMICS, JUSTICE, AND EQUITY

The dangers of cooking in Kakuma: How access to cooking fuel compromises the safety, dignity, and well-being of women living in refugee camps, a quantitative analysis

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Background: In 2012, 250 incidents of sexual and gender-based violence (SGBV) were reported in Kakuma Refugee Camp in Kenya. Due to the sensitive nature of SGBV, cases usually go unreported. Collecting firewood in unsafe locations leaves women vulnerable to SGBV and attacks. This study explores the relationship between firewood collection and incidences of SGBV in Kakuma through the Safe Access to Firewood and alternative Energy (SAFE) intervention. The study evaluated if the provision of fuel-efficient stoves and training on SGBV decreased the number of trips women take to collect firewood and increased the number of violent acts reported.

Structure/Method/Design: The SAFE study divided 402 households into three groups: nonintervention, stove recipient only, and stove plus SGBV sensitization for both baseline and end line surveys. For this evaluation, the stove recipient only group and stove plus SGBV sensitization group were combined. Two outcome variables were chosen for analysis: the number of collection trips per week and if the participant reports incidences of SGBV. Overall, the number of firewood collection trips per week decreased. In the end line survey, the majority of respondents reported collecting firewood one to two times per week, in contrast to the baseline, at two to three times. For the intervention group, the proportion of respondents who reported incidences of SGBV increased by 14.21%. 76.29% of participants reported saving fuel with the fuel-efficient stove and all but two participants reported saving cooking time per day, with 34.04% saving 3 or more hours per day. Chi-squared tests revealed the variables that were both statistically significant at a 95% confidence interval ($P < 0.05$) and practically significant for both outcome variables were type of fuel, if firewood is provided for free, and if the participant saved time and fuel.

Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract): Data were retrieved from the World Food Programme's (WFP) SAFE study in Kakuma Refugee Camp. The WFP Kenya country and sub-office staff conducted the field missions and data collection.

Summary/Conclusion: Important strengths of the study included the ability to conduct a study like this in Kakuma, filling a gap in research concerning fuel-efficient stoves, and the vast opportunities for expansion. Some challenges of the study were the difficulty in defining the measures of SGBV, the vulnerable state of a refugee population, and the relatively small sample size.

A framework for measuring progress towards universal health coverage

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Background: The elegant notion of Universal Health Coverage (UHC), when attained, ensures that everyone is able to access health services and not be subject to financial hardship in doing so. The wideness in scope and interpretability of UHC, however, emphasizes

a need to develop a unifying framework for its measurement thereby facilitating countries progress toward reaching this goal.

Structure/Method/Design: We identify two major issues in the realm of measuring the UHC. First and more prominent issue relates to defining the range of service coverage to be considered for measurement. Most of the current attempts to measure UHC have primarily focused on tracking maternal and child health services and a few communicable diseases. Service coverage for noncommunicable diseases (NCDs) and injuries remain unmeasured although they account for the majority of the global disease burden. The second issue relates to developing a metric that unifies different dimensions of UHC. Several studies have separately analyzed the service coverage and financial protection dimensions, often without regard to the other. Further, each study employ different definitions of coverage and methods for measurement hence can't be compared. We argue that these dimensions should be analyzed together to depict a comprehensive picture on coverage and to make valid cross-country comparisons on progress to UHC. In this paper, we propose a framework to address some of these issues.

We objectively define a set of health problems to be measured for monitoring UHC based on the global burden of disease criteria. We select the top 50 causes of global disease burden and identify the indicators for measuring each of these diseases and conditions. For measuring the financial coverage, we rely on existing indicators of financial coverage such as health insurance coverage rate and incidence of catastrophic health payments. We propose a two-dimensional scatter plot to simultaneously assess both financial and service coverage.

Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract): The proposed framework could be employed for tracking the progress made by all countries towards reaching the UHC goal. Most of the indicators for communicable diseases and maternal child health are already tracked by various organizations, thus is utilized. For NCDs and injuries, with limited data being tracked at the global level, we utilize the disease incidence and prevalence data in conjunction with the cause specific service utilization data available from but not limited to inpatient and outpatient registries, and existing surveys, for each country. Similarly for the financial coverage components we utilize the existing databases and household surveys.

Summary/Conclusion: Our efforts to measuring UHC is both timely and relevant. Results from this endeavor will act as a database for measuring and monitoring country's progress toward UHC.

An innovative approach to measuring efficiency of health service provision in developing countries

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Background: Governments of developing countries lack information about the process of providing health services (WHO, 2000). When services are provided inefficiently, scarce resources that could be used to treat additional patients are wasted. Even when the political will for efficiency assessment exists, the lack of adequate data represents a barrier to conduct accurate studies on the production and costs of health care services.

Structure/Method/Design: We use detailed facility-level data from Colombia, Ghana, India, Kenya, Lebanon, Zambia, and Uganda. In each country, we collected data in approximately 200 facilities over a 5-year period. In addition, 12,000 patient interviews were conducted with the aim of gathering information on consumer perception of health facility quality.

We specify a production model with five inputs and seven outputs. Inputs include the number of beds as proxy for capital, and four categories for labor (doctors, nurses, other medical staff, and administrative staff). As with respect to output, outpatient visits include basic outpatient services, ART (antiretroviral treatment), malaria, antenatal care, and emergency. For inpatient services we use inpatient days, births, and surgery.

To avoid biased efficiency estimates due to heterogeneous technology, we propose an innovative approach that adjust outputs across facilities. We first identify all pharmaceuticals and equipment related to the production of each output and build a score that reflects the extent to which technology is available in the facility.

We then use consistent bootstrap DEA models using the adjusted outputs to compute technical efficiency scores by controlling for measurement error and noisy data. We include minimal weight restrictions to reflect the relative importance of inputs and outputs in the production process of health facilities. Weight restrictions are chosen to maintain the radial nature of efficiency valid.

We finally use output weights provided by DEA to calculate the marginal rate of transformation between outputs. This information is critical to the estimation of average costs for each output.

Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract): We find evidence of important inefficiency (40% on average) with massive variation across facilities. Inefficiency substantially increases average costs to produce health services (35% on average). Also, we find evidence of efficiency increases over time of about 10%, likely due to the scale-up of ART treatment and related services. Additional evidence is necessary to assess the causal relationship.

Summary/Conclusion: We find evidence of potential efficiency increases. Efficiency increase of health services production in developing countries is paramount to exploit the potential of service coverage extension and fair allocation of resources. For this purpose, higher-quality data and systematic efficiency assessment analyses are needed.

Can bans break bad habits? An interrupted time series analysis of the impact of the 2005 high school smoking ban on teenage smoking behavior in Chile

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Background: Objectives: To evaluate the impact of the 2005 school smoking ban on smoking prevalence among the high school population compared to the general population aged 19 to 24 years in Chile, the country with the world's highest teenage smoking prevalence. The secondary objective was to evaluate the impact of this ban on high- versus low-frequency smokers.

Structure/Method/Design: The analysis followed an interrupted time series (ITS) design with a comparison group. The data consisted of biennially repeated population cross sections representative at the regional level in Chile between the years 2000 to 2011. The data for the intervention group (high school population, ages 12-18 years)

originated from the Chilean SENDA población escolar dataset ($n \sim 50,000$ per data year), and the data for the comparison group (age 19-24 years) originated from the Chilean SENDA población general dataset ($n \sim 2,000$ per data year).

In 2005, Chile passed a tobacco-regulatory law #20.105, effective January 1st, 2006. The strictest provision of the law was a complete smoking ban in all high schools and a tobacco sales ban within a radius of 300 m ($\sim 1,000$ feet) of all schools. The effect of this ban on the high school student population was the focus of this analysis. A two-stage ITS analysis via Poisson models was performed to assess the difference in change in slopes of smoking behavior pre- and post-policy between groups.

Thirty-day smoking prevalence change before and after the law, change in prevalence of heavy smokers before and after the law.

Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract): Past 30-day smoking prevalence during 2000-2001 was 41.9% and 55.1% among high school students and young adults, respectively. While smoking prevalence increased a relative 0.6% per year among HS students in the pre-intervention period 2000-2005 (RR, 1.01, 95% CI, 1.00-1.01, $P = 0.014$), no significant change was observed among young adults. Post-2006, the smoking prevalence decreased annually by -2.9% (95% CI, -5.0% to -0.1% , $P = 0.009$) in the high school group compared to the university aged group. A direct policy intervention effect of a -14.5% change over 5 years (or -29.0% over 10 years) can be attributed to the law. The impact of the smoking ban was driven by the decline in smoking prevalence in 8th- through 10th-grade students. The law was effective in reducing the relative proportion of low frequency smokers, but the proportion of heavy smokers (smoking more than 15 days per month) remained unchanged.

Summary/Conclusion: The 2005/06 high school smoking ban was successful in reducing the smoking prevalence among Chilean teenagers, but future interventions tackling older high school students and more frequent smokers are needed.

Health domains for sale: The need for better global eHealth governance of health information online

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Background: A debate on Internet governance for health, or "eHealth governance" is emerging with the impending award of a new dot-health (.health) generic top-level domain name ("gTLD") to a private sector entity by The Internet Corporation for Assigned Names and Numbers ("ICANN"), a multistakeholder nonprofit international organization that controls this system.

Structure/Method/Design: This was a descriptive global health policy study. We reviewed the applications of health-related gTLDs and assessed factors of application status and country of origin, entity type of applicant (public vs. private), applicant affiliations, proposed governance of gTLD, and the presence of any support/partnership from the health sector. Analysis was conducted in August 2013.

Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract): Upon our analysis, we found that prospective .health applicants are all business corporations with few or no ties to the global public health community. If approved, one of these companies would effectively control the future of the .health address on