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Review

Health sector demand-side financial incentives in low- and middle-income countries: A systematic review on demand- and supply-side effects

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ABSTRACT

Demand-side financial incentive (DSF) is an emerging strategy to improve health seeking behavior and health status in many low- and middle-income countries. This narrative synthesis assessed the demand- and supply-side effects of DSF. Forty one electronic data bases were searched to screen relevant experimental and quasi-experimental study designs. Out of the 64 selected papers, 28 were eligible for this review and they described 19 DSF initiatives across Asia, Africa and Latin America. There were three categories of initiatives, namely long-run multi-sectoral programs or LMPs (governmental); long-run health-exclusive programs (governmental); and short-run health-exclusive initiatives (both governmental and non-governmental). Irrespective of the nature of incentives and initiatives, all DSF programs could achieve their expected behavioral outcomes on healthcare seeking and utilization substantially. However, there existed a few negative and perverse outcomes on health seeking behavior and DSF's impact on continuous health seeking choices (e.g. bed net use and routine adult health check-ups) was mixed. Their effects on maternal health status, diarrhea, malaria and out-of-pocket expenditure were under-explored; while chronic non-communicable diseases were not directly covered by any DSF programs. DSF could reduce HIV prevalence and child deaths, and enhance nutritional and growth status of children. The direction and magnitude of their effects on health status was elastic to the evaluation design employed. On health system benefits, despite prioritizing on vulnerable groups, DSF's substantial effect on the poorest of the poor was mixed compared to that on the relatively richer groups. Though DSF initiatives intended to improve service delivery status, many could not optimally do so, especially to meet the additionally generated demand for care. Causal pathways of DSF's effects should be explored in-depth for mid-course corrections and cross-country learning on their design, implementation and evaluation. More policy-specific analyses on LMPs are needed to assess how 'multi-sectoral' approaches can be cost-effective and sustainable in the long run compared to 'health exclusive' incentives.

Introduction

In recent times, many countries have adopted demand-side financing (DSF) as a complimentary strategy for supply-side financing (SSF) on certain publicly provided goods (Ensor 2004). Under DSF, public budget to purchase these goods such as healthcare and nutrition goes directly to consumers instead of providers (Gupta, Joe, & Rudra, 2010). Consumers are typically entitled to purchase services from either public or private providers with the money from the government. DSF introduced three key changes in the public financing approach (Standing, 2004). First, it envisages that the government should provide purchasing power to consumers than directly engaging in service provision. Secondly, it entitles the government with a supervisory role on service provision and purchase to ensure fairness and efficiency. Thirdly, it tunes public financing as 'output- based' instead of 'input-based' so that adequate consumer and provider accountability could be achieved.

Demand side financing in health sector

DSF is a widely growing differential healthcare delivery approach to address unmet health needs (Gopalan & Varatharajan,

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2012; Savedoff, 2010). The underlying objective of DSF is to improve population health, and individual and social capabilities by addressing the population exposure on various risks such as social determinants of health (e.g. poverty, gender). The scope of DSF is more pronounced for under-served populations and regions. This prioritization is to augment the possibility of achieving many far-fledged health goals in a stipulated time-frame (Forde, Rasanathan, & Krech, 2012). There are two classifications for health sector DSF measures (Gopalan & Varatharajan, 2012). The first category is the consumer-led incentive to improve health related behaviors and health care utilization. These are mainly provided through cash transfers, vouchers and flat-rate subsidies. They usually pose conditionality on certain behaviors and are targeted on specific health goals (e.g. reducing maternal deaths). Since consumer-incentives are known for altering behavior changes, they are more deployed for merit goods with known externalities (e.g. vaccination) and essential primary healthcare services. The second type of DSF is health insurance (HI) or financial risk-protection measure. HI is usually not conditional on specific consumer health behaviors (except a few for maternal and chronic disease care) and is meant largely for secondary and tertiary care services.

Aims

This review uses systematic methods to investigate the demand- and supply-side effects of consumer-led (or the first category of DSF) financial incentives. This review is pertinent as the existing synthesized evidence does not cover all types of consumer-incentives, by confining their focus on conditional cash transfers only. They have also mostly explored DSF initiatives which are part of the multi-sectoral social protection measures in Latin America. Unlike the Latin American model, vertical approaches i.e. incentives targeting only health aspects (health-exclusive) are now widespread, especially on maternal care in Asia and Africa (Gopalan & Varatharajan, 2012). Further, the prevailing evidence on DSF's supply-side impact is scanty (Frethtim, 2008; Lagarde, Haines, & Palmer, 2007; Ranganathan & Lagarde, 2012). Though projected to improve service delivery, DSF might affect system efficiency adversely (Ranganathan & Lagarde, 2012). In this context, it may be relevant to understand how different types of DSF respond to varied health and health care delivery system needs.

Methods

This systematic review was designed and reported in line with PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines (Moher, Liberati, Tetzlaff, & Altman, 2009) and a pre-designed review protocol.

Data sources and search strategy

PubMed, Embase and CINAHL were the major electronic databases searched for peer-reviewed articles (Box 1). In addition, reports, discussion and working papers, and non-peer-reviewed articles were searched from various databases. A hand search enabled retrieval of relevant references from the selected papers. The literature search was conducted between October 2011 and March 2012, while papers published up to March 2012 were selected. We searched each database through a combination of MeSH and non-MeSH terms (Box 1) using Boolean operators "AND" and "OR". The thematic search centered on types of financial incentives, healthcare, and health or disease conditions. An adjunct search was conducted for different country settings or regions. SG and AD conducted the search independently, and screened the title, abstract and subject headings against inclusion and exclusion criteria. Then, SG retrieved the full-text of potentially eligible studies and re-screened them for final eligibility. AD conducted a random verification of few records at each stage and disagreements were resolved by discussion.

Study selection

Studies were included if they reported on; 1) any consumer incentive targeting a behavior change on healthcare or life style in a low and middle income country setting as classified by the World Bank (WB, 2011), 2) any outcome measures of DSF initiative confining to the broad-based themes (which were selected based on an initial literature review and explained in the results section), 3) either quantitative or mixed-methods tools and 4) English language. We excluded health insurance from the category of consumer incentives for two reasons; 1) it principally targets financial risk-protection rather than particular consumer behavior changes, and 2) its trajectory of functioning is different than that of other consumer incentives (Gopalan & Varatharajan, 2012). The literature base on DSF was found to be heterogeneous. Therefore, certain broad-based themes were derived to explore the potential effects of DSF initiatives. These themes selected based on an initial literature review enabled to provide consistency in reporting the results.

With respect to type of studies, we included studies reporting randomized experiments (where both treatment and control were randomly assigned) and quasi-experiments (where only treatment was randomized OR both control and treatment were non-randomized OR multiple measurements if there was no comparison group). In the latter category, we considered only 'controlled before and after interventions' (with the same population observed or intervened), 'cross-sectional studies using matching techniques', 'interrupted time-series' (at least three data collection points before and after the intervention), 'correlational designs using statistical controls', 'longitudinal designs' and 'panel designs'.

Data extraction

The initial search identified 3221 records, but only 64 records were eligible for full-text review (Fig. 1). Finally 28 records met the inclusion criteria. Extracted information encompassed: (1) publication details- author, title, journal, and date; (2) study details-objectives, study design, sample selection, sample size, primary and secondary outcomes, data sources, outcome measures, findings and methodological limitations; (3) features of DSF initiatives-name, location, duration, objectives, target groups, type of financial incentives and conditionality.

Critical appraisal

We used a customized appraisal tool to assess the potential source of bias on design, reporting, data analysis, and internal and external validity. In total, there were 22 criteria grouped under the above mentioned five components. Studies were given an indicative score for overall quality. This was calculated by summing the grades for each appraisal criterion (highest grade = 1; middle = 0.5; lowest = 0). All eligible studies were critically appraised by SG and checked by AD with any differences resolved by discussion. Under each component, we explored if the study incorporated or addressed the following aspects;

(1) Design: similar baseline groups, random intervention allocation, and appropriate participant eligibility criteria