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Addiction to a bad idea, especially in low- and middle-income countries: Contributory health insurance

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ABSTRACT

Despite limited evidence of successful development and implementation of contributory health insurance and low and middle income countries, many countries are in the process implementing such schemes. This commentary summarizes all available evidence on the limitations of contributory health insurance including the lack of good theoretical underpinning and the considerable evidence of inequity and fragmentation created by such schemes. Moreover, the initiation of a contributory health insurance scheme has not been found to increase revenues to the health sector or help health countries achieve universal health coverage. Low and middle income countries can improve equity and efficiency of the health sector by replacing out-of-pocket spending with pre-paid pooling mechanisms, but that is best done through budget transfers and not by contributory insurance that links payment to sub-population entitlements.

As health systems develop, a measure of success is the extent to which health financing shifts from predominantly individual out-of-pocket spending (OOPS) at the point of care to predominantly pre-paid and pooled financing. OOPS is both inefficient and inequitable as a form of health financing, so most alternatives are superior. OOP payments connect utilization of health services to an individual's or household's ability to pay; deter and delay utilization (especially for the poor), exacerbating or sustaining inequalities; and expose individuals or households to the risk of impoverishment resulting from high levels of health expenditures when they do utilize health services (constraining spending on other necessary expenditures). Historically, there are two very different ways to move away from OOPS, both of which introduce an insurance function protecting from potentially impoverishing outlays. One approach involves non-contributory entitlement (i.e. entitlement not linked to payment of contributions for health) and is typically funded from general government budget revenues. This budget transfer can either be to line ministries or to national insurance agencies or similar entities. The other approach links entitlement to pre-payment in the form of mandatory or voluntary insurance premiums, giving a subset of the population access to a set of health services (contributory health insurance). The top half of Fig. 1 depicts the historic transitions out of predominantly OOPS into either a budget transfer dominance or a premium-entitlement insurance dominance. Once a country has decided on the direction away from OOPS (either one of the arrows), it embarks on a path that is difficult to deviate from, in part because vested interests are developed and the political and actual cost of change increases.

The Organization for Economic Co-operation and Development (OECD), representing the wealthiest countries in the world, puts out an annual chart that captures the different financing schemes for health in member states. Developing countries can be excused for looking at OECD data and thinking there is no "best practice" for financing that shifts out of OOPS to some form of an insurance function (contributory or noncontributory), because the OECD data appears to show half the countries relying predominantly on social health insurance (SHI)

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contributions and the other half on general government revenues. As we see later, the data organized by financing scheme masks important long term and short term trends while giving the impression of the lack of global model or consensus on how to finance health care. In fact, there is a clear trend in the last 20 years and important shifts in the last 70 years among the wealthiest OECD countries that are very relevant to this discussion about the best way to finance health care.

In the remainder of this commentary, we argue that contributory health insurance is a bad idea, especially for low- and middle-income countries, because it typically excludes the people most in need of health coverage (people with low incomes, informal workers and unemployed people, for example), does not generate additional resources for health and undermines health system efficiency – in short, it does not help countries to progress towards universal health coverage (UHC). It also has negative implications for the economy. First, we look at the lack of a strong economic theory underpinning contributory health insurance. Second, we summarize the overwhelming evidence against contributory health insurance in developing countries. Finally, we summarize the historic, operational, and practical requirements for successful implementation of contributory health insurance in some high-income European and East-Asian countries and how such elements are missing in developing countries. Sadly, we find that while the theory and evidence line up against contributory health insurance models for developing countries, more and more countries are experimenting with, and trying to implement, such models. In other words, there is a real disconnect between an increased demand for contributory health insurance solutions and the growing evidence base on how problematic they are in developing countries—a form of an addiction to a bad idea.

1. The lack of economic rationale for contributory health insurance

The broad concept of insurance has wide applicability across a range of lifetime risks, including unemployment benefits, car accident indemnity, and life insurance. At one level, it is not hard to argue for health services insurance, which recognizes the low probability of need requiring a mechanism to spread risk, with empirical evidence showing 10 percent of a population incurring more than 60% of health care cost.[1]

Health insurance can be seen as a way of generating cross subsidies from low-risk to high-risk people, from richer to poorer people, and across age groups. Important to note at this stage, that these arguments for health insurance are not contingent on how it is paid for. In other words, both sides of Fig. 1 (non-contributory or contributory) introduce a form of insurance to health sector spending.

Deeper economic analysis, however, raises considerable concerns about applying contributory insurance models to health care. The Nobel Prize for economics has twice been awarded (to Kenneth Arrow in 1972 and Joseph Stiglitz in 2001) in part for work showing market failures for contributory health insurance. Arrow's award was focused on a study of uncertainty (Arrow, 1963) and Stiglitz on the application of the concept of asymmetric information to insurance markets (Stiglitz, 1977). The economic market failure arguments are even stronger when the insurance system is not only contributory but voluntary. A solid summary of the arguments against health insurance that is voluntary can be found in Barr (1992) (Barr, 1992). The two most prominent arguments relate to ***adverse selection***, with consumers opting out if they are healthy, and ***risk selection***, with insurance companies not competing on price and quality but instead trying to identify and drop high risk individuals. It is very hard to find solid economic theory to justify health sector reform that focuses on contributory health insurance, especially in developing countries.

2. The lack of evidence supporting contributory insurance in developing countries

Four recent publications on health insurance in developing countries (Yazbeck et al., 2020)' (Watson et al., 2021)' (Barasa et al., 2021)' (Cashin and Dossou, 2021) continue a tradition in health financing of questioning the relevance of contributory health insurance (Kutzin et al., 2016): two are global in nature and two focus on sub-Saharan African countries. The four papers collectively repeat a question that has dominated the literature and professional health financing opinion for the last 25–30 years, namely, why is contributory health insurance popular in developing countries when the evidence of success is limited at best? This section summarizes the evidence covered by these four newer publications as well as those that preceded them.

It is widely accepted that health systems should aim to meet the goals of UHC – that is to ensure that everyone can use the quality health services they need without financial hardship. To progress towards UHC also requires a health system to be adequately resourced and able to use resources equitably and efficiently. Assessing how well health systems meet these goals is challenging because of the range of outcomes (health status and financial protection), intermediate goals (equity and efficiency) and wider economic implications that need to be considered. It is practically impossible to empirically link health financing reforms to health outcomes but on all other dimensions we found overwhelming evidence of the inferiority of contributory health insurance.

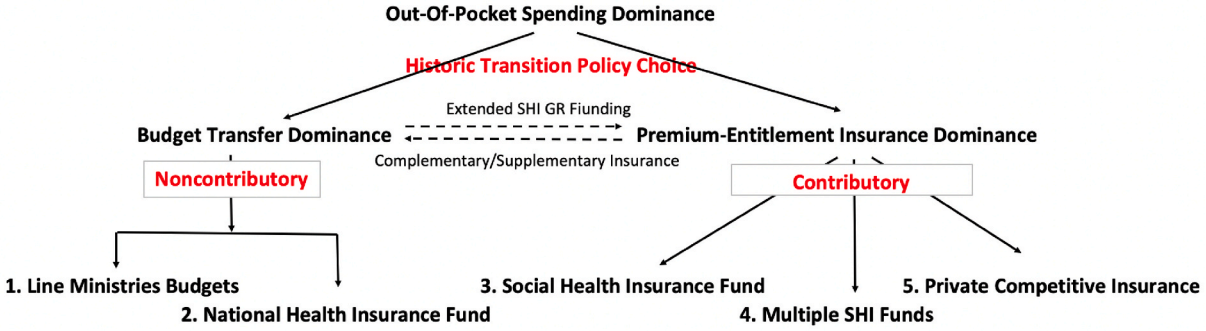

Fig. 1. Different pathways away from out-of-pocket spending for health
*The dashed lines refer to (top arrow) transfers from government general revenue design to subsidize health insurance premiums for populations that are poor or outside the formal labor marker; and (bottom arrow) premium-based insurance, usually voluntary, that can supplement or complement budget transfer financing.

[1] In the US, the top 10 percent of the population in terms of consuming health care accounts for 2/3 of all health spending (https://www.nihcm.org/topics/cost-quality/concentration-of-us-health-care-spending). In Germany, the 10% top consumer account for 62% of all health spending(https://www.bundesamtsozialesicherung.de/fileadmin/redaktion/Risikostrukturausgleich/20180125Sondergutachten_Wirkung_RSA_2017_korr.pdf).

Equity, access to health care and financial protection. The most obvious limitation of contributory health insurance is that, by linking entitlement to payment, it almost always covers people who are able to pay the premium and therefore excludes those most in need of health coverage – people with low incomes, informal workers and unemployed people. As a result, countries with contributory health insurance systematically experience gaps in population coverage. In most high-income countries, this gap tends to be small, but in low- and middle-income countries it is usually substantial. (WHO Regional Office for Europe, 2019)' (WHO Regional Office for Europe, 2021) Government attempts to address this problem often entrench inequality in access to health care. In many countries, the 'uninsured' only have access to a limited set of benefits (commonly emergency care and primary care visits) and are restricted to using a limited set of providers (for example, those run by the Ministry of Health).

It is axiomatic that a shift from OOPS to any form of health insurance should increase **financial protection**. When looking at how contributory health insurance compares to systems that rely predominantly on budget transfers (non-contributory) in providing financial protection to the largest possible population and, more importantly, to the most disadvantaged parts of the population, the evidence also stacks up against contributory health insurance. A global study of data from 111 countries shows that the overwhelming evidence for financial protection comes from budgetary funding and not contributory health insurance (Wagstaff and Neelsen, 2020). In Latin America, the introduction of social health insurance in the 1960s meant that the better off had more financial protection and access to better quality of care than the poorer segments of society (Savedoff, 2004). Household survey data from 36 Sub-Sharan African countries (Barasa et al., 2021) shows health insurance reaching only low levels of population coverage and mostly for the better off. A review of 15 years of published research testing the extent to which health insurance systems designed to address inequality actually do so (Watson et al., 2021) finds attempts are more likely to fail than not. A review of 24 countries that have successfully accelerated progress towards UHC found that none did so using the introduction of contributory health insurance (Cotlear et al., 2015). All 24 developing countries relied on budgetary transfers to increase access to health care services for the poorest segments of society. Even in countries that had an existing contributory health insurance system, the expansion took place through budget transfers to all insurance funds that extended coverage for the poor (the top dotted line in Fig. 1).

Additional Resources for Health. Countries have often introduced contributory social health insurance in the expectation that it will add new resources to the health sector (Yazbeck et al., 2020). Here again, there is no evidence to support such expectations. The most definitive global review to date based on actual evidence, a review by the WHO's Health finance team published in 2018, found that in low and middle income countries, fiscal space for health expanded mainly through higher domestic government financing resulting from economic growth and improvements in revenue efforts but not through contributory social health insurance financing through labor taxes (Barroy et al., 2018), (Tandon et al., 2018). The WHO's definitive review is consistent with a number of other similar findings about the dominance of budget transfers as a way to expand resources for health. (Cotlear et al., 2015)' (Fan and Savedoff, 2014)' (Savedoff and Smith, 2011)' (Kutzin et al., 2010)' (World Health Organization, 2019) Analysis from Europe and Central Asia (Wagstaff and Moreno-Serra, 2009) as well as of OECD countries (Wagstaff, 2009) show no added revenues from contributory social health insurance.

Efficiency. The literature and accumulated evidence are not kind regarding the impact of contributory health insurance on health system efficiency. Another form of inefficiency sometimes triggered through the introduction of contributory social health insurance is the fragmentation of pooling producing fragmented service delivery, particularly when 'uninsured' people are covered through separate schemes, as has been observed in Latin America (WHO Regional Office for Europe, 2019) and elsewhere (Wagstaff, 2010).

Trends in Wealthy OECD Countries. As we noted earlier, the OECD data on financing schemes leaves the impression that wealthy countries are evenly split on the form of financial pooling used (contributory or non-contributory). There are two reasons why this impression is inaccurate. First, while it is operationally and politically difficult and expensive to shift the main source of financing for health, the last 70 years have seen the following countries shift from pre-dominantly contributory to noncontributory (Wagstaff and Moreno-Serra, 2009; Kutzin et al., 2016): UK, Denmark, Iceland, Italy, Portugal and Spain. Interestingly, and relevant to this commentary, in the same 70-year period, not one of the wealthiest OECD countries moved in the opposite direction towards the premium-entitlement model. Second, WHO not only reports on financing schemes, consistently with OECD, but also reports on "source of financing" in their National Health Accounts data base which allows us to get a clearer picture especially when we look at a 20-year trend (Fig. 2). The 20-year trend data shows that the increase in overall spending driven primarily by the increase in government budgets as a source of financing over mandatory or voluntary contributory health insurance. Consequently both 20-year and 70-year trends show increased reliance on non-contributory financing.

Economic outcomes beyond health (labor market informality). Repeated data collection and analysis by the WHO (World Health Organization, 2019) shows that health sector spending grows faster than national income. Consequently, how the health sector is financed has an ever-growing impact on the larger economy. One of the most studied such impacts is that of labor taxes (the dominant form of contributory funding for health insurance) on the levels of labor sector informality. It should stand to reason that if you use labor taxes (payroll tax) to finance health, you are increasing the cost of labor and creating incentives for firms and workers to agree to work informally to bypass taxes. Many studies, especially in Latin America and Europe, have looked specifically at this economic outcome giving us even more reason to find contributory health insurance objectionable. (Wagstaff, 2009)' (Levy, 2008)' (Wagstaff and Moreno-Serra, 2009), (Wagstaff, 2010).

The overwhelming weight of the published literature on the outputs and outcomes of the introduction of, and reliance on, contributory health insurance in developing countries is negative. It shows the likelihood of not contributing to UHC, increasing inequality in access to health care and financial protection, increasing inefficiency, not adding meaningful resources to the sector, and negatively impacting the economy by increasing informality in the labor market and increasing administrative costs. There may very well be other, less tangible, reasons or arguments for the introduction of contributory health insurance, but when we look at measurable results, there are no good arguments. It is important to note that while most of the evidence summarized in this section relate to mandatory contributory health insurance, it applies equally to voluntary forms, regardless if these are attempts to include informal workers or a standalone system, which have even stronger

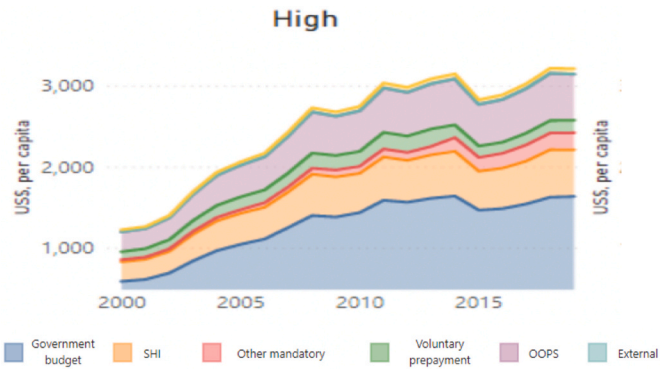

Fig. 2. Sources of Health Financing in High Income Countries 2000–2019. Source: WHO's GHED database.

evidence of failure. (Wagstaff et al., 2016)' (Capuno et al., 2016)' (Barasa et al., 2018), (Thomson et al., 2020).

3. Practical operational factors and historic context

Despite the strong economic theory against the likelihood of success in contributory health insurance and the lack of empirical evidence of success in developing countries, it is important to note that there have been a few sustained successes in higher income countries in Western Europe and East Asia. This fact, and apparent contradiction, prompts an important question: Are there enabling factors in wealthier countries that can produce successful contributory Health Insurance systems that do not exist in developing countries? It is precisely this question that is answered in a 2007 book (Hsiao and Shaw, 2007). The editors reviewed existing long term Social Health Insurance schemes in Africa, Asia, Europe, and Latin America and identified a number of factors that existed in wealthier countries but not in low and most middle income countries. Another paper focused on Western European countries finds similar enabling factors (Carrin and James, 2005).

Specifically, for countries to have sustained success with Social Health Insurance, usually labor tax financed, they need: (i) a large formal labor sector, which simplifies administrative functions and collection of premiums by payroll; (ii) high wages and salaries, which reduces the economic burden of higher payroll taxes on the employees; (iii) a low poverty rate, which reduces the need for the public sector to subsidize poor families; (iv) small family and household size, which reduces the need for large payroll deductions; (v) efficiently functioning provider networks structured to control costs; (vi) strong Human Resource capacities, needed for managing SHI; (vii) strong administrative support, including banking, accounting, actuarial, legal, and the Government's capacity to regulate. It would be almost impossible to find low income and likely middle income as well, that have many of these enabling factors for a successful contributory health insurance.

Two additional practical factors, one for Western Europe and one for East Asian countries, likely contributed to sustained successes in contributory national health insurance. For Western Europe, countries that eventually developed and sustained labor-tax financed social health insurance through deliberate acts of government, arrived at this financing mechanism organically based on 600 years of micro insurance that was guild (profession) based (Saltman et al., 2004) which built practical experience and tools that are supporting of insurance system as well as built competencies around governance that are required for transparently managing funds and facilitating decision making. For East Asia, countries like Japan and South Korea that built successful contributory national SHI, they did so at a time of fast and sustained economic growth. Such economic conditions provide both the political and financial space to implement most reforms. On both scores, historic experience with insurance governance, as well as fast growing economies, most low- and middle-income countries lack these enabling factors.

In summary, while there are wealthy countries that have sustained contributory health insurance systems, most of the enabling conditions do not exist in low- and middle-income countries. Moreover, the historic context of hundreds of years of experience with micro health insurance linked to professional associations in Europe are not replicated in low- and middle-income countries. Finally, a sustained economic growth, similar to some countries in East Asia, which provides the political and financial resources to build insurance funds, does not exist in most developing countries. As noted earlier, even some of the wealthiest countries of Europe that used to rely on contributory health insurance have shifted in the last 70 year to a bigger reliance on budget allocations, and no country has permanently moved from budget allocations to contributory systems.

4. Closing thoughts

Deciding how to finance health care in any country is both technically and politically difficult to do, and change can be expensive to implement. There is, however, universal agreement that solely relying on out-of-pocket payments at the point of contact is the worst possible way of financing health care and all countries are encouraged to move to collective pre-paid and pooled systems of health financing. As Fig. 1 depicts, the historic policy choice out of OOPS into pre-payment can be through two very different mechanisms and can result in one of five very different systems of financing. We have argued here that the choice of general government revenue budget transfer (non-contributory) is superior to contributory models of financing where entitlement is conditioned on payment of contribution or premium models for developing countries. Budget transfers have a stronger theoretical basis, overwhelming empirical evidence, and are better adapted to the institutional needs, capacities and characteristics of low- and middle-income countries. What remains hard to understand is the continued high demand for contributory systems in the face of all the evidence. It may be that in addition to the prospect of raising revenue for health (for which there is no evidence), contributory health insurance holds the promise of providing an entry point for a slew of associated reforms: the introduction of provider-purchaser split, new provider payment methods, more provider autonomy and accountability, removal of rigid public financing rules, among others. However, such reform opportunities are not unique to contributory health insurance. They are feasible under a non-contributory system too, without the negative implications of the contributory health insurance.

A way forward for strengthening health financing functions in developing countries is to build internal revenue and taxes agencies and strengthen the governance of national institutions, so these can manage resources for health transparently and purchase health services through a common purse.

Declaration of competing interest

None.

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