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4.2 Fragmented risk pool management



About the Health Finance and Governance Project

The Health Finance and Governance (HFG) Project works to address some of the greatest challenges facing health systems today. Drawing on the latest research, the project implements strategies to help countries increase their domestic resources for health, manage those precious resources more effectively, and make wise purchasing decisions. The project also assists countries in developing robust governance systems to ensure that financial investments for health achieve their intended results.

With activities in more than 40 countries, HFG collaborates with health stakeholders to protect families from catastrophic health care costs, expand access to priority services – such as maternal and child health care – and ensure equitable population coverage through:

- ▶ Improving financing by mobilizing domestic resources, reducing financial barriers, expanding health insurance, and implementing provider payment systems;
- ▶ Enhancing governance for better health system management and greater accountability and transparency;
- ▶ Improving management and operations systems to advance the delivery and effectiveness of health care, for example, through mobile money and public financial management; and
- ▶ Advancing techniques to measure progress in health systems performance, especially around universal health coverage.

The HFG project (2012-2018) is funded by the U.S. Agency for International Development (USAID) and is led by Abt Associates in collaboration with Avenir Health, Broad Branch Associates, Development Alternatives Inc., the Johns Hopkins Bloomberg School of Public Health, Results for Development Institute, RTI International, and Training Resources Group, Inc. The project is funded under USAID cooperative agreement AID-OAA-A-12-00080.

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About the Technical Efficiency Guide

Health system stakeholders in low- and middle-income countries are exploring ways to achieve more with available resources, and realize savings that can be used to fill the gap in resources needed to expand effective health coverage to all. Where other guides and tools focus on improving allocative efficiency (“doing the right things”), this guide focuses on technical efficiency (“doing things right”) (WHO 2010). It is intended to **help diagnose and address technical inefficiencies** across health systems.



4.2.1 Inefficiency in Risk Pooling Arrangements

What's the inefficiency?

Risk pooling in health care occurs when members contribute money on a regular basis (unconnected to any particular instance of illness) and in return receive access to some specified health coverage benefits. Pooled funds are then used to purchase health services, equipment, and drugs. Risk pooling protects members from high out-of-pocket health costs, which can contribute to catastrophic health spending or serve as barriers to accessing services for individuals who cannot afford to pay them (Smith and Witter 2004).

Risk pools can become “fragmented” when, instead of one large pool covering everyone in a population, multiple smaller risk pools cover distinct groups. These groups may be defined using various criteria, including geographic location, employment status (e.g. formal versus informal), income levels (i.e. ability to pay premiums), etc. In each of these cases, pools covering poorer segments of the population are often distinct from those covering wealthier segments, who can afford higher payments. Sometimes governments or donors will contribute funding to pools covering poorer or otherwise more vulnerable populations or different diseases or health programs. When membership is voluntary, healthier people are less likely to enroll, making health risks high relative to the monetary value of the financial pool. Such pools quickly become financially unsustainable. Smaller risk pools are less financially sustainable than larger ones because they have unstable income and expenditures are more difficult to predict, whereas larger pools predict costs with greater accuracy (Gottret and Schieber 2006). When the pool is smaller, random fluctuations in health needs carry a greater weight, leading to more uncertainty in predicting needs, and therefore more variation in costs (Smith and Witter 2004).

Why does this happen?

If the national government or a donor prioritizes one specific population, geographic area, or type of coverage, the risk pool is made smaller and less diverse and may place higher risk individuals in the same pool, limiting opportunities to effectively distribute risks. Risks are less predictable as the size of the pool grows smaller, based on the “law of large numbers.”¹

Geographic fragmentation in risk pooling can arise when the responsibility for collecting and allocating health funding lies at local government level. This may happen in contexts where health care is decentralized under the assumption that local government is better positioned to use resources efficiently and equitably. In these contexts, local governments may establish distinct risk pools covering the populations they serve (Gottret and Schieber 2006). The multiple, unconnected risk pooling schemes do not typically allow for pooling or redistribution across administrative geographic areas (WHO 2010)

Fragmentation by specific population groups can happen when membership is based on employment status and therefore different pools exist for groups such as government employees, the self-employed, unemployed, etc. (Smith and Witter 2004, WHO 2010) Likewise, when individuals are assigned to risk pools based on their age (e.g. retirees who are above a certain age, children, etc.) or health status, pools with disproportionate numbers of older and sicker members will exist (Smith and Witter 2004).

¹ The “law of large numbers” states that “the average of a large number of independent identically distributed random variables tends to fall close to the expected value,” which leads to the conclusion that the higher the number of beneficiaries that enter a risk pool is, the smaller the variation of the payments per beneficiary from the expected value (and therefore, the uncertainty) will be (Smith and Kane 1994).



Furthermore, fragmentation can also occur when participation in a risk pool is subject to personal choice (Smith and Witter 2004). In some countries, a myriad of private sector actors who are not centrally regulated offer insurance at variable rates using different formulas to determine premiums and coverage. Each actor creates a distinct, relatively small risk pool (Annear 2016). With insufficient revenue through premiums set at affordable levels, these smaller pools cannot adequately cover costs of management. Moreover, the rates may not be affordable to poorer populations. Unregulated private sector actors may also not prioritize health goals in line with national and international policy.

Lastly, fragmentation may arise if funds are pooled separately for different diseases or health programs. For instance, funds for treating and controlling HIV are, in some instances, pooled separately from funds for other health services (WHO 2010). This often occurs when funds for a particular disease program are provided by a donor.

What makes it technically inefficient?

When risk pools are small, health risks are not evenly spread (Gottret and Schieber 2006). Furthermore, some pools may have excess funds while others may not have adequate funds (Gottret and Schieber 2006). The larger and more diverse a risk pool is, the more effective it will be and the lower the premiums can be for participants (Yip and Hafez 2015).

Risk pools that are too small, regardless of the type of fragmentation, have very limited negotiating or purchasing power with health care providers and are thus unable to negotiate lower costs and better quality of care (Gottret and Schieber 2006), making money spent less likely to produce positive health outcomes. This means that more input is required to produce less output, thereby reducing purchasing efficiency. When the risk pool becomes stratified into income brackets and is broken into smaller segments, no segment of the population will receive high-quality affordable care and many insurers will go out of business (Yip and Hafez 2015). Diluting the national risk pool drives up costs and erodes quality of care for all (Kutzin et al. 2010). Furthermore, having multiple pools that do not offer the same level of coverage leads to adverse selection, as sicker beneficiaries are more likely to select plans that offer more comprehensive coverage (Hussey and Anderson 2003).

Fragmentation of any form increases administrative costs, that is, larger pools have lower costs due to economies of scale, while smaller pools require putting more complex regulations and incentive structures in place in order to avoid adverse selection (Gottret and Schieber 2006). As mentioned above, when multiple pools exist and individuals can choose to participate in any plan, adverse selection may occur. To address this problem, insurers may evaluate the risk of potential members, but the process of collecting the necessary information to evaluate risks results in higher administrative costs (Hussey and Anderson 2003). Furthermore, while risk equalization or cross-subsidization (the transfer of funds from one risk pool to another) can adjust funding shortfalls, it results in higher administrative costs when many pools exist (Gottret and Schieber 2006). Furthermore, such transfers require the existence of adequate oversight, in the absence of which misallocation and wastage of resources may occur (Gottret and Schieber 2006).

Fragmentation by population groups is technically inefficient because the risk pools cover population groups in the same geographic area, thus duplicating efforts (WHO 2010).

Fragmentation of risk pools by disease can also be a source of technical inefficiency, as the separate funding streams may hinder the integrated management of certain diseases or health conditions,



causing duplication of efforts. This could occur, for instance, if funds for HIV control are pooled separately from funds for a drug abuse program (WHO 2010).

What questions can help us diagnose the inefficiency?

- What schemes provide health insurance care coverage?
 - What are the largest schemes?
 - What populations groups are covered?
 - Which populations are excluded?
 - How extensive are their benefits?
- What motivated the creation of more than one risk pool?
- Are these insurance schemes sustainably financed?
- How do prices differ between the populations covered and not covered?
- Are there multiple risk pools? If so, what are they? Are there risk equalization measures in place?

Whom should we interview?

This list of potential interview respondents is given as an example. Their titles and positions may change depending on context and are not always representative of their level of knowledge in a particular domain. Thus, the list should be adapted and can change over the course of the interviews.

- ▶ National-level managers at Ministry of Health working in policy and planning
- ▶ Ministry of Finance administrators (revenue and expenditure)
- ▶ National health insurance managers
- ▶ Private health insurance company
- ▶ Private care provider

What indicators can help diagnose the inefficiency?

	Indicator	Calculation/precise definition*	What it measures	Potential sources of data	Source of indicator*
1.	% of population covered by risk pool	Number of people covered by risk pool / total population	Coverage	National system, private providers	N/A
2.	# of risk pools in country		The level of fragmentation	National system, private providers	N/A
3.	# of risk equalization mechanisms		Extent to which fragmentation is mitigated	National insurance regulator	Carrin and James 2005
4.	# of transfers between risk pools for risk equalization		Extent to which fragmentation is mitigated	National insurance regulator	Carrin and James 2005
5.	# of services covered in the benefit package		Breadth of coverage	National insurance scheme, private providers list of services	N/A

*N/A indicates that no established indicator was available.



What are some examples of the inefficiency?

- ▶ A well-regulated private sector insurance industry is more efficient: Prior to 2005, Chile faced a fragmentation of its risk pools by income and health risk, as a result of the simultaneous development of public and private health insurance where premium contributions were based on earnings. Private health insurance premiums were only affordable to higher-income individuals, and furthermore private insurers opted to enroll low-risk individuals, pushing higher-risk and low-income individuals toward the public insurer, which offered inferior access and quality of services. This segmentation led to those who were privately insured using only private sector providers, while members of the public insurer used the already overburdened public sector, resulting in an inefficient use of the available resources. To remedy this situation, the Government of Chile enacted “universal access with explicit guarantees” (AUGE) in 2005. Among other things, AUGE provides an enforceable, legal framework to regulate basic health care through private providers for the most prevalent health issues in Chile, mandating access to the same benefits package for beneficiaries of both private and public insurers. The AUGE reform also resulted in the set-up of a health regulatory agency, Superintendencia de Salud (SDS), which was mandated with implementing and enforcing the licensing and accreditation of providers. This served to adequately regulate the private sector, standardizing level of care, and to create demand for health services sectorwide (Yip and Hafez 2015, Results for Development Institute 2014).
- ▶ A single national risk pool in South Korea was more efficient: In South Korea, prior to 2000, the health insurance system was split into three types of health insurance funds based on employment status managed by over 350 insurers. Complex rules for calculating premiums and regional variations leading to variation in contributions, high administrative costs, and the small size of the risk pools made the arrangement inefficient and financially unsustainable. In response to this issue, the government of South Korea merged all schemes under a single national health insurance fund in 2000. The creation of this single risk pool led to significant efficiency gains as a result of administrative cost savings, as administrative costs decreased from 7.87 percent to 2.38 percent of total health insurance expenditures from 1998 to 2008. These savings were used to finance an expansion of benefits and reduced patient cost sharing (Yip and Hafez 2015).

Materials for Team Leading Next Steps

While beyond the scope of the Technical Efficiency Guide process, the sections below share some ideas that may be a useful starting point for the team responsible for leading next steps, if inefficiencies covered in this module are prioritized. If the country/region needs more detailed information, these leaders can consider using some of the tools and resources listed. If they want to brainstorm areas for potential efficiency gain, they can browse the table with high-level ideas to consider

Additional tools and resources

- ▶ This article provides a framework for analyzing performance of the health financing functions, including pooling, in the context of social health insurance (Carrin and James 2005): [Key performance indicators for the implementations of social health insurance](#)
- ▶ This step-by-step guide for analyzing a country’s health financing system provides guidance for analyzing key health financing functions, including pooling (Kutzin and McIntyre 2016): [Health financing country diagnostic: a foundation for national strategy development](#)
- ▶ This document provides a framework for identifying and correcting inefficiencies that hinder the delivery of priority health services. It proposes a step-by-step approach for identifying



inefficiencies based on health system functions and subfunctions (Sparkes et al. 2017): [A system-wide approach to analyzing efficiency across health programmes](#)

- ▶ This report provides key lessons and promising approaches for improving health system efficiency, including efficiency in risk pooling (Yip and Hafez 2015): [Reforms for improving the efficiency of health systems: lessons from 10 countries](#)

Potential areas for efficiency gain

Cause of inefficiency	Potential activity area	Resources
Fragmentation in risk pools		
Unregulated private sector	Regulate the private sector: In many countries, it has proven effective to introduce certification, licensing, and accreditation requirements of the private sector to even the playing field and offer consistent service across public and private insurers. Some countries have even gone so far as to regulate maximum wait times and co-payments across private providers (Yip and Hafez 2015).	Yip and Hafez, 2015
Small risk pools in private sector	Support a national health insurance plan: Establishing a national health insurance fund can serve to remove fragmentation from the risk-pooling scheme if it is well funded and the pool of participants is large and varied by income and risk levels. If already established, a national health insurance scheme should be funded by a single payer or coordination mechanism so as not to re-fragment the revenue stream. It is also important that public insurance be regulated the same as the private sector and costing and billing is streamlined across the two sectors for basic health services (Kutzin et al. 2010).	Kutzin et al., 2010
Multiple risk pools	Establish risk equalization funds: When multiple risk pools exist, fragmentation can also be addressed by establishing risk adjustment or risk equalization funds. These mechanisms consist in the transfer of funds between insurers to compensate for differences between premiums and the expected cost of care (in the case of <i>ex ante</i> mechanisms) or the actual cost of care (in the case of <i>ex post</i> mechanisms) (He and Wu 2016).	He and Wu, 2016



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