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International Experiences in Hospital Autonomy and Revenue Generation: Lessons for the Philippines

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EXECUTIVE SUMMARY

A variety of health sector reform measures have been implemented in countries around the world to address system-wide shortcomings and inefficiencies. Hospital autonomization – characterized by increased decision-making power at the hospital level vis-à-vis higher public sector authorities/funding agent – has been tried in several developing countries as a means to heighten system efficiency/productivity, quality of care, and resource mobilization. The following report reviews the evidence base relating to one of those goals – increased resource mobilization – to inform LEAD's work on improving national and local level policies to facilitate efficient delivery of family planning services.

A desktop review of the literature reveals a number of findings relating to the scope of autonomy, degree of revenue generation, and use of recovered costs, as well as cross-cutting issues. While the pitfall of inferring causation from associations is stressed throughout the report, the following provides a summary of the main points.

In terms of the *scope of autonomy* and resource mobilization, findings suggest that:

- User fees (on consultations and pharmaceuticals) and receipts from insured patients have been the primary means of revenue generation; less common measures to mobilize resources include such mechanisms as advertising space on billboards, renting space and securing third party funding.
- To varying degrees, conditions are often placed on hospital authority to determine fee schedules as well as retain and/or manage own-source funds. Hospitals in sub-Saharan Africa (SSA) were found to be most severely constrained in terms of determining fee schedules, with fewer constraints found in other regions of the world. Conditions on the retention and management of mobilized resources were found to be common, ranging from line item stipulations to time-based spending mandates.

In terms of the *degree of revenue generation*, findings suggest that:

- While many studies have found increases in revenue generation following autonomization, the level of revenue generated relative to costs is often quite modest (e.g. 10% - 30% of hospital expenditures).
- Levels of revenue generation can vary substantially from one autonomized hospital to another. A number of supply- and demand-side factors which may help explain these variations include: capacity of hospital-level systems to implement rationally-designed user fees schemes, constraints on hospital managers' authority to implement user fee schemes, and adequate assessment of demand for fee-based services.

In terms of *use of recovered costs*, findings suggest that:

- Staff salaries and incentives and medicine/materials/infrastructure are the most common uses to which own-source revenues are put. Allocation to these items appear to be driven both by hospital-level needs and higher-level constraints to retaining/managing own-source funds previously described.

In terms of *cross-cutting issues*, findings suggest that:

- Resource mobilization may have unintended equity consequences. Government subsidies to autonomized hospitals often do not decrease following autonomization, and in some cases have increased. Combined with generally modest levels of cost recovery, public sector resources have sometimes been used to subsidize private/revenue-generating services.
- Resource mobilization may affect equity of service availability. A common theme appears to be that user fee-based activities may adversely impact equity in utilization even if overall levels of utilization remain unchanged or even increase.
- Both system and hospital-level factors can constrain capacity to spend own-source revenue.

The findings above result in the following six summary conclusions:

1. Isolating the "effects" of hospital autonomization on revenue generation is difficult due to methodological constraints to making causal inferences.
2. Greater autonomy along one function without corresponding autonomy along other functions may limit effectiveness of resource mobilization goals.
3. The success of autonomized hospitals in mobilizing own-source revenue varies widely, and the fact that hospital autonomy is usually associated with a package of reform measures renders it difficult to discern clear patterns.
4. Cost recovery rates from revenue-generating activities are generally low, and autonomization does not necessarily lead to a decrease in government subsidies for hospitals.
5. Adequate hospital-level capacity to develop rational, sustainable fee schedules to generate revenue – a common denominator of the most successful cases – is often lacking.
6. Where hospital-level authority over allocation of own-source revenues exists, revenues are often funneled back into the resource-generating activities themselves rather than subsidizing other hospital services.

Based on the findings and conclusions, four recommendations are proposed to increase the likelihood that hospital autonomization meets desired revenue generation goals:

1. Set an appropriate timeframe over which to assess the "success" of autonomization and resource mobilization, particularly given that levels of government support are often maintained or even increased in the short-term.
2. Develop realistic goals for levels of cost recovery given the modest levels of cost recovery experienced by previously autonomized hospitals.
3. Complement changes in hospital manager authority to mobilize resources with technical assistance to appropriately do so (such as in setting fee schedules).
4. To increase availability of permanent family planning services, consider mechanisms which either channel own-source revenue raised from family planning services back into those services or create policies which require portions of general own-source revenues to be channeled into permanent family planning services.

LIST OF ABBREVIATIONS

APVVP	Andhra Pradesh Vaidya Vidhan Parishad
IHSP	International Health Systems Program
HSPH	Harvard School of Public Health
MOH	Ministry of Health
MRS	Medical Relief Society
NPSM	New Public Sector Management
RCT	Randomized Control Trial
SSA	Sub-Saharan Africa

BACKGROUND

Context

An international push for implementing health sector reforms has gained momentum since the 1990s. System-wide inefficiencies, declining quality of care, inequities in resource allocation, and demoralized work forces commonly cited as problems which affect health care systems globally. In the 1980s, several governments in Western Europe and other developed countries initiated a variety of reforms to address these concerns in their countries. Since that time, many developing countries have undertaken similar public sector reform measures. Informed by the experiences of developed countries, the more recent wave of health sector reform in developing countries has often encompassed both structural changes – such as health care financing reform or changes in provider payment systems – and organizational changes, such as decentralization of service provision and use of "new public sector management" (NPSM) techniques (Berman and Bossert 2000). Together with a transfer of locus of control to lower levels of the system (decentralization), NPSM emphasizes the application of private sector principles to public sector operations. Following models in the U.K., New Zealand and elsewhere, NPSM reforms have ranged from increasing the managerial autonomy of local-level facilities, to replacing bureaucracies with parastatal corporations, and finally privatizing public sector organizations.

In the health sector, hospitals have been a logical target for reform for reasons of allocative and technical inefficiencies. There is general agreement that hospitals have not performed to expectations, with "legendary" shortcomings in their functioning (McPake and Hanson 2004). On the one hand, the high investment costs associated with hospitals has been increasingly viewed as an inequitable allocation of resources (Govindaraj and Chawla 1996). While it is recognized that tertiary care is inherently the most costly level of the system, societal benefits from public sector investment in hospitals can be limited: even though spending on hospitals often accounts for one-half or more of the health sector's budget, hospitals in most countries are concentrated in urban areas with a much narrower scope of coverage compared to lower-level facilities. In Indonesia, for example, an underlying rationale to experiment with autonomy stemmed from a desire to re-allocate a greater share of governmental funds towards primary and secondary care. (Shaw 2004) More generally, policymakers in many countries have searched for a more allocatively efficient use of increasingly scarce resources devoted to the health sector (Mills, Vaughan et al. 1990; Castaño, Bitran et al. 2004). On the other hand, hospitals are commonly perceived as making inefficient use of resources that are allocated to them (Govindaraj and Chawla 1996; Harding and Preker 2000). Being particularly complex organizational structures which often constrained by "hierarchical bureaucracies," many have felt that hospitals to be in great need of reform (Preker and Harding 2003).

The autonomization of hospitals has been seen as a reform capable of addressing the shortcomings and inefficiencies of hospital service delivery. Hospital autonomization – increased decisionmaking power at the hospital level vis-à-vis higher public sector authorities/funding agent – is motivated by three primary goals: heightened

efficiency/productivity, quality of care, and resource mobilization.[1] Hospitals are seen to be overly constrained by hierarchical governmental organization which prevents hospital managers from making decisions appropriate for the hospital. Similarly, such tight control of hospital managers from above has been combined with a lack of exposure to market forces and competition from the outside. These two factors are perceived as contributing to inefficiencies in management, subpar quality of services, and continuing high costs of investment. Correspondingly, autonomization can provide both carrots and sticks to answer these problems: it heightens the bottom-line accountability of hospital managers but also provides them with the means to make greater/more efficient use of resources generated from service delivery (Shaw 2004). In terms of resource mobilization, for example, greater autonomy in generating and managing own-source revenues – the carrot – may be accompanied by reductions in central-level subsidies to hospitals – the stick. In short, by not only "letting managers manage" but requiring them to do so, health care reformers have hoped that hospital autonomy can address the operational efficiency and quality problems and therefore bring about a more equitable distribution of resources which are invested in hospital services (Preker and Harding 2003).

While autonomy in mobilizing resources is an important component of most autonomization policies (Govindaraj and Chawla 1996), it is not clear that greater autonomization will result in higher levels of hospital revenue generation. On the one hand, hospital autonomy to allocate and manage own-source revenue raised may be an incentive for hospitals to increase mobilized resources – through increased volume of fee-based services, better quality service, and more efficient management. In becoming more technically efficient, then, hospitals would also facilitate greater system-level (allocative) efficiency and overall performance. On the other hand, such high expectations of mobilizing resources may not be realistic. Increases in the levels or scope of service fees might drive away patients, leading to an overall reduction of revenue generated and more inequitable provision of services. And if higher levels of revenue generation are offset by public sector reductions in hospital subsidies, hospitals may end up being discouraged from continuing efforts to recover costs (Castaño, Bitran et al. 2004). With effect of autonomization on resource mobilization theoretically ambiguous, empirical analysis is necessary to better understanding the relationships between the two.

Objectives

This report analyzes developing country experiences with hospital autonomy and resource mobilization to provide lessons on policies aimed at increasing support for family planning/reproductive health programs (particularly contraceptive security) through increased revenues. Three of the LEAD project's objectives are to find alternative modes of financing contraceptives and reduce the Philippines' reliance on donated contraceptive commodities (i.e. contraceptive security), help Local Government

[1] Other rationale such as public accountability and equity can be added to this list (see, for example, Chawla, M., R. Govindaraj, P. Berman and J. Needleman (1996). Improving Hospital Performance through Policies to Increase Hospital Autonomy: Methodological Guidelines. Boston, MA, Data for Decision Making Project, Harvard School of Public Health.), but the three efficiency, quality, and resource mobilization are the most commonly cited reasons for autonomy.

Units strengthen financial, managerial, and technical capacity to provide family planning and selected health services, and improve the policy and legislative framework at both national and local levels to finance and support these same programs[2]. Revenue generated by autonomized hospitals hold the potential to help achieve all three of these objectives. A better understanding hospital autonomization's capacity to meet these goals therefore may help inform future LEAD project strategies and activities. To that end, this literature review focuses on developing country experiences in hospital autonomization and resource mobilization to sustain the objectives of the LEAD-Philippines project.

METHODOLOGY

The following report of international experiences in hospital autonomization and resource mobilization is informed by a desk-based literature review, conducted during the period February – June, 2005. Documents consulted included both peer-reviewed journal articles as well as public domain "grey literature" available on the Internet. Primary search engines included PubMed (for peer-reviewed sources), Google (for grey literature), and site-specific searches (e.g. IHSP documents related to autonomization; documents from the ELDIS Health Systems Resource Centre). Manual searches of bibliographic references contained within the documents retrieved were also searched to identify further pieces of literature.

Analytic Framework

The following literature review considers public sector hospital "autonomization" to refer to a reduction in authority of the hospital's funding agent (e.g. MOH) and increase in decisionmaking power of the hospital's management structures (Castaño, Bitran et al. 2004). The precise nature of the "reduction" and "increase" in authority/decisionmaking power varies widely from context to context and management function to function, giving rise to a wide continuum of modes of hospital autonomization (see (Chawla, Govindaraj et al. 1996) for more detail on such a conceptualization).

The literature review draws upon two frameworks to analyze hospital autonomy. In a first framework (Preker and Harding 2003), five types of incentives in the external environment are felt to shape hospital behavior: allocation of decision rights, such as control of factor inputs, scope of activities, and financial management; distribution of residual claims, that is the degree to which hospitals can retain and use own-source revenues; degree of market exposure; structure of accountability mechanisms, such as contracting processes to replace direct oversight; and provisions for ensuring social functions which may be necessary in the face of increased "bottom-line" pressures resulting from the first four criteria. An autonomous hospital enjoys a degree of self-control over some or all of these incentives, and therefore falls somewhere between the two extremes of this continuum of more and less restrictive modes of hospital organization. At the most restrictive end lie hospitals as budgetary units. Such hospitals are often managed as a government department and have centrally determined budgets (often simply based on the previous year's budget), all revenues returned to the central

[2] Adapted from http://www.msh.org/programs/philippines_lead.html.

Ministry, and functions which are neither explicitly defined nor differentiated from those of the MOH. At the other extreme lie privatized hospitals, in which the public sector essentially abdicates responsibility over hospital management and operations. In between these two extremes fall autonomized hospitals. Such hospitals are granted increased scope for operations (e.g. revenue generating and services offered) and more explicit accountability arrangements (e.g. performance requirements, Board of Trustees), but continue to be subject to direct control by the central Ministry over some or many aspects of operations (e.g. staffing or user fee levels). The MOH usually also bears ultimate responsibility for revenue losses incurred by the hospital.[3]

In a second framework, Chawla, Govindaraj et al. (1996) characterize autonomization as the degree of decisionmaking centralization which governs hospital behavior across a range of policy and management functions. The policy and management functions include: national health goals; hospital-specific goals; strategic management; administration; procurement; financial management; and human resources management. Autonomization is therefore not all-or-nothing: autonomy along one dimension may or may not be associated with autonomy along another. For example, a MOH may retain complete control over defining a hospital's mission and goals (low autonomy), but appoint a Board (medium autonomy) which has significant leeway in setting terms and conditions for human resources needed to attain those goals (high autonomy).

Though there are differences between these two frameworks, their similarities are perhaps most relevant for this literature review. (see Table 1 for a comparison of dimensions between the two frameworks) While Preker and Harding imply that privatization is the most extreme evolution in increased management authority, (Chawla, Govindaraj et al. 1996)explicitly reject the inherent importance of ownership characteristics (pointing out that public hospitals may be just as autonomous as private ones). Their criteria for assessing degree of autonomy also do not completely overlap. Degree of market exposure in the Preker and Harding framework, for instance, has no clear parallel in Chawla, Govindaraj et al. Yet the frameworks share two fundamentally important characteristics. First, autonomy is situated along a continuum of management environments and defined in relation to degree of hospital decisionmaking power over a number of functions. Second, no one aspect of decisionmaking power is viewed as inherently more important than another. Autonomy is therefore not all-or-nothing, and assessing a hospital's "degree" of autonomization is a somewhat subjective exercise. For example, autonomy granted for one function (e.g. resource mobilization) may be effectively constrained by limitations to autonomy for another function (e.g. human resource management) This point of view appears to widely shared by others conducting research into the topic (see, for example, (Collins, Njeru et al. 1999; Castaño, Bitran et al. 2004)). Third, and of particular relevance to this literature review, both frameworks deal to varying extents with the issue of own-source revenues. While the Preker and Harding framework appears to take a somewhat broader view than the Chawla, Govindaraj et

[3] Preker and Harding also refer to corporatized hospitals as a step closer to privatization than autonomized hospitals. Corporatized hospitals may be viewed as an extreme version of autonomization, whereby the hospital is a legally-established, independent entity (e.g. publicly owned private corporation) and a fully accountable "hard budget constraint."

al.framework – that is looking at the allocation as well as mobilization of revenues generated by the hospital – both consider resource mobilization as a fundamental dimension of autonomization.

Table 1. Comparisons of autonomization frameworks

Preker and Harding	Chawla, Govindaraj et al.
Allocation of decision rights: ▪ Inputs ▪ Labor ▪ Scope of activities ▪ Financial management ▪ Clinical management/nonclinical administration ▪ Strategic management ▪ Production processes	▪ Strategic Management – asset management, resource planning and allocation, mission definition, Operational guidelines ▪ Human Resources management – hiring/firing of personnel, creation of posts, determination of employee rules, contracts and salaries ▪ Procurement - purchase of drugs and medical supplies, purchase of non-medical supplies, purchase of equipment ▪ Administration - all other day-to-day management activities
Residual claims distribution	Financial Management – resource mobilization
Degree of market exposure: ▪ Proportion of services delivered to clients with choice	No direct analogy
Structure of accountability mechanisms: ▪ Hierarchical supervisions vs. rules/indirect mechanisms (e.g. contracting, regulation, boards)	Financial Management – Accounting of income and expenditures
Provisions for ensuring social functions: ▪ Explicit funding, demand-side subsidies, development of insurance	Health goals – role definition

Key Points

- Autonomization involves some degree of transfer of locus of authority from the government/public sector to individual hospitals.
- Autonomization is multi-dimensional: autonomy can be granted across a range of functions.
- Autonomization is not all-or-nothing: greater autonomy for one set of functions does not necessarily imply greater autonomy for another set of functions.

Limitations

Though the literature reviewed offers several insights offers several insights of the ways in which hospital autonomization might affect resource generation, two are two reasons to exert a good deal of caution in attributing hospital outcomes and behaviors to autonomization. First, the literature review was not intended to be a rigorous meta-analysis from which one might draw statistical inferences about the overall "effects" of autonomization.

Second, studies are often limited in their ability to tease apart cause-and-effect processes. Cross-sectional studies – studies which draw upon data measured at only one point in time – are the most limited in providing a basis for causal inferences. Though such studies may be able to shed light on associations between hospital autonomy and revenue generation, they provide no information on changes over time and therefore potential

causes-and-effects. Even studies which draw upon data measured over time may be limited in their ability to isolate the "effect" of autonomy on generating revenues. Suppose that a study finds an increase in revenue generation following autonomization. A common problem in attributing that increase to autonomization lies in the difficulty in separating the effect of hospital autonomization from other factors which might be the driving force. For instance, autonomization is usually implemented alongside other reform measures, such as changes in provider payment mechanisms or performance evaluation measures. If it is the changes in provider payment which take place in autonomized hospitals – not autonomization itself – which lead to changes in revenue generation, then it would be erroneous to attribute revenue generation changes to autonomy. One needs to therefore account for those "confounding" factors to isolate the independent effect of autonomy on revenue generation. Similarly, simply comparing revenue generation across autonomized and non-autonomized hospitals might not isolate the independent effects of autonomy on revenue generation. Hospitals are often autonomized based on meeting a set of criteria. In Indonesia, for instance, hospitals eligible for autonomy had to have demonstrated cost recovery levels of at least 50% (Bossert, Kosen et al. 1997). Since such hospitals are *selected* to be autonomized, they are likely fundamentally different from non-autonomized hospitals (perhaps inherently more efficient at delivering services or more prone/able to use medical technologies which heighten efficiency). If so, the relationship between hospital autonomy and revenue generation would again be confounded by differences in hospital characteristics which are associated with autonomy.[4] Thus while autonomy might be associated with a certain degree of resource generation in the selected hospitals, the effect might be greatly attenuated if generalized across non-autonomized hospitals.

The methodologies of the studies reviewed are limited in their ability to isolate the effects of hospital autonomization on revenue generation above and beyond other factors which might influenced observed outcomes. Four of the studies were cross-sectional, inherently minimizing their capacity to draw causal inferences (see Table 2 in the Appendix). Further, none of the studies consulted were able to control for the confounding or self-selection problems discussed above. Studies designed as randomized control trials (RCTs) go the furthest towards addressing confounding and self-election limitations on causal inference.[5] None of the studies consulted was designed as a RCT. Similarly, no studies were conducted under "natural experiment" conditions, a methodology which is somewhat less robust than a RCT but still attends to the methodological concerns

[4] Indeed, it was found that "the initial success of the conversion of hospitals in the United Kingdom into autonomous trusts in the early 1990s, can be explained by a self-selection problem – the more successful hospitals are more likely to make the decision to covert into trusts." Mays, N. (2000). Reforming Integrated Systems: the case of the UK. Reforming health sectors. A. J. Mills, Kegan Publishers. as cited in Castaño, R., R. Bitran and U. Giedion (2004). Monitoring and Evaluating Hospital Autonomization and Its Effects on Priority Health Services. Bethesda, MD, Partners for Health Reformplus, Abt Associates Inc..

[5] A RCT would randomly assign the "treatment" of autonomization to hospitals, then compare the degree of revenue generation. Such a design inherently attends to the methodological concerns outlined previously. Such a design is considered the "gold standard" for research into causes and effects.

outlined above.[6] Instead, all relevant studies retrospectively compared revenue generation pre- and post-autonomization (either solely within a hospital or compared to other autonomized/non-autonomized hospitals). Such a methodology exposes those studies to confounding and self-selection problems and therefore limits ability to attribute "effects" of autonomy on resource mobilization. This is not to imply that the studies' findings are without use or that lessons from their experiences cannot be applicability to the Philippines. Yet it is important to bear in mind that associations do not always imply causation, and that the generalizability of their findings may be inherently limited.

Key Points

- Drawing causal inferences from hospital autonomy to revenue generation is limited by the nature of the evidence base.

FINDINGS ON AUTONOMIZATION AND REVENUE GENERATION

To review the current knowledge on hospital autonomization as it relates to revenue generation, this review analyzes the scope of autonomy, scope of resource mobilization activities most commonly employed, the degree to which those activities generate resources and recover costs, and the uses to which own-source revenues are commonly put. Table 2 in the Appendix provides a comparative overview of selected findings.

Scope of autonomy

Range of revenue-generating activities

User fees and receipts from insured patients are the primary means of revenue generation, though alternative mechanisms exist as well. The majority of studies reported that user fees account for the bulk – if not all – of own-source revenues. Common arrangements include fees on services/consultations (almost all instances), fees on pharmaceutical purchases (all sub-Saharan Africa [SSA] cases and several cases from other regions), and charging for certain classes of beds (e.g. Indonesia, Rajasthan (India)). User fee receipts may come directly out-of-pocket from patients – most commonly the case in SSA – or from insurers where such systems exist. The Colombian model, for instance, eschews user fees at the entry point but relies on revenues from insured patients to cross-subsidize services for the non-insured (McPake, Yepes et al. 2003).

There are also instances in which less common mechanisms have been used to generate revenue. Autonomized hospitals in Zambia were found to supplement user fees with such activities as selling advertising space on billboards, operating grain mills, and renting space to private pharmacies. These supplementary activities accounted 12 – 95% of total non-governmental revenues in four hospitals studied (Hanson, Atuyambe et al. 2002). District-level hospitals managed under the autonomous Andhra Pradesh Vaidya Vidhan Parishad (APVVP) organization in India generated more resources through private donations (60% of own-source revenues) than user fees (40%) over a 10 year period in the 1980s and 1990s. Further, the APVVP's autonomization status itself helped

[6] A natural experiment takes advantage in a phased-in timing of the treatment (autonomization) in order to account for temporal effects (e.g. heightened efficiency through improved medical technologies) which would have taken place even in the absence of autonomization

secure a $130 million World Bank loan, a significant source of external funding (Chawla and George 1996). In the Indian state of Rajasthan, in-hospital autonomous organizations ("Medicare Relief Societies") have been established to complement existing service provision. Authorized to experiment with supplementary financing schemes, these societies not only set levels of types of user fees, but generate revenue through receipts from in-house hospital pharmacies, leasing of wards to third parties (e.g. Rotary/Lions clubs), external funding in the form of loans secured from financial institutions, and matching governmental grants for purchasing equipment) (Sharma and Hotchkiss 2001). Table 2 in the Appendix details the range of resource mobilization activities in the cases studied.

Key Points

- User fees on consultations and pharmaceuticals (to a lesser extent on private beds) are the most common revenue-generating mechanisms.
- Alternate revenue-generating mechanisms such as donations and leasing of wards – while rarer – can be as or more important sources of revenue than user fees.
- Autonomization has permitted hospitals in some contexts to increase external funding, such as multilateral donors.

Conditions on revenue-generating activities

Consistent with Chawla, Govindaraj et al.'s conceptualization of autonomy, a "decision space" framework related to decentralization is used to inform the following discussion on conditions imposed on revenue-generating activities. Drawing from an array of approaches and theories to analyze decentralization, (such as public administration, social capital and "principal-agent" approaches), "decision space" refers to:

> "the range of effective choice that is allowed by the central authorities (the principal) to be utilized by local authorities (the agents). This space can be formally defined by laws and regulations (and national court decisions)…[and] may also be defined by lack of enforcement of these formal definitions that allows lower level officials at each level to "bend the rules." (Bossert 1998)

For the review at hand, the relevant range of effective choice relates to mobilizing resources. Under this framework, decision space to *determine* hospital fee schedules is most often highly constrained or not-at-all, while central-level limitations on decision space for *retaining* or *managing* mobilized resources is more gradiated. In terms of setting fee schedules and prices, the decision space of autonomous hospitals in SSA tends to be quite narrow, while the decision space in hospitals from other regions tends to be quite wide. In every case studied from SSA, the MOH put limitations on hospitals' ability to determine fee schedule. The most restrictive limits were found with the Parirenyatwa National hospital in Zimbabwe, where fees were entirely determined by the MOH (Needleman, Chawla et al. 1996). The Kenyatta National Hospital and hospitals in Zambia enjoy somewhat greater formal decision space whereby hospital-determined prices are subject to approval by the MOH (Collins, Njeru et al. 1999; Hanson, Atuyambe et al. 2002). Similarly, while a standard public sector mark-up-over-cost fee rate of 20% had been set by the Ghanian MOH, informal decision space was found to be wider: fees varied in practice with facility, from 11% – 275%) over cost (Nyonator and Kutzin 1999).

Conversely, far fewer restrictions appeared to be imposed on hospitals from other regions. Though one study from Indonesia reported MOH retaining approval authority for setting fees (Bossert, Kosen et al. 1997), other studies from non-SSA countries did not explicitly report restrictions or guidelines impose on setting fee schedules for hospitals. For instance, the governmental law sanctioning APVVP hospitals in India makes no mention of regulating user fee charges, and autonomous hospitals in Cambodia, Indonesia (Suwandono, Gani et al. 2001) and elsewhere in India were reported to determine fee schedules entirely according to their own criteria.[7] The potential implications of this range of decision space on resource mobilization are discussed later in the next section.

In terms of retaining or allocating resources mobilized, conditions are often placed on the use of costs recovered from the revenue-generating activities described above. While autonomized district hospitals in Cambodia retain and manage all but 1% of revenues, for example, the MOH regulated the proportions to be spent on personnel (49%) and operating costs (50%) in at least one of the hospital studied (Akashi, Yamada et al. 2004). Similarly, Medical Relief Society (MRS)-managed hospitals in Rajasthan, India retain all funds (which are also tax exempt) and appear to enjoy a good degree of informal decision space on the level of charges.[8] Yet they must also comply with certain protocols for spending – 70% of revenue should be spent in the same year as the patient's visit – conditions which appear to bind in practice (Sharma and Hotchkiss 2001). And the government of Indonesia permits select (autonomized) hospitals to retain all revenue from certain activities, but limits spending of recovered costs to certain ends (e.g. staff salaries and pharmaceuticals versus equipment and civil works) and in defined percentages (Suwandono, Gani et al. 2001) Lieberman and Alkatiri in Preker and Harding).

Key Points

- Hospital managers' decision space to *set* fee schedules for revenue-generating activities is most often limited in the context of SSA, while fewer limitations were reported in studies from other regions of the world.
- Hospital managers' decision space to *allocate or retain* revenue generated by activities is often limited by the central level in all regions studied.

Degree of revenue generation

Level of revenue generation

While many – if not most – studies report significant increases in revenue generation following autonomization, the level of revenue generated relative to costs is usually quite limited. Own-source revenues were commonly found to increase following autonomization in the studies reviewed. Examples include: increased revenue for Indonesian hospitals in the first year of autonomization (though most were not able to sustain income growth over multiple years) (Bossert, Kosen et al. 1997); in Kenya,

[7] It is possible that restrictions existed but were not reported by the relevant articles.

[8] For example, while the State suggests that purchases over Rs. 5000 should be approved by the MRS institutional heads, MRS' were found to set their own thresholds ranging from Rs. 1,000 to 100,000.

increases in Kenyatta National Hospital (Kenya) own-source revenue from 1-10% over a 7-year period following autonomization (Govindaraj, Obuobi et al. 1996); the Parirenyatwa Hospital of Zimbabwe, which reportedly collected 3 to 12 times over multiple years as much than did a comparable public hospital[9] (Needleman, Chawla et al. 1996); public hospitals in Peru whose increases ranged from 1.5 to 5 times original levels over a 5-year time period (Arroyo Laguna 1999); and the National and Maternal Child Health Center referral hospital in Cambodia, which increased revenue threefold over three years following autonomization (Akashi, Yamada et al. 2004). As cautioned in the Methodology section, however, associations between granting of autonomy and increased revenue generation should not necessarily be interpreted as causal. In the Peruvian case, for example, fees garnered for services increased in the health sector more generally (from 7% – 17%) over the same period during which autonomized hospitals' revenues increased(Arroyo Laguna 1999). The degree to which autonomy itself led to increased levels of revenue – versus changes in the health system environment – is not entirely clear. Indeed, it would be necessary to analyze resource mobilization by comparable non-autonomized hospitals to get a better sense of the impact of autonomization on revenue generation. While these examples suggest that autonomization across varied contexts is associated with the goal of resource mobilization, then, it would be inappropriate to ascribe the increase in own-source revenue solely to autonomization without further study.

At the same time, several reports indicated that recovered costs accounted for only a fraction of total hospital expenditures. Reported rates of revenue generated relative to hospital expenditures ranged were often in the 10% – 30% range, from a low of 1.5% (multiple states in India) to highs of 50-80% (Cambodia and Indonesia). While a recovering a high degree of total hospital expenditures may not be a realistic goal, some of the same studies also pointed to inabilities to fully recover *operating costs* of the services themselves upon which user fees, privatized wards, etc., were assessed. In a recent study of three autonomized Indonesian hospitals, none were able to recover recurrent costs associated with maintaining commercial beds even though two of three recovered costs of the specific services for which they charged (i.e. hotel benefit beds). Further, had staff salary costs been included, none of the hospitals would have achieved short-term profitability[10] (Suwandono, Gani et al. 2001). Total and recurrent cost recovery rates for specific services in four levels of hospitals in China ranged from 37-93% and 43-91%, respectively (Forbes, Hindle et al. 2002).

Key Points

- Several studies pointed to increased levels of resource mobilization following hospital autonomy.

[9] The wide range of relative revenue collection may reflect uncertainty regarding the accuracy of cost estimates as well as actual differences. Regardless, the report did not call into question that the autonomized hospital collected relatively more than the public hospital.

[10] Staff salary costs were excluded because hospital managers did not control staff salaries (i.e. hospital managers' decision space did not extend to salary aspects of human resources). Those costs were therefore considered fixed and not included in the cost recovery calculations.

- Recovered costs generally represent a modest fraction (10% – 30%) of hospital operating costs, though do reach significantly higher levels in some circumstances.

Explaining variations in levels of revenue generation

A number of supply-side factors – as well as underlying context of autonomization – may help explain both the challenges of, and variations in, recovering hospital costs. A common theme which has emerged from several case studies is a lack of hospital-level systems/capacity to implement rationally-designed user fees schemes, that is fee schedules designed to recover a certain percentage of operating costs. Studies of newly or planned autonomized hospitals in Indonesia, Malawi and Jordan, for instance, found that several of the hospitals undergoing autonomization did not have accounting systems in place to be able to set fees to costs. (Shehata and Cripps 2000; Banks, As-Sayaideh et al. 2002; MSH Malawi) In Indonesia, the hospital accounting systems in place for one study's sample did not provide necessary financial data to conduct a comprehensive, routine financial analysis, limiting hospital managers' ability to set fees based on costs. More generally, it appears that the resource requirements needed to implement sustainable fee schedules are large, including adequate strategic planning skills, management information systems, and accounting expertise.

Additional constraints on hospital managers' "decision space" to implement user fee schemes may compound low hospital-level implementation capacity. For example, fees set (by the MOH) below cost in Zimbabwe created not only a "structural deficit," but also a disincentive to take patients reimbursed by the government (as opposed to private insurers) (Needleman, Chawla et al. 1996). The authors of the Rajasthan (India) study indicate how both sets of factors – hospital-level lack of capacity and central-level decision space restrictions – can impact revenue generation. There, the low levels of resource mobilization experienced in several Indian states was felt to stem from a combination of bureaucratic collection procedures, setting of fee levels not based on cost criteria, and poorly overseen exemption mechanisms (up to 90% of patients receive free care) (Sharma and Hotchkiss 2001). Even if hospital-level resources exist to determine sustainable fee schedules, then, constraints in the external environment may also come into play.

Lack of demand-side assessment also emerges as a second capacity limitation resulting in low resource mobilization levels. Multiple studies point out that potential demand for fee-based services was not adequately researched through market demand studies prior to imposing fees. In the case of three Indonesia hospitals, commercial bed occupancy lagged behind non-commercial bed occupancy in two of the three sites studied. The study authors indicated that a low commercial bed occupancy rate – coupled with higher nurse:bed ratio – in one of the specialist hospitals under study likely indicated a weak market for "hotel-oriented" activities at that level of hospital. It was implied that better study of the demand side might have facilitated fee setting more conducive to recovering full costs(Suwandono, Gani et al. 2001). In China, fee charging on such services as inpatient bed days, pathology tests, and drugs, had been permitted even before recent autonomization but fee ceilings set by the central government below cost inhibited cost recovery. Even after greater autonomy was granted to hospitals, it was suggested that the

lower incomes of township-level populations coupled with those hospitals' "overall inability to market their services" resulted in decreasing cost recovery rates among township hospitals compared to increasing cost recovery rates among higher-level hospitals. (Forbes, Hindle et al. 2002)

While better hospital capacity to set rational fee schedules, appropriate decision space to do so, and an appropriate understanding of the market demand do not guarantee higher levels of and efficiency in resource mobilization, those elements do appear to be important for success. The case of Cambodia suggests the importance of well-determined fee levels in successfully recovering costs. As related previously, the Cambodian hospital was able to recover a substantial portion (50-80%) of its operating costs. The authors of two studies suggest that the user fee schemes were well-conceptualized and involved significant planning to survey health utilization patterns, identify all service costs, and set fees based on those costs (Akashi, Yamada et al. 2004; Jacobs and Price 2004). Indeed, there were increases in number of hospital visits in the several months following both the introduction of user fees and a subsequent fee increase, and a national-level study indicated a doubling of outpatient and inpatient visits over two-and-one-half years following implantation of user fees. As an example, bed occupancy rates of costly rooms (i.e. private and 2-patient rooms) were found to be at least as high or higher as those for 8-patient rooms over the course of the study period, suggesting that user fees were appropriate for the level of local demand. Additionally, patient satisfaction in Cambodia of hospital service quality following the introduction of user fees was reported to be as high as 95% (Akashi, Yamada et al. 2004).[11] Similarly in Rajasthan (India), about three-quarters of hospitals with autonomous MRS set fee schedules according to costs, and departments of some hospitals were found to be self-sufficient(Sharma and Hotchkiss 2001). While those hospitals' relatively high cost recovery rates cannot be ascribed solely to rational fee setting, it is likely that such costing criteria played into their success.

In addition to more rationally set fee schedules, a diversified portfolio of revenue-generating mechanisms may also aid in recovering higher levels of costs. As previously described, autonomous hospitals in India average cost recovery rates of less than 2%, while those in Rajasthan average 10% – 15%. On the one hand, the hospitals charge user fees for a full range of services and judiciously exercise exemptions, heightening revenue generation. On the other hand, the multiple sources of financing available to supplement user fees are also felt to aid in resource mobilization. Private organizations and individuals had adopted wards in over one-third of the hospitals, for instance, and almost 30% secured private donations or matching governmental grants (Sharma and Hotchkiss 2001). Thus while effective determination and implementation of user fees may be necessary for greater levels of cost recovery, complementary mechanisms may also have a role to play.

[11] It should be emphasized that the planning necessary to develop these schemes was resource-intensive, including multiple surveys and initial pilot-testing of the fee schedules.

Key Points

- User fee schedules are not routinely set in a rational, sustainable manner, often because of:
  - constraints on hospital manager's decision space to set fees;
  - lack of technical guidance or expertise in setting fees (e.g. estimating hospital costs; determining service demand);
  - lack of data or resources to rationally set fees
- High levels of cost recovery may be associated with more rationally determined fee schedules. However, the inputs and resources required to do so may also be substantial.

Use of recovered costs

The uses to which own-source revenue are put appear (unsurprisingly) to respond to two factors: hospital-level needs and exogenously determined incentives. On the one hand, specificities of a hospital will dictate where monies are put, to the extent that hospital managers have decisionmaking power to do so. On the other hand, exogenous/MOH regulations described previously (see section on Scope of autonomy: Conditions on revenue-generating activities) constrain hospital-level ability to allocate self-generated resources. With these forces in mind, own-source revenue is most commonly allocated towards two areas: staff salaries/incentives and hospital equipment/infrastructure.[12]

Staff salaries and incentives

The majority of revenue generated from user fees on beds in Indonesia went to pay for physician incentives, even above a 40% ceiling imposed by the MOH (Suwandono, Gani et al. 2001). Cambodian hospitals allocated almost 60% of revenue generated from user fees on personnel costs, including hiring of additional personnel and increased staff compensation (Akashi, Yamada et al. 2004). In both cases, hospital managers allocated up to (and beyond) the ceiling on staff imposed by the central level.

Medicine / Materials / Infrastructure

Capital stock improvement and maintenance is a second common use of funds generated through cost recovery mechanisms. In some cases, this decision appears to be mainly driven by hospital needs. In Ghana, for example, user fee revenues in Ghana were used primarily to purchase pharmaceuticals under its "cash-and-carry" system. This system provides explicit mark-up rates for drugs, making it an attractive avenue of investment compared to other avenues for hospital managers (Nyonator and Kutzin 1999). Likewise in Cambodia, pharmaceutical and medical material purchases ranged from 12-25% of user fee revenue. Additionally, though a relatively small percentage of the revenue was allocated to ground maintenance, improved cleanliness of the hospital was identified by patients as a reason they chose the facility (Akashi, Yamada et al. 2004). And three hospitals in Indonesia were found to make capital investments in the form of renovating existing buildings to produce "higher cost, revenue-generating 'commercial' beds" (Suwandono, Gani et al. 2001).

[12] Many studies did not report the uses to which own-source revenues were put. This constraint may limit the generalizability of the subsequent discussion.

In other cases, however, exogenous influences seem also to drive decisions to invest in pharmaceuticals, medical materials or infrastructure. One of the largest Rajasthan hospitals spent almost three-quarters of generated revenue on construction and renovation, while several other secondary hospitals purchased machines despite a lack of trained personnel to operate them. These findings appear to be the result of two main forces: 1) a law requiring that 70% of revenue should be spent in the same year as the patient's visit, and 2) a lack of management and planning capacity in some institutions to effectively absorb/deploy resources to improve quality of services(Sharma and Hotchkiss 2001). In China, centrally-determined prices for high-technology services may have attracted too many hospitals to purchase these technologies; the resulting duplication of services resulted in under-utilized (and expensive) technology investments. (Forbes, Hindle et al. 2002)

Key Points

- Allocation of own-source revenues appears to be both determined and constrained by conditions imposed from the central level.
- Allocating resources towards staff salaries, purchases of pharmaceuticals and supplies/equipment, and maintenance are the most common usages of revenue generated.

CROSS-CUTTING ISSUES

Cross-subsidizing

A recurrent theme throughout these cases is that government subsidies to autonomized hospitals have not decreased despite autonomization, or even because of it. Governmental subsidies increased in both percentage/absolute terms to two autonomized teaching hospitals in Ghana, a finding similar to that in a two different samples of hospitals in Indonesia(Govindaraj, Obuobi et al. 1996; Bossert, Kosen et al. 1997; Lieberman and Alkatiri 2003). In Peru, public sector funds did not diminish in absolute terms following autonomization (even though it did in relative terms because of significant increases in hospital revenue generation) (Arroyo Laguna 1999). In Cambodia, government subsidies at an autonomized referral hospital rose 10% as a proportion of total income (from 20% – 30%) even as own-source revenues increased by a factor of three (Akashi, Yamada et al. 2004). At perhaps the extreme end of the spectrum, autonomization *itself* caused an increase of public sector transfers to the Kenyan Kenyatta National Hospital: the MOH's allocation of recurrent funds rose from 12% to 17% in part to cover costs associated with an autonomization-related upgrade of the hospital's salary structure (Collins, Njeru et al. 1999). While public sector transfers may drop in some cases following autonomization (e.g. China), there appears to exist an underlying tension between the goal of heightened efficiency and lowered costs to the public sector.

The combination of a low level of revenue generation/cost recovery and maintained levels of government subsidies has resulted, in some cases, in public sector resources subsidizing private services. There is evidence from Indonesia and Zambia, for example,

that user fee systems have resulted in reallocation of costs and priorities towards high margin activities, with the paradoxical effect of services for the rich being subsidized by others (Hanson, Atuyambe et al. 2002). Hospitals in Zambia, for instance, invested in high-cost wards based on expectations of generating greater marginal benefits. Yet given regulations setting maximum prices below costs, the poor ended up subsidizing the rich (Castaño, Bitran et al. 2004). Similarly, the low bed occupancy rate of commercial beds in three Indonesian hospitals resulted in those beds being subsidized by the government instead of providing supplementary revenue as had been intended(Suwandono, Gani et al. 2001). These findings have been echoed elsewhere in other studies in the same countries (Bossert, Kosen et al. 1997; McPake and Hanson 2004).

Utilization

There is some evidence that the implementation of revenue-generating activities by autonomous hospitals affects service utilization.[13] A common theme appears to be that user fee-based activities have adverse impacts on equity in utilization even if not on levels of utilization. In Cambodia, there is evidence that user fees at district hospitals drove away some clients of lower socio-economic status (Akashi, Yamada et al. 2004). As in Cambodia, user fees have not appeared to resulted in decreased utilization in Rajasthan, but no mention was made on potential equity effects (Sharma and Hotchkiss 2001). User fee increases in Indonesia were found to have adverse equity impacts (Bossert, Kosen et al. 1997). In China, increased autonomy and reduced government contributions led to a wide range of strategies to generate replacement revenue, including "attempts to increase volumes and the directing of patients towards high-profit services, as well as the use of more efficient processes of care" (Forbes, Hindle et al. 2002). Five referral hospitals in Peru experienced drops in utilization by patients from lower income strata compared to those in the highest stratum following structural reforms including hospital autonomization[14] (Arroyo Laguna 1999). Together, these findings suggest that, in some cases, revenue-generating activities implemented under autonomization may drive away those in lower socio-economic strata even if overall levels of utilization do not decrease.

Capacity to spend own-source revenue

Both system and hospital-level factors appear to constrain capacity to spend own-source revenue in some cases. In Ghana, perceived complicatedness of spending mechanisms reportedly dissuaded health facility managers in the early 1990s from spending high proportions of user fee-generated resources. However, a subsequent 1996 study found expenditure rates of 93% (public hospitals) to 100% (mission hospitals) for own-source revenue, hinting at the importance of sufficient hospital management capacities in achieving autonomization objectives (Nyonator and Kutzin 1999). Other instances indicated that central-level stipulations on own-source revenue expenditures may affect ability to spend funds generated. While improved efficiency of one autonomized hospital in Cambodia reduced the need for operating cost expenditures, for example, central-level

[13] While hospital autonomy and utilization is not the primary focus of this review, the effects of resource mobilization mechanisms on utilization are nonetheless relevant.

[14] However, it was also noted that "external factors" which coincided with autonomization and sectoral reforms contributed to decreased utilization among the poorer Peruvians.

mandates on proportions to be spent on operating costs led to unusable "surplus" funds carried over from year to year.

Key Points

- While reducing government outlays to hospitals is often a driving force of autonomy, autonomous hospitals in multiple contexts have experienced increased or maintained levels of government subsidies.
- There is some evidence that services designed for wealthier patients (e.g. commercial beds) are being subsidized by revenues from services paid for by poorer segments of society.
- User fee-based revenue-generating activities may discourage poorer patients from using services even if overall levels of utilization do not drop.
- Central-level limitations on allocation of revenue can constrain capacity to spend own-source revenue.

CONCLUSIONS AND RECOMMENDATIONS

Summary of Main Findings

The previous discussion of hospital autonomization and resource mobilization suggest several trends that may be of use to the LEAD-Philippines project. These include:

1. Isolating the "effects" of hospital autonomization on revenue generation is difficult.

Methodological constraints limit the ability to make causal inferences running from hospital autonomy to resource mobilization. Observed changes in revenue generation following autonomy may be due to many factors which are related to autonomy. As described in the introduction, for instance, hospital autonomy is usually part of a wider set of health system reform measures. Whether hospital autonomy in mobilizing resources itself causes changes in levels of revenue generation – as opposed to implementation of personnel performance evaluations, changes in provider payment mechanisms, or secular trends in patient utilization – is difficult to know. The Methodology section describes the ways in which the studies' designs limit ability to attribute changes in revenue generation to hospital autonomy itself. There is currently still a limited evidence base which can provide insights into links between hospital autonomy and revenue generation.

2. Greater autonomy along one function without corresponding autonomy along other functions may limit effectiveness of resource mobilization goals.

While greater autonomy in resource mobilization is often at the centerpiece of hospital autonomy reforms, autonomy along other dimensions is not always as readily forthcoming. Autonomy in human resource management, for example, is often much more restricted compared with that of resource mobilization. Such discrepancies of functional autonomy risk creating "dysfunctional organizations" and could limit the expected benefits of hospital autonomy on resource mobilization (Castaño, Bitran et al. 2004).

3. The success of autonomized hospitals in mobilizing own-source revenue varies widely.

Own-source revenues as a percentage of total revenues were reported to range from a low of 4% to a high of 80%, with much variation in between. Similarly, many hospitals increased the level of own-source revenues following autonomization/over time, but some experienced falls in such revenues. Again, the fact that hospital autonomy is usually associated with a package of reform measures renders it difficult to discern clear patterns about why some autonomous hospitals were better able to raise revenue/recover costs than others.

4. Cost recovery rates from revenue-generating activities are generally low, and autonomization does not necessarily lead to a decrease in government subsidies for hospitals.

Revenue-generating activities typically accounted for less than 30% of total hospital revenue or operating costs, and none were found to fully recover costs of implementing the activities themselves. While this modes level of cost recovery is not necessarily surprising – hospital services are the most costly in the health system – it does suggest a limited ability of autonomization to bring about decreased public sector allocations to hospitals. It also suggests that revenue-generating activities may have a limited capacity to provide resources for increasing other services, such as permanent family planning services. Analogously, though autonomization is often motivated by a desire to decrease resources allocated to tertiary care, there is no clear evidence that autonomous hospitals receive fewer public sector resources than non-autonomized hospitals. Some hospitals even received higher government subsidies following autonomization. There are various reasons that government transfers to autonomized hospitals remain elevated, including high start-up/investment costs (e.g. Kenyatta National hospital) or even rising costs of tertiary care more generally.

5. Adequate hospital-level capacity to develop rational, sustainable fee schedules to generate revenue – a common denominator of the most successful cases – is often lacking.

Researchers in multiple contexts suggested that well-conceived, thorough analyses of both costs and demand for services – while resource-intensive – may have played roles in relatively high degrees of cost recovery. Though such exercises do not guarantee success, they are likely a better approach than the alternatives of either tight MOH control or complete abdication of involvement in setting fee schedules.

6. Where decision space over allocation of own-source revenues exists, revenues are often funneled back into the resource-generating activities themselves, rather than subsidizing other hospital services.

Though limited information exists on the uses of own-source revenues, hospital managers with decision space over revenue allocation appeared to channel money back into the revenue-generating activities (e.g. staff salaries/incentives from consultation user fees; pharmaceuticals from drug user fees). This suggests a limited capacity or desire to use own-source revenues for purposes which are not directly related to mobilizing resources.

Recommendations

Based on the findings and conclusions, four recommendations are proposed to increase the likelihood that hospital autonomization meets desired revenue generation goals. These recommendations are:

1. Set an appropriate timeframe over which to assess the "success" of autonomization and resource mobilization.

The fact that levels of government subsidies to autonomized hospitals may be maintained or even increased suggests that the success or failure of autonomization may not be readily apparent in the short-term. There are a variety of reasons that government subsidies may continue apace to autonomized hospitals including high "start-up" costs of autonomization (e.g. improving health Management Information Systems necessary to track expenses; improving managerial capacities of hospital managers). While autonomization may eventually lead to improved allocative and technical efficiency in the medium- and long-term, those payoffs may not be immediately apparent. Developing a realistic, appropriate timeframe over which to assess the success of autonomization may therefore require substantial planning.

2. Develop realistic goals for levels of cost recovery.

As tertiary care is the most expensive part of the health system, setting realistic expectations about the degree to which revenue-generating activities can mobilize resources is important. The experience from other countries suggests that own-source revenues often are no more than 30% of hospital expenditures.

3. Complement changes in hospital manager decision space to mobilize resources with technical assistance to appropriately do so.

In short, a high level of governmental technical guidance to hospitals in setting fees may be warranted. In many of the cases analyzed, hospital decision space to determine fee schedules appeared to be either excessively wide (i.e. no restrictions from the government) or restricted (e.g. fees determined by the government). Too little guidance from the government may result in fees being set in unsustainable ways, while too much micromanagement may be no more appropriate (e.g. the Parirenyatwa National hospital in Zimbabwe) Thus whatever the appropriate degree of decision space, appropriate technical assistance in developing fee schedules may be necessary to bring about desired cost recovery goals.

4. Consider mechanisms which channel revenue raised from permanent family planning services back into increasing availability of those same services and/or advocacy of policies mandating portions of own-source revenues be channeled into increasing availability of permanent family planning services.

One of LEAD-Philippines goals is to increase availability of permanent family planning services. This literature review suggests that hospital autonomization has a limited capacity to increase own-source revenues, and resources which are mobilized are often channeled directly back to the revenue-generating activities themselves. Relying on own-source revenues from activities unrelated to permanent family planning services to increase availability of family planning services may therefore not be a viable option. In this context, two sets of strategies may help increase availability of family planning services. First, autonomous hospitals can directly increase availability of permanent family planning services by charging for family planning services and using those receipts to strengthen such services. Second, policies and regulations which mandate certain amounts of percentages of own-source funds to be devoted to permanent family planning services – in effect a constraint on hospital managers' decision space to allocate resources – may also be an option worth exploring. While both strategies are not without their drawbacks, they might be effective in translating autonomization and resource mobilization into increased availability of permanent family planning services.

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