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## I. Introduction

### A. Paper Overview

This paper reviews the issue of change management in the health system as it relates to the requirement for labour adjustment. The process of labour adjustment will generally be initiated whenever an enterprise or administrative unit has either too few or too many workers to carry out its mandate. Adjustment can be in either of two these forms when health systems are reformed or reform can lead to a situation in which more of some types of workers and fewer of other types are required. The paper focuses on integrating human resource planning, including labour adjustment, with broader strategic plans for health systems.

There is not a substantial literature that deals directly with the topic of labour force adjustment in health systems. As a result, much of this paper is based on inferences derived from the broader literature on labour adjustment. In addition, much of the literature on health sector reform and on alternative approaches to service delivery is relevant.

A central focus of this paper is on linkages between strategic plans for health systems and human resource plans. Given the high degree of labour intensity involved in the delivery of health services, effective health system planning must ensure that the proper human resources are available by location and by skill type. Many health sector labour adjustment situations will be “unplanned” in the sense of not originating in the health sector. Frequently, overall government fiscal restraint leads to this type of unplanned adjustment in the health sector.

The framework in this paper for assessing labour adjustment in the health system implies that integration of decision-making is required. This suggests an expanded role for human resources staff whose traditional role has been to implement plans developed by others. There may be important efficiency gains from this type of integrated decision-making. Health system labour force inventories by region, specific locations and skill levels must be a component of integrated health system planning.

The findings of this paper are consistent with recent experience in the private sectors of most industrialized economies. Globalization and increased competitive pressures have forced private sector organizations to review all elements of their cost structures. This has led to various types of labour adjustment scenarios. The implication for health systems is that human resource professionals should participate in broader health system design issues. Frequently, this may require health system human resource professionals to expand their skill sets to deal effectively health system planning.

Planning and effective communication of planned activities are related tasks that highlight the changing role of human resource departments. Worker concerns about adjustment costs remain an important barrier to change in many jurisdictions. Resistance to change is directly related to the extent to which effective communications programs are pursued and the extent to which options such as retraining and relocation are made part of the overall package.

Human resource inventories for personnel in the health system can play an important role in providing important data to achieve the objectives of health system reform. These data can be used to estimate attrition rates based on the age structure of the labour force and on experience with various plans to increase attrition. The objective is to have a quantitative health system human resource planning model tied to strategic plans for health systems in different jurisdictions. Case studies may be the best way to develop building blocks to implement such systems more widely.

## **B. Background**

Labour market adjustment issues are faced in a wide variety of contexts. Changes in technology, incomes, and new methods of producing goods or delivering services are key sources of the requirement for labour adjustment. Like many related changes, the changes that impact on the labour market have both costs and benefits. New opportunities develop for some members of the labour force but others may see reduced employment opportunities as a result of these changes. That is, adjustments can be positive or negative in terms of their impacts on employment levels. Frequently, changes will be positive for some groups and negative for others.

In all societies, a key challenge of the policy process is to promote changes that generate benefits in excess of costs. Various barriers to change may have negative impacts on overall productivity growth. At the same time, it is important to ensure that the costs of change are not borne disproportionately by individuals who must make adjustments in response to developments that lead to contractions in employment levels.

The process of change is reflected in the introduction of new products and processes and by the provision of new services, improved services and improved service delivery systems. The central role of labour as a factor of production means that labour adjustment is at the core of these types of changes. Particularly in contexts in which service delivery is labour-intensive, the process of change has important labour adjustment dimensions. We define labour adjustment as a process that is initiated whenever there is an imbalance between actual workers in an enterprise or department and the number required.

This paper focuses on the process of change in the delivery of health care. Many studies have pointed to opportunities to rationalize world health care systems. In many cases, the health system conditions that imply the need for restructuring are most severe in the poorest countries of the world and in countries with economies in transition. Labour adjustment issues will be an important component of making these changes in the most effective manner. In fact, the availability of effective adjustment policies will, in some cases, determine whether or not reforms are implemented or blocked by those who fear the adjustment process. Particularly in the case of positive or upside labour adjustment, market processes can play an important role in recruitment and retention.

## **C. Objectives of this Paper**

The purpose of this paper is to review the labour market context of likely changes that will lead to a reorganisation of the operation of health systems. The paper provides documentation for the view that such changes in the health system and the related labour adjustments are, in fact, likely. In many developing countries, for example, workers in the health sector have been members of the civil service. Major reforms that are either being implemented or considered would move some components of the health system such as public hospitals to the private sector. Other reforms within the public sector would create government agencies and corporations that would operate with different human resource systems than those in the civil service. It is not clear that health system planners have taken the human resource implications of these and other changes in the way the health system may operate fully into account.

New strategic plans are being developed for health systems in many parts of the world. A key objective of this paper is to demonstrate that these necessary changes will take place more efficiently if human resource issues are integrated at the planning stage. The paper also provides links to the broader literature on managing the process of change and integrating the labour adjustment component. In managing the labour adjustment process, the literature outlines the importance of planning and communication strategies and a key paper objective is to bring this focus to changes in the health sector.

## **D. Structure of this Paper**

The following section of this paper focuses on actual and likely reforms in health care systems with an emphasis on Eastern Europe. There are increasing pressures on health systems and the systems that have been developed in many parts of the world are no longer sustainable. This implies the requirement for restructuring and this will lead to both upside and downside labour adjustment. Section III of this paper deals with the labour adjustment process first in general terms and then specifically in the case of restructuring health systems. The objective is to promote effective patterns of adjustment. In a longer run perspective, this paper argues that this will occur only in a context in which human resource planning in the health system is integrated with broader strategic planning of the evolution of the system. Particular types of labour adjustment scenarios that might emerge are addressed specifically. The final section of the paper provides a summary and conclusions.

## **II. Reforming health care systems**

### **A. Overview**

What types of health system reforms are taking place, what future reforms are likely and how do we assess their impacts on health systems and on labour markets? Most importantly, what types of adjustment are most likely to lead to improved health outcomes? These are clearly difficult questions for which there are no definitive answers. There are many health reform agendas in place and different circumstances in different jurisdictions imply that many approaches to reform will be pursued. However, restructuring of various types is necessary to achieve most reform agendas. The labour intensity of the provision of health care services implies that labour market adjustment is a likely component of any serious reform agenda.

### **B. The Rationale for Restructuring**

Health systems in many parts of the world require important changes to operate more effectively. There are many reasons for health system changes and the underlying factors vary among countries. In many of the countries of the former Soviet Union, the centrally directed systems that existed are no longer financially sustainable. In other cases, growing populations and shifts in the location of populations motivate health system reform. Throughout the world, new health technologies have important implications for health system resource allocation. New organizational approaches to the planning and delivery of health care are a further important source of pressure for restructuring.

In many cases, incentive differences can mean that private production of some health services may be more efficient than production through public bureaucracies. Private production is not necessarily inconsistent with a state-operated system in which access is not based on individual payment for services. From the perspective of this paper, the key point is that any substantial changes in health systems, such as a movement to private provision of some services, mean that the existing deployment of labour resources in the system must be altered. These adjustments may involve costs. This will be the case for both upside adjustments in which new hiring is required and in downside cases in which some existing staff may be considered redundant. If individuals who anticipate adjustment costs can lobby effectively, they may be able to block changes that would improve the system. On these political economy grounds alone, it is important to anticipate the labour adjustment issue and incorporate measures to ameliorate these adjustments in the plan to reform the system.

## **1. Requirements for adjustment**

There is not a detailed literature that focuses exclusively on labour adjustment in the health sector. There is, however, an extensive literature dealing with various trends leading to a more limited role of the state in the management and delivery of a variety of services including health services. This literature is related to various initiatives to improve the effectiveness of resource use, particularly in the poorer countries of the world. This perspective can be seen in the World Bank's *World Development Report*, (1997). More specifically in the area of health policy, the World Development Report (1993), focussed on health policy reform and on health system issues. The social and economic importance of health issues and improved resource allocation in health were highlighted in *Health, Nutrition and Population*, World Bank, (1997). This theme has been pursued and extended in the recent work of the World Health Organisation in the *World Health Report 2000*.

## **2. Choosing Institutional Structures**

There have been many perspectives over time on the appropriate role for government and the role of the market. This is true not only in the area of health systems but more generally in terms of resource allocation and service delivery. A global perspective on this issue is provided in the 1997 World Bank report sub-titled *The State in a Changing World*. Imperfect markets and their effects have long been recognized but there has been growing recognition that we also deal with imperfect governments. Many of the factors leading to market failure will make allocation through government difficult as well. Faced with imperfect information as the source of market failure, for example, will public production necessarily be more efficient than private? The economics literature in this area suggests that this is an empirical question. Many existing institutions, however, are based on earlier approaches that used identified market failure (relative to the optimum) as a rationale for public provision. This is now recognized as incorrect, but there is an historical pattern in the health sector (and others) based on this earlier policy approach.

In some areas, privatization may lead to improved outcomes in the health system but other, more limited, options such as contracting out within a system of continuing public management may also lead to gains. Preker, Harding and Travis (2000) provide a series of perspectives on this issue including a review of the standard "make or buy" problem with a specific focus on hospital issues as an example. Improved organizational effectiveness may be generated through new management structures and new incentive systems. The challenge in this regard is to incorporate measures that improve efficiency while at the same time maintaining the access to services that is expected by patients and other users of the health system.

Changes in organizational structure in health systems are related to the extensive literature on principal-agent problems and the incentive structures of such relationships. As described in classic papers by Fama (1980) and by Jensen and Meckling (1976), different organizational forms have different strengths and weaknesses. In health systems, this is related to the responsiveness of health care providers to the wishes of patients. Some market-related incentive features when injected into public systems may make the agents (the providers) more responsive to the needs of the principals (the patients).

The framework for analyzing potential reforms in health care delivery by Harding and Preker (1999) emphasizes that in spite of significant past accomplishments, many health systems face important challenges. Public delivery of health services provides widespread access but at the same time frequently obscures the costs of service provision. Promoting efficient resource use in this context may be difficult.

It is for this reason that many governments have started to consider the use of different institutional arrangements for delivering health care.

The literature on organizational reform is linked to this paper because there will generally be important human resource implications of any significant change in the way services are delivered. The following section provides an initial review of some of the implications for human resource planning of health system reforms.

### **C. Implications for Labour Adjustment**

Egger, Lipson and Adams (1999) focus on the human resource component of health systems. They recognize that many developing countries and countries with economies in transition have human resources for health (HRH) planning systems in place. However, these systems may be incomplete or ineffective in some dimensions and may not have been implemented fully. HRH problems may, then, be the source of other problems in operating the overall health system effectively.

The development of effective HRH systems is constrained by various elements of the health system. These constraints may reflect the operation of the health system itself, but the broader economic, political and social systems also have important impacts. Funding may be an important issue but how those funds are used may be of equal importance if the focus is on health outcomes. Training existing health sector workers will be important, as will be issues of recruitment, retention and re-allocation. This is a further example of the importance of aligning human resource policy with broader strategic objectives for the health system. In fact, it is not an understatement to assert that appropriate human resource policies including incentive aspects of employment in health systems may be critical factors in determining whether overall health system objectives are achievable.

Many issues enter into effective HRH frameworks. Most important among these is what Egger, Lipson and Adams (1999) refer to as balance. This balance is in terms of the number of workers, the mix by skill type and their location. To achieve this kind of balance, Egger, Lipson and Adams argue that there must also be a balance in the way health system plans are implemented particularly in relation to human resource planning.

In many ways, this description of required linkages for overall organizational effectiveness parallels what has happened in many private sector organizations over the last two decades. Initially labour issues were treated separately from overall corporate strategy issues and human resource professionals were not closely linked with the overall framework for strategic planning. Globalization and increasing international competition meant that such systems could not continue since competitiveness was linked to controlling labour costs and using the workforce more efficiently. To the extent that increasing effectiveness of health systems is required, comparable system and planning changes may be required in the health sector.

A key element in the labour adjustment process is determining which workers or types of workers are most likely to face adjustment situations. Workers with more specific skills will generally have larger adjustment costs in downside adjustment situations since their skill specificity implies a lower competitive opportunity cost. These workers may have difficulties finding alternative employment and it will frequently be at lower wage levels. Highly trained, specialized medical personnel fall in this category. The upside adjustment issue is symmetrical. Gaps, in terms of requirements exceeding availability, are more likely for workers with more skills for whom recruitment and training are more time-consuming and costly. This issue is pursued in more detail in the following sections of this paper.

### III. Labour adjustment issues

#### A. The Process of Labour Adjustment

Labour adjustment is a general feature of a dynamic economy. Many factors contribute to required adjustments that may be positive or negative for any sector or sub-sector at any time. That is, the adjustment process can involve a variety of specific scenarios. Sectors can grow with all sub-sectors sharing equally in employment growth, some sub-sectors may decline while others increase and some overall sectors may decline in terms of employment. This implies that mixed strategies capable of dealing with both declining labour demands (downside adjustment) and expanding labour demands (upside adjustment) will be important. Exhibit III-1 provides a general outline of the factors underlying the labour adjustment process.

**Exhibit III-1**  
**A General Framework for Assessing Labour Adjustment**

| CAUSES OF CHANGE           | ADJUSTMENT PROCESSES    | OUTCOMES                        |
|----------------------------|-------------------------|---------------------------------|
| Technology                 | Flexible labour markets | New products, services          |
| Socio-Economic factors     | Training programs       | Improved delivery systems       |
| Political decisions        | Relocation allowances   | Job losses for adjustment cases |
| System restructuring       | Early retirement        | New jobs and opportunities      |
| Population changes, shifts | Normal attrition        |                                 |

**Source:** Adapted from Riddell (1986).

If the human resource component of the health system is not in equilibrium, or balance, this implies that some form of labour adjustment is required. As Exhibit III-1 indicates, there are many sources of change leading to disequilibrium. There are also many elements of the adjustment process and many potential outcomes. This general framework can be applied to any labour adjustment situation, including adjustment in health systems. The causes of change in the first column are the factors leading to adjustment and are intended to be inclusive of all factors causing change in a system. In the case of health systems, for example, changes in medical knowledge about the efficacy of different forms of treatment can be included under the system restructuring factor in the first column.

The framework in Exhibit III-1 begins in the first column with a series of factors that can disturb an initial equilibrium in the labour market. For example, if para-professionals are trained to perform tasks previously carried out by professionals, this substitution leads to an excess supply of professionals. Many forms of adjustment are possible as shown in the second column. In a flexible labour market, workers would move to their next best alternative. However, if skills are highly specific, other forms of adjustment like those listed may come into play. Outcomes in the last column include more cost-effective delivery of services but there may be significant adjustment costs for individuals who are affected.

In terms of planning the operation of a health system, the system requirements on the human resource side can be assessed relative to the current labour resource endowment. This division is similar to the

concepts of labour demand and labour supply. The related points that follow provide an outline of human resource linkages in the health system. The outline is designed to highlight the role of labour market adjustment. The elements in this process are as follows:

- Develop health system plan.
- Specify human resource requirements of the plan by location, occupation and skill level.
- Describe existing labour force by location, occupation and skill level.
- Compare actual labour force with required labour force to meet demands of reformed health system.
- Estimate degree of surplus or shortage by location, occupation and skill level.
- If surplus, develop detailed labour adjustment plan and communications plan for implementation.
- If shortages, develop recruitment and retention plan.

One purpose of the description of the labour adjustment process above is to highlight the fact that labour adjustment has potential upside as well as downside elements. Much of the labour adjustment literature, including Moore (1996), whose focus is on the health sector, and Abraham and Houseman (1994) whose focus is broader, deal only with downside labour adjustment. Particularly in health systems where populations are growing or shifting, there may be significant upside adjustments in the labour force required to meet system objectives. For other types of changes, the same sector may have both upside and downside changes with the net effect varying from case to case. In the sections that follow, both upside and downside labour adjustment situations are considered.

## 1. The Downside Labour Adjustment Process

In the case of downside labour market adjustment in which an enterprise or department must reduce employment levels, we can define the costs of adjustment for individuals negatively affected by the changes. This labour adjustment cost (LAC) is computed by considering labour market opportunities prior to and after the change for individuals who are “adjustment cases”.

The standard focus of the labour market literature in the case of displacement (a downside labour adjustment) is on the earnings change that results. A complete analysis would add to this any loss in utility (possibly related to different levels of job satisfaction) not captured in the earnings measure. Following the general approach of Jenkins and Montmarquette (1979) and more specifically that of Jacobson, LaLonde and Sullivan (1992), let  $E$  represent earnings,  $W$  the wage rate and  $N$  the amount of time per period (for example, per year) that the individual is employed.

Using this notation, earnings for individual  $i$  are then the product of the wage rate and the time employed. That is:

$$E_i = W_i \cdot N_i$$

If  $E^1$  refers to earnings after the adjustment takes place (worker displacement in the downside case), and  $E^0$  refers to pre-adjustment earnings then labour adjustment cost are defined as follows:

$$LAC_i = E^1 - E^0$$

The labour adjustment cost that is computed in this way clearly depends on changes in  $W_i$  and  $N_i$ . If an analysis is being carried out prior to the adjustment actually taking place, then it is necessary to estimate the labour market opportunity cost of displaced individuals. This opportunity cost would be determined by the  $W$  and  $N$  that would be observed in the next best alternative of these individuals in the labour market. Most published studies, including Hamermesh (1989), Jacobson, LaLonde and Sullivan (1992) and Farber (1993) focus on labour adjustment costs following a particular change in the relevant labour market. A series of studies including Tansel (1998) estimate the impact of institutional changes including privatization on earnings after dismissal. Hall (1995) considers the circumstances in which job changes are efficient and the barriers to efficiency in the labour market.

In principle, the adjustments that take place in the labour market for health care workers (due to health system reform) are no different than the adjustments that take place on a regular basis in the broader labour market. The economics literature reveals many parallels including the adjustment costs related to the introduction of tariff reductions, the introduction of new technology and many other sources of change in labour markets. Brander and Spencer (1994) investigate the worker adjustment costs in different trade-related scenarios in which there are payments to displaced workers. Rama (1999) provides a broad policy framework for assessing and implementing downsizing in the public sector.

All adjustment scenarios involve costs but downside adjustment raises the possibility of an important set of costs related to the political aspects of restructuring. As the recent report of the World Health Organization (WHO) indicates, there are many difficulties in changing investment patterns in physical and human resources. This relates to the standard economic model of concentrated costs and dispersed benefits of reforms. As the WHO (2000) report indicates, resources that are “spent on health service delivery or investment is income to someone and therefore creates a vested interest. If the income is large, this “someone” will lobby for more resources and resist changes that do not match his or her particular interests.” (p. 88). There are potential gains from the changes that are being considered but those gains are for widely dispersed users of health systems who do not have comparable incentives to lobby in support of the changes. The cost framework described above, in terms of labour adjustment costs, highlights how such costs would be calculated in terms of income losses for some elements of the health system.

## 2. The Upside Labour Adjustment Process

Labour market adjustment on the upside (employment growth in an enterprise or department) has received much less attention in the standard labour economics literature than has been the case for downside adjustments. From a political economy perspective, this is understandable since there are fewer obvious “losers” from the adjustment situation in the upside case. As well, in the upside case, market mechanisms are relied upon almost exclusively to mediate the adjustment process, at least in market economies. This is in contrast to the downside case where public sector adjustment policies and programs are common.

If markets act effectively (or relatively so) in upside cases, there may be some lessons from this for planners in health systems in which upside adjustments are required. Recruitment, retention and training will be the key elements of the upside adjustment process through markets. In the case of health systems, upside adjustments may require time lags to train specialized personnel. In addition, however, to the extent that the skills are highly specific and require large investments, this creates potential future incentives to preserve the sunk investments. That is, there may be an element of irreversibility in these investments that should be taken into account when they are initially made.

Labour markets perform a variety of functions that may have particular importance in the context of health systems. Wages act to attract the correct quantity and type of labour to specific locations and occupations. The structure of compensation can also play an important incentive role that is related to the quality of service provision.

The use of more market forces on the input side (in the form of wage differentials to attract and retain human resources) does not, however, necessarily imply that the health system is becoming more market-oriented from the point of view of patients and related users. Many factors determine the role of market forces on the “output” side of the market and different health systems use widely differing combinations of market and non-market allocation methods. However, the key point is that a decision to reform health care by using more incentives for workers and suppliers does not have to imply that access on the patient side is being altered in a market direction as well.

The conclusion with regard to attracting labour to specific locations and occupations is that there is an important role for wage differentials in attracting labour. This implies the existence of occupational and locational wage premiums as a method for ensuring that health system human resources are allocated efficiently. Union wage policies or public sector wage systems aimed at reducing the dispersion of wages may be a constraint on the extent to which this is feasible. In less developed countries in particular, there may be an important informal component of the health care sector. Extending reforms to this sector may generate difficulties at both the planning and the implementation stages.

## **B. Promoting Effective Adjustment Patterns**

The general labour adjustment framework in Exhibit III-1 shows that in cases where labour adjustment is required, both public and private adjustment mechanisms will be at work. The literature in this area indicates that the scale of the required adjustment relative to the size of relevant labour market is a key variable in determining the extent of adjustment costs. This is true for both upside and downside adjustments. The required time frame for completing the adjustment process also impacts adjustment measures. Longer lead times and longer implementation times allow adjustments to occur more readily. Of course, this reduction in adjustment costs, with more time for adjustment to take place, may be offset by increases in other costs.

The principal factor that can be utilized to hold down the costs of any restructuring initiatives that lead to reduced levels of staffing is the process of normal attrition. The extent of attrition depends on the age structure and normal mobility patterns of the workforce. In addition to normal attrition, it is possible to increase the attrition rate through various measures to induce voluntary attrition. This would be in the form of the provision of incentives to increase turnover, including early retirement.

It is important at this point to indicate the difference between gross and net attrition. In many public sector restructuring initiatives, downsizing is accomplished, in part, through a program featuring the provision of financial incentives for individuals to leave. Depending on the nature of these incentive packages, there may be post-program problems with the regional or occupational distribution of remaining staff. In some cases, areas or functions may become under-staffed if take-up rates for early retirement or other incentives are particularly high for some regions or groups. If this leads to a requirement for new hires to maintain the operational capacity of the organization, then the gap between gross and net attrition opens up. As the size of this gap increases, this clearly increases the cost of implementing the new system of service delivery. Haltiwanger and Singh (1999) provide evidence of this problem in the form of rehiring some workers who had initially been paid an incentive to leave.

The literature on labour adjustment highlights a number of elements of labour adjustment involving downsizing. These include the provision of severance pay and the use of retraining and mobility incentives. In the case of severance pay, if the “operational capacity” referred to above is to be maintained, it will generally be necessary to target severance packages since an open door approach can lead to the exit of critical personnel. In a union or public service environment, impacts of existing job security provisions in legislation or collective agreements will have to be taken into account. These are barriers to mobility and adjustment, and these barriers may be stronger in the public sector, particularly in less developed countries.

Policies adopted by government can either promote or discourage change and labour adjustment. There are both efficiency (market failure in the adjustment process) and equity rationales for public policies dealing with labour adjustment. In some jurisdictions, for example, adjustment situations involving large numbers of layoffs may be subject to regulatory requirements. The emphasis on large-scale adjustment situations is related to the discussion above of the costs of adjustment and how these may vary with the scale of the layoff.

Some common features of labour market adjustment initiatives include the following:

- Advance notice and consultation.
- Development of joint committee to develop and administer adjustment measures.
- Relocation and retraining.
- Effective communication.

Labour adjustment will be affected by government policies wherever it occurs but there may be particular issues when the affected workers are government employees. This reflects the commonly held view that public sector labour markets may exhibit more rigidity than those in the private sector. For a general overview of the operation of labour markets in the public sector, see Ehrenberg and Schwarz (1986).

## **C. Adjustment Issues Specific to the Health Sector**

### **1. Barriers to Adjustment**

The process of adjustment in labour markets is common in some areas but less common in protected markets. The process of change may be anticipated more in some sectors of the economy than others and this tends to reduce adjustment costs. In the health care sector, particularly if there has been heavy government involvement in planning and directing resource allocation, there may be significant rigidities. Trade unions and government regulations provide examples of institutions that may be designed to reduce the extent of change.

### **2. Worker Characteristics**

In addition to these factors related to the structural characteristics of the health sector, the types of human capital in this sector will also be important. In the terminology of Becker (1975), highly specific human capital in some sectors of the health care system will make adjustment costs higher and can act as an important barrier to restructuring. This implies that assessing restructuring in health systems requires relatively precise scenarios in terms of the types of workers likely to be impacted. Topel (1990) examines U.S. data on specific human capital and confirms its links to the costs of job loss.

Some unskilled and semi-skilled to mid-skilled workers in the health system will have similar adjustment patterns and labour adjustment costs as workers in other sectors of the economy. No special policies may be required in these cases. Physicians and other specialized medical resources may be more difficult to deal with because of the highly specific nature of their human capital. The more specific is the human capital of displaced workers, the larger the labour adjustment costs are likely to be. Physicians may also have a greater capacity for influencing policy-makers to prevent or delay changes in the health system that may affect them negatively.

### 3. Selected Adjustment Issues

Staines (1998) provides a useful perspective on the development of health sector strategies for Eastern Europe and Central Asia. Particularly in countries with economies in transition (CEITs), the inherited health systems are changing and in most cases there is no coherent plan for reform. The CEITs face inevitable change in health systems. Inherited systems did not deal with emerging health issues and were not fiscally sustainable. The structures that supported old systems (with many positive factors) are no longer in place. The challenge is to anticipate and co-ordinate a variety of aspects of change. Most commentators recognize that there must be a continuing government role or issues will be dealt with unevenly and there will be service level differences related to incomes. There is continuing concern with the possibility of growing disparities of access to affordable care.

There is a clear general question of “How should health systems be reformed?” There are country and region differences that are important. It would be desirable to have a general template, although its development is a major task. Consistent with the work of Harding and Preker (1999), the key role for government in this regard is in structuring the framework of the new system and monitoring to deal with potential market and local government failure.

Staines (1998) provides one perspective on the reform process and on the likely characteristics of new health systems in these jurisdictions. The view of Staines is that: “Health facilities and regulatory organizations will exhibit new incentive systems, a more entrepreneurial, results-oriented and outward-looking culture, and more sophisticated information systems” (p. 3). More specifically, this will require “an expanded primary care system coupled with a leaner and more cost-effective but better equipped hospital sector” (p. 3). This description implies that both upside and downside labour adjustment may be required. This is a frequent result of a misallocation of human resources—some areas have excess labour while other areas are not staffed at sufficiently high levels.

In the CEITs, the adjustment focus comes from efficiency measures and the requirement for cost containment. Staines (1999) and other commentators have pointed out that the inherited health systems used the wrong types of inputs to produce outputs that were less effective than would have been the case with more effective selection. Changes, however, are not easy to generate because important constituencies support the status quo.

Much of the published literature suggests that health systems in CEITs may have had too much central direction and insufficient use of market forces. That same literature recognizes, however, that health systems require a balance of public and private participation due to market failures. Whether or not one agrees fully with this assessment, the “inherited” health systems were not sustainable implying that in the change scenario that develops, there will be a continuing process of both upside and downside labour adjustment.

Developing an effective change scenario for health systems requires an understanding of how the inherited systems operated and a related understanding of what worked in the old system along with what did not work effectively. As Preker and Feachem (1999) point out, many of these systems had important positive elements. Cost control through doctor allocation of services worked reasonably well in Hungary, for example, in a system in which practitioners were well trained and there was universal coverage of the population. However, as Preker and Feachem (1999) also point out, this system, along with many others, had problems because “relying too heavily on a state monopoly in a centrally-planned and supply-driven health sector lowers the efficiency and quality of care” (290)

A variety of problems have been identified with health systems in the CEITs. There is evidence of ineffective targetting of investment in both physical and human capital. As has been the case in some Western countries, the allocation process of the former health systems led to over-investment in acute care hospitals with high levels of specialization and under-investment in public health services and treating patients at the primary level.

Skill problems related to excessive specialization have often been identified with many occupations such as nurses’ aides being recruited before they had acquired sufficient general training. This means that workers in these categories are less adaptable, raising the costs of labour adjustment. Klugman and Schieber (1990) point out that in Kazakhstan, wage levels for health sector workers have declined relative to wages offered to workers with comparable skills outside the public sector. Wage structure issues are an important component in the task of integrating human resource and overall strategic plans for the health sector.

Other elements that have been identified as issues in health sector reform include weak incentives for efficiency, particularly in countries of the former Soviet Union, and a tendency in some reforms to go too far in the direction of market financing thereby creating inequalities in access. Problems of this kind reflect the fact that the planning frameworks of the inherited health systems have been abandoned but no replacements have yet been provided. It is important to recognise the difficulties of altering health systems in an environment in which the entire social and economic system is changing so rapidly.

In developing new health systems, particularly in Eastern Europe, a number of elements of an improved health system strategy can be identified. These include improving lifestyles, particularly as it relates to tobacco and alcohol consumption. If successful, such measures would also contribute to controlling health costs in the long run. Other objectives include increasing choice in the health system and aligning provider incentives with health system outcomes. In considering the development of new health system strategies, it may be useful to consider North American ideas of managed care and managed competition. All of these alternatives may be associated with changes in delivery structures and with labour adjustment.

As these adjustments take place in the health system and in its labour force, to ensure desirable health outcomes, it will be important to maintain health/GDP ratios but there may be a need for budget caps in specific parts of the system. All of these factors are related to labour adjustment in health systems. As other parts of this paper have emphasized, the high degree of labour intensity of the provision of health services means that major health system changes will have significant impacts on the health labour force.

#### **4. Regional Location Issues**

Many jurisdictions report continuing problems in serving rural or remote locations particularly in the case of specialists. In managed systems with standard salaries across the board, residents in remote locations are likely to face continuing problems. This is an issue in the United States and Canada as well as in countries undergoing major changes in their economies and health systems.

In the case of these professionals, there is a clear question of providing the correct incentives. In a purely private sector context, we would expect to observe wage differentials to attract workers with the required skills to the locations where they are in short supply. This kind of upside adjustment problem may be resolved through the use of more market mechanisms that would allow for greater flexibility in salary structures to offset perceived negative aspects of some locations.

#### **D. Developing a Health Sector Labour Force Adjustment Scenario**

This section of the paper outlines and describes the major steps in developing an adjustment scenario for the labour force in the health sector. This reviews and brings together the various elements of labour adjustment described in previous sections of the paper. The principal focus here is on downside labour adjustment. The steps involved are:

- Specify health system changes.
- Construct data set on existing health system labour force.
- Estimate impact of health system changes on labour force.
- Measure “surplus” and “shortage” positions by location, skill type.
- Estimate normal attrition and consider induced attrition.
- Estimate number of positive and negative adjustment cases.
- Review institutional barriers to adjustment.
- Estimate costs of required adjustment program.

Most of the steps listed above are relatively straightforward to describe but may be difficult to implement in some cases. The first step of specifying changes to the health system is crucial for understanding labour adjustment but will be difficult to achieve agreement on in many jurisdictions. There are vested interests associated with the status quo, frequently with sufficient resources to resist changes that may threaten their position in the system.

Data on the health system labour force may be less problematic, although at the national level, data are not routinely organized in this way. To fit with the remaining steps in this outline, data on the existing labour force must be organized by location and skill type. These data can then be analyzed in terms of a variety of possible scenarios for change in the health system. As noted earlier in this paper, it would then be possible to compare the existing allocation of labour resources with the one that would exist in a new health system scenario.

The analysis in the steps described to this point provides estimates of the extent of “surplus” and “shortage” positions by location and skill type in the health system. In a labour market context in which there is continuing turnover due to voluntary separations and retirements, the next step is to estimate normal attrition and consider the use of induced attrition. Early retirement packages and other types of severance agreements are examples of induced attrition. To the extent that these are voluntary and, together with normal attrition, can often account for a large fraction of the required adjustments, these are important avenues for reducing both the extent of resistance to change and the costs of change.

Following the steps described to this point, the analysis provides an estimate of the number of positive and negative adjustment cases. Positive cases imply the need for recruitment but, in some cases, recruitment can be from among the negative adjustment cases. If health system workers can be relocated or retrained, there are important benefits in holding down the other costs that may be involved in resolving both the remaining surplus and shortage cases.

The existence of institutional barriers to adjustment will vary by jurisdiction. Seniority provisions may limit the ability of managers in the health system to deal with negative adjustment cases. Particularly if the adjustment strategy moves as far as layoffs, union agreements or public sector employment arrangements may be an important barrier.

Given the measures that have been implemented in the steps above, the number of adjustment cases will have been reduced from the initial surplus and shortage amounts. Further steps are then necessary if adjustment cases remain. Retraining to improve mobility will be an important option for dealing with a situation of labour surplus. The full range of options can then be specified, allowing development of a plan from which planners can estimate the costs of the required adjustment program.

## **E. Planning Health Systems and Determining Resource Requirements**

An important link in the labour adjustment process is to compare existing human resource allocations with the requirements of the plan for reform. A key contention of this paper is that effective overall planning and implementation requires integration of health system and human resource planning. This section of the paper focuses in more detail on some of the issues that are involved in doing this in the context of health systems. The circumscribed nature of market forces in the delivery of health care makes this a more difficult problem to deal with.

The main point to note in this regard is that the health system planning that is required need not all be carried out centrally. This is a key element of the *World Health Report, 2000*. It also reflects the conclusions of recent work carried out at the World Bank and described in Harding and Preker (1999) who develop a conceptual framework for reforms in health care delivery. This work also reflects the work of economists such as Williamson (1991) who focus on alternative institutional arrangements.

The starting point for this work is the standard economic framework of comparative advantage. Different institutional forms for delivering health care services will have different comparative advantages in different circumstances. The range of institutional forms is extensive. It runs from pure public sector planning and delivery at one end of the spectrum to purely private provision through markets at the other. This spectrum includes incentive-based public sector budgeting, contracting out some services and contracting out some facilities such as entire hospitals or hospital food service.

The rationale for considering these alternative institutional arrangements is related to the original decisions in the health area to move away from markets. The rationale for this initial move is related to market failure in the health care area that has been documented widely. There are many potential forms of market failure as it relates to health systems. However, government provision of health services as the obvious alternative to markets may exhibit signs of government failure. Wolf (1993) explicitly discusses this possibility and its implications in the context of imperfect alternative arrangements. Market failure initially leads to a consideration of government provision but, in some circumstances, the extent of government failure may be greater. The current focus is no longer on public or private provision of various elements of health and other services but on the mix that will work best. This literature has been highly persuasive in the movements to privatization and contracting out of some government functions.

The search for institutional forms that will lead to better results has not been confined to health care. Canada, for example, has moved to private operation of airports that had previously been run as part of Federal government activities. Finding the right mix of delivery and monitoring systems is important in health care systems and in other areas if we are to operate these systems effectively.

These choices about institutional forms have a number of possible implications for labour adjustment in health systems. Most clearly, changing the way parts of the system are organized can, itself, be an important source of changing the way that inputs including labour are used. Less obviously, some forms of institutional structure will react more quickly to changing pressures on health systems than others. Markets often exhibit more flexible responses whereas activities that are publicly provided often exhibit more inertia and are more susceptible to lobbying to maintain the status quo.

## **IV summary and conclusions**

### **A. Main Findings**

The purpose of this paper is to review different approaches to change management in the health system specifically as it relates to the requirement for labour adjustment. Adjustment can be of two forms when health systems are reformed: both upside and downside labour adjustment may be required. The paper focuses on framework issues and provides an overall context for integrating human resource planning, including labour adjustment, with broader strategic plans for health systems.

There is not a substantial literature that deals directly with the topic of labour force adjustment in health systems. There is, however, a literature that is related to the topic in that it focuses on labour adjustment, more generally, not in health systems that are being reformed. In addition, all of the literature on health sector reform and on alternative approaches to service delivery is relevant. Much of this health sector literature, however, does not include direct links to human resource requirements and to the labour adjustment that may be involved.

A central focus of this paper is on linkages between strategic plans for health systems and human resource plans. Given the high degree of labour intensity involved in the delivery of health services, effective health system planning must ensure that the proper human resources are available by location and by skill type. Human resource constraints can limit the effectiveness of health system reforms when there is increased demand for some skills. Similarly if downside labour adjustment is involved, a failure to plan the labour adjustment process can generate resistance to reform that may delay or alter substantially the intended reforms. Effective planning must be accompanied by effective communication to ensure that plans can be implemented as intended.

Some general trends in health systems that are relevant for the analysis of this paper include movements to systems that are more flexible and in which substitution away from the most costly elements of health care is possible. More flexible systems will have lower adjustment costs in response to future changes, including fewer labour adjustment issues. Such long term planning should also take into account potential rigidities associated with sunk investments. In cases where there is highly specific human capital, requiring large investments, individuals who have invested will have strong incentives to engage in political action to protect their investments. This clearly makes adjustment to change more difficult.

### **B. Some Implications**

The key implication of the framework in this paper for assessing labour adjustment in the health system is that integration of decision-making is required. This implies an expanded role for human resources staff whose traditional role has been to implement plans developed by others. There may be important efficiency gains from this type of integrated decision-making. The levels at which this type of decision-making should take place will vary with the institutional structure for planning and delivering health services in different jurisdictions.

The integration of strategic and human resource planning requires incorporating human resource data in broader planning frameworks but it also implies a need for human resources professionals to be more pro-active in developing data bases on the existing labour force. Health system labour force inventories by region, specific locations and skill levels must be a component of integrated health system planning. These data on currently available health system human resources must then be related to the resources that are required in order to carry out health system reforms most effectively. In the area of health care, the determination of required resources by location and skill level is a complex task since many services can be delivered with varying input mixes.

The perspective provided in this paper is consistent with recent experience in the private sectors of most industrialized economies. Globalization and increased competitive pressures have forced private sector organizations to review all elements of their cost structures and this has led to various types of labour adjustment scenarios. A common feature of this experience is a reorientation of the roles of different layers of management in the broader decision-making process. The implication for health systems is that HR professionals should participate in broader health system design issues. In many jurisdictions, this may require a re-assessment of the role of human resource professionals. These individuals will require expanded skill sets and job experience to deal effectively with broader aspects of health system planning.

Planning and effective communication of planned activities are related tasks that highlight the changing role of human resource departments. Worker concerns about adjustment costs remain an important barrier to change in many jurisdictions. The general labour market literature on the adjustment process strongly indicates that resistance to change is directly related to the extent to which effective communications programs are pursued and the extent to which options such as retraining and relocation are made part of the overall package.

### **C. Conclusions and Suggestions for Future Work**

Human resource inventories for personnel in the health system can play an important role in providing important data to achieve the objectives of health system reform. These data can be used to estimate attrition rates based on the age structure of the labour force and on experience with various plans to increase attrition. The objective is to have a quantitative health system human resource planning model tied to strategic plans for health systems in different jurisdictions. Case studies may be the best way to develop building blocks to implement such systems more widely.

The core hypothesis of this paper is that health system reforms will be more effective if labour adjustment issues are considered as part of the initial planning process. Different jurisdictions may be thought of as occupying different points on a spectrum in which one end point is “little consideration of labour adjustment” issues and the other end point is “substantial consideration of labour issues”. The placement of individual jurisdictions on the spectrum would be based on indicators to be developed in the case study analysis. Variables that are likely to be important include the existence of human resource inventories, a well-developed human resources planning model and evidence on the role of human resource professionals in the overall strategic planning process.

In assessing the effectiveness of health system reforms, a labour adjustment focus in case studies of different jurisdictions could be used to test the hypothesis that effective human resource planning is a key determinant of the overall success of labour reform. An important focus of the case studies would be on the extent of labour adjustment costs and how they relate to integrated planning activities. Many elements clearly enter the reform process so that the case studies, focusing on labour adjustment approaches, would have to be part of a larger effort to understand the reform process in health systems.

Achieving a greater degree of integration of strategic and human resource planning would be a major step forward in increasing the efficiency of health systems in many jurisdictions. However, the degree of difficulty in achieving this should not be under-estimated. This paper is not intended to minimize the inherent difficulties in this process or to suggest that there are never links of this kind in existing health systems. Health systems are dynamic. The process of change requires labour adaptation and the adaptation of capital and other inputs. There are important time lags in the adaptation of many forms of physical capital in health systems. It is important to recognize that many forms of human capital in health systems may have comparable lags. This makes an integrated planning system both more difficult and more important to achieve.

The discussion in much of this paper relates to planning and delivering health care in effective health systems. It is important to stress as well, that part of the development of such systems may involve decentralization, privatization of some functions, contracting out of others and more use of incentives throughout the system. Effective delivery of health care requires consideration of alternative organizational reforms for the delivery of health services in addition to more effective planning of core public sector components that guarantee access.

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