

Pay and non-pay incentives, performance and motivation

Prepared for the Global Health Workforce Strategy Group
World Health Organization
Geneva, December 2001

Vern Hicks

Health Economics Consulting Services

Orvill Adams

Director
Department of Health Service Provision (OSD)
World Health Organization
Geneva

Abstract

This paper provides an overview of evidence of the effects of incentives on the performance and motivation of independent health professionals and health workers. Incentives are viewed in the context of objectives held by paying agencies or employers. The review defines the nature of economic incentives and of non-financial incentives. Particular attention is paid to the need for developing countries to understand the impacts of health reform measures on incentives.

A review of current literature found that the response of physicians to economic incentives inherent in payment mechanisms appears to follow directions expected in theory. Incentive structures are becoming more complex, however, as a result of managed care and blended payment mechanisms. There is insufficient evidence of the effects of incentives on motivation and performance of other health workers, due perhaps to a preoccupation of researchers with economic responses. Incentives must be viewed in a broad context in order to understand constraints and success factors that affect their prospects of success. Health human resources should be seen as a complex and interrelated system where incentives aimed at one group of professionals will impact on the entire system.

Introduction

The World Health Report 2000, *Health Systems: Improving Performance* defines incentives as “all the rewards and punishments that providers face as a consequence of the organizations in which they work, the institutions under which they operate and the specific interventions they provide”⁽¹⁾. This definition suggests that the organization, the work that is done and the setting in which work takes place will determine the incentive used and its resulting impact. Buchan et al add another dimension by defining an incentive in terms of its objective: “An incentive refers to one particular form of payment that is intended to achieve some specific change in behaviour”⁽²⁾.

This review is intended to provide an overview of the current evidence on the effect of pay and non-pay incentives on health workers’ performance and motivation. The literature on incentives is primarily focussed on the impact of specific incentives on provider behaviour, especially physicians. There is much less work on the structural and organizational aspects of incentives. This paper primarily uses as its base two papers recently completed for WHO and in publication: (1) *Incentive and Remuneration Strategies in Health Care: A Research Review* (Buchan et al); (2) *The Effects of Economic and Policy Incentives on Provider Practice* (Hicks and Adams)⁽³⁾.

The first paper is based on a search of English language publications, using library and CD-ROM facilities. The review as reported by Buchan et al covered the following databases: Social Science Citation Index (SSCI), BIDS, CHNAHL, Psyc Lit, FirstSearch, Medline and Health Management Information Consortium (HMIC). A total of 352 articles and papers were identified. The paper by Hicks and Adams is based on ten country case studies using a common framework for analysis developed by WHO. The countries in the study (Bahrain, Bangladesh, Côte d'Ivoire, Estonia, Ghana, Islamic Republic of Iran, Kyrgyzstan, Mongolia, Nepal and New Zealand) have all undergone health policy changes in the past decade which explicitly addressed incentives, especially in regard to providers.

These two very different approaches for collecting evidence and experiences are augmented by a selected set of recent studies that focus primarily on incentives and their impacts.

The paper is organized in three sections. The first presents the range of both pay and non-pay incentives and begins to link incentives to objectives. The second presents a review of evidence about the impact that incentives have on provider behaviour and the third section outlines some of the key factors in making incentives more effective.

Range of incentives

Buchan et al offer the following typology of incentives that can be included in remuneration packages. They define remuneration as “the total income of an individual and may comprise a range of separate payments determined according to different rules” (page 5). ‘Payments’ in this context refer to both financial and non-financial incentives.

Table 1 - Typology of incentives.

1. Financial	A. Pay
	B. Other direct financial benefits <ul style="list-style-type: none"> • Pensions • Illness/health/accident/life insurance • Clothing/accommodation allowance • Travel allowance • Child care allowance
	C. Indirect financial benefits <ul style="list-style-type: none"> • Subsidized meals/clothing/accommodation • Subsidized transport • Child care subsidy/crèche provision
2. Non Financial	<ul style="list-style-type: none"> • Holiday/vacation • Flexible working hours • Access to/support for training and education • Sabbatical, study leave • Planned career breaks • Occupational health/counselling • Recreational facilities

Source: Buchan J et al, 2000.⁽²⁾

Chaix-Couturier et al (2000) in a systematic review of the effects of financial incentives on medical practice initially identified 130 articles on the subject and accepted 89 that met their defined criteria⁽⁴⁾. They offer a typology of financial incentives inherent in different types of remuneration. The principal difference between the two approaches is their scope, with the

typology used by Buchan et al comprising a total pay and benefit package and Chaix-Couturier et al focussing on types of payment that are typically used to remunerate physicians for providing medical care. The Chaix-Couturier approach is more in line with common interpretations of physician remuneration systems as incorporating one or more of four strategies: capitation, shared financial risk, fee-for-service and salary.

Prospective payment incentives provide a measure of risk to physicians. In capitation by physician the physician is given a sum of money to provide ambulatory care for his or her patient population and the sum is adjusted for financial risks incurred by the managed care plan. In capitation by patient the physician is given a sum adjusted to the number and type of patients who register in his or her office.

Bennet defines payment strategies, or mechanisms, and key incentives for providers (Table 2)⁽⁵⁾. This approach is based on economic theory in which responses are assumed to reflect an effort by physicians, as suppliers of service, to maximize incomes subject to constraints imposed by fees set externally and payment mechanisms. In the case of medical care, economic incentives are one of many factors that influence practice patterns. Other considerations include professional ethics, training, experience and the nature of relationships between the provider and paying agency⁽⁶⁾.

Table 2 - Key payment mechanisms

Payment mechanism	Key incentives for providers
Fee-for-service	Increase number of cases seen and service intensity. Provide more expensive services.
Case payment (e.g. DRG)	Increase number of cases seen, decrease service intensity. Provide less expensive services.
Daily charge	Increase number of bed-days (through longer stays or more cases)
Flat rate (bonus payment)	Provide specific bonus service (neglect other services)
Capitation	Attract more patients to register while minimizing the number of contacts with each and service intensity.
Salary	Reduce number of patients and number of services provided.
Global budget	Reduce number of patients and number of services provided.

Source: Bennett S, 1997.(5)

Aligning incentives with objectives

The economic approach to incentives in purchasing health services was discussed in WHO's World Health Reports (WHR) 1999 & 2000 under the heading of 'strategic purchasing'. The focus there was on purchaser provider relationships, and the objective was to develop relationships in which appropriate packages of health care could be purchased. These packages could include discrete services or they could encompass comprehensive care to be provided on a long-term basis. In these relationships capitation or fundholding and contracting involve risk sharing in the sense that the provider agrees to accept responsibility for providing a negotiated bundle of services according to agreed standards of care at a fixed rate; the purchaser undertakes to finance care for insured populations and to be accountable to the public (or clients if the purchaser is a social security plan or private insurer).

WHR 2000 also discusses the effects of incentives on organizational performance – in effect extending the analysis of the role of incentives to health care funding agencies. Incentives that affect organizational performance can be divided into internal and external incentives (Table 3). Internal incentives affect decision making powers and can have profound effects on

performance. As an example, the degree of autonomy and accountability will determine the extent to which incentive mechanisms, rather than explicit direction, will be necessary to ensure best performance. There is an obvious analogy between internal incentives in organizational performance and internal incentives in the management of the staff of an organization. External incentives refer to methods used by health systems to control the activities of health organizations or funders. Regulation, for example, is used to limit governance decision rights so that the public interest is not jeopardised. Private sector organizations typically have high levels of decision rights and require strategic regulation, whereas public sector agencies are normally subject to hierarchical control, obviating the need for regulation.

Table 3 - Internal and external incentives

Internal incentives	External incentives
Decision rights (autonomy)	Governance (responsibility for decisions and control over residual income).
Accountability	Financing directed toward public policy objectives.
Market exposure (risk)	Control mechanisms (the degree to which regulations or financial incentives are necessary to obtain desired policy objectives).
Financial responsibility	
Unfunded mandates (e.g. to care for those with special needs without extra compensation).	

Source: WHR 2000. (1)

The internal and external incentives discussed in WHR 2000 illustrate the pervasiveness of incentives in economic relationships and the need to link incentives to objectives. Research into the effectiveness of various incentives in organizational behaviour is clearly of interest to health policy makers. Within health organizations and agencies, incentives are similarly important to the achievement of objectives. Much of the research literature on incentives (e.g. contracting and regulation) can be classified as dealing with incentives to organizations or independent contractors (e.g. independent professionals). An understanding of how organizations or contractors respond to incentives is incomplete, however, without parallel insight into how incentives affect performance *within* organizations or institutions.

The link between organizational objectives and personal motivation is the psychological contract between the individual and the organization⁽⁷⁾. This describes a reciprocal relationship which may be defined as the mutual expectations of the individual and the organization with each other. The psychological contract is often unwritten and unspoken, but nevertheless represents each party's expectations for the relationship's continued existence⁽⁸⁾.

The psychological contract, for many individuals, includes an intrinsic belief that their work will give them a fulfilment which has many dimensions: it concerns self-actualization, a sense of achievement, recognition, responsibility and the quality of personal relationships in the workplace. It is increasingly being recognized that these sources of motivation are vital for managers to consider in HRD⁽⁹⁾.

From organizational objectives to personal motivation

In the context of health human resource management, incentives to health workers are necessary to obtain system-wide objectives such as the right balance of skills in the workforce and an appropriate geographic distribution. Incentives are also important to internal efficiency and

effectiveness – examples include the experience and skill levels of staff, ability to work as a team and motivation to identify personal accomplishment with the achievement of organization objectives. As we will discuss later, there is a special need for research into incentives that seek to affect personal motivation rather than simply elicit an economic response.

Personal motivation of health workers often is not explicitly considered in health reform policies. The link between policy initiative and worker motivation is complex and careful study requires an intellectual framework that recognizes the importance of individual, organization and societal factors in motivation. A conceptual framework developed by Bennett and Franco recognizes the following factors⁽¹⁰⁾:

- *Individual level determinants*: individual needs; self-concept; expectations of outcomes or consequences of work activities.
- *Organizational context*: salary; benefits; clear, efficient systems; HR management systems; feedback about performance; organizational culture.
- *Social and cultural context*: community expectations and feedback.
- *Health sector reform*: communication and leadership; congruence with personal values of workers.

The framework was discussed at a workshop in 1998, where several countries reported experience with worker motivation in health sector reform⁽¹¹ⁱ⁾. Positive experiences were reported by Kazakhstan, where primary care reform provided greater prestige for health workers while financial rewards and effective communication were used to recognize performance. Zimbabwe reported negative effects of reform on motivation, which were attributed to low salaries and limited or ineffective communication with workers. Mixed experiences were reported by Senegal and Chile, where success factors included financial and non-financial incentives (such as increased status and improved working environment); negative factors included changes in management structure due to decentralization that created conflict between local governments and workers. The need for clear lines of authority and for autonomy of senior personnel were also highlighted as important issues in motivation. Other analyses of decentralization have identified risks to worker motivation in decentralization of authority for health systems. Risks include the potential for organizational roles and responsibilities to become conflicting or inappropriate; changes to organizational or worker responsibility may be poorly communicated and managerial competence may diminish⁽¹²⁾.

However, it is also worth noting Schein's *Complex Model* (1980)⁽¹³⁾, in which he suggests that because human needs vary across a life-span and from person to person, incentives will vary in their impact on motivation depending on the person and upon the stage of life at which they are offered. He suggests that universal approaches to motivating the individual do not recognize the complexity of people. For this reason, measurement of worker motivation is important to develop appropriate feedback mechanisms for human resource management. While measures of responses to individual determinants may be reasonably similar in both developed and developing countries, the latter group of countries will require customized measures of responses to organizational factors, taking into account cultural incentives and environmental constraints⁽¹⁴⁾. Decentralization requires a concerted effort to build management skills for planning, implementation and evaluation at local levels. Decentralizing the process for rewards and promotions was also identified as a potentially important factor for worker motivation in Ghana⁽¹⁵⁾.

Impact of incentives on behaviour

Physicians and other independent professionals

The choice of payment mechanisms has significant implications for mode of practice and work codes as a result of the tension between financial incentives and professional values⁽¹⁶⁾. There appears to be general agreement in the literature on the key differences between fee-for-service, capitation and salary in terms of their key incentives. The literature suggests that the impacts of incentives in general can be thought of in three ways: (1) financial impacts on providers in capitation or shared-risk plans, (2) risks to the quality of care^(4, 17, 18), (3) impact on patient confidence. With respect to quality of care, the following risks in managed care and risk-sharing plans were identified in the review by Chaix-Couturier et al:

- limited continuity of care, in particular for patients suffering from chronic illness;
- reduced range of services offered to patients, particularly in the case of prevention and psychological support;
- under-use or improper use of emergency services resulting in delayed treatment - and related complications;
- risk of ethical conflicts;
- multiplicity of guidelines from different plans recommending different courses of action for the same condition;
- reduced time for teaching and research;
- reduced confidence of patients;
- the major risk identified remains that of conflict of interest between the physician and the patient, across all populations, including both low-risk and high-risk patients.

The review found evidence of:

- increases in volume in response to fee freezes leading to higher expenditure;
- redistribution of patients from high income to low income physicians when ceilings were placed on annual earnings;
- higher rates of elective surgical procedures.

Salaried physicians:

- referred patients less frequently than fee-for-service physicians;
- had lower levels of activity;
- tended to have fewer home visits and to concentrate activities during office hours.

Another review that focussed on salary payments found twenty-three papers in the international literature that dealt with practice patterns of salaried physicians⁽¹⁹⁾. The papers suggested that salary reimbursement was associated with lower use of tests and fewer referrals compared to either fee-for-service or capitation and fewer procedures per patient, lower patient loads, longer consultations and more preventive care compared to fee-for-service physicians. None of the studies were able to judge whether the more conservative patterns of salaried physicians were more efficient in terms of patient needs. It is also important to recognize that doctors' behaviour may be influenced by other incentives such as organizational level payments, limited drug lists, therapeutic protocols and high levels of peer review. A confounding factor in cross-sectional

studies could be that physicians are attracted to certain remuneration modes as a result of their own preferences for particular practice styles.

Blended payment methods are being used increasingly in managed care plans in the US. Blended payments usually combine fee-for-service for certain types of care and capitation for others services, notably primary care and prevention. A 1996 survey of independent practice associations in California, comprising 49,000 physicians, found that capitation tends to be used more frequently for GPs than for specialists⁽²⁰⁾. Evaluations suggest that blended payments perform better than non-blended payments in terms of providing incentives for types of care desired by the paying organization⁽²¹⁾.

Lessons about the use of payment incentives identified in the review by Chaix-Couturier et al were:

- practice changes in response to financial incentives result from economic factors rather than professional motivation; consequently they may not be effective as the only method of implementing public health policies.
- financial incentives should not be structured in a way that can create a conflict of interest between revenue and quality of care;
- adjustment of financial incentives to reward quality is very difficult in practice;
- disclosure of incentives is necessary to maintain trust in both physician and paying agency.

Financial incentives to physicians may cut across all payment mechanisms. A particularly controversial type of incentive consists of rewards or benefits provided by the pharmaceutical industry. A recent literature review of physician-industry relationships found that physicians' professional behaviour was affected by industry incentives and recommended the issue be addressed through educational programs and regulatory policy⁽²²⁾.

Disclosure of incentives

Disclosure of incentives is a topical issue in the US due to regulations passed by the Health Care Financing Administration in 1998 in an attempt to avoid conflict of interest by physicians in managed care plans who treat Medicare and Medicaid clients⁽²³⁾. Disclosure is expected to improve patients' understanding of treatment rights⁽²⁴⁾. Some analysts suggest that patients may be reluctant to think of relationships with their physicians in terms of financial incentives, may not understand the relevance of information on incentives to their own treatment and may experience an erosion of trust in their physician⁽²⁵⁾. Others have suggested that disclosure of incentives be limited to the information that patients want at the time they need it, rather than blanket disclosure of all incentives that potentially influence care⁽²⁶⁾.

Physician resistance to incentives

Financial incentives that limit incomes or non-financial incentives that increase administrative (transaction) costs and threaten professional freedom can cause resistance from physicians and impair the viability of policy initiatives. This appears to be the case with managed care strategies in the US, which have provoked a backlash from physicians and patients⁽²⁷⁾. In Canada there has also been a campaign led by physicians against cost restraint, and there are signs that central and provincial governments are abandoning reforms aimed at rationalizing physician supply and hospital resource use as a result.

Other health staff

The review by Buchan et al found:

“...a limited evidence base currently available on the impacts of incentives on health workers and/or associated service providers.”

Their study found 62 papers that dealt with incentives for independent professionals and other health workers. Medical staff, primarily physicians, were the subject of eighty percent of the studies focussed on health workers, and most were based on experience in the US or UK. The authors concluded that, with the exception of physicians:

“...there is little evidence generated in this review on which to base an assessment of the likely impact of incentive interventions.”

The dearth of studies on non-physician health workers may reflect a preoccupation among researchers with economic responses to incentives. There is a solid body of theory – and a lively debate – about the role of supplier incentives in controlling utilization of health resources. Health human resource policy is not based on economics to the same extent as payment for medical care services. In addition to an understanding of the role of financial incentives, HHR policy requires evidence of how a range of non-financial incentives affect motivation, including factors such as loyalty to the employer or the organization and perceptions of control or empowerment in the job environment. This knowledge is especially important where possibilities for economic rewards are limited by fiscal constraint and employers must seek non-pay incentives to motivate staff.

This study has concentrated on English language literature. It will also be important to stay abreast of literature and research in other languages.

Organizational influences and policy context

Buchan et al make the following points about incentives, which could inform future research:

- If an incentive strategy is to be effective, it must be *congruent* with, and based on, the overall strategy of the organization.
- The strategy must be *appropriate* to the objectives of the organization and the context in which it operates.
- Pay determination arrangements can limit the nature of sector reform policies and modify the adoption of incentive policies.

The importance of institutional and other contextual factors was also highlighted in the report by Hicks and Adams, which noted that:

“Specific behavioural responses cannot accurately be predicted without knowledge of the context in which an incentive exists. A complex set of health care objectives and policies may result in many incentives, some of which act in opposite directions.”

The report summarized health human resource incentives in the case study countries in terms of *incentive packages*, in which specific incentives were related to policy objectives and placed within a context that included complementary measures and constraints (Table 4). Most of the incentive packages were directed to salaried professionals rather than private practitioners. Some of the packages targeted or included non-physician staff, including nurses and primary care workers.

The case studies found that remuneration policies or practices may determine whether or not non-financial incentives will succeed. Examples included:

- A tendency for professionals in the public sector to spend most of their time and energy in private practice, or to charge informal fees, where salary levels are low or pay is delayed.
- A necessity for adequate remuneration (by country standards) in order for incentives aimed at recruitment and retention to be effective. Examples included opportunities for higher education or housing and educational assistance for families.

Table 4 - Incentive packages for human resource issues from country case studies.

Objectives	Incentives	Complementary Measures	Constraints	Results
Recruitment and retention - in country	<ul style="list-style-type: none"> - Competitive salaries - Seniority awards in pay scales¹. 	Fiscal policies that increase the after-tax marginal value of salaries.	<ul style="list-style-type: none"> - Budget limitations. - Low public service salaries. - Policies to reduce salaries as a share of operating costs. 	Helps retain physicians in Bahrain.
	Allow after-hours private practice in public institutions.	Service standards and controls to prevent reduced work effort in the public system.	Work effort may be concentrated in private practice, leading to deterioration of quality in public service.	Considered successful in Bahrain. Other countries have experienced deterioration in the public system where providers also engage in independent private practice.
	Tolerate informal payments ² .		Informal charges limit access and may impede reforms that involve formal user fees and exemptions.	In Ghana, informal payments are widespread and entitlements to exemptions from formal charges are not respected.
Recruitment & retention - rural areas	<ul style="list-style-type: none"> - Higher salary or location allowances. - Remuneration based on workload³. 	<ul style="list-style-type: none"> - Decentralized administration. - Freedom to allocate institutional revenues or savings from operational efficiency to fund incentives. - Improved infrastructure and staff competence. 	<ul style="list-style-type: none"> Overall staff shortages. Budget limitations. Professional and lifestyle disadvantages. Greater potential in urban areas for earnings from private practice. Conflicting financial incentives. (e.g. loss of housing allowance in Bangladesh). 	No identified successes.
	<ul style="list-style-type: none"> - Services in defined areas as a condition of licensing or specialty training. - Opportunity for government sponsored higher education. 	Consistent application of policies for transfer and tenure.	<ul style="list-style-type: none"> - Confidence may be lost if selection process is perceived to be arbitrary. - Provider concerns that temporary postings may become indefinite. 	Results for (2): <ul style="list-style-type: none"> - Aids retention of professionals in public service in Ghana. - In Nepal, providers are critical of policy, as opportunities to train abroad are not linked to performance.

¹ Seniority as a basis for remuneration is often considered an inferior alternative to a results-based salary (which is not known to exist in any of the study countries). Seniority can affect retention, however, as noted by the Bahrain authors.

² Not official policy in any of the study countries. Ghana author speculates this may be explain "blind eye" to informal charges.

³ Planned in Ghana, but not yet implemented. Not implemented in other countries.

Objectives	Incentives	Complementary Measures	Constraints	Results
	- Provide housing and good quality educational opportunities for family.	Adequate salary.		Health sciences institute in Nepal reports success with nurses, but not with physicians.
Recruitment & retention – rural areas	Recruit trainees from rural areas.	Public health and family practice emphasis in training curricula.	Traditionally, urban area students are over-represented in student population.	No results reported in case studies.
Quality and availability of primary care.	- Training and promotion opportunities for nurses and medical auxiliaries. - Training of multifunction health workers. - Community mobilization of women volunteers, TBAs and local leaders.	Clear job descriptions and criteria for promotion.	Opposition by professional associations to expanded roles for multifunction health workers.	- Nepal reports success with a programme that allows health assistants and other health workers in rural areas to train for posting to higher levels. - No results reported in the country studies.
Encourage teaching and research	Pay non-practicing allowance in lieu of private practice.		Allowances may not be competitive with private practice earnings.	Nepal reports success in basic medical sciences. In clinical departments, many physicians resigned their teaching positions.
Improve quality of care	Specify clinical guidelines in provider contracts.	- Leadership role by professional organizations. - Inclusion in curricula of medical schools.	- Weak professional governance or management ability. - Information systems.	New Zealand reports success in having guidelines adopted, although effects on clinical behaviour are not certain.
	Licensing of institutions and professionals based on defined standards.	- Tradition of professionalism in medical culture. - Acceptance of civil and legal authority.	Potential shortage of qualified inspectors and managers.	Estonia reports a reduction in the number of hospitals and unqualified doctors and an increase in quality.

Key factors in making incentives more effective

The most important factor in making incentives more effective will be to extend the scope of research and evaluation to include a range of professions that reflects the actual composition of the health system workforce. Professions that should receive special attention include:

- nurses, whose roles have been changing to include more responsibilities while appropriate staffing levels have not been clearly established.
- primary health care workers, who comprise the main source of care in many developing countries;
- managers of health facilities, who must cope with new incentives and accountability relationships as a result of decentralization and cost restraint.

Incentives must be viewed in a broad context in order to understand the constraints and success factors that will affect the chances of their success. Components of the incentives framework used in case studies for the Hicks and Adams paper include:

1. Macroeconomic restructuring and health policy reform
2. Health finance
3. Provider supply and practice characteristics
4. External constraints and enabling factors
5. Professional environment

6. Evaluation of funding systems and policy
7. Sustainability of change

Health human resources must be seen as an interrelated system involving staff with a complex mix of skills and motivations. The effects of incentives aimed at one group of professionals will reverberate through the entire system. Policy makers need to know if specific incentives will reinforce health system goals or upset a delicate balance in which systems may be 'just coping' under stress.

The study of incentives is also relevant to the issue of health worker mobility. A number of 'push' and 'pull' factors affect movements of health personnel. Financial incentives are usually considered as an option to aid recruitment and retention in underserved areas. Non-financial incentives also have a role in mitigating adverse conditions in areas that have difficulty maintaining sufficient numbers of personnel and the right mix of skills in the health workforce.

References

1. World Health Organization. The World Health Report 2000 – health systems: improving performance. Geneva: World Health Organization, 2000:11.
2. Buchan J, Thompson M, O'May F. Incentive and remuneration strategies in health care: a research review. In press.
3. Hicks V, Adams O. The effects of economic and policy incentives on provider practice – summary of country case studies using a WHO framework. 2000. Geneva: World Health Organization, 2000. In Press.
4. Chaix-Couturier C, Durand-Zaleski I, Jolly D, Durieux P. Effects of financial incentives on medical practice: results from a systematic review of the literature and methodological issues. *Int J Qual Health Care* 2000; 12:133-42.
5. Bennet S. Health care markets: defining characteristics. In: Bennet S, McPake B, Mills A, eds. *Private health providers in developing countries: serving the public interest?* London: Zed Books, 1997.
6. Giacomini M et al. The many meanings of money: a health policy analysis framework for understanding financial incentives. Hamilton, Ont: McMaster University Centre for Health Economics and Policy Analysis, 1996.
7. Kotter JP. The psychological contract: managing the joining-up process. *California Management Review* 1973.
8. Thomas RR. Harvard Business School Note: managing the psychological contract. In: Victor V, ed. *Managing people not personnel: motivation and performance appraisal*. Boston: Harvard Business Review, 1990.
9. Rantz MJ, Scott J, Porter R. Employee motivation: new perspectives of the age-old challenge of work motivation. *Nursing Forum* 1996; 31:29-36.
10. Bennett S, Franko LM. Public sector health worker motivation and health sector reform: a conceptual framework. Major Applied Research 5, Technical Paper 1. Beehtsda, MD: ABT Associates, 1998.
11. Bennett S, Franko LM. Summary proceedings: Workshop on Health Worker Motivation and Health Sector Reform. Major Applied Research 5, Working Paper 2. Beehtsda, MD: ABT Associates, 1999.
12. Kolehmainen-Aitken, R-L. Decentralization and human resources: implications and impacts. *HRDJ* 1998; 2:1-23.
13. Schien EH. *Organizational psychology*, 3rd, ed. New Jersey: Prentice Hall, 1980.
14. Kanfer R. Measuring health worker motivation in developing countries. Major Applied Research 5, Working Paper 2. Beehtsda, MD: ABT Associates, 1999.
15. Dovlo D. Health sector reform and deployment, training and motivation of human resources towards equity in health care: Issues and concerns in Ghana. *HRDJ* 1998;2:34-47.
16. Kingma M. Can financial incentive influence medical practice? *HRDJ* 1999;3:121-31.
17. Dudley R, Miller R, Korenbrot, Luft HS. The impact of financial incentives on quality of care. *The Milbank Quarterly* 1999;76: 649-86.
18. Grumbach K, Osmond D, Vranizan K, Jaffe D, Bindman AB. Primary care physicians' experience of financial incentives in managed-care systems. *N Engl J Med* 1998;339:1516-21.
19. Godsen T, Pedersen L, Torgerson D. How should we pay doctors? A systematic review of salary payments and their effect on doctor behaviour. *Q J Med* 1999; 92:47-55
20. Grumbach K, Coffman J, Vranizan, Blick N, O'Neil EH. Independent practice association physician groups in California. *Health Aff* 1998;17:227-37.
21. Robinson JC. Blended payment methods in physician organizations under managed care. *JAMA* 1999; 282:1258-63.
22. Wazana A. Physicians and the pharmaceutical industry: is a gift ever just a gift? *JAMA* 2000;283:373-80.
23. Gallagher TH, Alpers A, Lo B. Health Care Financing Administration's new regulations for financial incentives in Medicaid and Medicare managed care: one step forward? *Am J Med* 1998;105:409-15.
24. Miller TE, Sage WM. Disclosing physician financial incentives. *JAMA* 1999;281: 1424-30.
25. Miller TE, Horowitz CR. Disclosing doctors' incentives: will consumers understand and value the information? *Health Affairs* 2000; 19(4):149-55.
26. Hall MA, Kidd KE, Dugan E. Disclosure of physician incentives: do practices satisfy purposes? *Health Aff* 2000;19:156-64.
27. Sekhri NK. Managed care: the US experience. *Bull World Health Organ* 2000;78: 830-43.

Discussion

Thomas L. Hall
Department of Epidemiology and Biostatistics
University of California/San Francisco

Opinion: I like the paper and believe it will make an important contribution to a long-neglected area of concern and research.

- a) The authors use the term, “health human resource(s)” at least four times. I have never before seen this term and in English it does not read well. I much prefer the long-standing WHO term, “human resources for health,” or alternatively, they could use “health-related human resources,” though this is rather cumbersome. I suggest against introducing a new term unless this has become “official” new terminology, in which case they might refer to the new terminology the first time the term is used.
- b) Personally, I am familiar with their subject and terminology. However, for an international journal, to be read by many persons for whom both English and economics are “second languages,” the prose could be challenging to follow. There may be some technical terms that could benefit from brief paraphrasing the first time they are used, and/or further amplified by examples.
- c) The “Introduction” refers to using “..as its base” two papers, the second reporting on the results of 10 country studies. As a reader/reviewer progressing through the paper I was eagerly awaiting more comment about what different countries were doing and how well their incentive systems worked. Though I realize that the main findings on the country studies are reported elsewhere in the Hicks and Adams paper, I was rather disappointed to not have a greater flavor of other country experiences. The paper made occasional reference to findings in the case study countries, but the references were so brief and without a larger context that it was hard to interpret that information. The “take-away” message I got from the paper was that we don’t know much about how, and indeed whether, incentives work, and we need to know more. This is an important and useful message, but perhaps in common with the authors themselves, I was left somewhat frustrated by the lack of any real conclusions. Though I accept that their primary goal was to provide an “overview” to the matter of incentives, ie, a typology and a recounting of what is known, if I were in a developing country looking for some guidance as to what to do and what not to do, however cautious and tentative the suggestions, I would be disappointed. -- These comments notwithstanding, I liked the paper, the authors have done a good job, and they have certainly make a persuasive case for doing more research, though Heaven help the researchers in trying to design studies in this very complicated area!
- d) I was impressed by the attempt to “disclose” incentives to patients. On first thought, entirely rational and appropriate. On second thought, a nightmare for patients to make good use of the information, especially considering that it involves their health, and at a time when they are concerned about their health and the variables that may affect their providers. That is a land where even angels may fear to tread!

Overall comments

Pay is one of the key success factors in managing the organization. Effective design of pay policies and mechanisms can positively draw talented workers from the market, encourage the development of the existing pool, and thus increase the performance of both the organization as a whole and the members of the organization. Discussing pay therefore is useful as it will promote the sharing of experiences and ideas for improving the performance of organizations. This is even more so if the discussion is focused on strategic and important sectors of the economy such as the health sector, as this paper attempts to do.

If there could be any general suggestion to strengthen this paper, however, it would be the need for the paper to point out the rationale for transforming the pay policy of the health sector. More specifically, a brief background should be provided about why this sector is moving away from traditional pay (i.e., salary/seniority based pay) toward a variable pay regime. What problems are these variable pay systems (e.g., capitation, fee-for-service) trying to solve that the traditional system cannot (e.g., enhance team working, accountability to society, market competition for health professionals, more complicated diseases, etc.)? And how to these questions differ from country to country?

In addition, within the variable pay system, incentive mechanisms can be structured into several dimensions, e.g., individual, team, or organization-wide levels. This paper however seems to focus mainly at the individual level. As the paper also recognizes that incentive mechanisms should cover all ranges of health workers, adding countries' experiences on implementing team-based or organization-wide incentive pay (i.e., how these people work together) into the discussion will provide a clearer picture about problems of traditional pay as well as problems and issues of individual based incentive schemes.

Sectional comments

Comment #1: As mentioned above, before concentrating directly on the range of incentives (in the first section), a brief background on the current situation of the public health sector would help readers to link incentive mechanisms with overall health sector management more objectively. This may include discussing such points as key programs in managing the health sector (e.g., service quality, transparency and cost), the seriousness of the problems, and the importance of incentives to alleviate those problems.

Comment #2: Table 2 on page 5 provides a good outline of types of incentives. However, the table comes up short in explaining why providers have such key motives for each type of payment mechanism. Therefore, addressing more on the sources of loopholes of payment mechanisms (e.g. information asymmetry and ineffective information system) would help in facilitating discussion in the round table (e.g., how a results-based management system with key performance indicators can increase service quality and accountability of salary-professionals?).

Comment #3: Table 3 on page 6 offers a very interesting aspect; internal vs. external incentives. However, adding some elaboration and concrete examples here would make the paper more objective. For instance, what is the practical aspect of autonomy? What are the implications for the public sector (e.g., recruitment flexibility, block grant funding)? What market exposure is covered? And so on. Also, as one major development in health reform is decentralization, it will be interesting to see how the community can serve as an external or internal incentive mechanism of health management (for example, to have community

representatives serving as management board members). It is also interesting to know how certain types of incentive mechanisms (e.g., capitation) can induce the change in external governance of the organization (e.g., budget system), and what are the lessons learned for developing countries. The link among internal incentive mechanisms themselves should also be mentioned. For example, how to balance between autonomy and accountability.

Comment #4: The authors point out on page 8 several factors that shape up motivation of health professionals. It is therefore interesting to know, from international experience, which of these factors are more manipulable or which ones behave more as constraints.

Comment #5: As it seems that the section “*Impact of incentives on behaviour*” talks about the types of incentives (i.e., fee-for-service, capitation, and salary) and their corresponding impacts on behaviour, hence, a cross-tab table (e.g., a table with columns for types, and rows for impacts- or vice versa) will help readers to get the picture and follow the argument more easily.

Comment #6: As the paper mentions on page 3 that the third section of the paper will cover key factors in making incentives more effective, it may be more appropriate that the part on “Organizational influences and policy context” from pages 13 to 16 should be moved to be under the third section on page 17.

Comment #7: It would be interesting if the paper also touched more on the effect of incentives on organization structure and health management attitudes. For example, how do certain types of incentives effect the use and design of health infrastructure (e.g., equipment, information system); how to design an incentive mechanism that promotes the preventive health care approach (as against curative approach), or; how to design an incentive mechanism that enhances the health of the local community?

Comment #8: It would be advisable if the authors can draw conclusion what all these mean for health sector pay in developing countries and how these concepts and ideas can be applied for Thailand’s health sector pay reform.

Comment #9: As the paper is divided into 3 main sections, putting outline numbers on each section will help readers to follow the paper effectively.

Toni Ivergard
Personnel Audit Systems Scandinavia, Sweden

I have a background in research and senior governmental work in HR management and labour market planning over the last 30 years. As governmental labour director, I was often displeased and very critical to the research about effects of incentives in the labour market mainly carried out by macro economists. As a large contrast, it has been a very great pleasure to read this paper by Adams and Hicks about the effect of incentives in the health sector. It is one of the best if not the best literature reviews I have read in this area! It has been carried out at a level, which is close to the real life practical problems. This makes it possible to make practical proposals and to be useful in development of new structures for remuneration systems.

In the following paragraphs, I will give a number of unstructured comments - small and large without any order of priority. But first one major objection! Not against the review, but against the main outcome of the review.

The reviewed papers present a number relationships between different incentive and change in 'first level' of performances; like number of cases, service intensity, cost of service provided, number of bed-days, number of patients registered, etc. But from this information it is very

difficult, if not impossible, to draw any conclusions about the change in the effectiveness and efficiency of the health system. One would finally like to understand the chain of causality: Incentive leads to change in performance, which results in improved health for all parts of the population! This change of causal events would be the most important reason for using incentives. This in turn leads up to the classic discussion about promotion, prevention and prime care vs. curing, caring, hospitalisation and highly specialised services. The gap between the two seems nearly impossible to over-bridge.

The superb review also proves the need for much more HHR research based on and related to areas like organisational behaviour, learning organisations and classic social psychology (is the work by researchers like Herzberg and Blauner completely forgotten, because they published generations before the introduction of the Internet?). Evidence from early research shows the weakness of pay as an incentive for improved performance and final system results and the strength of 'empowerment' and control of your own work (e.g. Hygiene vs. Motivation factors). More recent research has given the same evidence (e.g. Karasek, RA, & Theorell T, 1990) based on the 'control-demand' model ⁽¹⁾.

Personally I am convinced (mainly not on hard evidence, but on 40 years of practical experience from the area) that the use of only pay as an incentive to create equity in health in rural areas is a very weak measure. It has to be complemented with a set of other measures related to motivation, culture and deeper individual driving forces (e.g. your personal 'north star' in the terms of Prasad Kaipa, 2000) ⁽²⁾.

In the absence of more fundamental research directly related to the efficiency and effectiveness of the health service system, the information in Adams and Hicks can still be of great value. However, it has to be implemented with an unbiased wisdom and knowledge and this is difficult to find in the medical culture. Medical science as a research area, has probably the best developed and most advanced strategies and methods to produce evidence-based information and knowledge (considering it is a very complex biological science with social and psychological overlays). The presumptions and very strong subjective opinion dominates the debate when it comes to factors related to the way of practising in their own occupation.

Personally I think table 2 can give a lot of valuable guidance in development of incentive systems. However, remember it is not one payment mechanism which is the optimal solution, but a combination of mechanisms.

Adams and Hicks correctly state 'Private sector organizations typically have high level of decision rights..'. In this context, I would like to bring up alternative forms of organisations in the third sector economy or 'social economy'. In a process of decentralisation this form of organisation might bring about a guarantee against misuse (and corruption) of the freedoms of the new system.

They also discuss the social contract of Kotter. In my experience this contract must not be unwritten and unspoken. To be effective the use of the contract model should be formalised - written, signed, outspoken and published.

The conceptual framework of individual motivation factor by Bennett and Franco is a bit too traditional in my opinion. Results from researchers like Karasek, et al ⁽¹⁾ (1990) ought to be integrated.

Adams and Hicks say that 'a confounding factor in cross-sectional studies could be that physicians are attracted to certain remuneration modes as a result of their own preferences for a particular practice style'. This sounds likely and indicates the need for some kind of flexibility in any kind of incentive system.

References

1. Karasek RA, Theorell T. Healthy work, stress, Productivity and reconstruction of Working life. New York: Basic books/Harper, 1990.
2. Kaipa P. (2000):www.selfcorp.com

Dr.Suwit Wibulpolprasert
Deputy Permanent Secretary
Ministry of Public Health, Thailand

This paper provides an excellent and extensive review on the issues of incentives, performance and motivation. The authors should be commended for the immense effort they have put in. Financial incentives definitely influence performance both on the negative and positive side ⁽¹⁻²⁾. The increasing caesarean section rate for private patients is a very good example ⁽³⁾.

The review focuses mainly on the materialistic dimension of incentives, i.e., incentives to support physical and biological needs and some social needs. These are definitely extremely important basic needs of all human beings. They are the first three levels of needs as defined by Abraham Maslow. It would be more complete if the authors could also include some review on the incentives to support more social, self-actualization and esteem needs which are a higher level of human needs.

To support this level of needs, incentives on a social and spiritual dimension may have to be considered. These incentives should be seriously considered and supported **in addition to** those materialistic incentives. The social and spiritual incentives will definitely enhance as well as reduce the negative impact from any financial incentives.

The relationship between patient and health personnel may be of three types. The original (classical) type of relationship is the so-called “Patron-Client” relationship. The patient depends heavily on the trust and the superior power of wisdom of the health workers. The patient usually regards the health worker as someone with superior power. This vertical type relationship is the usual relationship in the rural areas of most developing countries. The second type of relationship is the so-called “contractual relationship”. The patient has some specific “contracts” with the providers. This is a more equal relationship and it is with this type of relationship that financial incentives work best. This is the main relationship in more urban areas and in developed countries. The last type of relationship is the “communitarian relationship” whereby the patient and the providers are members of the same community. Friendships and community ties are very important in this kind of relationship.

Patient-providers relationships are very complex and relate to all three types of social relations. The patient who registered with a provider under a capitation payment system does expect some kind of good services as defined in the contract. However, they also must have some trust in, and respect for the providers. In case that the primary care providers are members of the same community, their communitarian type of relationship will definitely influence the performance and motivation of the providers. This involved with developing packages of incentives need to consider these relationships in order to achieve the best outcome.

There are several examples of using the social and spiritual dimension of incentives in developing countries. In Thailand, there are at least three national prizes given to the best practising doctors (particularly rural doctors) ⁽⁴⁾. Many rural doctors, in spite of unfavorable working circumstances, work happily and efficiently in the rural areas. The high recognition accorded to them by the community, provide incentives to support their self actualization and esteem needs. This is also the same as those missionary doctors working in many developing countries, as well as those volunteer doctors to help the dispossessed. Creating community ties among rural physicians, for example the Rural Doctor Society of Thailand, also provides the

rural doctors with spiritual incentives to perform favourably as they belong to the socially accepted community of dedicated doctors. Spiritual and social incentives created under some innovative management mechanisms also contribute greatly to the performance ⁽⁵⁾.

I do hope that WHO can also document the social and spiritual dimension of incentives in many developing countries. This will provide additional social recognition as well as an example for providers in other countries.

It should be reaffirmed that these higher level incentives should be created in addition to those basic financial and non-financial incentives to satisfy the basic physical, biological and social needs of the providers.

References

1. Pannarunothai S, Boonpadung D, Kittidilokkul S. Paying health personnel in the government sector by fee-for-service: a challenge to productivity and quality, and a moral hazard. HRDJ 1997;1:127-134.
2. Kingma M. Can financial incentive influence medical practice? HRDJ 1999;3:121-131.
3. Hanvoravongchai P, Letiendumrong J, Teerawattananon Y, Tangcharoensathien V. Implications of private practice in public hospitals on the cesarean section rate in Thailand. HRDJ 2000;4:2-12.
4. Wibulpolprasert S. Inequitable distribution of doctors: can it be solved? HRDJ 1999; 3:2-22.
5. Chaisiri K. Human resource development through continuous improvement: a case study of Yasothon hospital, Thailand (1994-1997). HRDJ 1998;2:142-151.

Gustavo Nigenda

Senior Researcher, National Institute of Public Health, Mexico

The amount of literature interested in the analysis of doctors' behaviour and the use of incentives to improve performance has been growing in recent years. The paper in reference produces an interesting analysis of the available literature that should be considered as a topic to reflect about to keep moving ahead in the analysis of these issues.

From my perspective most of the documents rely on the understanding of doctors behaviour from an individual point of view, giving too much emphasis on the use of economic mechanisms, and not enough on their behaviour in groups. For example, seeing doctors as income maximizers would not be an appropriate approach in many countries where doctors are paid a similar salary as nurses or where they can obtain earnings in the private sector knowing that the public institution will never provide a high level of income. A related issue is the use of incentives to improve performance which should be judged in a very careful way since it can create perverse effects. For example for doctors in many countries the lack of incentive of being a low-salaried worker is compensated by the fact that they can be paid under the counter or they can practice a surgical procedure for a private client using the public facilities. In the real world the misuse of public resources is tolerated by institutions and practiced by doctors. These issues are difficult to address and to study but should be considered as elements of analysis.

As a theoretical frame the proposal of Bennett and Franco seems to encompass a whole set of determinants, including the individual level of determinants, and others that could be characterised as social, cultural and institutional. Nonetheless in addition to these determinants, doctors, as many other workers, live in highly politicised environments which are not really considered in the analysis of doctors behaviour in most studies. In the following lines I will try to suggest some areas and topics that should be considered in the theoretical framework and that in my opinion provide very insightful thoughts about the issue of doctors behaviour.

- a) **The Political context.** Politics is a difficult area to study since data can not be statistically presented and has to be obtained by deep observation, long interviews and sometimes through interaction with social actors in the process of policy definition. Besides, concepts

such as power, conflict, interests, participation, authoritarianism, legitimacy and others have to be put to play to understand the deep rationale of institutional and group behaviour. Actually doctors represent a group that is always located in the center of the political scenario. They tend to move as a group with common interests and objectives in order to defend their position as the main technical decision-makers. For example, in Mexico doctors were under political control through the use of unions as the State's mechanisms of manipulation to guarantee minimum participation and maximum stability. Doctors understood the strength of these mechanisms to define the limits of their participation and found the institutional environment and technical decisions as the main area of influence. As individuals doctors took advantage of institutional prerogatives but as a group they lost their capacity for mobilization and recently are trying to regain it in search of better working conditions and more capacity to define policy.

- b) **Institutional environments** are important for the definition of doctors behaviour. The rationale of use of resources is moving towards an increase in efficiency of all elements, doctors included. It has been documented that doctors do not necessarily agree with these changes and they tend to get in conflict with managers or institutional rationalizers. In the division of labor doctors are positioned in such a way that they can claim no interference in their technical performance from any other institutional actor, while at the same time they command and define the work of other groups. Reforms are often changing this status through the implementation of audits, quality assurance and other surveillance mechanisms but doctors are permanently looking for options to defend their position as a group. The expansion of organizational schemes such as those proposed by Health Maintenance Organizations (now being transferred to the developing world) are demanding compliance from doctors to rationalize mechanisms. This type of organizational models is also responding to the implementation of contracting mechanisms by public institutions. Many doctors in Latin America are moving away from public institutions to engage in private ones, meaning that their salaried status will remain and that efficient performance will be required with no guaranteed increases in salaries. The role of unions in the private sector is much less important than their role in public institutions.
- c) **The professional status of doctors** is also important because it allows them to attain autonomy and dominance but also social prestige and authority. It is well known that most doctors, even in developing countries, have a self-representation as successful individuals, obtaining high earnings and being able to determine the policy process. In Latin America, historically, a distinguished member of the group is normally appointed as minister of health in order to guarantee the presence of other members in high-rank positions and in the definition of strategic policy under the assumption that doctors are the only recipients of the technical knowledge. Recently doctors have been challenged by economists since new policy guidelines for the performance of the health system are based on economic rationale. Doctors behaviour may be determined by several aspects and modified by incentives but at the end of the day as Professor Abel-Smith wrote, "values are (and should be) the elements that truly determine doctors behaviour". The incentive approach relies on the capacity of institutions to change individual behaviour. However, some changes may be produced through the interaction with people and communities (not with clients) when doctors feel themselves members of a community or a group even without institutional involvement. There are examples on how outreach programmes create a sense of commitment among doctors with the community which makes them perform optimally even when economic incentives are lacking.
- d) **Regulatory framework.** Finally the issue of **regulation** has to be mentioned when talking about doctors behaviour. This is a responsibility of the Ministries of Health and mechanisms should be updated in most developing countries since many old regulatory guidelines and laws are senseless in the context of health reform. In Latin America for example the issue of

licensing has been changing recently but since still remains a bureaucratic procedure in the hands of the Ministry of Education, and thus, does not guarantee training quality. These mechanisms are the outcome of an old-style authoritarian policy that imposed procedures without the participation of doctors. In the last decade the participation of groups that were underrepresented is a reflecting vigorous participation and new regulatory mechanisms should respond to this trend.