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Leadership and governance in seven developed health systems

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ABSTRACT

This paper explores leadership and governance arrangements in seven developed health systems: Australia, England, Germany, the Netherlands, Norway, Sweden and Switzerland. It presents a cybernetic model of leadership and governance comprising three fundamental functions: priority setting, performance monitoring and accountability arrangements. The paper uses a structured survey to examine critically current arrangements in the seven countries. Approaches to leadership and governance vary substantially, and have to date been developed piecemeal and somewhat arbitrarily. Although there seems to be reasonable consensus on broad goals of the health system there is variation in approaches to setting priorities. Cost-effectiveness analysis is in widespread use as a basis for operational priority setting, but rarely plays a central role. Performance monitoring may be the domain where there is most convergence of thinking, although countries are at different stages of development. The third domain of accountability is where the greatest variation occurs, and where there is greatest uncertainty about the optimal approach. We conclude that a judicious mix of accountability mechanisms is likely to be appropriate in most settings, including market mechanisms, electoral processes, direct financial incentives, and professional oversight and control. The mechanisms should be aligned with the priority setting and monitoring processes.

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1. Introduction

The *World Health Report 2000* introduced the notion of a government's responsibility for the 'stewardship' of the health system, which "encompasses the tasks of defining the vision and direction of health policy, exerting influence through regulation and advocacy, and collecting and using

information" [1]. The notion was subsequently refined and characterized by the World Health Organization as 'leadership and governance', which "involves ensuring strategic policy frameworks exist and are combined with effective oversight, coalition building, the provision of appropriate regulations and incentives, attention to system-design, and accountability" [2]. Leadership and governance are generally considered to be the most complex but also the most important function of government in relation to its health system.

Governance can be defined as social coordination and three main types are usually described in the literature: hierarchy, market and network [3,4]. They rest on

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different theoretical bases (for example, theories of bureaucracy, economics, sociology) and require different actions from government. A hierarchy implies a need to define rules, allocate resources and responsibilities, with an implication of top-down direct control. A market implies an emphasis on purchasing, regulation, and creating incentives. A reliance on networks implies the need to establish common values and knowledge, and management through professional norms and information.

Ouchi [5] argues that the choice of optimal organizational control in a specific situation depends on two broad contextual considerations: the knowledge of the production process and the ability to measure outputs. Markets are optimal when knowledge of the production process is poor but outputs can be accurately measured – that is, when contracts can be readily written and performance monitored by observing outputs. Conversely, hierarchies might be preferred when knowledge of the production process is good but outputs are difficult to measure – that is, when behaviour can be readily controlled through rules of process. When information on both production process and output measurement is poor, the organization may have to resort to what Ouchi calls ‘clan control’, under which performance is determined by social and cultural norms rather than markets or bureaucracies.

The traditional model of governance was based on hierarchy, but developed towards mixed models including market and network types. This requires new and more general approaches to governance as governments relinquish some aspects of direct control. A focus on leadership and governance therefore does not necessarily imply a need for government itself to finance, provide or otherwise directly control health system resources. Rather, this perspective emphasizes the responsibility of government for ensuring that goals are articulated, that necessary systems, capacity, incentives and information are in place to assure attainment, and that all stakeholders are able to exert appropriate influence on the actions and performance of the system. Indeed, the emphasis upon stakeholders implies that the state cannot impose ‘top-down’ governance. It is likely that – given the diffusion of power in modern economies – the state must mobilize networks of power in order to steer events [6]. In a typically complex health system no one actor has all the knowledge and power required to get things done and the state must therefore necessarily engage in networked governance across many organizations.

The concept of leadership and governance is relatively new in health, and there is little consensus on how to define, model or measure stewardship of the health system [7]. However, management theorists and political scientists have well-established more general models in this domain. In particular, analogies have been drawn between the need to ‘steer’ physical or biological entities, and the need to exercise governance of social systems. Such models have been described by authors such as Beer [8] as ‘cybernetic’, derived from the Greek word κυβερνητής (kybernetes – a steersman), which is also the root for the word ‘governance’. Osborne and Gaebler [9] note that states now seek to ‘steer rather than row’ their developed economies.

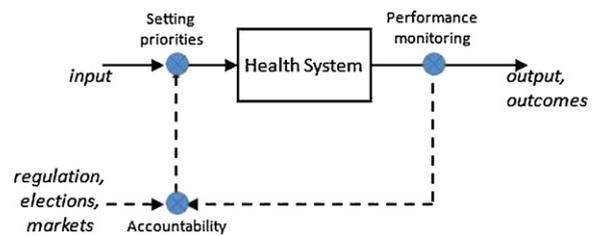


Fig. 1. A cybernetic model of health system leadership and governance.

Other authors [10] rely on system thinking to gain a deeper understanding of the process necessary to implement a given intervention in the real-world setting. Only by taking all the relevant implications into account, including how the system will react, what synergies can be developed and what negative behaviour might be expected, can one ensure that the design of the intervention is robust and the intended result will emerge. Veillard et al. [11] propose an operational framework for assessing the stewardship function of health ministries. The relevance of such models to the analysis and strengthening of health systems is clear. Under the World Health Organization definition stated above, leadership and governance involve setting priorities for the maintenance and improvement of the population’s health, assessing progress towards attainment of those priorities, and ensuring that all relevant actors are held properly to account for their actions. Following Smith and Goddard [12], we summarize this process with reference to three key components: setting priorities, monitoring performance, and holding to account. Although necessarily a simplification, this three-part model captures many of the essential features of the leadership and governance challenge. It is illustrated in Fig. 1, a representation that underlines the notion of performance feedback inherent in successful governance of the health system. This emphasizes the function of ‘steering’ the systems under scrutiny.

1.1. Priority setting

Priority setting can be defined as a more or less systematic approach to distributing the available resources between competing demands in order to fashion an optimal health care system, given system constraints [13]. The most fundamental element of priority setting is to ensure that a clear set of goals is articulated for the health system to act as a basis for such optimization. Experience since the *World Health Report 2000* suggests that the principal goals are likely to include variants of the following:

- Improved health status of the population
- Safe, high quality health services
- Responsive health services, meeting the expectations of patients and caregivers
- Equitable treatment and outcomes
- Financial protection from the expenditure consequences of ill health
- Ensuring a sustainable supply and efficient use of resources

The precise formulation of goals, and the degree of importance attached to them, is a matter for individual nations to determine. It is largely a political decision, but there are available frameworks that can help to guide the debate [14]. In practice, high-level goals do not differ substantially between health systems. The task of priority setting is to convert the chosen high-level goals into targets and operational actions for the health system. In contrast, these are likely to vary considerably depending on local circumstances such as pressures on the health services budget and local constraints [15].

Priority setting can take a number of forms, such as required standards of service or aspirational targets of attainment [13]. A common form of priority setting in systems both of mandated health insurance and of devolved tax funding involves the specification of a set of health services (the health basket) to which insurees are entitled [16]. Increasingly, parts of the health basket are being shaped at the national level by agencies at arm's length from government, using techniques such as cost-effectiveness analysis. It is quite common to observe other priority-setting approaches, often running alongside the health basket, such as targets for health improvement, standards for patient safety, or waiting times and other access guarantees.

1.2. Performance monitoring

The IT revolution has transformed our ability to capture vast quantities of data on the inputs and activities of the health system. The immediate stimulus for providing better information has been to improve the delivery of health care by securing appropriate treatment and good outcomes for patients. Without access to reliable and timely information on the patient's medical history, health status and personal circumstances, the clinician will often be unable to provide optimal care, and wasteful duplication and delay may also occur. Similarly, patients often lack the information required to make choices about treatment and provider congruent with their individual preferences and values and offering the best potential health outcomes.

More generally, information is also a key resource for securing managerial, political and democratic control of the health system – in short, for improving its governance. There have been astonishing developments in the scope, nature and timeliness of performance data made publicly available in most developed health systems [17]. Performance monitoring can be defined as the systematic collection, analysis and dissemination of data to inform stakeholders of the actions and outcomes associated with practitioners, organizations and entire health systems. There are many diverse uses of performance information, such as tracking public health, monitoring health care safety, determining appropriate treatment paths for patients, promoting professional improvement, assuring managerial control, and promoting the accountability of the health system to citizens. Underlying all of these efforts is the role it plays in enhancing the decisions that patients, clinicians, managers, governments and citizens take in steering the health system towards better outcomes. A primary purpose of performance information is therefore to

promote transparency throughout the health system and to enable stakeholders to hold actors within the health system properly to account.

1.3. Accountability mechanisms

Specification of priorities and performance monitoring has little purpose if relevant actors do not have the power to use the results to effect change. For example, Mannion and Goddard [18] found that performance monitoring in Scotland was well advanced in the mid 1990s. However, it had little impact on health system behaviour because of a lack of accountability mechanisms and the associated incentives to prompt appropriate responses on the part of practitioners, managers and organizations. The same phenomenon can be observed at a national level – for example, the biennial Dutch Health Care Performance Report [19] has been slow to inform the policy debate and national priority setting.

Stewart [20] argues that accountability has two broad elements: the rendering of an account (provision of performance information), and the consequent holding to account (sanctions or rewards for the accountable party). The availability of performance information is therefore not in itself sufficient to promote accountability. There must also be put in place appropriate accountability mechanisms – arrangements that allow stakeholders to express their judgments on service providers and – where necessary – encourage them to take remedial action. Such mechanisms might include markets in which patients or payers can choose which providers they use, democratic processes in which the public passes periodic electoral judgment on relevant agencies, direct incentives through payment or accreditation systems, and the oversight of providers through professional regulation or through reputational pressure from the judgments of professional peers. The common feature is that they imply some incentive for the provider to take action.

All nations have put in place governance institutions and systems that – to some extent – address the need for priority setting, performance monitoring and accountability. However, the precise scope, design and effectiveness of such mechanisms vary considerably. The objective of this paper is to explore the current state of progress in health system governance in seven countries: Australia, England, Germany, the Netherlands, Norway, Sweden and Switzerland. In particular, it describes the relevant arm's length institutions that have been put in place and the methods they use, assesses the scope and effectiveness of their operation, and discusses the extent to which, as a whole, they serve the leadership and governance requirements of the health system.

There is no single accepted definition of an arm's length institution. The OECD [21] describes them as assuming government responsibilities "at arm's length from the control of politicians, with different hierarchical structures from traditionally functioning ministries and in some cases management autonomy or independence from political influence". They have been created with two objectives in mind: to improve efficiency and effectiveness, or to legitimize decision-making independent of political influence.

The key ways in which they differ from traditional ministries include: different governance structures; exemption from certain managerial, financial, or personnel rules; and a degree of management autonomy. The common feature is a desire to distance the detailed operations of the agency from day-to-day political scrutiny and control. Of course this can be effective only if the agency is given very clear terms of reference and authority. The OECD describes such arrangements as “distributed governance” [21].

The countries were chosen to reflect a range of health system arrangements in high income countries with universal health coverage, largely financed by mandatory contributions in the form of taxation or social health insurance. Table 1 summarizes key national health statistics, highlighting the similarities in many of the measures [22,23]. In contrast, Table 2 gives a broad comparison of their health system characteristics, highlighting considerable variation in structures of governance. A key unresolved debate is the optimal extent of decentralized control within health systems [24], and we sought to reflect a spectrum from the considerable decentralization found in countries such as Switzerland and Sweden to the high levels of centralized control found in England and Norway. Clearly the issues involved in ‘steering’ the system are very different depending on the degree and type of decentralization in place, and this issue is a key focus of our discussion.

The study takes advantage of an author from each country who is familiar with the health system and relevant policy developments. Consistent responses were sought through a semi-structured questionnaire, summarized in Annex 1, developed in discussion with all authors in order to avoid misinterpretation or ambiguity. In the next section we summarize for each country experience under the three leadership domains, and assess the extent to which they are aligned. A concluding section discusses the findings and draws conclusions for future priorities.

2. Summary of findings

The survey results are reported in full elsewhere [25]. In this section we summarize the key findings from individual countries. To a large extent the state of progress within a country can be assessed by reporting the type and effectiveness of the institutions that have been put in place to undertake the leadership and governance functions described above. Therefore, as a framework for the discussion, Table 3 summarizes relevant agencies in the seven countries under scrutiny.

2.1. Australia

Australia has a federal system of government with functional and fiscal responsibilities divided between the national government and the six states and two territories who administer respective regional health systems. Health care is offered by both public and private providers; medical services are subsidized through the government health insurance system (Medicare); approved pharmaceuticals are subsidized; and public hospital care is free for public patients. Financing comes from general taxation, a small health tax levy and some user co-payments.

Table 1
Population, health spending and health outcomes by country.

	Australia	United Kingdom	Germany	The Netherlands	Norway	Sweden	Switzerland
(a)							
Population (millions 2009)	21.3	61.6	82.2	16.6	4.8	9.2	7.6
Total health exp % GDP (2008)	8.5	8.7	10.5	9.9	8.5	9.4	10.7
General govt exp on health as % of total health exp (2008)	65.4	82.6	74.6	75.3	78.6	78.1	59.1
Health expenditure per capita PPP\$ (2008)	3365	3222	3922	4233	5207	3622	4815
Life expectancy at birth (2009)	82	80	80	81	81	81	82
(b)							
Amenable mortality 2006–2007 of all causes ages 0–74	56.9	82.5	76.4	65.6	63.6	61.3	53.1 ^a
% change amenable mortality 1997–1998 to 2006–2007	–35.3	–34.7	–28.0	–32.3	–35.5	–30.7	–18.7 ^b

Source: (a) WHO [22]; (b) Nolte and McKee 2011 [23].
^a Average 2004–2008, calculation of the health administration of Ticino.
^b Compared to average 1998–2002.

Table 2
Health system characteristics by country.

	Australia	England	Germany	The Netherlands	Norway	Sweden	Switzerland
Form of government	Federal	Unitary	Federal	Unitary	Unitary	Unitary	Federal
Main source health revenue	General taxes	General taxes	Wage-related contributions	Wage-related contributions and community-rated premiums	General taxes	General taxes	Community-rated premiums
Health cover finance agency	National health insurance scheme	National Health Service	160 sickness funds	Health insurers	Regional and local authorities	Regional and local authorities	80 health insurers and 26 cantons
Governance in health system	National and state govts	National health department	Corporate	Corporate	National	National and counties	Traditionally cantons, but increasing role played by the federal government
Hospital ownership	State govt public hospitals (70% beds), private hospitals	Mainly public or not for profit	Mixed public and private	Private not-for-profit/NGOs	National govt (4 regional offices)	21 counties	Public and private
Physician employment	Mainly private	Mainly public or under govt contract	Mainly private	Mainly private	Local govts contract and private physicians	County employees	Mainly private

Source: Paper authors; The Commonwealth Fund. International profiles of health care systems. New York; 2010.

In addition, although private health insurance is voluntary, the Australian government offers financial incentives and sanctions for people to take out private insurance cover for private hospital care and some private allied health services [26].

Setting priorities is a joint responsibility of the national government and the states and territories. A number of national agencies and forums have been established to help inform priorities, for example, the Australian National Preventive Health Agency. Australia has been a leading user of health technology assessment (HTA) and its National E-Health Transition Authority now aims to establish secure interoperable electronic health information systems. The Australian Health Ministers' Conference agrees national priorities. The Council of Australian Governments has recently taken steps to strengthen *performance monitoring*. The Australian Commission on Safety and Quality in Health Care leads initiatives and proposes standards but has no formal powers of intervention. The federal government aims to strengthen performance monitoring and accountability in relation to public hospitals through the establishment in 2011 of a Hospital Pricing Authority and a National Health Performance Authority. The prime *accountability* mechanisms are via intergovernmental forums, the national and state health departments, accreditation of provider organizations, and the Australian Health Practitioners Regulation Agency established in 2010.

Australia has generally adopted a 'soft' regulation approach entailing persuasion and collaboration in preference to a harder regime entailing enforcement. Whilst the decentralized nature of the health system can promote innovation and responsiveness to local conditions, it also fragments accountability. Efforts are under way to improve accountability arrangements through the promulgation of national minimum standards, and public performance reporting. However, it remains unclear what sanctions or supports follow upon poor performance by the states or their public hospitals in meeting public priorities, and accountability in the private sector remains weak.

2.2. England

The English National Health Service (NHS) has traditionally been the archetypal centrally planned health system, offering universal insurance funded mainly from general taxation. Services remain largely free at the point of access. However, the NHS has increasingly separated the functions of provider and purchaser of health services, and now relies increasingly on a mixed market of public, not-for-profit and commercial providers. Patients are free to choose any approved provider for much non-emergency hospital care, supported by a system of diagnosis-related group (DRG) payments [27]. The policies of a new (2010) coalition government have reinforced the emphasis on provider markets, in which performance information is expected to play a major role.

The Care Quality Commission assesses organizational compliance with a large set of 'core standards' developed in conjunction with the health ministry, which forms the principal *priority setting* mechanism. Much of the

Table 3

Examples of agencies involved in health system governance in the seven countries.

	Priority setting	Performance monitoring	Accountability
Australia	Council of Australian Governments Australian Department of Health and Ageing State and territory health departments Australian Health Ministers' Conference National E-Health Transition Authority Australian National Preventive Health Agency	Australian Institute of Health and Welfare Australian Commission on Safety and Quality in Health Care National Health Performance Authority Hospital Pricing Authority	Government health departments Accrediting agencies Australian Health Practitioners Regulation Agency
England	Care Quality Commission National Institute for Health and Clinical Excellence (NICE)	Care Quality Commission Dr Foster Office of National Statistics	The health ministry
Germany	Federal Joint Committee (G-BA, members: Federal Association of SHI Physicians, Federal Association of Sickness Funds, German Hospital Federation) Institute for Quality and Efficiency in Health Care (IQWiG)	AQUA (formerly by the Federal Office for Quality Assurance) Organization for Transparency and Quality in Health Care	Federal Joint Committee (G-BA) Federal Chamber of Physicians Federal Insurance Authority (BVA)
The Netherlands	Health Council Health Care Insurance Board (CVZ) Medicines Evaluation Board (CBG)	National Institute for Public Health and Environment (RIVM)	Health Care Inspectorate (IGZ) Health Care Authority (NZa)
Norway	Regional Health Authorities Norwegian Council for Quality Improvement and Priority Setting in Health Care	Health ministry (hospitals) Municipalities (primary care)	Norwegian Board of Health Supervision
Sweden	Ministry of Health and Social Affairs Dental and Pharmaceutical Benefits Agency (TLV)	National Board of Health and Welfare Association of County Councils Quality Registers (individual conditions)	County councils/local government
Switzerland	Federal Service Board Medical Board (cantons)	Federal Office of Statistics Patient Safety Foundation SwissDRG	Swiss medical association (FMH) and other professional organizations

assessment is self-reported, but there is a significant threat of audit and inspection. The other main priority setting mechanism in England is the health technology assessment undertaken by the National Institute for Health and Clinical Excellence (NICE). NICE is also seeking to integrate best practice quality standards into its recommendations. *Performance measurement* has been at the heart of recent reforms, and is therefore relatively well developed, both in primary and hospital care. A private organization *Dr Foster* also offers assessments of NHS hospitals, including standardized hospital mortality rates. Traditionally, *accountability* in the English NHS has focused on the hierarchical managerial relationship between NHS organizations and the health ministry. However, recent policy has focused on market accountability, including encouragement of a more diverse provider market; reform of provider payment mechanisms; the development of patient choice guarantees; improved information on provider performance; and efforts to create a level playing field for market participants.

The broad requirements to support a more market-oriented model are being put in place, albeit in a piecemeal fashion. The main weaknesses of the system at present are the lack of information on large parts of the health system that might be useful to patients, and the limits to real choice and contestability at many stages of the patient pathway. And an impending severe spending squeeze on NHS finances will limit the scope for creating new capacity.

2.3. Germany

Germany has a system of statutory social health insurance (SHI). The bulk of the population (85%) receives coverage from around 160 competing health insurance funds (sickness funds) – autonomous, not-for-profit, non-governmental bodies under public law – funded through joint contributions by employer and employee. Of the remainder, about 10% are covered through private health insurance based on a different set of regulations, and 4% are covered directly by the government [28]. A fundamental characteristic of the political system in Germany is the separation of powers between the federal level (with a constitutional emphasis on parliament and relatively weak powers granted to the government), the states (both individually as well as participants in federal policy-making) and various corporatist institutions. It leads to a relatively strong degree of delegated and autonomous decision making.

The Federal Joint Committee (G-BA), established in 2004 represents sickness funds, ambulatory care physicians as well as hospitals. It is the paramount *priority setting* body in the SHI scheme's system of joint self-government. Amongst its principal responsibilities, the G-BA defines the benefit basket of the SHI system, and takes responsibility for assessing the quality and efficiency of care. Its work is in part supported by HTA reports undertaken by the Institute for Quality and Efficiency (IQWiG). Increasing *performance*

measurement efforts are being made [29]. Since 2010 the Institut für angewandte Qualitätsförderung und Forschung im Gesundheitswesen (AQUA) has taken responsibility for wide scale performance reporting in an anonymized way, associated analysis, and seeking responses from underperforming providers [30]. All hospitals are also expected to publish publicly a suite of 27 performance measures as part of the mandatory biennial quality reports. *Accountability* is secured through systems of various statutory and voluntary accreditation schemes, at the organizational and practitioner level, and the freedom of patients to choose provider.

In some senses the high degree of delegated decision-making is the strength of the German system. Granting the power for priority setting, performance assessment and expenditure control to actors inside the system, requiring them to take decisions that balance different interests and making them jointly accountable, ties decision-making and accountability together. However, governmental powers and accountability vis-à-vis the population at large are considerably weaker than in other countries. Various non-governmental actors can block decisions and thereby delay the implementation of priorities and regulations intended by law. Over the last 20 years, coalitions of various parties have tried to overcome this dilemma by strengthening the role of the government vis-à-vis the corporatist actors, e.g. through merging the various sectoral joint committees into one, trying to set up a governmental agency for quality (which ended up as IQWiG under corporatist control) or by creating the national health fund, which is administered by the Federal Insurance Authority (which is also charged with supervising the sickness funds).

2.4. The Netherlands

Over a period of 20 years the Netherlands has moved from a health system based on traditional social health insurance (with voluntary private insurance for higher income families) towards a system of competitive health insurers offering a mandatory package of care for the whole population [31]. An important feature of the Dutch reforms has been a long-term vision of what is to be achieved, and incremental implementation, requiring a degree of political consensus on the desired future shape of the health system. The vision comprises a system of 'managed competition' in both the insurance and provider markets, with the intention of controlling the activities, quality and costs of the health system. The markets are overseen by the Dutch Health Care Authority (NZa), which sets payment rates and has the power to impose obligations on players with significant market power. It also seeks to improve the transparency of markets for purchasers and patients. The Health Care Inspectorate (IGZ) establishes minimum quality standards.

Overall responsibility for *priority setting* rests with the Minister of Health, who is responsible for the access, quality and costs of Dutch health care. The ministry and, when necessary, the legislature set strategic priorities. A number of arm's length agencies are then responsible for more operational priority setting, including the Health Council (advises the government on the state of the art in medicine,

health care, public health and environmental protection), the Health Care Insurance Board (CVZ) which advises on the contents and implementation of the basic health insurance package, and the Medicines Evaluation Board (CBG), which assesses and safeguards the efficacy, safety and quality of medicinal products. *Performance monitoring* is central to the implementation of managed competition. All providers and insurers must produce an annual accountability report, including information on costs, activity and quality. This includes information for consumers on a website (KiesBeter.nl). In addition, the independent National Institute for Public Health and Environment (RIVM) produces a biennial national report on the performance of the health system, which is presented to Parliament as a means of holding the health ministry to account for its stewardship of the health system [19]. Managed competition places great emphasis on markets as an important mechanism for securing improved *accountability*. The requirements for markets to function efficiently include transparent information and meaningful choice for individual patients and collective purchasers (the insurance funds). The health care authority NZa has primary responsibility for ensuring that markets function appropriately, whilst the Dutch Competition Authority (NMa) enforces fair competition amongst both insurers and providers, which are subject to the Dutch Competition Act. The minimum standards set by the health care inspectorate IGZ act as an accountability mechanism in the form of accreditation. Self-regulation, particularly of the medical profession, is also an important aspect of the Dutch system.

The Dutch health system is conceived as a system, albeit one towards which progress is being made incrementally. Therefore, unlike most other health systems, there is an ambition to align all three elements of leadership and governance. It is recognized that the reforms will take many years to complete and so far progress has been variable. In particular, there has been a (probably necessary) reliance on existing institutions to take on many of the roles of priority setting, performance monitoring, and accountability. However, reforms to date have been implemented with a consistent vision in mind, and the roles and responsibilities of relevant arm's length bodies are therefore moderately well aligned. The greatest challenge is to align priority setting for the short and the long term, performance monitoring and the associated system responses. Recently the Minister of Health initiated the establishment of a national Quality Institute that has the power to enforce change and integrates the knowledge of the various institutes involved (CVZ, IGZ, NZa, research units).

2.5. Norway

Norway's health system is funded mainly through taxation. There are three levels of government: the national Parliament (Storting), 19 county councils and 430 municipalities. The municipalities are in charge of primary care, care for older people and care of physically and mentally disabled people; the counties deal with health promotion and dental care; and the central government is responsible for secondary care. Health reform in the 1970s was concerned with equity issues and developing health services;

the 1980s focused on decentralization and cost containment; the 1990s on leadership and efficiency issues; and the 2000s on delivery and organization of the health system [32].

At the national level, an overarching National Health Plan (at present for 2011–2015) forms the basis for strategic *priority setting*. In primary care, local priorities are set mainly by the individual municipalities. Secondary care is governed by the four regional health authorities (RHAs), and priorities are set by way of contracts with the national ministry, which outline what hospitals are expected to deliver over the next year with regard to quantity, quality and areas requiring improvement. The Council for Quality Improvement and Priority Setting in Health Care (under the roof of the Norwegian Knowledge Centre for the Health Services) deals with questions of national importance and great cost, for instance regarding introducing new screening programs for cancer or the introduction of new expensive medications or procedures. *Performance measurement*, in the form of targets to be achieved, forms a central aspect of the contracts. In primary care, most municipalities have some system for measuring performance, although their efforts are not coordinated at a national level and mainly focus on treatment volume and other structural measures.

There are many shortcomings in the current arrangements. Most measurement focuses on structures or volume rather than outcomes, so is not useful in improving quality. Public reporting of results is limited and results are not published in a user-friendly way. There is also a lack of capacity to analyze data. Performance monitoring therefore adds low value, as little or nothing is done to enforce change or improvement. *Accountability* relies thus mainly on administrative processes (as represented by the RHA contracts) rather than markets or electoral processes.

The Patients' Right law promises a patient treatment within a specified time frame, and this is usually monitored. If a hospital fails to provide the treatment within that period, the patient has the right to seek treatment – whether it be private or public – elsewhere and the failing hospital has to pay for the cost incurred. To this extent the three components are aligned. However, there is otherwise little alignment between priority setting, performance monitoring and accountability.

2.6. Sweden

Sweden has three independent levels of government all involved in the health system: national, county and municipality. The health system is primarily funded through national and local taxation [33]. The Ministry of Health and Social Affairs initiates goals and policies at the national level. Service delivery and financing is the responsibility of the local authorities, which own most providers. The 21 county councils play a major role in the Swedish health system. Each should offer good health and medical services to persons residing within its boundary. The 290 municipalities are responsible for nursing home care help in the delivery of services for older people. Since 2005, reforms have centred on attempts to integrate services and avoid fragmentation, transparent comparison of health care

performance, and choice and privatization in primary care delivery.

All three government levels are responsible for *setting priorities* for health system actions and standards. Overall goals and policies are determined at the national level, and the national government has also invested resources in building a strong national evidence base for local decision-making through arm's length agencies. Cost-effectiveness in prescribing is promoted through the reimbursement decisions and recommendations of TLV, a national HTA agency for dental and pharmaceutical benefits. Since 2006 *performance monitoring* efforts have focused on clinical indicators and performance-related outcomes referred to as Öppna jämförelser (“open comparison”), a transparent comparison of quality and clinical indicators across the 21 county councils. The association of local governments (county councils) generally carries out performance monitoring in collaboration with the National Board of Health and Welfare. Quality registers for specific treatments are managed independently with the support of the national government through specialized organizations. The national government can in principle hold the county councils accountable for obligations covered by the Health Care Act. However, the Act describes responsibilities for local government in general terms, so this does not happen in practice. Increasingly, the national government is using direct incentives, such as pay-for-performance related to waiting time targets, to influence developments at the county level. The main *accountability* mechanism for the county councils is the electoral choice of the local population. Market mechanisms and choice for the population have traditionally been limited, but have recently been strengthened, most notably in primary care.

In summary, the Swedish system has some way to go. Priority setting is not transparent, other than for prescription drugs (through HTA) and the hospital waiting time guarantee. It is not aligned with performance monitoring, which is weak compared to some other countries. Performance information at the provider level is limited, and its main use relates to managerial benchmarking. On the other hand, the system of quality registers does offer the potential for detailed benchmarking of professionals and organizations. Accountability mechanisms generally come to light during elections at all three levels, and the impact of greater use of market incentives has yet to be assessed.

2.7. Switzerland

Switzerland has three institutional levels: the confederation (central state), the cantons and the municipalities. The political system is characterized on the one hand by federalism and direct democracy and, on the other hand, by liberalism and private institutions that play a significant role even in social security. The health system is mostly funded by compulsory health insurance premiums and taxes. Federal-level intervention is limited, but the position of the central government in health policy issues has become more significant over the past decade. Responsibility for the financing, organization and delivery of health services lies with cantons, large municipalities, health insurers, as well as public and private providers. A

fundamental health reform in 1996 introduced compulsory health insurance across the country with a nationally standardized benefits package [34]. Citizens can choose from a market of non-profit insurers offering statutory coverage.

Priority setting is a responsibility shared by federal government, cantons and, in the field of elderly care, even municipalities. Depending on the issue at hand, the federal government, the cantons, the organization of health insurers, the provider associations and the patient/consumer associations take part in the decision-making process. The federal government is responsible for defining the statutory benefits package and the Federal Service Board (FSB) is responsible for recommendations in the area of medical treatments. However, it has limited resources and its deliberations are not transparent. To fill this gap, in 2008 the canton of Zurich set up its own agency, called the Medical Board (MB). In 2011, the cantons accepted to anchor the agency at federal level, demonstrating that MB has the potential to become a true arm's length agency for HTA. *Performance monitoring* is limited [35]. Performance indicators pertaining to quality of care are not collected systematically and there is no country-wide program that sets standards of care quality. Monitoring is generally carried out by the cantonal authorities jointly with provider associations and the confederation is of subsidiary importance. A federal agency called SwissDRG has been created to run the DRG system through systematic collection of microdata from all hospitals and in a certain sense measuring performance in the hospital sector. A nascent Patient Safety Foundation has also been formed, under the aegis of a number of stakeholders, but is at an early stage of development. *Accountability* relies predominantly on consumer choice, control by professional peers and continuing education requirement for physicians, and voluntary accreditation schemes for hospitals. But it is not ensured in a systemic way as a result of the weaknesses highlighted in performance monitoring and priority setting. In January 2011 the federal government presented a draft bill aiming to strengthen control and accountability of health insurers through a powerful regulatory agency at federal level.

Thus leadership and governance in the Swiss Federation are highly fragmented [35]. The proper functioning of insurance and provider markets is frustrated by weak information and lack of transparency.

3. Discussion

The brief country sketches identified a large number of arm's length agencies, as summarized in Table 3. The findings indicate a variety of approaches to leadership and governance. This section discusses the results under the three domains, and draws some conclusions for future developments.

3.1. Setting priorities

Setting goals for the health system is a clearly political undertaking, and a proper role for a legitimately elected government. We have found that some of the important goals of health systems are reasonably uncontested in practice. Few argue with the need to assure the quality and

safety of health services. However, other goals such as maximizing efficiency or promoting equity are more problematic. Whilst the pursuit of health system efficiency or equity would for many observers be a 'good thing', converting those general principles into a concrete concept, let alone a measurable indicator or target, is not straightforward.

Of the countries under scrutiny, only Germany, Norway, England and – to a lesser extent – Australia have a formal system of setting comprehensive and clear goals for the health system. Although setting high-level goals is a manifestly political undertaking, a system of agencies advising the health ministry, such as that found in the Netherlands, might be the most appropriate way of informing a government's choice of national priorities. However, it runs the risk of somewhat arbitrary choice of goals, and is vulnerable to capture by vested interests. It also encounters difficulties in more devolved systems in which local states, counties or cantons have the freedom to depart from national priorities. Australia seeks to set and implement national priorities through intergovernmental and intersectoral forums. The Norwegian Council for Quality Improvement and Priority Setting in Health Care acts as a forum for debating priorities, recognizing the political nature of the task, but also using evidence produced by the Norwegian Knowledge Centre for Health Services.

A lack of any statement of goals can make operational priority setting problematic. Priority setting is particularly important in a system of mandatory health insurance. Insurers, patients and payers must in principle be told what treatments and diseases the mandatory insurance package should cover, who is entitled to receive care, and the standards of quality they can expect. Only with a clear picture of patient entitlements can insurers, providers and governments be held properly to account. In practice, such clarity is rarely found. There is in developed health systems an assumption that all 'reasonable' treatments should be covered, to an 'acceptable' level of quality. It has traditionally been rare to find explicit statements of entitlement. However in many health systems the capacity to deliver a comprehensive package is coming under increasing pressure, as financial pressures increase and variability in the quality of provision is exposed. The need for clearer statements of priorities then becomes apparent. For example in Switzerland the lack of a national priority setting agency led the cantons to launch the Medical Board initiative, a multilateral body that provides "bottom-up" HTA recommendations, aiming at revitalizing the public debate on priority setting and guidelines.

So long as clear national goals are set, and agreement reached on how they are to be made operational, the detailed work of setting priorities can be delegated to an arm's length organization. The goals of improving cost effectiveness, maximizing the health of the population, and assuring patient safety underlie the operations of many of the agencies described above. For example, most health systems with universal insurance coverage seek – implicitly or explicitly – to maximize health for a given budget. The generally accepted approach to making this principle operational is the application of cost-effectiveness analysis (CEA) to the assessment of health technologies. To varying

extents, there has been some progress in making that principle operational amongst the countries surveyed.

Australia has a long tradition of using CEA to assess new drugs. In England NICE has led international practice in the methodology and processes of HTA, and its technology guidance is mandatory. In Sweden TLV has produced mandatory guidance on the cost-effectiveness of drugs since 2002, and the National Board of Health and Welfare produces advisory guidelines for major diseases. However, whilst new technologies are increasingly being subjected to cost-effectiveness scrutiny in all countries, progress in embedding the criterion into the broader range of health services has been slower. The Netherlands has also made tentative progress in embedding HTA in arm's length agencies such as the Dutch Health Care Insurance Board (CVZ), which examines the cost-effectiveness of various treatments, and monitors more generally whether the health basket is effective, rational and efficient.

A general problem with operational priority setting at the local level is the complexity of the task, and the lack of capacity in many health systems to interpret how national goals can be converted into local priorities. In England, this problem was addressed by creating a national target-setting regime that left little room for local discretion. It was successful in addressing urgent national priorities, such as reducing waiting times, but led to many local anomalies and proved unsustainable. In contrast, in Sweden the National Centre for Priority Setting in Health Care ('Prioriteringscentrum') is a joint initiative of the national ministry and the association of local governments. It has been set up to promote the priority setting process, providing a research, development and support role for priority setting and performance monitoring by local government. The 'Prioriteringscentrum' appears to recognize the need for some central capacity to support local decision makers.

3.2. Performance monitoring

Notwithstanding the vastly increased potential for deploying performance measurement tools in modern health systems, and the large number of experiments under way, there remain many unresolved debates about how best to use performance data to best effect. Health systems are still in the early days of performance measurement, and there remains an enormous agenda to improve its effectiveness. However, in all the countries surveyed, the policy questions of whether to collect data, and what data to collect, are rapidly being augmented by questions of how best to summarize and report such data, and how to integrate data into an effective system of governance.

In principle, performance monitoring should be aligned with the coverage, quality and outcomes goals set out in the priority-setting task. Yet health policy is replete with examples of poorly articulated goals, the attainment of which cannot be readily measured or tracked over time. Examples include the commonly promulgated goal of reducing disparities in health outcomes, which is often adopted without specification of the associated metrics or targets. Furthermore, if localities are free to set their own priorities it becomes difficult to know what metrics to specify. The

national role then may become one of mandating underlying data to be collected, rather than creating specific performance indicators.

It is important to note that setting the framework for performance monitoring is essentially a national government responsibility, which it should either undertake directly or delegate to national or regional agencies. One of the most important functions of performance monitoring is the ability to compare institutions seeking to deliver the same sorts of services. Only by specifying a common reporting framework can such comparison be effected. This need for a nationally agreed specification of performance metrics becomes even stronger in more decentralized systems of care, when direct control of services is less feasible, and benchmarking and comparison assumes central importance.

It is noteworthy that all countries surveyed have to some extent recognized the need for relatively well-resourced national agencies or independent bodies to specify, collect, analyze and disseminate comparative performance information. Thus, although many national systems of performance monitoring have developed piecemeal and opportunistically, there have increasingly been efforts to embed activities in a more coherent overarching institutional and conceptual framework.

As well as the scope of performance data, an important element of performance monitoring is the format in which performance data are presented. Critical choices in this domain are: the contents of summary reports of performance; the level at which performance is reported (practitioner or organization); whether reports are made public; the extent to which organizations are ranked according to performance; and the extent to which individual performance metrics are aggregated into summary measures of attainment. There is little evidence to date to inform practice and few signs so far that the public choose their providers based on performance public reporting.

Most of the countries covered in this paper require some element of periodic performance reporting by provider organizations, and have put in place – or contracted – national arm's length agencies to promote that function. Examples include the Öppna jämförelser in Sweden, the AQUA Institute in Germany, the Care Quality Commission in England, and the proposed National Health Performance Authority in Australia.

3.3. Accountability

The accountability element is the least well-developed aspect of health system leadership and governance. Broadly speaking, it is possible to identify four classes of accountability mechanism:

- Market-based systems of choice, under which patients or insurers or both are able to exert pressure on providers to improve quality, responsiveness and prices through the threat to take business elsewhere.
- Systems of electoral accountability, under which relevant authorities are subjected to periodic electoral scrutiny, with the associated threat of loss of office.

- Direct incentives through managerial control, or payment mechanisms designed to improve quality or ensure minimum standards.
- Accountability of providers to professional oversight and control.

It is rare to see any of these systems operating in isolation and in practice most countries operate a mix of systems. However, the important requirement is that accountability mechanisms should contain incentives for providers of services to scrutinize and act appropriately upon their reported performance.

Almost all health systems contain elements of the above types of accountability. Most notably, any provider payment mechanism will implicitly offer some incentives to providers [36]. The key issue is whether such incentives are aligned with system goals. In practice, many existing accountability mechanisms have developed through a mixture of historical accident and political expediency, and it is rare to find any that they have been designed with the goal of system improvement explicitly in mind.

The countries surveyed emphasize different aspects of accountability. The Netherlands has placed most reliance on markets, regulated by a number of information and competition agencies. England appears to be moving in the same direction. Sweden and Switzerland have emphasized local democratic accountability, although there is some question over whether electorates have access to adequate information on which to base their judgments. Germany carefully promotes market instruments but for the main part continues to rely on a 'corporatist' system of delegated responsibility and consensus amongst the various stakeholders. Norway, through the four regional health authorities, has placed more reliance on direct command and control, through the setting of annual plans and contracts. Australia has a more heterodox approach that involves negotiation with stakeholders and – like the Netherlands and Switzerland – places considerable weight on professional accountability. It has set up a new national oversight body for the health professions, the Australian Health Practitioners Regulation Agency. Switzerland plans the introduction of a strong regulatory agency, similar to the FINMA (its financial market regulatory agency) to hold health insurers to account.

Perhaps the easiest way of examining the effectiveness of accountability mechanisms is to scrutinize the incentives to which they give rise. In general, the principal incentives relate to: financial regimes (revenue received in relation to costs and effort on the part of providers); loss of electoral office; the consequences of failure to meet targets and contractual obligations; and the removal of accreditation and ability to practice, and loss of professional reputation. The designer of accountability mechanisms must in principle determine whether the chosen incentives will provoke the desired responses amongst organizations and individual practitioners.

3.4. Concluding comments

This survey has underlined the importance of the national leadership and governance role in steering the

health system towards better performance. It has described the agencies put in place by seven countries to fulfill the key tasks of priority setting, performance monitoring and accountability. The case studies have highlighted a plethora of agencies addressing aspects of the leadership and governance triad. However, these aspects are in general not well aligned, and there are considerable gaps and duplication in all systems. Table 4 summarizes the main lessons learned and barriers encountered in this study in each of the domains. For example, setting priorities involves negotiating trade-offs between national goals and local priorities. Monitoring performance involves agreeing on meaningful measures that are universally available and technically and practically feasible. Making providers accountable involves harmonizing strategies with incentives.

Underlying many of the initiatives described is a move away from a traditional trust in professional models of accountability towards more transparent approaches that are open to public scrutiny, particularly in the secondary care sector. The key instrument supporting this shift is the specification and public release of performance data, informed by goals and priorities, and serving a meaningful accountability process. This movement may reflect both an enhanced ability to collect and disseminate performance data, and increased public demands for transparency. We speculate that improvements in performance data may in the future bring to light weaknesses in priority setting and accountability mechanisms, leading to improvements in both, although to date evidence of this interdependency has not been strong. Our case studies have also highlighted the added complexities of decentralized health systems, in which nationally mandated priorities and data can inform local decision-making, but there must remain a degree of autonomy.

The case studies suggest that although there seems to be reasonable consensus on broad goals of the health system there is quite a large variation in approaches to setting priorities. Performance monitoring may be the domain where there is most convergence of thinking, although countries are at different stages of development. It is perhaps in the third domain of accountability mechanisms that we have observed the greatest variation amongst the countries, and the greatest uncertainty as to the optimal approach to adopt. The failure to observe a preferred model, and the stark incentives inherent in relying on a single accountability model, suggest that a mix of accountability mechanisms – in the form of market mechanisms, electoral processes, direct financial incentives, and professional oversight and control – is likely to be appropriate in most settings. The important point is that the mechanisms should be aligned with the priority setting and monitoring processes.

Finally, we have noted that although the rationale for our model of leadership and governance seems strong it is unlikely to emerge naturally, and its successful implementation may require capacity at a national, local, practitioner and citizen level. Some countries (notably Sweden) have recognized this. However, several promising initiatives appear to have lacked impact, and this may be because the targeted audience lacks the ability to understand and act on the information appropriately. A major role for arm's length agencies would therefore appear to be to enhance

Table 4

Lessons learned and barriers encountered.

Strategies	Tasks	Lessons learned	Barriers encountered
Set priorities	Set national goals Build networked governance	Broad national goals must translate into achievable local targets Involve key stakeholders	Conflicts between national and local priorities Capture by powerful vested interests
Monitor performance	Agree uniform performance indicators Establish a national reporting framework Data collection and analysis	Establish well-resourced performance monitoring agency Clarify aim of reporting framework Articulate clear technical requirements	Conflicts between central and local priorities Provider suspicions about political rationale Lack of capacity and coordination, technical difficulties
Make providers accountable	Establish accountability mechanisms Align strategies	Apply multiple mechanisms, offer incentives and sanctions Harmonise regulatory agencies	Lack of regulatory and enforcement capacity Disconnect between different accountability mechanisms

understanding of the information they provide, and to help recipients make appropriate decisions, whether they are politicians, managers, clinicians, patients or payers. The current challenges for these health systems include setting realistic priorities based on sustainable financing, performance monitoring that encourages rather than stifles innovation, and designing accountability mechanisms that strengthen rather than undermine professional responsibility.

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Annex 1. Questions for country case studies

General information

1. Please describe how priorities are set for improving health system actions and standards. Who is involved? What is the role of arm's length agencies? What is the evidence base for decision-making? What are the main strengths and weaknesses?
2. How is performance monitored? By whom? What are the main strengths and weaknesses of current approaches to monitoring performance?
3. How is accountability for performance ensured? How are the accountability mechanisms in place linked to the health system's broader governance structures? Are the mechanisms effective?
4. To what extent are the three components (priority setting, performance monitoring and accountability mechanisms) aligned?

The role of arm's length agencies

5. Please describe the use of an arm's length agency (or agencies) to improve health system governance.

6. Which of the three elements of leadership and governance do these agencies mainly reflect (priority setting, performance monitoring or accountability)?
7. What were the preconditions needed to make their implementation feasible?
8. Did they require significant new capacity? Of what sort? How was additional capacity created?
9. What have been the successes and failures of the agencies, and are there specific barriers to their proper functioning?
10. What are the three main things needed to enhance their effectiveness in the future?

References

- [1] World Health Organization. The World Health Report 2000. Health systems: improving performance. Geneva: World Health Organization; 2000.
- [2] World Health Organization. Everybody's business: strengthening health systems to improve health outcomes. WHO's framework for action. Geneva: World Health Organization; 2007.
- [3] Bouckaert G, Peters B, Verhoest K. The coordination of public sector organizations – shifting patterns of public management. Basingstoke: Palgrave Macmillan; 2010.
- [4] Thompson G, Frances J, Levacic R, Mitchell J, editors. Markets, hierarchies and networks: the coordination of social life. London: Sage; 1991.
- [5] Ouchi W. A conceptual framework for the design of optimal control mechanisms. Management Science 1979;25:833–49.
- [6] Braithwaite J, Drahos P. Global business regulation. Cambridge: Cambridge University Press; 2000.
- [7] USAID. Health governance: concepts, experience, and programming options. Bethesda: USAID; 2008.
- [8] Beer S. Decision and control: the meaning of operational research and management cybernetics. London: John Wiley & Sons; 1966.
- [9] Osborne D, Gaebler T. Reinventing government: how the entrepreneurial spirit is transforming the public sector. Boston: Addison-Wesley; 1992.
- [10] de Savigny D, Adam T, editors. Systems thinking for health systems strengthening. Geneva: World Health Organization; 2009.
- [11] Veillard JHM, Brown AD, Bariş E, Permanand G, Klazinga NS. Health system stewardship of National Health Ministries in the WHO European region: concepts, functions and assessment framework. Health Policy 2011;103(2–3):191–9.
- [12] Smith P, Goddard M. Performance management and operational research: a marriage made in heaven? Journal of the Operational Research Society 2002;53(3):247–55.
- [13] Hauck K, Smith P, Goddard M. The economics of priority setting for health: a literature review. Washington, DC: The World Bank; 2002.
- [14] Arah O, Klazinga N, Delnoij D, Ten Asbroek A, Custers T. Conceptual frameworks for health systems performance: a quest for

- effectiveness, quality, and improvement. *International Journal for Quality in Health Care* 2003;15:377–98.
- [15] Wismar M, Busse R. Outcome-related health targets – political strategies for better health outcomes. A conceptual and comparative study (part 2). *Health Policy* 2002;59(3):223–41.
- [16] Schreyögg J, Stargardt T, Velasco-Garrido M, Busse R. Defining the benefit basket in nine European countries: evidence from the EU Health BASKET project. *European Journal of Health Economics* 2005;6(Suppl. 1):2–10.
- [17] Smith P, Mossialos E, Papanicolas I, Leatherman S, editors. Performance measurement for health system improvement: experiences, challenges and prospects. Cambridge: Cambridge University Press; 2009.
- [18] Mannion R, Goddard M. Impact of published clinical outcomes data: case study in NHS hospital trusts. *British Medical Journal* 2001;323:260–3.
- [19] Westert G, Van den Berg M, Zwakhals S, Heijink R, Verkleij H. Dutch health care performance report 2010. Houten: Bohn, Stafleu, van Loghum; 2010.
- [20] Stewart J. The role of information in public accountability. In: Tomkins C, editor. *Issues in public sector accounting*. Oxford: Philip Allen; 1984.
- [21] OECD. Distributed public governance: agencies, authorities and other government bodies. Paris: OECD; 2002.
- [22] World Health Organization. World health statistics 2011. Geneva: World Health Organization; 2011.
- [23] Nolte E, McKee M. Variations in amenable mortality – trends in 16 high-income nations. *Health Policy* 2011;103(1):47–52.
- [24] Saltman R, Bankauskaite V, Vrangbaek K, editors. *Decentralization in health care: strategies and outcomes*. Maidenhead: Open University Press; 2007.
- [25] Smith P, Anell A, Busse R, Crivelli L, Healy J, Lindahl AK, et al. Leadership and governance in seven developed health systems. Paper prepared for the Commonwealth Fund 2010 International Symposium on Health Care Policy. New York: Commonwealth Fund; 2010.
- [26] Healy J, Sharman E, Lokuge B. Australia: health system review. Copenhagen: WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies; 2006.
- [27] Smith P, Goddard M. The English National Health Service: an economic health check. OECD Economics Department Working Paper No. 716. Paris: OECD; 2009.
- [28] Busse R, Stock S. The German health care system, 2009. In: Commonwealth Fund, editor. *International profiles of health care systems: Australia, Canada, Denmark, England, France, Germany, Italy, the Netherlands, New Zealand, Norway, Sweden, Switzerland, and the United States*. New York: Commonwealth Fund; 2010.
- [29] Busse R, Nimptsch U, Mansky T. Measuring, monitoring, and managing quality in Germany's hospitals. *Health Affairs* 2009;28(2):w294–304.
- [30] Institut für angewandte Qualitätsförderung und Forschung im Gesundheitswesen (AQUA). *Qualitätsreport 2009*. Göttingen: AQUA Institut; 2010.
- [31] Schäfer W, Kroneman M, Boerma W, Van Den Berg M, Westert G, Devillé W, et al. The Netherlands: health system review. Copenhagen: WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies; 2010.
- [32] Johnsen J. Norway: health system review. Copenhagen: WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies; 2006.
- [33] Glenngård A, Hjalte F, Svensson M, Anell A, Bankauskaite V. Sweden: health system review. Copenhagen: WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies; 2005.
- [34] Minder A, Schoenholzer H, Amiet M. Switzerland: health system review. Copenhagen: WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies; 2000.
- [35] OECD. OECD reviews of health systems – Switzerland. Paris: OECD; 2011.
- [36] Robinson J. Theory and practice in the design of physician payment incentives. *Milbank Quarterly* 2001;79(2):149–77.