Capacity planning in health care: reviewing the international experience

Stefanie Ettelt, Ellen Nolte, Sarah Thomson and Nicholas Mays

Health systems in most high-income countries aim to provide a comprehensive range of health services to the entire population and to ensure standards of quality, equity and responsiveness. Although approaches vary widely, responsibility for developing the overall framework for financing and organizing health care usually lies with the central government, while governance of the health system is often shared by central and regional authorities. We review here approaches to capacity planning, a crucial component of health care governance by concentrating on a selection of countries – Canada, Denmark, England, Finland, France, Germany, Italy, the Netherlands and New Zealand – chosen to represent the diversity in health care financing and organization since both these factors may be expected to impact on approaches to capacity planning.∗

In most countries, health care capacity planning∗∗ takes place at national, regional or local level, reflecting the various tiers of governance within health systems, but the distinction between these levels is not always clear-cut. For example, regional and local authorities may oversee entities with large differences in population size, legal and political mandates and organizational structures. In most of the countries we reviewed, health care capacity planning has been devolved to the regional level often reflecting the devolution of the overall responsibility for organizing health care, with Denmark and Finland involving local authorities as an important actor. Regional/local planning entities may overlap with regional/local political structures (the regions in Denmark, for example) or they may be regional/local bodies established exclusively for health care, such as Regional Hospital Agencies in France and District Health Boards in New Zealand (Table 1 overleaf).

The Netherlands departs from this general picture in that it has largely liberalized health care capacity planning. Thus, while the central government remains responsible for the overall health system, neither it nor its

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∗∗ Health care capacity planning refers to the process of organizing decisions and actions relating to the availability and distribution of health care.
Table 1: Lead responsibility for capacity planning

<table>
<thead>
<tr>
<th>Country</th>
<th>Lead responsibility for capacity planning</th>
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<tr>
<td>Canada</td>
<td>Planning is the responsibility of the provinces/territories, guided in some cases by national frameworks, with participation from local authorities</td>
</tr>
<tr>
<td>Denmark</td>
<td>Regions and municipalities plan different areas of health care autonomously, with some central supervision</td>
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<tr>
<td>England</td>
<td>National and regional planning is directed by the central government with the participation of local authorities</td>
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<tr>
<td>Finland</td>
<td>Planning is the responsibility of municipalities and hospital districts (formed by municipalities)</td>
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<tr>
<td>France</td>
<td>Regional Hospital Agencies (RHAs) plan hospital care within a centrally-set framework in consultation with regional stakeholders</td>
</tr>
<tr>
<td>Germany</td>
<td>Länder (state) governments plan hospital capacity based on national and regional legislation in consultation with regional stakeholders</td>
</tr>
<tr>
<td>Italy</td>
<td>Regional governments plan health care (mainly hospital care) guided by a national health plan</td>
</tr>
<tr>
<td>New Zealand</td>
<td>Responsibility for planning is shared by the central government and District Health Boards (DHBs)</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>Regional provider organizations plan acute hospital care (subject to approval for new hospitals from the central government)</td>
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Regional and local tiers are directly involved in health care planning. The withdrawal of government planning began in the 1980s and reflects a political climate that favours regulated market forces over central command and control. Since the introduction of universal compulsory health insurance in 2006, planning of acute health care has been devolved to regional hospital associations (in collaboration with health insurers) and only plans for larger investments, such as new hospital developments, must be approved by government.

The active involvement of provider organizations in the planning process is characteristic of France and Germany, two countries with a strong corporatist tradition. Involvement of the public and other stakeholders such as health professionals, usually through consultation, forms an integral part of the planning process in England, Italy and New Zealand. In Denmark and Finland, public involvement in planning is mainly through representation by elected members of regional and municipality boards.

Health plans and types of planning

With the possible exception of the Netherlands, all countries employ health plans as major planning tools. In line with the various tiers of administration involved in capacity planning, health plans are developed at national, regional and/or local level.

Conceptually, planning is associated with two different functions: strategic planning and operational planning.  

1 Strategic planning involves framework setting and defining the principles of the health system and its general directions, and is most frequently undertaken by authorities at the highest level of health system governance, such as the central Ministry of Health (England, France, Italy and New Zealand) or the respective regional or local tier in decentralized systems (provincial/territorial governments and regional health authorities in Canada and federal states in Germany (hospital care only)). In contrast, Denmark and Finland have devolved strategic planning to regional and local authorities. The degree of involvement of lower-level administrations in strategic planning is largely determined by their level of autonomy and decision-making power.

Operational planning refers to the translation of the strategic plan into activities, which may cover the whole range of operations involved in health care provision, including the allocation of budgets and resources, the organization of services and the provision of staff, facilities and equipment. This function is most often carried out by regional authorities but may also involve local authorities, such as regional health authorities in Canada; municipalities in Denmark and Finland; and primary care trusts in England. In some countries regional/local planning is directly informed by national health plans and regional authorities are required to integrate national directives with regional health plans (vertical integration). This is generally the case in England, Italy (Box 1), New Zealand (see case study, page 5) and France (see case study, page 7), as well as in Canada where regional health authorities have to adopt and implement health plans developed by provincial or territorial governments.

Regional and local planning in Denmark and Finland is primarily operational. In Denmark different levels of the system are responsible for different sectors of health care, with regions planning hospital care and some primary care services while municipalities plan rehabilitation, long-term care and other primary care services.  

* In January 2007 Denmark’s 14 counties were merged into five regions and the number of municipalities was reduced from 270 to 98. The administration of the health system is a core responsibility of the regions.
vertical integration of planning, this might change in line with a redistribution of responsibilities following the administrative reorganization that has recently taken place.

Scope and sectors of planning
In all countries we reviewed, planning focuses on hospital care. Systematic planning in the ambulatory sector is only seen in Denmark, England, New Zealand and, to some extent, Finland (Table 2).

Countries vary in the extent to which planning applies to both public and private (for-profit and not-for-profit) providers, usually reflecting whether private providers have traditionally qualified for the public reimbursement of the services they provide. Hospital and health plans in Canada, France, Germany and Italy cover both public and private hospitals, whereas planning in Denmark, England, Finland and New Zealand mainly applies to public facilities.

Planning hospital capacity
Planning hospital capacity involves several dimensions: capital investment in existing facilities and new developments; investment in expensive equipment and technology (such as magnetic resonance scanners); service delivery; and allocation of human and financial resources. Given the variety of approaches to health care organization, it is not surprising that the intensity of planning devoted to each of these sub-sections varies among countries. Most countries plan the number of hospitals, but the scope and detail differs, with some health plans outlining the number and location of facilities only, mostly based on existing structures. Others take planning much further, determining in detail the number and design of specialty departments and their geographical distribution within a defined area.

Traditionally, bed capacity has been the preferred unit of planning for hospital care and remains so in countries such as Finland, Italy and New Zealand, and in most Canadian provinces/territories and the German Länder. In contrast, England and France have recently departed from this approach moving towards planning of service volume and activity (see case study on France).

Capital investment planning
Major capital investment in hospital infrastructure is usually regulated and planned separately from operational procedures and, where these apply, operational budgets. In Denmark, Finland, Germany and Italy new hospital developments and major restructuring projects are funded and planned at a regional level; that is, by regional councils, hospital districts, Länder ministries of health and regional health departments respectively. In France, New Zealand and the Netherlands, new hospital developments require the approval of the central government. In most countries regional (and sometimes national) authorities are also involved in financing major investments whereas in the Netherlands hospital developments are entirely privately
financed. The growing importance of private investment can be seen in other countries; in Canada, for example, hospital investment is frequently supported by charity funds associated with individual hospitals.

The process of capital investment planning varies between countries, with many applying different mechanisms to long-term and short-term investment. Thus, in Finland long-term investments for a period of up to 10 years are planned and overseen by the hospital districts, whereas short-term (and usually smaller) investments are put forward at sub-district level and only require the approval of the hospital district. In England, smaller capital investments are planned by local Primary Care Trusts within a framework set by the Department of Health. Larger investments require the approval of the Department, which has also been directly involved in some private sector procurements; for example, through the private finance initiative (PFI) scheme where private consortia, usually involving large construction firms, are contracted to design, build, and in some cases manage new projects.4 Projects that involve investments of more than €100 million (€148 million) require approval by the Treasury.

Developments in health care capacity planning

This brief overview of the experience of health care capacity planning in nine countries illustrates how approaches to planning strongly reflect the health system’s institutional, legislative and regulatory framework, which in turn reflects the wider political, social, economic and cultural context. Consequently, capacity planning is often inadvertently influenced by contextual changes. One example is Denmark, where reform of the administrative system is underway and which also involves a redistribution of responsibilities for health care between regions and municipalities.5 These developments are likely to have a substantial impact on capacity planning in the health care sector, for example with regard to the distribution of specialist services.

Capacity planning is also affected by administrative decentralization in the health sector. Thus, regionalization in Italy has transferred major responsibility for planning from the centre to the regions. Similarly, in France, responsibility for planning and organizing hospital care has been transferred from the central Ministry of Health to regional authorities.6 However, the French government has retained an overall steering role, indicating that the balance between regional and central responsibilities has shifted through reducing rather than eliminating central authority.

Conversely, some countries with a strong tradition of decentralization have experienced increased levels of central government involvement in predominantly regional and local matters. Again, Denmark can be seen as an example with plans to increase the supervisory role of the central government in planning and delivering health care through its subordinate body, the National Board of Health. In Finland the central government increasingly affects local health care decision-making through earmarked budgets and the financing of particular projects to be implemented by municipalities. It is noteworthy that the trend towards increasing central involvement in these two countries reflects a heightened awareness, and a decline in the (political) acceptability, of regional inequalities in health care. There is also discussion in Finland about whether the role of an existing ‘Social Welfare and Health Care Target and Operational Plan’ should be strengthened towards forming a central steering tool. This plan was first introduced in 1999 and is prepared by each newly elected national government for a four-year period. It is developed under the auspices of the Ministry of Health in cooperation with municipalities, non-governmental organizations and the health care professions. By developing and communicating targets to which all health system stakeholders contribute its role, so far, is mainly strategic.7

Health care reforms as they relate to financing mechanisms and/or the introduction of new models of health care delivery may also affect planning. For example, similar to other countries, Germany introduced diagnosis-related groups to fund hospitals; it is expected that this change in financing will exert an impact on approaches to hospital planning at the Länder level.8 In Finland, the introduction of commissioning of private providers in a predominantly public primary care sector may lead to further developments in planning methodologies. Moreover, the 2006 health insurance reform in the Netherlands is likely to reshape the provider landscape by introducing individual contracts between private health insurers and providers. In this context, an interesting case is presented by New Zealand: following experiments with markets and competition, in 2000 the country reintroduced health plans and planning frameworks after having abolished them in the 1990s.

These examples illustrate the challenge, for governments, of reconciling responsibility for providing equitable, affordable and accessible health care with policies such as decentralization, competition and provider pluralism, which aim to encourage responsiveness and enhance efficiency. The diversity of approaches to planning (or not planning in some sectors or countries) reflects the difficulty of balancing local, regional and central decision-making on the one hand, and provider competition and regulation on the other.

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Capacity planning in New Zealand

Stefanie Ettelt, Ellen Nolte, Sarah Thomson and Nicholas Mays

Having abolished planning frameworks in the 1990s New Zealand reintroduced them in 2000. Health care governance in New Zealand is now shared between the central government and 21 local District Health Boards (DHBs). In 2000, the government developed a comprehensive New Zealand Health Strategy, mapping out its vision for health care provision for the next 5–10 years and creating a policy framework within which DHBs operate. Embedded in a legislative framework, the national health strategy is linked to other health sector and wider intersectoral strategies addressing population health (for example, strategies to strengthen families or road safety). DHBs and the Ministry are required to coordinate their activities with other health and non-health agencies.

The national health strategy sets out the principles, goals and objectives for the health system and highlights key priority areas such as cancer prevention and treatment, diabetes, obesity, smoking and Maori (the indigenous population’s) health. However, it does not state how specific objectives should be addressed or how services should be provided. The only exceptions are some priority areas for which the government has developed additional strategies (“toolkits”) and, in some cases, specific action plans. Toolkits provide policy guidance rather than binding rules or objectives, so quantified targets are rare and are not usually incentivized.

The legislative framework sets out an operational policy framework which defines the accountability obligations of each DHB, such as the production of a five-year strategic health plan, an annual statement of intent, an annual operational plan and regular monthly and quarterly reports measuring progress against the annual plan. Strategic health plans must be developed every 5–10 years in consultation with the local community and approved by the Ministry of Health.1 The annual statement of intent outlines the DHB’s planned progress towards promoting the health of its population; it also includes performance measures. Underperforming DHBs face an escalating range of potential sanctions from more frequent reporting and more intrusive monitoring at one end of the continuum to removal of the entire board at the other. One financial penalty is the removal of the facility of being paid in advance for the delivery of services. The Ministry may also instruct DHBs, appoint a Crown Monitor to report to the Minister on the performance of a board, replace a board or the chair of a board, and dismiss individual board members.1 There is a perception, particularly among DHBs, that the level of central control risks undermining their planning and decision-making autonomy, potentially hindering rational planning and preventing DHBs from being held accountable for their actions.2

A district’s annual operational plan forms the basis for funding agreements between the DHB and the Ministry (see Box 1 overleaf). It defines the directions and priorities of health care provision in the region, generally including all areas of health care. Considerable variation among operational plans reflects variation in local needs and in the ability of districts to organize and manage health services effectively and efficiently.

Annual operational plans require DHBs to undertake a health needs assessment of the resident population to identify factors that might adversely affect health and the

Erratum Notice

In the article ‘Screening for Disease – considerations for policy’, (Euro Observer 2006;8(3):3 in the section on adolescence, it was stated that “the only screening programme shown to be effective is opportunistic screening for Chlamydia in those aged less than 25 years”. This should have been “the only screening programme which could be effective is for Chlamydia infection. This requires further research to determine the optimal method of delivery”. Walter Holland
Box 1 The Canterbury DHB annual plan

Canterbury’s district annual operational plan identifies strategies in line with five ‘core directions’:
(i) improving the health status of the community,
(ii) identifying better ways of working together,
(iii) innovative models of service integration,
(iv) developing the health care workforce, and
(v) leading in hospital and health services in New Zealand.

Strategies were defined collectively by involving the public in consultations. The plan provides an overview of the actions to be taken to achieve strategic objectives, each linked to a time frame and indicators for outcomes and performance measures. It also provides information on the adaptation of national strategic priorities, health care financing and the management of financial resources.

contribution of health care to health outcomes. The level of detail of assessments varies, however, as does their utilization for service planning and priority setting, with some suggestion that despite aspirations, health needs assessments have so far had relatively little impact on planning and purchasing decisions.

DHBs negotiate annual agreements with non-statutory Primary Health Organisations (PHOs) and contracted private hospitals and other independent providers. For public hospitals that are part of DHBs (as their provider arm), DHBs negotiate internal service level agreements and contract with the provider arms of other DHBs. Contracts and service level agreements define the type and volume of services to be provided (sometimes including provision targets in areas that are considered to be underprovided), financing arrangements and, in some cases, quality indicators such as ‘pay for performance’ contracts for selected PHO services (currently under development). While not directly involved, the government may still affect contracting arrangements by providing additional financial incentives to increase performance in defined areas. DHBs are required to report to the Ministry to ensure equal treatment of providers in both the public and the private sector.

In 2006, the government proposed a framework for coordinating collective decision-making in cases where decisions made by one DHB may have resource implications for other DHBs. The framework applies to new health interventions, capital investments and service reconfigurations that have cross-regional or national implications. It also allows for collective consideration of proposals for disinvestment.

Given the many structural changes that have taken place in New Zealand’s health system in the last 15 years, and the relatively new approach to decentralized purchasing, there has been little overall planning or regulation of new technologies. However, a major national review of the location and scale of highly specialized hospital services was carried out in 1997 and the four main DHB providers of these services (Auckland, Wellington, Christchurch and Dunedin) are currently attempting to coordinate the views of all DHBs on the use and location of expensive health technology.

Major capital investments are separately regulated and outlined in the Guidelines for Capital Investment (2003). The Ministry of Health’s National Capital Plan sets out the long-term investment requirements of the public part of the health system, identifying and prioritizing major capital investments (for example, new hospitals or hospital extensions) for a period of ten years. At the district level, DHBs must provide a Strategic Asset Financing Plan covering the next five years and an annual Strategic Asset Management Plan to ensure that investment decisions are well informed. Capital investment by DHBs requires approval from the Ministry of Health and the Treasury if: investments exceed NZD 10 million ($5.3 million) or 20% of a DHB’s total assets; the investment requires Crown equity support (i.e. a government capital subsidy); it potentially affects the performance of the DHB; or it has been identified by the Ministry of Health and/or the Treasury to be of high risk. Investments in information systems and communication technology require approval from the Ministry of Health if: the investment exceeds NZD 3 million ($1.6 million); it is not consistent with the health sector Information Systems Strategic Plan; or it is not supported by a Regional Capital Group (any investment exceeding NZD 500,000 ($267,000) requires support from a Regional Capital Group).

Technology investments between NZD 500,000 – 3 million ($1.6 million) require approval from the Ministry of Health.

REFERENCES


Regional Capital Groups have been introduced in each region of the country to improve the coordination of decision-making across DHBs; they are comprised of representatives from each DHB within the respective region.
Capacity planning in France

Stefanie Ettelt, Ellen Nolte, Sarah Thomson, Nicholas Mays and Isabelle Durand-Zaleski

Since 1996 responsibility for planning health system resources and capacity has been shared by the central government (the Ministry of Health) and 22 regional hospital agencies (Agences régionales d’hospitalisation, ARHs). The partial devolution of the planning function aimed to enable regional authorities to meet the health needs of the population more appropriately. Other corporatist actors and representatives of the public also participate in the planning process and may play an important role during consultations.

Planning largely takes place at the regional level, involving (i) regional health conferences (conférences régionales de santé) and (ii) the ARHs (see below). The Ministry of Health has a stewardship role, establishing a catalogue of health services that the regions must incorporate in their plans. Based on a national assessment of need and (sometimes politically driven) priorities, the catalogue lists services in major areas such as general medicine, surgery, perinatal care, rehabilitation, intensive care, medical imaging, psychiatry, palliative care, care for defined population groups (for example, older people, children and adolescents) and care for selected conditions (for example, chronic kidney failure and cancer).

Regional health conferences feed into the regional planning process, bringing together all the regional actors involved in organizing, financing and delivering health care (the federations of private and public hospitals, health professionals, health insurance funds and patient representatives) to assess regional health needs, discuss additional regional priorities for service delivery, and to define an implementation strategy. They also provide the national health conference (which brings together representatives of the regional health conferences to discuss and define health care priorities at the national level) and the Ministry of Health with information on regional issues and health needs. The strategy is mainly implemented through Regional Strategic Health Plans (Schema régional d’organisation sanitaire, SROS) developed by ARHs in consultation with the stakeholders (including the Ministry of Health) who participate in the regional health conferences.1

Since their introduction in 2003, SROSs have incorporated the function previously undertaken by a ‘national medical map’ (carte sanitaire), a quantitative planning tool used by the Ministry of Health to divide each region into health care and psychiatric sectors and to set norms for beds/population ratios for major disciplines based on national data, including expensive diagnostic and treatment equipment in hospitals or elsewhere, rehabilitation and long-term care. Developed every five years, the SROSs aim to tailor health care delivery to local needs, in contrast to the previous national planning norms (carte sanitaire). The SROSs set out overall strategic goals for health care delivery and define priorities, objectives and targets, including quantitative targets and the distribution of local health care facilities.

Strategic planning requires ARHs to assess population health needs based on regional health care utilization data and data on mortality and morbidity. Data are analysed by region and compared across regions to identify demand and over/under capacity. Assessments also consider expert estimates of future trends in demand and technological change; these are largely based on epidemiological data compiled by the statistics department of the Ministry of Health, supplemented by local data (for example, from cancer registers or data on the number of people with chronic conditions from the regional statutory health insurance office) and trends observed in other countries (mainly the United States). The experts selected by the ARH are usually opinion leaders in their field and can have a substantial impact on planning; they may also perpetuate vested interests since they often represent hospital departments.

Hospital planning

The regulatory framework for hospitals applies equally to private for-profit, private not-for-profit and public providers. Services provided by any hospital will be reimbursed by statutory health insurance (Sécurité Sociale) as long as the related providers are authorized by the Ministry of Health.

ARHs are generally responsible for planning services and for the authorization of hospitals; they also oversee any change to the existing hospital infrastructure, including restructuring and mergers. The only exception is the construction of (new) hospitals (private and public) and comprehensive emergency centres which have to be authorized by the Ministry of Health.

The SROS is the key instrument for hospital planning, determining local capacity by specifying the number of facilities in each region and sub-region for each area of care (general medicine, surgery, maternity care, accident and emergency, neonatal care, radiotherapy, cardiologic intensive care and psychiatric care;

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1 For example, ten regions have identified access to care for underserved groups – such as people in undersupplied geographic areas and socioeconomically marginalized population groups – as an additional priority, leading to the creation of about 300 centres providing 24-hour access for these groups.
expensive technical equipment such as MRI scanners) and defining volumes for certain types of services. Service volumes refer to units such as the number of patients, sites, length of stay, performed procedures and admissions. They are expressed as a minimum or maximum number of services or a rate showing the increase/decrease in numbers compared to previous volumes.²

The rationale behind planning service volumes (rather than bed/population ratios as was the case with the national medical map) is to control oversupply, a persistent problem in regions like Paris and the South of France. Apart from being a means of avoiding duplication and controlling expenditure, the planning of service volumes also aims to improve the performance of providers and the quality of services.

SROs also form the legal basis for target contracts (contract d’objectifs et de moyens) between hospitals and ARHs, introduced in 2005. Target contracts set out the responsibilities of each hospital and the volume of services to be provided. Typically negotiated for a period of three to five years, they require hospitals to obtain authorization from the ARH for the services they provide (including expensive health technologies). They also require an evaluation of existing capacity and service volumes, which must be undertaken at least 14 months before the existing contract expires.

Target contracts have been criticised by the hospital federation on the grounds that the definition of service volumes restricts the flexibility of hospitals to respond to changes in demand (for example, if there is a closure of a hospital in the vicinity). Hospitals can be penalised for not adhering to target contracts by a financial penalty of up to 1% of total revenue. The ARH may also suspend the authorization for the service for which the target was not reached. However, so far no hospital has been penalised, probably because SROs are a relatively new planning tool. A new model target contract has been negotiated by the Ministry of Health and the hospital federations for the SROS for 2006–2010, and took effect in April 2007.

References

Mental Health Policy and Practice Across Europe

Edited by Martin Knapp, David McDaid, Elias Mossialos and Graham Thornicroft

This comprehensive collection is key reading for policy-makers, professionals involved in the delivery of health and social care services, voluntary agencies, non-governmental organizations, academics and students of health policy.

Sample chapter available from www.observatory.dk