Chapter 2

Strengthening community-based primary health care

This chapter provides an overview of Israel's well-developed community-oriented primary care system and its exceptional contribution to improving the quality of health care while containing costs. It describes its strengths and weaknesses and focuses on the challenges that now face Israel. The chapter starts by acknowledging Israel's world-class quality monitoring mechanism for community care which sets a blueprint for others to follow, but which has the potential for further development. It then highlights the need to strengthen co-ordination between community and hospital care. Recent changes to the resource allocation formula signal Israel's commitment to redressing geographical differentials in health care capacity between central regions of the country and the North and South, but they need to go further if real change is to be realised. Attention is drawn to serious shortfalls in numbers of physicians and registered nurses, and the need to develop strategies that bolster their numbers and ensure staff are drawn into Israel's periphery. The chapter also notes that public health and primary prevention services need strengthening.

2.1. Introduction

The health care system in Israel is founded on a well-organised and comprehensive community-oriented primary care service that sits alongside a government-managed public health network. There are three broad categorisations of community and primary care services in Israel:

- *Primary medical care*: physician-led clinics which provide generalist medical care including health promotion and preventive interventions. These clinics tend to be a mixture of solo and multiple partner establishments with multiple partner practices predominating in Israel's centre and solo practices predominating in the periphery.
- *Secondary (specialist) community-based care:* specialist-based medical services working partly in the community (general internists, paediatric specialists and surgical specialists, etc.). Specialists may work in ambulatory surgery clinics or practice as part of family or regular GP clinics. Nearly all salaried community specialists work for Clalit, in Clalit-owned and operated specialist clinics. Independent specialists tend to provide services from their own clinics.
- *Other community-based clinical services*: a wide range of services including community mental health clinics, family health centres (Tipat Halav), emergency care centres and community pharmacy services, etc.

The focus of this chapter is primarily on the first two dimensions of primary care described above. The chapter starts with an overview of Israel's community-oriented primary care system and outlines some of its salient achievements. It then discusses the challenges it needs to tackle and how it can be further developed. It concludes with some overarching comments about the context within which primary care operates and the need for greater focus on health promotion and primary prevention through a strengthened public health service.

2.2. Primary care in Israel is well-developed, accessible and of high quality

The community health care system has largely been shaped by Israel's four health funds (see Chapter 1). While the breadth and depth of community care coverage is standardised across Israel, the health funds have a major influence in shaping the structure and delivery of community services, and the approach adopted by each health fund differs. There is no typical model. In broad terms, each health fund has adopted a mixed employment model for its community-based services.

For example, Clalit directly employs most of its physicians, whereas Maccabi and Meuhedet provide services using a predominantly independent,

contracted physician workforce. Leumit on the other hand utilises a mixed model with salaried and independent physicians.

Primary care in Israel is highly accessible, geographically and financially. Even small villages tend to have one or more physician (Rosen, 2011). Although the North and South are significantly disadvantaged relative to other districts in terms of community-based specialists, the availability of primary care physicians is fairly uniform nationally (Shemesh *et al*., 2007). Primary care is also very accessible financially, as three health funds do not have co-payments for visits to a primary care physician, and in the fourth, they are nominal. Out-of-hours care is available through 24-hour telephone hotlines staffed by experienced registered nurses and evening care centres, urgent care centres and home visit services. All the health funds have continuing care/home care units for patients who need help in the transition from hospital to community, and for patients who need longer-term support at home. Awareness of socio-economic, cultural and religious diversity and a commitment to reducing health inequalities is well developed in the two largest health funds, Clalit and Maccabi, and reflected in their delivery of services (see Chapter 3).

Under all the health funds, primary care professionals and community-based specialists are the gatekeepers to hospital and specialist secondary care. As such, they play a key role in onward referral and co-ordinating care for their patients, as well as reducing the need for emergency hospitalisation. In view of the high cost of hospital care, the funds manage hospital expenditures intensively. Community-based alternatives to hospital care include community-based specialists, emergency care centres, ambulatory surgery clinics, secondary care centres, diagnostic services etc. Primary care staff are supported by a sophisticated IT infrastructure that supports the delivery of care.

An infrastructure survey of primary care clinics reported a mean practice population size of 5300 patients. The survey found that on average primary care clinics have 3.4 full time equivalent (FTE) general practitioners, 2.6 FTE nurses, 1.5 FTE practice assistants (with or without clinical tasks). Most clinics also employ a practice manager alongside ancillary staff members (Lieshout, 2010).

Population surveys show that for the most part patients are highly satisfied with the care they receive and find it accessible. Waiting times are reported to be low (up to two-thirds of patients are able to see a primary care physician the same day). However, heavy physician caseloads mean that consultation times are short (averaging less than ten minutes) and there is inadequate time to address mental health and health promotion issues. This is corroborated by population surveys: only 16% of respondents replied affirmatively when asked if the family physician enquired about mental problems, and only 36% of those

experiencing mental distress in the preceding year reported that their family physician had spoken to them about it (Brammli-Greenberg *et al*., 2011).

Overall, the primary care system in Israel is highly developed, with a wide range of professionally led clinical services. In many respects therefore, Israel's primary care system is well placed to meet future health care challenges that are common to most developed countries, including adverse changes to upstream health determinants such as obesity, lifestyle habits that damage health such as smoking, an ageing population and the mounting burden of chronic disease.

Israel's community-focused information system sets an international benchmark in excellence and demonstrates commitment to quality monitoring and improvement

The health funds have a well-developed and sophisticated information infrastructure in community care which supports both the delivery of care and quality monitoring. All the funds have comprehensive electronic medical records (EMRs) in community care, which support the sharing of information among physicians, laboratories, diagnostic centres and patients. EMRs are used across the community care setting and, although they are not standardised across the health funds, they capture detailed patient level information including demographics, diagnostic and testing information, and drug utilisation data. They also capture key clinical and public health quality monitoring data, including chronic disease management and some risk factor information. As Clalit has its own network of hospital services, its patient records are linked across community and hospital care.

These electronic systems are used to support delivery of care processes on the ground. The health funds have also developed sophisticated ongoing internal quality review processes for monitoring and providing feedback on performance. This is particularly evident in Clalit and Maccabi. As Israeli residents have a unique patient identifier, record linkage of disparate health care events is feasible in order to obtain a care pathway view. However, it is used selectively as Israel has legal restrictions on record linkage and there are widespread concerns about using it.

Building on its successful implementation of health care information technology, the Israeli health care system has benefitted from an innovative quality monitoring system focused on community care. The programme began as a research project involving the four health funds, and in 2004 was adopted by the government as the National Programme for Quality Indicators in Community Healthcare (QICH) (see Box 2.1). It has since been used to monitor and improve the quality of preventive, diagnostic and therapeutic primary care services in Israel.

Box 2.1. The Quality Indicators in Community Healthcare (QICH) programme

The indicators in QICH cover six clinical areas: asthma, cancer screening (breast and colorectal cancer), immunisation for older people, child and adolescent health, cardiovascular health, diabetes. QICH incorporates a focus on primary prevention, as demonstrated by the inclusion of indicators relating to risk factors in the general population, such as the recording of BMI among children and adolescents, and the recording of cholesterol, blood pressure and BMI among adults as risk factors for cardiovascular disease. Data quality for QICH is ensured through the use of standard indicator definitions by all health funds, and a systematic data quality audit cycle to ensure validity and comparability.

The QICH indicator set is based on national and international guidelines reflecting the current scientific evidence, international parallels, relevance for the Israeli health care system, and the feasibility of production. It is subject to continuous development and evolution. The QICH programme has learned from and built on international example, including quality measurement initiatives such as the Healthcare Effectiveness Data and Information Set (HEDIS) of the National Committee for Quality Assurance (NCQA) in the United States (some QICH indicators are based on HEDIS definitions).

The success of the QICH programme is in large measure due to the support and co-operation of Israel's four health funds. As the programme is not mandated, its success is attributable to the voluntary involvement of the health funds in the conception and design of the project from the start, their active participation in the indicator development process, and the consensus developed around a scientifically robust quality measurement programme. The QICH project is an exemplar of the practical implementation of a systematised, ongoing scheme for monitoring and improving the quality of primary care, based on scientific research and guidelines. It is also an outstanding example of government and competing health funds working in co-operation towards a common goal – quality improvement in primary care. With some exceptions, these features are unusual among OECD countries, where quality monitoring in health care tends to be defined by the hospital sector.

Next section sets out some key achievements of the Israeli primary health care system.

Israel's impressive life expectancy gains and lower premature mortality from chronic conditions reflect the contribution of its primary care system

Primary care is an effective setting for preventing illness and premature death and, in contrast to specialist acute care, is associated with a more equitable distribution of health in populations (Starfield, 2005). Moreover, primary care often serves as the co-ordinating hub for specialised care and for

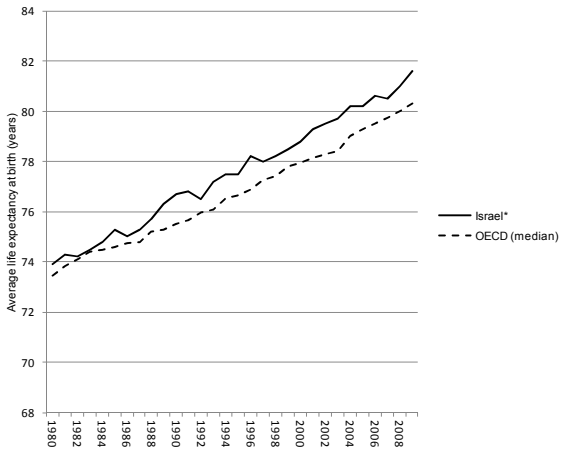
the management of long-term chronic conditions. In a number of health care systems, primary care is the first and most typical point of contact for the provision of basic health care, making it ideally situated to provide consistent and co-ordinated care over the life course of individuals.

Israel has good overall health status and compares favourably with other OECD countries. In 2009 life expectancy at birth was 81.6 years, more than two years above the OECD average (OECD, 2011b). Israelis also feel very positive about their health, with eight out of ten reporting that their health is good or very good. This places Israel on an equal footing with countries like Sweden, the Netherlands and Switzerland (OECD better life index).

Life expectancy in Israel has been higher than the OECD median for many years (Figure 2.1), and well before the introduction of National Health Insurance Law (NHIL). This indicates that factors beyond the delivery of a modern, systematised health service were already exerting a powerful effect on health gain. Israel is a young country and high migration rates could be a contributor to its life expectancy advantage, given that people with pre-existing disease are less likely to migrate than the physically fit.[1] It is difficult to distinguish between the impact of a more strategic and structured approach to health care delivery, as exemplified by the introduction of the NHIL, and the impact of other determinants of longevity. However, the fact that life expectancy has continued to outpace median OECD life expectancy indubitably has a health care related component. This is corroborated by other findings as described below.

Israel's impressive life expectancy gains are reflected in its premature mortality profile. Figure 2.2 shows potential years of life lost (PYLL) before age 70 in OECD countries. Israel has lower rates of premature life loss for both males and females when compared to the OECD average, indicating the strength of Israel's primary care system. As the typical first point of contact with the health system and because the family physician / patient relationship often endures over time, primary care is well situated to assess lifestyle risks, offer preventive advice, raise awareness about and detect the early signs of disease, and ensure patients receive continuing care. Israel's low premature mortality rate overall is reflected in lower premature mortality from chronic diseases, the bulk of which is managed in primary care. Lieshout (2011) shows that health care systems with a stronger primary care focus are likely to deliver better chronic care management. However, a weak area in many countries, including in Israel, is self-management support for people with chronic disease.

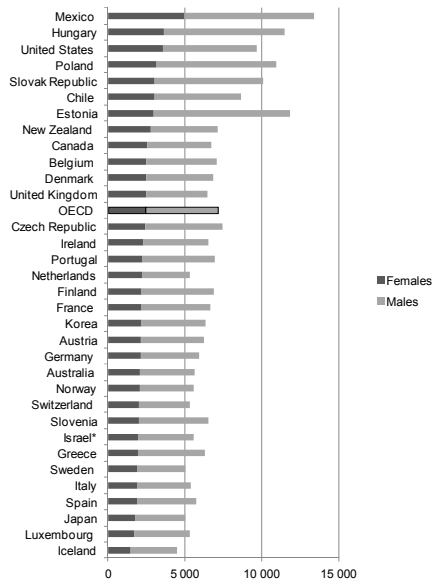
Figure 2.1. Life expectancy at birth in Israel is higher than the median for OECD countries



*Information on data for Israel: *http://dx.doi.org/10.1787/888932315602.*

Source: OECD Health Data 2011, DOI: 10.1787/health-data-en.

Figure 2.2. Potential years of life lost (PYLL) in Israel are below the OECD average, 2009 (or nearest year)



* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602.*

Source: OECD Health Data 2011, DOI: 10.1787/health-data-en.

There have been some notable improvements in the quality of primary care in recent years

QICH data is published annually at national level, and disaggregated by age, sex and socio-economic status (SES). The recent decision to publish QICH data for each health fund is a welcome development and will enable the public to assess the quality of primary care delivered by each health fund. The government has proposals to publish geographically disaggregated data. At present, there is no intention to publish the data below health fund level, for example, for clinics; it will not therefore be possible for the public to make informed decisions about quality differences at a local level.

QICH measures spanning child health, screening, cardiovascular disease prevention and chronic disease management demonstrate steady quality improvement, especially on process indicators relating to assessment of anthropometric and cardiovascular risk factors (Table 2.1). Israel's performance on some measures is on a par with that of the United States and the United Kingdom (Jaffe *et al*., 2012), which is commendable given Israel's comparatively modest per capita expenditure on health. Unlike the Quality and Outcomes Framework in the United Kingdom, there are no financial incentives linked to performance.

2.3. Performance in some areas needs further improvement and unnecessary hospitalisations raise concern

Examples of areas in need of further improvement

Despite improvements over time, and excellence in some areas, performance on some QICH indicators remains mediocre and offers scope for improvement (Chassin, 2012). For example, on influenza vaccination for people aged 65 years and over, Israel (61%) is above the OECD average (56%) but well below Mexico, Chile, Korea and some European countries, where rates reach over 70% (OECD, 2011b). Variations in performance by age, sex and SES groups are also apparent for several indicators (Manor *et al*., 2011). Diabetes care shows scope for further improvement, especially for Arab women who have a diabetes prevalence rate that is considerably higher when compared with Jewish women (8.1% for Arab women, compared 9.4% for Jewish women) (INHIS-2; see Chapters 3 and 4).

Table 2.1. QICH: Change in quality indicators between 2007 and 2009

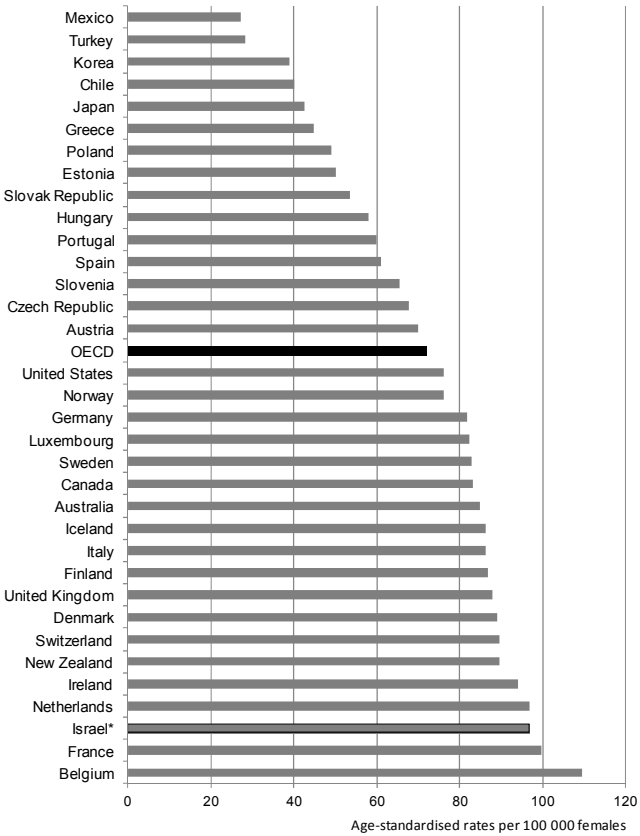
Indicator	2007 (%)	2009 (%)	Change*
Asthma			
Use of control medication for people with persistent asthma in past year	76.2	79.7	3.5
Influenza vaccination for people with persistent asthma in past year	29.1	40	10.9
Cancer screening			
Mammography screening in past two years (ages 51-74)	60.7	67.7	7
Colorectal cancer screening in past year (ages 50-74)	22.1	27.4	5.3
Immunisation for older adults			
Influenza vaccination for people aged 65+ in past year	51.9	56.7	4.8
Child and adolescent health			
Adolescents with a record of BMI in past three years (ages 14-18)	27.9	60.8	32.9
Cardiovascular health: primary prevention			
Record of LDL testing in past five years (ages 35-54)	78.2	82.8	4.6
Record of LDL testing in past year (ages 55-74)	76.1	76.9	0.8
LDL ≤ 130 mg/dL in past five years (ages 35-54)	67	69.7	2.7
LDL ≤ 130 mg/dL in past year (ages 55-74)	71.8	74.9	3.1
Record of BMI in last five years (ages 20-64)	41.9	69.3	27.4
Record of BMI in last five years (weight in past year) (ages 65-74)	61.2	73.9	12.7
Record of blood pressure in last five years (ages 20-54)	71	84.3	13.3
Record of blood pressure in past year (ages 55-74)	77.8	81.3	3.5
Blood pressure ≤ 140/90 mm Hg in last five years (ages 20-54)	95.7	96.5	0.8
Blood pressure ≤ 140/90 mm Hg in past year (ages 55-74)	86	87.4	1.4
Cardiovascular health: secondary prevention			
LDL lowering medication following CABG surgery (ages 35-74)	83	84.1	1.1
ACEI or ARB medication following CABG surgery (ages 35-74)	61.6	64	2.4
Beta blockers following CABG surgery (ages 35-74)	70.1	73.4	3.3
LDL lowering medication following cardiac catheterisation (ages 35-74)	84.6	84.8	0.2
ACEI or ARB medication following cardiac catheterisation (ages 35-74)	63.6	67.1	3.5
Beta blockers following cardiac catheterisation (ages 35-74)	67.9	69.3	1.4
LDL ≤ 100 mg/dL following CABG surgery (ages 35-74)	67.6	71.6	4
LDL ≤ 100 mg/dL following cardiac catheterisation (ages 35-74)	69	72.2	3.2
Diabetes			
Record of HbA1c in past year	91.7	92.3	0.6
HbA1c ≤ 7.0% in past year	49.4	48	-1.4*
HbA1c ≥ 9.0% in past year	13.3	12.9	-0.4
% with HbA1c ≥ 9.0% in past year treated with insulin	44.8	53.1	8.3
Record of LDL testing in past year	90.9	90.4	-0.5
LDL ≤ 100 mg/dL in past year	60.3	65.6	5.3
Record of eye examination in past year	63	64.3	1.3
Record of microalbuminuria or microalbumin/creatinine testing in past year	71.3	74.3	3
Influenza vaccination in past year	47.1	55	7.9
Record of blood pressure in past year	90	91.9	1.9
Blood pressure ≤ 130/80 mm Hg in past year	67	68.6	1.6
Record of BMI in past year (height in past five years)	74.4	83.6	9.2

* Indicates negative change in performance.

Source: Manor, O., A. Shmueli, A. Ben-Yehuda, O. Paltiel, R. Calderon and D.H. Jaffe (2011), *National Program for Quality Indicators in Community Health in Israel. Report for 2007-2009,* School of Public Health and Community Medicine, Hebrew University-Hadassah, Jerusalem.

Breast cancer provides an illustration of where performance has been both impressive and in need of further improvement. Israel's incidence of breast cancer is among the highest in OECD countries (Figure 2.3). The high incidence reflects the disproportionately high prevalence of BRCA1 or BRCA2 gene mutations among the Ashkenazi Jewish population (Struewing, 1997; Jemal *et al*., 2010), which significantly increase the lifetime risk of developing breast cancer (UK Cancer Research, 2012). Under a national breast screening programme, Israeli women aged 50-74 are invited every two years for mammography screening. For women identified as having above average risk, screening is initiated at age 40 and accompanied by more advanced testing, including for genetic mutation.

Figure 2.3. Female breast cancer incidence, 2008

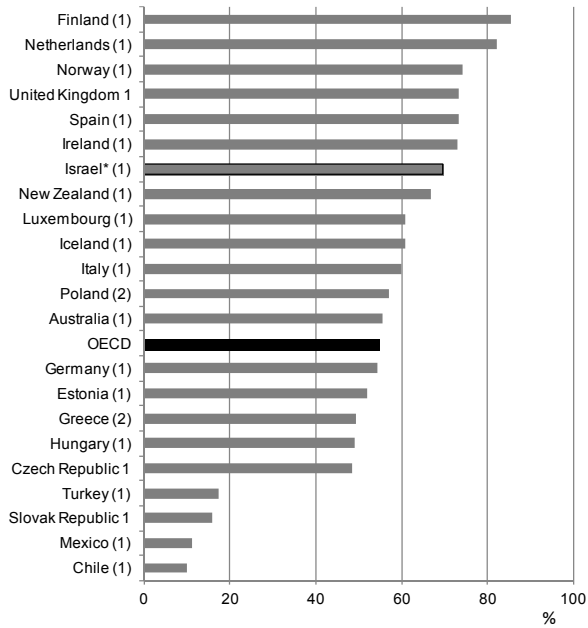


* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*

Source: OECD Health Data 2011, DOI: 10.1787/health-data-en.

Israel has achieved impressive declines in the PYLL rate for breast cancer, exceeding the OECD median and on a par with the United Kingdom and Switzerland (OECD, 2011b). This is testimony to the efficacy of its primary care services. However, while breast cancer incidence in Israel is 35% higher than the OECD average, mammography rates compare less well and are only 15% higher (Figure 2.4). Breast cancer mortality is 26% higher than the OECD average (notwithstanding a 15% decline in mortality between 2000-09) and remains among the highest in OECD countries (OECD, 2011b). More recent data from the 2010 report of the National Breast Screening Programme, indicate that screening rates have improved considerably and now stand at around 72%. However, Israel still needs to accelerate the momentum on improving mammography rates, this especially applies to ultra-orthodox Jewish women and immigrant women where mammography rates are 5-10% lower. Furthermore, while breast cancer screening rates are similar between Arab and Jewish women, rising breast cancer incidence among Arab women (see Chapter 3) will require additional screening efforts among this group.

Figure 2.4. Mammography screening (women aged 50-69), 2009



***** Information on data for Israel: *http://dx.doi.org/10.1787/888932315602.*

1. Programme. 2. Survey.

Source: OECD Health Data 2011, DOI: 10.1787/health-data-en.

Potentially preventable admissions in Israel indicate a mixed performance profile for primary care

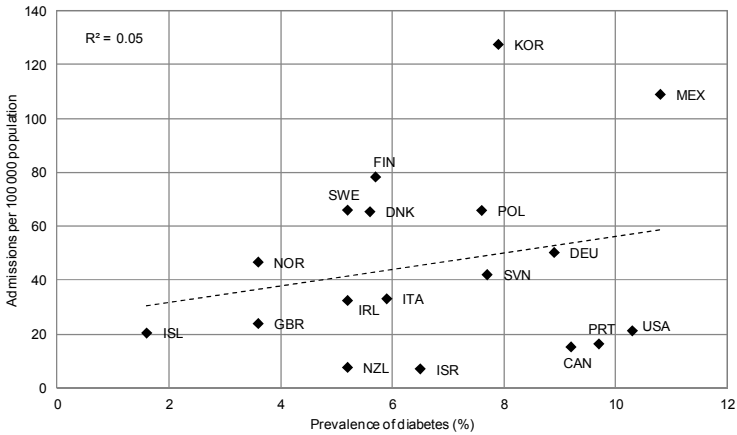
Potentially preventable admissions (PPA) for selected conditions provide an indication of the quality of the primary care system because appropriate management, support for self-management, and co-ordinated care across the service continuum can generally reduce the need for acute intervention. PPAs can also signal cost inefficiencies in the health system because they constitute a potentially avoidable cost on the acute sector and an opportunity cost in terms of bed availability.

Israel's PPA profile shows a mixed picture, with examples of performance at both impressive and poor ends of the quality spectrum. At the impressive end, admissions for uncontrolled diabetes were lowest among OECD countries (OECD, 2011b). Although differences in coding practices and disease classification systems between countries may affect the comparability of the data, Israel's low rate undoubtedly in part reflects the national focus of the QICH programme on diabetes control and the monitoring of primary care quality for diabetes since 2004. More specifically, the adoption by Clalit, Israel's largest health fund, of a unique interdisciplinary diabetes quality improvement programme targeted at primary care providers has resulted in significant improvements in diabetes care (see Chapter 4). These achievements are all the more impressive when viewed in the context of Israel's diabetes prevalence rate (6.5%), which is moderately high relative to other OECD countries (see Figure 2.5, which shows hospital admission rates for uncontrolled diabetes and diabetes prevalence across OECD countries).

At the other end of the quality spectrum, Figures 2.6 and 2.7 indicate that management of respiratory disorders in primary care could be improved, so as to avoid deterioration leading to hospital admission. Figure 2.4 shows hospital admission rates for asthma for OECD countries.[2] Israel's rates, especially for females, are higher than the OECD average and point to the need to develop a more targeted approach to asthma care with increased focus on prevention and case management.

Treatment for asthma with anti-inflammatory agents and bronchodilators in the primary care setting is largely able to prevent exacerbations and, when they occur, most exacerbations can be handled without the need for hospitalisation. High hospital admission rates may therefore be an indication of poor quality care. Table 2.1 on QICH performance shows that the proportion of people aged 5-56 with persistent asthma receiving control and/or relief medication[3] increased from 76.2% in 2007 to 79.7% in 2009. However, the medication rate in the low SES group exempt from co-payments (72.8%) was well below that in the non-exempt group (80.9%), even though asthma prevalence is higher in the former than latter (2.4% vs. 0.9%).

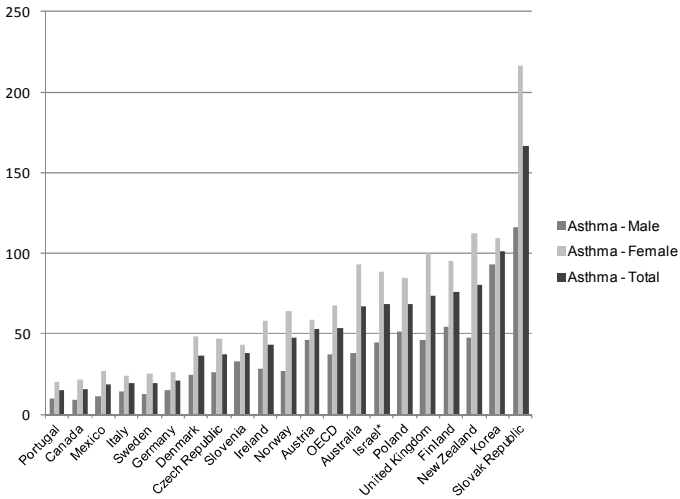
Figure 2.5. Hospital admissions for uncontrolled diabetes are below other OECD countries with similar diabetes prevalence, 2009



Note: Prevalence estimates of diabetes refer to adults aged 20-79 years and data are age-standardised to the World Standard Population. Hospital admission rates refer to the population aged 15 and over and are age-standardised to 2005 OECD population. * Information on data for Israel: *http://dx.doi.org/10.1787/888932315602.*

Source: International Diabetes Federation (2009) diabetes prevalence estimates; *OECD Health Data 2011,* DOI: 10.1787/health-data-en, for hospital admission rates.

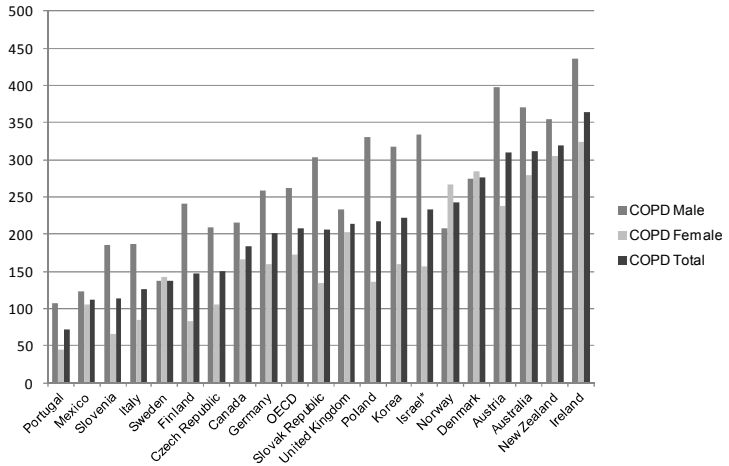
Figure 2.6. Potentially preventable hospital admissions for asthma in Israel are higher than the OECD average, 2009



* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602.*

Source: OECD analysis based on *OECD Health Data 2011,* DOI: 10.1787/health-data-en.

Figure 2.7. Potentially preventable hospital admissions for COPD in Israel are higher than the OECD average, 2009



* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602.*

COPD: chronic obstructive pulmonary disease.

Source: OECD analysis based on *OECD Health Data 2011,* DOI: 10.1787/health-data-en.

As people with asthma are at increased risk of respiratory complications, and influenza vaccination significantly decreases the risk of such complications, the government recommends annual influenza vaccinations for asthma patients. QICH data shows that the influenza vaccination rate among people aged 5-56 with persistent asthma increased sharply from 29.1% to 40% in the three years to 2009, but it remains well below comprehensive coverage.

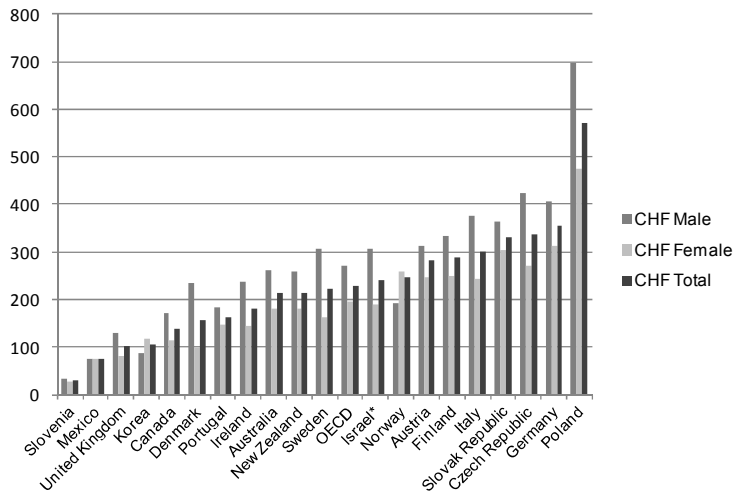
Male hospital admission rates for chronic obstructive pulmonary disease (COPD) in Israel are the fourth highest among OECD countries and a significant cause for concern (Figure 2.5). COPD is a preventable disease and smoking cessation is the recommended mainstay of effective primary prevention. Although smoking prevalence in Israel (20.4%) is marginally lower than the OECD average (22.1%), it has declined less in Israel over the previous decade than in some other OECD countries (OECD, 2011b).

Furthermore, there are significant differences in smoking prevalence between SES and population groups in Israel, with Arab men in particular having far higher rates than Jewish men (see Chapter 3). Overall, these patterns point to the need to strengthen smoking cessation services overall, targeting in particular groups with higher smoking prevalence. The fact that primary care physicians in Israel are typically the first point of contact in assessing health risks may indicate that health promotion and preventive

care for a highly significant health risk (smoking) has not yet received sufficient priority in Israel. It is also notable that QICH does not include any indicators on smoking.

Finally, Israel has a moderately high overall preventable admission rate for congestive heart failure (CHF), just above the OECD average (Figure 2.8). Research based on the Heart Failure Survey in Israel, which examined the quality of care for patients with heart failure, found that mortality rates increased sharply after discharge from hospital. In-hospital mortality was 4.7%; however, mortality increased to 19% at six months post discharge and to 28% at one-year post discharge (Garty *et al*., 2007). The high risk of long-term mortality indicates the urgent need for developing more effective management strategies for patients with CHF discharged from hospital. In this regard, promising findings from a recent study in Israel found that "supervision by dedicated specialised nurses in a heart failure center increased compliance, improved functional capacity in CHF patients, and reduced hospitalisation rate". The same study concluded that "CHF centers should be considered part of the standard treatment of patients with symptomatic CHF" (Gotsman *et al.*, 2011). While the outcome of this study is very encouraging, the admission profile in Figure 2.6, may point to wider failings in care for a chronic condition whose prevalence is increasing and whose overall impact on the health care system and the economy at large is profound (Jiang *et al*., 2009).

Figure 2.8. Potentially preventable hospital admissions for congestive heart failure (CHF) in Israel are slightly above the OECD average, 2009



* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602.*

CHF: congestive heart failure.

Source: OECD analysis based on *OECD Health Data 2011,* DOI: 10.1787/health-data-en.

In summary, the PPA profiles presented here indicate a mixed picture on primary care quality in the context of potentially avoidable hospital admissions. Improvements in diabetes care do not appear to be matched for other chronic diseases. There is also an apparent dissonance between Israel's higher hospital admission rates for some chronic diseases and its relatively low levels of premature years of life lost for many chronic conditions. It is possible that the impact of the former on mortality may become apparent over coming years.

Israel's modest performance on the selected PPA measures may indicate stresses in its primary care system resulting from its changing demographic profile, and insufficient focus on health promotion and preventive measures, and on conditions not included in QICH and therefore not subject to measurement, or some combination of these and other factors. In this regard, a conspicuous weakness of the QICH framework is that it does not currently include quality measures for COPD, CHF, smoking status and related measures to incentivise preventive action around quitting smoking. Primary care professionals should be more active generally in health promotion, disease prevention, and encouraging healthy lifestyles (smoking cessation in particular). Primary care services operate in a wider health care context, and it is imperative for government-run public health and prevention services to complement these efforts by strengthening the focus on risk factor modification and promoting health literacy.

2.4. Areas for improvement in Israeli's primary care system

Israel's quality monitoring programme for primary care has potential for further development

To start with, an area for further development relates to the QICH programme. While QICH is a quality-monitoring programme for primary care that many countries could learn from and emulate, it can be further developed over time, exploiting the potential offered by the use of EMRs in primary care. Maintaining developmental momentum may reduce the scope for international comparisons, which are of value, but it will inform and enable further improvements in the quality of primary care across a broader range of services covering larger segments of the population, and could make Israel an international pacesetter in this area.

First of all, further disaggregation of national QICH data will be useful for analysing performance variations, targeting improvement strategies and addressing inequalities (see Chapter 3). In particular, geographically disaggregated data will enhance the ability to identify areas of weak performance.

Second, the QICH programme has been running well for some years, and it would be appropriate to expand its coverage to include:

- Additional clinical areas, including those of epidemiological significance and/or of increasing importance given the ageing population, *e.g.* mental illness, and chronic diseases such as COPD and CHF. It is unclear why foot examinations for diabetic patients and cervical cancer screening are not included. Indicators on interventions or programmes to help keep people healthy, *e.g.*, smoking cessation services, should be strengthened.

- Intermediate outcome and outcome measures to assess the impact of Israel's community-oriented primary care programme. For example, significant improvements are apparent in process indicators for recording of BMI, but it is unclear what follow-up action is taken by health care professionals and how effective it is. Likewise, it is legitimate to monitor whether or not improved quality of primary care is delivering better outcomes, for example for people with cancer, cardiovascular disease, and diabetes.

- Use of EMRs for developing more sophisticated, multi-dimensional measures, for example, the proportion of diabetic patients who have had all the required annual health checks,[4] and diabetic patients with co-morbidities. The use of uni-dimensional measures will become increasingly inappropriate given an ageing population and the growing prevalence of co-morbidities, requiring the development of correspondingly complex and multi-dimensional measures.

Third, the quality of primary care impacts also on hospital care and care in other settings. It is increasingly important to measure quality of care and co-ordination across providers and sectors, and along whole pathways, for patients with chronic disease. Indicators can be developed, for example, on hospital admissions for ambulatory care sensitive conditions (ACSCs),[5] visits to emergency departments, or the quality of community care on discharge from hospital. Although Israel's information infrastructure for hospitals and other residential care settings is less well developed and does not currently lend itself to such analyses, the QICH programme could be the spearhead that drives such developments over the longer term.

Fourth, although evidence about the impact of public reporting of performance data on patient choice is equivocal (Shekelle *et al.*, 2008; Laverty *et al.*, 2012), greater publication and transparency of QICH data would as a minimum incentivise quality improvement through the impact on providers. Thus far QICH has been used primarily as an internal quality monitoring and improvement tool, for use by health funds to compare their

performance against national benchmarks. The move to publish QICH data for each health fund from 2012 is welcome, and should be extended further. The co-operation between the government and across the health funds on QICH provides a foundation for transparency. Reporting of quality information using reliable, audited, standardised measures supports public accountability, and can stimulate quality improvement by providers. There is also a need to build on publication of QICH data at health fund level and to evaluate the merit of moving towards a lower level of disaggregation in the near future.

Fifth and finally, on the premise that what gets measured gets done, it is important to ensure that primary care in Israel keeps a broad focus on performance beyond QICH. An important area for improvement relates to interoperability between the acute and community care settings. Currently, electronic communication between hospitals and the community (*e.g.* transfer of diagnostic and procedural information and hospital discharge summaries) is patchy and poor in Israel. For example, in QICH patients with cardiovascular disease (CVD) are identified by health funds by using reimbursement codes for cardiac surgery (Jaffe *et al*., 2012), even though these account for a small proportion of the total CVD symptomatic population.

Clalit is unusual among Israel's health funds because it operates its own network of hospital services. Its initiative in implementing an integrated community/hospital EMR has improved interoperability and the quality of information flow between community-based clinics and hospitals. An evaluation showed improvements in care quality and reduced costs through avoidance of unnecessary duplicate diagnostic testing (Nirel *et al*., 2009; Nirel *et al*., 2010). The availability of linked records and interoperability has also enabled Clalit to develop a prediction model for identifying patients at high risk of admission to hospital, and to implement case management strategies to reduce the risk of admission and readmission.

Interoperability deficits represent a serious threat to patient safety, care co-ordination and continuity. With the growing burden of chronic disease, the interface between primary and hospital care assumes increasing significance. It is critically important that Israel find mechanisms for overcoming these information barriers to integration of care between the primary care and hospital sectors, and assessment of the quality of such care.

Co-ordination of care between primary care and hospital care services needs to be strengthened

Poorly co-ordinated and fragmented care is often caused by services operating independently of each other, and can lead to poor patient outcomes, inefficient services and wasted resources. With an ageing

population, growing prevalence of chronic disease, and rising costs of hospital care, co-ordination and integration are increasingly important for improving the quality, seamlessness and experience of care for patients, and for containing health care costs.

While primary care has been in the vanguard of Israeli quality improvement initiatives, the interface with hospital care and co-ordination of care across services has received inadequate attention. Co-ordination of care between different care settings remains a weakness of the Israeli health care system, as noted also in Chapter 4 in the context of diabetes care. Communications between community-based physicians and their counterparts in hospitals, the transfer of patient records and related information across providers, and post-discharge planning appear to be weak. Poor co-ordination is evident from population surveys, which show that 42% of respondents report the absence of a co-ordinating physician for all the medical information on their treatment, and about a third of the chronically ill and elderly responded that they had no physician fulfilling this function (Brammli-Greenberg *et al*., 2011).

These challenges are not unique to Israel (see Box 2.2). Many health care systems facing demographic and financial pressures experience similar co-ordination difficulties at the interfaces between various parts of the health care system (*e.g.* primary/secondary care, mental/physical health care), and between health care, social care and long-term care. A survey by the OECD found that health care systems were often characterised by administrative separation of care provision into silos, frequently operating on different budgets, subject to different governance arrangements, and under the jurisdiction of different authorities (Hofmarcher *et al*., 2007).

One reason for poor co-ordination could be that community and hospital services in Israel developed separately, and three of the four health funds do not in the main directly employ their primary care staff or own hospitals. Consequently, their information systems are not interoperable across primary and hospital care, leading to weak communication. The flow of information between primary care and hospital services needs to be facilitated and strengthened, and the feasibility, costs and acceptability of wider implementation of integrated EMRs should be explored. If this presents practical difficulties, other routes for improving information transfer and communication should be explored, learning from and building on Israeli experience of integrated EMRs as described below.

Box 2.2. Evidence on the need for care co-ordination and integrated care

Care co-ordination is a global concern, as evident from the Commonwealth Fund's 2011 survey of patients with complex care needs in 11 countries, which reported on poor care co-ordination between primary care doctors and specialists, gaps in care transition between hospital and home, and the lack of interoperability of electronic health records (Schoen *et al*., 2011). The Fund noted the need to redesign care systems around patients, make care teams accountable across sites of care, manage transitions and medications well, and for payment mechanisms that promote system integration and quality improvement.

Continuity of care with a GP, self-management by patients with long-term conditions, closer integration between primary and secondary care can reduce hospital admissions, and structured discharge planning and personalised care plans can reduce readmissions (Purdy, 2010). Comparisons between the NHS in England and Kaiser Permanente in the United States show that Kaiser Permanente's integrated care model better enables it to provide care in the community and keep patients out of hospital, resulting in lower use of acute bed days and making it more cost-effective (Feachem *et al*., 2002; Ham *et al*., 2003). The compelling need in many countries to contain hospital costs has led to increased focus on improving the quality of ambulatory care, especially for chronic diseases, and co-ordination between community and hospital care. Improved care co-ordination can also have a significant effect on the quality of life of elderly patients and people with long-term conditions, and is of increasing importance given the growing prevalence of patients with multi-morbidities (Barnett *et al*., 2012).

There can be many types and degrees of integration, and organisational integration is neither necessary nor always sufficient to deliver results (Curry and Ham, 2010). Virtual and/or contractual integration can deliver many benefits. Effective care co-ordination depends less on organisational integration than on clinical and service integration, because care quality is influenced more by the nature of team working and adoption of shared guidelines and policies than by the nature of organisational arrangements. Based on the formation of alliances, partnerships and networks, commissioners and providers can work to deliver integrated care for patients through care co-ordination, care planning and use of technology.

As Clalit employs most of its primary care physicians, its organisational structure lends itself more readily to care co-ordination across primary and hospital care, supported by its system of linked records and interoperability across sectors. This enables it to have a proactive approach to identifying and managing patients at high risk of admission. It has also developed discharge and post-discharge policies and assessment systems. An evaluation of Clalit's integrated EMR suggests it has potential for cost savings and, in a care system that is becoming increasingly complex with care episodes often straddling multiple care settings, has the potential to improve quality and increase care co-ordination and continuity (Nirel *et al.,* 2009; Nirel *et al.,* 2010).

Another means of improving care co-ordination is through contractual and payment mechanisms in place with providers. Although the other health funds

have different organisational structures to Clalit, they can, for example, through their contractual arrangements with hospitals ensure that the linkages go beyond financial terms and clauses to also include quality, safety and co-ordination issues. Currently, contractual arrangements and the interface between health funds and hospitals relate primarily to reimbursement issues and do not extend to co-ordination (or to quality and safety). For example, they do not relate to how comprehensive is discharge assessment, planning and liaison for stroke and hip fracture patients on discharge from hospital. Contracts need to be widened to include services that enhance care co-ordination, and payment models that encourage co-operation across sectors and reward multidisciplinary care need to be developed to better engage providers at all levels. The use of shared guidelines, care plans and joint accountability can also facilitate co-ordination.

Primary care can also play a key role in this process. As it is the locus of health care delivery in Israel, and plays a key gate-keeping role for onward referral to hospital and/or specialist care, it is well placed to promote care that is well co-ordinated and integrated. The OECD found that most countries place importance on primary care providers to ensure patient follow-up and care co-ordination (Hofmarcher *et al.,* 2007).

Finally, improving care co-ordination across providers and services needs to become a policy priority, and the government, health funds and providers should get actively engaged with this agenda. (Although social care is out of remit for this report, this co-ordination needs to encompass social care also.) The government and health funds have hitherto focussed on the primary care sector, but it is timely for the Israeli health care system to move forward in response to the growing and changing demands on it.

The formula for disbursing resources to the health funds has a negative impact on the supply of community health care services in Israel's periphery

Until recently, the formula used by the government for allocating the bulk (80%) of the public funding for services provided by the health funds was based on the age and sex of the population insured with each health fund. In 2011, the formula was modified to also include distance from urban areas. The change (estimated cost NIS 160 million) is intended to compensate health funds for delivering services to remote populations and attract investment in infrastructure to the periphery, thereby reducing the differentials in health care capacity between Israel's prosperous central regions and the periphery. However, this change to the formula does not go far enough. Moreover, without a regulatory framework to ensure that resources are spent where needed, it will be difficult to prevent implicit risk selection from taking place.

The addition of a measure of "peripherality" to the resource allocation formula is expected to result in an increase of between 5% and 10% to the periphery's health budget (Chernichovsky, 2011). Although this change appears to be a step in the right direction, the impact is likely to remain small given the scale of inequalities in health and health care capacity between the Centre and the periphery (see Figures 2.9A and 2.9B, and Chapter 3).

Another and perhaps more intractable problem resulting from the inadequacy of the current resource allocation formula is the potential for risk selection, that is, that health funds may adjust the availability of community services based on the socio-demographic characteristics of an area, leading to under-provision of services in less wealthy areas and over-provision in richer areas. There is some evidence that this might be occurring already. A study (Shmueli, 2012, currently unpublished) provides some evidence that the supply of community services is tailored to minimise income loss (under-provision in the periphery) and optimise income gain (over-provision in the Centre), particularly in relation to specialist community physicians, as services provided by specialists are more expensive than generalist family physician care. The study also found some evidence of service substitution, with areas predominantly inhabited by Arabs being more likely to receive higher levels of family physician and community paediatric services but poorer access to other types of specialist community services.

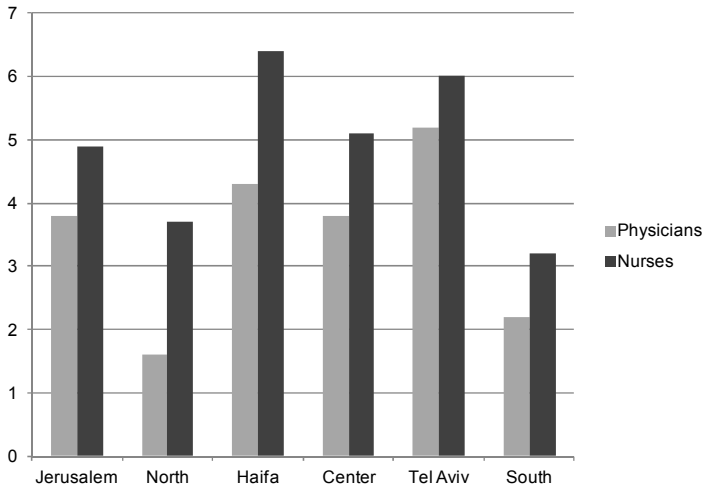
Reduced access opportunities for patients, especially those with special medical care needs, resulting from implicit risk selection could have damaging effects on health. Because areas with high health need are under-provided with specialist community services, there is also the potential for damaging knock-on effects on the morale of family physicians, who may increasingly perceive themselves as isolated practitioners rather than working as part of an integrated community team. There may also be negative impacts on family physician workloads and effectiveness if they have to deal with the health consequences of a dearth in specialist practitioners.

The recent change to the resource allocation formula is likely to be inadequate because it does not account sufficiently for health care need, and therefore does not offer the health funds enough incentives to focus where need is greatest. Israel should review the formula and introduce an adequate proxy that reflects health care need more adequately (*e.g.* using measures of morbidity, mortality or SES as considered appropriate). The challenges and tensions entailed in developing an appropriate algorithm for allocating resources are not unique to Israel. For example, there are trade-offs between seeking to account fully for differences in need on the one hand, and the predictive power of the formula, cost of collecting the data and managing the system, and any unintended behaviours from providers that the formula might encourage on the other hand. Israel will need to assess these issues to

arrive at a balance that is appropriate for its particular circumstances and that also goes towards addressing the underlying requirement for more equitable distribution of limited resources.

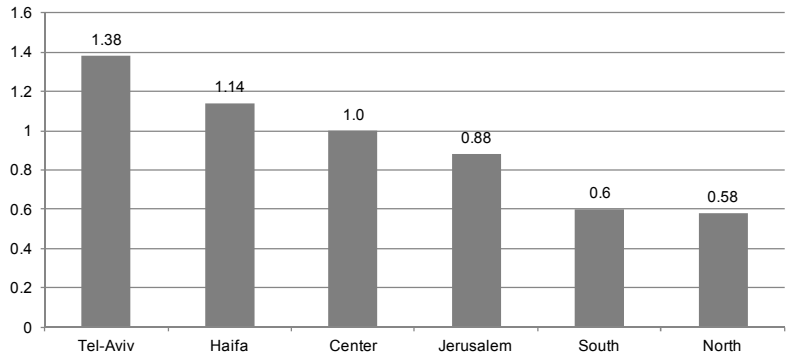
Figure 2.9. Deficits in health care manpower in the North and South relative to other districts

A. Health care professionals per 1 000 persons by district, 2010



Source: Labour force survey, Israel Central Bureau of Statistics.

B. Ratio of specialist to generalist physicians, 2006-07



Source: Taub Center for Social Policy Studies in Israel (adapted from Policy Paper Series, Israel's Healthcare System, Dov Chernichovsky, Policy Paper No. 2011.13.

Furthermore, without any regulatory mechanism to ensure that money intended for areas of high need is actually spent on service provision in those areas, it is not possible to prevent implicit risk selection from taking place. Israel therefore also needs to introduce measures to ensure that funding reaches the areas for which it is intended. Given that the government has the regulatory authority and mechanisms for monitoring the quality of health care services, these can be used to introduce a formal process requiring the health funds to conduct periodic equity audits. The government should independently review and monitor these outputs.

These issues need to be tackled urgently in order to redress inequities in the geographical distribution of community services, including specialist community services.

Prospective shortages in Israel's clinical workforce are a serious threat to the quality and sustainability of its community health care system, especially in the periphery

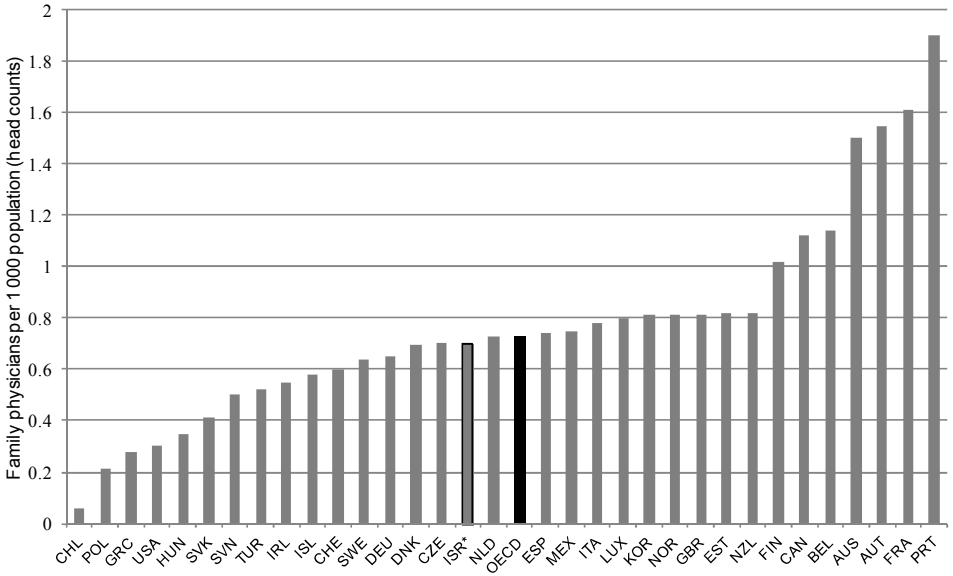
Shortfalls in the physician and registered nurse workforce resulting from the depletion of the influx from the former Soviet Union, combined with a growing and ageing population, a rise in chronic disease prevalence and a rapidly maturing workforce, are set to place increasing strain on the clinical workforce. These pressures now threaten to undo the integrity of Israel's community care system and its track record in delivering accessible, high quality care. The risks are particularly acute in the periphery.

Physician workforce

There are approximately 5 300 practising family physicians in Israel, equivalent to around 0.7 per 1 000 population. This is slightly lower than the OECD average but on a par with Denmark and the Netherlands, both considered to have strong primary care systems (see Figure 2.10; note that data do not represent the total physician workforce in Israel's community care system).[6] Another relevant feature of the workforce is that 16% of practising family physicians are Arab, somewhat under-representative of the 20% of the Israeli population that is Arab.

As a result of a very large influx of Jewish medical doctors from the former Soviet Union (FSU) in the early 1990s (Eckstein and Weiss, 1999) and an already healthy physician immigration rate from Eastern Europe and elsewhere, Israel has enjoyed one of the highest physician to population ratios in the world. However, with the FSU influx having run its course (Rosen, 2008), and a significant reduction in foreign physician influx, Israel has had to become increasingly reliant on developing its own home grown medical workforce.

Figure 2.10. Family physicians per 1 000 population in Israel are slightly lower than the OECD average



Note: The OECD definition includes: district medical doctors, family medical practitioners, primary health care physicians, medical doctors (general), medical officers (general), resident medical officers specialising in general practice, medical interns (general). It excludes paediatricians, obstetricians and gynaecologists, specialist physicians (internal medicine), psychiatrists, clinical officers.

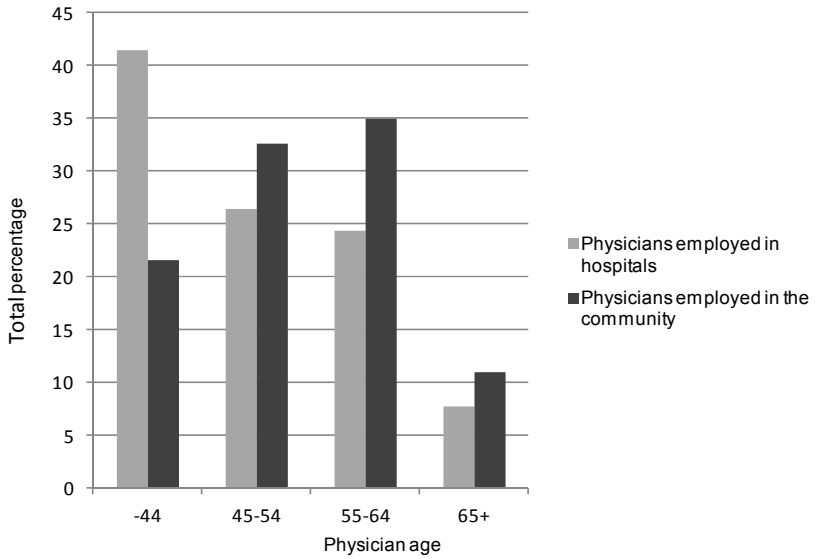
* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602.*

Source: OECD Health Data 2011, DOI: 10.1787/health-data-en.

Another problem facing the community care sector is that it has an ageing workforce. In 2003, 6% of community physicians were aged 65 or over; in 2010 that figure had risen to 11%. Physician shortages as a result of the numbers retiring in coming years are likely to be more acute in the community than in the hospital sector, which employs double the proportion of younger physicians (aged below 44 years) than the community sector (Figure 2.11). This imbalance reflects in part the tendency for newly qualified doctors to choose medical careers other than family medicine (Shmuel *et al*., 2001). This trend is also apparent in the fact that the ratio of general practitioners (GPs) to non-GPs has declined markedly over time, and is falling faster than the OECD average (Figure 2.12).

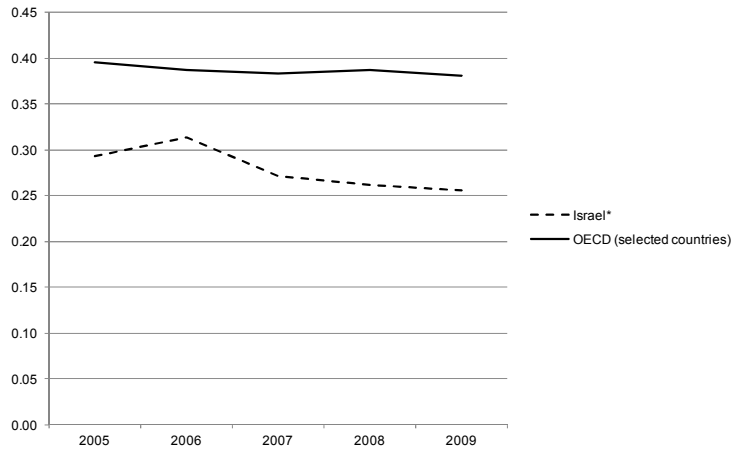
The Israeli response to rising demand as a result of these demographic factors has been slow, and medical graduates are far fewer than in other OECD countries (Figure 2.13).

Figure 2.11. Israel has a higher proportion of older physicians employed in the community



Source: Based on information received to the Ministry of Health from most health care organisations: HMOs, the Civil Service Commission, the army and most of the hospitals.

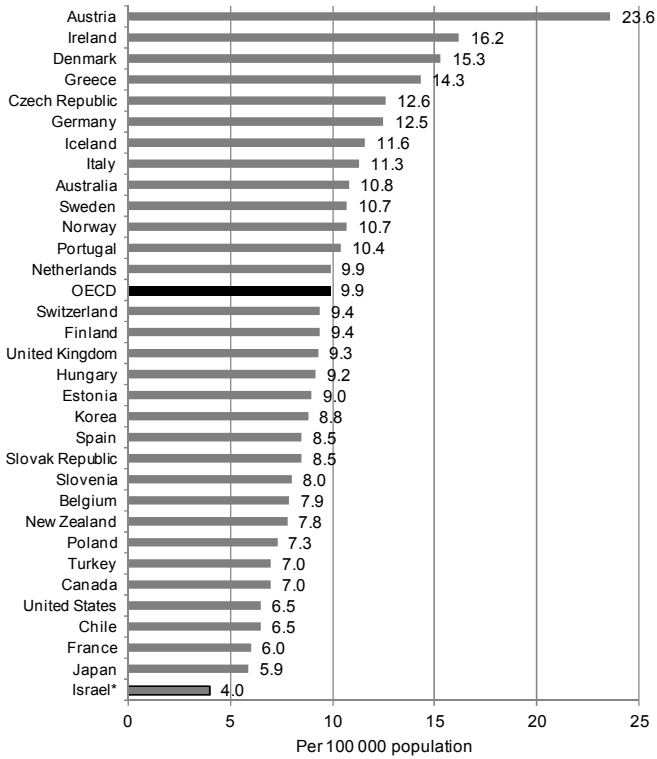
Figure 2.12. The ratio of general practitioners to physicians of other specialists is falling more rapidly in Israel than other OECD countries



***** Information on data for Israel: *http://dx.doi.org/10.1787/888932315602.*

Source: OECD Health Data 2011, DOI: 10.1787/health-data-en.

Figure 2.13. Medical graduates per 100 000 population are the lowest in OECD countries



* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602.*

Source: OECD Health Data 2011, DOI: 10.1787/health-data-en.

The looming shortfall in physician numbers and changing epidemiological context might be one of the factors that is starting to impact negatively on care and care co-ordination. A recent national survey found that in primary care around 14% respondents felt they had not received an adequate explanation about their medical condition or treatment. The survey also noted that about 40% of patients reported the absence of a co-ordinating physician for all the medical information on their treatment, and that one third of the chronically ill and elderly had not received this service either. Only 16% of respondents reported that their family physician had inquired about their mental state (Bammli-Greenberg *et al*., 2011). Research indicates that stress levels among primary care physicians increased substantially between the mid-1990s and 2001 (Kushnir *et al*., 2004).

The impending physician shortage was predicted as early as the 1990s. In 2002, the Council for Higher Education (CHE) submitted a report on the scale and impact of the expected shortfall, which led to the opening of Israel's fifth medical school in the northern region of Galilee in 2011.

Whether or not this measure, and the increased throughput of medical students in the four other medical schools, is sufficient to meet the projected shortfall in physician numbers, in particular the more acute shortfall in family physicians, remains to be seen. It is difficult to predict whether the increase expected – 1 000 additional physicians by the year 2018 – will be achieved, and whether it will be adequate to offset retirement rates, medical brain drain (estimated to be around 12.5% per annum (Bhargava *et al*., 2011) and the increased health care needs of an ageing population. From a community care perspective the success of these initiatives is contingent on whether they will attract sufficient numbers of trainees to family medicine, and on whether community medicine in Israel's periphery is encouraged as an attractive option for the newly graduating workforce.

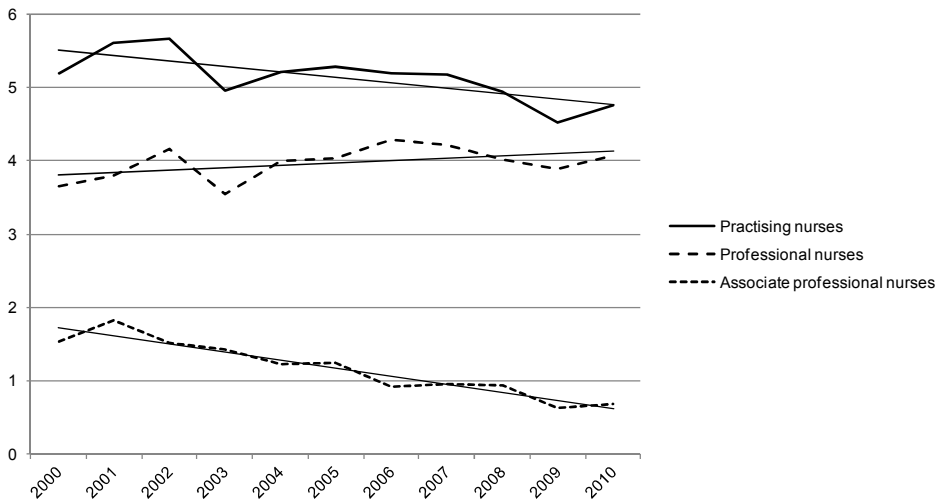
Israel will have to ensure that medical schools give sufficient priority to family medicine as a career option. This means more than simply ensuring that there are adequate residency programmes. Research has shown for example, that the early clinical experience (fifth year) of medical students' training programme is an opportune time to begin interventions to influence their decisions to specialise. Furthermore, there appear to be distinct patterns among students indicating a preference for a career in family medicine, including the fact that they were more likely to be female or married and for males and females, were less likely to be interested in surgery and, importantly were more likely to be interested in working in the periphery. These patterns could be utilised to identify potential candidates for a career in family medicine, students that are likely to accept rotations to peripheral areas and, for newly qualified physicians, residency programmes in outlying primary care clinics (Weissman, 2012).

The mounting pressure of chronic disease and multi-morbidity will increasingly require family physicians to co-ordinate a wide range of complex health care services and ensure good care co-ordination. There is a mounting body of evidence to suggest that care management and co-ordination for chronic conditions is still largely a physician-led activity in Israel, despite the fact that physicians prefer higher rates of nurse involvement in patient care (Gross, 2009). Moving towards a collaborative care model, where professional nurses take on more responsibility in two key areas, preventive and chronic disease care, has several advantages including enhanced opportunities for better care co-ordination and care outcomes (Lowery, 2012), increased job satisfaction and motivation both for nurses and physicians, and a stronger focus on preventive care and health risk reduction.

Community nurse workforce

The number of practising registered nurses (professional nurses, associate professional nurses, foreign nurses licensed to practice and practising) has been declining for some years and is now well below the OECD average (4.8 versus 8.1 per 1 000 population) (Figure 2.14). This is largely due to the decline of FSU immigrant nurses and, for projected future losses, the abolition of the practical nurse category. Awareness about the important role of nurses and other non-medical health care professionals is increasing, leading to strenuous efforts to up-skill and increase nurse numbers.

Figure 2.14. The number of nurses per 100 000 population has been declining



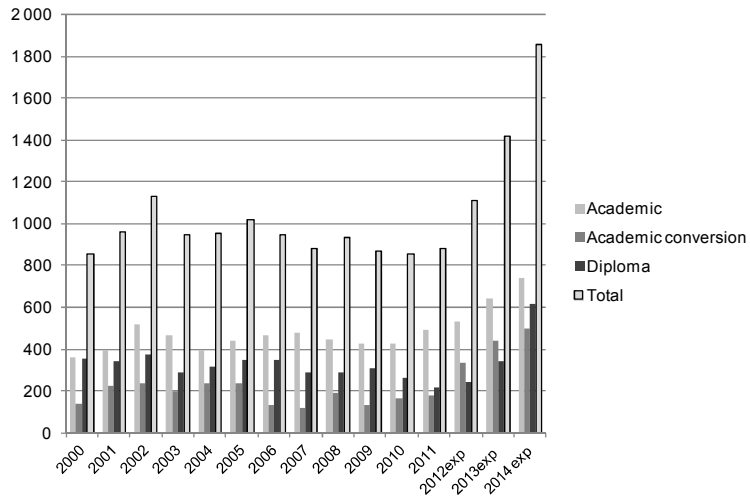
Source: OECD Health Data 2011, DOI: 10.1787/health-data-en.

Approximately three quarters of registered nurses (RNs) work in the hospital sector, the rest work in a variety of community postings, including primary care clinics. The nurse workforce is mature – in 2011, approximately 30% were aged 55 or over. Community-based nurses tend to be older than hospital nurses and more likely to be based in Israel's periphery. In general, the Israeli RN workforce is well trained and skilled, with 55% having had advanced training, 50% holding an undergraduate degree, and around one in five holding a MA or PhD (Nirel *et al*., 2012).

The government has put considerable effort into stemming the current nurse shortfall and ensuring that the RN of the future will be well trained

and highly skilled. This includes abolition of the practical nurse category and a concerted drive to attract new nursing students, graduates with degrees in subjects unrelated to nursing and re-training opportunities for practical nurses. This ambitious initiative is expected to near double the supply of registered nurses by 2014 (Figure 2.15).

Figure 2.15. Past trends and projected supply of new registered nurses in Israel, 2000-14



Source: Data supplied by Shoshana Riba, Israel Ministry of Health.

However, recent research which considered nursing supply alongside factors such as retirement, drop out, emigration and nurse "survival" (expected natural death rate) noted that the number of RNs would decline by at least 25% between 2008 and 2028 (Nirel *et al.*, 2012). If this projection is accurate, it would halve the current RN-to-population ratio within 20 years. Furthermore, while up-skilling the workforce is an essential prerequisite for effective care, job satisfaction and staff retention, this strategy has risks. Israel could end up with a highly skilled workforce but with no one to take on more practical nursing tasks, or that highly qualified nurses have to undertake roles previously performed by practical nurses. A more balanced approach could have been to ensure more mix of skills and training levels between academic and diploma qualified RNs. It is also not clear whether the financial incentives to stimulate nurse recruitment in the periphery will have the required impact, especially the South where there are serious nurse shortfalls.

It will be important for Israel to ensure that nurse education strikes a balance between the number of highly qualified and diploma qualified nurse graduates (perhaps by introducing a quota system). Furthermore, there are clear and much needed advance practice nurse requirements in Israel's periphery and in this regard, emphasis should be given to the development of health promotion, preventive care and chronic disease case management and co-ordination. Given the findings above, that more mature nurses tend to work in the community and are more likely also to work in the periphery, it may be prudent to target this group in particular for the role of advanced practice nurse.

2.5. Conclusions

Israel's ability to deliver health outcomes that are amongst the best in the OECD, despite spending less on health than most OECD countries, is attributable not only to a younger and healthier population, but also to the strengths of its primary care system. These include:

- Universal access to high-quality services through a well-developed primary care infrastructure (including, for the present, a substantial workforce of general practitioners) covering the entire country and providing a comprehensive basket of health care services free or at relatively low cost for users at the point of service.
- A community focus that encourages continuity of patient relationships with a doctor and a practice in the local community. This facilitates continuity of care and reduces the need for costly referrals to or emergency use of secondary care services.
- Health funds that proactively use their financing and management influence to drive continuous improvement in the reach and quality of first point of call health care services.
- Proactive assessment of risk factors to health and management of chronic disease.
- The use of modern information and communication systems, including electronic patient records, that support both frontline delivery of patient care and quality monitoring of services overall.

Unsurprisingly, there are issues which require attention if Israel is to meet its future health challenges effectively. Pressures on the community care system resulting from a growing population, increasing proportions of elderly patients and those with complex chronic care needs, rising expectations, and advances in medical technology are now becoming evident, despite the positive trend in overall quality improvement. The

health care system needs to adapt to these challenges if the impressive record of primary care services is to be maintained. Given the universal coverage, inclusiveness and cohesiveness of Israel's primary care services, it can raise the quality bar higher.

This calls for developments in the information and quality-monitoring infrastructure for primary and community care services to an increased level of sophistication, one that also reflects the changing epidemiology of disease. A greater focus on prevention, chronic disease management and improved care for ambulatory care sensitive conditions will alleviate the effects of growing future demands on the health care system. Care co-ordination across different settings – especially between the community and hospital – is currently patchy and, if strengthened, will help to improve patient experience and outcomes and reduce the risk of admission to hospital. If Israel's impressive track record in primary care is not to slip, then its overall manpower needs (physicians and nurses in particular) must be anticipated and planned for, and staff deployment to the periphery encouraged. The resource allocation formula is a potentially key lever for redressing geographical disparities in primary and community care staff numbers, but is currently not being deployed effectively to this end (and may even be exacerbating disparities). Finally, the Israeli health care system risks being overwhelmed by the burden of chronic disease unless the focus on health promotion and primary prevention is strengthened. This needs to happen in both the primary care setting and through government operated public health services.

Notes

1. One third of the population in 1995 and 27% in 2008 were foreign-born, among the highest in OECD countries (OECD, 2011a).

2. The consistent gender difference apparent in Figure 2.6 for all countries, with females having consistently higher admission rates than males, may reflect recent research findings showing that women have a higher incidence of asthma, poorer quality of life and increased utilisation of health care compared with men, despite having similar medical treatment and baseline pulmonary function (Kynyk *et al.*, 2011).

3. In QICH, control medication for asthma includes: immunomodulators, inhaled corticosteroids, leukotriene modifiers, long-acting beta-2 agonists, methylxanthines, mast cell stabilisers). Relief medication includes: short-acting beta-2 agonists, anticholinergics.

4. A report for England based on 2009/10 data from a national diabetes audit showed that, in contrast to the high achievement scores on individual QOF indicators for diabetes, only 53% of type 2 and 32% of type 1 diabetic patients received all of the nine annual checks recommended by NICE, with large geographical variations. See: *www.ic.nhs.uk/webfiles/Services/NCASP/Diabetes/200910%20annual%20report%20documents/National_Diabetes_Audit_Executive_Summary_2009_2010.pdf*.

5. These are conditions for which effective management and treatment should avoid admission to hospital, and include: chronic conditions, where effective care can prevent flare-ups; acute conditions, where early intervention can prevent progression; and preventable conditions, where immunisation and other interventions can prevent illness. The definitions and diagnostic codes used to measure ACSCs can vary.

6. For example, a 2003 survey indicated that another 5 000 or so physicians also work in the community, but are from other, non primary care fields of medicine such as paediatrics, obstetrics and gynaecology and general internists (Shemesh *et al.*, 2007).

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