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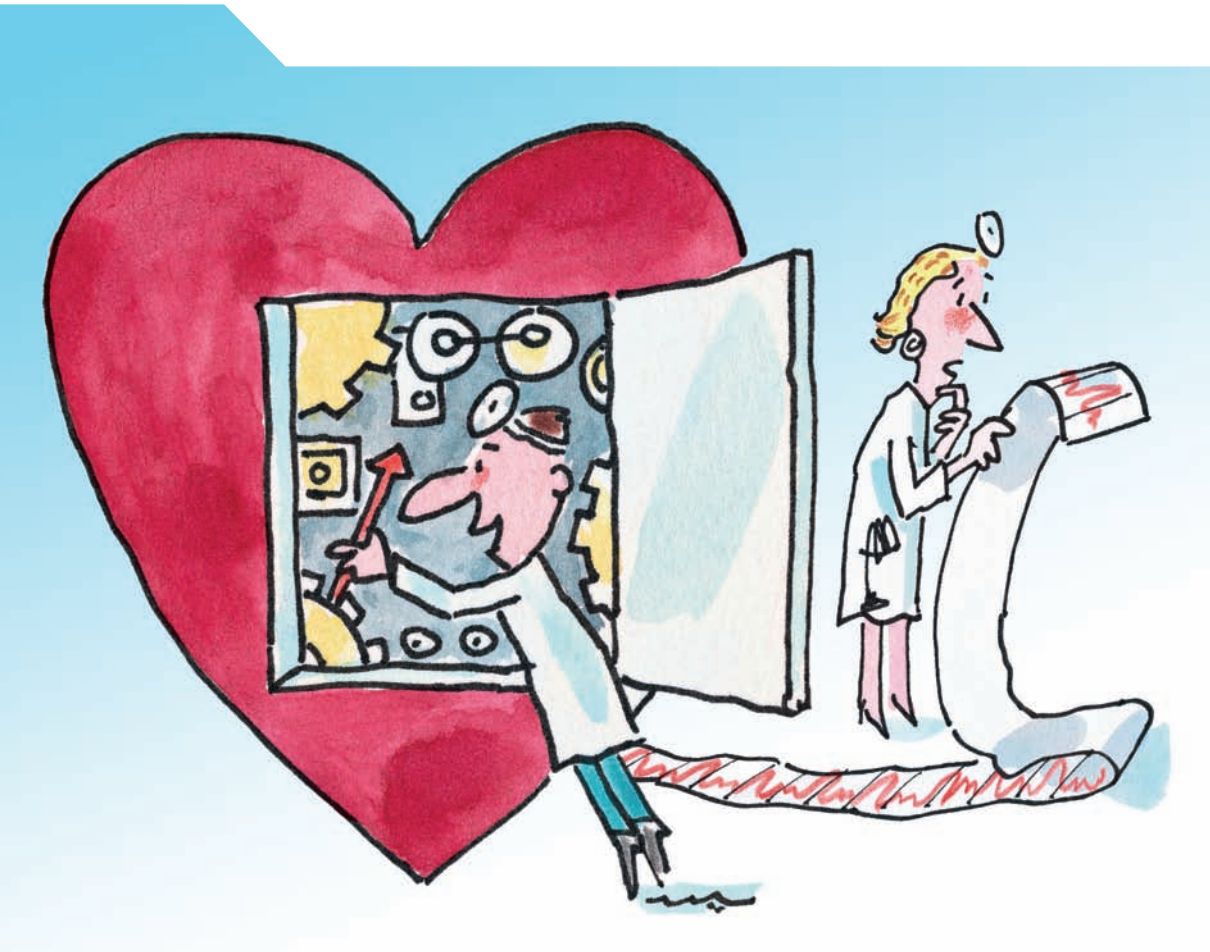

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OECD Reviews of Health Care Quality: Israel 2012

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Foreword

This report is the second of a new series of publications reviewing the quality of health care across selected OECD countries. As health costs continue to climb, policy makers increasingly face the challenge of ensuring that substantial spending on health is delivering value for money. At the same time, concerns about patients occasionally receiving poor quality health care led to demands for greater transparency and accountability. Despite this, there is still considerable uncertainty over which policies work best in delivering health care that is safe, effective and provides a good patient experience, and which quality-improvement strategies can help deliver the best care at the least cost. *OECD Reviews of Health Care Quality* seek to highlight and support the development of better policies to improve quality in health care, to help ensure that the substantial resources devoted to health are being used effectively in supporting people to live healthier lives.

Israel provides an interesting case study for this series. While many OECD countries are currently striving to improve primary care, Israel's efforts over the past decade have developed one of the most sophisticated programmes to monitor the quality of primary care across OECD countries. On the other hand, these practices do not extend to Israel's hospitals, which are characterised by high levels of occupancy and comparatively less information on the quality of care they deliver. A diverse immigrant population and deep inequalities further complicate the task of policy makers, who have been making efforts to improve health outcomes among the disadvantaged. After having sustained lower health care spending than most OECD countries for some time, Israel's health system is now coming under pressure as the population ages and chronic diseases rise, which are likely to continue within the context of a tight fiscal environment. As with other OECD countries, Israel's government will need to ensure that significant spending on health continues to deliver value for money. This report seeks to provide constructive advice to further these efforts, informed by the experience of OECD countries at large.

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Acronyms and abbreviations

ACEI	Angiotensin converting enzyme (ACE) inhibitors
ACSC	Ambulatory care sensitive condition
ARB	Angiotensin II receptor blockers
BMI	Body mass index
BP	Blood pressure
BRCA1	Breast cancer 1
BRCA2	Breast cancer 2
CABG	Coronary artery bypass graft
CHF	Congestive heart failure
CHE	Council for Higher Education
CHS	Clalit Health Services
CME	Continuous Medical Education
COPD	Chronic obstructive pulmonary disease
CVD	Cardiovascular disease
ED	Emergency department
EMR	Electronic medical record
ESRD	End stage renal disease
FOBT	Fecal occult blood test
FSU	Former Soviet Union
FTE	Full time equivalent
GDM	Gestational diabetes mellitus
GDP	Gross domestic product
GP	General practitioner

HbA1C	Glycated hemoglobin
Health Funds	Maccabi, Meuhedet, Clalit and Leumit
HEDIS	Healthcare Effectiveness Data and Information Set
ICD	International Classification of Diseases
ICDC	Israel Center for Disease Control
JCI	Joint Commission International
LDL	Low-density lipoprotein cholesterol
MHS	Maccabi Healthcare Services
MOH	Ministry of Health
MRSA	Methicillin-resistant staphylococcus aureus
NCQA	National Committee for Quality Assurance
NHI	National Health Insurance
NHIL	National Health Insurance Law
NIS	New Israeli shekel
PPA	Potentially preventable admissions
PCI	Percutaneous coronary intervention
PYLL	Potential years of life lost
QICH	Quality Indicators in Community Health Care
RN	Registered nurse
SES	Socio-economic status
Tipit Halav	Family Health Centres

Executive summary

This report reviews the quality of health care in Israel. It begins by providing an overview of the range of policies and practices and the role they play in supporting quality of care in Israel (Chapter 1). It then focuses on three key areas: strengthening community based primary care (Chapter 2), tackling inequalities in health and health care (Chapter 3), and improving care for people living with diabetes (Chapter 4). In examining these areas, the report seeks to highlight useful practices and provide recommendations to improve the quality of health care in Israel.

While most OECD countries have been grappling with rapidly rising health costs, Israel has contained growth in health care costs to less than half the average for OECD countries over the past decade. Health care spending in Israel absorbed 7.9% of GDP in 2009 – the eighth lowest among OECD countries. While low levels of health spending are likely to reflect successive years of tight control over spending and the lesser demands of a younger and healthier population, Israel has also made the most of tight budgetary circumstances to build a health care system with high-quality primary health care, though poor information and high occupancy rates makes it difficult to say the same for hospitals.

Israel provides a good example of how to undertake reforms to strengthen primary care. Over the past decade and a half, policy makers and health plans have sought to reorganise doctors working in the community into teams. This has provided them with a platform to do things that other OECD countries are struggling to do, like regular monitoring of a patient's health indicators, delivering follow-up support after a visit to the doctor, and tailoring preventative advice to the specific needs of communities. Israel's primary health care clinics are held accountable through extensive data collection on their activities. While Israel has benefited from a substantial migration of doctors, this has created a major challenge for the future as the cadre of older doctors heads towards retirement in coming years. Ensuring that future doctors and nurses choose to work in primary care ought to be a focus of policy, alongside continuing to expand the number of chronic diseases covered by performance data on health care clinics.

In contrast to primary care, too little is known about the quality of care delivered in hospitals. This lack of information is particularly concerning with Israel's hospitals operating at an occupancy rate of 96% in 2009, well above the average of 76% amongst OECD countries and significantly higher than the 85% level that is broadly considered to be safe occupancy in the United Kingdom, Australia and Ireland. Hospitals should have access to data on how they compare on quality measures – such as infection rates, patient safety and indicators of clinical quality – that can be used to inform improvements in care. While some major tertiary hospitals have sought to monitor their own performance, the development of a national data set that allows hospitals and plans to compare their performance relative to their peers remains in its infancy. The government's efforts on this front ought to be more ambitious and rolled out more quickly.

In addition to expanding data collected in hospitals, Israel has the potential to get more out of what it already collects. Efforts currently underway to begin reporting on the quality of care performance of each of the four health funds are worthwhile. The prospect of consumers being able to move with their feet should increase the likelihood that the management of health facilities and health funds consider quality of care as a dimension in which they compete.

A key area where health funds ought to focus their attention to improve the quality of care is the co-ordination of care between primary health care services and hospitals. While a patients' key health information, diagnostic test results and recent medications are often recorded, this information is not transferred to hospitals often enough. Health funds ought to use their financial influence across both hospitals and primary care to improve information exchange, and beyond this, encourage more communication between health professionals across facilities so that care can be better tailored to the patients' needs. This problem of care co-ordination looms large for those living with diabetes, who are often more susceptible to multiple health conditions. As they require care from multiple specialists, those living with diabetes are likely to be relying on informal co-operation amongst health professionals. However, the extent of their complications and previous treatments is not as well documented as it ought to be.

Finally, Israel's health system has to contend with a complex picture of health inequalities. In general, those who are not Jewish, live in the North or South, and those from other poor socio-economic groups are likely to suffer from poorer health outcomes. The government and health plans have undertaken commendable efforts in recent years to address these inequalities, by encouraging health information in multiple languages, incorporating remoteness into the formula for allocating resources across health funds, and through capital investments in peripheral regions. These

efforts ought to continue and be redoubled. As well as providing more support to community health workers, training to skill physicians and nurses in delivering culturally appropriate care would help build a more responsive medical workforce. The government should avoid increases in co-payments for essential health services that hit those on lower incomes hardest and can discourage worthwhile health seeking behavior. While health policy makers have been undertaking efforts to tackle inequalities across the health system, they need to be complemented by efforts to address wider socio-economic differences beyond health care.

Even with strong fundamentals such as a strong primary care system and a large number of doctors, Israel's health system faces major challenges ahead. Pressure on heath system will only increase as chronic diseases rise, Israeli's relatively young population ages and the wave of older health care professionals who arrived from the former Soviet Union in the early 1990s head for retirement.

Addressing these challenges will require prudent reforms to strengthen the health system's capacity to support Israelis in living healthier lives in to the future. By pursuing a combination of policy reforms at a system-wide level and targeted reforms to address particular shortfalls, there is considerable scope to improve the quality of care in Israel's health system. This report contains the OECD's recommendations to help Israel do so.

Assessment and recommendations

Israel has established one of the most enviable health care systems among OECD countries in the 15 years since it legislated mandatory health insurance. While most OECD countries have been grappling with rapidly rising health costs, Israel has contained growth in health care costs to less than half the average for OECD countries over the past decade. Health care spending in Israel absorbed 7.9% of GDP in 2009 – the eighth lowest among OECD countries. While low levels of health spending are likely to reflect successive years of tight control over spending and the lesser demands of a younger and healthier population, Israel has also made the most of tight budgetary circumstances to build a health care system with high-quality primary health care.

Israel has a tax-funded national health insurance that provides universal coverage of health care. Israelis choose among four competing health insurance funds, which must offer insured people a basic package of health services. The two largest funds – Clalit and Maccabi – cover around 80% of the population. In addition to the basic package, around 75% of the population purchases complementary health insurance from one of the four health insurance funds and a third of the Israeli population buys commercial health insurance that covers services outside the basic package, such as dental care, ancillary services, and provides choice of private provider. A further two-thirds of the population also purchases commercial insurance for long-term care. The Ministry of Health has an overarching regulatory and policy making role, as well as owning about half of the country's hospitals, while local governments provide public health services and sanitation. The government provides health funds with a yearly per capita allocation adjusted for age, gender and location of the people insured by each fund. Funds seek to drive improvement in the system either by their direct control of the clinics they own (with Clalit having the most significant number of health facilities compared to the other three funds) or by contracting with independent health providers.

Health funds can boast impressive reforms over the past decade that have helped consolidate primary care services into teams and improved support for patients living with chronic disease. Health funds also play an active role in driving continuous improvement in the quality of care based on a broad range of data on whether good practices are being undertaken and what patient outcomes are. The sum of these efforts is that among OECD countries, Israel's health system is particularly good at identifying chronic diseases amongst patients early and supporting those living with a health condition to avoid an unnecessary hospital visit. Diabetes care is a revealing example of the good performance of Israeli health system. Efforts by the government to prevent and control diabetes have contributed to low number of admissions to hospitals for uncontrolled diabetes among OECD countries, while reductions in complications demonstrate ongoing efforts to improve quality of care provided to patients with diabetes.

However, while primary care services have been on a trajectory of improvement for some time, there exist substantial challenges for quality of care in Israel's health system:

- Ageing and the increasing specialisation of Israel's health workforce risks reducing the number doctors and nurses that are available to work in primary care in the future.
- Poor information on hospital quality makes it difficult to assess whether frequent reports of quality shortfalls are highlighting systematic problems.
- Though they finance both primary care and hospital services for a patient, most health funds do not do enough to ensure that these services are co-ordinated, and patients have little basis to make informed choices between funds and providers.
- While Israel has made commendable efforts to address substantial and complex inequalities, persisting socio-economic disparities and regional differences in health care capacity could undermine efforts already underway, and the recent trend of rising out-of-pocket expenses may disadvantage those without the capacity to pay.
- Governance of the health system is fuzzy, with the ministry involved in both setting policy and operating half the country's hospitals, making it difficult to locate responsibility for driving change.
- In the case of diabetes care, the fact that patient files in primary care are not linked to specialist and hospital services; that clinical guidelines do not extend to the management of certain co-

morbidities such as mental health; and that quality indicators do not include simple measures such as foot care, means that patients with complications might not get appropriate referral and control of their condition.

Addressing these challenges will require prudent reforms. After briefly profiling the strengths of primary health care in Israel, this first chapter will elaborate on these challenges and provide recommendations to help policy makers improve the quality of care in Israel.

Reform is all the more important at a time when signs are emerging that Israel's health system is coming under strain today. Protracted strikes and very high levels of bed occupancy ought not to be a norm. Pressure on health system will only increase as chronic diseases rise, Israeli's relatively young population ages and the wave of older health care professionals who arrived from the former Soviet Union in the early 1990s head for retirement. If the health system is not prepared to grapple with these challenges, or is not provided with the adequate resources to be able to do so, then the combination of good health outcomes and low health spending that Israel can boast of today is likely to be at risk in the future.

Delivering and sustaining high-quality primary health care

Israel delivers a high standard of primary care but there are areas of concern

As a consequence of conscious policy decisions made over two decades ago to prioritise the delivery of care in the community, Israel delivers a high standard of primary care to much of its population today. Patients generally turn to local primary health care clinics as their first point of call and they are gatekeepers to hospitals and specialist care. Out-of-hours care is available through 24-hour telephone hotlines staffed by nurses, evening care centres, urgent care centres and home visit services. The bulk of patients suffering from chronic conditions are likely to find doctors and nurses working to help monitor their health and manage their condition through proactive practices, such as regular measurement of blood glucose and blood pressure for those suffering with diabetes. These efforts are often supported by information technology platforms such as those that remind clinic staff which patients have not received a regular check-up.

Proactive primary care services are likely to have delivered dividends in health outcomes. In 2009, an estimated 3 601 years of life were lost in Israel by men under the age of 70, compared to an average of 4 689 amongst OECD countries. Similarly, an estimated 1 949 years of life were lost by women under the age of 70 compared to an average of 2 419 amongst OECD countries. This overall performance is reflected in lower

premature deaths from some chronic diseases, indicating that primary health care – where the bulk of chronic disease management takes place – is making a difference in helping people manage their health. For example, while 6.5% of the adult population lives with diabetes in Israel (equal to the OECD average), Israel had the second lowest number of admissions to hospitals among OECD countries for uncontrolled diabetes per 100 000 population in 2010.

Nonetheless, individual disease-based indicators also suggest that problem areas remain. With 68.4 visits to hospitals for asthma per 100 000 population, Israel is above the OECD average of 51.8 visits per 100 000 population. Similarly, 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.

Re-organising doctors into teams have been critical to helping Israel's primary health care services do things that other OECD countries are struggling to do

Over past years, health funds have proactively encouraged health professionals to work in teams. In Clalit, this was achieved by establishing clinics in which their salaried doctors were located. Other funds used a combination of financial incentives and dialogue to encourage independent doctors to work alongside other professionals, with the country's second largest health fund (Maccabi) having had more success than the two smaller health funds (Meuhedet and Leumit). Even in OECD countries regarded as having strong primary care, such as the United Kingdom, Australia and New Zealand, a large proportion of doctors continue to work as solo-practitioners. The average primary care clinic in Israel is staffed by the equivalent of 3.4 general practitioners, 2.6 nurses, 1.5 practice assistants and most have a practice manager.

Health care teams have made it possible for community health clinics to support patients suffering from chronic disease, such as by following up with patients after a visit, routine health screening and providing advice on improving lifestyles. In recent years, the United Kingdom, Australia, France and Switzerland have changed financing or provided additional payments to general practitioners to try and prioritise such services and had limited success in driving system-wide change.

Israel's approach has been different and had a more systematic impact. Health funds have focused on changing the structure of supply rather than seeking to influence physician behaviour through financial incentives. By promoting larger clinics, health funds have provided doctors with additional resources to support patients. Contrary to the concerns expressed in many

other OECD countries, Israel's experience demonstrates that the shift to larger clinics can create possibilities for worthwhile activities while preserving the importance of an ongoing patient-doctor relationship.

Primary health care in Israel has benefitted from a substantial migration but ensuring that future doctors and nurses choose to work in primary care and have the skills they need will be important

Primary care in Israel has benefited from the substantial migration of doctors. The population of doctors close to doubled over the late 1980s and early 1990s, with almost one in three of these new doctors choosing to practice in community-based facilities. This supply of family doctors is likely to dwindle as many of the older workers that migrated from the former Soviet Union retire. While Israel has made efforts to increase domestic medical graduates, younger doctors are choosing to specialise and work in a hospital. To ensure primary care facilities have the workforce they need, the government should encourage younger doctors to work in primary care, including through providing the opportunity to undertake their clinical training in primary care settings. Israel should complement these efforts with making sure that the skills of older medical workforce remain current. Currently, requirements on continuing professional development are weak compared to other OECD health systems. The government and the Israeli Medical Association should seek to progressively introduce mandatory forms of quality assurance such as participation in peer-review activities, assessment of professional performance and continuous medical education.

At the same time, the nursing workforce is also becoming older and increasingly specialised. Currently, around 55% of nurses in Israel have at least a first degree, of which nearly one in five also have a higher degree. Recent efforts to promote further academic training by nurses may affect the pipeline of nurses for primary care that are willing to undertaking "practical" functions in community health care facilities. While the government's efforts to encourage the professionalisation of the nursing workforce is commendable, future policy should be sensitive to ensuring that there is a sufficient number of nurses with the necessary skills and a desire to work in primary care settings. In this context, re-introducing diploma qualified nurses should be considered as an option to help meet demand in primary care, particularly in high-need areas.

Clinics are held accountable through extensive data collection and management of their performance by health funds

A major strength of primary care in Israel is the extensive range of data that is collected by community health facilities on nearly the entire population. The basis for this has been electronic patient records that have

facilitated the collection of information on patients, and has led to the specification of a minimum data set called the Quality Indicators in Community Health Care (QICH) programme. The QICH includes basic patient demographics and thirty five measures across six key areas: asthma, cancer screening, immunisation for the elderly, children's health, cardiovascular health and diabetes. This data identify some risk factors for poor health (*e.g.* obesity), monitor the quality of care being delivered, track drug utilisation and measure selected treatment outcomes. Alongside the Quality and Outcomes Framework in the United Kingdom, the QICH is one of the most comprehensive programmes for monitoring the quality of primary care among OECD countries today.

The information collected as part of QICH provides the basis for health funds to review the performance of individual clinics. Most health care facilities receive feedback on their performance across key activities such as ensuring women of the appropriate age range receive breast cancer screening, through to ensuring that patients with diabetes registered with a particular practice have their blood glucose levels monitored regularly and that follow-up action is being undertaken where problems arise. For example, indicators collected in community care suggest that Israel delivers high-quality care for diabetic patients; more than 92% of diabetic patients had their blood glucose level measured in 2009, with comparable rates for blood pressure and cholesterol checks. While the two major health funds (Clalit and Maccabi) periodically set internal targets for clinics, these targets are rarely backed by significant financial incentives. It is likely these two funds can utilise their superior financial clout to drive health providers to improve performance more effectively than the smaller plans may be able to. Evidence of improvement across key indicators highlights that monitoring and feedback is a useful force in driving improvements in the quality of care.

Nonetheless, there is much that can be done to improve the QICH's ability to steer improvements in the quality of care. As a start, Israel should expand the number of domains covered to include major chronic conditions such as chronic obstructive pulmonary disease, heart failure and mental health. A more sophisticated direction for future development would be to develop patient-focused measures that draw on multiple indicators, such as reporting a wide range of other chronic conditions experienced by patients with diabetes. This will be increasingly important as the number of people with more than one chronic disease increases.

Improving quality of care in hospitals

Israel's hospitals ought to do more on quality of care, beginning with better monitoring

Unlike the situation in primary care, it is difficult to find public information on the quality of care that patients are receiving in hospitals. The extent to which data is collected varies dramatically by hospital. Where some major tertiary hospitals have comprehensive monitoring and improvement activities, these are more likely to be led by motivated individuals (both professionals and managers) rather than be part of a system-wide approach to raising performance. In the absence of data, there have been regular reports of crowded hospitals and instances of beds located in corridors. Israel also has the highest acute care bed occupancy rate among OECD countries, with hospitals running at 96% occupancy on average over 2009. This was significantly higher than the average of 76% among the 25 OECD countries which reported data, and higher than the 85% level that is broadly considered to be the limit of safe occupancy in the United Kingdom, Australia and Ireland. Concerns over shortfalls in the quality of care in hospitals have often been voiced by Israeli experts, particularly over hospital acquired infections – an example of one of the consequences when safety is not sufficiently prioritised.

The discipline of measuring performance and then using this to encourage improvement that has been successful in primary care should be brought to bear on the hospitals sector. The government has recently embarked on a project to improve quality indicators for hospitals; however it ought to be more ambitious and rolled out more quickly, given the expertise on quality measurement available in Israel. Hospitals should have access to data on how they compare and be held accountable for common quality measures – such as infection rates, patient safety and indicators of clinical quality – that can be used to direct improvements in care. Hospitals should also be encouraged to develop their own programmes to foster a culture of quality improvement amongst their staff. This should be implemented alongside the government's current path of rolling out the Joint Commission International-based accreditation model, as it provides scope to actively support hospitals in developing better processes for quality of care than the "inspectorate" model used today. If required to urge change, the government should mandate key priorities and a minimum data set for public reporting.

Making data more readily available and portable across care settings

Making the data collected today publicly available allows more scope for competition between funds and providers to occur on the basis of quality

Israel may not yet have exploited the full potential of transparency to drive improvements in the quality of care. While Israel's health funds have developed a capacity to use indicators on quality of care to encourage performance improvement, this is largely a closed door process today. In private discussion with funds, a particular health facility can compare how it performed against other facilities within their fund. This may be useful for encouraging improvement within a fund, but limits comparisons to the larger group of facilities across the country. Given the significant differences in the size of health funds, facilities working with Clalit and Maccabi are likely to be able to compare themselves against a much larger group of peers than those working with Leumit and Meuhedet. The experience in other OECD countries such as the United Kingdom, Korea, the Netherlands and the United States suggests that being able to compare performance relative to their peers (and competitors) can motivate the management of health facilities to improve quality of care.

Until recently, patients in Israel have little basis on which to make informed choices should they wish to do so. Many within the Israeli health system have argued that publishing quality of care indicators would lead to consumers making skewed assessments of performance, as these indicators do not provide holistic measures of good quality health care. It has also been argued that the four health funds have highly diverse patient populations, which makes it difficult to meaningfully compare between health funds. Other sections of the clinical community and administrators of the health system argue that this information provides an insight into the efforts of providers. They also argue that health funds are big enough that inter-fund comparisons would be worthwhile indicators of performance across the system, even if it reflects differences in patients' health across the four funds. Evidence from the United Kingdom suggests that a small group of informed consumers can seek to make decisions about which facility they go to on the basis of quality of care information. Even if a large number of patients did not access this information, the prospect of consumers being able to move with their feet is likely to enhance the potential for the management of health facilities and health funds to consider quality as a dimension in which they compete.

Information exchange and co-ordination between primary care and hospitals is surprisingly weak and ought to improve

Given that Israel's health funds finance the full range of a patient's health care services, it is surprising that poor co-ordination of care between primary care and hospitals is too often the norm in Israel today. While patients within primary care have an electronic medical history with their key health information, results of diagnostic tests and their recent use of health services, these records do not extend to hospitals often enough. Poor information exchange between primary care and acute care is likely to mean that hospital doctors do not have medical histories for patients, and cannot benefit from the judgments and observations of their counterparts in the community. Similarly, primary care is not able to work as effectively as it could to ensure that the health professionals who have the most regular contact with patients are aware of their previous hospital treatments and their care requirements on discharge from hospital. This is particularly important for those living with diabetes, who are often more susceptible to multiple health conditions. As they require care from multiple specialists, those living with diabetes are likely to be relying on informal co-operation amongst health professionals, and find the extent of their complications and previous treatments not as well documented as it ought to be.

Improving information exchange between hospitals and primary care would help tailor care to a patient's needs. While efforts have been made in this direction (particularly, by Clalit, which benefits from its ownership of facilities) developing electronic medical histories that are portable across primary care and hospitals throughout the system ought to be a priority. Beyond this, health funds should seek to use their ability to contract with (or ownership of) hospitals to encourage co-ordination of care for patients, such as through obliging discharge information, planning and liaison with primary and social care.

Tackling health inequalities by acting on multiple fronts

The Israel population features a complex picture of health inequalities

Inequalities in health outcomes and access to health services have persisted in Israel for some time, but disentangling and addressing disparities in health is complex. The many dimensions of inequalities – socio-economic circumstances, ethnicity and geography – are often interconnected and mutually reinforcing. This makes it difficult to directly relate inequities to specific causes. At the same time, specific population groups also face health issues that are independent to other factors that cause inequality more generally. Israel's health policy makers ought to be commended for acknowledging these inequalities and making a range of efforts to address

them, although making serious inroads into addressing inequalities in Israel will require tackling the multiple axes of disadvantage within and beyond the health sector.

In general, Israelis who are not Jewish, live in the North or South, and those from other poor socio-economic groups are likely to suffer from poorer health outcomes. For example, the largest non-Jewish group in Israel, the Arab population:

- has a life expectancy that is four years lower than Jewish men and 3.2 years lower than Jewish women;
- is twice as likely to suffer from diabetes between the ages of 45 and 64 and experience diabetes at a younger age;
- is more likely to suffer from hypertension, a heart attack or a stroke.

While differences between Jews and Arabs are likely to account for a significant share of inequalities, disparities also exist within the Jewish population, with mortality for Jews born in Asia, Africa and Europe up to 70% higher than among Israeli-born Jews and with. Poorer health outcomes often reflect broader economic inequalities in Israel. For example, poorer (generally Arab) families are likely to be concentrated in more peripheral areas in the North and South, where access to services is more difficult than in major centres. There are also pockets of poverty concentrated among Ultra-Orthodox Jews, who often also have distinctive health behaviours.

Poorer Israelis are more likely to use health services. While this reflects a reality across almost all OECD countries – that the poor are more likely to be sick and more likely to need health services – meaningful gains have also been made in improving access amongst the poor. For example, poor patients are as likely to purchase drugs after cardiac surgery, and those among the poor who have diabetes are likely to have similar blood pressure and low-density lipoprotein (LDL) cholesterol control than their higher-income counterparts. However, infant mortality rates are high among Arabs and poor Israelis. Poorer Israelis are more likely to struggle with blood sugar control and cholesterol control following heart surgery. The prevalence of diabetes is almost five times higher among lower socio-economic groups. They are also likely to have lower uptake of mammography and flu vaccination, even when these are covered by health insurance.

This suggests that factors such as cultural norms and health literacy are likely to be affecting the quality of care for the poor, calling for action on multiple policy fronts. Critically, while health can play a significant role, making serious inroads into inequalities experienced by many of these people will require tackling the underlying dimensions of poverty – such as

low incomes, poor housing, shortfalls in basic infrastructure and a lack of transport – in order for health services to make a lasting difference.

With commendable efforts to date, further action should focus on making services more culturally appropriate, strengthening efforts on prevention and improving data on inequalities

Efforts have been undertaken to overcome the cultural factors and language barriers that often limit disadvantaged groups from getting the most out of health services today, but more could be done. The government's recent efforts to direct health funds and providers to deliver information and advice in multiple languages is a welcome start, but whether it is faithfully implemented remains to be seen. More substantial measures can also be pursued, such as up-skilling physicians and practice nurses in dealing with health inequalities in their practice and delivering culturally appropriate care, and encouraging the development of culturally sensitive clinical guidelines. Israel has already sought to establish community health workers, particularly those with interpretation skills, to help provide a "link" to worthwhile health care services for specific populations. Israel's local governments, many of which are already involved in preventative health care, provide an ideal platform to facilitate a further expansion of such services. In the longer term, increased efforts should be undertaken to strengthen the recruitment of medical health professionals from local communities and a diverse range of cultural backgrounds.

While there have been successes and consistent effort to date, preventing disease in Israel could be improved and better targeted to the most disadvantaged groups. In recent years, the government has undertaken efforts to reduce salt and sugar intake in industrial food products, improve the labelling of products with low nutritional value, develop public infrastructure that encourages physical activity and improve awareness of good lifestyle habits. This has been undertaken with the co-operation of local governments, health funds, schools and local communities, providing a worthwhile example of how a multi-pronged prevention strategy can be built to tackle chronic disease. However, a number of key risk factors for chronic disease and poor health exist amongst more disadvantaged groups in Israel. Smoking prevalence amongst Arab men is close to double rates for Jewish men and rates of obesity rates among Arab women are one and half times higher than among Jewish women. Smoking, diabetes and obesity are usually major risk factors associated with cardiovascular disease, one of the main causes of death in Israel. Efforts to roll out highly cost-effective services such as smoking cessation and obesity reduction programmes for low socio-economic groups across the system could help improve health.

Better information on the multiple dimensions of inequalities in Israel could also help improve the targeting of current and future programmes to those most at risk. Israel currently relies on a crude measure of disadvantage that identifies individuals as "low socio-economic status" on the basis of their entitlement to income support (such as unemployment benefits, pensions and family supplements). Moving beyond this categorisation and making quality indicators available by key dimensions of inequality such as geography, language and religion would help provide a richer picture of where disadvantage concentrates. This is likely to be a considerable task involving further recording or matching health information to other social data held by the government. In the short term, disaggregating quality information that is already being collected by region would help better map the geography of disadvantage than is possible today and help pinpoint which areas have room for improvement.

Health services ought to be located closer to those who need them most

Today, the north and south of the country are home to one third of the Israeli population, half of the Arab population and the majority of the country's poorest and sickest persons. At the same time, the availability of primary, community and hospital care services is much poorer in the North and the South compared with other parts of the country. To a large extent, these reflect differences in the distribution of health services between major cities and other areas that exist across other OECD countries. Nonetheless, differences in the availability of health workers are large given the small size of Israel when compared to other OECD countries with significantly more dispersed populations. For example, Jerusalem and Tel Aviv benefit from 16.4 and 18.4 health care staff per 1000 workers compared to 11.2 and 10.0 health care staff per 1 000 workers in the North and the South respectively. As a consequence, health services in peripheral areas face high demand, complex cases and stretched resources.

While the Israeli Government has undertaken worthwhile steps to address this, there is potential to do more. The introduction from 2012 of a remoteness factor into the formula for allocating public health insurance funds to the four funds ought to reward health funds with populations living in more peripheral areas. The challenge will be to ensure that the health funds in question channel these resources towards their more needy populations. A forthcoming review of the capitation formula ought to consider the utility of introducing new variables that reflect determinants of health care need, such as morbidity, mortality and socio-economic differences across the country. The government can also extend efforts to steer where resources are directed. Some steps have been taken through initiatives to boost capacity outside of major centres, such as through a new

medical school in Galilee in the North, efforts to allocate more new hospital beds to peripheral areas, incentives for development of health promotion programs amongst disadvantaged populations and financial incentives to attract health personnel to peripheral areas. In this manner, future capital planning ought to be skewed towards locating services closer to those who need them most.

The rising burden of patients' out-of-pocket expenditure can make access more difficult for the poorest

An emerging area of concern for equity in access to health care is the trend towards rising out-of-pocket costs. Israel now has the eighth highest out-of-pocket expenditure as a share of household consumption among OECD countries, accounting for 4.1% of final household consumption in 2009. These rising costs hit those on lower incomes hardest and can discourage worthwhile health seeking behaviour, with long-term consequences for health care use and outcomes. In line with findings from global evidence, Israeli surveys indicate that some of the chronically ill and poor have forgone medication or treatment in some circumstances. Increasing co-payments are not an equitable or efficient means of raising funds as they disproportionately fall on the sickest and poorest in society and can lead to patients forgoing both unnecessary and necessary treatments. Recent initiatives to remove user fees at mother and infant care centres and extend preventative dental cover for young children are positive steps. Similarly, ceilings on insurance and medicines costs help provide some protection from out-of-pocket costs that Israeli patients are likely to face. Policy makers should limit further increases in co-payments and consider the equity implications of decisions taken in the annual update of the insurance basket. The government should also monitor the efficacy safety net mechanisms and if needed consider expanding those to a wider range of households with lower incomes and high health needs. This would reduce the risk that patients needing care are dissuaded from accessing it.

Ensuring governance is equipped to drive quality

The government has less capacity to drive change than would be desirable to steer improvement

There is a high level of awareness of quality issues amongst the Ministry of Health, major health funds and health providers, even though differences of opinion exist on how best to achieve this. Israel's legislative framework for quality of care designates the Ministry of Health's role in supervising health funds and facilities to uphold the delivery of quality services as a patient right.

The Health Ministry has an eclectic range of tools at its disposal. The ministry grants licences to most health care facilities, inspects them and investigates complaints. Through enforceable "directives", the ministry can compel public and private hospitals to comply with certain procedures and it maintains regular dialogue with the four health funds on addressing gaps and improving quality. New regulations obliging reporting on quality indicators will add a new tool by which the ministry can use moral persuasion, and potentially, public opinion to help improve quality of care. However, between explicit sanctions and moral persuasion, it is debatable whether the ministry currently has the financial capacity and human resources to target shortfalls and elevate priorities.

A more fundamental challenge is the government's dual responsibilities. There is a significant tension in the Ministry of Health between its role as the regulator of the health system and the owner and operator of half the country's hospitals. The complexity of regular operational and management decisions relating to running public hospitals is often likely to dominate the time and resources of the ministry at the expense of developing and driving policy improvement for the system at large. There is also the potential that regulation for hospitals is too strongly influenced by the interests of its hospitals. While it would constitute a substantial reform and is likely to take a considerable amount of time, creating a Ministry of Health that can hold others in the system accountable for delivering high quality of care and that focuses on policy making could be a worthwhile reform.

Conclusions

Israel deserves credit for shaping a strong primary health care system. At a time when all OECD countries are grappling with more patients living with a chronic disease, Israel's organisation of primary health care services is geared towards supporting people who will live longer with more frequent health concerns. Nonetheless, several challenges remain in maintaining and improving the quality of health care in Israel. To guard what is currently best about Israel's health system, doctors and nurses will need to be encouraged to continue to choose a career in primary care. The quality of care in hospitals ought to be an area of focus, as should ensuring that different parts of the health system work to co-ordinate care for patients. Health policy makers deserve to be commended for making significant inequalities a priority, and ought to continue in the efforts to tackle inequalities, especially by resisting pressures to raise co-payments and strengthening targeted health promotion and prevention services for high-risk groups. Each of these challenges are significant in their own right. Taking steps to address them today will strengthen the health system's capacity to support Israelis in living healthier lives in to the future.

Policy recommendations for improving quality of care in Israel's health system

1. Strengthen primary care by:

- Expanding the number of areas covered in the Quality Indicators for Community Health programme to include major chronic conditions such as chronic obstructive pulmonary disease, heart failure and mental health.
- Over time, developing more patient-focused measures of quality of care that draw on multiple health indicators, such as the proportion of patients with diabetes who have had all their required annual health checks or the number of people living with multi-morbidities.
- Encouraging younger doctors to work in primary care by providing opportunities to undertake training in primary care settings.
- Re-introducing diploma qualified nurses to help meet demand in primary care and in high- need areas.
- Introducing mandatory professional development for doctors (*e.g.*, participation in peer-review, assessing performance and continuous medical education) as a condition of seeking professional re-certification.

2. Better assess the quality of care available in Israel's hospitals and drive improvement by:

- Establishing a quality monitoring programme in Israeli hospitals of the kind that exists in community care today and obliging public reporting of common quality measures for each hospital.
- Encouraging (or obliging) hospitals to develop their own quality improvement programmes.
- Continue the rollout of the new hospital accreditation model.

3. Improve the co-ordination of care for patients and exchange of information across settings by:

- Ensuring that electronic medical histories are portable across health care settings to support the transfer of information that can be used to help co-ordinate care.
- Using contracting between health funds and hospitals to promote co-ordination of care, such as through obliging discharge information, planning patient pathways and liaison with primary and social care facilities.
- Shifting towards public reporting of quality of care information across health funds to help inform the choices of informed consumers.

Policy recommendations for improving quality of care in Israel's health system
(cont.)

4. Further the current suite of worthwhile efforts to address the extent of inequalities by:

- Undertaking health-based interventions alongside broader efforts to tackle inequalities such as employment, housing, access to basic infrastructure.
- Systematically rolling out public health programmes that target health risk factors amongst disadvantaged groups, such as smoking amongst Arab men and obesity amongst Arab women.
- Ensuring that health funds and services are providing information and advice in multiple languages.
- Training physicians and nurses in dealing with health inequalities in their practice, developing culturally sensitive practice guidelines for providers and promoting community health workers. Over the long term, increasing efforts to recruit medical professionals from peripheral areas and diverse cultural backgrounds.
- In addition to remoteness, considering the introduction of variables that capture determinants of health care need, such as morbidity, mortality and socio-economic differences into the risk allocation formula.
- Limiting further increases in co-payments, and considering the equity implications of the annual update of the insurance basket. If necessary, expanding safety nets to a wider range of households with low incomes and high health needs.
- Making indicators available by key dimensions of inequality such as geography, language and religion to better map where disadvantage concentrates.

5. Improve the focus of the governance of the health system in driving quality by:

- Improving the government's capacity to target specific health priorities.
- Over time, better separating the government's role as both the owner and operator of half the country's hospitals and the regulator of hospital performance.
- Increasing efforts to share best practices between health funds, so that the smaller health funds have the ability to benefit from the quality monitoring and management expertise of larger funds.

Chapter 1

Quality of care in Israel's health system

This chapter provides an overview of policies and strategies to improve the quality of care in Israel's health system. It seeks to profile key quality of care policies and benchmark the extent to which Israel has deployed various policies that are commonly used across OECD countries to assure the delivery of high quality care. The chapter covers system wide policies such as legislative and administrative arrangements. It then profiles efforts to assure the quality of inputs into health care, such as education and training of the health workforce and accreditation of health facilities. The chapter then focuses on policies to monitor and drive improvements in the quality of care, which vary considerably in their maturity between hospitals and primary care. In general, Israel's approach to quality of care places considerable faith in collecting information and relying on dialogue between health care service providers and health funds to drive ongoing improvements in the services they provide.

1.1. Introduction

The principal focus of this chapter is to describe and benchmark Israel's policies to assure the delivery of high-quality health care. In doing so, the chapter will seek to profile:

- the governance and legislative framework for quality of care in Israel;
- whether inputs into health care – people, technology and physical infrastructure – are appropriately equipped to deliver high quality of care;
- key policies to monitor the quality of services delivered; and
- whether policies support the health system in driving continuing improvements in the quality of care.

This chapter (and this report) will outline the institutional architecture of Israel's health system only in so far as it is useful to understanding how it drives the quality of care. A broad overview of the structure and financing of Israel's health system is contained in Box 1.1. For more detailed information on the Israeli health system and previous reforms, the European Observatory's *Health Systems in Transition* report on Israel (Rosen and Merkur, 2009) is a useful source of information.

1.2. Context

Israel has high life expectancy and low levels of health care spending

Most OECD countries have enjoyed large gains in life expectancy over past decades, driven by improvements in living conditions, public health interventions and progress in medical care. Israel's life expectancy at birth of 81.6 years in 2009 is two years more than the OECD average (79.5 years). This was the fourth highest among OECD countries, alongside Australia and behind only Japan, Switzerland, Italy and Spain (Figure 1.1).

Israel spends less on health than many other countries in the OECD. Total health spending accounted for 7.9% of GDP in Israel in 2009, which was below the average of 9.5% among OECD countries. Health spending at this level of GDP ranked Israel as the eighth lowest spending country in the OECD. This ranking is similar when measured on a per person basis – where Israel's spending of USD 2 164 per person in 2009 (adjusted for purchasing power parity) was lower than the OECD average of USD 3 223 per person in 2009 (Figure 1.2).

Box 1.1. Overview of the Israeli health system

The framework for Israel's health system today was largely established in the 1995 National Insurance Law which ensures the provision of government-financed health insurance to all Israeli citizens and the right to enroll in any one of the competing health funds. Health funds are provided with a government subsidy for every enrolled patient, with most public funding sourced from payroll and general tax revenues.

Health funds play a central role in purchasing of health care services to the population, and in some cases, provide them. The largest health fund is Clalit, which covers 53% of the population and operates as a vertically integrated health care company. Clalit provides many of its services through community clinics and hospitals that it owns and operates and generally employs physicians and other health care workers on a salaried basis. The second largest health care fund is Maccabi, with a market share of 24% of the population. Maccabi primarily contracts with independent physicians and hospitals in financing the delivery of health care services. The two other funds, Meuhedet and Leumit, cover 13% and 10% of the population respectively and also largely contract with independent physicians and hospitals. The government is the major provider of hospitals in Israel, with the Ministry of Health owning and operating about half the nation's acute hospital beds. A further third of hospital beds are operated by Clalit and the rest are operated by a mix of profit and not-for-profit hospitals. Other than Clalit, health funds pay hospitals for the services they deliver through a combination of per diem charges and payments categorised by diagnostic related groups.

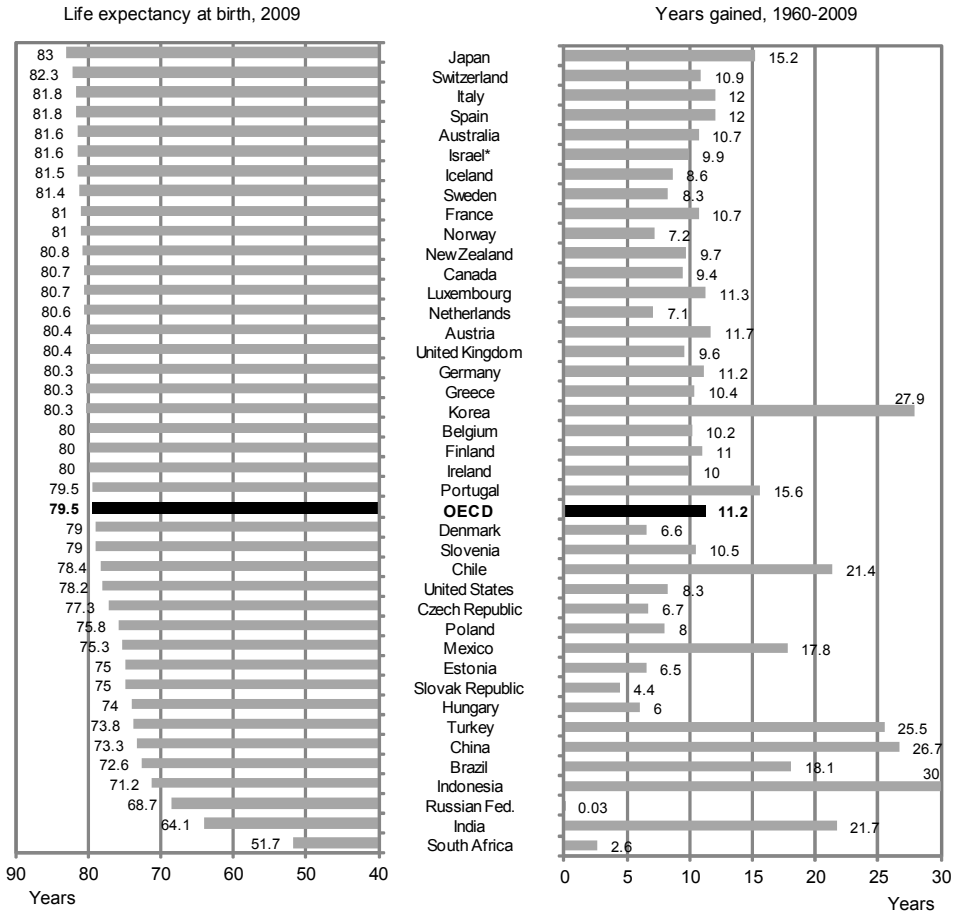
The government employs a number of budgetary controls on its health care system. At the highest level, the basic package of services is determined centrally by a professional committee which reviews and ranks new procedures and services and makes decisions based on overall budgetary constraints set by the Parliament. In addition, the government influences hospital budgets by setting caps on annual revenue to each hospital (though these caps can be flexible). The combination of these two controls provides the Israeli Government with significant influence over both the overall budget and some ability to influence the allocation of funds between hospitals and primary care. The balance of funding towards the cost of delivering the NHI's basic benefit package which is not provided by the government comes from privately financed sources: supplementary insurance and out-of-pocket payments.

Israeli citizens can and often do buy additional health insurance. The four health funds each offer supplementary voluntary health insurance to cover services not included in the NHI benefit package. Around 74% of the population currently holds this type of cover. In addition to this, a number of companies provide commercial voluntary health insurance products that cover around 35% of the population. It is estimated that some 32% of the population have supplementary health insurance from both health funds and by commercial insurers.

Relative to its population, Israel has slightly more doctors than most OECD countries. There were 3.4 practicing doctors per head of population in Israel in 2009, slightly above the average among OECD countries of 3.1 doctors per head of population. In contrast to doctors, the number of nurses relative to the population is significantly lower than most OECD countries. Israel's 4.5 practicing nurses per 1 000 population was nearly half the average among OECD countries of 8.4 practicing nurses per 1 000 population. Consequently, Israel's ratio of 1.3 nurses to physicians is the fifth lowest among OECD countries, ahead of only Chile, Greece, Italy and Mexico.

Source: Rosen, B. and S. Merkur (2009), "Israel: Health System Review", *Health Systems in Transition*, Vol. 11, No. 2, pp. 1-226, *OECD Health Data 2011* and Israeli Ministry of Health.

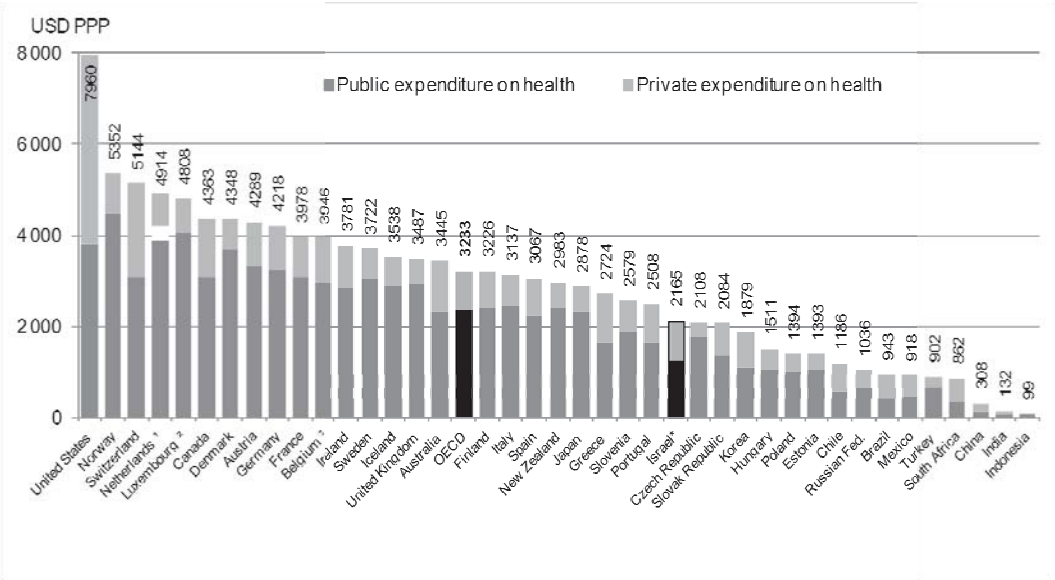
Figure 1.1. Life expectancy at birth, 2009 (or nearest year available)



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

Source: OECD Health Data 2011, DOI: 10.1787/health-data-en; World Bank and national sources for non-OECD countries.

Figure 1.2. Total health expenditure per capita, 2009 (or nearest year available)



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

1. In the Netherlands, it is not possible to clearly distinguish the public and private share related to investments.

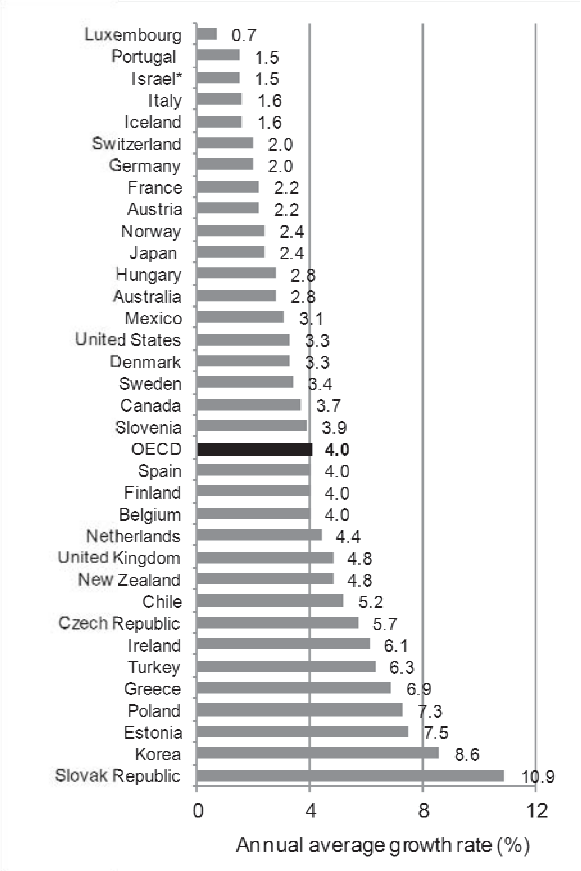
2. Health expenditure is for the insured population rather than the resident population.

3. Total expenditure excluding investments.

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

It is particularly remarkable that Israel has been able to maintain consistently lower growth in health spending over the past decade when compared to other OECD countries. While health expenditure per capita across the OECD has grown at an average of 4% a year between 2000 and 2009, Israel's spending on health per capita has grown at an average of only 1.5% a year (Figure 1.3). Over a decade when health systems have continually been under pressure to deliver more – driven by higher expectations, rising demands on services and advancements in medical technologies – Israel's health system has managed to contain growth in costs better than most. This is likely to reflect strong budgetary controls by the government, and to a lesser extent, the fewer demands of a relatively younger, migrant population.

Figure 1.3. Annual average growth in health expenditure per capita in real terms, 2000-09 (or nearest year)



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

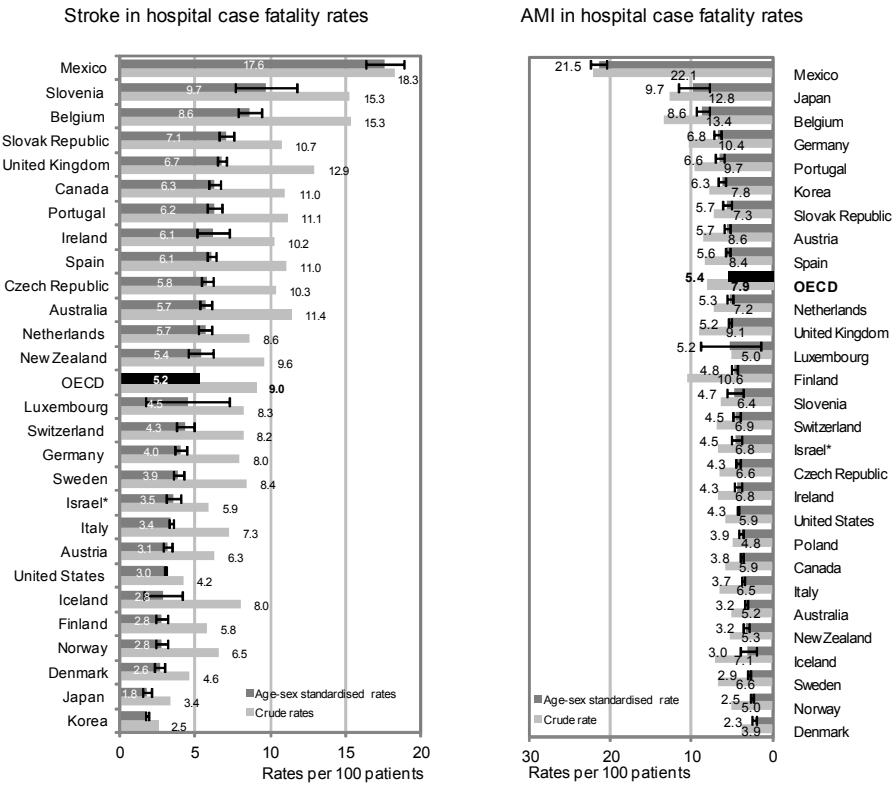
Source: OECD Health Data 2011, DOI: 10.1787/health-data-en.

Quality indicators for acute and primary care for Israel are in line with OECD averages

Israel's performance on quality of care indicators suggest that the health system is delivering outcomes that are in line with, and in some cases better than, the average across OECD countries. In the hospital setting, Israel's performance on two key measures is better than the average among OECD countries. In-hospital case fatality rates for acute myocardial infarction (AMI) are a useful measure of quality of care where most OECD countries have made significant progress in reducing mortality from

coronary artery disease over the past three decades. Much of this reduction is attributable to better health care. At 4.5 deaths per 100 patients (standardised for age and sex) in 2009, the in-hospital case fatality rate for AMI in Israel is lower than the OECD average of 5.4 deaths per 100 patients (Figure 1.4). Similarly, in-hospital case fatality rate after ischemic stroke is 3.5 deaths per 100 patients (standardised for age and sex), lower than the OECD average of 5.2 deaths per 100 patients (OECD, 2011). Along with most other OECD countries, Israel has made progress in gradually reducing case fatalities for AMI and stroke over the last decade. Yet with a number of countries – such as Italy, Iceland, Norway and Denmark – managing to achieve consistently better outcomes, it is likely that there is scope for improvements to be made.

Figure 1.4. Stroke and AMI in hospital case fatality rates in Israel rank among the lowest in OECD countries

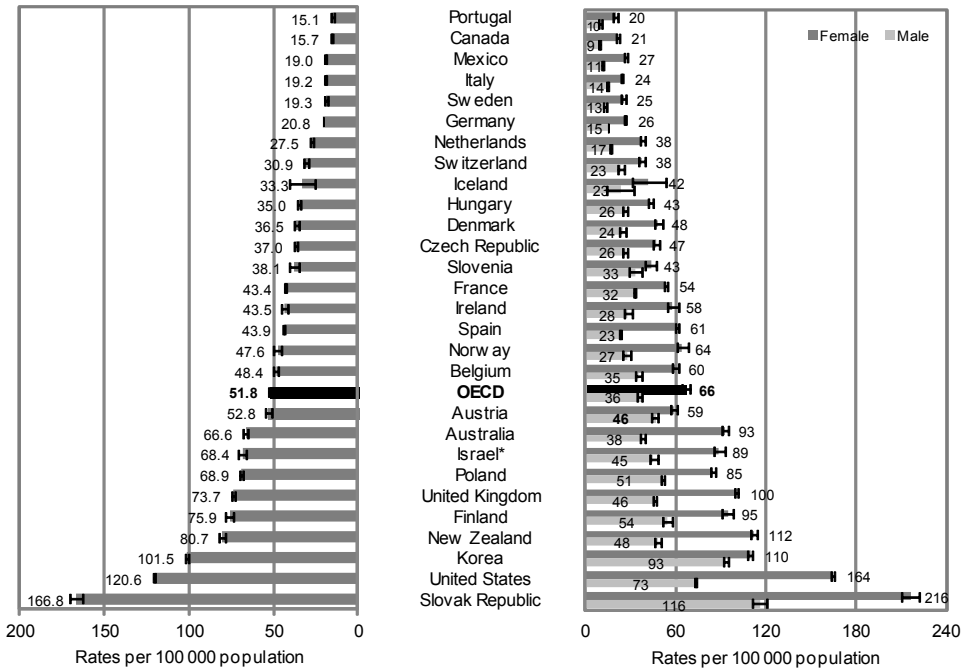


* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602.*

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

Indicators of the quality of care in primary health care services suggest a mixed performance across chronic conditions. Good management of chronic conditions such as asthma, COPD (chronic obstructive pulmonary disease) and diabetes in primary care settings can often help reduce exacerbations that lead to hospitalisation. Therefore, hospital admission rates for these conditions serve as a proxy for the quality of a country's primary care system. With 64.8 hospital admissions per 100 000 population in 2009, Israel's admissions for asthma were higher than the OECD average of 51.8 and the seventh highest among OECD countries reporting data (Figure 1.5). Israel also had the seventh highest number of hospital admissions for COPD, with 234 admissions per 100 000 population, compared to an OECD average of 198 hospital admissions per 100 000 people (OECD, 2011).

Figure 1.5. Asthma admission rates in Israel higher than the OECD average



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

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

1.3. Profiling policies on quality of health care and their impact

Quality issues have gained importance across OECD countries in recent years as governments and the public increasingly focus on what is being delivered in exchange for major public investments in health care. Policies to address quality of care can not only help improve patient outcomes, but can often do so at similar levels of investment. As with other OECD countries, Israel has been facing the challenge of improving quality within a tight budgetary environment for some time. This chapter seeks to profile the key policies and strategies that Israel has used to encourage improvements in the quality of health care. The description of policies in this chapter is structured according to a framework for categorising quality policies (detailed in Table 1.1 below).

Table 1.1. A typology of health care policies that influence health care quality

Policy	Examples
Health system design	Accountability of actors, allocation of responsibilities, legislation
Health system input (professionals, organisations, technologies)	Professional licensing, accreditation of health care organisations, quality assurance of drugs and medical devices
Health system monitoring and standardisation of practice	Measurement of quality of care, national standards and guidelines, national audit studies and reports on performance
Improvement (national programmes, hospital programmes and incentives)	National programmes on quality and safety, pay for performance in hospital care, examples of improvement programmes within institutions

Health system design: legislation and institutions

Israel's legislative framework provides a solid platform for policies to improve the quality of care

Israel's approach to supervision and regulation for quality of care has its legal basis three key pieces of legislation. At the highest level, the Ministry of Health has an authority to regulate health care service providers under the *1940 People's Health Edict* and the *National Health Insurance Law*. These laws provide the Ministry of Health with the ability to demand information from the four health funds and hospitals for the purposes of monitoring and control. In particular, the National Health Insurance Law specifies that the Ministry of Health has the ability to supervise the activities of the health

funds with reference to the "quality of services" provided by these health funds. In line with the practice amongst many OECD countries, these pieces of legislation provide a regulatory power over health funds and provider institutions that is broad and does not prescribe particular quality management practices.

It is through legislation on patients rights that the strongest basis for efforts to assure the quality of care can be found in the Israeli health system. Israel's *Patients' Rights Law* contains two key sections that provide the legislative basis for quality of care in Israel's health care system. Firstly, the law specifies that patients are entitled to get adequate medical treatment in terms of "professional level and quality, and in terms of an inter-personal relationship" (Section 1.3). Secondly, the law obliges health care providers, health funds and the Director General of the Ministry of Health to establish a "Control and Quality Committee(s)" in their respective organisations. The law specifies that their deliberations are not accessible to patients or the legal system, but that these committees have the ability to find that there is a case for taking lawful disciplinary measures against a health care practitioner. In addition to Control and Quality Committees, an Investigative Committee has been established to deal with patient complaints and exceptional events. Each medical facility is also expected to have an Ethics Committee that is responsible for dealing with patient grievances and informing members of staff on their rights under law. Studies undertaken of the implementation of the Patients' Rights Law suggest that the committee system has influenced providers to employ personnel with roles demanded under this law (Rosen and Merkur, 2009).

Israel's Ministry of Health sets directions to assure quality of care, but its role is constrained on several fronts

In addition to the supervisory role for health funds (as detailed above), the Ministry of Health has a range of other responsibilities that allow it to influence the quality of care. These extend to the licensing of health facilities, regulating the nursing workforce and emergency preparedness and response. Relatively recently, the ministry has established a Quality Assurance Division that is responsible for evaluating and promoting quality, leading national quality projects (such as surveys and studies) and monitoring clinical outcomes. The initial role of this division is to be a hub for the various other quality monitoring and assurance activities that the ministry has already been undertaking, and to undertake specific activities on monitoring quality of care along with other areas of the department or academic institutes (Table 1.2).

Table 1.2. Key quality of care activities undertaken by the Ministry of Health's Quality Assurance Division

Departments	Description of main topics	Description of their role
Quality Assurance Division	✓ Patient safety	This department accumulates all of the reports arriving from hospitals in accordance with public health regulations (death notices and adverse events). Data analysis from an organisational perspective enables identification of risk factors from a variety of sources in the health system, including human errors. The findings serve as a basis for the development of comprehensive, focused prevention plans in an effort to reduce the potential damage to the patient.
	✓ Quality survey	The department of Quality Survey is constantly monitoring processes in medical institutions. The department initiates periodic, planned quality surveys in selected areas. Each year several areas are surveyed at the national level, in hospitalisation and in the community, with the participation of the organisations relevant to the subject.
		The Public Inquiries and Complaints Department operates on two levels: 1. Individual handling of public inquiries and complaints falling under the responsibility of the Ministry of Health on matters concerning medicine, dentistry, requires under the Freedom of Information Law. 2. Managing a repository of inquiries and complaints received from the public at the Ministry of Health and all its branches, drawing system-wide and state-level conclusions from the findings.
	✓ Investigation committees	Investigation of quality management of care where there is suspicion of medical malpractice.
Medical Services Research	Hospital quality indicators	Since 2009, the Medical Services Research Department performs nationwide surveys of hospital quality indicators. The indicators are: post operative mortality, surgical site infection, re-hospitalisation, re-operation, mechanical complications.
ICDC	Israel Center for Disease Control	The center provides decision makers in the health system with up-to-date information in order to inform health policy and service planning. The center conducts health surveys, monitors infectious diseases, establishes registries for the various diseases, improves and maintains the records, writes publications on the population's health, conducts courses and trainings for students and doctors on public health, and provides information to various health professionals.
Hebrew University Hadassah & Israel National Institute for Health Policy Research	Community care quality indicators	These organisations draw on data provided by the four health plans to develop and monitor primary and secondary health care indicators and performance measures.

Beyond the capacity for surveillance and sanctions, the ministry has indirect levers to drive changes in the health system to improve the quality of care. A tool for the ministry is to use enforceable "directives" on specific topics that all health care providers must comply with. Through the Medical Councils that the ministry supports, it is able to maintain a dialogue on specific areas of clinical care (*i.e.* the National Council on Diabetes, as detailed in Chapter 4) and bring together health funds and service providers across the system to foster co-ordinated approaches to improving quality. However, beyond explicit sanctions and moral persuasion, the ministry lacks an independent capacity to redirect resources within the system to target shortfalls (as discussed in Chapter 2).

The Ministry of Health has a dual role as the operator of nearly half the country's hospitals and as a principal regulator for the health system at large. This places the ministry in the difficult position of being engaged in both operational and management decisions relating to public hospitals and then assessing the direct consequences of these decisions. The complexity of operational and management decisions relating to running public hospitals is likely to demand significant time and resources in the ministry, along with its responsibilities for developing and driving policy improvements for the population at large. Indeed, the ministry is largely responsible for public health programmes to address nationwide issues, and in doing so also has to maintain relationships beyond simply health providers, with organisations such as schools, workplaces and local governments. There is likely to be a tension between the ministry's policy and regulatory responsibilities that could constrain its scope to focus on improving the quality of care.

Inputs into health care

Israel's health workforce is well qualified but could do more to remains abreast of latest medical practices

There is currently a considerable difference between the standards and practices demanded of nurses in Israel under the supervision of the Ministry of Health and that which is demanded of doctors by the Israeli Medical Association. Nurses can practice at one of three levels of qualification – registered nurses, practical nurses and midwives. To attain one of these levels of qualification, they must undertake professional training in an institution accredited by Israel's Chief Nursing Officer and a pass a state licensing programme. Today, around four-fifths of Israel's nurses are registered, with half holding an academic degree in nursing. Nurses can also specialise through training in one of 13 advanced specialities, which following licensing examinations provides scope for extending the boundaries of professional autonomy within that specialised

area of practice. The accreditation of training institutions, conducting examinations and setting performance standards for nurses is undertaken by the Ministry of Health, which also conducts quality audits to verify standards of professional practice within the nursing profession.

In contrast to nursing, there are few means of continuing assessments of practice amongst doctors once they have gained their professional status. The Israeli Medical Association has the predominant influence in recognising doctors as medical specialists, once they have an approved medical degree and meet the requirements of their chosen specialty. These requirements entail an internship programme (generally of four to six years on average) and various examinations, both of which are set by the relevant specialist organisation. The Israeli Medical Association's Scientific Council must approve a person before the Ministry of Health issues a specialist certification.

Beyond these requirements to become a doctor, Israel currently has weak requirements on continuing professional education amongst the medical workforce when compared to other OECD countries. There is currently no professional re-certification process in Israel. A number of non-obligatory courses are provided by various organisations such as scientific associations and vendors of health and medical products, but these are not obligatory to maintain medical practice. To date, the government and the medical community have not established a procedure of re-certification for the significant number of doctors that have migrated to Israel over the past two decades. At the same time, Israel has a comparatively older medical workforce than in many OECD countries. To ensure that the skills of its doctors remain up to date, the government and the Israeli Medical Association should seek to progressively introduce mandatory forms of quality assurance, such as participation in peer-review activities, assessment of professional performance and continuous medical education. This should be linked to the re-certification of medical professionals, as is increasingly becoming the norm across OECD countries.

Recent changes in the approach to hospital accreditation are worthwhile

Israel currently has two tier accreditation programme, through compulsory inspections linked to the licensing of medical facilities and a voluntary accreditation programme. The basis for assuring the quality of health care facilities in Israel is inspections by a team within the Ministry of Health, which is responsible for the licensing of all hospitals and health care facilities in Israel. These inspections are undertaken on a routine basis with a frequency of between three months to three years depending on whether the facility is a hospital, surgical clinic, dialysis facility or other type of facility

providing medical services. Each inspection is undertaken by a team appointed by the ministry that includes doctors, nurses and other professionals in charge of occupations such as physiotherapy, social work, occupational therapy, administration and finance. The Ministry of Health has undertaken more than 200 inspections over the last eight years.

The inspection process has recently shifted from reporting on provider's performance to providing a score for each facility. The ministry currently scores facilities across around 30 domains, with a maximum possible score of 100. Most facilities receive a score of between 80 and 90. Scoring was introduced recently to provide a uniform basis for benchmarking across the various inspections which could then be made available to the public through the Ministry of Health's website. Each facility is provided with a report following the inspection and required to address its comments, make necessary changes to their facilities and be able to account for these changes. Prior to the introduction of scoring, these reports did not contain scores. In cases where severe malpractices are identified, the Ministry of Health has the capacity to issue a warrant specifying a limited duration of time during which the provider must address deficiencies and make itself subject to a re-evaluation. In some cases, the Ministry of Health can also seek an immediate suspension of practice or a total closure of a facility (or ward) where it believes life endangering conditions are in place.

In recent years, efforts have been undertaken to progressively implement the Joint Commission International (JCI) model of accreditation. Currently, five government hospitals are in the final stages for JCI accreditation, which shall be extended to cover all 11 government hospitals by the end of 2012. Seven Clalit hospitals have already been accredited using this method and a further three are anticipated to be added in the near future. One Maccabi hospital has been accredited and a one other Maccabi hospital is seeking accreditation (Ministry of Health, 2012). Given the cost entailed with implementing JCI accreditation (which is currently conducted with the support of JCI), this new model of accreditation is currently a voluntary process. The gradual roll-out of JCI-based accreditation is a positive development for quality of health care in Israeli hospitals. The JCI model adopts less of an "inspectorate" style approach, than the process currently undertaken by the ministry, and places a focus on working with hospitals to help them improve quality. The Ministry of Health's intentions to continue to expand this model of accreditation is a worthwhile policy that holds the potential to support hospitals in adopting better processes for quality of care. Over the longer term, Israel should consider shifting the accreditation of all hospitals to its own best practice accreditation model, based on the JCI methodology, and adapted to meet the country's unique requirements (*e.g.* emergency preparedness).

Health system monitoring and improvement

The use of clinical practice guidelines varies considerably across Israel's health system

The development and use of clinical practice guidelines is fragmented, likely reflecting differing views amongst health care purchasers and doctors on the role of clinical guidelines in Israel. The various professional organisations associated with the Israeli Medical Association are the principal developers of clinical guidelines in Israel. These guidelines are usually developed in compliance with evidence-based medicine principles. Some of these guidelines also refer to cost-benefit analysis, but these forms of assessments are more often undertaken under the auspices of the government's process for inclusion of medications and services in the annual health care budget. In a small number of cases, the Ministry of Health will develop and publish guidelines, particularly when the use of a certain technology included in the basket ought to occur within specific circumstances.

There are several mechanisms for the dissemination of clinical guidelines amongst the medical profession. The Israeli Medical Association informs its membership through booklets and through their website. Individual health funds distribute guidelines to physicians employed by (or contracting with) their funds and may even provide internal guidelines of their own. In recent years, the Ministry of Health has become more proactive in the dissolution of clinical guidelines, by compiling guidelines across the various national councils with which it consults. In limited cases, these guidelines are may include recommendations on appropriate clinical practice.

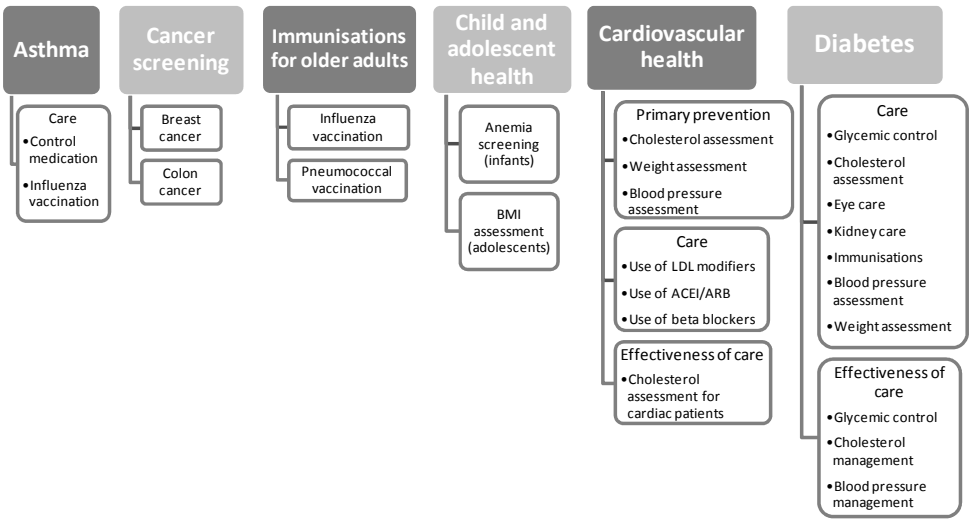
How clinical guidelines are used within Israel's health care system is likely to vary considerably across health funds, medical facilities and be subject to the awareness and initiative of individual doctors. While health funds and the ministry may seek to provide advice to encourage the adoption of certain guidelines, there are no systematic policies linking actual medical practice (or payment for medical practice) to the adoption of specific guidelines. Health care funds are more likely to collect data on process or outcome indicators of physician performance (as detailed in the following section) rather than seek to measure compliance with various recommendations detailed in clinical guidelines. To the extent that health funds and individual health care facilities monitor the appropriateness of pharmaceutical prescriptions, this is more likely to be driven by concerns over controlling costs than in appropriateness of medical practice. Indeed, the adopted approach of monitoring processes and outcomes is likely to reflect contested views within Israel's medical community over whether guidelines can be instructive for patients who have multiple health conditions and concerns that guidelines could become a means to constrain clinician autonomy.

Community-based health care facilities have developed an advanced model for monitoring the quality of health care in Israel

The community health care sector in Israel has one of the most sophisticated programmes for collecting data and monitoring the quality of care across OECD countries today. The focus of these activities is Israel's National Programme for Quality Indicators in Community Healthcare (QICH), which is a voluntary programme adopted by the Health Ministry and undertaken by the National Institute of Health Policy Research and Hebrew University, Hadassah (having originated at Ben-Gurion University). The QICH's key objective is to provide information to policy makers and the public on the quality of community health care provided across the four health funds in Israel, it covers the nearly the entire population of Israel.

The QICH draws on data collected by health funds (based on uniform indicator definitions) for their health facilities across six key topic areas: asthma, cancer screening, immunisation for the elderly, children's health, cardiovascular health and diabetes (see Figure 1.6).

Figure 1.6. The National Programme for Quality Indicators in Community Healthcare is one of the most impressive examples of primary care data collection among OECD countries



Source: Manor, O., A. Shmueli, A. Ben-Yehuda, O. Paltiel, R. Calderon and D.H. Jaffe (2011), "National Quality Indicators Programme", Report presented to the OECD, Jerusalem (unpublished).

In total, the programme captures more than 35 measures of quality of care across three key domains of primary prevention, disease management and effectiveness of care delivered in community-based medical facilities. Data across these categories is available for the entire population according to age, sex and a proxy for socio-economic status and is audited at three levels: by health funds, programme directorate and external auditors. Since 2006, five reports on the quality indicators collected have been published, and the data included in these reports form the basis to assess the quality of community health care provided by the four health funds, identify risk-factors among sub-populations and evaluate the quality of care over time (see Jaffe *et al.*, 2012).

The data collected as part of the QICH is an important resource for quality improvement activities undertaken by health funds. Through their participation in QICH, all four health funds are able to draw on this dataset to make comparisons between their performance and the *aggregate* national performance for a particular indicator. This feedback provides a useful means for funds to benchmark their own performance and identify potential shortfalls in performance. The data provided to individual funds is not adjusted for the patient (and risk) profile of each individual fund in order to protect each fund's patient information. However, with only four funds across Israel it is likely that health funds have a sufficient corporate understanding of the profile of their patients relative to other funds to make judgements on whether this ought to account for discrepancies in performance. The two larger health funds (Clalit and Maccabi) also collect a broader set of indicators beyond those specified under the QICH, including data on health outcomes of their patients.

A survey of health fund managers suggests that the information collected as part of the QICH brings a management focus on improving the quality of care. The study by the Myers-Brookdale Institute (Rosen and Nissanholtz-Gannot, 2010) found that managerial meetings for health fund managers included a review of performance in quality indicators and that this triggered conversations on efforts that could be made to improve performance within particular facilities. Similarly, health fund managers reported that the introduction of quality information encouraged those working to support quality across the health fund take efforts to disseminate information on successful efforts undertaken by individual practices or regions. This suggests that having data can form the basis for an informed discussion about quality alongside other operational considerations that are often the focus of health service managers. At the same time, it is important to note that the survey suggested that there were significant differences between health funds when it came to managers engaging in quality improvement efforts beyond the QICH indicators, whether managers were shown data on their peers, the staff at fund headquarters devoted to quality improvement and

the emphasis given to reducing disparities across population groups. This suggests that while each of the health funds are involved in collecting information for the QICH, the extent to which they are using this data to drive broader improvements in the quality of care is likely to vary considerably.

The systemic collection of data on the quality of care in Israel's hospitals in its infancy

Israel has the highest rate of hospital bed occupancy among OECD countries. In 2009, Israel's hospitals ran at 96% occupancy on average over the year (OECD, 2011). This was significantly higher than the average of 76% among the 25 OECD countries which reported data, and higher than the 85% level that is broadly considered to be the limit of safe occupancy in the United Kingdom, Australia and Ireland. Israeli experts have often voiced concerns over shortfalls in the quality of care in hospitals, particularly over hospital acquired infections (see Box 1.2) as one of the consequences when safety is not sufficiently prioritised. In the absence of data, there have been media reports of crowded hospitals and instances of beds located in corridors.

In contrast to the well-organised programme for primary care, the collection of data on quality of care in hospitals in Israel has largely relied on the initiative of individual hospitals and funds. The extent to which hospitals collect data on processes and outcomes within their facilities varies dramatically by facility. While some major tertiary hospitals were able to demonstrate comprehensive monitoring systems for quality of care, other hospitals report that they do not have systems in place and that quality monitoring was undertaken at the initiative of individual departments and clinicians. With operational control of its own hospitals, Israel's largest health fund has sought to introduce a quality monitoring programme in recent years (Box 1.3), though this covers a subset of activities for hospitals accounting for about one third of the country's hospital beds. In spite of the skills of Israel's hospital administrators and the incentive for funds to assess whether individuals are receiving high quality of care in hospitals, there is a lack of information to improve the quality of care across all hospitals.

While several other OECD countries – such as the United Kingdom, Germany, the Netherlands and Australia – have had programmes to monitor and compare quality of care in hospitals for some years now, the Ministry of Health in Israel has only recently sought to establish a Programme of Quality Indicators for Israel's hospital sector. A project to commence the collection of quality indicators across public and private hospitals commenced in 2009 and led to its first publication of data in 2011 (see Box 1.4). This project represents the first system-wide attempt to report on quality measures for hospitals across the Israeli health system.

Box 1.2. Hospital-based infections

Media reports on shortfalls in the quality of care, particularly that of hospital-based infections, have been a regular occurrence in Israel, as in many other OECD countries. These reports are coincide with anecdotal evidence from hospital managers. Efforts to collect data in this area can suffer from the difficulty of having hospital staff report incidents and issues. Formally, all Israeli hospitals are expected to collect information on infections, including the isolation of patients, and report this to the Ministry of Health. This information is then provided to the public in yearly summary reports, without disclosing hospital identity.

A challenge for improving Israel's infection policies is a lack of standard policies and data to monitor whether hospitals are taking proactive efforts to prevent hospital acquired infections. In the absence of information available across the system on practices being undertaken at particular hospitals, one study on the compliance of hospital staff with guidelines for active surveillance of MRSA found that the compliance of medical and nursing staff with key actions was poor at one medical center. The study was conducted by reviewing the cases for patients admitted over the course of a particular year that had been affected with MRSA to see whether the appropriate screening processes were adhered to. This was supplemented by monitoring adherence to hand hygiene strategies. The study found that almost two-thirds of those who ought to have been screened for MRSA carriage were not, and more than two-thirds of those found to be carriers did not receive isolation treatment. However, despite these observations, rates of MRSA decreased continuously over the study period. Nonetheless, the study argues that deficiencies found ought to be addressed with a renewed focus on improving adherence to hand hygiene as well as other interventions to reduce hospital acquired infections.

While the results of this particular study may not be generalised to the hospital sector at large, such investigations of preventative actions and the extent of proactive monitoring by staff are often the mainstay of hospital quality programmes in many OECD countries. In some cases, the implementation of such programmes has been driven by governments and prominent purchasers through a National Patient Safety Programme.

Source: Ministry of Health (2012), "Response to the OECD Questionnaire on Quality of Care in Israel", Jerusalem (unpublished) and Zoabi, M., Y. Keness, N. Titler and N. Bisharat (2011), "Compliance of Hospital Staff with Guidelines for the Active Surveillance of Methicillin-Resistant Staphylococcus aureus (MRSA) and its Impact on Rates of Nosocomial MRSA Bacteremia", *Israel Medical Association Journal*, Vol. 13, December.

Box 1.3. Clalit's Hospital Quality Indicators Programme

As the owner and operator of a number of hospitals, Clalit has sought to establish a quality indicators programme for its facilities. Clalit's programme covers its eight general hospitals, two psychiatric hospitals, three rehabilitation hospitals and one children's hospital. Following extensive preparation, Clalit has developed a set of 22 quality indicators that seek to cover administrative functions as well as clinical quality improvement. Examples of clinical quality indicators include:

- Performance of PCI in patients with ST-elevation acute myocardial infarction within 90 minutes from emergency department (ED) arrival;
- Length of hospital stay after colectomy in patients with colo-rectal cancer, recurrent visits to the ED within 24 hours from discharge;
- Recurrent hospitalisation within 30 days after discharge from a psychiatric department;
- Proper rehabilitation programme for patients after cerebrovascular accident or femur neck fracture in rehabilitation departments;
- Examples of administrative QIs are: percentage of ICD coding of discharge diagnoses in the emergency department and proper documentation of treatment programme in psychiatric wards.

For each quality indicator, Clalit's management seeks to set a target, informed by international benchmarks, trials and expert opinion. Hospitals are then scored on their performance relative to the target, which is then computed into a global score on a scale of 0-100. The relative weight of every quality indicator takes into account a number of factors such as the relevance, importance, patients' population size and the focus of stakeholders. The hospital and wards managers in the programme have access to software that enables them to see their performance and to compare their performance to the average organisational performance on a monthly basis. Having run this programme for five years, Clalit is now seeking to develop new quality indicators and enter new hospital departments into the programme.

Source: Clalit Health Services (2012), "Response to the OECD Questionnaire on Quality of Care in Israel", Jerusalem (unpublished).

Box 1.4. Israel's new Project for Quality Indicators in Hospitals

Israel's Project for Quality Indicators in Hospitals commenced in 2009. This was initially proposed as a voluntary project, but secured the early support of the four health funds and most general hospitals. The project will initially focus on general surgery and orthopedics, with intentions to expand by adding an additional clinical specialty per year.

Approach for collecting data

The project will seek to screen all general surgery and orthopedic wards three times a year to analyse the care provided and patient outcomes following their operation. The screening team includes an infection control physician, epidemiology nurse and specially trained nurses. In every screened ward, a senior surgeon reviewed all post-operative complications for each patient and patients were followed for 30 days from surgery.

The specially trained nurses in each of these teams use medical records to collect data such as demographic information, case-mix, chronic diagnoses, pre-operative preparation, intra-operative data, post-operative complications, reoperation and rehospitalisation, etc. Data on deaths are verified through linking hospital-based information to the population-wide national registry.

Data is standardised by reviewing 20% of randomly selected records from each of the nurse data collectors and comparing their completed questionnaires with original medical records.

Quality indicators collected

The quality indicators collected as part of this project include:

- Surgical site infection (30 days)
- Mortality (30, 60, 180, and 365 days)
- Bacteremia (30 days)
- Re-operation (30 days)
- Re-hospitalisation (30 days)
- Post-operative bleeding (30 days)
- Pneumonia (30 days)
- Urinary tract infection (30 days)
- Mechanical complications (30 days)

This project design is identical for all hospitals in Israel. Each questionnaire has been approved by a Professional Steering Committee and every variable has a definition. While this is a highly labour intensive process, in the future it is intended that standardisation of electronic medical records across facilities could help facilitate better data collection.

Feed-back to providers

The outcomes of the Hospital Quality Project are presented on an anonymous basis to the Executive of the Ministry of Health and results are published on the ministry's website. Specific outcomes are presented on a yearly basis to individual hospitals and to their department managers.

Source: Ministry of Health (2012), "Response to the OECD Questionnaire on Quality of Care in Israel", Jerusalem (unpublished).

There are a number of policies to improve the collection on quality of care data in hospitals that could be undertaken in Israel. As a starting point, coding a patient's diagnosis more comprehensively, such as through present-on-admission or secondary diagnosis coding, could help hospitals assist their most complex (and most frequent) patients. More broadly, providing hospitals with data on how they compare and holding them accountable for common quality measures – such as infection rates, patient safety and indicators of clinical quality – can be used to direct improvements in care. The Ministry of Health's ownership of hospitals provides useful means through which to establish such programmes, as it could specify common themes and a common basis for reporting. If required to urge change, the government could mandate key priorities for action and legislate a minimum data set for public reporting.

With common and better information, the approach to driving improvement that has been successful in primary care may be brought to bear on the hospitals sector. Hospitals could also be encouraged to develop their own programmes to foster a culture of quality awareness and improvement amongst their staff. Through its work on a new initiative for hip fractures, the Ministry of Health has demonstrated that it has the capacity to develop policies that seek use evidence and financing levers to encourage improvements in the quality of care (Box 1.5).

Box 1.5. An innovative use of financing to drive quality of care: Time-bound hospital payments for hip fractures in Israel

The timeliness of operations to correct hip fractures can make a substantial difference in health outcomes, with studies suggesting that correcting a fracture to the upper part of the femur (a bone connected to the hip) within 48 hours considerably improves survival and reduces complications. Using National Trauma Registration data, the government has sought to introduce a time-bound payment for hospitals to increase the number of hip fracture operations, whereby the full DRG payment is only made to hospitals if the operation is performed within 48 hours.

This policy was applied to all hospitals and a study of its effects was carried out by the National Center for the Study of Trauma and Emergency Medicine. The change in the payment method resulted in a 24% increase in the number of operations performed within 48 hours, a decrease in median waiting times to two days from three days and decreased mortality during hospitalisation by 29%. Studies are currently being undertaken to assess the mortality rate up to two years following the operation prior to the government's new policy, compared to the period following the introduction of the policy.

Source: Ministry of Health (2012), "Response to the OECD Questionnaire on Quality of Care in Israel", Jerusalem (unpublished).

A further strength of the Israeli health system is that the majority of patients have an electronic medical record within their community care facilities. While the adoption of records varies considerably in hospitals, efforts to increase the transferability of records from community care to primary care would provide clinicians with vital information to help improve the quality of the care they provide. It would also deliver useful information to monitor health outcomes across both community and hospital settings.

Israel has been improving systems to measure patient experiences

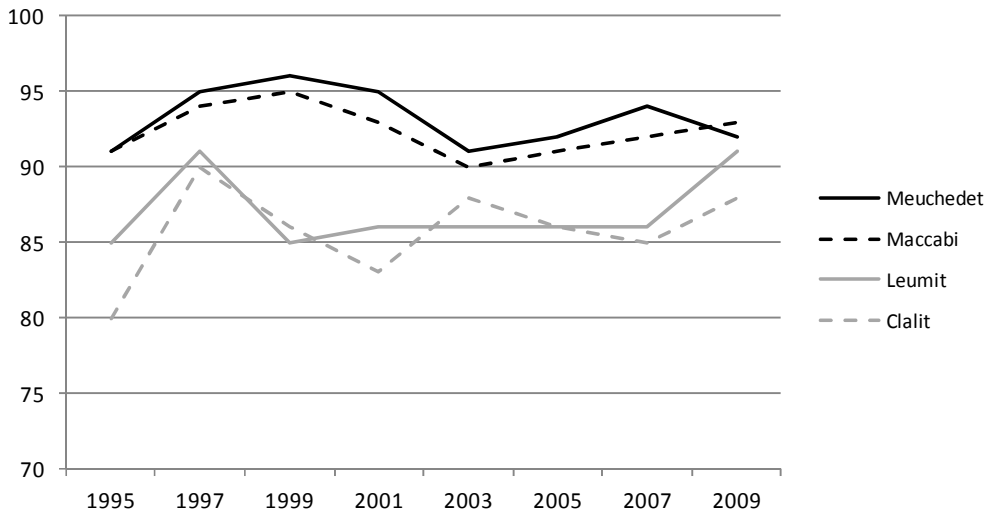
The measurement of patient experiences varies considerably across Israel's four health funds, which have taken the lead in measuring patient experiences with individual health care services. For example, for community health care services, the largest of the four health funds (Clalit) conducts a series of patient experience surveys including a large scale telephone survey of all members, periodical surveys of patients following a visit to a GP, focus groups of patients and an in-house ombudsman to respond to queries, complaints and suggestions. These activities are generally combined with Clalit's other data collection and aggregated for distribution to clinical staff and their managers. Similarly, Maccabi regularly conducts evaluations of its range of services using telephone surveys and focus groups. Maccabi is also deploying evaluation methods using the internet (using patients and physician panels) and cellular telephones to evaluate the quality of services immediately after they are provided (Ministry of Health, 2012). As with other information on quality of care collected by or on behalf of the funds, data on patient experiences are not distributed beyond health funds. In addition, the Ministry of Health also operates an ombudsman for complaints related to health care facilities and health funds.

At a system-wide level, the government and the four health funds finance a national survey on the performance on of health care services from the perspective of patients. The Myers-JDC-Brookdale Institute has been undertaking this biennial survey for the last 20 years. The survey polls a representative sample of around 2 000 Israeli adults and focuses on issues such as satisfaction with health fund services, the availability of health care, waiting times, preventative health care services provided to patients, the burden of payments, the time devoted by doctors and efforts undertaken by funds and health facilities on care co-ordination, among other areas. With a series of core and variable questions, this survey attempts to monitor patient experiences in the Israeli health system over time, across the four sick funds and across population groups. The national survey is supported by a steering group of key bodies in the health sector and is based on a questionnaire that is administered in Hebrew, Arabic and Russian.

The results of this survey often receives considerable media exposure, with a summary and detailed report provided to key decision makers and made available to the public through a website. The most recent survey indicates that the four health funds enjoyed high levels of patient satisfaction with their services overall (Figure 1.7), with substantial variation across funds (Brammli-Greenberg *et al*., 2011). While this survey represents a useful way of gauging overall levels of satisfaction across the system, it is a crude indicator of whether individual patients are satisfied from the care they received at specific occasions where they sought medical assistance. There is scope for the government to work with the four health funds to standardise the collection of patient experiences and publish more granular indicators of the experience of the users of health services in a particular year.

Figure 1.7. Satisfaction with Sick Fund Services appear to be high in Israel

Percentage satisfied/very satisfied



Source: Gross, R. (2010), "Using Patient Experiences to Improve the Health Care System in Israel" (presentation), Smokler Center for Health Policy Research, Myers-JDC-Brookdale Institute and Bar-Ilan University.

Is information and dialogue enough to drive continuing improvements in the quality of care?

Unlike many other OECD countries that have sought to use the influence of government over health care providers to direct priorities and

programmes for quality of care, Israel's approach has been to appeal to a provider's innate interest in improving the quality of care. Many OECD countries have often sought to use their legislative power, managerial control or budgetary influence to establish national or regional programmes that seek to simultaneously drive improvements across the system. These programmes generally focus on areas such as what information is collected, patient safety efforts, the use of checklists, guidelines and pathways, and linking specific outcomes to financing.

While the Israeli Government has the capacity to implement such programmes, it has more often chosen an approach based on collating data and encouraging dialogue on the basis of this data. Implicit in this strategy for trying to improve quality is the view that other actors in the health system – notably, health funds and health care facilities – have a desire to continue to improve the quality of care once they are provided with the knowledge and freedom to do so.

This approach has delivered improvements in quality of care within Israel's primary care clinics. At the centre of quality improvement efforts in primary care is a management relationship between health funds and the clinicians that work for these health funds or contract with them. As detailed earlier, information collected as part of the QICH forms the basis for a dialogue between health plan executives, their regional managers and individual clinicians on improving quality. That this very dialogue is reported to occur across the system is to the credit of policy makers, health funds and health providers who have sought to make this a priority. Such processes often do not occur frequently enough in other insurance-financed health care systems in the OECD.

Furthermore, it is of note that unlike other countries (such as Australia, the United Kingdom, France, Germany and New Zealand) that have sought to use pay-for-performance arrangements to seek to improve quality, Israel's health funds rarely employ significant financial incentives. The premise of the Israeli approach to quality improvement is to use information and the influence of management to drive improvements in performance. By providing information to managers and clinic staff, managers have the ability to motivate them to improve performance by appealing to their innate desire to deliver high-quality care. This is combined with the ability to make organisational decisions such as promoting certain managers and recognising high performing individuals or clinics (Rosen and Nissanholtz-Gannot, 2010). This is demonstrated in the case study of quality improvement efforts by Maccabi (Box 1.6).

Box 1.6. Driving quality improvement as a purchaser: A case study of Maccabi's efforts in primary care

Maccabi Healthcare Services is the second largest health care fund in Israel, providing ambulatory-based services to 1.9 million members in Israel. Services are provided throughout the country through relationships with 4 000 self-employed physicians and 1 000 nurses. The organisation is divided into five regions and 160 branches (the smallest administrative unit).

Maccabi's strategy to improve the quality of care consisted of:

- Senior leadership on the importance of quality of care;
- The development of "quality teams" in its central headquarters and local branches that trained staff throughout the organisation on awareness of quality of care issues;
- Introducing a performance management system with 25 indicators for good processes and patient outcomes in primary care, based on the National Programme for Quality Indicators.

In addition to these activities, Maccabi developed targets by region for performance on different quality of care indicators. Setting higher targets for units considered to be weaker was part of an active strategy to encourage management to invest more resources in areas where there was greatest scope for improvement. While the achievement of targets was not supported by significant financial incentives, outstanding units received recognition throughout the organisation. Similarly, all managers received information on the performance of different branches and regions and primary care doctors received performance data on their patients relative to their peers.

Maccabi argues that between 2004 and 2009, performance in key indicators of quality of care improved, with the following being observed:

- Breast and colorectal cancer screening increased by 44% and 146%, respectively;
- Poor HbA1C control decreased by 29% and control of LDL cholesterol increased by 96.2% and 90.3% among diabetic and cardiovascular disease patients, respectively;
- Influenza vaccination increased from 53% in 2003 to 62.9% in 2009, despite a decrease in 2006;
- Variance between regions and branches declined in the majority of clinical areas;
- Disparities between the general and targeted populations (the Arab sector, the poor) were reduced in some areas.

In addition to observed improvements in performance indicators, Maccabi managers believe that they have helped locate quality of care as more important concern within their organisation and actions. While such a programme has been operating in primary care, the quality of secondary care is not yet measured in a similar way on a regular basis.

Source: Maccabi Health Services (2012), "Response to the OECD Questionnaire on Quality of Care in Israel", Jerusalem (unpublished).

However, the dialogue between health funds and providers on quality improvement largely occurs behind closed doors due to restraints on the use of quality of care data between funds, and Israel may not be making the most of the information it collects. Currently, the ability of individual health facilities to benchmark themselves is limited to those within their fund (*i.e.* Clalit clinics can compare themselves to other Clalit clinics but not to Maccabi clinics). This may be useful for seeking improvements within clinics that a fund contracts with, but limits the ability of clinics to benchmark themselves to facilities across Israel. Only being able to compare where a clinic sits amongst a few peers may be less useful that having a sense of how it performs nationally, particularly when the geographic concentration of fund membership may result in clinics associated with Maccabi, Meuhedet and Leumit largely being able to compare themselves with other clinics in Tel Aviv, Jerusalem and Judea and Samaria respectively.

Experience from countries such as the United Kingdom, Korea, the United States and the Netherlands suggests that giving providers information on their performance on quality of care relative to others can often motivate the poorest performers to undertake improvements efforts. While primary health care clinics in Israel are likely to benefit from consistent dialogue with health funds on improving the quality of care, the discussion may often be about raising standards to the best they contract with in the fund and not necessarily the best in the country.

At a higher level, restraints on information are likely to mean that the four health funds are limited in benchmarking the performance of their clinics overall. Funds are currently able to compare the performance of their clinics with that of the market overall, but they cannot compare themselves to other funds. This reduces the incentive between the four funds to be the best performer. Behind this sits a larger question that Israeli policy makers, like many others in OECD countries, are grappling with – whether relying on the virtue of funds and providers are enough to drive quality improvement or whether consumer choice of provider based on quality indicators ought to be encouraged to propel providers' competition on quality.

A lack of public information on quality of care by different providers is likely to mean that consumers make decisions on which fund they choose (or which facility they choose) on the basis of perceived quality and other factors. Experience from other OECD countries such as Switzerland, the Netherlands and Germany suggest that the *quality of customer service* patients receive from their funds and financial cost are major factors driving patient decisions to switch between funds. Today, Israel has comparatively lower rates of switching between funds and high levels of patient continuity with a fund.

Israel's health funds and some providers have argued that the publication of a sample of specific measures on clinical performance is

difficult to interpret without clinical expertise and could provide a skewed picture of performance. There are also concerns about the extent to which data on processes and outcomes ought to be standardised to reflect the diversity of patients across the four health funds. However, other sections of the clinical community and administrators of health system argue that this information is useful – it provides insight into how much effort particular providers are making, and can be aggregated to compare differences across health funds.

A recent court ruling will oblige the publication of information on community care across Israel's four health funds from March 2012. This will mandate that all information is published for the public, including a comparison between health funds. This is a step in the direction of allowing consumers to make informed choices between health funds. In the longer term, Israel may wish to consider reporting quality of care outcomes at the level of the provider. Research on competition in hospital services in the United Kingdom has suggested that the prospect of a small number of highly informed patients acting on the basis of quality information can conduce management to improve quality of care for fear of even losing small volumes. Currently, Israel leaves little scope for patients to make informed decisions on the basis of quality of care outcomes, whether it is for choosing their fund or choosing a hospital. This could limit the potential for using market pressure and choice to encourage quality improvements in the Israeli health system.

1.4. Conclusions

There is a considerable disconnect between world-leading quality of care policies in Israel's community care sector and weaker than expected quality of care policies in place in hospitals. While there are variations across the country, the community care sector at large has developed a highly sophisticated model for monitoring and improving the quality of care. This is not mirrored in the hospital sector, where further efforts to specify the measurement of quality of care could in the future form the basis of the kind of quality improvement efforts that have served primary care well to date. Israel also has been developing systems to measure patient experiences. To date, Israel has used dialogue with providers informed by quality indicators as a main tool for stimulating quality improvements. This seems to be working well at community care level, yet performance in the hospital care sector is difficult to assess. An open question for the future is whether quality indicators ought to be used to encourage informed patient choices and thereby enforce more competitive pressures onto providers and funds.

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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

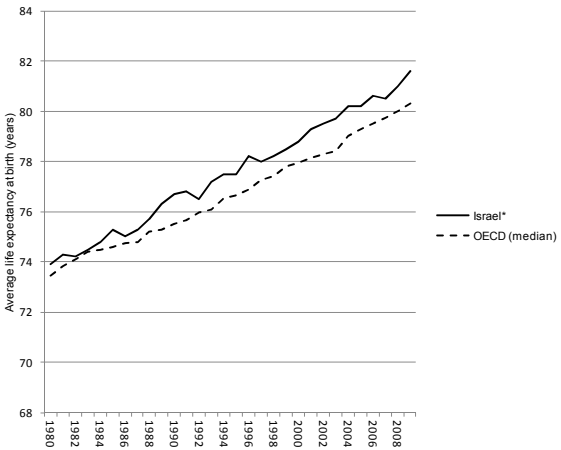
the management of long-term chronic conditions. In a number of health care systems, primary care is the first and most typical point of contact for the provision of basic health care, making it ideally situated to provide consistent and co-ordinated care over the life course of individuals.

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.

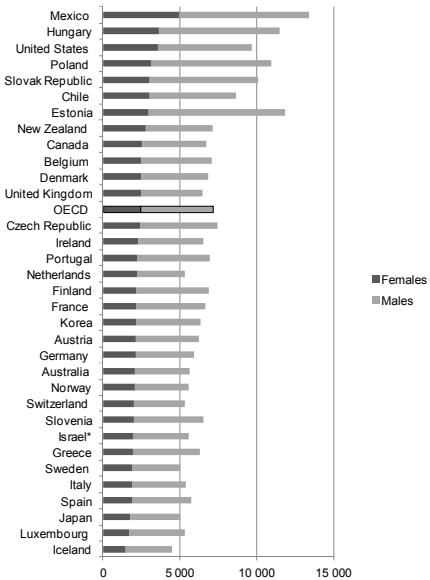
Figure 2.1. Life expectancy at birth in Israel is higher than the median for OECD countries



*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.

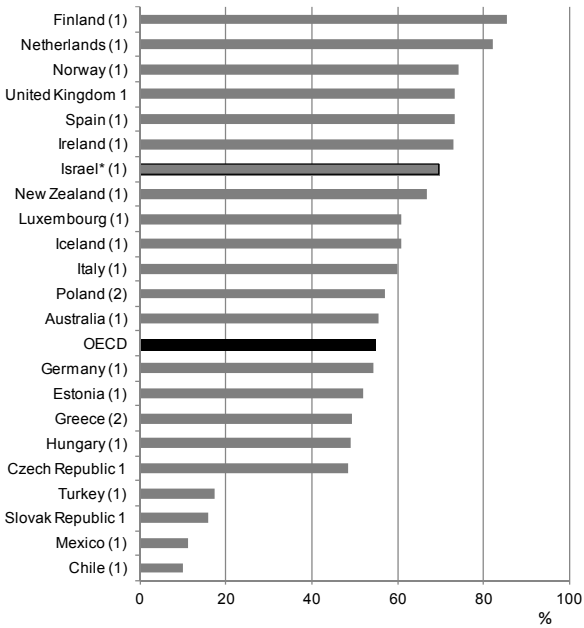
Figure 2.3. Female breast cancer incidence, 2008

* 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

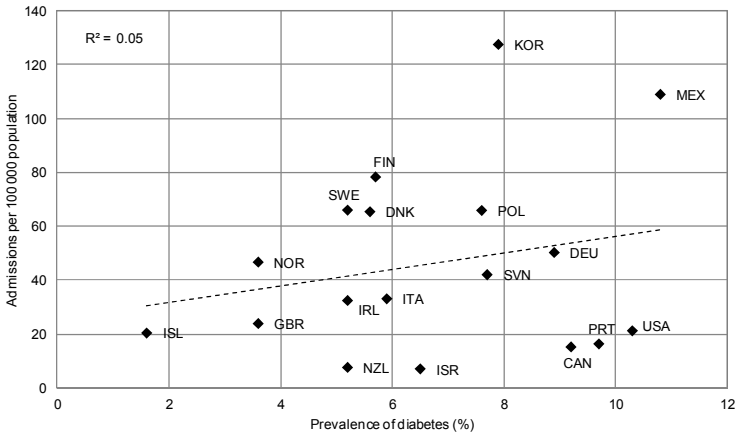
Potentially preventable admissions (PPA) for selected conditions provide an indication of the quality of the primary care system because appropriate management, support for self-management, and co-ordinated care across the service continuum can generally reduce the need for acute intervention. PPAs can 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%).

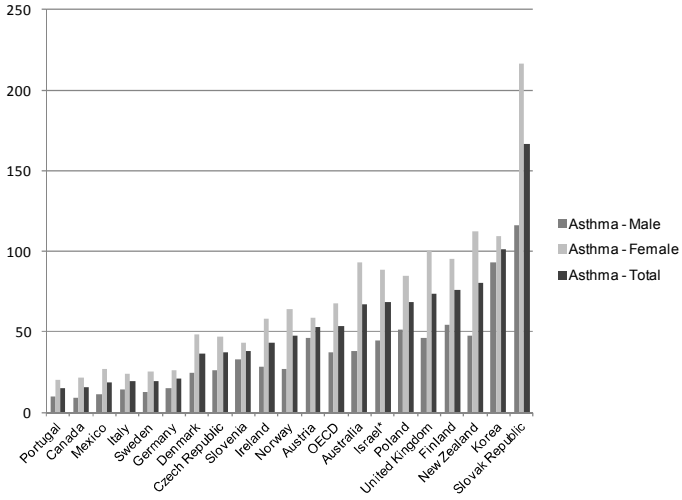
Figure 2.5. Hospital admissions for uncontrolled diabetes are below other OECD countries with similar diabetes prevalence, 2009



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.

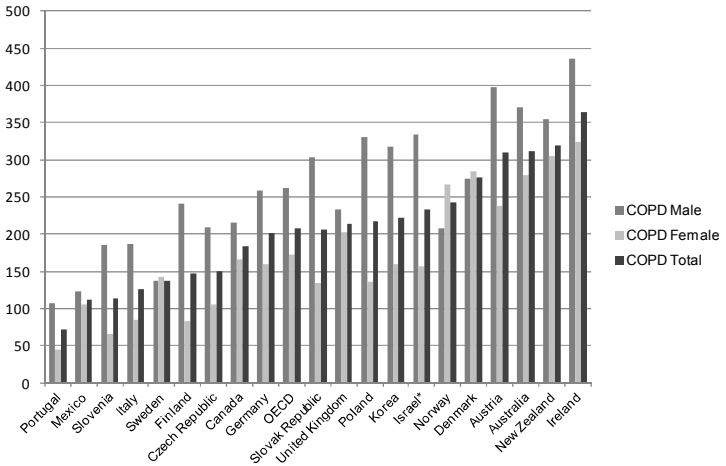
Figure 2.6. Potentially preventable hospital admissions for asthma in Israel are higher than the OECD average, 2009



* 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.

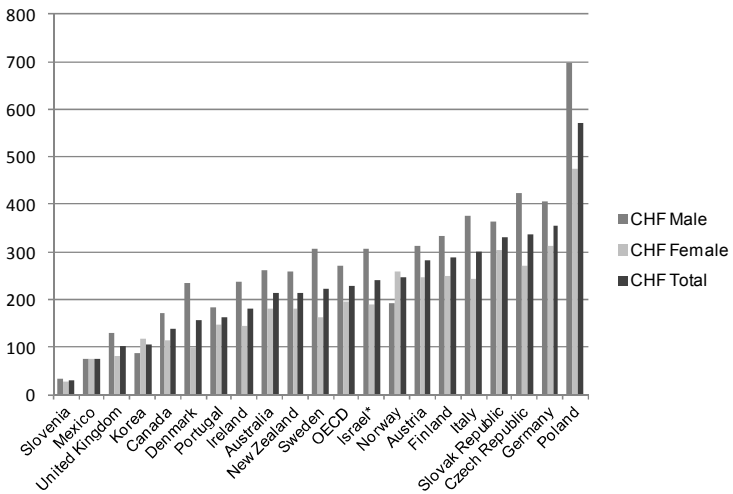
Male hospital admission rates for chronic obstructive pulmonary disease (COPD) in Israel are the fourth highest among OECD countries and a significant cause for concern (Figure 2.5). COPD is a preventable disease and smoking cessation is the recommended mainstay of effective primary prevention. Although 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.

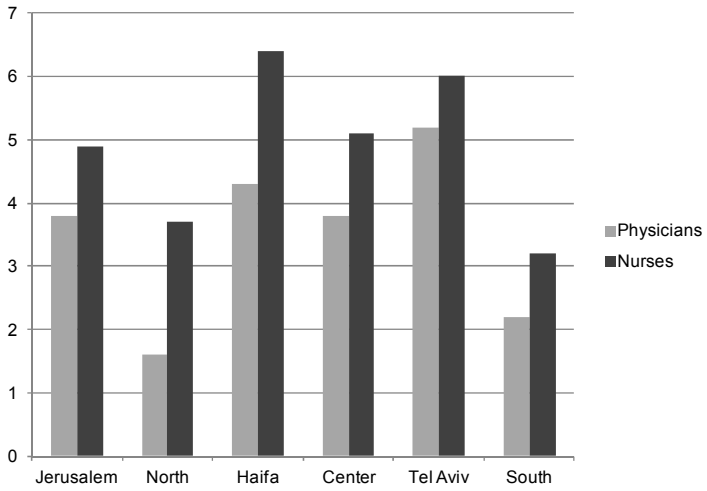
Reduced access opportunities for patients, especially those with special medical care needs, resulting from implicit risk selection could have damaging effects on health. Because areas with high health need are under-provided with specialist community services, there is also the potential for damaging 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.

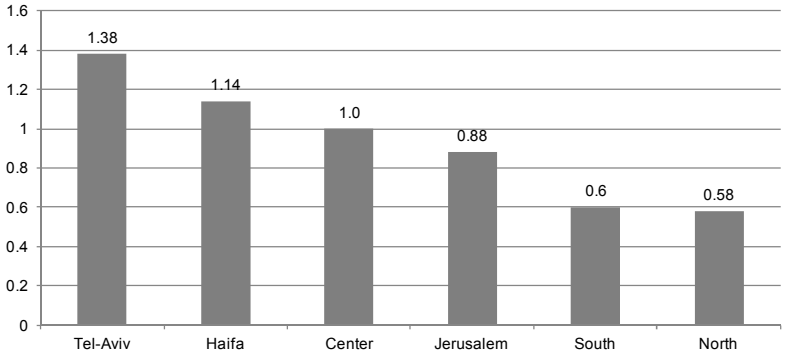
Figure 2.9. Deficits in health care manpower in the North and South relative to other districts

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

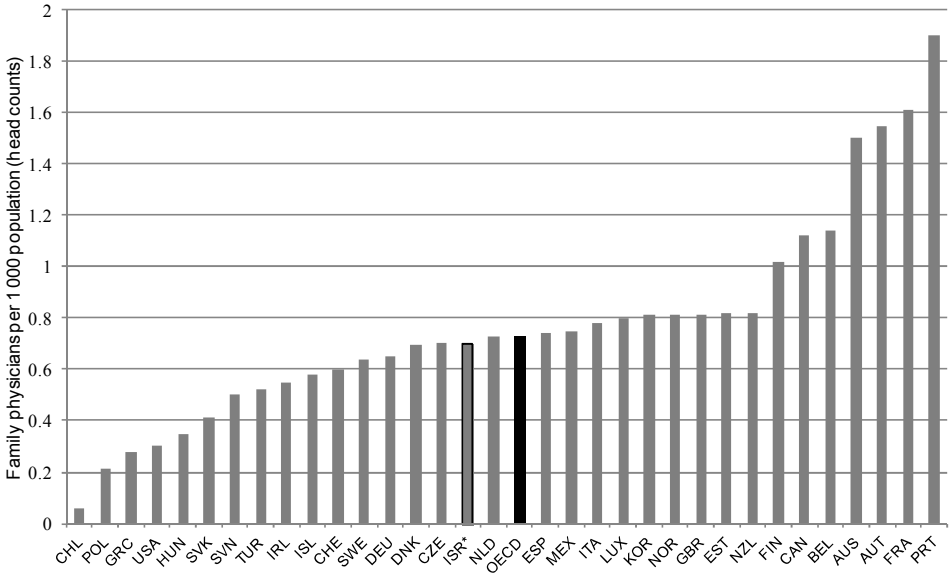
Shortfalls in the physician and registered nurse workforce resulting from the depletion of the influx from the former Soviet Union, combined with a growing and ageing population, a rise in chronic disease prevalence and a rapidly maturing workforce, are set to place increasing strain on the clinical 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.

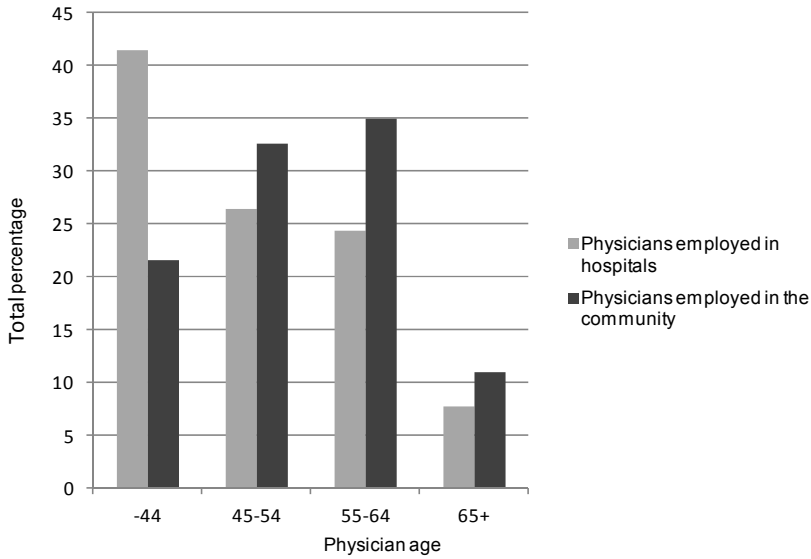
* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602.*

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).

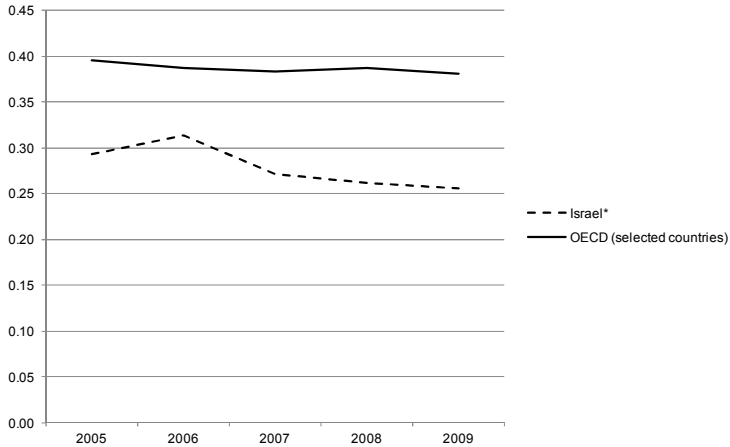
The Israeli response to rising demand as a result of these demographic factors has been slow, and medical graduates are far fewer than in other OECD countries (Figure 2.13).

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.

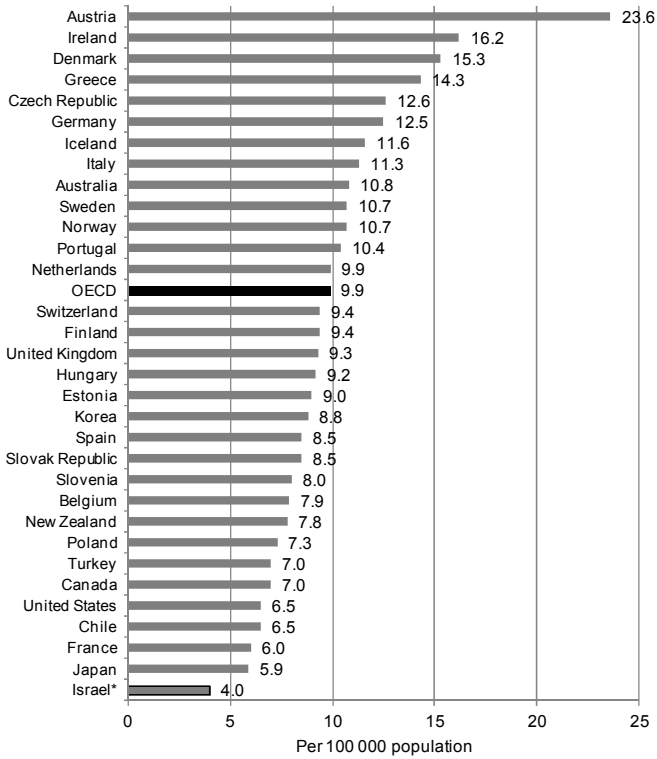
Figure 2.12. The ratio of general practitioners to physicians of other specialists is falling more rapidly in Israel than other OECD countries



* 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.

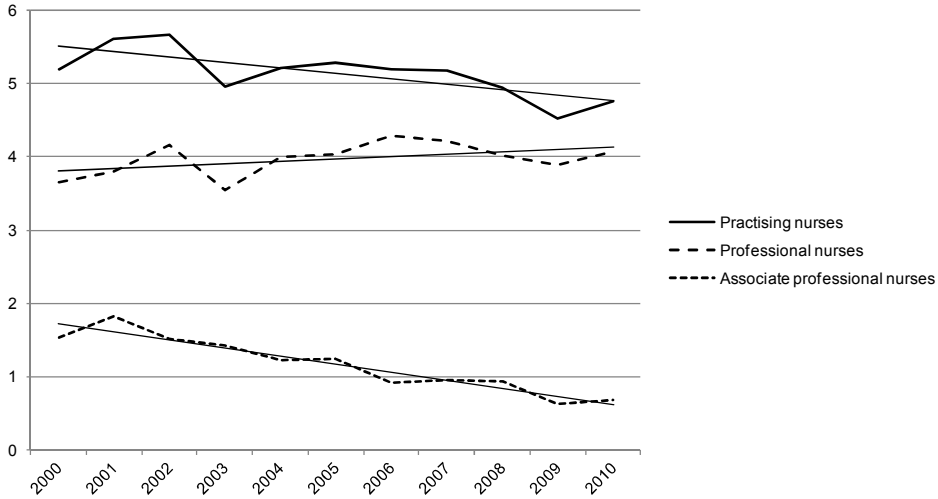
Israel will have to ensure that medical schools give sufficient priority to family medicine as a career option. This means more than simply ensuring that there are adequate residency programmes. Research has shown for example, that the early clinical experience (fifth year) of medical students' training 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



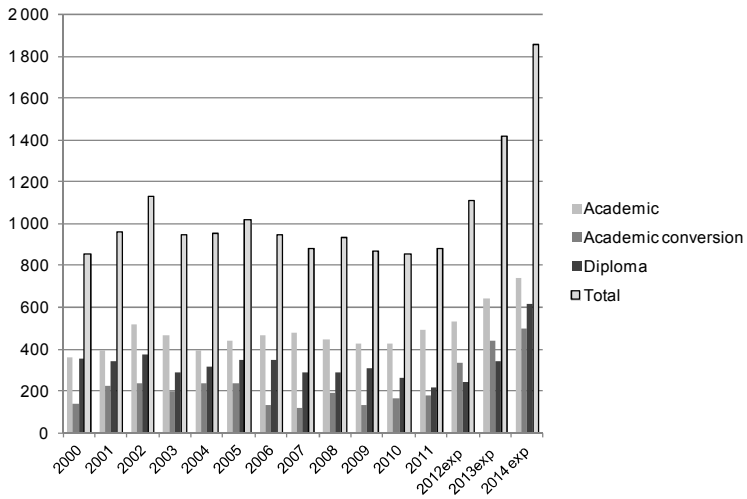
Source: OECD Health Data 2011, DOI: 10.1787/health-data-en.

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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Chapter 3

Tackling inequalities in health and health care in Israel

Israeli society is characterised by deep economic and social divisions, with poverty rates that are greater than in most other OECD countries. The government and health funds are taking serious steps to address prevailing inequalities in health and health care quality by population group, socio-economic status and geography. The government has recently developed an ambitious action plan and taken significant steps for reducing inequalities in health care. This is highly commendable, especially considering the challenging social-economic environment within which inequalities in Israeli society are nested. Despite this, further improvements can be made. Information on access to and the quality of hospital care for different groups is lacking, for example. Other key issues deserving closer attention are the growing financial burden of out-of-pocket payments; the need for strengthening the focus on culturally tailored primary prevention and health promotion services among high-risk groups; and the need to monitor how changes in the capitation formula impact on geographical variations in staffing and infrastructure. The government will need to monitor carefully the outcomes of the reform plan, and continue to strengthen incentives, rewards and penalties for providers and funds. Importantly, achieving the government's goal of reducing health inequalities will require action across government departments and measures to reduce wider socio-economic differentials driving health inequalities.

3.1. Introduction

The Israeli Government has shown strong commitment to address inequalities in the health system. This is regarded as a key pillar of a strategy to improve quality of care. Equity is an important goal of high-quality health care systems, and appears as a cross-cutting dimension in several frameworks used for assessing the performance and quality of national health care systems. This goal is not unique to Israel. Many OECD countries actively seek to reduce inequalities in health and health care.

Quality improvement programmes do not necessarily reduce inequalities, and differential uptake and/or implementation can actually widen them. Reducing inequalities in health and health care is important for reasons additional to the underlying goal of social justice that is valued in most countries. A reduction in the avoidable ill health and premature death associated with such inequalities can lower health care costs and increase working lives, productivity and employment. Making equity an explicit target is therefore a hallmark of the Israeli Government's commitment to improve quality.

While many determinants of health and health inequalities lie outside the health care system, they are also influenced by the design and quality of health care systems and can be shaped by public policy. The quality of services and how they are organised can, for example, impact on health and health inequalities through their impact on the uptake of, compliance with and treatment outcomes of services among different population groups. High-quality care must therefore be responsive to the particular health care needs of different groups, especially those at risk of poor health. Health care systems can play a significant role in improving health and ameliorating inequalities by providing high-quality, person-centred and equitable health promotion, disease prevention and health care services. The design of health care systems, such as financing, insurance coverage, regulation, use of incentives and specific interventions, and geographical penetration can also have a significant impact on inequalities in health and health care – for better or for worse. Many countries deploy these (and wider) system levers in their strategies for reducing inequalities in health and health care. The ability to monitor these inequalities is an essential pre-requisite for the development of equity promoting strategies, and for assessing their impact, and requires information systems that are fit for purpose to support such measurement.

This chapter reflects on the Israeli Government's plans and policies to tackle inequalities in health care, making suggestions for areas where current actions could be strengthened further. The chapter examines the quality of health care services in Israel in the context of prevailing health inequalities, focussing in particular on variations in health care quality for

sub-groups of the Israeli population. It starts by examining variations in health and health care quality for different population groups and regions. It goes on to discuss the key factors implicated in variations in health care quality, and how these challenges could be addressed in order to reduce health inequalities. Although the scope of this chapter does not extend to the wider determinants of health, wide socio-economic inequalities prevailing in Israel remain a major driver of health inequalities irrespective of the performance of the health care system.

3.2. The Israeli health care system is designed to provide equity in health care, and moves are underway to reduce prevailing inequalities

Equity of health care provision for all Israelis is an underpinning principle of the Israeli health care system (see Box 3.1). The government has made commendable efforts to address disparities in health. Besides providing universal coverage, the Ministry of Health (MOH) has been active in developing and implementing strategies to tackle inequalities in health and health care. Since 2009/10, when the goal of reducing inequalities was announced, the MOH has directed earmarked budgets towards this goal, both through direct governmental action and through the aegis of the health funds and other agencies (see Horev and Averbuch, 2012 for an overview). The *Pillars of Fire* action plan for 2011-14 outlines its goals and deliverables for addressing the underlying drivers of inequalities in health care. Some key recent initiatives are shown in Box 3.2. Inequality reduction strategies are developed through close collaboration between the MOH and key stakeholders, such as the health funds, hospitals and local authorities. Through its publications, the MOH also tries to keep health inequalities high on the public agenda.

Box 3.1. Equity and human rights in health care provision are enshrined in the Israeli legislation

The National Health Insurance Law (NHIL) of 1995 enshrines the right to health care of every Israeli, and universal coverage by mandatory health insurance. Key elements of the law anchor the principles of universality and equality of access: entitlement to a specified insurance benefits package; choice of insurance provider; regulations to prevent "cream-skimming" of patients; and a funding mechanism based on progressive taxation. The Law also provides the right to services that are timely, of reasonable quality, and within reasonable distance from the insured's place of residence. The insurance basket has recently been extended to include dental care for children.

The Patients' Rights Law, enacted in 1996, goes beyond equity of access to ensuring respect for and consideration of patients, dignity and privacy, informed consent, patient confidentiality and access to medical records. It prohibits discrimination on grounds of religion, race, gender, nationality, country of origin or any other such basis. It obliges medical institutions to provide treatment in cases of emergency, regardless of financial coverage.

Box 3.2. The Israeli Government has significant measures underway to tackle inequalities in health care: Some key initiatives since 2009/10

In 2008 the President of Israel established a task force to recommend ways to close social gaps in Israel, including in the health sector. An action plan by the MOH to narrow health inequalities was initiated in 2009. In 2010 the MOH declared its obligation to deal with health inequalities by including it in the list of MOH targets and a comprehensive strategic policy planning process took place. A special unit was established in the MOH and a strategy was formulated for reducing inequalities in health. The goal of narrowing health disparities was included as second among the MOH's seven "Pillars of Fire" goals for 2011-14. Based on these goals, an action plan for narrowing health inequalities was developed.

Objective 2 under the "Pillars of Fire" goals relates to reduction of health care inequality. The target objectives identified here include:

1. reducing the disparity in financial access to health services;
2. reducing the influence of cultural differences in the utilisation and quality of health services;
3. providing sufficient quality and professional health care personnel to the periphery;
4. improving the physical infrastructures in the peripheral regions;
5. providing incentives to the health funds for undertaking activities to reduce disparity;
6. establishing a database for information relating to morbidity, accessibility to and availability of services, and relating to intervention activities effective in reducing disparity in the health sector.

A comprehensive overview of strategic decisions, policies and interventions to address health care inequalities can be found in Horev and Averbuch (2012). Those include, for example:

- development of a national plan to tackle inequalities;
- a directive requiring all health care providers to provide access to culturally appropriate services in the main spoken languages;
- abolition of fees at governmental mother-infant care centres;
- extension of insurance cover to include dental care for children;
- changes to co-payment system *e.g.*, extending exemptions to elderly patients with chronic disease, family ceilings on expenditure on pharmaceuticals and reductions of copayments for generic medicines;
- establishment of a new medical school in Galilee, which will upgrade services in the North;
- incentivising training and recruitment of nurses from the Bedouin community in the South;

- incentivising the recruitment of health care professionals to the periphery, including through salary increases;
- planned increase in the number of hospital beds overall and in the periphery;
- allocation of NIS 60 million for improving the hospital infrastructure in the periphery;
- extension of the capitation formula to include distance from urban areas (in addition to age and sex);
- retrospective incentives (conditional on performance) to health funds for infrastructure and health promotion initiatives in the periphery and to disadvantaged populations;
- five-year plan for improving the health of the Bedouin community;

Several of these initiatives are discussed in further detail later in this chapter.

Source: Horev, T. and E. Averbuch (2012), "Coping with Health Inequalities: A Roadmap for Developing a National Plan. The Israeli Experience", Health Economics and Insurance Division, Ministry of Health, Jerusalem.

Although the government plays the lead role in national policy development, macro-level system design and regulation, the health funds are key to implementing strategies for reducing health care inequalities because of their responsibility for delivering frontline services. They also play a key role in the development of health care capacity, either directly through their own network of staff and facilities, or through contractual services. The organisational commitment of the two largest health funds (Clalit and Maccabi) to reducing inequalities in health care delivery, and in developing their own inequality reduction action plans as part of overall frameworks for quality improvement, is commendable, as there is no mandatory requirement for them to do so, and given the financial challenges they face with strict government controls on public funding.

Despite these efforts by the MOH and insurance funds to tackle inequalities, they may not be sufficient if inequalities in Israeli society are not addressed. Much of the health inequities in Israel find root in socio-economic, ethnic and geographical inequities, which are difficult to disentangle and grapple. As reported by WHO (2008), social and economic policies have a determining impact on health equity.

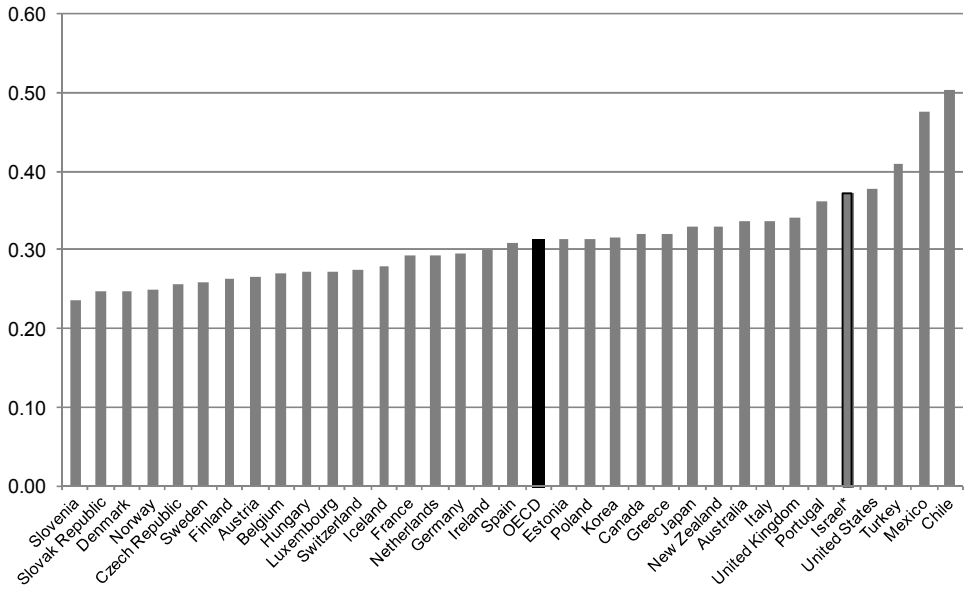
Inequality in Israel is wide and rising

Income inequalities in Israel are wide and persisting. The average income of the richest 10% of the population in Israel is about 14 times that of the poorest 10% (OECD, 2011a). The Gini coefficient for Israel, which is

a measure of income inequality ranging from zero (full equality) to 1 (when only one person concentrates all income), is among the highest in the OECD (Figure 3.1). It has also been grown by over 4 percentage points since the mid 1980s, one of the highest rates of increase in the OECD. Widening gaps between the rich and the poor, coupled with other dimensions of inequities such as education, ethnicity, and distance from the Centre, are reflected in health inequalities.

Figure 3.1. Gaps between rich and poor are higher in Israel than in most OECD countries

Levels of inequality in the latest year before the crisis, total



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

Note: The Gini coefficient ranges from 0 (perfect equality) to 1 (perfect inequality). Gaps between poorest and richest are the ratio of average income of the bottom 10% to average income of the top 10% Income refers to disposable income adjusted for household size. Latest year refers to 2007 for Denmark, 2006 for Japan and 2009 for Chile.

Source: OECD (2011), *Society at a Glance – OECD Social Indicators*, DOI: 10.1787/soc_glance-2011-en.

There are variations in health status and disease prevalence between population groups in Israel

Health status varies significantly within the Israeli population, primarily in association with population group, socio-economic status (SES) and area of residence: non-Jews, poor SES groups, and those living in the north and south periphery regions experience worse health than Jews, higher

SES groups and those living in the Centre. These characteristics are often correlated: for example, Arabs are more likely than Jews to be both poor and live in the periphery. They can also have independent effects, which combine to create a multiple axis of health disadvantage: for example, Ethiopian migrants experience the health disadvantages associated with poor SES, but they also have high diabetes prevalence (over 20%) associated with diet and lifestyle changes following migration.

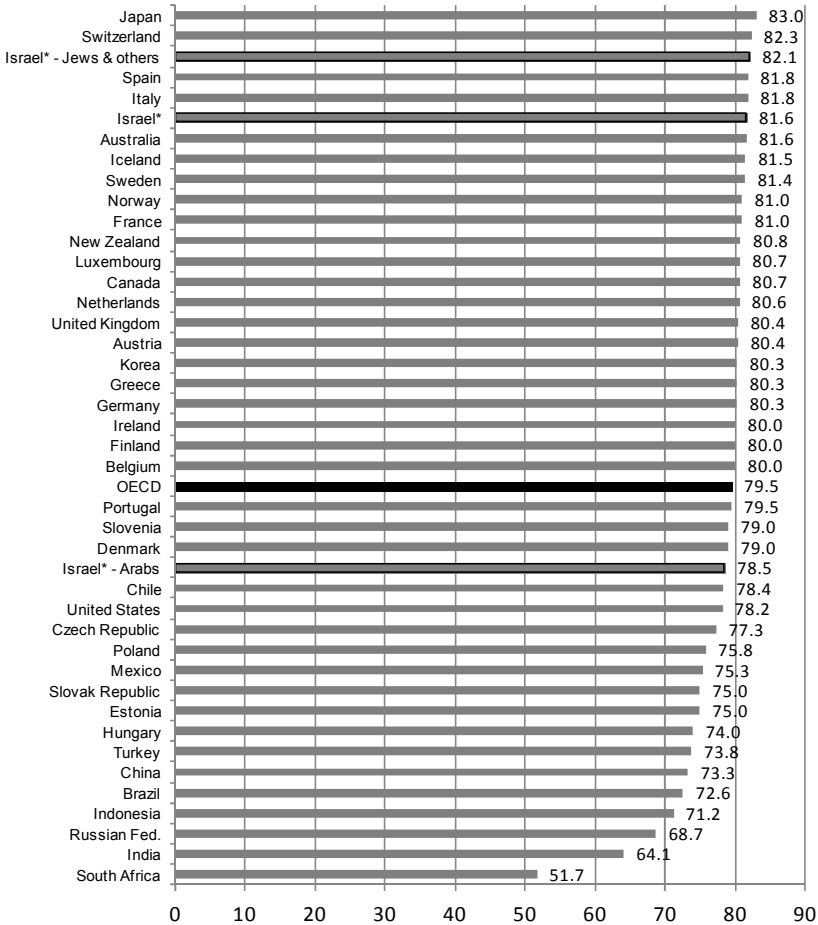
Life expectancy is widely used as an indicator of a nation's health. Although life expectancy is subject to many wider social determinants, it is in part amenable to improvement through health care interventions. Life expectancy in Israel (81.6 years) compares well with the OECD average (79.5 years) (Figure 3.2), and is rising for both Jews and non-Jews. Israeli Arabs have higher life expectancy than several OECD countries and Arab and Muslim countries in the region. However, Arabs constitute the largest non-Jewish group in Israel (20% of the population), and their longevity disadvantage relative to Jews (4 years in men, 3.2 years in women) persists. Arabs have higher mortality from several leading causes – including those covered by Israel's Quality Indicators for Community Health (QICH) programme – such as cancer (males only), diabetes, circulatory and respiratory disease (Table 3.1).

These patterns reflect socio-economic and cultural differences between communities. For example, research shows that variations in mortality between Arab and Jewish localities are largely accounted for by socio-economic differences between localities (Chernichovsky and Anson, 2005). Mortality differs significantly also within these populations: for example, all-cause mortality among Jews born in Asia, Africa and Europe-America is up to 70% higher than among Israeli-born Jews. While socio-economic and cultural differences explain most of the inequities in health, there are also some inequalities linked to geography (Table 3.2). Some differences within the Arab community (between Muslims, Druze and Bedouins) are greater than those between Arabs and Jews, in part due to socio-economic differentials (Averbuch *et al.*, 2010). These epidemiological patterns illustrate the diversity of the Israeli population overall and within particular population groups.

Infant mortality is a sensitive barometer of health. Although it reflects the impact of wider socio-economic determinants, the quality of maternal and child health services also impact significantly on outcomes of pregnancy and infancy. Israel's infant mortality compares favourably with the OECD average, and is lower than rates in some high-income countries (Figure 3.3). Although infant mortality is falling in all groups, differentials persist within the Israeli population. Mortality in Arab babies is over double the rate in Jews (6.8/1 000 live births and 2.7), primarily due to four-fold higher

mortality from congenital malformations resulting from consanguineous marriages (Rosen and Samuel, 2009). It is a major contributor to the life expectancy disadvantage of Arabs. There are also marked socio-economic gradients in infant mortality: mothers with less than four years schooling have a four-fold higher rate than those with over 16 years of education. Rates in the North and South are double that in the Centre (Table 3.2). These patterns reflect the correlation between ethnicity, SES and area of residence.

Figure 3.2. Israel's life expectancy at birth compares well with other OECD countries, 2009



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

Source: OECD (2011), *Health at a Glance 2011 – OECD Indicators*, DOI: 10.1787/health_glance-2011-en; Ministry of Health (2010), *Health in Israel: Selected Data 2010*, Jerusalem.

Table 3.1. Arabs have worse health status than Jews for several indicators

Variable	Jews		Arabs		Date
	Males	Females	Males	Females	
Life expectancy					
2000	77.1	81.2	74.6	77.9	
2009	80.3	83.9	76.3	80.7	
Age-adjusted mortality/100 000:	*				
Respiratory system diseases	53.5	38.4	116.9	55.7	
Cerebrovascular diseases	41.7	32.4	47.9	58.2	
Heart disease	148.7	96.2	220.7	133.1	
Diabetes	41.3	30.5	90.1	90.6	
Lung cancer	46.1	17.7	75.1	14.1	
All cancers	211.6	172.3	227.3	152.4	2007
ALL CAUSES	741.6	525.5	990.8	703.5	
(All cause mortality for Jews born in:					
Israel	-527.3	-358.1			
Asia	-833.9	-480.2			
Africa	-831.6	-618.2			
Europe-America)	-778.3	-528.3			
Age-adjusted cancer incidence/100 000:					
All cancers	312.1	268	261.1	212.8	2007
Lung	29.5	14.4	51.3	7	
Breast	-	87.7	-	73.2	
Prostate	79.3	-	38.8	-	
Mortality ages 10-24/100 000:	*	*			
Natural causes	15.2	9.8	21.1	16	2007
External causes	21.5	5.7	42.7	**	
Child mortality <5 /1 000 live births	3.2		9.1		2009
Infant mortality/1 000 live births	2.9		6.7		2006-08
Infant mortality from congenital anomalies/1 000 live births	0.8		2.5		2005-07
Stillbirth rate/1 000 births	5.3		6.8		2008

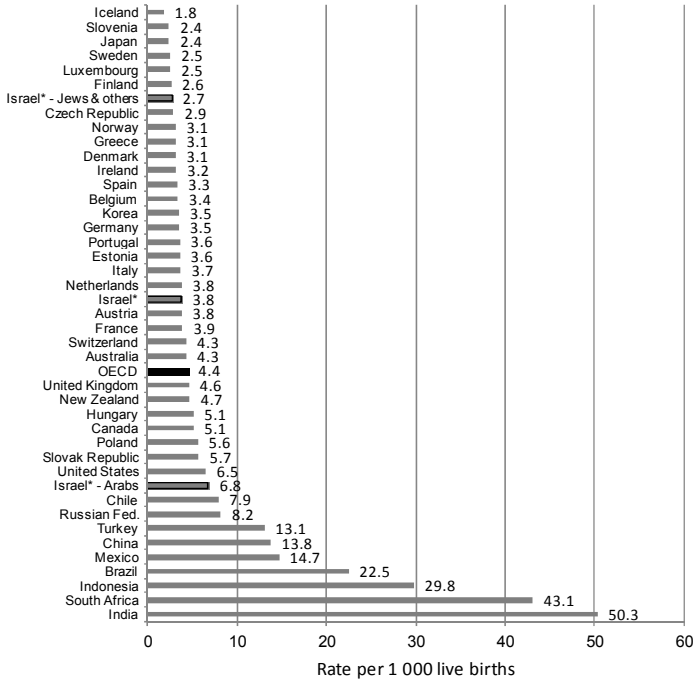
* Refers to Jews and others; ** Rate based on small numbers.

Table 3.2. South and north districts have higher mortality rates than other districts in Israel, 2010

District (provisional data)	Infant mortality per 1 000 live births 2010	Standardised death rate per 1 000 population 2010
Central	2.4	4.9
Tel Aviv	2.7	5
Jerusalem	4.1	4.8
Haifa	4.1	5.4
North	4.4	5.5
South	6	5.4
TOTAL	3.7	5.1

Source: Ministry of Health (2010), *Health in Israel: Selected Data 2010,* Central Bureau of Statistics, Jerusalem.

Figure 3.3. Israel's infant mortality rates compare well with other OECD countries, 2009



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

Source: OECD (2011), *Health at a Glance 2011 – OECD Indicators*, DOI: 10.1787/health_glance-2011-en; Ministry of Health (2010), *Health in Israel: Selected Data 2010*, Jerusalem.

Internationally, SES is a strong predictor of health status. Income inequalities are both wide and widening in Israel (Figure 3.1; OECD, 2011d), exemplifying the challenges faced by its health care system in reducing health inequalities. For example, socio-economic inequalities in total and cardiovascular mortality widened by over 40% between 1983-1992 and 1995-2004 (Jaffe and Manor, 2009). Compared with 15% in Jews, 51% of non-Jewish families are below the poverty level; the proportion of children below poverty level is 24% and 63% respectively. Despite equivalence in legal entitlements, Arabs have lower levels of education, employment and income, and higher proportions live in the periphery regions most disadvantaged in terms of health care and other infrastructure. Socio-economic gradients operate also within groups: for example, SES is the main predictor of limiting long-term illness within the Arab population (Daoud *et al.*, 2009).

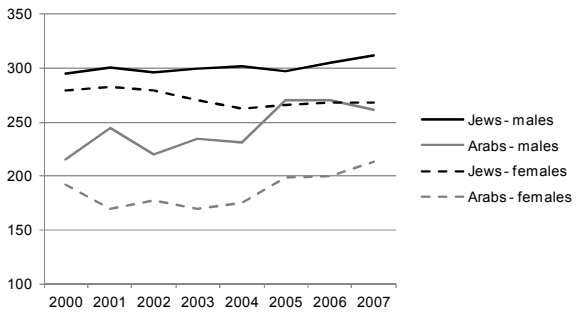
These differences in health status reflect underlying differences in disease burden. The 2009 Israeli national health survey shows higher reported prevalence of hypertension, myocardial infarction and stroke

among Arabs than Jews. The prevalence of diabetes at ages 35-64 is more than double among Arabs than Jews; they also have a younger age at onset. Diabetes prevalence varies over two-fold by net household income (14% and 6.2% in below and above average income households respectively) and three-fold by educational status (23.4% in those with under eight years schooling compared with 7.5% in those with over 12 years schooling). Diabetes prevalence in the low SES group is almost 5 times higher than in the general population (16% vs. 3.4%).[1]

Also notable is the changing epidemiology of disease, with overall cancer incidence rising in Arab men and women by 21% and 11% between 2000 and 2007. Breast cancer in Arab women increased by 40%, reflecting both lifestyle changes and increased and earlier detection resulting from rising uptake of mammography (Figures 3.4 and 3.5 show trends in the incidence of all cancers and breast cancer among Jews and Arabs).

Figure 3.4. Cancer incidence is rising among Arabs in Israel

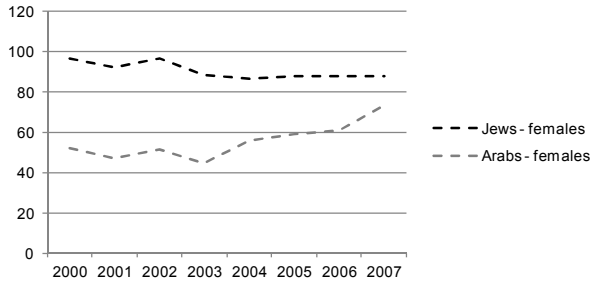
Age-adjusted rate/100 000



Source: Ministry of Health (2010), *Health in Israel: Selected Data 2010,* Jerusalem.

Figure 3.5. Breast cancer incidence among Arab women is catching up with rates among Jewish women in Israel

Age-adjusted rate/100 000



Source: Ministry of Health (2010), *Health in Israel: Selected Data 2010,* Jerusalem.

Although cancer incidence is higher among Jews than Arabs, mortality differs little between Jewish and Arab men (Table 3.1). A contributory factor is the high incidence of lung cancer among Arab males (nearly double that in Jews), accounting for 20% of all cancers in Arab men and with no decline over the decade, and reflecting differences in the prevalence of smoking between Jewish and Arabs.

Access to community health care does not appear to be a major obstacle, but treatment outcomes vary

High-quality health care systems enable timely and affordable access to effective services for all residents as appropriate to their needs. Barriers to access from within the health care system can arise from supply-related factors, such as the geographical distribution of facilities and staff, their levels of training, education and cultural sensitivity, the organisation of services, their distance from users and availability of affordable transport. Even with systems providing universal insurance coverage, the scope of the benefits package and co-payments can pose barriers to access. Demand-related factors such as age, SES, health beliefs and literacy, and information about local services can also impact on access to and uptake of health care.

The 2009 health survey – covering the permanent population of Israel – showing higher visits per capita to physicians, family doctors and dentists, and higher hospitalisation rates, among Arabs than Jews suggests that Arabs do not have problems accessing health care services. However, whether or not this differential is commensurate with their higher morbidity is unclear from the data, and visits to physicians, family doctors and dentists, and hospitalisation rates, are lower among larger households. Public opinion surveys suggest that out-of-pocket costs are a deterrent to seeking medical treatment, especially among low-income groups and the chronically ill (Brammli-Greenberg *et al.*, 2011).

The QICH show improving performance on many indicators (Manor *et al.*, 2011), signalling the achievements of Israel's highly effective primary care-oriented health care system. Table 3.3 shows QICH performance by SES. Performance on many process measures (*e.g.* risk factor assessments) shows no SES differences, or is better in the low SES group (defined as exempt from co-payments), showing an inverse socio-economic gradient. Prescription of drugs following cardiac surgery is also higher among exempt than non-exempt patients.[2] The reasons for these socio-economic patterns are unclear, but one explanation could be greater morbidity and/or contact with services in the exempt population. Another possible explanation could be that this reflects the result of targeted programmes for the disadvantaged by health funds. No SES differences were apparent for some outcome indicators *e.g.* blood

pressure and LDL control in diabetic patients. Overall, these patterns are evidence of the widespread population reach of Israel's well-established community care programme.

Table 3.3. Selected (unadjusted) QICH indicators by SES status[1] in Israel, 2007-09

Indicator	Low SES (%)	High SES (%)
Indicators showing poorer rates in low SES compared with high SES group		
Asthma prevalence**	2.4	0.9
Use of asthma control medication	72.8	80.9
Mammography rates	64.7	68.8
Influenza vaccination 65+	51.8	59.5
Prescription for statins following CABG surgery	83.4	84.7
LDL control following CABG surgery**	69.2	73.4
LDL control following cardiac catheterisation**	70.1	73.4
Diabetes: prevalence**	16.1	3.4
Diabetes: HbA1C <7%**	46.7	48.7
Diabetes: HbA1C >9%**	13.8	12.3
Indicators showing similar rates in low/high SES groups		
Colon cancer screening – FOBT	28.6	27.1
Colon cancer screening – colonoscopy	19.4	20.7
Children 9-18 months with a haemoglobin record	74	73.4
BP control 20-54**	96.1	96.6
BP control 55-74**	86.4	87.8
Prescription for statins following cardiac catheterisation	84.7	84.8
Diabetes: recording of HbA1C	92.9	92
Diabetes: assessment of LDL cholesterol	90.9	90.1
Diabetes: assessment of microalbuminuria	73.4	74.7
Diabetes: assessment of blood pressure	92.9	91.4
Diabetes: assessment of BMI	84.2	83.2
Diabetes: controlled LDL**	65.4	65.8
Diabetes: controlled BP**	68.9	68.4
Indicators showing better rates in low SES compared with high SES group		
Influenza vaccination in people with asthma	52.5	37.8
BMI assessment at 14-18	68.2	60.1
Weight assessment at 20-54	78.9	68.9
Weight assessment at 55-74	73.7	67.4
Height assessment at 20-54	76.5	65.3
Height assessment at 55-74	88.3	85.5
BMI assessment at 20-64	81.3	68.1
LDL assessment 35-54	89.4	82.3
LDL assessment 55-74	80.7	75.5
LDL control 35-54**	71.3	69.5
LDL control 55-74**	76.9	74

1. Low SES defined as entitlement to exemption from or reduction in co-payments.

**. Indicators marked with ** are prevalence or treatment outcomes. The others are process measures.

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.

However, inequalities are apparent even in this flagship programme of Israeli health care. The low SES group compares unfavourably on cholesterol control following heart surgery and on some QICH preventive measures *e.g.* mammography and flu vaccination. Mammography rates are also significantly lower among Arab women compared with Jews (Central Bureau of Statistics, 2011). Research into adherence to screening recommendations for early detection of breast and colorectal cancer found that low SES patients, Arabs, immigrants and those without supplementary insurance do fewer such tests, even though they are highly accessible and covered by the insurance package (Wilf-Miron *et al.*, 2011); this suggests that factors other than cost, such as physical and social environment, cultural norms and beliefs, and health literacy also mediate in low uptake. Overall performance on some QICH is weak (Chassin, 2012), and any inequalities within these signify even poorer quality of care for disadvantaged groups.

The QICH for diabetes presents an anomalous picture: risk factor assessment rates in low SES diabetic patients are similar to or better than rates in the high SES group, and low SES patients with poor glycaemic control (HbA1C >9%) have higher insulin prescription rates (Table 3.3). Despite this, glycaemic control is worse in the low SES group. Similar patterns appear in the previous QICH report for 2005-07, showing the persistence of these patterns, and a multivariate analysis also showed that exemption status among diabetic patients is a predictor of better performance on process measures but worse outcomes (Jotkowirtz *et al.*, 2006). These patterns may have various explanations *e.g.* low SES patients have long-established disease, insulin is started late, or that lifestyle changes and adherence to insulin use are more difficult to achieve. Poor control in this group is of particular concern, given their five-fold higher prevalence of diabetes. As Arabs are mainly from the low SES group, they risk the triple jeopardy of early onset, high prevalence and poor control. The reasons for these patterns need to be understood, and monitoring of referral rates to specialists for poorly controlled diabetic patients or those who have co-morbidities is important.

In contrast to the rich profiling of variations in quality of community care routinely undertaken in Israel, data about hospital, specialist and tertiary care provided to different population groups and regions is lacking. This gap is a major obstacle to assessing the equity and quality of hospital care for different groups and regions, especially as there is some evidence of underutilisation in use of specialist and diagnostic services by people of low SES (Shadmi *et al.*, 2011).

3.3. Israel has a good information architecture for measuring inequalities but there are some important gaps

Israel has good data for profiling inequalities in population health and community care, but there are some critical gaps in information

A major barrier faced by many health care systems in improving health care quality and reducing inequalities is the lack of comprehensive, routinely available data on population health and health care quality stratified by the relevant dimensions of inequality. The availability of such information is imperative for understanding the scale and nature of the problem, informing policy development and resource allocation, targeting strategies and outreach services, and evaluating impact. It is also important for getting health inequalities on the public and political agenda. The Israeli civil registration and health care information systems provide a considerable amount of data routinely that can be used for these purposes, but there are some salient gaps.

Table 3.4 summarises the inequality dimensions available for different national data sources in Israel. There is a well-developed information architecture for measuring population health inequalities through its vital statistics and registration systems, which provide comprehensive data on fertility and mortality *e.g.* by religion, population group and district (but not SES). Periodic population health surveys provide data on risk factors such as smoking and physical activity, use of health care services, disease prevalence and uptake of selective preventive services by a range of demographic and socio-economic characteristics. These surveys are a useful tool for monitoring cross-sectional patterns and trends in these variables at national level, and over time. However, the surveys are conducted at intervals (the latest were in 2004 and 2009), and survey-based data are a poor substitute for comprehensive, ongoing data on disease prevalence and health care utilisation derived, for example, from disease registers and health care data that has full population coverage, and which also has the potential to provide supporting diagnostic and clinical information that surveys cannot provide.

The universality of electronic patient records for community care enables data for specified QICH indicators to be extracted and for this information to be used to measure inequalities systematically and inform improvements in community health care quality:

- Rich national QICH data on the reach of preventive services and quality of community care (for selected chronic diseases) delivered to population groups by age, sex and SES is available annually. From 2012, the data will also be available separately for the four health funds.

Table 3.4. National data sources and the inequality dimensions available

National data source	Inequality dimensions publicly available (excluding age and sex, which are generally available)	Comments
Population health data		
Fertility	Religion, population group, district	Comprehensive data on population health status stratified and published by key dimensions of inequality other than SES.
Infant mortality (overall and by cause), stillbirths	Religion, population group, years of mother's schooling, district	
Mortality: overall and by cause of death	Religion, population group, place of birth, district	
Health survey: risk factors, self-assessed health, use of health care, disease prevalence, influenza vaccination and mammography uptake	Population group, place of birth, size and density of household, years of schooling, employment status, household income, district	Useful data on risk factor prevalence stratified and published by key dimensions of inequality. Disease prevalence and health care utilisation rates derived from health care data with full coverage would be preferable to survey-based data.
Health care data		
National registries *e.g.* cardiac surgery		Data not publicly available.
Cancer registry: overall and individual cancers	Religion, population group	Comprehensive data on incidence stratified and published by dimensions of inequality.
Community care: QICH	SES (measured as exemption from co-payments)	Rich data available. Population group, district would be a very useful addition.
Hospital care	Data on ED visits, hospital discharges, length of stay, procedures only available by age, sex only.	Data on access, quality and outcomes of care overall and for different groups is poorly developed and needed by population group, SES, district.

Source: Compiled by the OECD.

- The two largest health funds analyse the data for their insured populations for inequalities in uptake and quality of community care, and actively use it to inform their quality improvement and inequality reduction activities. They do this at two levels: a) aggregate level *e.g.* performance variations by clinic or district, and b) disaggregated level *e.g.* performance variations at physician level, or patients not reaching treatment goals. Box 3.3 describes Clalit's programme for improving quality overall and reducing inequalities in health care by driving improvements in low performing clinics.

Box 3.3. Using evidence-based quality improvement measures to reduce inequalities at Clalit

Clalit (3.8 million enrolees) has the largest share of low SES groups, immigrants, rural inhabitants, elderly and people with disabilities. It has implemented several initiatives to improve health and access to care, and promote health education and cultural competency for disadvantaged populations. In 2008, CHS developed a primary care focused strategy for reducing disparities. Seven evidence-based quality indicators for primary prevention and disease control that showed variation by SES and ethnicity were identified for quality improvement and disparity reduction.

Recognising that quality improvement does not of itself reduce disparities, 55 low-performing clinics with 10% of Clalit enrolees were selected for implementation of disparity reduction interventions. The performance gap between the low-performing and other clinics fell by 40% after a year.

This success was based on a mix of a) top-down organisational policy change, goal-setting, continuous measurement, management support, use of incentives, and b) bottom-up empowerment of local staff to plan and implement interventions tailored to local populations. CHS concludes that focusing organisational resources on clinics that serve disadvantaged populations but are failing to address their health needs is key to closing the health and health care quality gap. This case study illustrates how increased equity and quality improvement can be integrated, to raise the quality bar overall and reduce inequalities within.

Source: Balicer, R.D., E. Shadmi, N. Lieberman, S. Greenberg-Dotan, M. Goldfracht, L. Jana, A.D. Cohen, S.D. Regev-Rosenberg and O. Jacobson (2011), "Reducing Health Disparities: Strategy Planning and Implementation in Israel's Largest Health Care Organization", *Health Services Research,* Vol. 46, pp. 1281-1299.

However, the lack of disaggregated, comparative QICH data by district and population group is a limitation in identifying and addressing variations in performance.Another constraint is the way SES is currently defined in QICH: entitlement to exemption from or reduction in co-payments, which in turn is determined by NHIL criteria that are updated periodically and include poorer population groups, as defined by the National Insurance Institute (NII). They include, for example, people in receipt of low-income supplements, elderly welfare recipients, children with disabilities, and those with large families and selected chronic diseases. This definition of low SES risks excluding some vulnerable groups, such as low-income households not eligible for income support and supplements (OECD, 2010b).

In contrast to the relatively rich data available for community care, data on access to, use and outcomes of hospital and specialist care, and mental health care, are virtually non-existent, except for the limited information periodically available from population health surveys. Consequently, it is not possible to comment on variations in access to and quality of secondary

care services for different groups, which is a major constraint in analysing inequalities in health care. Though worthwhile efforts have recently been initiated by the Israeli Government to co-ordinate data collection on inequalities with a view to identifying and filling gaps, addressing these gaps in data ought to become an ongoing priority.

Information for measuring quality of health care for different groups has gaps

Israel's efforts to reduce health care inequalities would be significantly aided if gaps in data for measuring variations in access and quality for different groups and regions were addressed:

- The lack of QICH data disaggregated by geography and population group is an obstacle to comprehensive understanding of variations in the quality of community care for different groups. Performance on these indicators can conceal geographical or population group variations that may be additional to those indicated by SES. The community care programme is in the vanguard of health care delivery in Israel, offering unique opportunities for prevention and early intervention. The ability to identify and tackle variations in quality at this stage is therefore critical in reducing the unequal burden and impact of disease, and for raising quality overall. The government proposal to disaggregate the QICH by geographical areas classified by a geographical measure of deprivation would be a significant step forward, when implemented.

- Population group is closely associated with health status, and should be routinely recorded in patient records and used for analysing inequalities in access and quality of health care. While this is a sensitive issue in Israel and data protection legislation restricts the transfer of population group information across services and via record linkage, it is a key dimension in health inequalities in Israel, and is widely used (see Table 3.4). It is associated with distinct cultural, religious and socio-economic features that influence lifestyles, decision-making behaviours, health care usage, health status and health care outcomes. In recognition of this, the health funds sometimes ascribe population group to patient records, based on patient characteristics. This unofficial practice of inferring population group should not be necessary. Assessment of variations in health care quality and the delivery of culturally appropriate services that reduce inequalities would be facilitated by the routine availability of this information. The recording of language, religion and a more robust measure of SES than exemption status would also

enhance the practical utility of information in this context. Ultra-orthodox Jews, for example, have distinctive health behaviours and patterns, such as low uptake of preventive care including mammography and late diagnosis of breast cancer, but they are difficult to identify as a group in the available data. The government is examining the legal and technical issues entailed in expanding the demographic information (such as language and education) collected on patients.

- The poorly developed information architecture for Israel's hospitals is a significant barrier to measuring access to and the quality of hospital, specialist and tertiary care for population sub-groups and regions. Hospitals have well-developed electronic patient records that are used internally for the clinical management of patients, and to monitor and improve the quality of care. The government also monitors hospital quality. But the data is not used to measure access and quality for patient sub-groups or regions (hospitalisation rates based on population surveys are unsatisfactory for this task). It is therefore not possible to assess, for example, whether access to specialist care or elective surgery is equitable and appropriate to need, or whether some groups have higher admission rates for preventable complications of chronic conditions. The government has proposals for enhancing the centrally compiled database for hospitals, which will provide an opportunity to rectify this gap that should not be missed.

- Although this review does not cover mental health care, the absence of data on the quality of mental health services – community and inpatient – is also a notable gap, especially since the burden of mental health problems in many countries is often greater among socio-economically disadvantaged groups.

The government is funding the Gertner Institute for the Study of Epidemiology and Health Policy to compile a research and statistical database of evidence-based interventions and international best practice for reducing inequalities in health care. The Institute will also map gaps in the data available for measuring inequalities. This should enhance Israel's capacity for implementing evidence-based interventions for reducing inequalities, and improve longer-term availability of data for monitoring inequalities in health care and the impact of inequality reduction strategies.

How information is used to measure and address inequalities in health care can be improved

There is potential for strengthening the use of the rich health information infrastructure of Israel to tackle inequalities in health and health care:

- The government should use the rich data available on population health to undertake a comprehensive health care needs assessment by district, which takes into account the population's socio-demographic composition, fertility, morbidity, mortality and patterns of health care usage. It should take account of high-risk groups, such as children and the elderly, low SES groups, and new immigrants within each district. This information should inform the development of targeted policies and action plans for reducing health inequalities and ensuring that the availability of health care resources and infrastructure map to them.

- The disease registers *e.g.* for cancer, diabetes, cardiovascular and infectious diseases can be used to analyse variations in disease prevalence and health care quality for populations sub-groups and regions (depending on the completeness of the registers/audits and level of clinical detail available). Other than for cancer and congenital birth defects, little of this data is in the public domain and it is unclear whether and how it is used to measure variations in disease prevalence and the delivery and outcomes of care, and for shaping quality improvement strategies. There appears to be significant untapped potential for greater deployment of disease registers for these purposes, as has been done with, for example, cardiac surgery and diabetes clinical audit databases in many countries. Israel's national notification system for infectious diseases is to be extended to include chronic disease, also potentially providing rich data in the future for these purposes.

- In addition to the QICH indicators, electronic patient records for community care can be used to identify patients with multiple co-morbidities and those not meeting all the assessment and treatment criteria for a particular condition. An example is an indicator on the proportion of diabetic patients who received all scheduled tests within the year; or those not meeting control thresholds on blood pressure, cholesterol and HbA1C, which could help to identify diabetic patients that may need referral to specialist care, or those with co-morbidities. It would also be useful to extend QICH to

include quality indicators for other chronic diseases (see Chapter 2) and the monitoring of outcomes *e.g.* for diabetic patients.

- More comparative data on inequalities in health care needs to be in the public domain in order to highlight the variations between providers, regions, population groups etc, drive improvements in the quality of services and reduce variations, raise public awareness, and for use by multiple stakeholders, including health planners, policy makers, the health funds and researchers.

3.4. Rising out-of-pocket payments for health care have implications for equity of access and quality

The rising burden of co-payments can impact negatively on utilisation of health care

The low level and growth of public funding for health care in Israel over the years has coincided with increasing dependence on privately funded health care through co-payments, supplementary and voluntary health insurance (see Chapter 1). Annual average real-term growth in health expenditure per capita between 2000 and 2009 was only 1.5%, compared with the OECD average of 4%. Public funding as a proportion of total health expenditure fell from 70% in 1996 to 58% in 2009 (OECD average is 72%), and is the fifth lowest in OECD countries. Households with supplementary insurance (80%) and out-of-pocket expenditure (excluding private insurance) as a proportion of health expenditure (28%) are both among the highest in the OECD. Private health expenditure is regressive, with the lowest income households spending 7.2% of disposable income on health care, compared with 3.6% in the top income quintile.

A key element of quality, embedded in Israeli legislation, is equitable access to health care. The NHIL provides universal entitlement to a broad package of services. Subsequent legislation (1998) allowed the health funds to levy user charges for components of the benefits package, including visits to physicians and specialists, diagnostic tests and pharmaceuticals, with the intention of curbing excessive use of health care resources and boosting health fund revenues.

Cost-sharing by health care users can reduce the burden on public finances. However, user charges can be regressive if they increase financial burdens on those with greater health care needs, who also tend to be less able to pay (*e.g.*, low-income earners, migrants, and the elderly). As in many other OECD countries, Israel has exemptions for high-need and/or low income groups to protect their access to services. Specifically, co-payments

in Israel are subject to exemptions, discounts and ceilings for recipients of income maintenance and disability allowances, older people, patients with chronic disease or specified illnesses (Table 3.5). About 10% of the population are exempt or receive discounts, and the co-payment, ceiling and exemption schemes of the health funds have to be approved by the government.

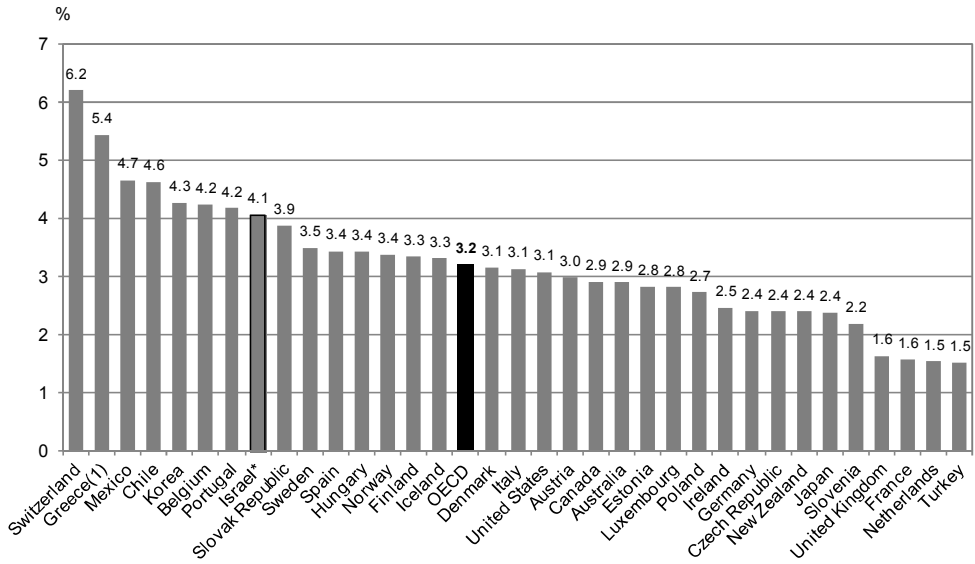
Table 3.5. Co-payments: Rates, ceilings and exemptions in operation

Visits to physicians and clinics	Co-payments First visit in a quarter to primary care provider: flat rate charge of NIS 0-7. First visit in a quarter to a secondary care provider: flat rate charge of NIS 22. No charge for subsequent visits in the same quarter to the same centre/professional. Ceilings Quarterly ceiling per household of NIS 118-176 (depending on health plan). When the ceiling is reached, patients continue to receive treatment without further co-payments. For pensioners or households with recent immigrants the ceiling is halved. Full exemption from co-payments Pensioners in receipt of the income supplement (see OECD, 2010). Patients with end-stage renal disease, cancer, AIDS, Gaucher disease, thalassaemia or tuberculosis (only for their conditions).
Pharmaceuticals	Co-payments Generally 15% (10% for generic) of the purchase price, with a minimum payment of Ceilings and exemptions: A ceiling on quarterly pharmaceutical charges for the chronically ill (NIS 280). This is halved for pensioners and those in receipt of the NII's Income Support programme (see OECD, 2010).

The implementation of these principles has resulted in the main in an integrated, efficient and equitable health care system with universal coverage. However, since the NHIL was enacted, co-payments for services in the benefits package have been rising (Elhayany and Vinker, 2011), even though have moderated to remain within inflation in recent years. Out-of-pocket expenditure as a proportion of final household consumption in Israel (4.1%) is higher than that of several OECD countries and the OECD average (3.1%) (Figure 3.6). Co-payments could potentially become burdensome for some groups and households, in particular for pharmaceuticals. For example, large family households could accumulate

substantial co-payment bills for frequent prescriptions for minor ailments. Moreover, not all indigent and disadvantaged groups meet the exemption criteria (OECD, 2010b) and some patients are unaware of their entitlements (Brammli-Greenberg *et al.*, 2006).

Figure 3.6. Out-of-pocket expenditure in Israel is nearly a third higher than the OECD average, 2009



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

1. Private sector total

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

Rising out-of-pocket costs, including for services included in the benefits basket, risk eroding the principles of equitable access to care embedded in the Israeli health care system. Rising out-of-pocket costs are reportedly leading higher proportions of low-income groups (who also have a higher prevalence of disease) and the chronically ill to delay or forgo medical care. Surveys show that by 2009 the proportion of respondents finding health care costs burdensome increased to 24%, and was higher among low-income groups (36%) and the chronically ill (35%) (Brammli-Greenberg *et al.*, 2011). The rate forgoing medication or medical treatment (including specialist care, check-ups and treatments included in the basket) or both due to cost was higher among low-income groups (22%) and the

chronically ill (18%) than the average (14%). Over one third (38%) of low-income respondents waived dental care due to cost.

The rising share of co-payments could impact negatively on use of care by individuals especially among those with chronic disease. For example, co-payments for dietary advice, prescription drugs and consultations with specialists could deter uptake by low-income diabetic patients (see also Chapter 4), who may need to draw on these services often. Compliance with medication and clinical outcomes have been shown to improve when prescription drugs are provided free to low-income Israeli patients who avoid medication for chronic conditions because of inability to pay (Elhayany and Vinker, 2011). Other evidence also shows that increased cost sharing for prescription drugs (including for chronic disease) is associated with lower drug treatment rates, worse adherence, poorer clinical outcomes and greater use of inpatient and emergency medical services, with cost-savings from restricting drug benefits being offset by increased costs of hospitalisation and emergency care (Goldman *et al.*, 2007; Gemmill *et al.*, 2008; Hsu *et al.*, 2006). These effects could be magnified among low-income groups with higher rates of chronic health problems, and exacerbate health inequalities. Non-adherence to treatment or medication also risks increasing wider socio-economic costs of avoidable ill health, such as unemployment and premature mortality.

The government has taken significant steps to reduce health care costs and improve access, but additional options should be considered

The government's *Pillars of Fire* action plan for 2011-14 includes an objective to reduce disparities in financial access to health care, and the government has taken some important steps to expand access to publicly funded services that are key to reducing health care inequalities:

- The abolition of fees at governmental *tipat halav* mother-infant care centres in 2010 makes maternal and child care more universally accessible and affordable, especially for low-income families, those with many children, and the populations of the periphery. These centres provide frontline antenatal, postnatal, genetic counselling and child health preventive services, and are key agents for improving maternal and child health. This move, supported by an allocation of NIS 40 million, should therefore reduce inequity of access and contribute to improving child health.
- The widening of insurance cover in 2010 to include (preventive and preservative) dental care for children up to age 10, to be extended to age 14 by 2013 (budgetary allocation rising to NIS 240 million over three years), will reduce inequalities in oral health and promote

child health overall. Oral health in children shows marked socio-economic gradients in most countries, and dental costs constitute a major cost burden in Israel.

These moves by the government are important for promoting the welfare of mothers and children. There is overwhelming international evidence that health inequalities in infancy and childhood are a key predictor of lifelong inequalities in health. Inequality reduction strategies therefore often prioritise improvements in the health and wellbeing of mothers and children, which depend on universal access to high quality maternal and child health services.

Some changes to co-payment systems made by the government will also help to reduce the financial burden of health care on disadvantaged populations. These include reduced fees for elderly patients with chronic disease receiving income supplements, a 10% discount for medication costs at ages over 75 years and reductions in co-payments for the use of generic drugs. Funding for long-term care, a long-standing challenge, is currently met mainly by supplementary or voluntary insurance, but there is a proposal to expand public coverage of community and institutional care, which would improve access. The government is also considering the inclusion of dental care for the elderly in the insurance basket.

Four out of five Israeli households purchase supplementary insurance from the health funds that augments or enhances services included in the benefits package (many aimed at the chronically or seriously ill), or covers services not provided such as dental and long-term care (Brammli-Greenberg and Gross, 2011). However, supplementary insurance rates among Arabic speakers (63% of the population) and low-income groups (66% of the population) are below average (81%). A review of supplementary insurance plans taken up by low-income groups could shed light on whether they include services that should be considered for inclusion in the basic package.

To ensure that financial barriers do not prevent the disadvantaged and those with a higher disease burden from accessing essential preventive and health care services, the government should continue to monitor and strengthen safety nets. The exemptions, discounts and ceilings should be reviewed regularly to see whether they can be extended, eliminated or frozen for some services or groups (*e.g.*, for people with chronic disease; co-payments for pharmaceuticals by large households; referrals to specialists for patients whose diabetes is poorly uncontrolled). As updating of the basket and its costs in the light of new technologies and drugs is subject to annual governmental review (including by the Ministry of Finance) and

updates, this is an opportunity to consider whether changes are compatible and keeping pace with quality and equity considerations.

Patients should be made aware of their entitlements to free or subsidised care, through information campaigns and in the course of direct contact with services. The government's 2011 directive on cultural and language competence, requiring (among other actions) health funds to provide members information in the main languages, will help raise awareness.

3.5. Reducing geographical inequalities in health care capacity should be a priority

Regions with the greatest health care need are under-served by health care services

Lack of access to quality health care is a contributor to health inequity, and is disproportionately experienced by people living in remote and rural communities. Although the NHIL requires equitable access to health care for all, there are marked regional imbalances in health care capacity, with the North and South being disadvantaged relative to other regions. One third of Israel's total population (31%), and 56% of its Arab population, live in these regions, where population health is also poorest and socio-economic deprivation greatest. Geographical imbalances in staffing and infrastructure should therefore be addressed as a matter of priority.

Relative to other OECD countries, Israel has a low overall bed (acute and long-term care) and nurse to population ratio, with a shortage of physicians forecast. It also has the highest acute care bed occupancy and almost the lowest lengths of stay. The focus of the Israeli health care system on community care with comparatively low hospital usage is a model that most countries aspire to in attempting to maintain health care quality during financially challenging times. However, inequalities in the geographical distribution of both community and hospital care capacity within this overall economical supply do impact negatively on access to and the quality of health care in the disadvantaged regions of the periphery.

Table 3.6 and Figures 2.9A and 2.9B in Chapter 2 show geographical variations in health care infrastructure and manpower in Israel. The ratio of acute care, long-term care, emergency care and delivery beds, MRI and CT machines, and dialysis stations to population is lower in the periphery relative to other regions – especially in the South. Staff availability in the periphery for both community and hospital care (physicians, nurses, dentists, paramedics, specialists) also compares unfavourably. These disparities are long-standing. Although OECD's international comparisons of regional density of staff are caveated because of differences in measurement unit

sizes, geographical differences in physician density in Israel are wider than in OECD countries other than Turkey, the United States and the Russian Federation (OECD, 2011c). Physician availability varies three-fold between the North and South on the one hand, and Tel Aviv on the other.

Moreover, health care capacity is distributed in inverse proportion to health care need, as the populations living in the northern and southern periphery also have the poorest health. Services facing the combined challenges of high demand and over-stretched infrastructure, staff shortages, recruitment and logistical difficulties will struggle to provide equitable access or a high standard of care. For example: many women giving birth at the Soroka Medical Centre in the South do not seek antenatal care, and follow-up of premature and sick neonates after discharge to isolated rural areas is constrained because of inadequate nurse numbers (although nurse vacancies have recently been filled); low bed capacity and high occupancy rates make it difficult to meet specified quality standards such as surgery for hip fracture within 48 hours of admission; they also lead to overcrowding and prolonged stays in emergency departments, patients being kept in corridors, and the risk of high infection rates.

Table 3.6. Health care infrastructure by district in Israel

Variable	National	South	North	Tel Aviv	Centre	Haifa	Jerusalem
Health care facilities 2009							
Delivery room beds/100 000 women aged 15-44	14.7	9.9	12.8	18.5	13	16.6	23.7
Delivery room beds/1 000 live births	1.5	0.9	1.4	2	1.4	2	1.8
Operating rooms/100 000	5.8	3.3	4	8.4	5.5	6.9	8.6
Recovery room beds/100 000	10.2	4.4	8	15.4	9.7	15.3	12.7
Emergency dept beds/100 000	14.9	9	14	15	13.9	19.3	24.9
Dialysis stations/100 000	15.4	13.6	14.3	18.8	12.2	21.5	19.7
Inpatient beds: acute/100 000	193.2	138.4	148.3	250.3	201.2	258	223

Source: Ministry of Health (2010), *Health in Israel: Selected Data 2010,* Jerusalem.

The impact of these geographical imbalances in health care capacity is compounded by an environment prejudicial to good health, especially in the South: greater poverty and unemployment, and weaker social and community infrastructure, *e.g.* roads, public transport, electricity, water supply, sanitation and housing, especially in the "unrecognised settlements" in the South. Proximity to military action and the resulting casualties adds to the demands on services. Under-staffed community services and

geographical isolation mean that preventive services may not get the priority they warrant. Distances from hospitals and poor transport services, especially in the unrecognised settlements of the South, constrain access generally and make for obstacles and delays in accessing emergency services. These challenges to service provision and access are compounded because the Bedouin population is itinerant and population density in the Negev desert is very low. Although Bedouins constitute about 2% of the Israeli population, complications in pregnancy and delivery, acute conditions in infants such as gastrointestinal and respiratory disease, and the pressure on preventive services for mothers and children in the Negev, are for instance likely to contribute to high infant mortality in the Bedouin population. Given that almost one third of the Israeli population lives in the deprived regions of the North and South, investment in improving health care provision here has significant potential for reducing inequalities in health care and raising quality overall. Governmental initiatives to provide health care in this challenging environment and improve the health of the Bedouin community notwithstanding, the lack of wider community infrastructure is not conducive to good health among communities living in these areas.

Initiatives to reduce geographical inequalities in health care capacity should be monitored, evaluated and strengthened as needed

Using a mix of direct funding, financial incentives and changes to the capitation formula used for determining allocations to the health funds, the government has taken a number of significant steps recently that are designed to reduce the workforce and infrastructure deficits in the periphery and promote health improvement. Schemes directly funded by the government include:

- Establishment of a new medical school in Galilee, which will upgrade services in the North.

- Incentivising the training and recruitment of nurses from the Bedouin community in the South. Retention rates have been low (20%) owing to the cultural barriers to women working and the premium attached to high fertility. This strategy has longer-term potential for reducing the nursing shortage in the South, placing staff in their local communities and enabling health promotion, prevention and health care services to be provided by those who share the social, religious and cultural norms of the communities they are serving.

- The allocation of NIS 13.6 million for the five-year plan for the Bedouin sector, which includes building additional mother and infant care clinics, intervention programs to reduce congenital defects and mortality and initiating the use of mediators and health promoters.

- A planned increase in the overall number of hospital beds by 1 000 over six years, up to half of which may be earmarked for the periphery, and an allocation of NIS 60 million for improving the hospital infrastructure in the periphery. The likely impact on hospital capacity in the periphery is unclear and unlikely to improve the situation in the short term.

Although government is the overall architect of health policy and macro system design, it plays a limited role in the delivery of frontline services. In its national plan for narrowing health disparities, government defines the goals, target groups and incentives, while leaving health funds autonomous in implementation. This depends in the main on the responsiveness of and uptake by the health funds and health care professionals to government initiatives, which include:

- Incentivising physician and nurse employment in the periphery, including through sizeable incremental salary increases over time. As poor economic development, educational infrastructure, social amenities and the loss of private practice income are major obstacles to the recruitment and retention of staff in low-income areas such as the Negev and Galilee, this initiative should help to attract staff to the periphery, with initial results showing around 100 medical residents received bonus grants to undertake their residency in the periphery.

- Modification in 2011 of the capitation formula at a cost of NIS 160 million to include distance from urban areas in addition to age and sex (see Chapter 2), designed to prevent geographically based selection by health funds and encourage them to invest in the periphery.

- Retrospectively incentivising investment by the health funds in infrastructure and health promotion initiatives in the periphery and for disadvantaged populations by NIS 16.5 million annually.

As these initiatives have been introduced since 2010, when the governmental goal of reducing health inequalities was introduced, it is too

early to assess their impact and whether it will be adequate for reducing the sizeable and chronic regional imbalances by boosting capacity in the periphery. It is therefore important that:

- The government keeps under review the geographical distribution of health care infrastructure, staff and equipment in relation to health care need, in order to estimate the location and scale of the deficits. The review should allow for projected demographic changes in the population.

- The impact of current initiatives in redressing regional imbalances in health care capacity is monitored by the government and evaluated in light of the assessment above, to see if the impacts are adequate for bridging the deficits identified.

- The impact of recent changes to the capitation formula are monitored, and the formula is reviewed as planned in 2012, and recalibrated as needed to reflect accurately the determinants of health care need (such as morbidity, mortality, SES). Ensuring the capitation formula adequately reflects health care need is important because the populations served by the health funds differ significantly in terms of their socio-economic, demographic, health and location profiles. While the change to the funding formula goes in the right direction, it reflects health care need only partially, with the risk that the allocations may not reach the periphery (see also Chapter 2).

- Recruitment policies include vigorous efforts to train and recruit link workers, nurses, physicians etc from within local communities; high attrition rates can be expected to moderate over time. Regulation, financial incentives, personal and professional support can be used as levers for attracting staff to the periphery and retaining them (Dolea *et al*., 2010; WHO, 2010).

In keeping with its decentralised, managed competition-based health care system, the government's strategy for reducing health inequalities is not prescriptive; it provides autonomy to health funds to respond as appropriate to national goals, criteria and incentives. This is similar to the approach of other OECD countries with managed competition models, such as Switzerland and the Netherlands, which have in the main succeeded in delivering equitable access to health care. The government will have a major role in monitoring the impact of the initiatives described above on reversing the wide and chronic regional inequalities in health care capacity in Israel and for steering funds and provider behaviour in the desired direction. This

could include strengthening the use of financial incentives and recognition of good results for funds and providers. The government can also use its regulatory authority, including scrutiny and inspection powers, to ensure that health funds are meeting national standards of equity and quality uniformly. Publication of comparative information on performance showing progress against agreed goals, and indicators measuring variations in capacity, access and quality, can also leverage improvement. Additional tolls that the Israeli Government may wish to consider include regional allocations for health funds, attaching conditions to the capitation formula to ensure funding flows to the periphery, government stimuli to infrastructure development in the periphery, and using its powers of ownership and licensing of facilities to redirect resources to more peripheral areas.

Until conditions improve, the wider socio-economic disadvantages, physical and social isolation, and lack of basic civic infrastructure and community services for people living in the unrecognised settlements in the South will continue to exercise independent, deleterious effects on health and health care quality, and contribute to the growing health differentials between the South compared with the Centre.

3.6. Health promotion and health education services for disadvantaged groups, and culturally competent care, should be strengthened further

The reach and quality of health promotion, health education and preventive services for groups at risk of poor health needs to be strengthened further, both at population level and in the context of primary care delivery. While government public health services and the health funds are very active in this regard, changes in health behaviours and primary prevention are secondary to the focus of health funds on delivering health care to patients. Despite the strong primary health care infrastructure, heavy caseloads, lack of training and inadequate incentives mean that the role of staff in primary prevention remains weak. Training and up-skilling physicians, practice nurses and other frontline staff in health promotion, disease prevention and provision of culturally appropriate care, and an awareness of health inequality issues can be strengthened further. Services targeting the reduction of risk factors such as smoking and obesity among disadvantaged groups, and promoting uptake of preventive services such as genetic counselling and mammography, should be a priority. Although mammography rates among Arab women have increased as a result of strenuous efforts by health funds, they remain relatively low (551/1 000 at ages 50-74 compared with 681 in Jewish women) illustrating the potential for preventive services to

reduce inequalities in health care and outcomes. According to OECD analysis on prevention, health education and promotion, regulation and fiscal measures, and counselling in primary care are cost-effective interventions in improving health and longevity (OECD, 2010a).

Table 3.7 presents data on smoking and physical activity among Israeli population sub-groups. The marked variations by population group and SES illustrate the importance of prioritising behaviour-modification strategies among high-risk groups. Smoking prevalence is inversely associated with SES, and high smoking prevalence among Arab men (crude rate of 446 per 1 000 compared with 250 in Jewish men) is reflected in their high mortality. Physical activity rates also show a positive socio-economic gradient, and are 4-fold higher among Jews than Arabs. These variations are reflected in regional differences, with the populations of the South and North being at highest risk. Rates of obesity and diabetes are high among Arab compared with Jewish women, and childhood obesity is positively associated with having a father of Asian-African origin and recent immigration, and negatively associated with the level of paternal education (Gross *et al.*, 2011). Targeted health promotion and prevention services for high-risk groups need to be strengthened. The priorities for primary prevention should be informed by the health care needs assessment, but the data on risk factor prevalence suggest priorities could be smoking cessation services targeted at Arab men and obesity reduction strategies targeted at low SES groups.

Table 3.7. Risk factors by population group in Israel (rates/1 000), ages 20+, 2009

	Smoking		Physical activity	
	Males	Females	Males	Females
Population group				
Jews and others	250	143	249	218
Arabs	446	37	69	51
Housing density				
< 1.0	193		249	
1.0-1.49	220		151	
1.5+	221		87	
Years of schooling				
0-8	218		82	
12-Sep	263		169	
13-15	173		229	
16+	131		291	
District				
Central	190		221	
Tel Aviv	198		242	
Jerusalem	185		187	
Haifa	212		204	
North	225		157	
South	230		188	

Source: Israel Central Bureau of Statistics (2011), *Health Survey 2009*.

Socio-cultural norms and perceptions of disease influence health behaviours and decision making, such as low uptake of cancer screening among Arab and ultra-orthodox Jewish women, and language and cultural understanding of asymptomatic disease such as diabetes as barriers to access among Ethiopian immigrants. Data from the community care programme shows that low SES groups, Arabs, immigrants and those without supplemental insurance do fewer tests for early detection of cancer, even though these services are cost-free in the insurance basket (Wilf-Miron *et al.*, 2011). This illustrates the socio-cultural obstacles to preventive care that need to be overcome through outreach programmes and culturally adapted services.

A cultural practice that has significant negative health outcomes and poses a particular challenge for health care services is consanguineous marriages among Arabs. As in many Middle-Eastern countries, rates of congenital anomalies, recessive disorders and associated morbidity and mortality resulting from consanguinity are high in the Israeli Arab population. Although common, such marriages are associated with SES status (Sharkia *et al.*, 2008; Vardi-Saliternik *et al.*, 2002). Socio-economic development and improvements in women's educational and economic status, combined with health education, screening and genetic counselling programmes can help to reduce rates of consanguineous marriages and the high associated infant mortality, which is a significant contributor to the longevity disadvantage of Arabs. Some Middle-Eastern countries offer premarital screening programmes to help couples to make informed decisions. Although changing long-established cultural practices is both challenging and sensitive, the genetic counselling services provided by nurses to high-risk groups (such as the Bedouins) strive to promote change.

The adoption of healthy behaviours, uptake of preventive services, compliance with medical advice and ability to self-care depend on services being delivered by culturally competent professionals. Israel has a diverse population *e.g.* Arabs (Muslim, Christian, Druze, Bedouin), Jews (ranging from secular to ultra-orthodox), Ethiopian migrants and Russian Jews, each with distinctive cultural, religious, linguistic and behavioural features. Providing services that meet the needs of these diverse groups is an essential element of quality and a key challenge for the health care system (Epstein, 2007). Box 3.4 describes a Maccabi intervention for raising mammography rates among Arab women by addressing barriers to uptake. Services need to ensure they have the institutional capacity and skills to deliver it universally. A study of health promotion programmes (smoking, home accidents, physical activity, nutrition, diabetes control) found that although most programmes covered the Arab population, cultural competence and the infrastructure to promote it varied significantly at organisational level

(Rosen *et al*., 2008). The importance of cultural competence is now well recognised in Israel, and a number of such initiatives are underway to promote culturally competent services.

Box 3.4. Using culturally tailored services to improve uptake of preventive services

MHS, the second largest health fund (1.8 million enrolees), provides community-based health services via self-employed physicians. In 2004, MHS launched a programme to improve quality of care and equity by increasing mammography uptake among Arab women. The top-down organisational drive was complemented by bottom-up solutions by local staff for improving screening rates based on their field experience. Barriers to access and uptake (such as lack of access and information, social norms, fatalism, risk of stigma) were identified by local Arab staff, and strategies developed for addressing them. Transparency of performance measurement secured management commitment and staff involvement. By 2005 mammography rates in Arab branches increased from 27% to 46% and overall MHS rates from 49% to 63%, resulting in quality gains for Arab women and overall, and reduced inequalities in breast cancer screening rates. Education, income, ethnicity, health insurance all had independent effects on uptake, illustrating the complex dynamics that drive health care decisions and inequalities even when there are no financial barriers to preventive care. In 2008, MHS implemented a comprehensive, long-term strategy to promote equity in service provision and health outcomes.

Source: Wilf-Miron, R., N. Galai, A. Gabali, I. Lewinhoff, O. Shem Tov, O. Lernau and J. Shemer (2010), "Organisational Efforts to Improve Quality While Reducing Health Care Disparities: The Case of Breast Cancer Screening Among Arab Women in Israel", *Quality and Safety in Health Care*, Vol. 19, pp. 1-6.

Strengthening recruitment from local communities will increase the health care system's capacity to meet the needs of all its users. Health care professionals and link workers recruited from minority communities can not only help reduce staffing shortages in the periphery, they are an effective medium for delivering health promoting messages, given their familiarity with the socio-cultural norms of the communities they serve. Upskilling and recruitment of community-based health care staff and link workers should therefore be priorities, and the establishment of community-based user groups such as Tene Bruit should be actively encouraged.

Fostering an equity conscious culture in secondary care should also be facilitated. Accreditation processes and clinical guidelines tailored to reflect the clinical needs of different population groups will support the delivery of patient-centred care. Hospital staff should have the appropriate clinical and cultural skills to deliver services accordingly.

Communication barriers can be a major obstacle to access for minority linguistic groups, and in patients' interaction with services. Overcoming

language barriers is therefore important for improving the quality of services. A major recent initiative is the government's 2011 directive to health care providers requires them to provide access to culturally appropriate services in the main spoken languages (Hebrew, Arabic, Russian, English, and Amharic) (see Appendix C in Horev and Averbuch, 2012 for details). This initiative, implementation of which will be monitored in the hospital inspection and accreditation process (using a cultural competence tool developed by the MOH), should improve health care accessibility and quality for all population groups. It also signals the standards expected of a quality health care system in catering to the needs of its minority and disadvantaged users. The government will need to ensure through its inspection process that this directive is implemented routinely in the course of user interactions with health care staff, including in the context of preventive services.

Finally, it is important for minority groups to be empowered and enabled to have a voice on health care matters and engage in critical dialogue with policy makers, so they have a role in shaping policy, services and the context in which they are delivered. A study of late uptake of neonatal care among Bedouin mothers in the South found that the barriers were a combination of poor living conditions, physical inaccessibility, and perceived benefits of preventive care (Daoud *et al.*, 2010). This illustrates why preventive strategies need to be designed with a holistic understanding, based on dialogue, of the drivers of health behaviours and obstacles to uptake. A user-focussed service is at the heart of the quality agenda and key to empowering populations to shape their health, especially those at the margins of society. Further community-based patient organisations and advocacy groups such as Tene Bruit should be fostered through dialogue and modest start-up funding. This will encourage community involvement in health promotion and service provision. Building on the links that the government and health funds have with the voluntary sector can support this process.

3.7. Conclusions

Although health inequalities typify most societies (for example, life expectancy differentials between Israeli localities – eight years – are similar to life expectancy differences between London boroughs), a combination of social, cultural, historical and economic factors make addressing inequities in Israeli especially complex. It is therefore commendable that the Israeli Government has made tackling persistent inequalities in health and health care a priority. Equitable access to and uniformly high standards of health care for all users in accordance with their needs are essential hallmarks of a high-quality health care system.

The Israeli Government has embarked on an ambitious programme for reducing inequalities in health care since 2009/10. While it is too early to assess the impact of the policies implemented, the strategies are well directed and it will remain important to continue monitoring the initiatives underway. This chapter has sought to highlight a few areas where efforts could be strengthened or prioritised.

First of all, while community care is well developed and highly accessible overall, it is not clear that this applies in all regions and what the position is with respect to access and quality of hospital and specialist care for different groups. The growing burden of out-of-pocket payments and regional imbalances in health care capacity can impact negatively on both access to and the quality of care received by different groups. The high prevalence of risk factors and morbidity in some groups points to the need for continuing to strengthen targeted health promotion, prevention and chronic disease management programmes, such as smoking cessation services for Arab men and self-care among low SES diabetic patients. These services should be delivered by culturally competent staff recruited from their communities where possible. Accreditation processes and clinical guidelines can also be tailored to reflect the clinical needs of different groups, and hospital staff should be skilled to deliver services accordingly.

Making better use of its rich data on population health and bridging data gaps on the quality of care for different groups (especially hospital care and mental health care) will support Israel's efforts in this area. Such data should be used by the government and insurance funds to inform health care needs assessment in different regions, capacity planning and development, identification of variations in the quality of community and hospital care, and planning for demographic and epidemiological changes. Reducing out-of-pocket costs, in particular for chronic disease, and ensuring that patient are aware of their entitlements, will improve access, quality and outcomes for patients and has the added advantage of yielding longer-term cost savings from reduced avoidable morbidity.

Redressing the large and chronic regional disparities in health care capacity is a priority for improving quality of care and health outcomes in the periphery, where populations often experience the combined disadvantages of greater health care need, poverty, geographical isolation, poorer civic amenities, and also relative shortages of health care infrastructure. Current initiatives should be kept under review for their impact, and supplemented by additional measures such as changes to the capitation formula to better reflect health care need, greater use of financial incentives, rewards and penalties to steer providers and funds' behaviours, and community-based recruitment drives in the periphery.

Finally, the independent initiatives of the health funds (Clalit and Maccabi) in developing a variety of approaches to reducing disparities in health care quality within an overall programme of quality improvement have yielded good dividends. Sharing learning and good practice about "what works" could yield greater collective pay-offs and there may be scope for cost savings *e.g.*, in delivering health promotion and education services where there is geographical overlap in catchment populations. The well-established collaborative links between government and the health funds, and events such as the annual inequalities conference led by the Ministry of Health, provide worthwhile forum for regular dialogue. Measures to engage Meuhedet and Leumit are needed to ensure all the health funds are engaged in this national priority area.

Israel faces numerous challenges in reducing inequalities in health and health care: wide and widening inequalities in income and wealth, a culturally and religiously diverse population, new migrants, and a health care system that is economically funded by OECD standards. However, Israel has the critical building blocks in place to tackle this challenge: legislation requiring the health care system to apply principles of equity, universal health care insurance coverage, a government committed to reducing inequalities in health, active engagement of the Health Ministry, health funds and health care professionals (including the Israeli Medical Association) in achieving these goals, and a strong community health care system.

Realising its goal of reducing health inequalities is not a task for the health sector alone. It will require the government to also implement measures to reduce wider socio-economic differentials and foster working across government departments. Israel's local governments, many of which are already involved in preventative health care, provide an ideal platform to facilitate this. Government attempts at raising the profile of health inequalities and engaging other departments in efforts to address poverty and social determinants of health inequalities should be reinvigorated. The hazards to health and health care in the unrecognised settlements of Southern Israel will remain unless the lack of basic infrastructure and geographical and social isolation are addressed. These are but a few examples of how important it is for the Israeli Government to address different dimension of socio-economic disparity, which will have important consequences on the ability of the health sector to address inequalities in health.

Notes

1. Diabetes prevalence in QICH is defined as the prescription of three medicines for diabetes; low SES group is defined as entitlement to exemption from or reduction in co-payments – about 10% of the insured population.
2. QICH indicators relating to pharmaceuticals measure patients receiving prescribed medication.

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Chapter 4

The quality of diabetes care in Israel

This chapter reviews the quality of diabetes care in Israel. Diabetes care is mainly provided and co-ordinated in the community care sector. As a result of improvements made in the community care sector at large, quality of care provided to patients with diabetes has been improving in recent years, as shown by decrease in long and short-term complications. Today, quality of care appears to be good in the general population, but remains a problem in some population groups. Scaling-up and widening diabetes prevention programmes, especially amongst disadvantaged populations and some ethnic groups will be required in the context of a rising disease burden. Moreover, these population groups might also suffer poorer health outcomes than the rest of the population and may require specific tailored care. Care co-ordination and continuity, especially between the community care sector and hospital sector will also need to be improved, especially as patients with diabetes are likely to experience complications. A particular focus on diabetes co-morbidities, including mental health, will be required to move towards greater patient-centred care and better outcomes.

4.1. Introduction

In Israel, as in many OECD countries, diabetes mellitus is a leading cause of death, is associated with significant co-morbidities, and is associated with considerable health expenditure. While the prevalence of diabetes in Israel is close to the OECD average (6.5% of the total adult population in 2009) (OECD, 2011a), trends of increasing prevalence of obesity, ageing of the population and changing lifestyles are likely to drive an increase in the future. Moreover, diabetes affects certain population groups unequally, and has become a major public health concern amongst certain ethnic groups (*e.g.* Arab-Israelis or immigrants from Ethiopia).

The landscape of diabetes care in Israel has changed considerably over the course of the last decade, mostly as a result of general improvements in the community care sector at large. Overall, data shows that health funds and governmental efforts to prevent, monitor and manage diabetes have resulted in good quality standards of care, and, in turn, in better health outcomes for patients with diabetes. Short-term complication rates, uncontrolled diabetes rates and retinopathy have been decreasing in recent years: for instance, data reported to OECD suggest that hospitalisation for poorly controlled diabetes (uncontrolled diabetes[1]) in Israel was the second lowest in the OECD in 2009 (OECD, 2011a). Nevertheless, these improvements have been unequal across the population: some population groups are more likely to be affected by not only higher prevalence rates, but also poorer health outcomes. Additionally, co-ordination and continuity of care, key facets of diabetes care, are currently weaknesses in the Israeli delivery model.

This chapter reviews the quality of care of diabetes in Israel, and forms a good disease-specific case study for some of the more general points made about Israel's health system throughout this report. For example, the chapter points out difficulties facing a central authority in ensuring quality of care and driving changes across competing health funds. Co-ordination of diabetes care across different levels of care in the health system, especially across primary and secondary care, has been a concern. Finally, diabetes is more severe in some ethnic groups. Beside genetic factors, differences in environmental exposure, lower health literacy and cultural barriers, this might also reflect inequality of access to community care and other services in selected population groups in Israel, as discussed in Chapter 3 (Box 4.1).

Box 4.1. What is diabetes care?

What is diabetes?

Diabetes is a condition where the concentration of glucose in the bloodstream is too high. Over time, This can cause serious complications, including blindness, heart attacks, stroke, kidney failure and lower extremity amputations. Once developed, diabetes is lifelong and its chronicity, complexity and rising prevalence make diabetes a challenge for any health care system and a key marker of health care quality.

There are two main types of diabetes. In type 1 diabetes, the insulin necessary to allow glucose to leave the bloodstream and enter cells is not produced because insulin-producing cells in the pancreas have been destroyed. In type 2 diabetes (formerly called non-insulin dependent diabetes or adult-onset diabetes), the body either does not produce enough insulin, or the insulin it produces is ineffective (insulin resistance). Type 2 diabetes accounts for at least 90% of all cases of diabetes. In addition, high blood sugar levels can also be observed in pregnant women without a history of diabetes. The prevalence of Gestational Diabetes Mellitus (GDM) differs from population to population: for instance, Lawrence *et al*. (2008) estimates that GDM occurs in 4-14% of all pregnancies in the United States. In Israel, a population-based study in the Maccabi health fund showed that overall, prevalence of GDM is about 6% (Chodick *et al*., 2010).

Although diabetes cannot be cured, it can generally be managed successfully. The cornerstone of management is a healthy lifestyle around diet, physical activity and non-smoking, with some patients also taking medication or injecting insulin.

What constitutes good quality care?

Diabetes is a complex, chronic condition and reaching a shared understanding of the condition between the patient and their clinical team is critical. High quality care, therefore, consists of regular reviews and assessments, tailored patient education; lifestyle management (particularly around a good diet, taking exercise and stopping smoking); monitoring and achieving blood glucose control (including self-monitoring as appropriate); monitoring and achieving blood pressure and lipids control (and estimating cardiovascular risk); antithrombotic therapy in particular patients and avoiding kidney, eye and nerve damage in all patients. High quality care also involves identifying and managing depression and other complications, referring as appropriate to specialist care.

International experience tends to show that quality initiatives have achieved substantial improvements in the processes of care (such as checking blood tests at regular intervals), but that success has been much more variable in terms of clinical outcomes (such as achieving blood glucose control). Furthermore, quality initiatives have not always benefitted particular groups such as the elderly or those of low socio-economic position, and have tended to neglect patient-reported assessments of quality, in favor of clinical measures and outcomes.

What is the burden of disease associated with diabetes?

More than 366 million people worldwide have diabetes (International Diabetes Foundation, 2011). The World Health Organization refers to this as a "global epidemic", predicting diabetes to become the seventh leading global cause of death by 2030. If not managed well, type 2 diabetes doubles the risk of heart attacks and strokes and can reduce life expectancy by eight to ten years (Franco *et al*., 2007).

The International Diabetes Federation estimate that in industrialised countries health care costs in people with diabetes are doubled and that, globally, diabetes caused at least USD 465 billion in health care expenditures in 2011. In OECD, the cost of diabetes was estimated to USD 345 billion (IDF, 2009). Beyond health care costs, diabetes also represents significant indirect cost to the economy due to loss of productivity and greater absenteeism, as well as non-financial costs to patients and their carers. The St Vincent Declaration (1989) points to important human intangible costs caused by the disease. Diabetes requires a lifelong daily management of the disease, important changes in lifestyles and diets, daily medication (with potential side effects) and complications which can have important bearings on the well-being and mental health of individual and their families (Department of Health, 2001).

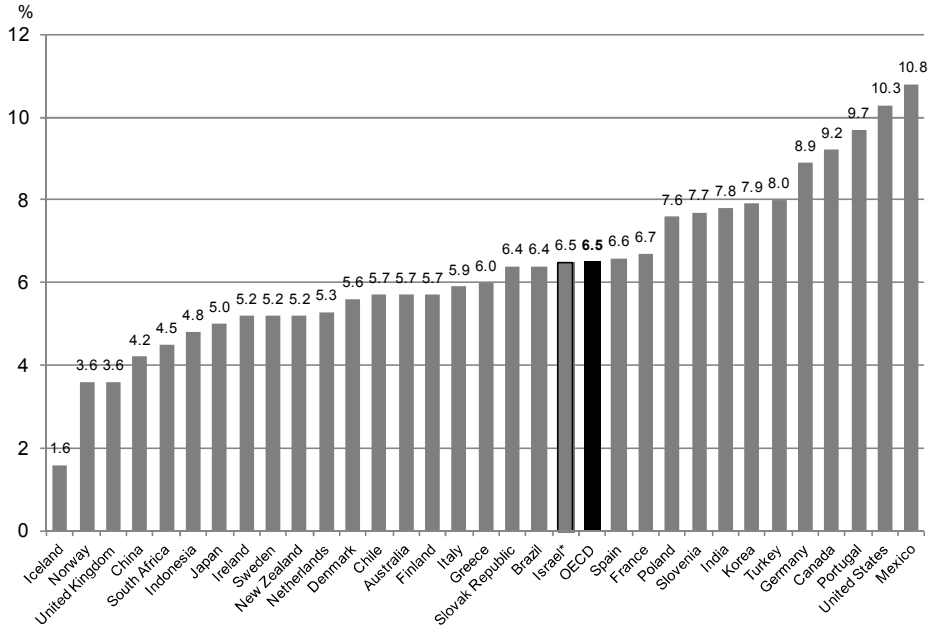
4.2. Diabetes is a growing public health threat in Israel

Although diabetes prevalence in Israel is around the OECD average, rates are much higher in specific population groups

In 2010, 6.5% of the total Israeli adult population had diabetes (either diabetes type 1 or 2); in line with the OECD average (Figure 4.1). Incidence of type 1 diabetes among those aged 0-14 years is 10.4 per 100 000,[2] which is much lower than the OECD average of 16.9 per 100 000. Other studies have reported higher diabetes prevalence rates: according to both the WHO (2011) and Danaei *et al.* (2011), diabetes prevalence rates could be as high as 10% (respectively 8.7% and 10.2% for men and women) in Israel.

However, prevalence for type 1 and 2 diabetes is particularly high amongst certain population groups and ethnic minorities. The National Programme for Quality Indicators in Community Health (QICH) reports a prevalence of diabetes as 4.7 times higher in the exempt population (as defined by exemption to copayment on medical services and prescriptions therefore at higher socio-economic disadvantage) than in the general population. Some studies have also shown that these vulnerable population groups have worst health outcomes, quality of life and develop the disease at a significantly younger age.

Figure 4.1. The prevalence of diabetes among adult aged 20-79 in Israel is around the OECD average, 2010

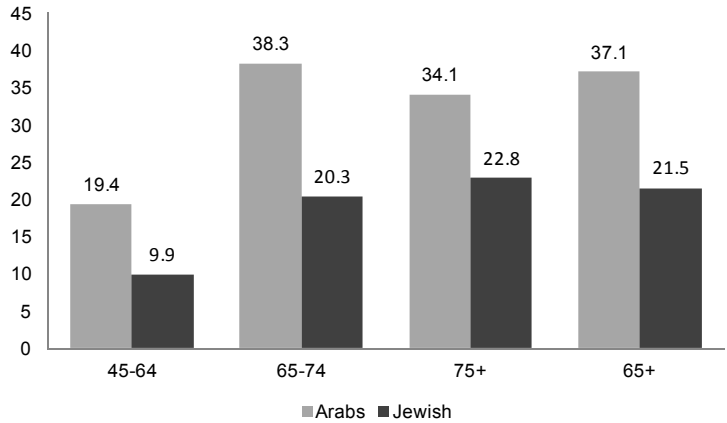


* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602.*

Source: OECD (2011), *Health at a Glance – OECD Indicators,* DOI: 10.1787/health_glance-2011-en; International Diabetes Federation.

For instance, prevalence of type 2 diabetes among Arab-Israelis is almost twice as high as among the Jewish population, and Arab-Israelis develop type 2 diabetes 11 years earlier than the Jewish population, on average (Kalter-Leibovici *et al*., 2011) (Arab-Israelis have lower incidence rates of type 1 diabetes than Jews). Among people aged over 45, prevalence of diabetes is consistently higher among the Arab permanent population (Figure 4.2). A disproportionate burden (relative to the overall population) is also likely to be suffered by Ethiopians immigrants.

Figure 4.2. Self-reported diabetes prevalence is higher among Arabs than among Jewish people in Israel, 2009



Note: The 2009 Health Survey is based on a representative sample of the permanent population of Israel, excluding those residing outside localities (Bedouin tribes) and residents of institutions (*e.g.*, retirement homes and chronic nursing institutions).

Source: Israel Central Bureau of Statistics, "Household Health Survey 2009".

Israel is likely to experience rising prevalence of both type 1 and type 2 diabetes

Type 1 diabetes in the 10-17 year group is increasing in Israel. According to Sella *et al.* (2011), there was a 5.8% annual increase in the incidence rate of type 1 diabetes between 2000 and 2008. Koton (2007) showed that the annual incidence of type 1 diabetes increased by 5.2% and 8.0% in Jewish and Arab-Israelis respectively between 1997 and 2003. The incidence of type 1 diabetes among Ethiopians was also significantly higher than for the rest of the Jewish population (Koton, 2007; Sella *et al*., 2011). There is in general little evidence on the driving cause of rising type 1 diabetes (Gale, 2002).]

While diabetes prevalence rates at present are about OECD average, they are also likely to increase in the course of the next decades. Similarly to other OECD countries, diabetes prevalence has been rising in recent decades as a result of ageing population, deteriorating lifestyles and diets, particularly relevant for some ethnic minorities and population groups (Wilf-Miron *et al*., 2010).

Ageing population

In 2009, 9.8% of the Israeli population was 65 years old and over, expected to reach 14% by 2030 (OECD, 2011b). The share of the very old people – *i.e.*, those older than 75 years in the population aged over 65 years increased from 39.8% in 1998 to 47.7% in 2009.

Rising obesity and overweight

According to OECD data, the prevalence of obesity in Israel was 13.8% of the total adult population, in 2009, below the OECD average of 16.9%. Nevertheless, some studies have reported higher obesity rates in Israel. For example, the WHO (2011) estimates obesity rates as high as 26.2% of the total Israeli adult population, based on a survey on health and nutrition conducted in 2003-04 (face to face interviews). Another study by Finucane *et al.* (2011) shows the mean BMI for men and women being respectively 27.1 kg/m² and 27.3 kg/m². Obesity and overweight have risen in recent years and is likely to continue to rise, due to changing lifestyles and diets, especially among certain population groups. For instance, Kalter-Leibovici *et al.* (2011) estimate that obesity rates among Arab-Israeli women reach 54.8%, against 34.1% among Jewish women. Only 23% of Arab-Israeli women declare to have a regular leisure physical activity, against 51.6% of Jewish women.

Overweight and obesity prevalence rates in children are currently low but on the rise. Janssen *et al.* (2005) showed that 9.3% of children were overweight, one of the lowest rates among the group of 34 countries reviewed. Nonetheless, in 2005, Israeli adolescents ranked first in consumption of soft drinks, and also time spent in front of the television or computer. Physical inactivity and unhealthy diets are also more likely to be prevalent in certain population groups, including Arab teenage girls: 60% of Arab-Israeli teenage girls were reported to watch more than three hours of television on regular week-days (Janssen *et al*., 2005).

4.3. Despite good health promotion and prevention, efforts to tackle risky behaviour should be scaled up and widened in focus

Diabetes is a well-characterised condition, with documented risk factors and comprehensive clinical guidelines and protocols developed over the past decades. As in other OECD countries, programmes to reduce the risk of onset of type 2 diabetes through general health promotion campaigns have been implemented in Israel in recent years (Box 4.2).

Box 4.2. The National Programme for Promoting an Active and Healthy Lifestyle

The National Programme for Promoting an Active and Healthy Lifestyle is a cross-governmental programme defined by the Ministry of Health, the Ministry of Education and Ministry of Culture and Sports to promote active and health lifestyles, with a particular focus on child obesity. To monitor the implementation, a cross-governmental committee was formed, working with local authorities (municipalities), the four health funds and the private sector. The Ministry of Health acts as the steward of this initiative, and has allocated NIS 26 million in 2011 to the programme.

The three areas of work for this joint co-operation across governments are the following:

- *Increase awareness of lifestyles risks:* marketing awareness in schools and workplaces by trained "health promoters" employed by health funds.
- *Building of public infrastructure supportive of healthy lifestyles:* including sports infrastructure in schools, cycling roads and walking alleys. As part of this initiative, a pilot programme was launched in 75 schools to provide healthy delivery of meals (limitation of products available in vending machines and cafeterias), promote physical activity among children and increase awareness through education programmes.
- *Implementation of disincentives to products which are considered harmful* (*i.e.* accurate marking and labelling of food, taxation of products with little nutritional value, etc.) and *incentives for local authorities or health funds to undertake health promotion initiatives*. For instance, financial incentives could be provided for health funds which will develop individual counselling activities, as well as prevention and treatment of obesity programmes.

Israel has put two commendable programmes to prevent obesity and promote healthy lifestyles. The National Programme for Promoting an Active and Healthy Lifestyle and Healthy Israel 2020 have been designed as multi-level strategies involving health funds, ministries and local communities. One impressive achievement of these programmes was the adoption of regulations on reduction of salt and sugar levels in industrial products, as well as better marking of ingredients and nutritional value. According to recent works of the OECD on prevention of obesity, food labeling is widely regarded as a cost-effective intervention to tackle overweight and obesity (OECD, 2010).

Nevertheless, most of the interventions are only currently piloted at the local level, and there is a risk that efforts to tackle unhealthy food habits and obesity may not be scaled-up at national level, or might remain unco-ordinated across sectors and levels of government. In the absence of a co-ordinated plan of action or of remedies for inaction – whether through compulsion, fiscal incentives or other sticks and carrots measures, isolated

strategies at the local level and initiatives left to the good will of individual organisations and health funds are likely to have only marginal impacts on the lifestyle and health of the population.

Moreover, most of the efforts seem to be directed to prevention of obesity and health promotion among children, especially in schools, leaving interventions in the workplace and counseling in primary care out of the scope of the current strategy. Nonetheless, these interventions have been identified as very powerful in driving changes among the adults, and in families. In its intensive form (with specialist and primary care consultations), counseling by health professionals is effective in reducing the total energy intake from fats by 10% (OECD, 2010). The impacts of such interventions are likely to be amplified when implemented alongside other interventions, such as food regulation, worksite intervention and mass media campaigns. These combined interventions are more cost-effective than treatment routinely provided by health services. For instance, a comprehensive multi-level intervention package would only cost USD 21 per person per year in Western Europe (OECD, 2010).

Another efficient use of limited available resources would be to work with specific population groups, known to present important risk factors. This is especially relevant to the case of Israel, as obesity is more prevalent in specific and identified population groups for which intervention programmes can be limited by important cultural and linguistic factors. For instance, Arab-Israeli women have been shown to be more at risk of developing type 2 diabetes as a result of lack of physical activity, sedentary lifestyle, and possible genetic propensity towards diabetes. Some local initiatives, such as walking groups for Arab-Israeli women, have proved popular in some localities, and should be further supported. Culturally appropriate lifestyle interventions give good results, too. For instance, an intervention targeted at obese Arab-Israeli women combining counseling sessions (group and individual) with a specialist dietician and physical activity group sessions has shown to have been successful in reducing risk factors associated with diabetes (Kalter-Lebovici *et al.*, 2010). Defining and implementing a tailored action plan in targeted communities could harness the benefits of a nation-wide health promotion programme, especially among adults. This must be done in partnership with the population groups meant to benefit, to ensure that the initiatives are relevant and acceptable, and be accompanied by rigorous evaluation, to ensure effective use of public funds.

4.4. Secondary prevention and diagnosis of diabetes strategies in Israel are in line with current international standards

Gestational diabetes is tested in all pregnant women at mild-to-moderate risks around weeks 24-28 of pregnancy, in line with the experience of other OECD countries and research literature. Identifying gestational diabetes at early stages of pregnancy can reduce the risks of prenatal death, neonatal complications, fetal overgrowth, caesarean delivery, and hypertensive disorders. Pre-natal consultations could suitably identify women at risk for screening, as risk profiles for gestational diabetes (overweight or obesity, previous or familial history of impaired glucose fasting or type 2 diabetes) have been well defined (Ducarme *et al.*, 2008).

Most adults are diagnosed with type 2 diabetes through general blood tests, which seem to be part of regular health check-ups in Israel: for instance, in 2009, 73% of the adult population in Maccabi had at least one fasting glucose result in their medical file. In Maccabi, if patients are diagnosed with abnormal blood glucose tests, they are offered a second test to diagnose diabetes. In Clalit, patients with abnormal results are offered 14 sessions with a dietician for lifestyle modification; and closely followed by their co-ordinating doctor.

In general, under-diagnosis of type 2 diabetes is unlikely to be a major concern, given the regular use of blood tests of the Israeli population. Recent debates and studies have shown that universal screening for adults could be resource consuming, while improving very little diabetic patients health outcomes. Simmons *et al.* (2010) show that the research on the impact of universal or targeted screening have concluded on mixed results: screening for type 2 diabetes seems to be neither cost-effective neither significantly beneficial for patients under treatment. Given the recurrence of blood tests in Israel, such an approach will be even less suitable. Simmons *et al.* (2010) also show that if diabetes screening per se is not cost-effective, it can be embedded in a broader screening for conditions such as cardiovascular disease and should include a more comprehensive health assessment of risk factors for other chronic conditions.

4.5. Israel has good measurement of quality of diabetes care, but co-ordination of care for diabetic patients can be improved

Israel measures of diabetes care in the community show improvement over time but also disparities across population groups

The National Programme for Quality Indicators in Community Health (QICH) is one of the largest programmes to measure quality of primary and community care across OECD countries. With regards to diabetes,

indicators developed within the programme are similar to those used in the Quality and Outcomes Framework in the United Kingdom and intend to measure both process and outcomes (Table 4.1). The National Comprehensive report produced in 2010 shows that quality of care for diabetic patients appears good and has been improving in recent years.

Table 4.1. Quality indicators in community health indicators for diabetes in Israel, 2009

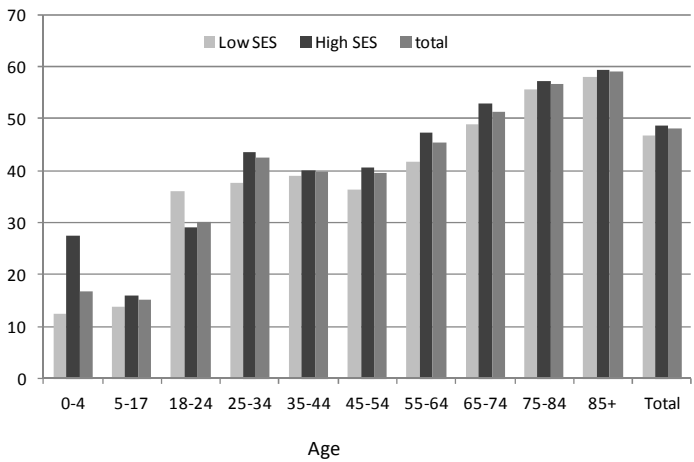
QICH indicators (diabetes)	2009
Percentage of individuals with diabetes mellitus with a record of hemoglobin A1c (HbA1c)	92.30%
Percentage of individuals with diabetes mellitus with HbA1c less than or equal to 7.0%	48.00%
Percentage of individuals with diabetes mellitus with HbA1c greater than 9.0%	12.90%
Percentage of individuals with diabetes mellitus with HbA1c greater than 9.0% who purchased insulin	53.10%
Percentage of individuals with diabetes mellitus with a record of low-density lipoproteins (LDL) cholesterol testing	90.40%
Percentage of individuals with diabetes mellitus with low-density lipoprotein (LDL) cholesterol levels less than or equal to 100 mg/dL	65.60%
Percentage of individuals with diabetes mellitus who had an eye examination	64.30%
Percentage of individuals with diabetes mellitus with a record of microalbumin levels	74.30%
Percentage of individuals with diabetes mellitus ages 5+ years who received an influenza immunization	55.00%
Percentage of individuals with diabetes mellitus and a record of blood pressure	91.90%
Percentage of individuals with diabetes mellitus ages 18+ years with blood pressure less than or equal to 130/80 mm Hg	68.60%
Percentage of individuals with diabetes mellitus ages 18+ years with a record of body mass (BMI)	83.60%

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.

With regards to process indicators, there is some evidence that quality of diabetes care has been improving since 2007. For instance, the percentage of individuals with diabetes mellitus with a record of HbA1c in the past year reached 92.3% in the past year and 90.4% of individuals with diabetes had a record of an LDL cholesterol test during the measurement year. Improvements are also noteworthy in blood pressure and eye examination, although the latter is lower in older age groups, where the risk of developing blindness is the highest.

Glycemic control, as defined by the measure "percentage of individuals with diabetes mellitus with HbA1c (a measure of blood glucose control over the past three months) less than or equal to 7.0%", has been stable over the three years of measurement. In 2009, according to this measure, 48% of patients achieved glycemic control (Figure 4.3)

Figure 4.3. Almost half of all patients with diabetes mellitus have HbA1c level less than or equal to 7.0% in Israel, 2009



SES: socio-economic status.

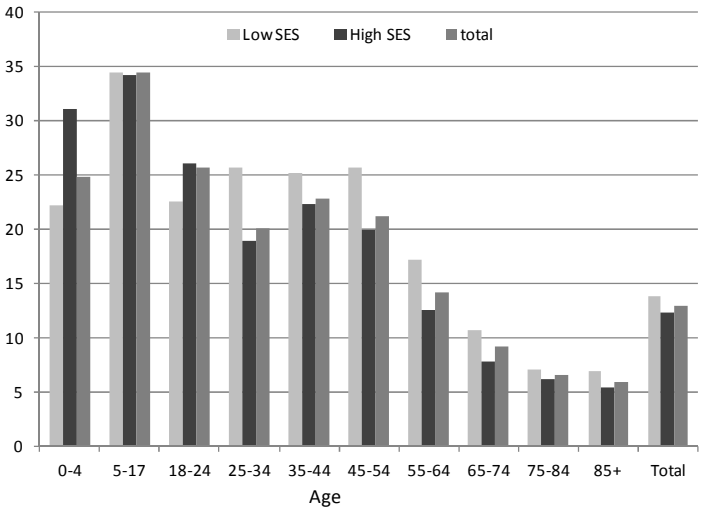
Source: Manor O., Shmueli A., Ben-Yehuda A., Paltiel O., Calderon R. and D.H. Jaffe (2011), *National Program for Quality Indicators in Community Health in Israel. Report for 2007-2009,* School of Public Health and Community Medicine, Hebrew University-Hadassah, Jerusalem.

In recent years, an important body of literature has built up around the importance of control of blood glucose levels to reduce the risk of cardiovascular disease and microvascular complications. However, levels of appropriate blood glucose (HbA1c less or equal to 7%) applied in such quality measures have been widely debated. Such tight control of blood glucose levels can be hard to achieve in the general population, as patient treatment options or history and severity of the disease can influence the ability of providers to achieve glycemic control. Currently, one of the goals of the QICH programme is to define sub-group specific HbA1c to evaluate quality of monitoring and appropriateness of treatment (Jaffe *et al.*, 2012). In the UK's Quality and Outcome Framework, similar indicators are used to measure quality of diabetes care: the target rate for the percentage of patients with a level of

HbA1c less than 7.4% has been defined at 50% (in order not to penalise physicians for dealing with complex patient conditions).

An additional measure of quality of diabetes care is the percentage of patients with uncontrolled diabetes, as measured by the indicator "percentage of individuals with diabetes mellitus with HbA1c greater than 9.0% (Figure 4.4)". In Israel, 12.9% of individuals had poor glycemic control, according to this measure. It is worth noting that this rate has been decreasing over the past three years – but is more prevalent among low socio-economic status (SES) populations. The share of patients with poor glycemic control receiving insulin therapy has increased from 44.8% to 53.1% from 2007 to 2009. Nevertheless, access to medication and services could further be improved: medication costs for diabetic patients are capped at USD 70 per month, which can represent a considerable financial burden for patients. Additionally, patients with diabetes are not exempted from co-payments for consultations with specialists in the community, which can have important impacts on access to care, but also compliance and outcomes of patients.

Figure 4.4. Low socio-economic groups have slightly higher percentage of individuals with diabetes mellitus with HbA1c greater or equal to 9.0%, 2011



SES: socio-economic status.

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.

Another measure of quality of diabetes care is the rate of vaccination for influenza. Epidemiological studies showed that diabetic patients, especially those with end stage renal disease or cardiovascular disease (and those with abnormalities in the immune system), are at higher risk of death from influenza and pneumococcal disease (American Diabetes Association, 2007). Vaccination rates appear to be higher among older population (those aged 85+) but could be improved by more widespread vaccination campaigns.

Overall, the QIHC programme suggests that quality of diabetes care is improving over the years. Nevertheless, other epidemiological studies (Israel Central Bureau of Statistics, 2003-2004) show that there might be large inequalities of care and outcomes among the population, especially for some specific population groups. The measure of socio-economic status is informative to capture large differences in health care quality across the population, but might give little insight to policy makers to better target initiatives to specific groups in need, presenting risky lifestyles or genetic propensity towards developing diabetes. Disaggregating these data (especially those collected by the QICH programme) geographically or by language (rather than based on ethnicity) at the level of regions can provide information on where improvements in care can be achieved, and inform targeted programmes in the community.

Health funds have developed important patient education and empowerment programmes for diabetic patients; patient associations could play a stronger role

Patient education and empowerment is a critical component of diabetes management and role of health professionals, as diabetes is a self-managed chronic disease. Patient education is an on-going process, which needs to be adapted to changing patient needs, lifestyles, treatment and health outcomes. Over the past decade, a body of clinical procedures and protocols on management of diabetic patients and patient education; mostly applied to primary care. Such protocols have been defined by health funds in Israel.

Currently, patient education and empowerment is provided through patient training courses and counselling sessions organised by Health funds to improve health literacy, lifestyle habits and self-management skills (including home glucose monitoring). In Clalit, patient empowerment was placed as a central piece of diabetes care in the *Diabetes in the Community* programme (see Box 4.3). Patient education and empowerment programmes included distribution of educational materials in three language and healthy lifestyle workshops. More targeted initiatives have taken place in the specific population groups with culturally appropriate materials, such as among Ethiopians and Arabic insurees (included visits to the community of integrated

teams for severely ill patients and distribution of translated cook books for healthy food based on traditional Arabic cuisine). In Maccabi, training courses are being organised for voluntary patients, combining individual counselling and group education sessions organised with 15 other diabetic patients to share on their experience. Each patient diagnosed with diabetes can enrol in ten group discussion sessions. Maccabi has also put in place frequent "Diabetes mornings" in larger clinics at the regional level, during which patients can consult with a dietician and nurse for individual counselling, as well as perform a blood and eye test.

Although the two main health funds have put patient education and empowerment at the heart of the organisation of diabetes care, by organising group and individual sessions, and providing supporting materials and training courses in Hebrew as well as Russian, Arabic and Ethiopian. However, the frequency and take-up and effectiveness/impact of such initiatives is unknown and currently not monitored by health funds. For instance, discussion with the NGO Tene Bruit suggests that Ethiopian populations do not benefit widely from these interventions. The NGO has set up a telephone line with community health workers and doctors proficient in Ethiopian to provide more information on self-management, and as also organised health fairs to promote changes in lifestyles, especially with regards to healthy diets. Finally, patient education and empowerment should be individual tailored interventions, from a lifecycle perspective. Such an approach could be promoted by greater involvement of patient associations, absent in Israel. The Israeli Diabetes Association, mainly composed of medical professionals, and researchers, plays a limited advocacy role in the community, as its main activities are targeted to medical professionals' knowledge and awareness.

The development of patient associations can be a positive step towards care, particularly around shared decision making and management. In other countries, such groups have been instrumental in delivering patient education, advocating for patients' needs and liaising with health funds, pharmaceutical companies, clinicians and other stakeholders to ensure high-quality care. This development would be especially relevant in the context of a fragmented ethno linguistic country where concerns over inequalities in access are important, such as Israel.

Box 4.3. Clalit: Diabetes in the Community

The *Diabetes in the Community* programme was launched in 1995 by the largest health insurance fund Clalit (managing care for 75% of the nation's diabetic patients). Under the programme, a diabetes management system was implemented in all Clalit primary care clinics nationwide. Care co-ordinators (of whom 80% were nurses) were appointed in every clinic, alongside a team with a primary care physician, a diabetologist, dietitian and health educator working together for a given number of diabetic patients.

As part of the initiative, Clalit developed disease registers to follow diabetic patients, clinical pathways, clinical guidelines adapted to primary care, and continuous medical education programmes. These have been available almost yearly since 1995 and tackle different topics related to diabetes management, ranging from prevention to care for complications (Goldfrach and Porath, 2000). Rather than applying a national standardised programme, *Diabetes in the Community* aimed at increasing co-operation between clinics and with other levels of care within districts, leaving districts the necessary margins for maneuvers to organise the programme at the local level.

For instance, in the Tel Aviv-Yaffo district, 45 community clinics were appointed to participate to the *Diabetes in the Community* programme, in which one primary care physician and nurse where appointed in each facility. The programme consisted in three steps. Firstly, a lead team composed of a diabetologist, a dietitian and specialised diabetes nurse to provide a three-day course to train appointed physicians and nurses on the use of special management tools specifically developed by Clalit (including follow-up care, care co-ordination and more medical training of management and care of diabetes). The appointed physicians then in turn gave a three-hour lecture on the interventions and the lessons from the three-day course to all physicians working in the clinic (Stern *et al*., 2005). Finally, the lead team responsible for education at the district level and the appointed physicians and nurses from the community carried out a series of consultations with patients defined at high risk (high blood glucose levels) on disease management and lifestyle modifications. These consultations were carried out over the course of two years, with about four months intervals (Stern *et al.*, 2005).

An evaluation of the programme between 2000 and 2002 showed that not only the quality of diabetes improved, but also the participation in the programme: the number of diabetic patients seeking care in the appointed clinics and supported by the initiative increased by 7% in two years. Care did not improve only for patients with poorly controlled diabetes (with HbA1c greater than 8.5%), but for all patients. The share of patients with uncontrolled diabetes decreased from 27% to 19%, while the share of patients with good control (HbA1c less than 7%) increased from 38% to 50%. This improvement trend has also been confirmed in Goldfracht *et al*. (2011), which followed diabetic patients over 12 years and showed considerable improvements in quality of care in all indicators.

These positive results are nonetheless to be analysed in a context of improvements in quality of diabetes care in the community nationwide as a result of general political and financial commitment of health funds and the Ministry of Health. Nevertheless, they show that well structured comprehensive programmes tackling both patients empowerment and physicians education and co-operation between clinics at the local levels can significantly improve management of diabetes.

Continuity of diabetes care in primary care has improved with efforts to improve community care in Israel …

The recent reforms of the Israeli health care system have put primary care as a pillar of new approaches to patient-centred care. Continuity of diabetes care, *i.e.* support of diabetic patient with a stable team and site of care, has been considered one of the key factors for achieving positive health outcomes among diabetic patients (Mainous *et al*., 2004; Gulliford *et al.*, 2004).

With the expansion of geographic coverage of clinics and availability of primary care services, continuity of care with a provider or a group of providers has improved significantly. The current organisation of care relies on care co-ordinators or primary care physicians to perform a wide range of tasks from diabetes prevention and health promotion to management of diabetes for the majority of the population. For instance, in Clalit, a survey showed that 80% of diabetic patients were cared by primary care physicians only (Goldfracht *et al.*, 2005). In the two main Health Funds, diabetic patients are usually enrolled in a patient list and are assigned a diabetes management team upon diagnosis.

The quality of continuity care has also improved as a result of development of clinical guidelines Comprehensive clinical guidelines have been developed by health funds based on guidelines from the American Diabetes Association, NICE and the Israeli Diabetes Association. In 2010, a meeting of 50 diabetes experts has reviewed and updated all clinical guidelines developed by Clalit, subsequent to which the revised guidelines were sent personally to all nurses and doctors in the network. Clalit has also organised a periodical Continuous Medical Education (CME) programme specialised in diabetes care, in the form of a one-day training. The CME sessions have been last organised in 2010, and were attended by 3 000 physicians and nurses. They tackled a breadth of topics from diagnosis and prevention to patient compliance to treatment. While this is a strong programme of CME, such a systematic approach to CME with regards to diabetes might not be available to all physicians across the health care system. The development of clinical pathways and procedure, and organisation of CME and training workshop by each Health Plan should be made available to all physicians, and therefore could be more closely monitored by national organisations such as the Israeli Diabetes Association.

There has also been evidence of innovative practices developed by health funds on the combined use of electronic medical records (EMR) and quality indicators developed under the QICH programmes. Primary care physicians therefore use EMRs not only as quality measurement tools, but also as a management tool for patients with recorded chronic conditions. In the case of diabetes, the QICH focuses on 12 indicators including measure of level of

Hba1c, eye exam within the last year, blood pressure monitoring or BMI control. These indicators are also used by physicians to develop a comprehensive follow-up care system by sending reminders on patients who fall short on some quality indicators, and identify patients at risk of complications.

… but larger efforts should be undertaken to improve care co-ordination

While continuity of community care has improved significantly in recent years, co-ordination of care between different levels of care remains one of the weaknesses of the current organisation of diabetes care. Poor care co-ordination is a particularly prominent feature observed across the Israeli health care system (see Chapter 2), especially for three out of four health funds for which patient files are not harmonised across primary, hospital and post-acute care.

In the case of diabetes, more concerning is the absence of information on transferability of patient files between primary care and hospital settings. For instance, there is currently no information on patient care post-discharge in the case of acute complication, and on use of patient files in hospital settings. While patient EMR are shared between providers in community care, efforts should be undertaken towards ensuring that EMR can be accessed and modified at all points of care.

Referrals to specialist diabetes clinics can also be extremely important in the management of diabetes for complicated cases, as multidisciplinary teams can provide comprehensive care and lifestyle advice in accordance to patients' needs. This is especially relevant for foot examination, for which quality of care is not currently being monitored through the QICH data (see Section 4.6), even though foot examinations are carried out by trained nurses at the primary-care setup. Finally, similar to the situation in other OECD countries, Israel also faces the challenge of co-ordination across sectors, including the health and social care sector, the latter being an important source of provision of health care for diabetic patients (especially older age patients).

4.6. Israel should step up efforts to manage diabetes complications and its co-morbidities

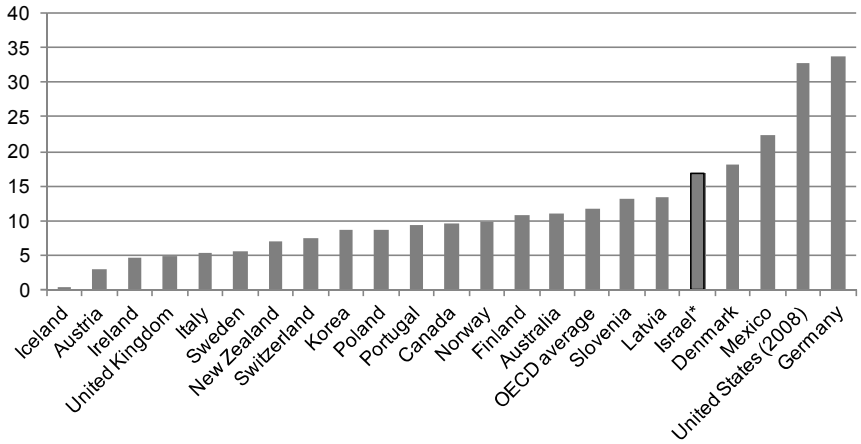
Care for diabetes could be improved by focusing on patient groups most at risk of complications and implementing targeted incentives schemes for providers and patients

As diabetes is a chronic condition and requires lifelong treatment and monitoring of care, some patients will be at risk of experience complications

directly related to daily management of the condition. There is no comprehensive data on development of complication and general health status of patients with diabetes in Israel. Common long-term complications of diabetes include blindness, lower extremity amputations and end stage renal failure, which are not systematically recorded in Israel.

Blindness and lower extremity amputation rates are the frequent macro- and micro-vascular complications directly related to inadequate management of blood glucose levels. Israel ranks amongst one of the highest in lower extremity amputation rates across the OECD (Figure 4.5) with more than 16.9 per 100 000 population while the OECD average is 11.4 per 100 000 population.

Figure 4.5. Israel has high lower extremity amputation rates compared to other OECD countries, 2009 (or latest year available)



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

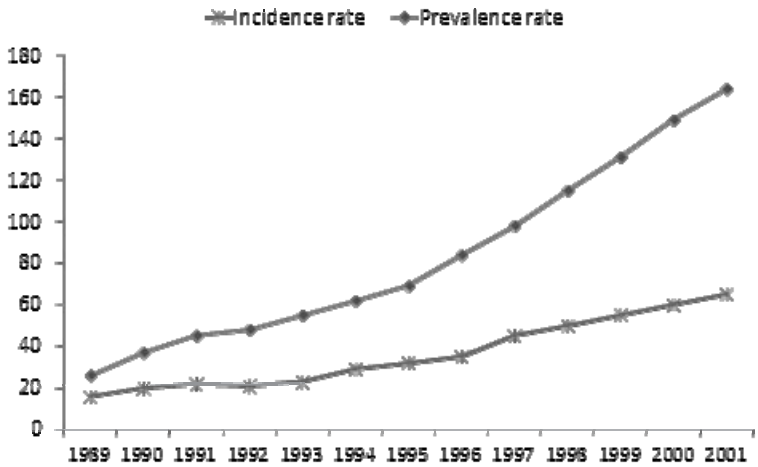
Source: OECD Health Data 2011, DOI: 10.1787/health-data-en.

Blindness is also considered quite high, affecting 1.6% of diabetic patients, and remaining the main cause of blindness for people aged between 41-65 years old in Israel. Nonetheless, blindness amongst diabetic patients has dropped from a high 5 per 100 000 in 1999 to less than 3 per 100 000 population in 2008. This is in line with the decrease in blindness which has been observed in the country for several decades (Skaat *et al*., 2012).

Finally, the high incidence of end stage renal disease (ESRD) further supports the evidence that more attention should be paid to patients at risk of

complications. End stage renal failure invariably translates into a need for lifelong renal dialysis or transplant, and higher mortality. Increase in dialysis prevalence rates was driven by an increase in ESRD among diabetic patients (threefold increase between 1989 and 2001). In 1989, diabetes accounted for only 19% of all ESRD, but it reached 41% in 2001 (Figure 4.6). Prevalence is higher among older men than women – with 10.8 per 1 000 diabetic patients for men aged over 75 years (compared to a low 2.2 per 1 000 for women). Data on incidence of ESRD for all cause from Calderon-Magalit *et al.* (2011) show an increase in incidence in most countries, with Israel rate being one among the highest in the world. Yet, recent data from the Israeli Center for Disease Control (2011) show that, despite an increase in the incidence of ESRD for all cause since the beginning of the 1990s, the rate has remained stable since the beginning of the 2000s.

Figure 4.6. Age-standardised and prevalence rates (per 100 000 population) of diabetes related end stage renal disease is rapidly increasing in Israel



Source: Adapted from Kalderon-Margalit, R., E.S. Gordon, M. Hoshen, J.D. Kark, A. Rotem and Z. Haklai (2008), "Dialysis in Israel, 1989-2005 Time Trends and International Comparisons", *Nephrology Dialysis Transplantation*, Vol. 23.

This increase is particularly concerning as the availability of kidney transplantation is still a sensitive issue in Israel. Since 2002, about 150 kidney transplants were on average performed each year (with the exception of 2011 with 242 transplants) (Israel National Transplant Center, 2012). In the absence of transplantation option, patients with ESRD experience lifelong dialysis and ultimately high mortality rates.

These data altogether show that there could be improvements in management of diabetes complications. For instance, the inclusion of an indicator on foot checks in the QICH is recommended, in addition to the definition of clinical standards and guidelines in relation to foot care. In 2009, the Nursing Administration in the Israeli Ministry of Health and the National Council on Diabetes issued recommendations for foot checks by nurses working in the community. Nevertheless, more comprehensive guidelines including patient education on self-care and detection of foot abnormalities (such as dry skin, pain and regular self-examination) should be issued and disseminated widely across health funds.

High prevalence of retinopathy should also be addressed: retinal examination appears to be not only lower than in other countries (64.3% of total diabetic patients, vs. 90% in the United Kingdom), but also particularly low for strands of the population most at risk of developing cataract and blindness: retinal examination appears to be less and less often performed for patients aged over 75 years old, with only about 50% of patients aged 85 or over receiving such an exam. This is especially surprising given that this pattern is not observed across any other indicator in the QICH, as elderly tend to receive as much care and checks as the rest of the population (except for BMI and blood pressure measurement). Retinal screening is a widely accepted clinical practice in other countries to prevent visual impairment potentially leading to blindness, therefore an important component of quality of diabetes care (Cuadros *et al*., 2009). Policies seeking to achieve higher eye examination should be pursued for the total population, and more specifically target elderly, especially those in lower socio-economic groups for which eye examination rates drop to a low 48%. In other countries, the use of retinal cameras and digital photography to screen for retinopathy, even at early stages of the condition, has proved to be an efficient way by which screening rates could be improved (Massim *et al*., 2003; Cuadros *et al*., 2009).

Indicators currently collected could be combined to develop more patient-centred measures of quality of care, for instance by identifying patients falling short on several targets.

More generally, these indicators should be interpreted with caution. As micro-vascular complications leading to foot amputation, blindness or end stage renal failure typically develop over the course of a few years up to decades, they do not necessarily reflect the quality of care as currently delivered today, and are likely to document shortfalls in diabetes care in previous decades (especially prior to the recent introduction of the QICH and primary care developments in the health funds). Nevertheless, quality of care might improve further if providers were to face additional incentives to diagnose and better manage such complications, in low SES and elderly patient groups.

Renewed effort is needed to successfully manage complex patients in the community, whose outcomes fall short of agreed quality thresholds. This requires Israel to re-examine provision of specialist support available physicians working in the community and explore the potential for innovative service models at the interface between acute hospital care and ambulatory care. This might involve the use of targeted, results-based, incentive schemes, for both clinicians and patients.

Greater attention should be paid to the identification and management of the multiple additional morbidities that often co-exist in diabetic patients

Currently, efforts have focused on monitoring indicators directly related to identifying and managing diabetes, most notably keeping the H1bAc at controlled levels. Nevertheless, there is a scope to improve the care for the multiple co-morbidities that diabetic patients face. Even for patients with appropriate blood glucose level, diabetes triggers important metabolic changes beyond insulin secretion and sensitivity. Diabetes patients are two to three times more sensitive to cardiovascular disease or pneumococcal diseases. There is currently no information on the share of diabetic patients with coronary heart disease, stroke or Transient Ischemic Attack, or mental health problems, while cardio and cerebrovascular diseases are the main causes of death of diabetic patients. The presence of co-morbidities can interfere with compliance with diabetes treatment, and have a negative impact on patient outcomes.

Diabetes can also have a significant impact on mental health in all people with diabetes, more at risk of experiencing severe depression (Lustman *et al*., 2000; Nichols *et al*., 2003; Goldney *et al*., 2004; Schram *et al*., 2009). Poor mental health status and well-being can be an additional obstacle to effective self-management and treatment adherence. In addition to diagnosing mental health problems amongst diabetes, psychological support provided alongside diabetes management in primary care is crucial to the success of the policies already in place.

Israel should build upon its highly successful QICH programme and consider additional indicators (including health outcome indicators). A particular focus on recording co-morbidities and complications should be the priority of future policy developments. While this is already done in primary care settings for people with diabetes, more systematic data collection could feed into a broader process of monitoring and managing co-morbidities. This would help to identify patients at most risks of developing complications and evaluate the quality of data recorded with the aim, ultimately, to decrease variability across health care providers. The recording of smoking is a positive step towards a more patient-focused

management (nicotine supplements and smoking cessation drugs are also included in the health service baskets). Additionally, QICH indicators could also be used to identify patients at risk of developing cardiovascular diseases through building a composite indicator comprising HbA1c, blood pressure and cholesterol measurements and targets, and better link this indicator to appropriate specialist referrals and lifestyle modification counselling.

Additionally, while current guidelines in Israel include co-morbidities (hypertension, dyslipidemia), further efforts should be directed towards developing more comprehensive guidelines to manage diabetes alongside identified co-morbidities, for example for mental health. Clinical guidelines on the specific topic have been developed in other OECD countries and could potentially benefit to better manage diabetes for an increasing number of patients experiencing more than one chronic condition. For instance, the National Institute of Clinical Excellence has recently issued guidelines on identification of depression among patients with chronic conditions, including diabetic patients (NICE Guideline No. 90, 2009). Depression screening tests and management protocols have also been developed in recent years (Poutanen *et al.*, 2010; de Azevedo-Marques and Zuardi, 2011; Gaynes *et al.*, 2010).

4.7. Conclusions

As in most OECD countries, diabetes care is largely organised and co-ordinated in primary care settings from health promotion and prevention to actual management of diabetes and its complications. The recent implementation of the QICH shows that quality of diabetes care in community appears to be high and consistent with international standards observed across other OECD countries. In addition, there has been evidence of innovative practices undertaken by the main health funds to measure and monitor diabetes care, and also ensure that quality of care is delivered across the population, such as the use of EMR to manage individual patients.

Nonetheless, facing new challenges of a rising epidemic as a result of ageing population and changing lifestyles and diets in a rather budget constrained environment, Israel will need to consolidate the current efforts to improve diabetes care, especially in vulnerable populations.

The government and health funds should also seek to implement quality assurance mechanisms to ensure that 1) current policies to tackle diabetes (for instance, health promotion and prevention) are harnessed with strong political and financial commitment, 2) that care is better co-ordinated across providers and that quality can be monitored across sectors in the long run (by the consolidation of information exchange platform between different levels of care), 3) current measurement efforts are pursued and extended to new areas of

care, especially identification and care for diabetes complications (foot care, emphasis on elderly in retinal examination) and co-morbidities (cardiovascular disease, mental health, etc.), and 4) providing greater focus on diabetes care in vulnerable population and providing linguistically and culturally relevant support to these population.

Notes

1. Uncontrolled diabetes is defined as the number of hospital discharges of people aged 15 years and over with diabetes type 1 or 2 without mention of a short-term or long-term complication. Rates are presented per 100 000 population (OECD, 2011). Uncontrolled diabetes admissions to hospitals are usually triggered by high levels of blood glucose; and therefore are a good proxy for quality of continuing diabetes care and patient education. Methodology for calculation of uncontrolled diabetes admission rates can be found at *http://stats.oecd.org/wbos/fileview2.aspx?IDFile=4f8625fa-7aff-4b7b-bb68-8b9db40b24fc*.

2. A recent study of Sella *et al.* (2011) reports higher rates of about 15.23 per 100 000 persons-years between 2006 and 2008.

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