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Exploring Global Health Care Cost Drivers: Israel and the Netherlands

Sponsored by the International Actuarial Association Health Section (IAAHS) and the Academy's Health Practice International Task Force (HPITF)

February 18, 2015

Presenters

- Dr. Tuvia Horev, Professor at Ben-Gurion University of the Negev (Israel)
- Rian de Jonge, AAG, Actuary, Netherlands
- Moderator: Susan Mateja, MAAA, FSA
  Chairperson, Health Practice International Task Force (HPITF)

Exploring Global Health Care Cost Drivers: Israel and the Netherlands

All nations face difficult challenges in providing health care to their people

Exploring Global Health Care Cost Drivers: Israel and the Netherlands

A series of webcasts that will highlight the health care models of various countries will take place in 2015

- February 18 (Israel & Netherlands)
- May 13 (U.S. & South Africa)
- September (TBD)
- November (TBD)

We are starting a conversation that will explore the following:

- General characteristics
- Financing system
- Cost drivers
- Methods of coping with the cost drivers
- Measurement metrics
- Insights, successes, hurdles
- Future trends

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Exploring Global Health Cost Drivers – 2015 Webinar Series

ISRAEL

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18 February 2015

Population and Demographic Indicators

	1990	2013
Population (Millions)	4.660	8.135
Population over 65 (%)	9.2	10.6
Total fertility rate	3.0	3.0
Infant Mortality Rate	10.9	3.4
Life expectancy at birth (Male)	73.8	80.3
Life expectancy at birth (Female)	78.8	83.9

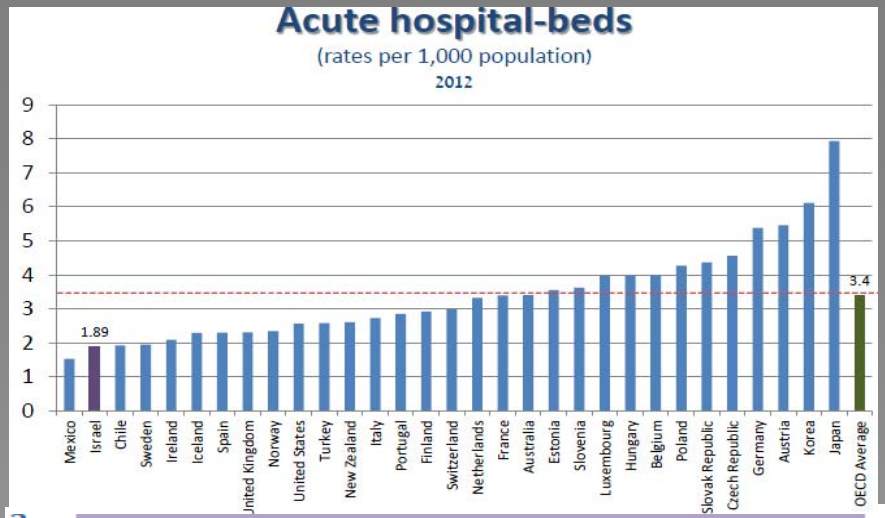
Israeli Healthcare Key Components

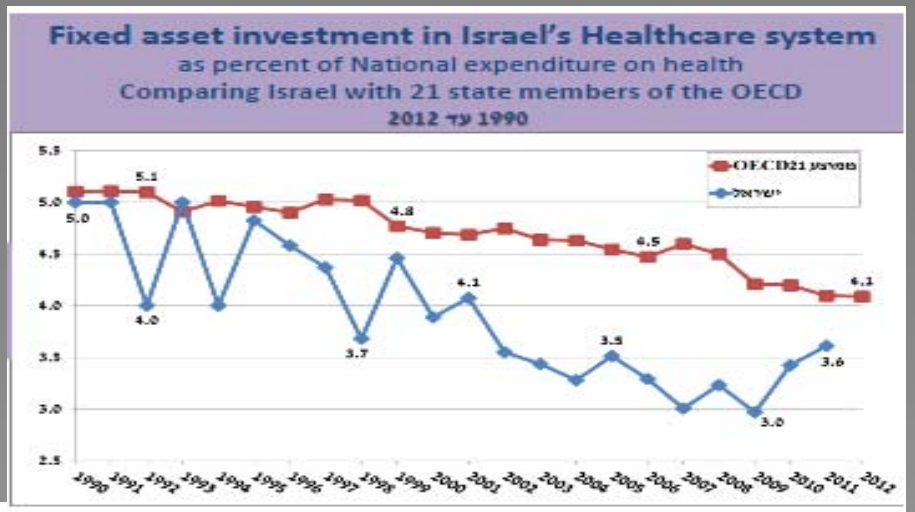
- **Universal mandatory coverage** (see #19)
  - 100% of Israeli residents
  - Comprehensive package and medical basket
  - Provides: 4 sick funds, some by the Ministry of Health (see #20)
  - Participants free to move between sick funds
- **Premiums**
  - Income related (see #21)
  - Collected by National Insurance Institute of Israel
- **Budget –**
  - Guaranteed by law
  - Annually updated

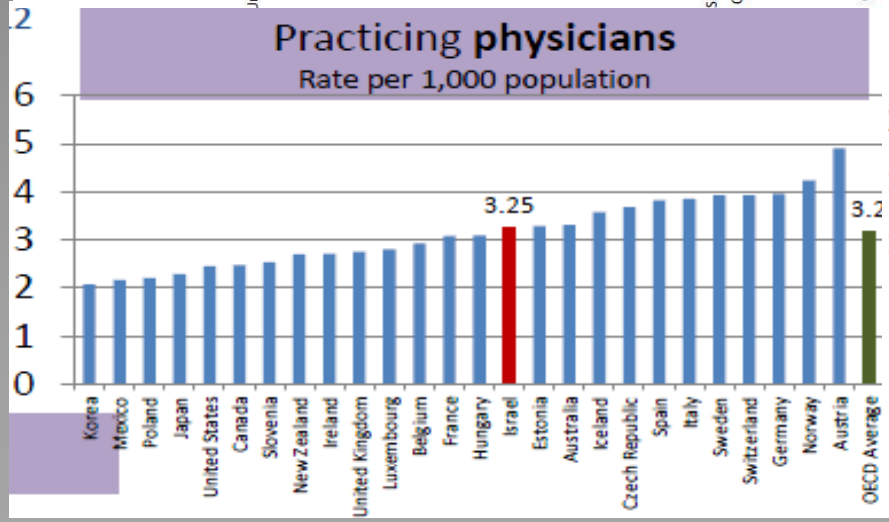
Voluntary Health Insurance (VHI) (see #22, #23-24)

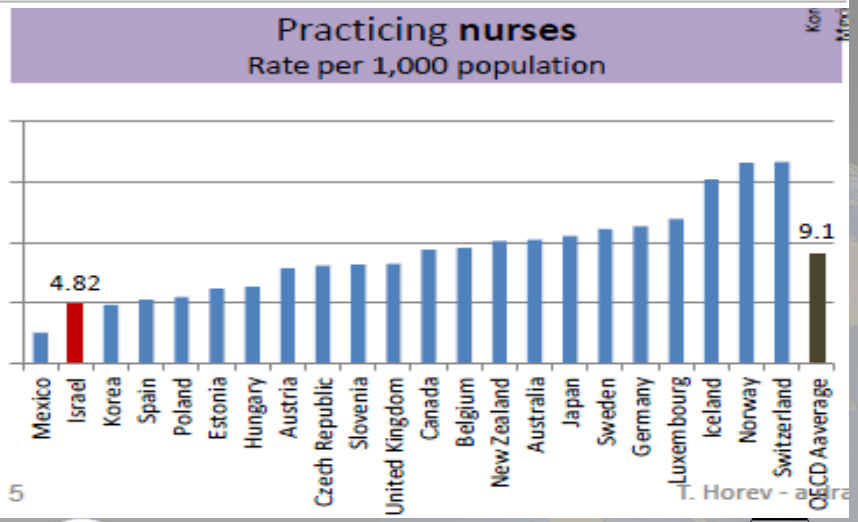
- **Sick funds** (SF) – regulated by Ministry of Health (MOH)
  - Permitted to offer a voluntary health insurance to their insured
  - Based on principles defined by the National Health Insurance Law (NHIL)
  - Autonomy to define the coverage, within MOH rules
  - Each SF has two layers of VHI
- **Commercial insurance companies** – regulated by Ministry of Finance
  - Individual and group policies
  - Main coverages:
    - Health expenses; critical illnesses; dental
    - Long Term Care – with SF as policy holders
  - Based on insurance legislation

Physical and Human Resources



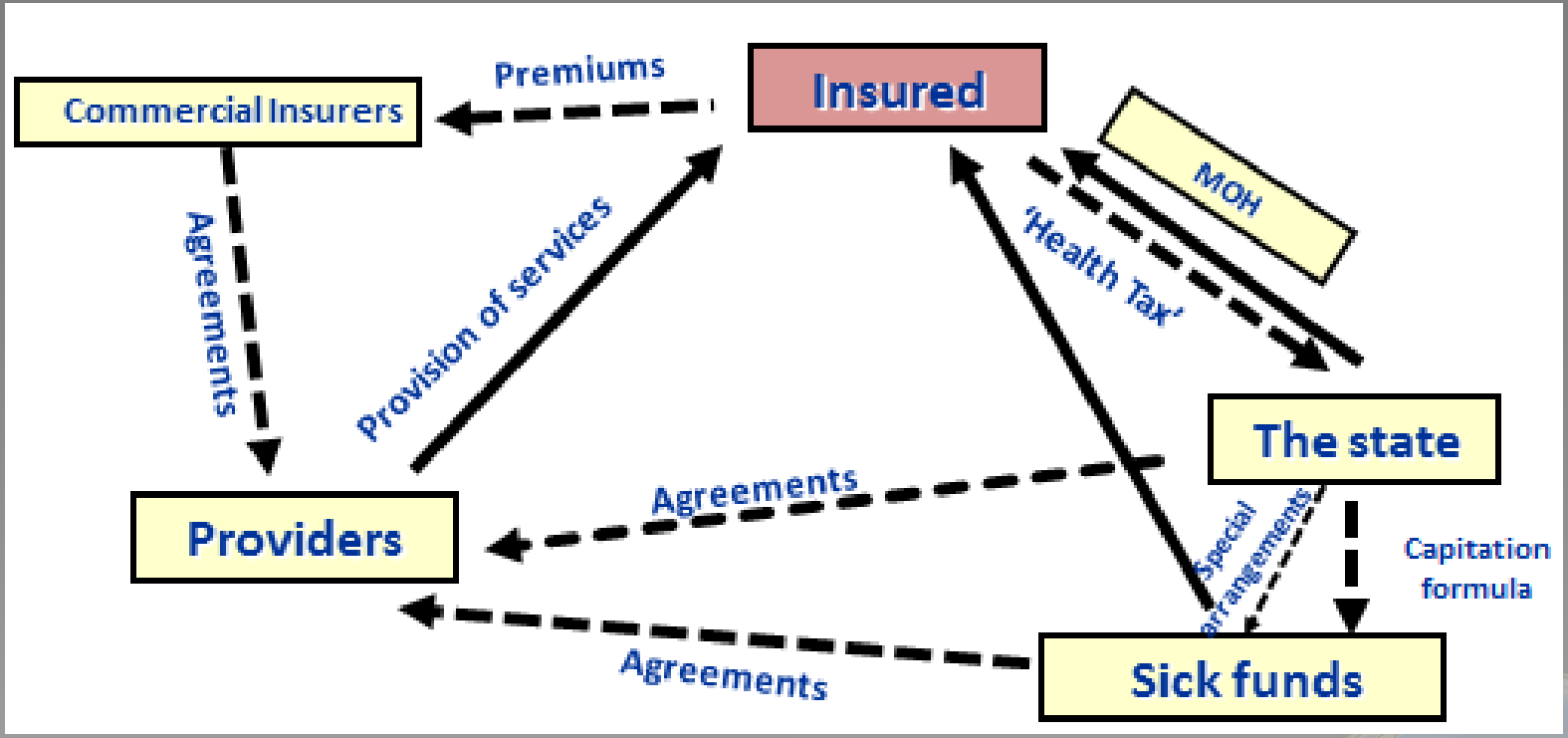






Financial Flow – Israeli Healthcare

(excluding insureds' deductions and payments)



Capitation F. – the allocation formula to the sick funds

Capping – Ceiling arrangements for the payments of sick funds for hospital services

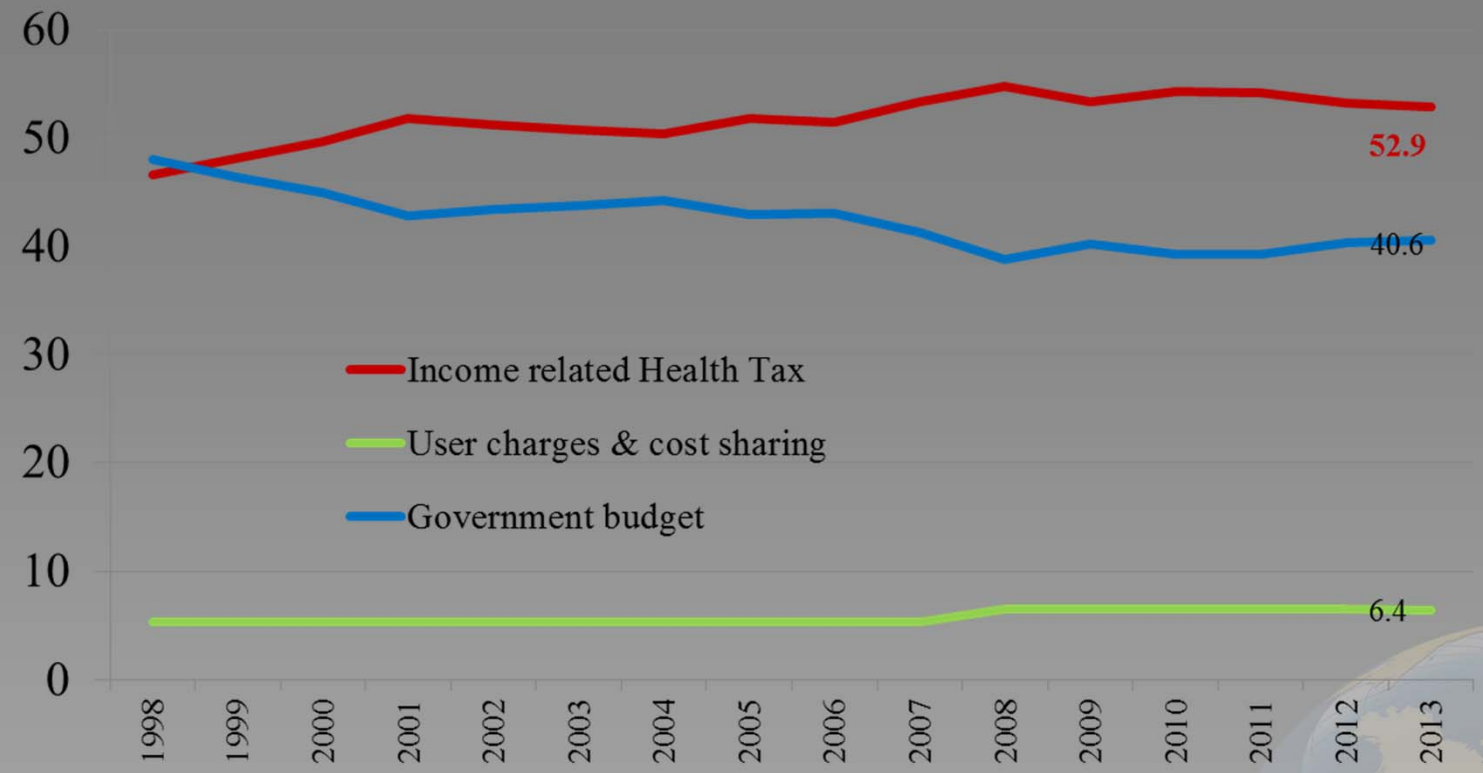
Special arrangements - usually stabilization agreement or incentives to implement Pay for Performance (PfP) policy

User charges – do not appear in the scheme

Payments

Provision of services

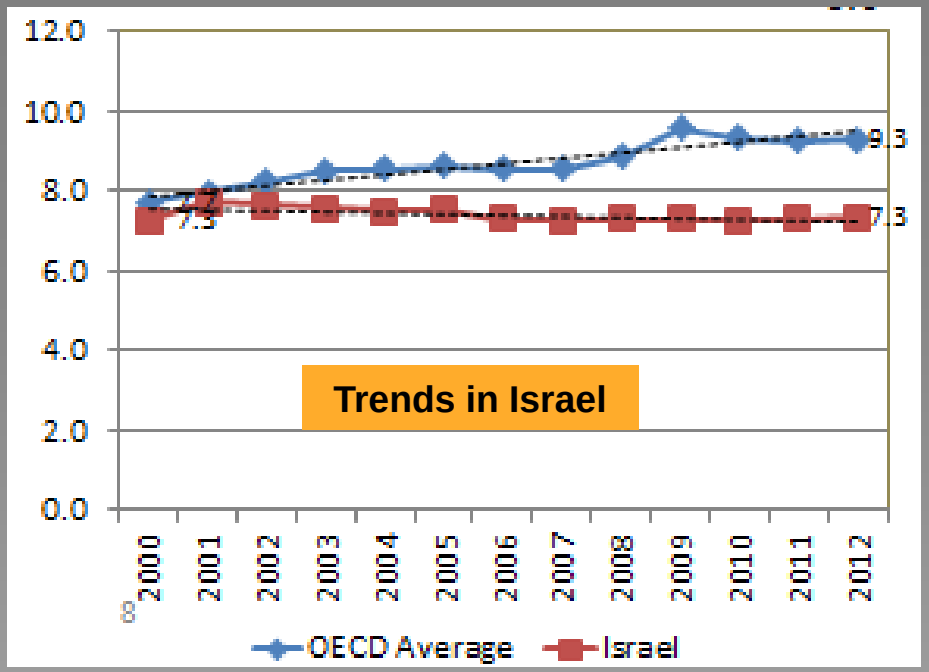
Main Sources of Funding the SFs Services under the NHIL

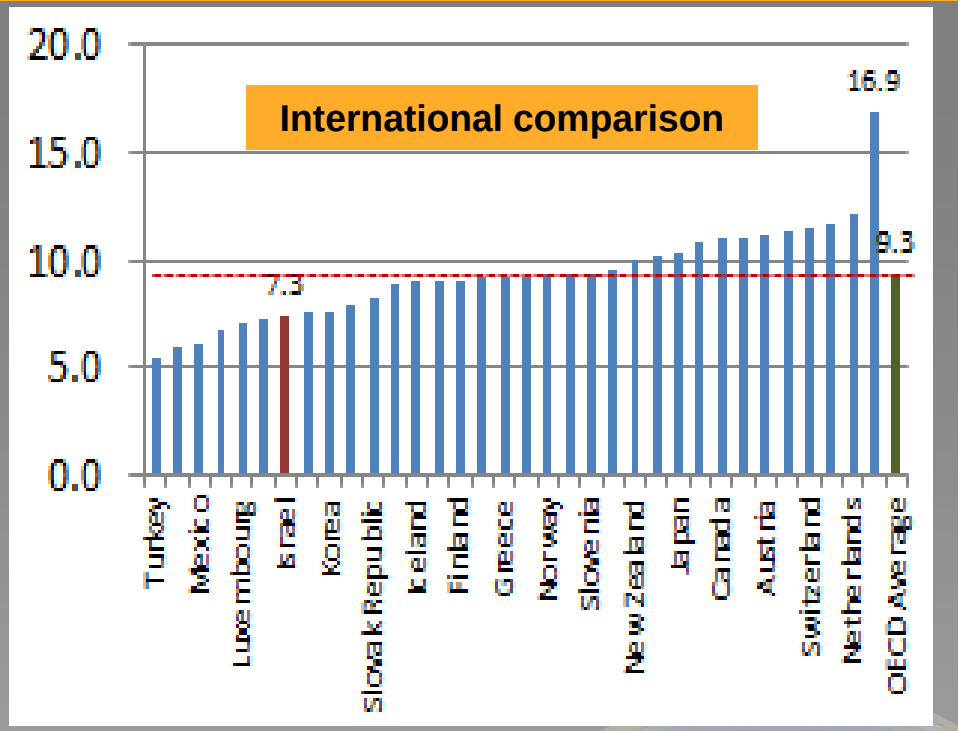


2013 budget = 36.6 billion NIS (app. 10 billion $)

Total Health Expenditure - % of 2012 GDP

(see #25)





Public expenditure on health as percent of the total health expenditure

- **Israel** - 60%
- **OECD average** - 72%
- **OECD median** - 75%

Health expenditure per capita (USD PPPs)- 2011

Average OECD – 3,322

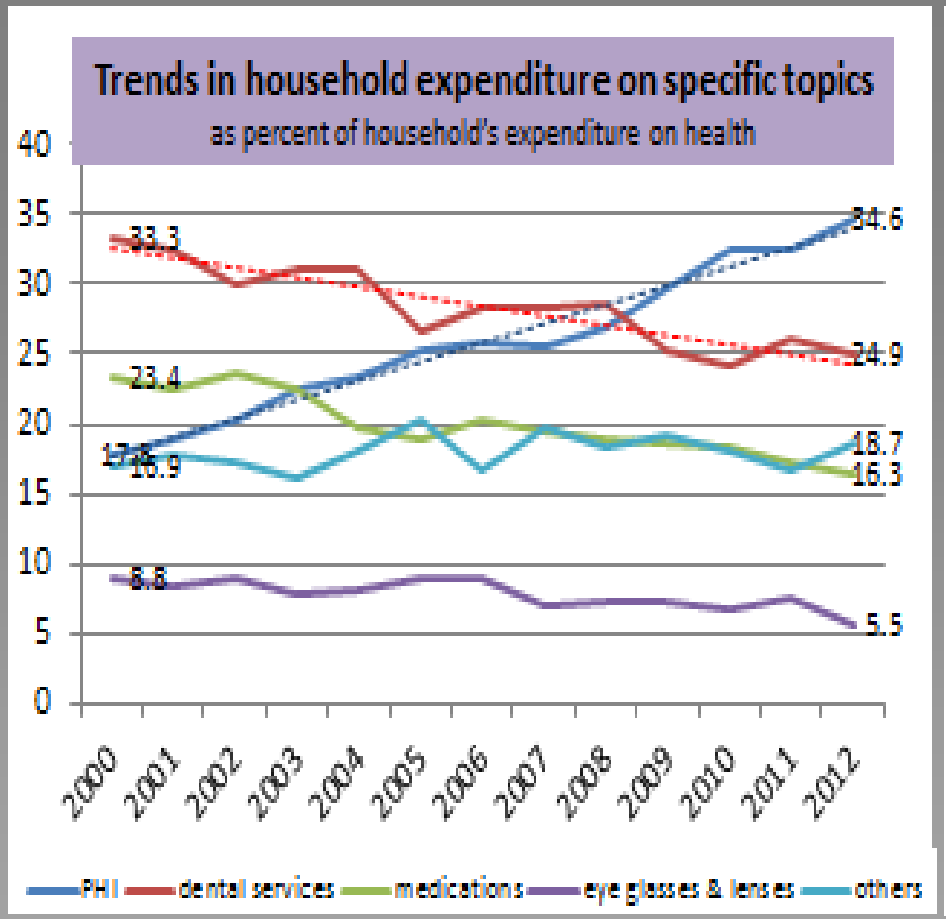
Israel – 2,239

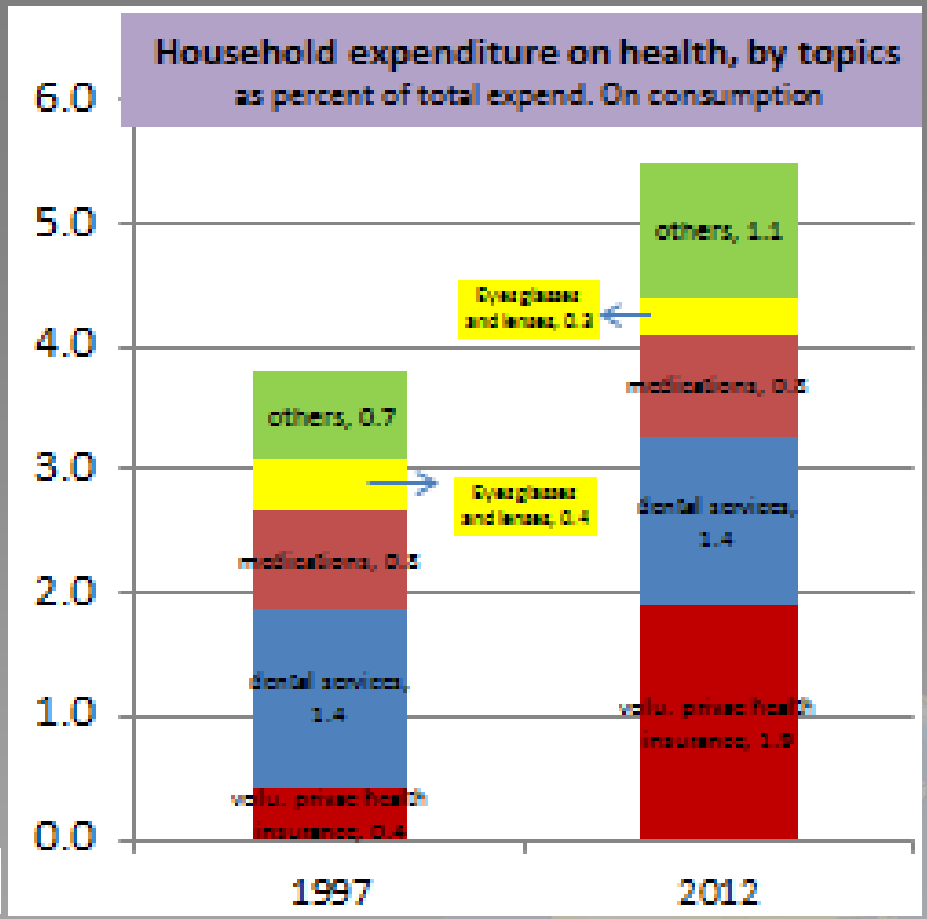
Governmental Expenditure OECD and Israel

Percentage of GDP	Health	Education	Health & Education	Security	Transfers & Support	Housing	Total public expenditure
1995							
OECD average	5.9	5.7	11.7	2	17.8	1.3	51.6
Israel	5.4	7.4	12.8	8.5	10.6	1.7	50.3
Israel's ranking among 19 OECD countries	13	2	8	1	19	3	12
2011							
OECD average	6.9	5.7	12.6	1.4	18.2	0.7	48.8
Israel	5.2	7	12.1	6.2	10.9	0.4	42.1
Israel's ranking among 19 OECD countries	13	2	8	1	19	3	12
Change (2011-1995)							
OECD average	1	0	0.9	-0.5	0.4	-0.6	-2.8
Israel	-0.2	-0.4	-0.7	-2.3	0.3	-1.3	-8.2

Household Expenditure

% of Total Household Consumption Expenditure





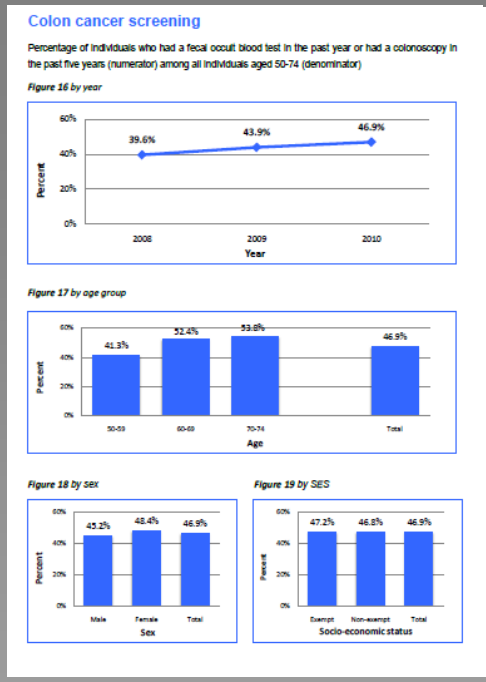
Israel's Main Cost Drivers

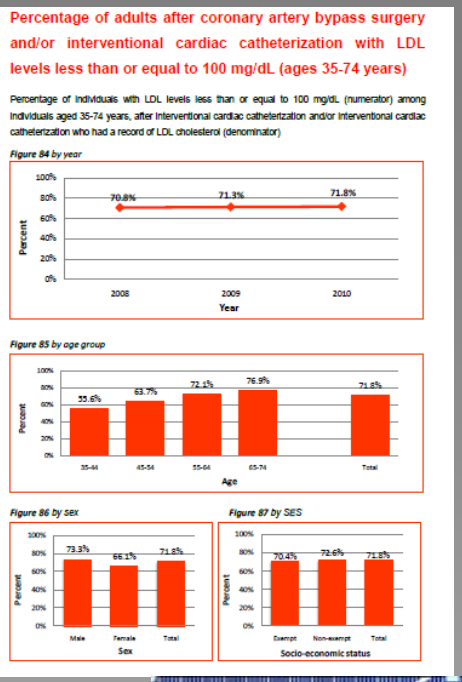
- **Aging** (see #26)
- **Chronic morbidity** (see #27)
- **High technologies**
- **Wrong incentives and inefficiencies**
- **A growing private sector**

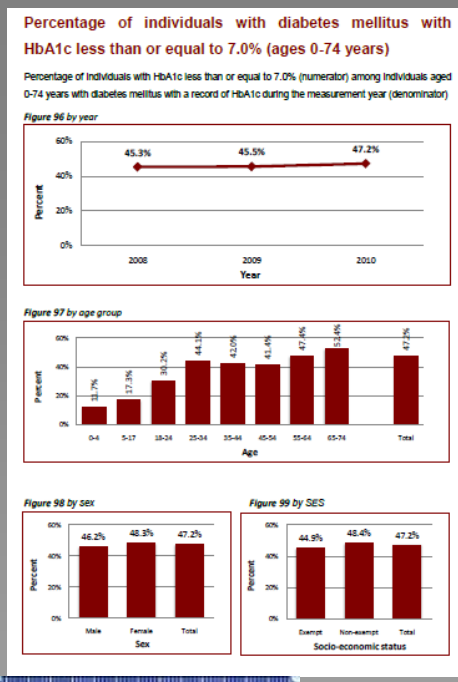
Policies Coping with Cost Drivers

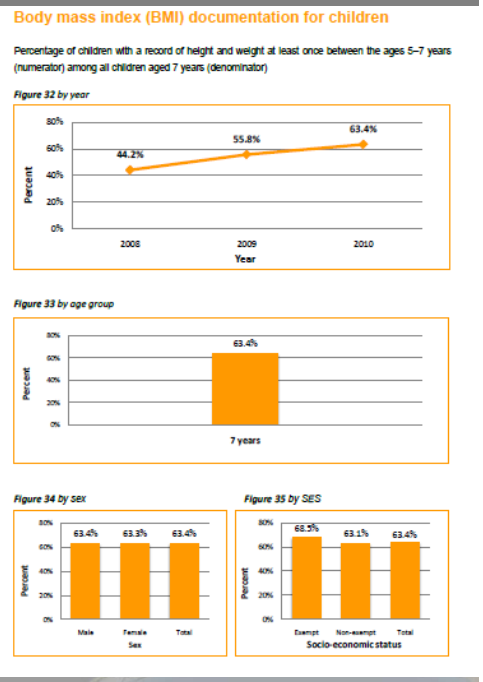
- **Steps to strengthen the public sector**
- **Attempt to reform LTC**
- **Pay for Performance – incentives to sick-funds**
- **Regulation of private health insurance**
- **Capping expenditure of hospital services**
- **National program for Healthy Life Style & Prevention**
- **Annual allocation for new technologies**

Israeli Healthcare Community Quality Measurements (see #28)



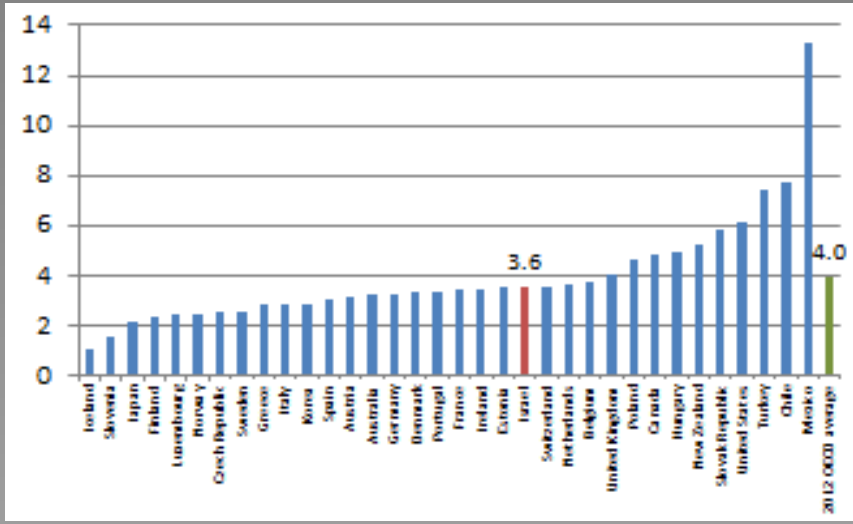




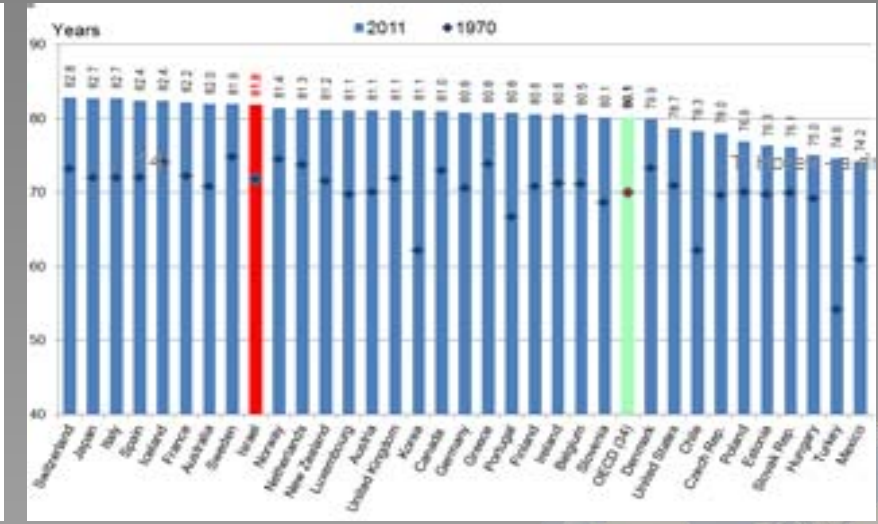


International Quality Measurements

Infant mortality
Deaths per 1,000 live birth 2012



Life expectancy at birth
International comparison*



Life expectancy at birth (2013):
Male - Israel is ranked 3rd (2.4 years above the average)
Females - Israel is ranked 11th (0.8 years above the average)

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Strengths of Israel's Healthcare System

(see #29-32)

- **Efficient – good outcomes, moderate cost, stable finances**
- **Well developed and high quality primary and community care**
- **Good Information and Communications Technology (ICT) system**
- **High customer satisfaction**

Challenges Faced by Israel's Healthcare

- **Match future resource allocations and functionality to changing population and technology needs**
- **Maintain quality of care standards**
- **Impacts of private sector and 3rd party payers on public systems**
- **Supply of specialists and professionals**
- **Narrow disparities**
- **Standardize and optimize the ICT system**

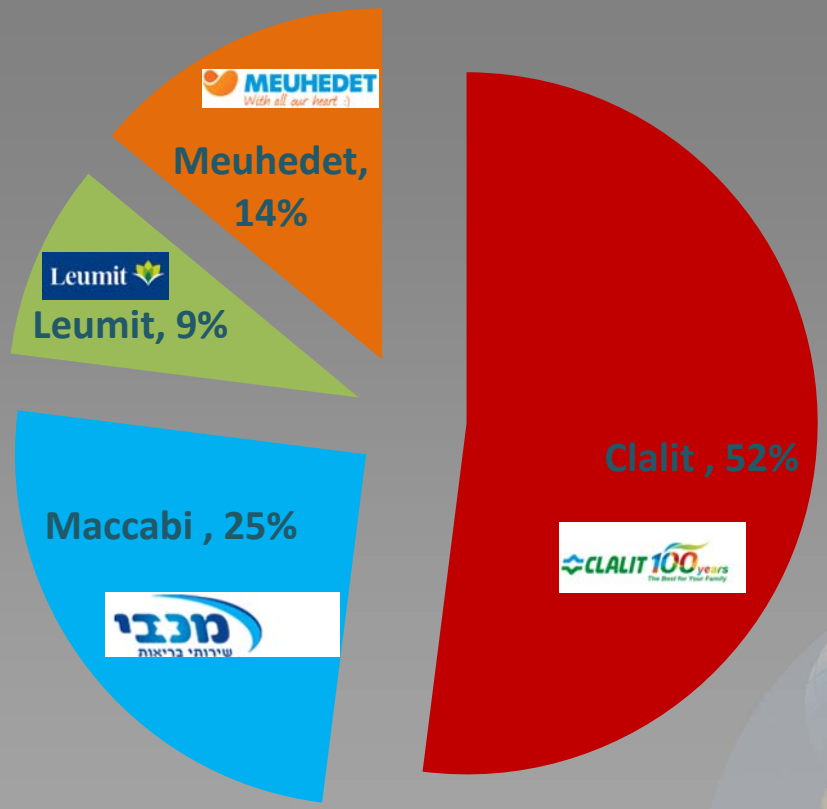
APPENDIX

References to Appendix's slides are marked in the main presentation by (**see #slide-number**)

Israel's Basic Basket of Healthcare Services

- **NHIL services under SFs responsibility**
  - Primary and secondary medicine
    - Health examination, treatment, imaging, lab tests, etc.
  - Hospital inpatient and outpatient services
    - General, psychiatric, LTC
  - Medications
  - Dental services to children
- **Services under MOH responsibility**
  - Vaccinations and prevention
  - Mental health
  - Institutional LTC
  - Health promotion service to children up to 8th grade
  - Equipment to handicapped people

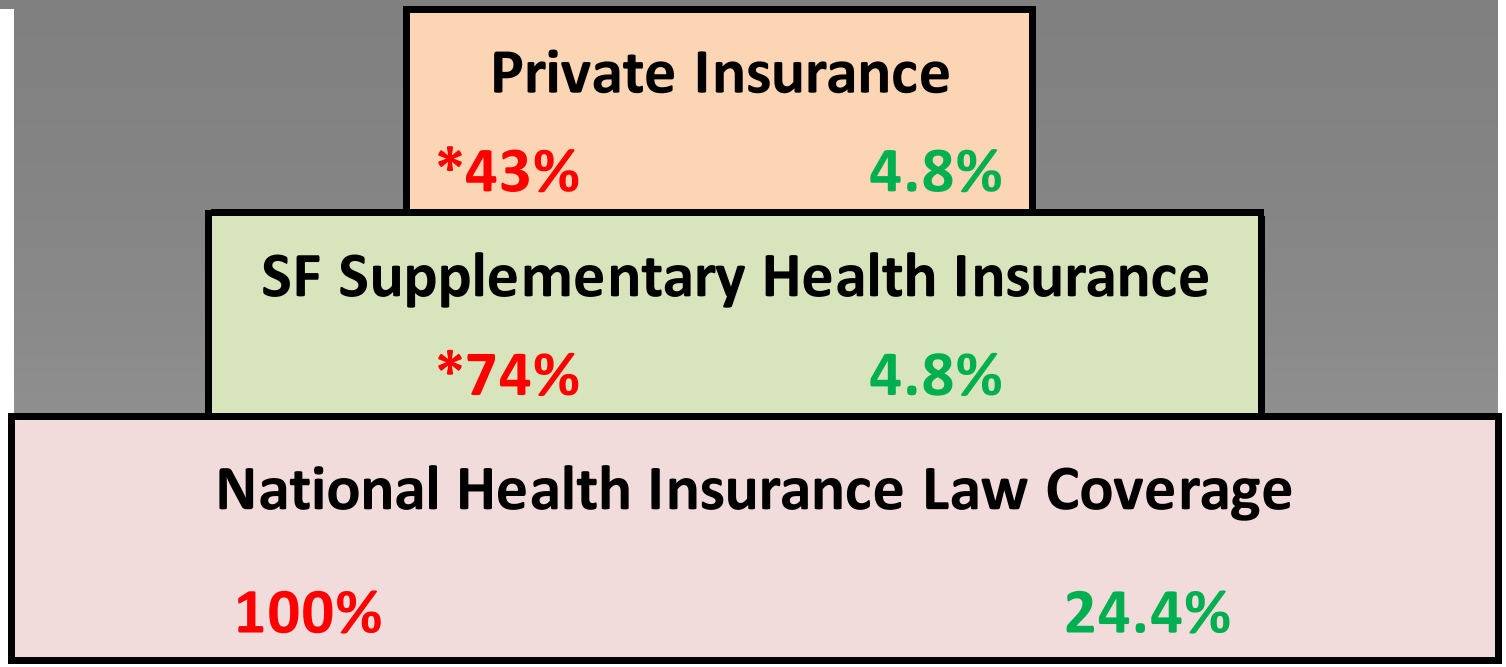
Market Share of SF in 2013



Income-Based Health Tax

- **Monthly payments to National Insurance Institute of Israel (NIII)**
- **Employed and independent workers**
  - 3.1% of salary up to 60% of national average income level
  - 5% of income above 60% of national average income level
  - 1% of income of home support person
- **Unemployed resident**
  - Monthly fixed payment of 103 NIS (~$27)
- **Ceiling – 5 times national average income level**

Israel's Healthcare Tier System - 2013

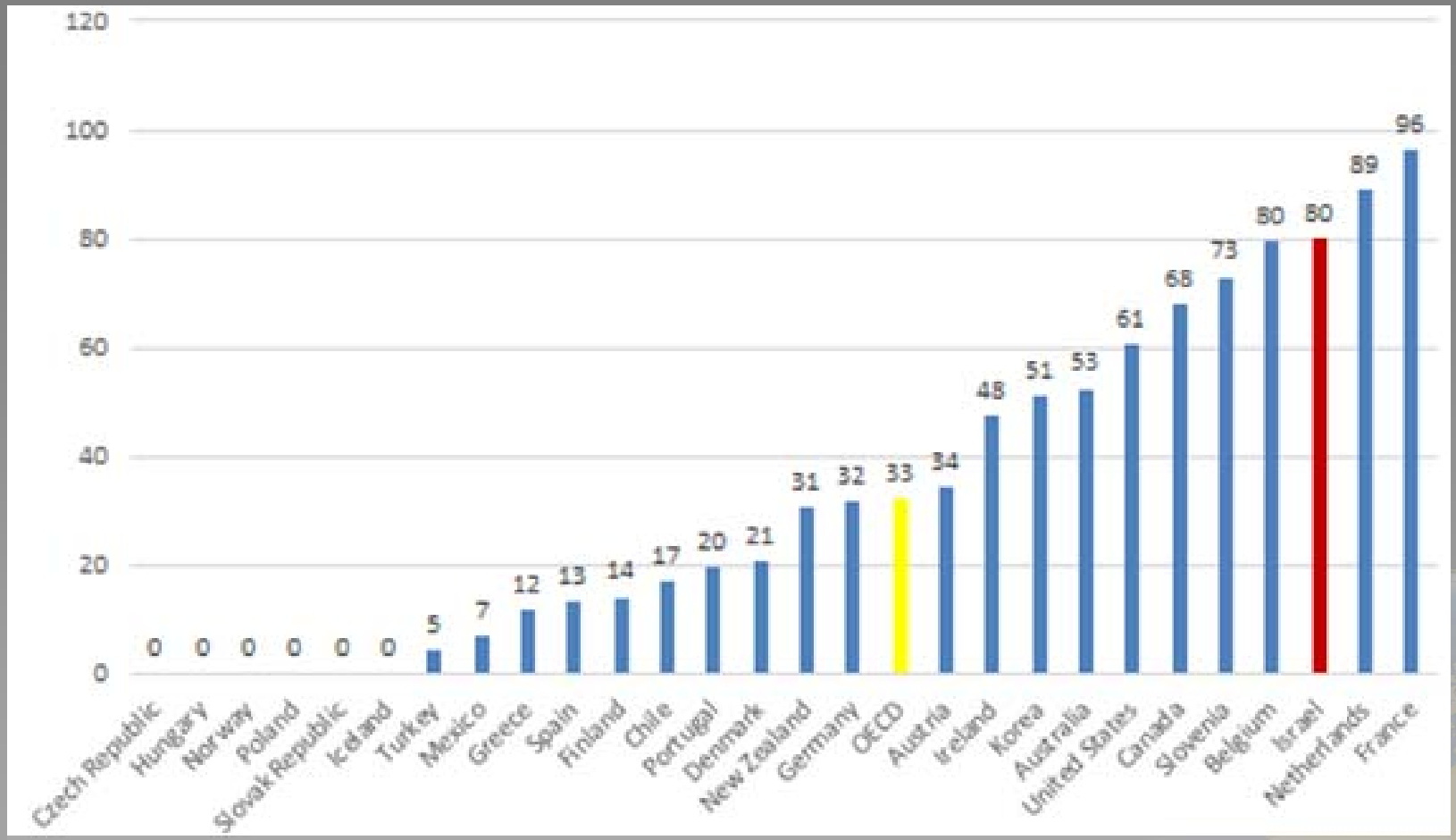


Percentage of each tier

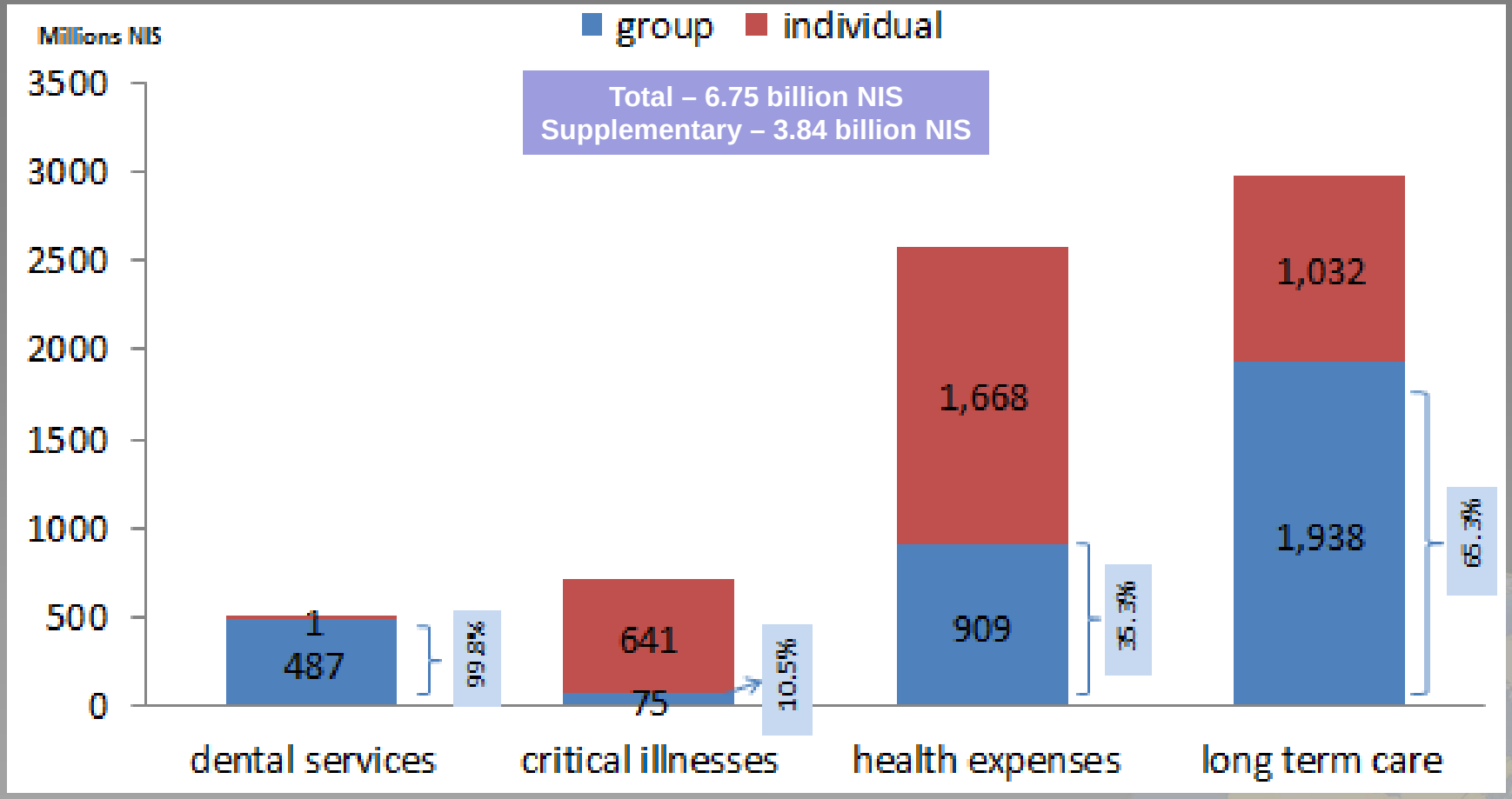
Red - of population; Green - of health expenditure

* Some people are doubly insured by both SF & Private Insuraance, so total is over 100%

Insured in VHI as % of Population 2011



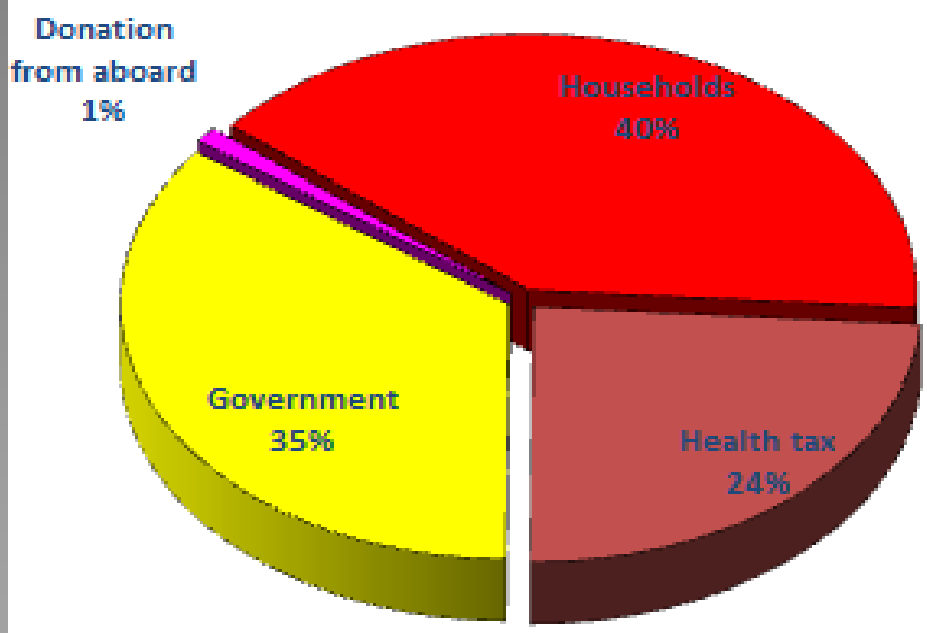
Total 2013 Private Insurance Premiums by Type of Policy



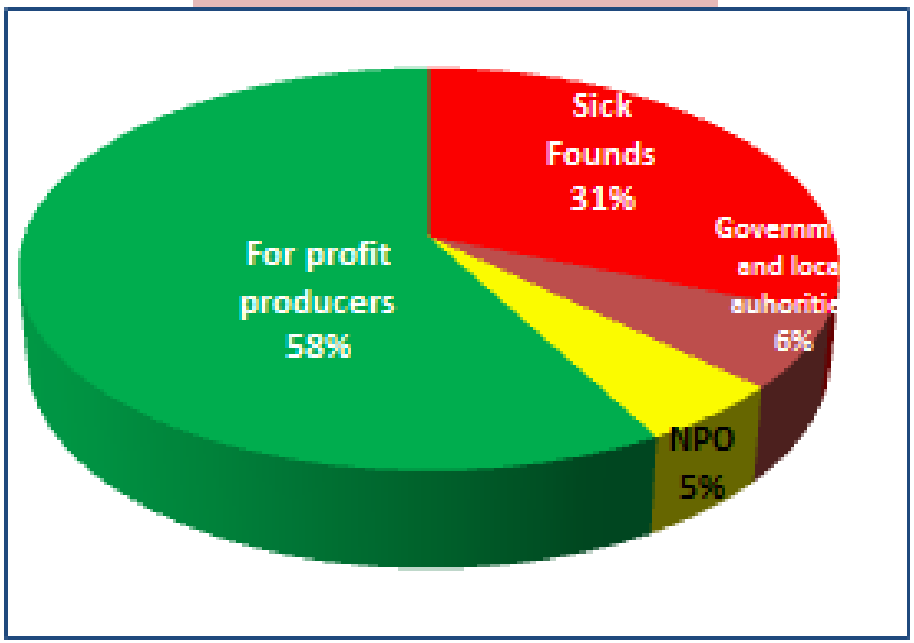
Israel's 2013 Healthcare Expenditure

Total 79.3 Billion NIS

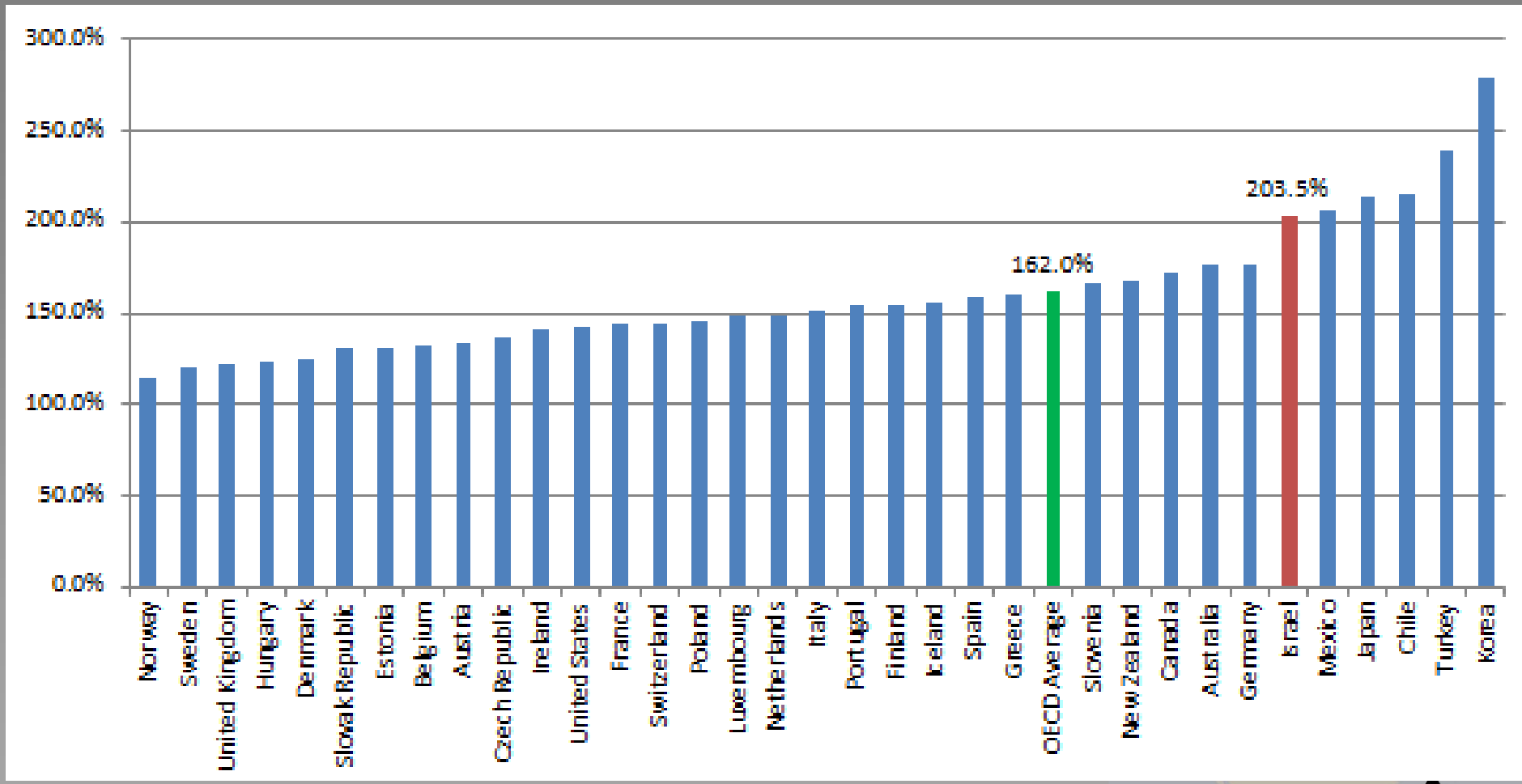
By Financing Sources



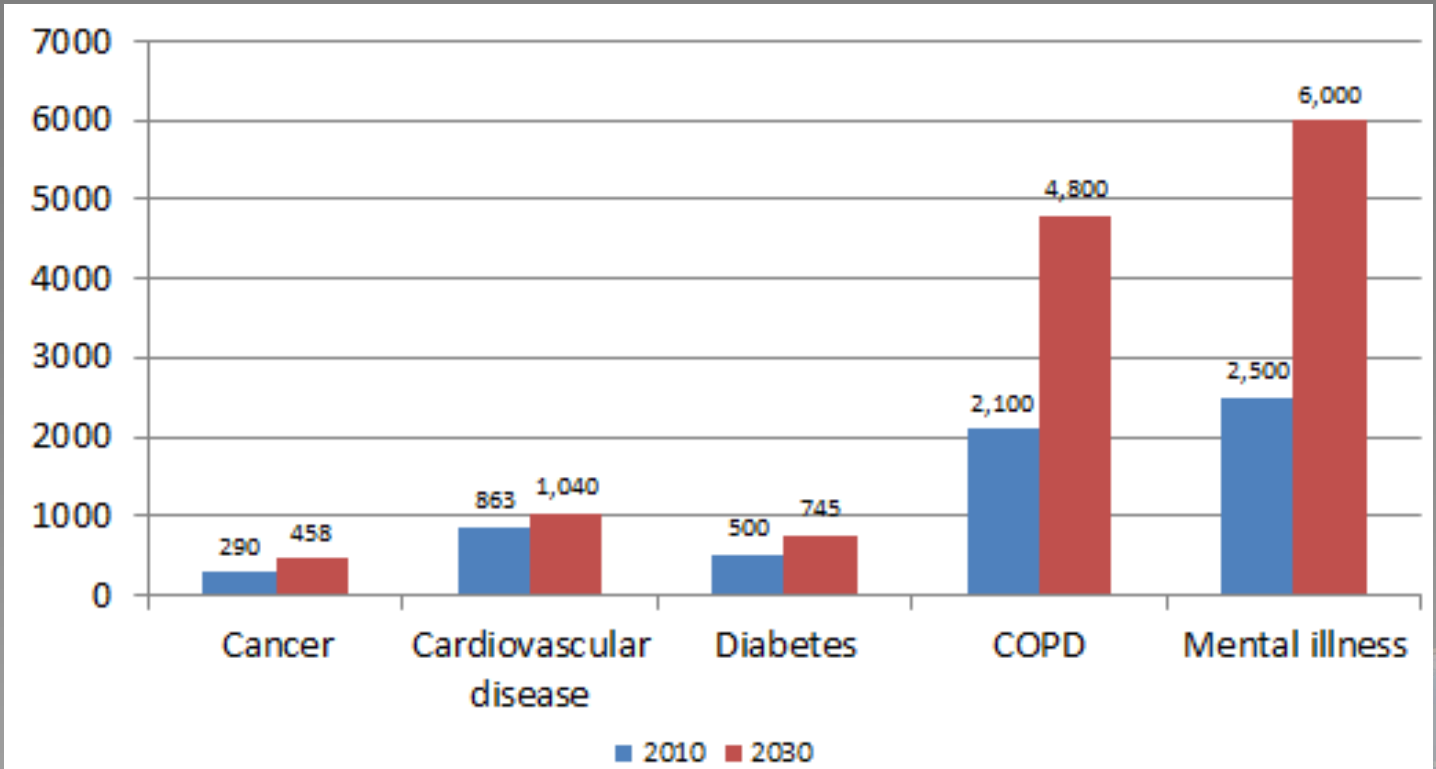
By Operating sector



% Growth over 1990-2013 of NUMBER of elderly (65+) Population



Expected Increase in Global Burden of Selected Diseases



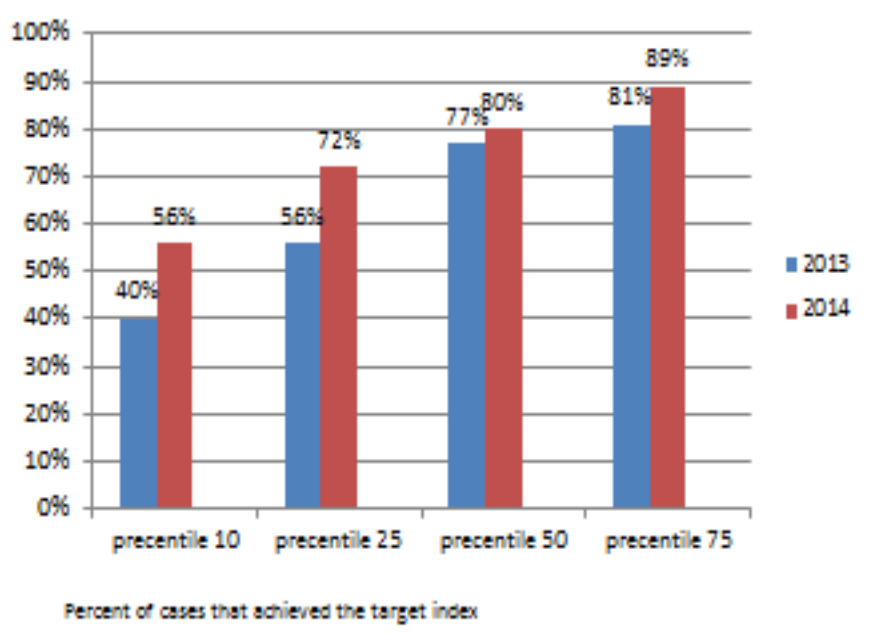
Economic loss and burden

EPIC approach: **lost output from five the conditions over the period 2011-2030 is estimated at nearly US$ 47 trillion.**

VSL approach: **the economic burden of life lost due to all NCDs ranges from US$ 22.8 trillion in 2010 to US$ 43.3 trillion in 2030.**

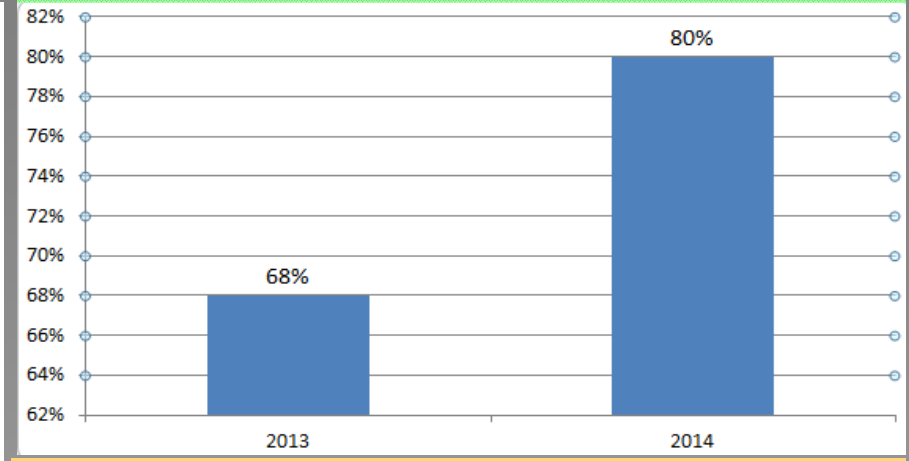
Quality Indicators in Hospitals

Hip Operation Within 48 Hours



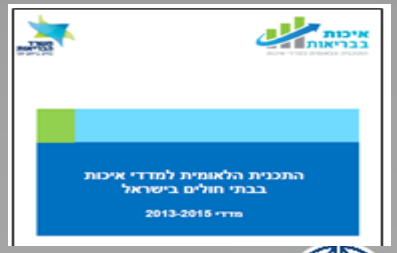
PCI conducted within 90 minutes to patients with STEMI

(percent of hospitals who meet the target standard)

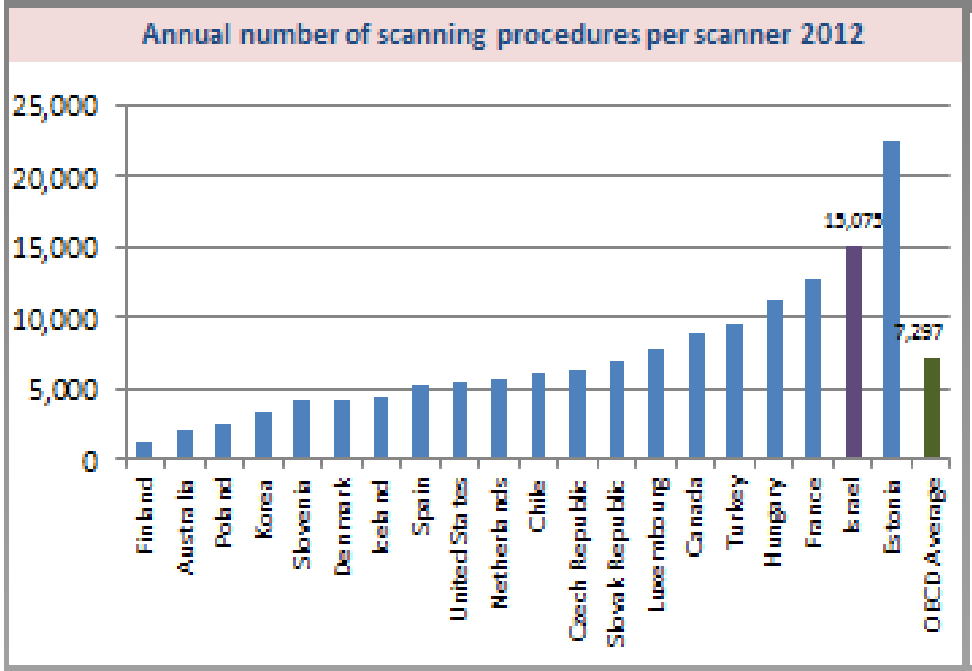


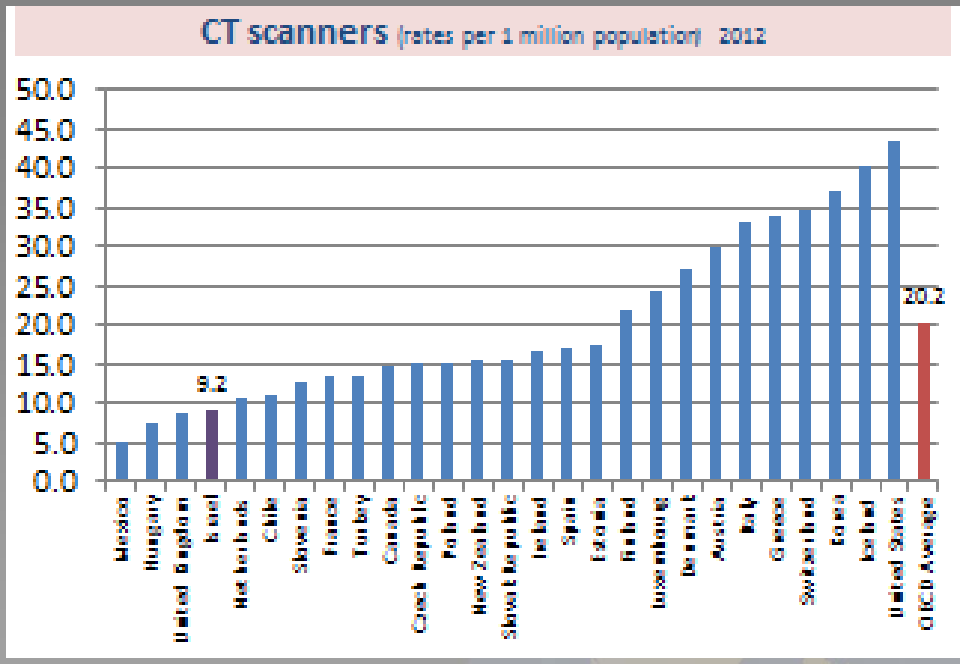
PCI = A coronary stent placed by **Percutaneous Coronary Intervention**

STEMI = ST segment elevation myocardial infarction (a severe type of heart attack)

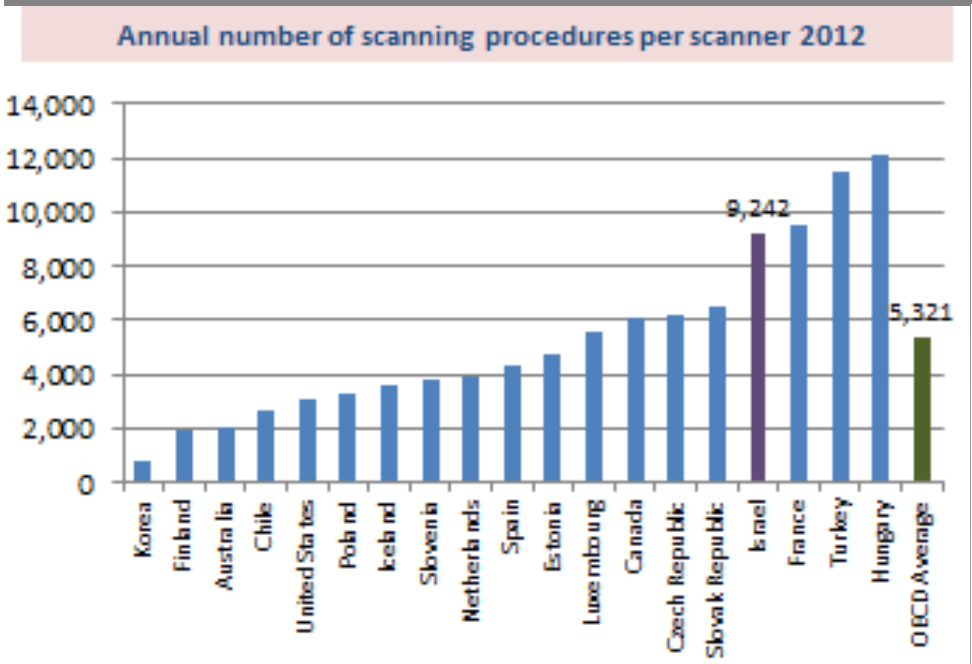


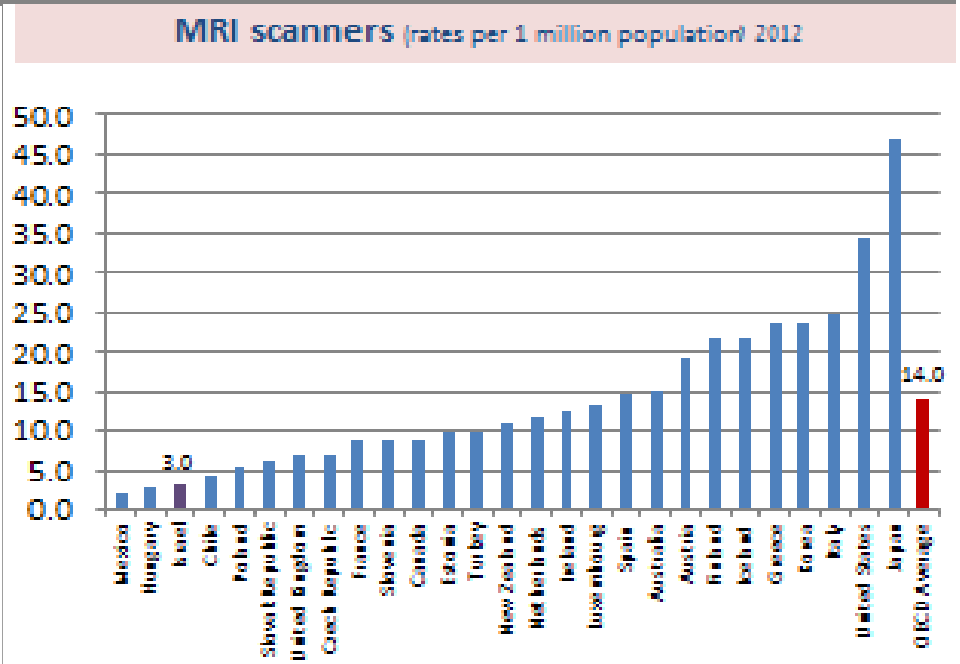
CT - Infrastructure and Utilization



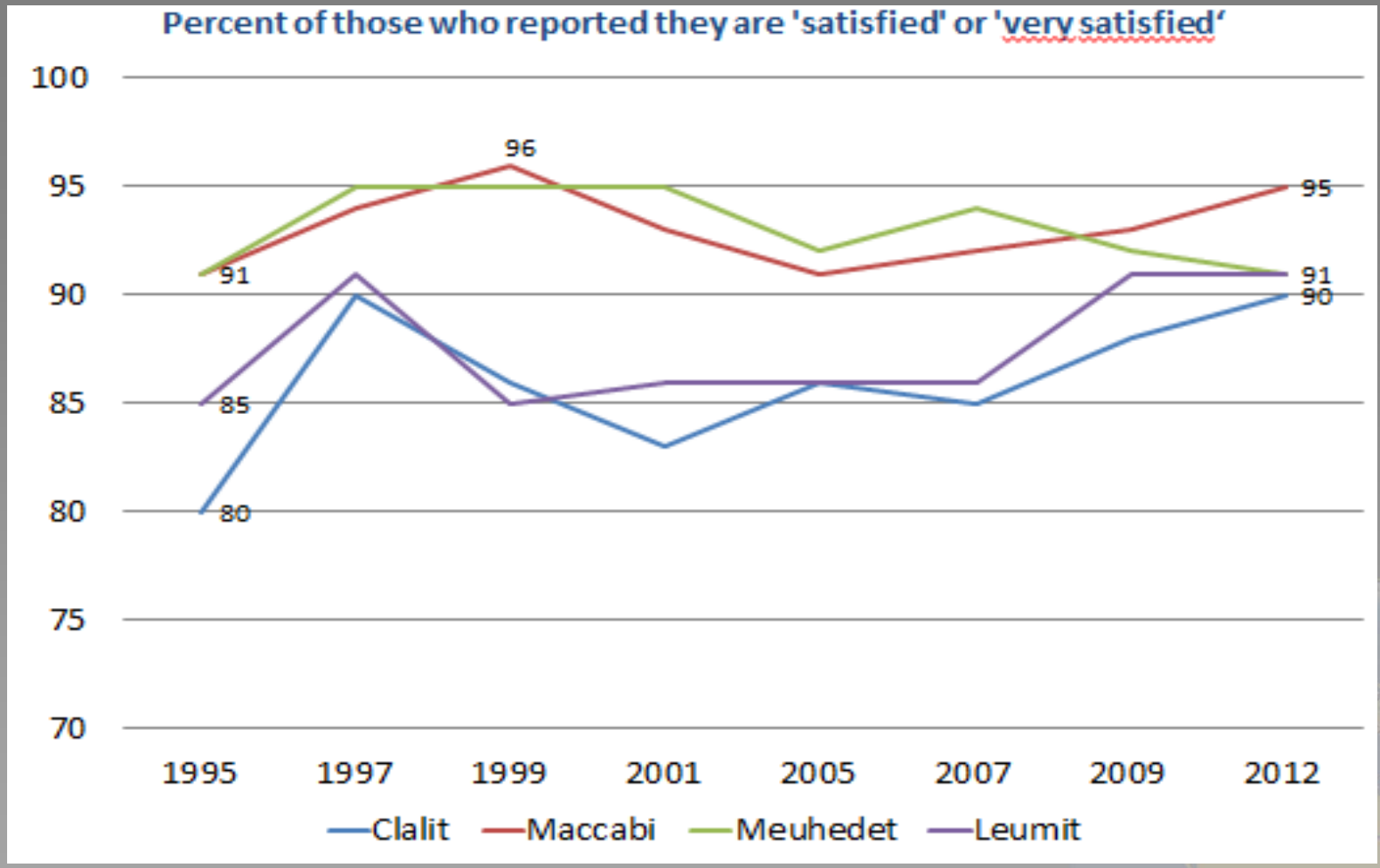


MRI - Infrastructure and Utilization





SFs Clients' Satisfaction



Outside Reviews - 2012

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

- **"Israel has established one of the most enviable health care systems among OECD countries"**
- "Primary care in Israel is well-developed, accessible geographically and financially, and of high quality"
- "Israel's impressive life expectancy gains and low premature mortality from chronic conditions reflect the contribution of its primary care system"
- "Low number of admissions to hospitals for uncontrolled diabetes, while reductions in complications demonstrate ongoing efforts to improve quality of care provided to patients with diabetes"

Sources

Slide	Sources
2	Israel Central Bureau of Statistics, Israel Ministry of Health
5	Based on data from OECD Health Statistics 2014, Bank of Israel 2014, and Ministry of Health, Israel 2014
6	Administration of Strategic & Economic Planning, Ministry of Health
7	Administration of Strategic & Economic Planning, Ministry of Health
8	OECD Health Statistics 2014
9	Bank of Israel 2013
10	Based on data from Israel Central Bureau of Statistics
13	National Program for Quality Indicators in Community Healthcare in Israel 2008-2010, the Ministry of Health, the Israeli Institute for Health Policy Research, and the Health Council, 2014
14	Based on data from OECD Health Statistics 2014
20	Ministry of Health
21	NIII Regulations
22	Based on data from Ministry of Health 2013 and 2014, Myers-Joint of the Brookdale Institute 2013, and Ministry of Finance 2013
23	OECD Health Data 2014
24	Ministry of Finance, Annual Report, 2013
25	Israel Central Bureau of Statistics
26	OECD Health Statistics 2014
27	Bloom, D.E., Cafiero, E.T., Jané-Llopis, E., Abrahams-Gessel, S., Bloom, L.R., Fathima, S., Feigl, A.B., Gaziano, T., Mowafi, M., Pandya, A., Prettner, K., Rosenberg, L., Seligman, B., Stein, A.Z., & Weinstein, C. (2011). The Global Economic Burden of Non-communicable Diseases. Geneva: World Economic
28-30	The National Program for Quality Measurement in Hospital – 2013-2015 Measures, 11/2014
31	Myers-Joint, Brookdale Institute, Jerusalem

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Exploring Global Health Care Cost Drivers: the Netherlands

The Netherlands

Rian de Jonge

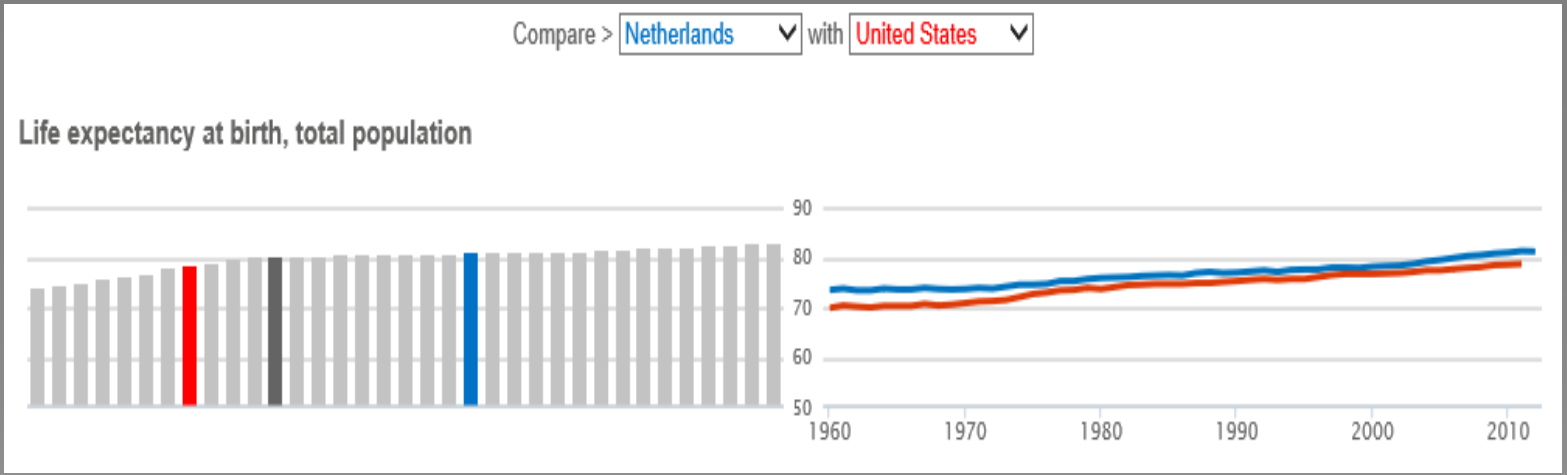
Overview

- Demographics and Health expenditure stats
- Health system and funding
- Health expenditure trends analysed
- Cost drivers and ways of coping
- Challenges and strengths

Overview

Demographics and Health expenditure stats

Demographics
the Netherlands vs. U.S. (cont.)

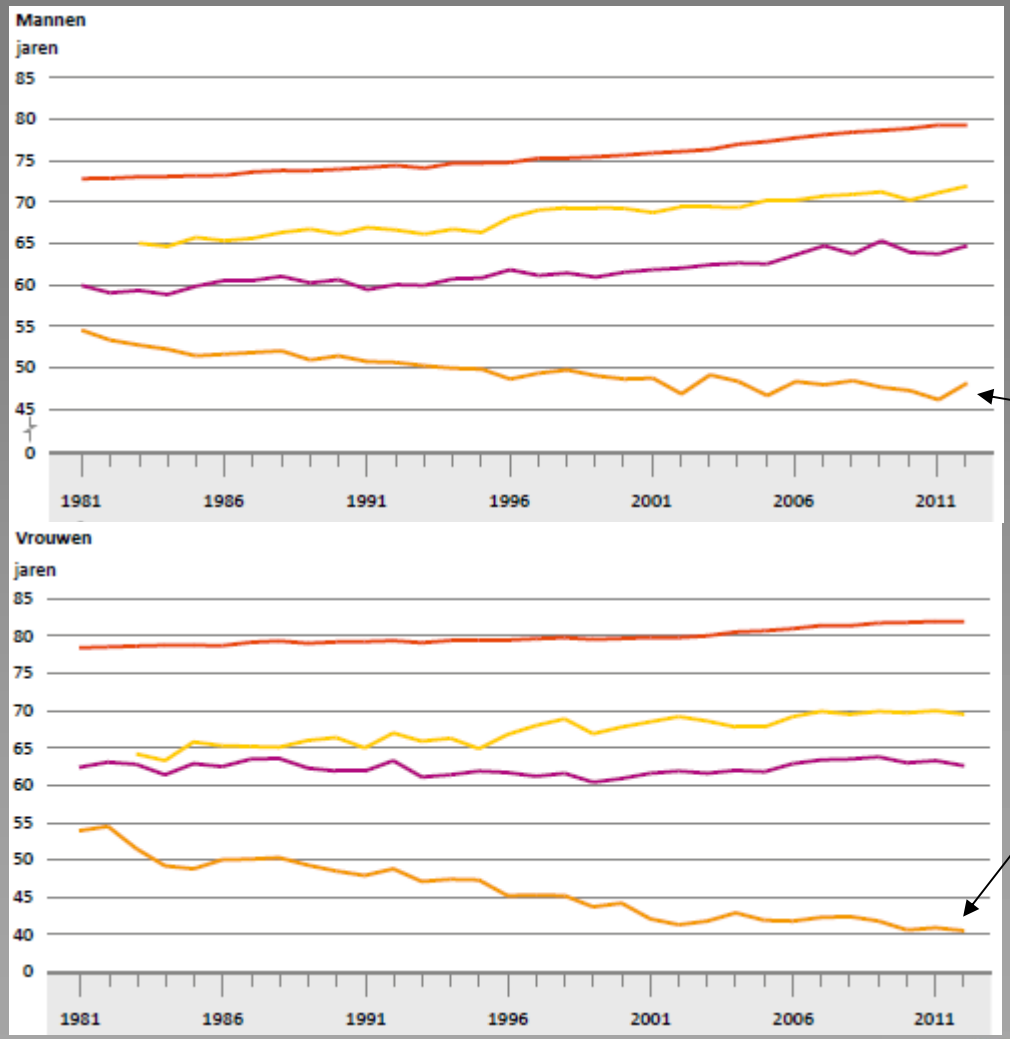


2012/ 2014	The Netherlands	US
Population	16.8	320,3
Fertility rate	1.76	1.86
Population over 65y	15%	13%
Self reported obesity%	12%	29%

	Netherlands			OECD average		Rank among OECD countries*
	2012		2000	2012	2000	
Health care resources						
Number of doctors (per 1000 population)	3.1	(2011)	2.4	3.2	2.7	19 out of 34
Number of nurses (per 1000 population)	11.9	(2011)	10.3	8.8	7.5	7 out of 34
Hospital beds (per 1000 population)	4.7	(2009)	4.8	4.8	5.6	16 out of 34

Source: OECD

Demographics
the Netherlands (cont.)



- Life expectancy at birth
- … without physical limitations
- … in perceived good health
- … without chronic diseases

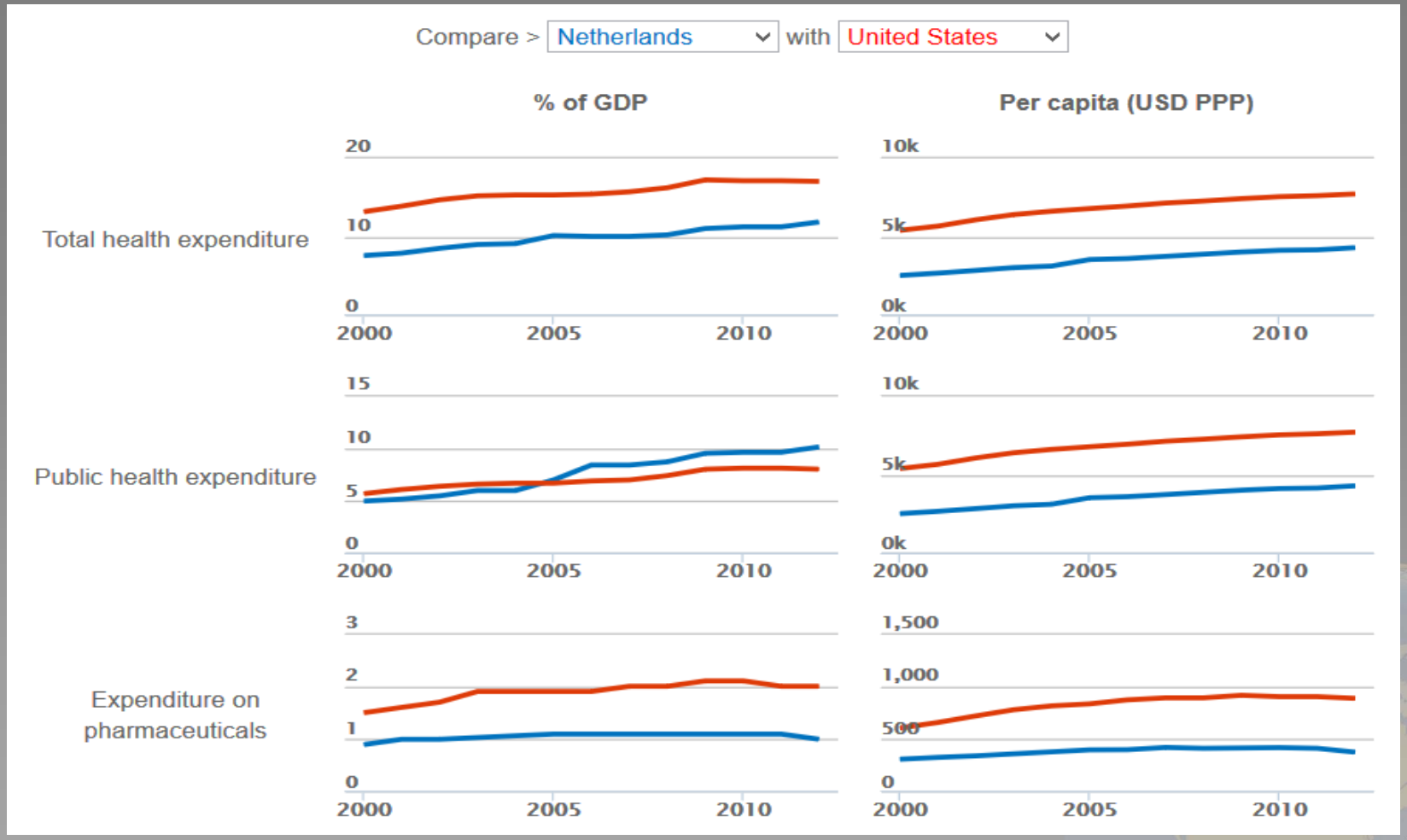
Chronic disease:
More chronic diseases are diagnosed as such, partly due to Western lifestyle and partly due to improved medical analyses.
This increases treatments and thus costs

Source: Dutch CBS – Projections for healthy life expectancy until 2030

Health expenditure the Netherlands vs. U.S.

Source: OECD

Health expenditure
the Netherlands vs. U.S. (cont.)

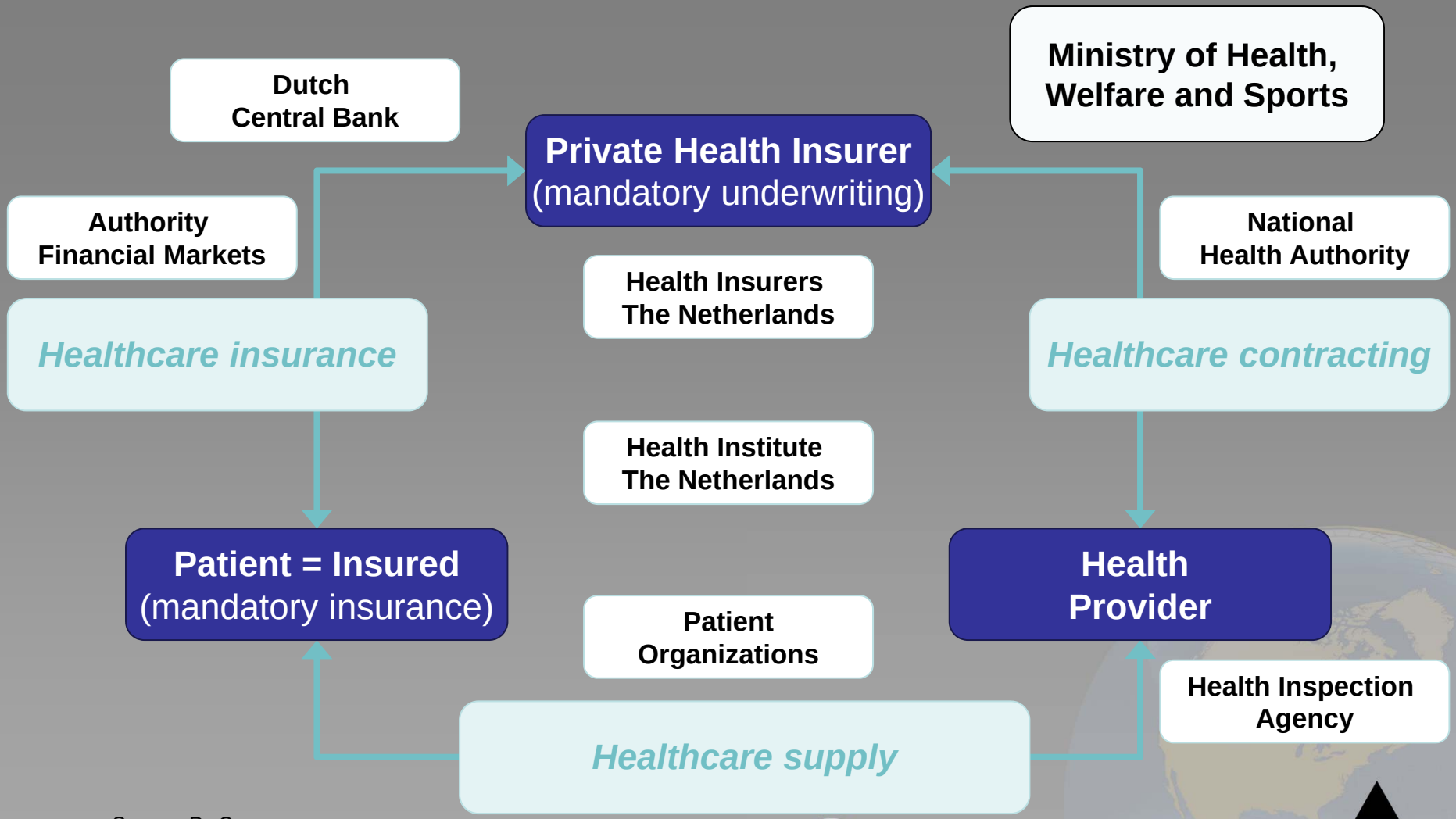


Source: OECD

Overview

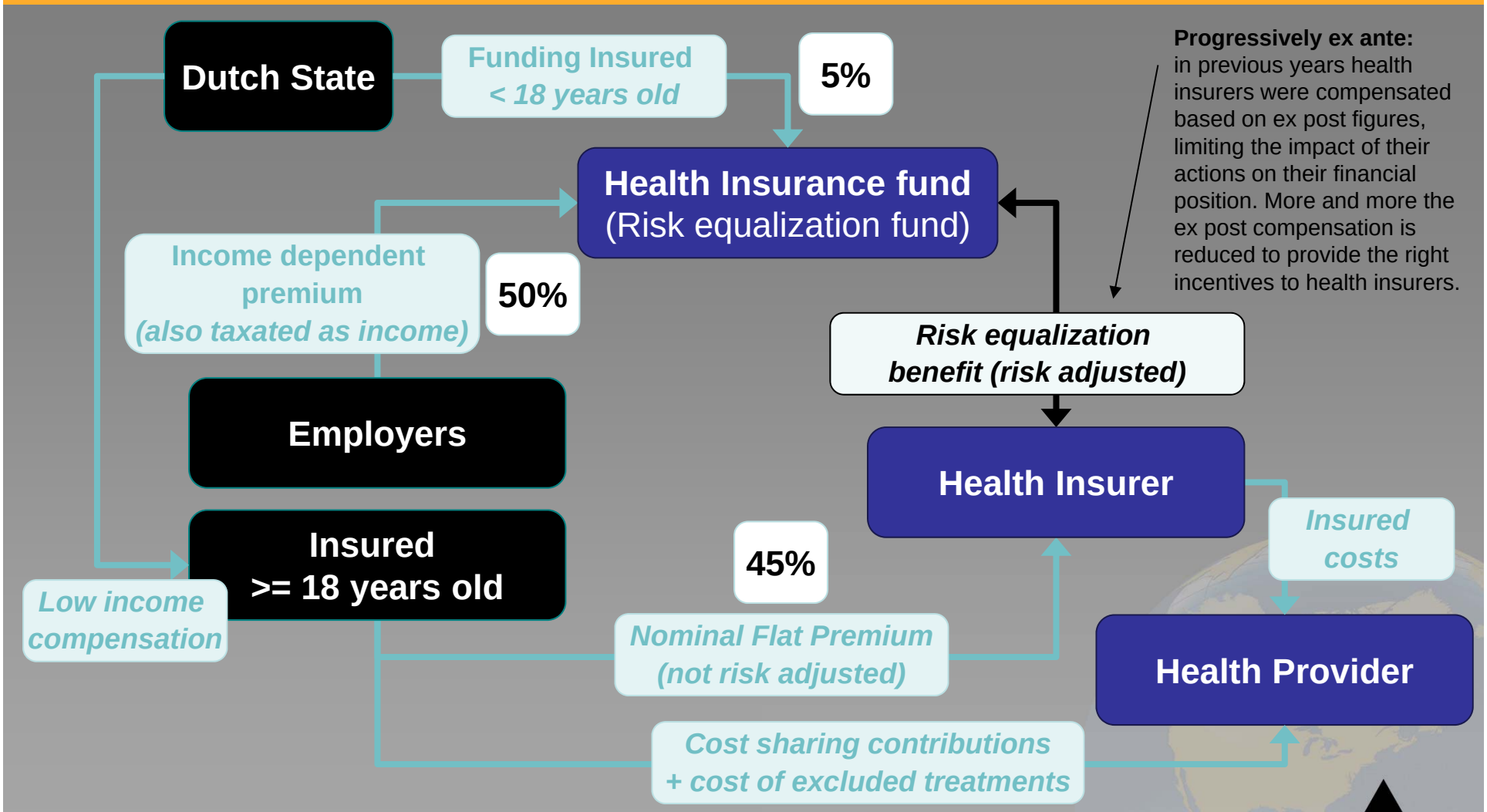
Health system and funding

Healthcare system overview
Base coverage for cure (GP, HC, etc.) and parts of LTC



Source: PwC

Healthcare system funding
Base coverage for cure (GP, HC, etc.) and parts of LTC



Progressively ex ante: in previous years health insurers were compensated based on ex post figures, limiting the impact of their actions on their financial position. More and more the ex post compensation is reduced to provide the right incentives to health insurers.

Source: PwC

LTC funding
LTC reform

2011	Zvw (base cure/ care)	AWBZ (long term care)
Income related premium	19.666	14.585
Fixed premium	14.292	
Government budget	2.319	5.248
Cost sharing contributions	1.498	1.720
Other benefits	345	31
Total benefits	38.118	21.584
Total expenses	37.678	25.440
	440	*-3.856*

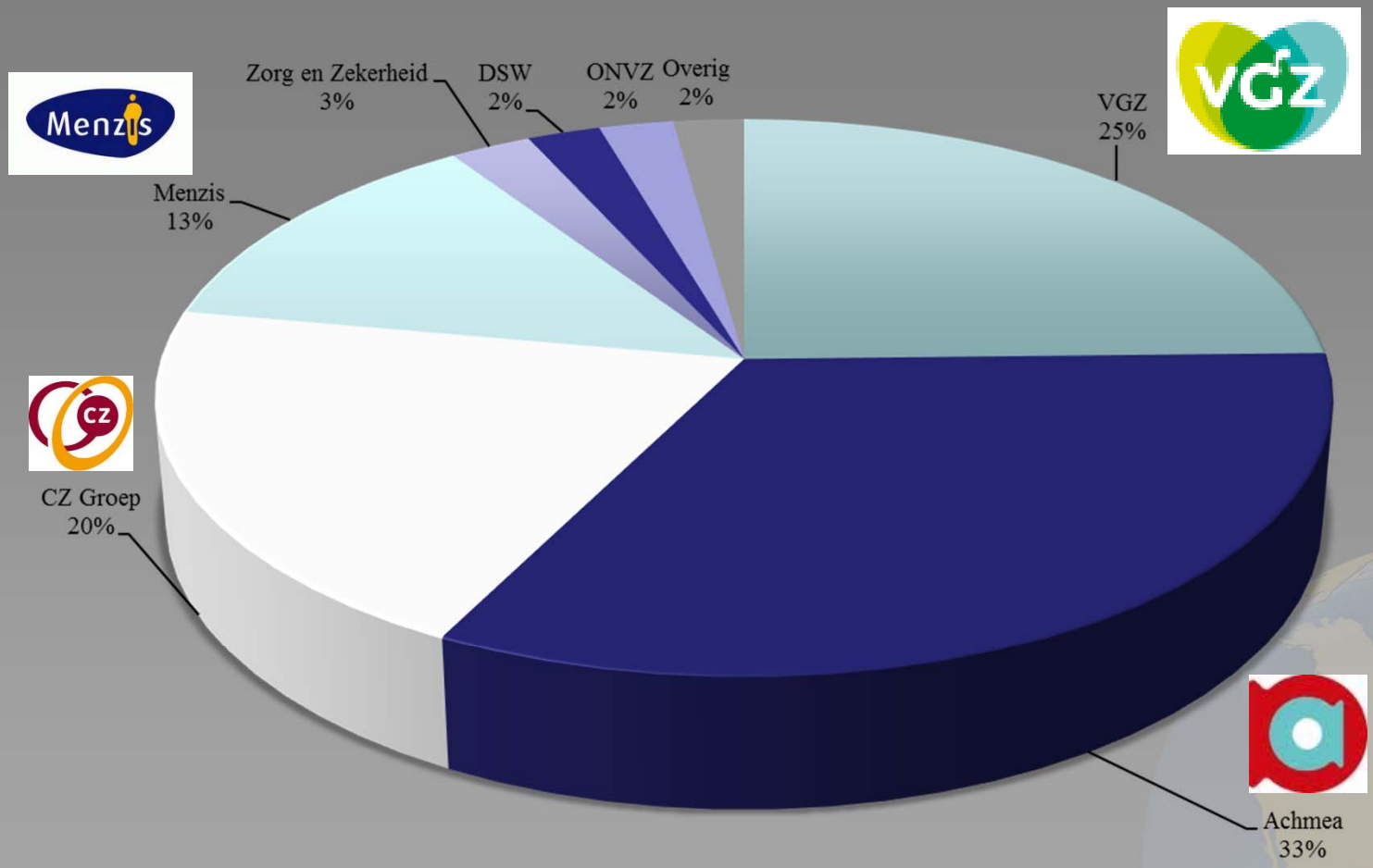
Solidarity in funding: In addition to the income related Zvw premium schemes, Zvw fixed premium payments are compensated by the State for low income individuals. The 5 percent financed by the State is mainly paid by higher income individuals through the progressive general taxation scheme. An estimate of 70 percent of the Zvw funding is thus paid based on income dependent funding. Together with the 100 percent of AWBZ that was funded by income related taxation, this leads to an overall 80 percent income related premium, which corresponds with a flat percentage equal to approximately 20 percent of the lifetime gross income that is paid or health care for all income levels.

Long Term Care reformed (Jan 2015): AWBZ and Wmo change from insurance to provision: no longer a right to receive care.

2015 (estimated)	(central gov)	Zvw (private ins)	Wmo (local gov)	Youth (local gov)
Before reform	**(AWBZ) 26.750**	**38.750**	**2.000**	
Change youth mental care		-1.000		1.000
Change LTC	-8.750	3.750	3.750	1.250
Reduction Cure		-750		
Reduction Home Care			-500	
Reduction LTC	-500	-250	-250	-250
After reform	**(Wlz) 17.500**	**40.500**	**5.000**	**2.000**

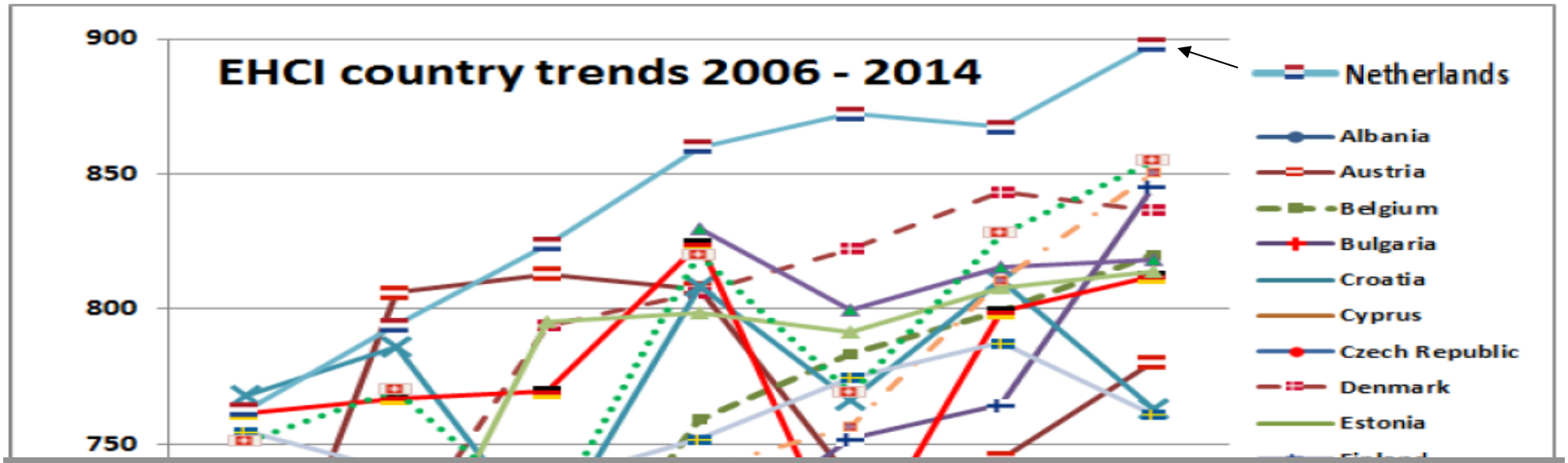
Sources: Dutch government, CPB, Rabobank Themabericht and PwC

Market concentration
Base coverage for cure and parts of long term care



Source: PwC based on annual reports

Healthcare system evaluation: Euro Consumer Health Index



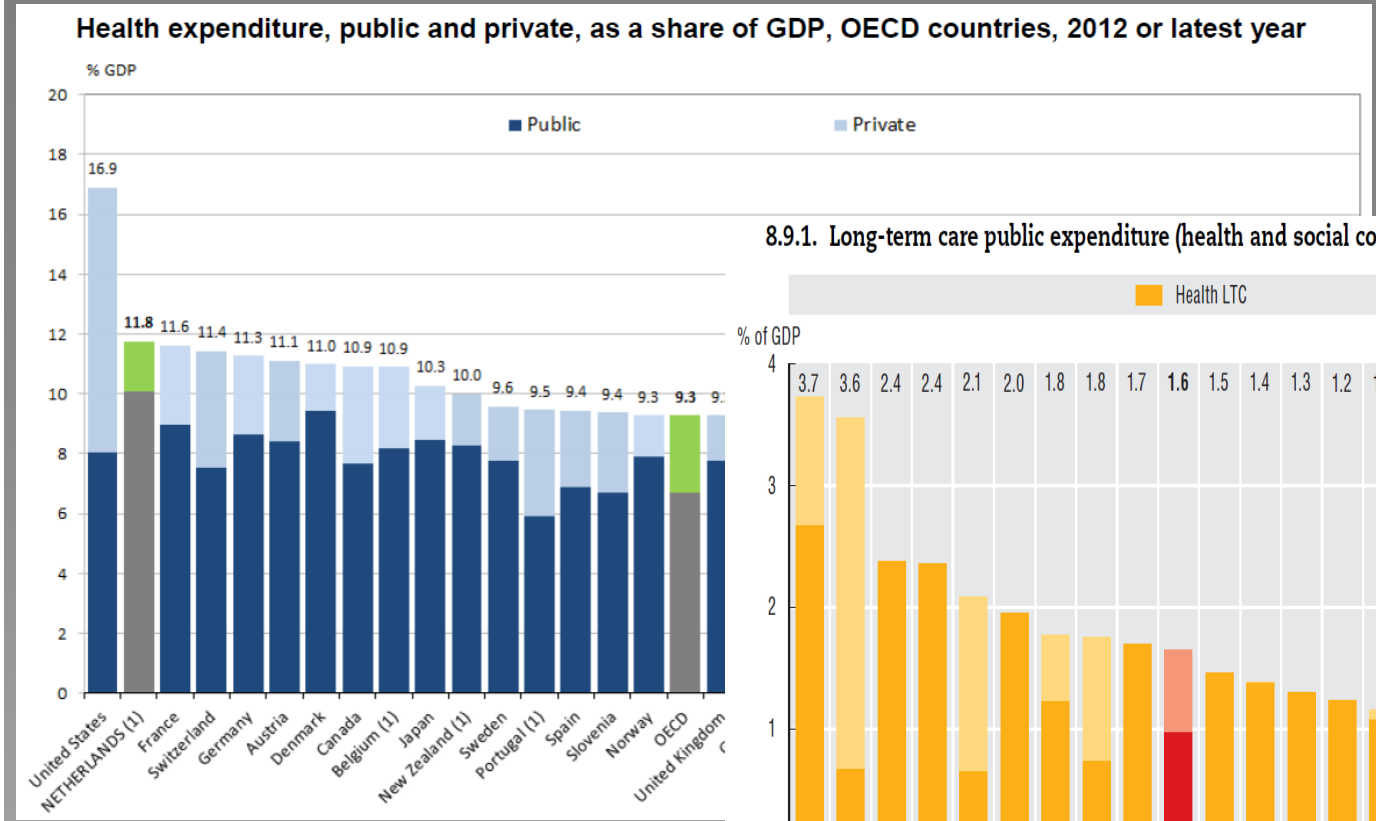
EHCI research indicates that the Dutch Health care system is 'the best' European system from a consumer perspective:

- Top 3 consistently since 2005
- 898 out of a 1000 is an all time EHCI high score following a positive trend
- Gap with #2 widens from 19 in 2014 to 43 2013 (50 in 2012)
- Netherlands (jointly) wins 4 out of 6 categories
- Weakest score is on waiting time, which is due to the GP-gatekeeper role
  that is intentionally built in to save costs.
- Netherlands still ranks 9th (2013 and 2014) after correcting for the cost level (BFB index)

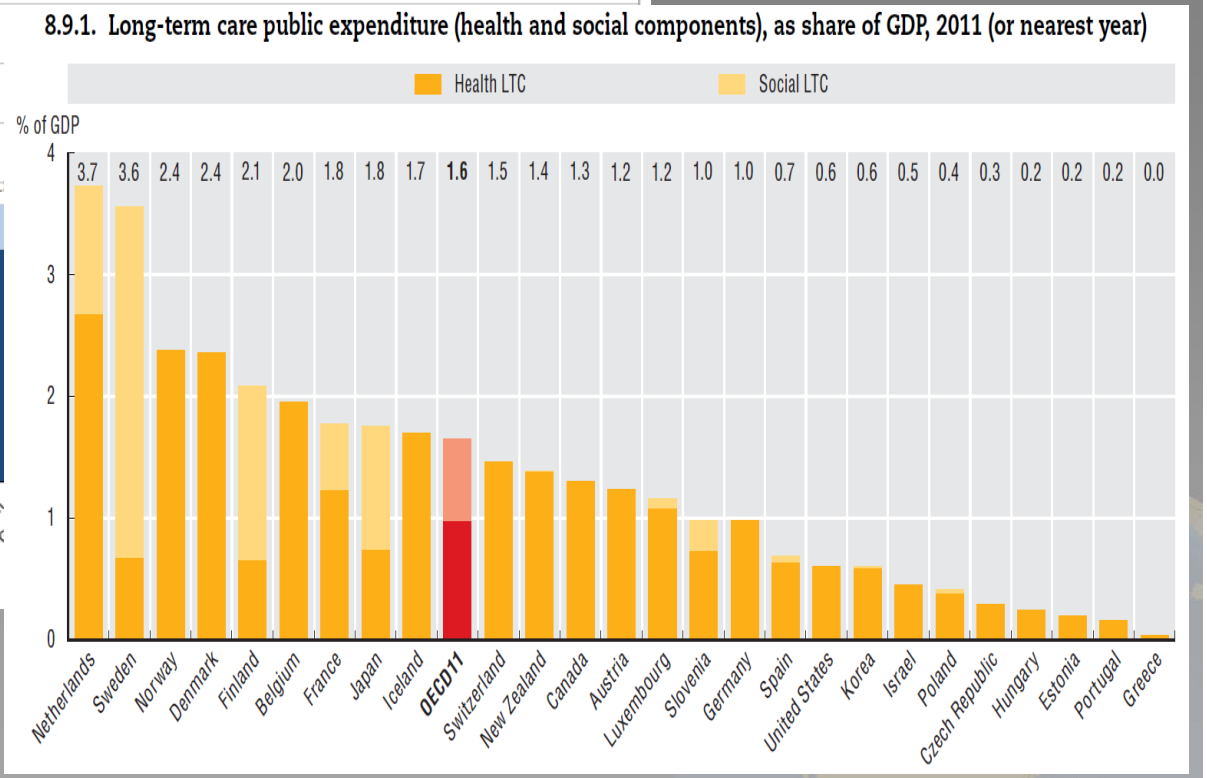
- Healthcare systems based on social insurance ('Bismarck' systems, such as the Dutch system), where there is a multitude of insurance organizations, who are organizationally independent of healthcare providers score better for larger countries than systems where financing and provision are handled within one organizational system ('Beveridge' systems like UK NHS). The top consists of dedicated Bismarck countries. Beveridge systems only seem to work in relatively smaller countries, which can also be found at the top of the index.
- Cost issue indicated as not due to multi-payer model, but due to ratio of in-patient care, especially in LTC

Source: Health Consumer Powerhouse EHCI 2014 report

Healthcare System
LTC Issues

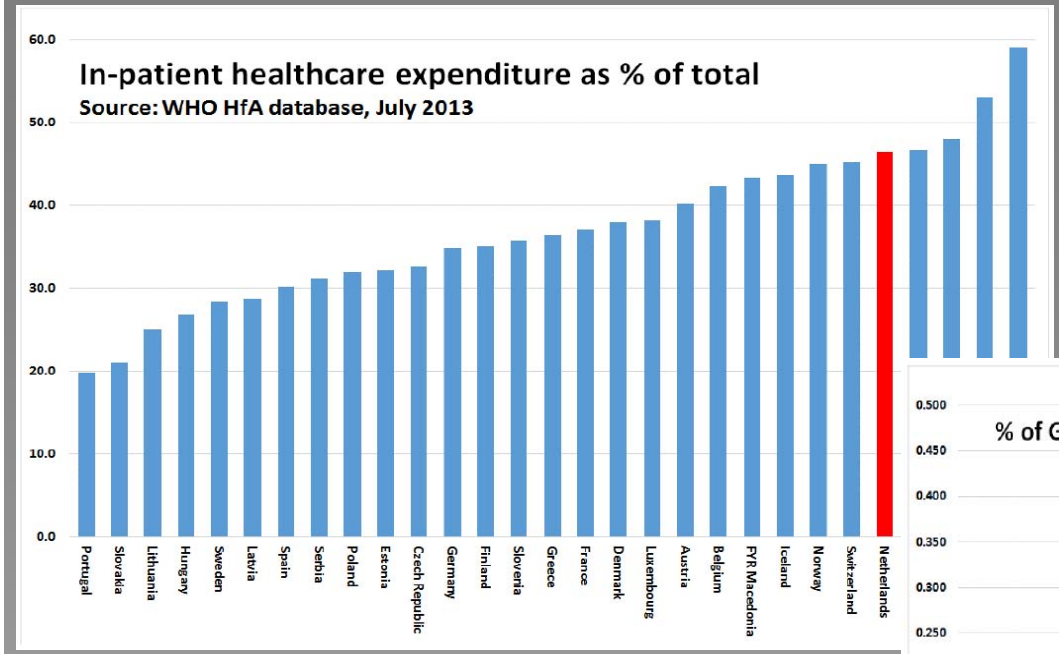


Source: OECD Briefing Note Netherlands 2014

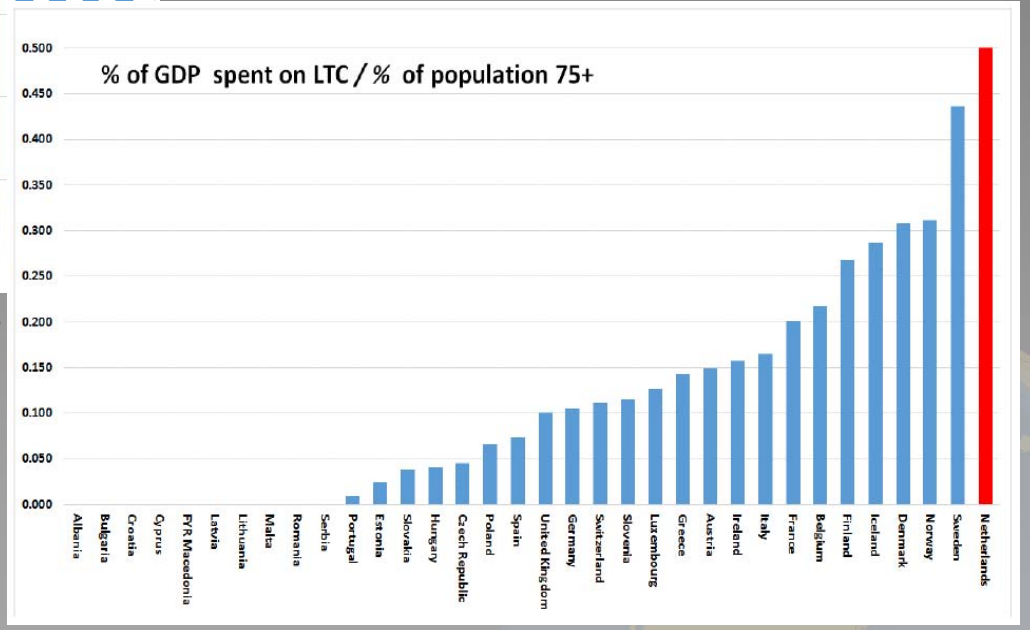


Source: OECD (2013), Long-term care expenditure – Health at a glance

Healthcare System
LTC Issues (cont.)



Source: Health Consumer Powerhouse Euro Health Consumer Index 2013

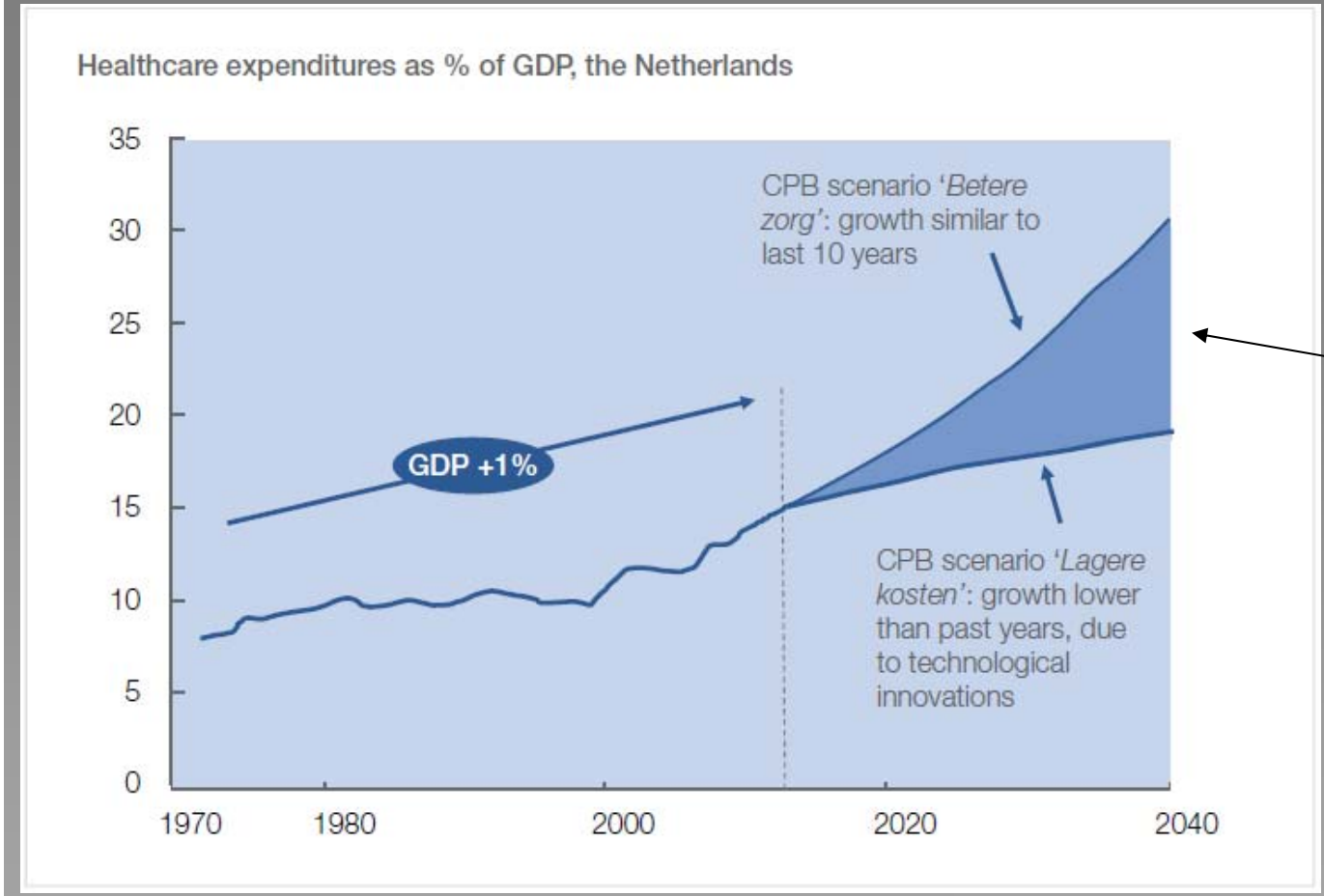


Source: Health Consumer Powerhouse Euro Health Consumer Index 2013

Overview

Health expenditure trends analysed

Projected Healthcare expenditure



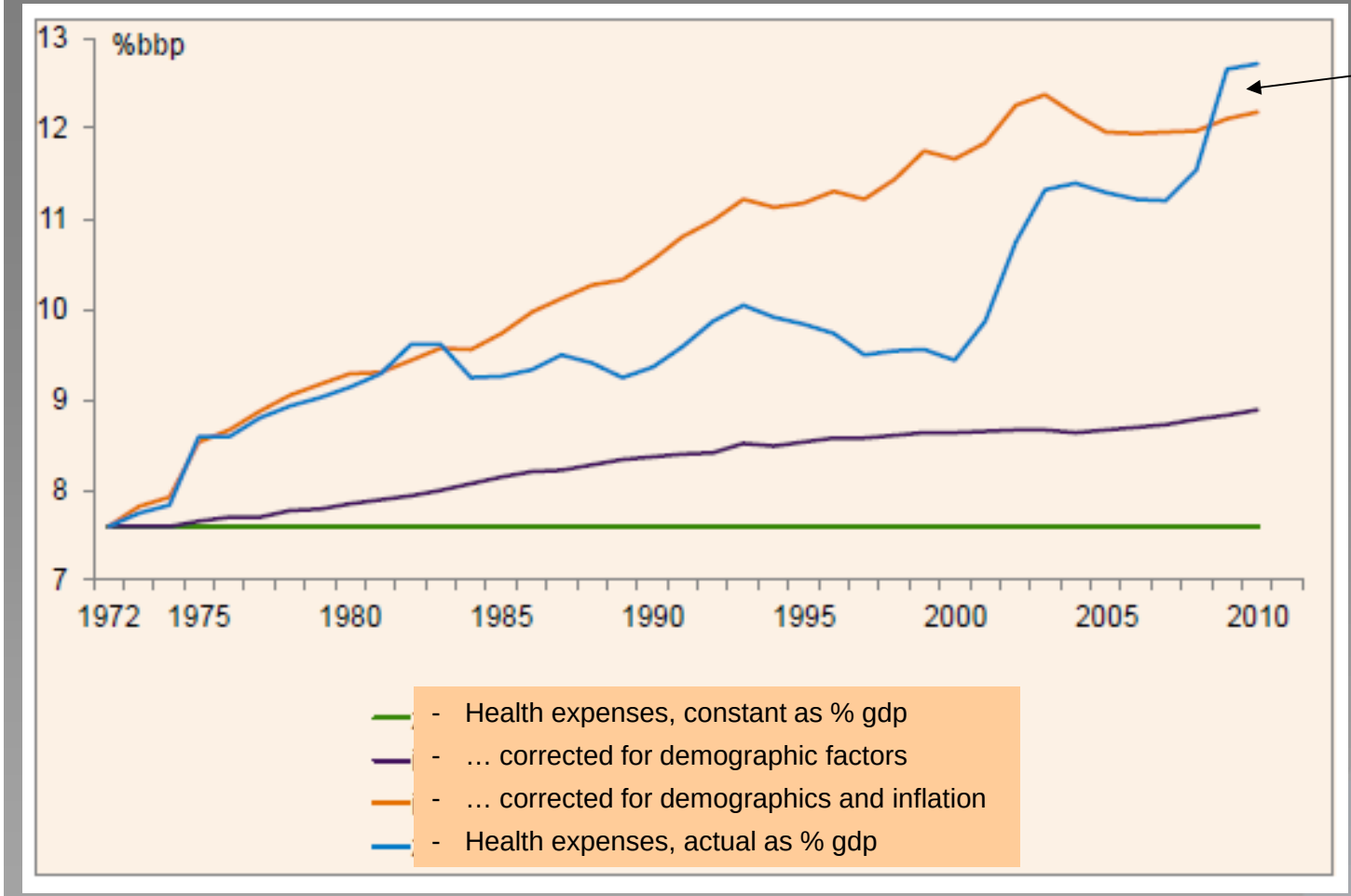
Source: World Economic Forum 2013 - Vision for Dutch Health care in 2040

Strengths: The Netherlands has been number one on the Euro Health Consumer Index for several years and is among the top OECD countries when it comes to waiting lists, patient rights and scope and availability of services.'

Challenges: 'our current health care system is not sustainable in the long-term, due to the high costs involved as well as the resources needed to provide ever increasing amounts of health care.

The rise in curative health care in the Netherlands is similar to the trend in other countries; in terms of long term care, however, the Netherlands provides a much more extensive collective package and a relatively inclusive set of criteria for patient assessment and subsequent allocation of health care. This has caused costs for care in the Netherlands to increase rapidly, and for the country to spend considerably more (collectively) on care than other countries: …nearly twice the OECD average.

Projected Healthcare expenditure (cont.)



Source: Dutch CBS, Book 7-Future of Health Care

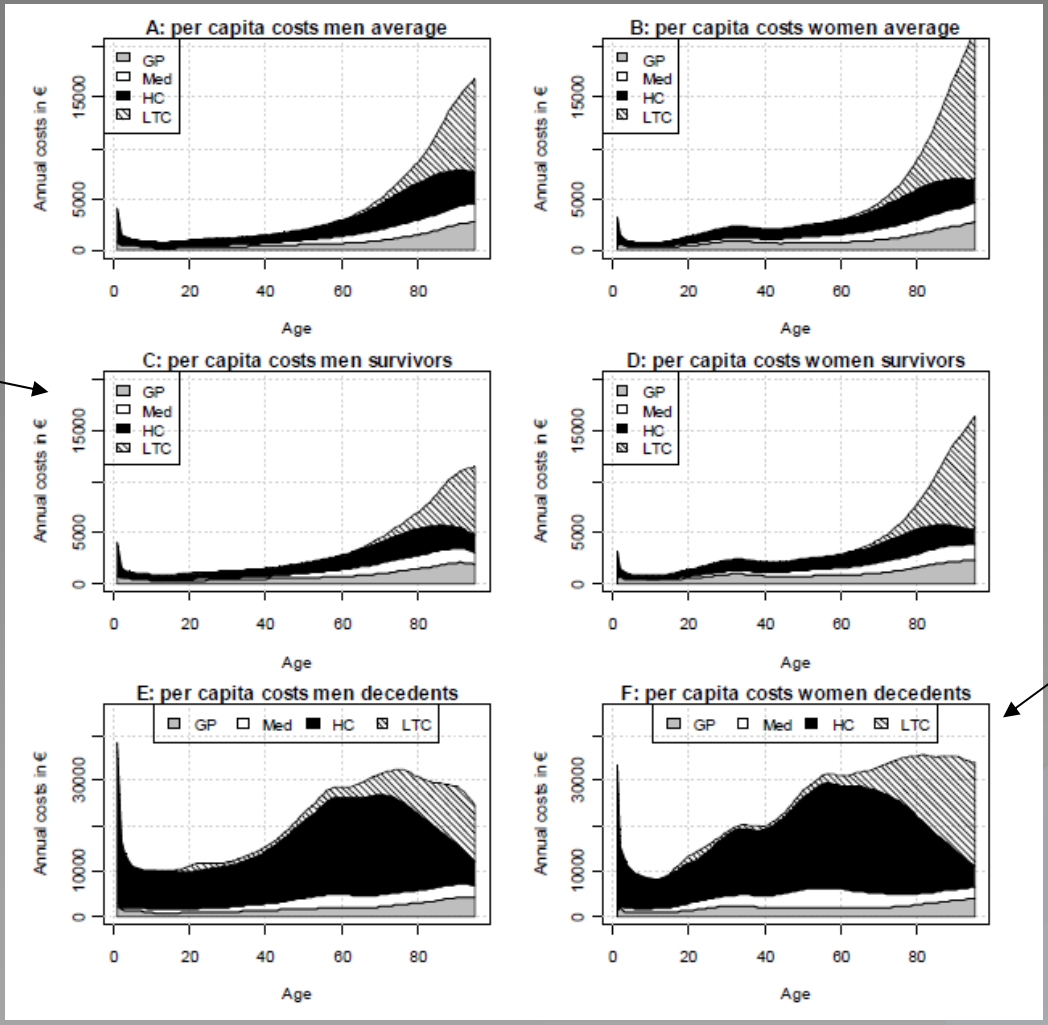
Health care cost rise in recent years has resulted from health policy changes: 'The period 1981-2000 was characterized by tight budgets necessary to compensate for government deficits in those years. This lead to limited growth of health costs, but also to long wait lists.' In the period after this, the waiting lists were eliminated by increasing health care expenses, and bringing the cost level back to the original growth path that would result from extrapolating from the early 1980s to now.

Is using the last 10 years as an estimation basis for the future thus appropriate as was done by CPB on the previous slide?

Projected Healthcare expenditure (cont.)

Survivors show increasing health care costs with age, especially due to long term care costs for older ages and especially for older women:
Total costs of survivors increase exponentially at old age mainly due to frailty, disability, co-morbidity and subsequent needs for nursing and residential care.

GP = General Practitioners
HC = Hospital Care
LTC = Long Term Care
Med = Retail sale etc.

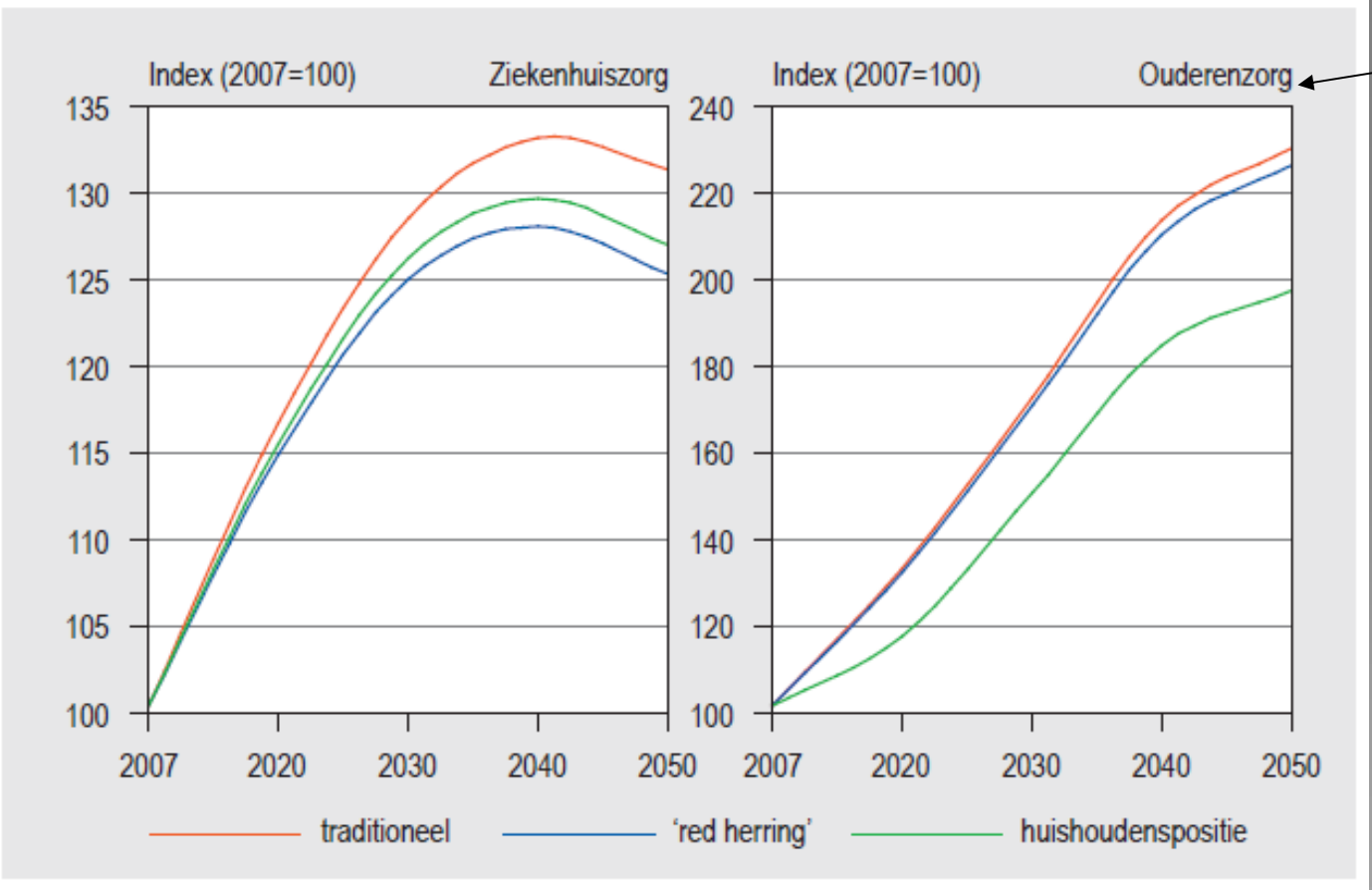


Source: Albert Wong, 2012

'It has been demonstrated repeatedly that time to death is a much better predictor of health care expenditures than age.'

Decedents (people who have died) have much higher expected health care costs than survivors for hospital care and long term care (note axis scale).
Note that the type of provider differs for age: HC costs are especially high for decedents of middle up to older ages, but not that much for the old ages, where LTC costs dominate the total cost.

Projected Healthcare expenditure (cont.)



Health care cost rise less than otherwise predicted if the projections are corrected for:
1) delayed death ('red herring' – blue line) and thus delayed high costs, especially for hospital related care (left graph); and
2) the prolonged period that partners are both alive (household position – green line) and thus the delayed move to institutional elderly care.

Also note the following (Lubitz): The total health care costs of a 70 year old over the period to his/ her death is approximately equal for all independent of the actual moment of death. It is thus not so much the increasing life expectancy until death, but the increased number of people reaching 70, that impacts the projected future health care costs.

Source: Wong, A et al, 2008 (RIVM publication)

Overview

Cost drivers and ways of coping

Cost drivers

- Ratio of in-patient care
- Culture: Western lifestyle and demanding patients
- Ageing (mixed impact!)
- Ethical considerations wrt End-of-Life ‘cure’
- Perverted incentives: treatments vs. outcomes
- Increase chronic diseases/ co-morbidity
- Mobilisation of latent demand
- Upcoding
- Medical innovation

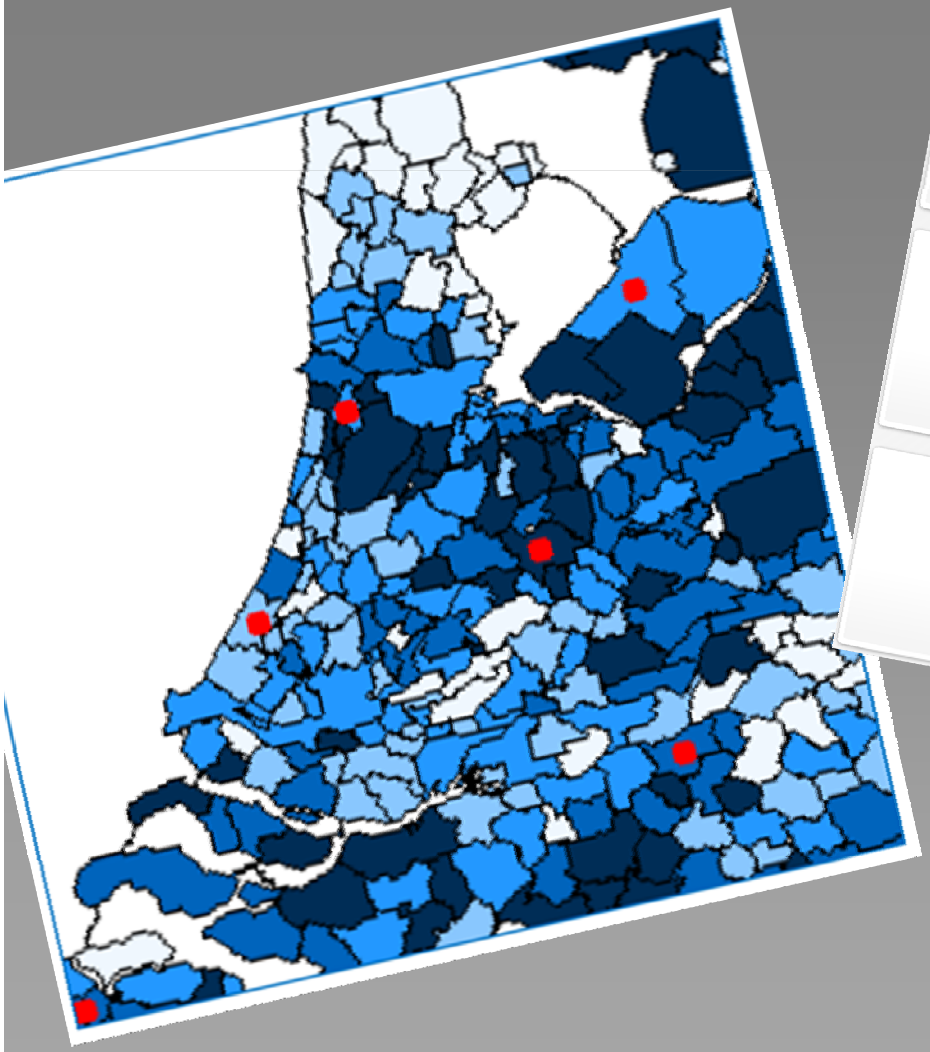
Cost drivers
Ways of coping

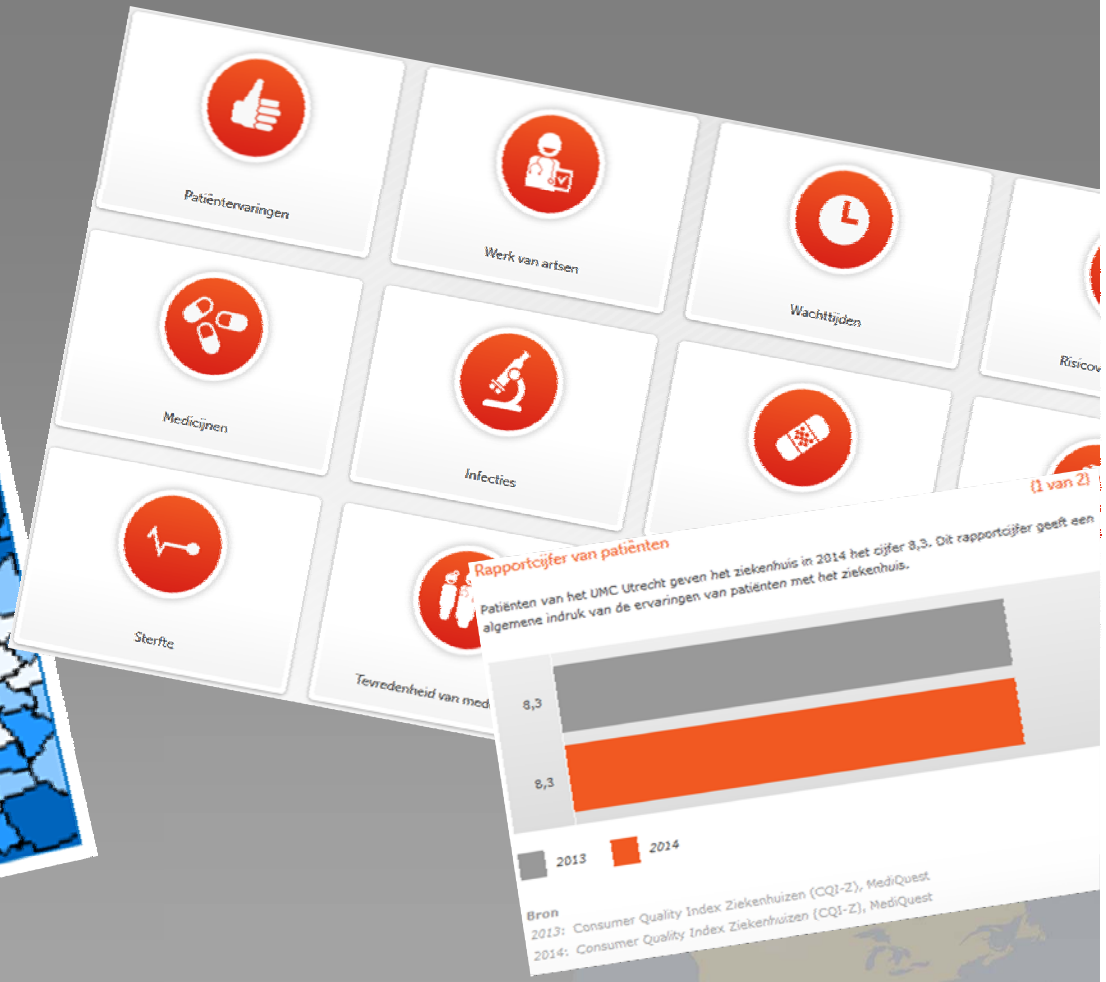
- Increase out-patient care:
- Increased efficiency
- Long Term Care reform: Decreased patient eligibility
- More healthcare provided by GP practice
- Prevention
- Further privatisation of health care
- Increased cost sharing and cost transparancy
- Decreased basic insurance cover

Cost drivers
Ways of coping (cont.)

- Debate on curative treatment at old ages
- Shift from volume based to quality based incentives
- Decrease improper use of the system, such as upcoding
- Co-morbidity treated as such
- Centrally organised care for chronically ill patients
- e-Health initiatives

Cost drivers
Some Metrics





Source: Dutch association of Hospitals

Source: ZN/ Vektis/ Plexus Report indicators variation between practices

Overview

Challenges and strengths

Challenges

- High cost level linked with high in-patient care:
  Trend: LTC high in-patient care ratio and growing 50 – 70 year old population is a challenging mix
- Complex system of coding and claiming
- Supply/ incentive induced demand
- Many parties involved
- LTC quality of care

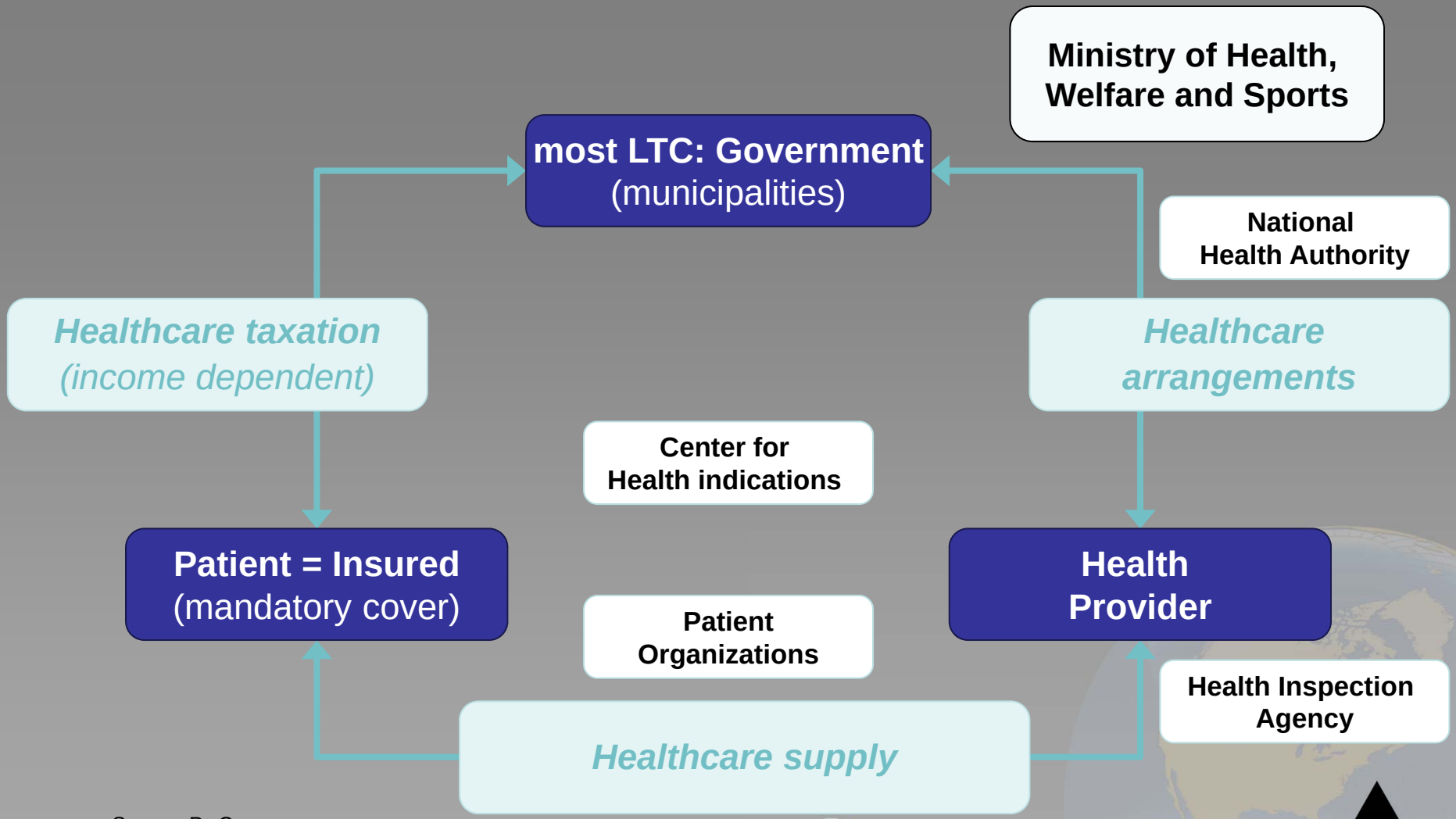
Strengths

- High quality, range and accessibility of curative health care
- High patient involvement
- Growing stability in the system
- Increasing focus on transparency and collaboration between parties
- Difficult reforms are implemented to lower costs

Overview

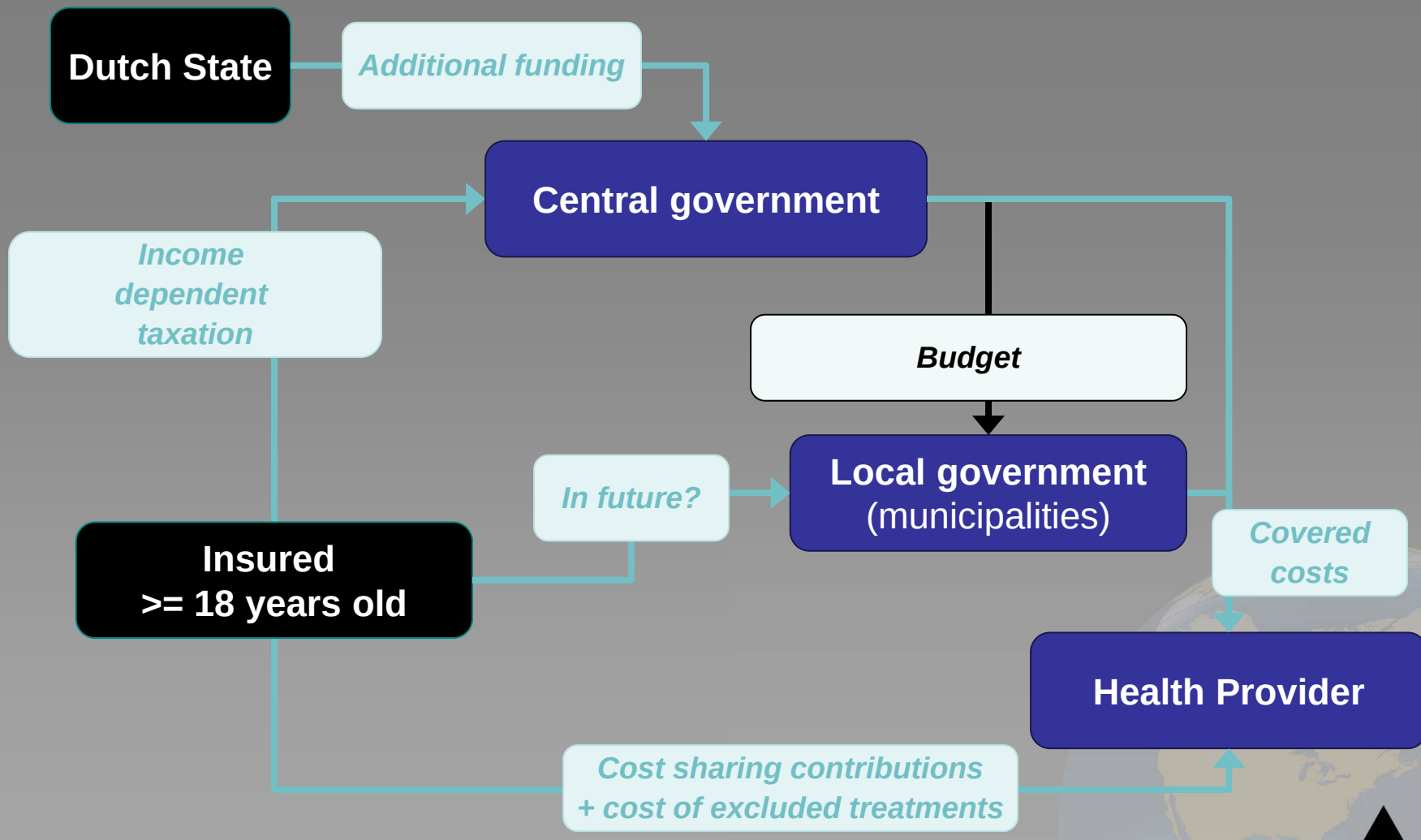
Appendices

Appendix
Healthcare system overview
LTC



Source: PwC

Appendix
Healthcare system funding
LTC

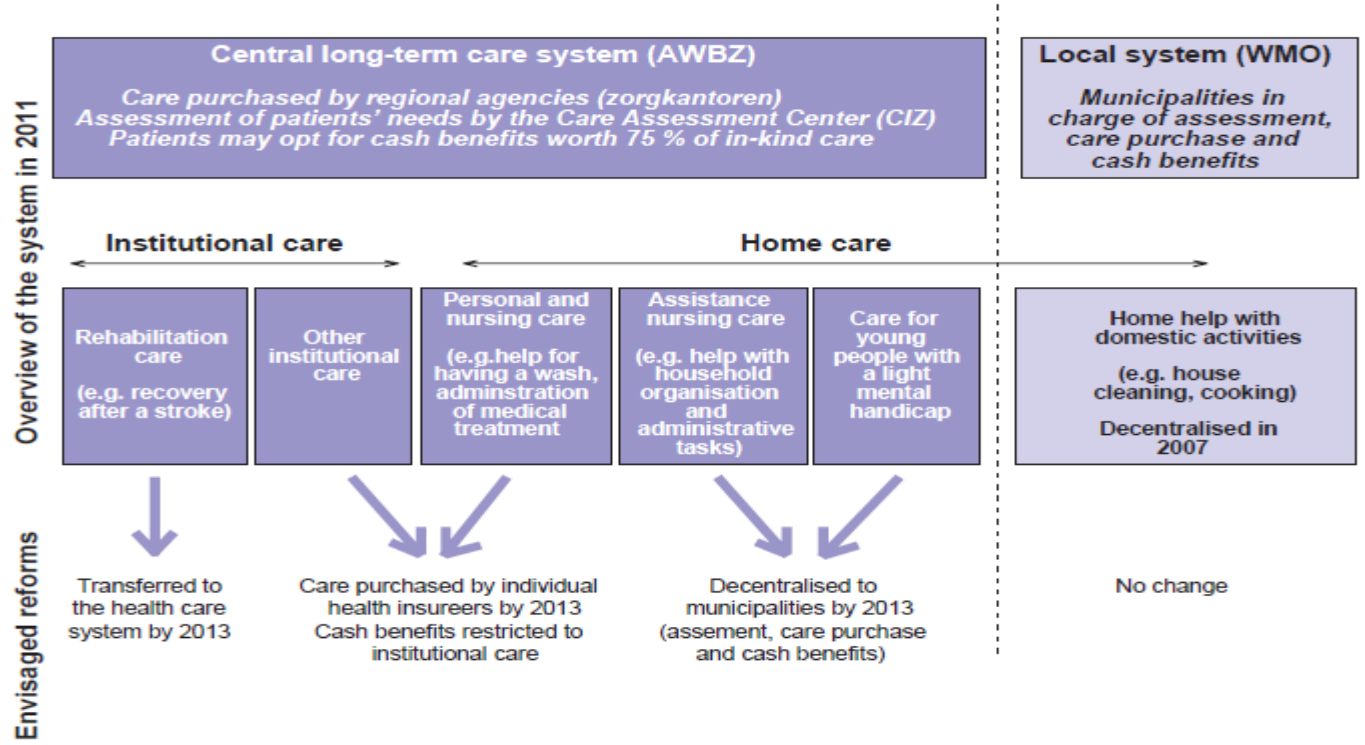


Source: PwC

Appendix
Overview of LTC reform

Box 6. The government's reform agenda for long term care (cont'd)

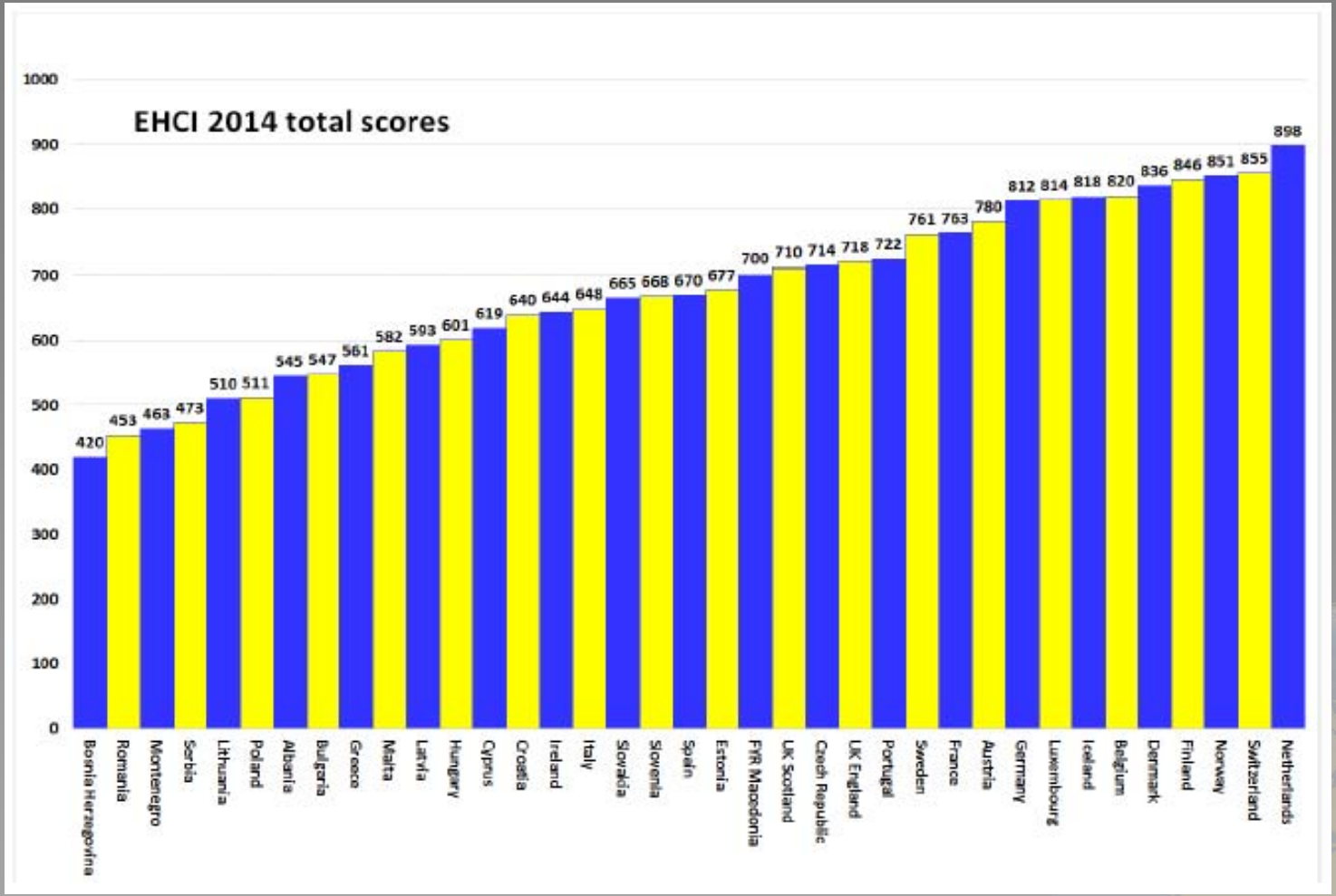
Figure 7. Main features of the envisaged reorganisation of the long-term care system



Source: Ministry of Health, Welfare and Sport.

Source: OECD Economics Working Paper Health Care reform and Long-Term Care in the Netherlands

Appendix
Euro Health Consumer Index 2014 scores



Source: Health Consumer Powerhouse Euro Health Consumer Index 2014 report

Appendix
Overview of abbreviations

- Zvw = Healthcare Insurance Act
- AWBZ = Exceptional Medical Expenses Insurance Act
- Wmo = Social Support Act
- Wlz = Long Term Care Act
- Youth Care Act