



Health Care System reform and short term savings opportunities

Iceland Health Care System project

7 October, 2011

THE BOSTON CONSULTING GROUP

Preface

This is the final report from a 5 week effort to analyze the performance of the Icelandic health care system and identify opportunities for short term savings and more long term Health Care reform.

The BCG project team has reported on a weekly basis to a Steering Group consisting of key stakeholders in the Icelandic health care system and has been supported by a Data Group. In addition, an Advisory Group has meet with the project team on one occasion. Five site visits have been made to different organizations (Reykjanesbaer, Landspítali, Akranes, Akureyri, Glaesibaer).

As the Ministry of Welfare was in urgent need of external input as part of deciding on priorities for 2012 this work has been done in a "best effort approach" in a very short period of time. Individual recommendations and savings potentials need to be further investigated and detailed in order for the Ministry of Welfare to make decisions but the report provides directional advice on which areas should be the focus of further review. Analysis is based on data provided by the Data Group as well as publicly available sources.

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Executive summary

The Icelandic health care system is publicly financed and provides care to 318 000 inhabitants of which 2/3 live in the capital region. The system is organized in 7 health care regions (which provide specialized care, primary care and elderly care) and 76 municipalities (of which some provide elderly care). About 14% of the care is privately provided and there is no gatekeeping system. The population will grow by 7% the next 20 years and is overall still fairly young compared to other European countries. The most important risk factor among the population is obesity which is increasing at a rapid speed.

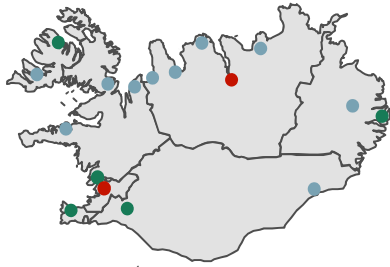
Iceland has very good quality of care results compared to other European countries especially in areas such as AMI, stroke and breast cancer but dental and diabetes care stands out as exceptions. Access to specialist care is good although access to GPs is viewed as a concern. Overall Iceland spends 9.3% of GDP on health care which is average compared to other European countries but the financial crisis has strained the budget. The current plan is to increase the budget by 0.3 BISK 2012. This increase is the result of reallocation of funding consisting of a 2.5 BISK increase (in private specialist care, drug spend and care for patients treated abroad) and a cut of cost by 2.2 BISK in other areas (primarily public hospital care). Our review has shown that overall the current system is characterized by a number of challenges:

- *Care structures:* The current care structure and service levels of specialized care and elderly care have not been designed in sufficient detail on a country wide level resulting in a suboptimal structure.
- *Current market rules & gatekeeping:* The current reimbursement system for private specialist is fee-for-service and for public providers there is a fixed budget. In combination with no gatekeeping this is causing a continuous increase in private specialist care visits and risk for over consumption e.g. cataract surgery. Primary care has similar incentives challenges with fee-for service for private after hours GPs while the public primary care organization has a large number of internal challenges (focus has been on capital region).
- *Patients flows:* There is also likely to be potential to improve the current patients flows through better care integration and better patient guidance.
- *Direct expenditure:* There is potential to further reduce drug spend and also review opportunities to implement Lean processes in public care providers.
- *In addition:* There are substantial improvements needed in the planning and performance management of the system. A component in this will be improved E-Health. Given the obesity trend a strong prevention strategy is needed. Our Value Based Health Care maturity assessment indicates that much of the infrastructure is in place, however, strategic direction from the government is needed to accelerate data richness and reporting.

In summary, several improvements can be made to the system in order to provide better service, better quality of care and increase efficiency. Further analysis is needed to both understand the current challenges in more detail as well as design future solutions. Together with the Steering Group we have defined the following prioritizations in terms of which areas need to be addressed:

- 1) A reform of the current primary care model and the private specialist model in the capital region. In addition, an improvement project around data gathering, budgeting and performance management needs to be launched and several short term savings ideas need to be further analyzed.
- 2) A review of the current elderly care model to identify how more equal, efficient and higher quality care can be provided.
- 3) An redesign of the overall care structure across the 7 regions and municipalities.

The project has reviewed the current Icelandic HC system



HC system landscape

Identifying and describing the HC system landscape with focus on

- Demographics and geography of Iceland
- Key risk factors and incidence of common diseases
- Current resources and capacity of the system
- Financial situation and degree of private provision
- Recent developments



System performance

Evaluating the performance of the system in four dimensions

- Quality e.g. outcomes and VBHC maturity
- Access e.g. waiting times
- Finance e.g. key growth contributors
- Efficiency e.g. care structures, market rules, patient flows



First priority of reform

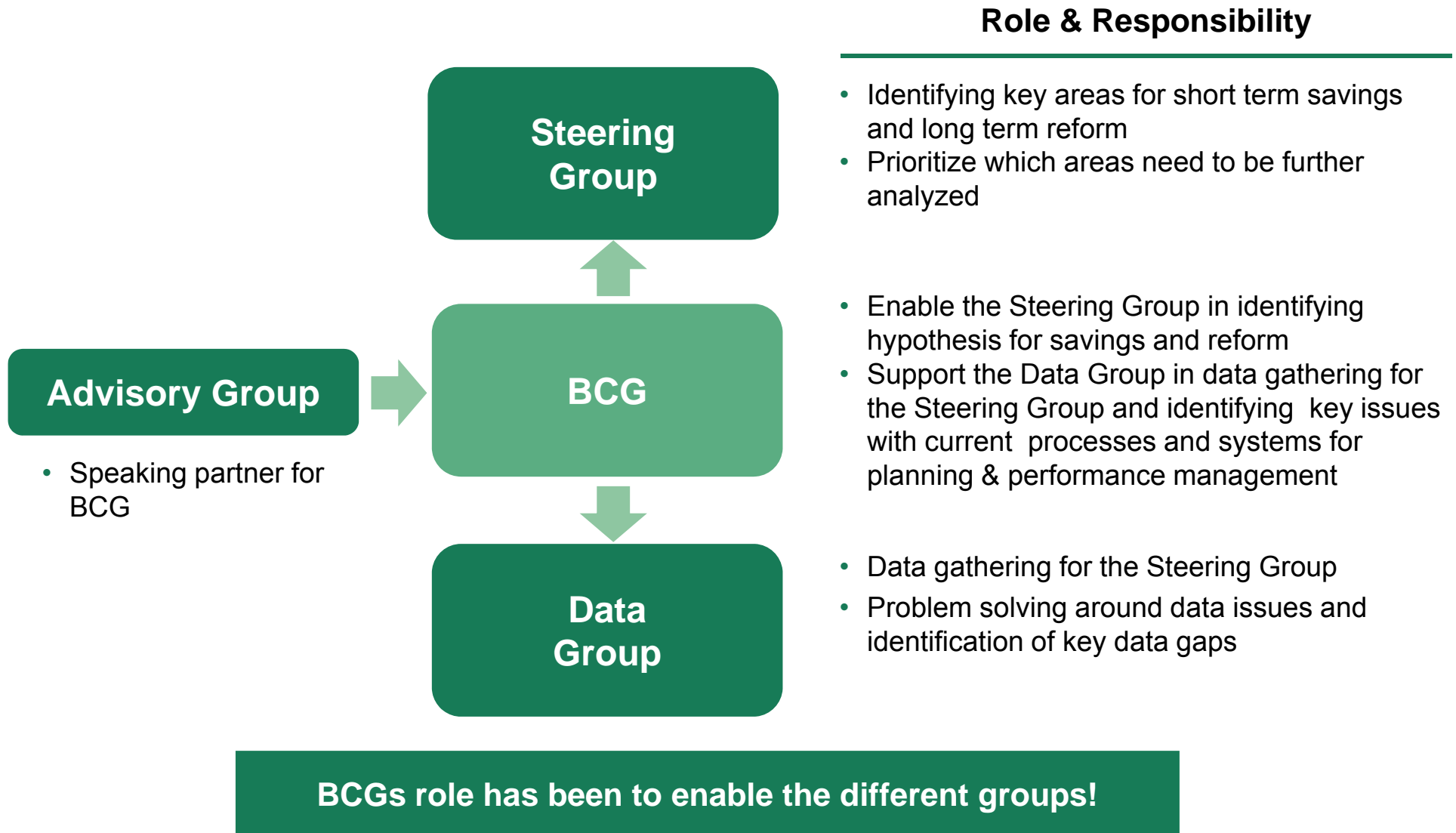
Short term savings potential

- Despite recent cuts, identify further short term cost improvements

Long term reform

- Identify areas with long term improvement potential

Role & responsibilities of key project members



Participants in key groups

Steering Group

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 Political advisor to the minister
 CEO
 Chief of Finance and Information
 CEO
 Chief of Medicine
 Chief of Nursing and Operations
 Chief of Medicine
 Director General, Operations
 Special Advisor

Ministry of Welfare
 Ministry of Welfare
 Landspítali
 Landspítali
 Akureyri hospital
 East Health Directorate
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 Ministry of Welfare
 Ministry of Welfare
 Landspítali
 Directorate of Health
 Directorate of Health

Agenda

Description of the Icelandic health care system

Current performance of the system

Key changes needed to secure a better system in the future

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Description of the Icelandic health care system

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Summary of the Icelandic health care system set-up

Population & geography

- Total population of 318,000 which will grow by 23,000 (7%) by 2020
- Relatively young population with an additional 3,000 >75 by 2020
- Rural areas becoming depopulated and 2/3 live in the capital region

Incidence and risk factors

- Overall average incidence
 - Diabetes particularly low historically although increasing
- Low tobacco and alcohol consumption however overweight is very high and increasing

Structure

- Care organized in 7 regions and 76 municipalities
- 2 main hospitals, 6 regional hospitals, 16 health institutions
- No gatekeeping

Financing

- 80% government, 20% out-of-pocket
- Dental care to larger extent funded out-of-pocket
- Public care units have fixed budgets but private providers reimbursed fee-for-service

Degree of private provision

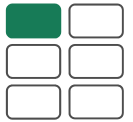
- 14% of total expenditure is privately provided primarily in dental and specialized care
- Additional 7% from non profit nursing homes

Recent events

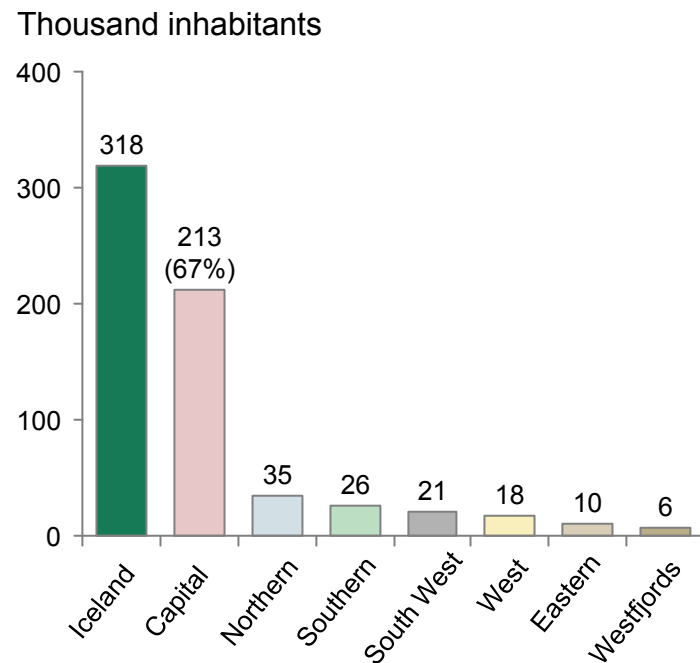
- Large cost cutting efforts have been made last few years
- Recent creation of the Ministry of Welfare through merging of two ministries

Iceland's population of 318 000 is spread out in 7 regions

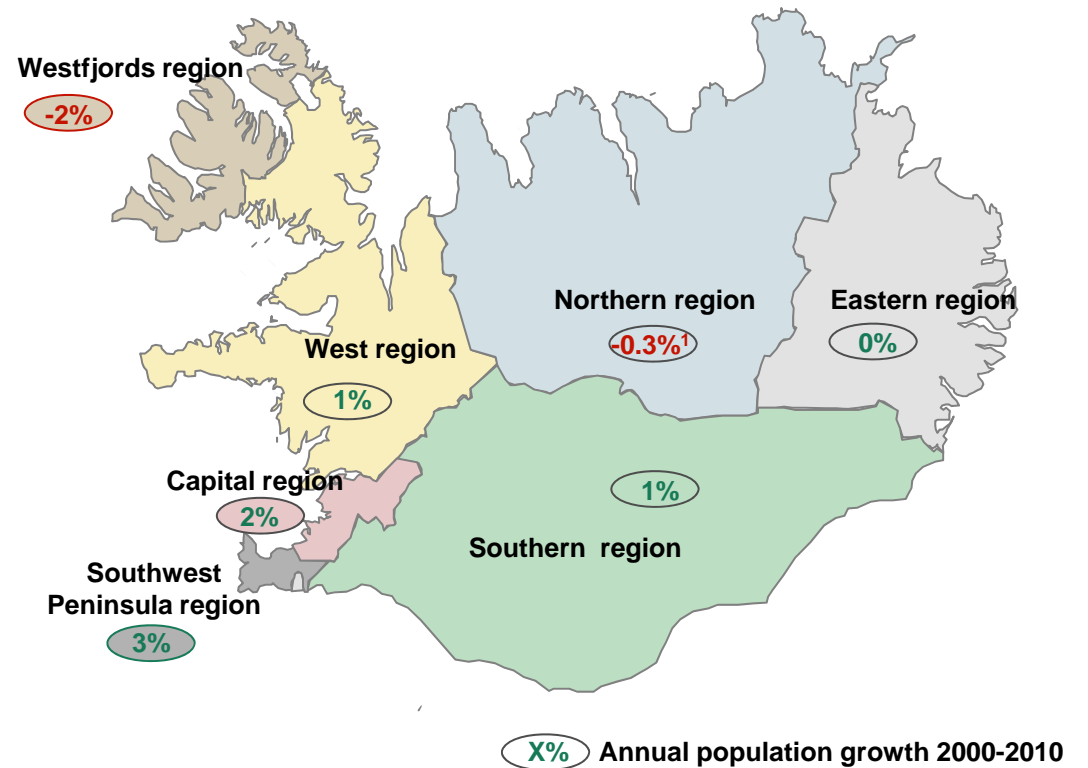
Southern regions attracting people from northern parts



2/3 of the population lives in the capital region



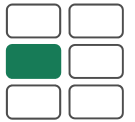
Population is moving from north to south



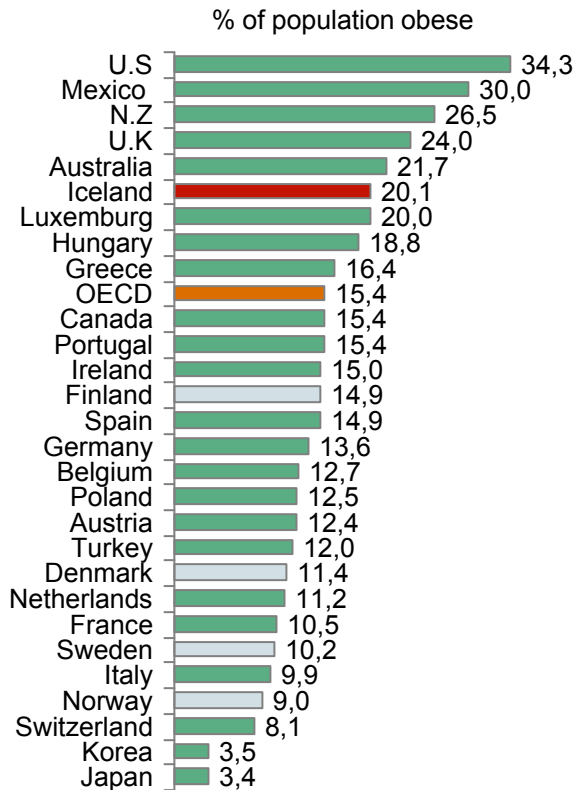
1. 2011 statistics CAGR refer to 2000-2010 where the previous Northwest and Northeast are combined to new Northern region
 Source: Ministry of Welfare, BCG analysis

Obesity is increasing rapidly in Iceland

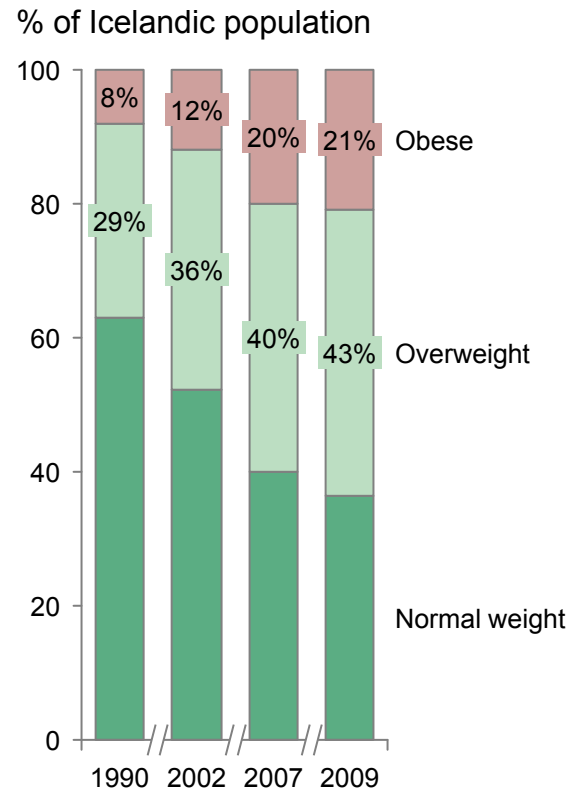
Obesity is more common in rural areas



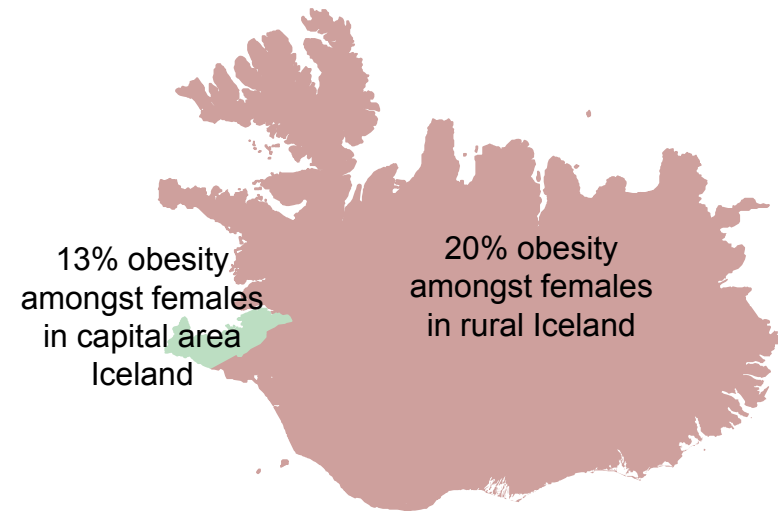
5th most obese country



Obesity and overweight has increased rapidly



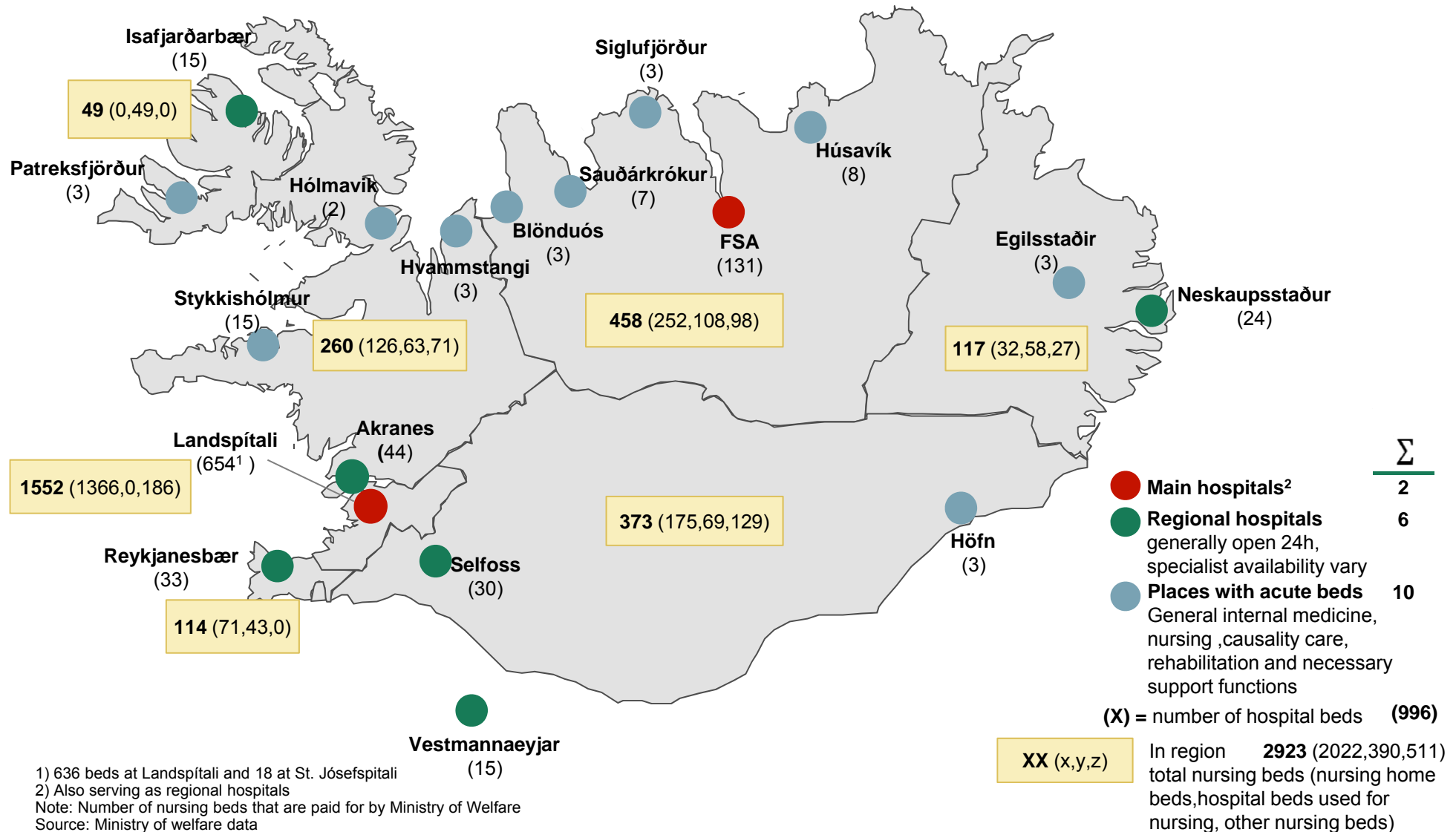
Obesity rates higher in rural areas than in Capital area



Source: OECD health at a glance, *Smoking, obesity and education of Icelandic women by rural-urban residence*, Steingrimsdottir et al 2010, BCG analysis

Current structure consists of 7 health care regions

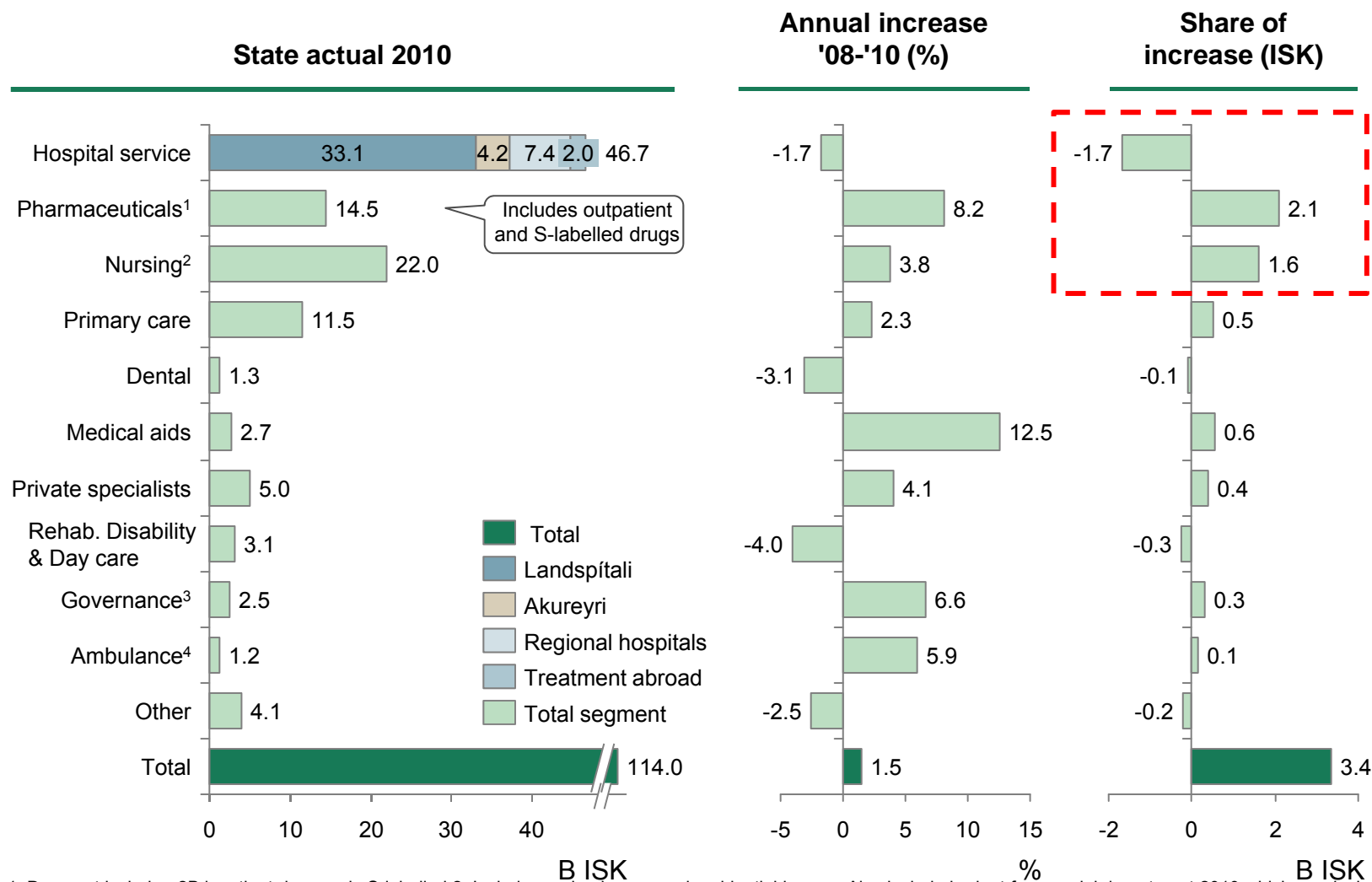
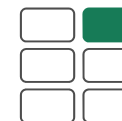
All with one main/regional hospital, additional general hospital institutions and primary care



1) 636 beds at Landspítali and 18 at St. Jósefspítali
 2) Also serving as regional hospitals
 Note: Number of nursing beds that are paid for by Ministry of Welfare
 Source: Ministry of welfare data

State expenditure has increased 1.5% per year since 2008

Pharma and nursing are cost drivers whereas hospital service is decreasing



1. Does not include ~2B inpatient drugs only S-labelled 2. Include nursing homes and residential homes. Also include budget from social department 2010 which was included 2008, 2009 and again 2011 3. Include Ministry of Welfare, Directorate of Health and Icelandic radiation authority 4. Only include state spend not the budget on the individual hospitals 5. Other include Sjúklingatrygging, new Landsítali Capex and Heilbrigðismál, ýmis starfsemi eand other capex costs etc
 Source: Ministry of welfare reported data 2011

Agenda

Description of the Icelandic health care system

Current performance of the system

Key changes needed to secure a better system in the future

Review of key system performance in four dimensions

Quality

- Iceland has among the highest care quality in Europe
- Maturity of VBHC Iceland scores high on national enables but lower on data richness, quality and sophistication of use

Access

- Overall access to care is good especially in specialized care although some concerns raised about primary care access

Finances

- HC cost as a share of GDP has been increasing and the financial crisis has put cost pressure on the HC sector
- Budget reallocations need to be made next year

Efficiency

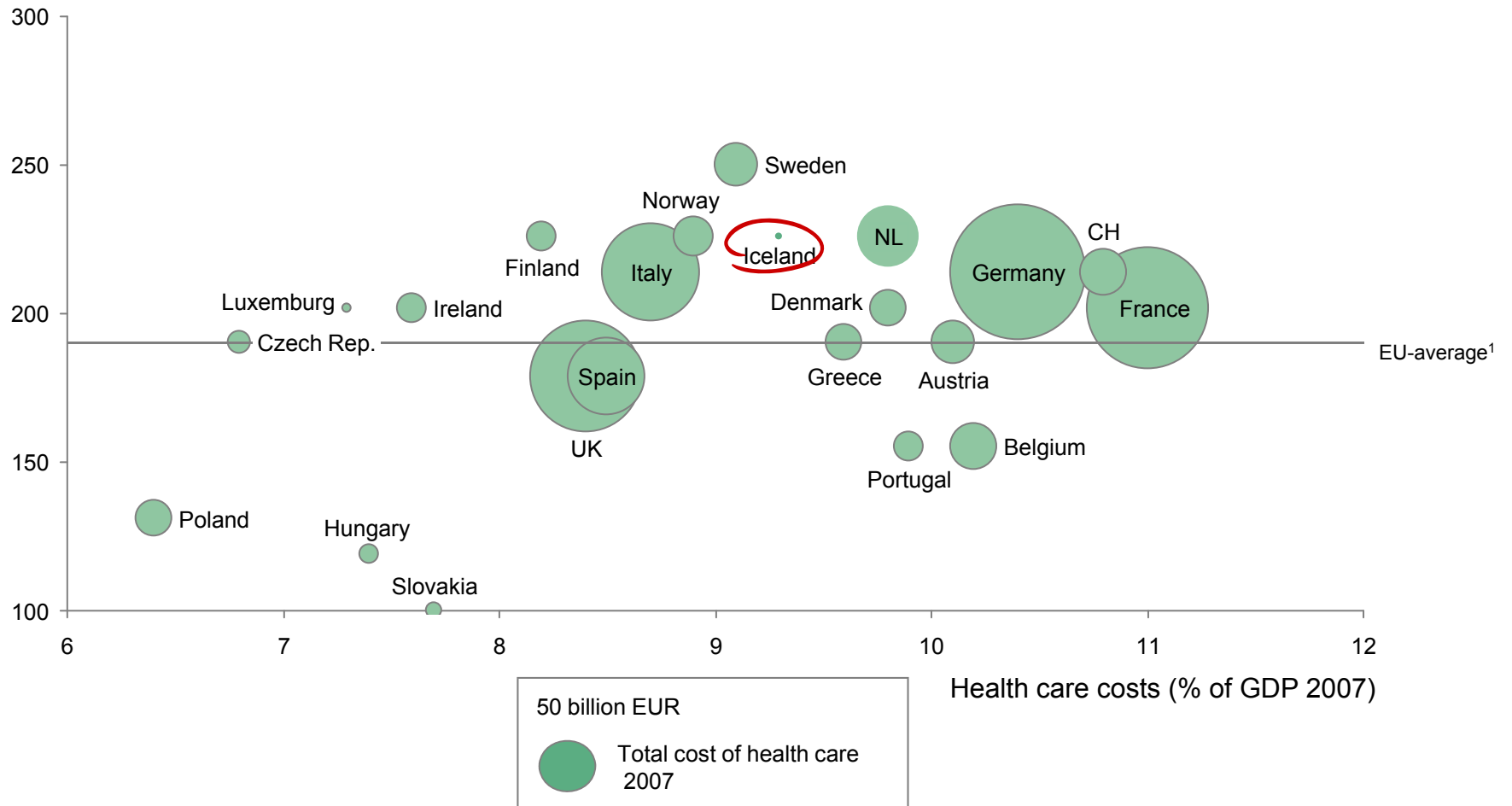
- First analysis indicate a large number of improvement areas in terms of care delivery structure, market rules, to high usage of emergency care etc

Quality of health care in Iceland high

Scoring top five in Europe when measuring outcomes

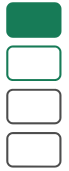


Quality points based on medical outcomes

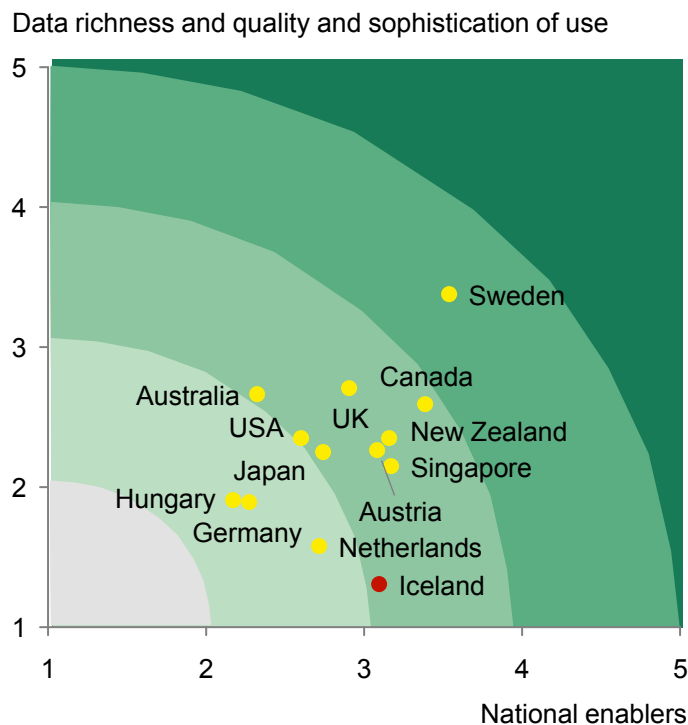


1. Weighted average based on Euro Health Consumer Index 2009 and total health care costs 2007
 Source: Euro health consumer index 2009, OECD health data 2009

Analysis of Iceland's VBHC maturity level identify lack of data collection and sophistication of use



Average on national enablers for outcome data collection but scores low on data richness and sophistication of use



See appendix for additional detail

A countries maturity level guides areas for national focus

Scores high on important infrastructure enablers

- High clinical IT usage and reasonable level of interoperability
- Unique identifiers personal numbers
- High use of standards however not always consistently
- No patient consent required

Lower score on national commitment enablers

- Little governmental strategic direction
- Medium-high engagement among physicians
- Very little reporting to public on outcome data and there is fiscal interest from the public
- Registry for cancer nationally funded

Currently few registries and low richness in outcome data

- Two national with low data richness
- A number of Landspítali registries with higher data richness score primarily used for clinical improvement work
 - However with little impact on clinical guidelines and reimbursement, accreditation

Data is currently primarily used in research applications

- Low level of reporting to clinicians, public and payers
- IceBio registry is an exception with a platform used as a clinical tool and data shared with clinicians on a monthly basis

Note: National enablers is average of scores for 1a3-6, 1b (all), and 2a6; Data richness and quality and sophistication of use is average of 2a (all), 2b (all), 2c1-3, and 3 (all, except 3.5). Note clinician engagement is not included in this overall assessment. Singapore data is desk base research only interviews scheduled for 26th August -2nd September, Austria Data is still not finalised
Source: BCG interviews and analysis 2011

Correlation between high quality and availability of registry



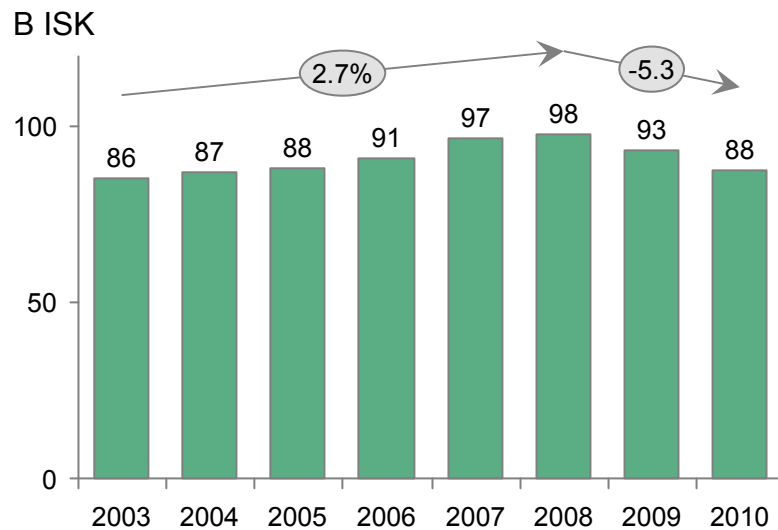
	Disease	Quality indicator	Incidence /Prevalence	Registry	Quality ranking	
1	Acute myocardial infarction	• Lowest post 30 days mortality in OECD 2.1%	~200/ year ²	✓	● Very High	} OECD ⁴
2	Breast cancer	• Next highest 5 year survival rate among OECD 88% ¹	~600/ year ³	✓	● Very High	
3	Digestive tract cancers	• Next highest 5 year survival rate among OECD ¹ 66% for colorectal cancer	~40/ year ³	✓	● Very High	
4	Chronic renal failure	• Highest proportion of treated patients receiving transplants in OECD	~150 people ³	✓	● High	
5	Stroke	• Lowest post 30 days mortality for isocemic stroke 2.3% ¹ • OECD average for hemorrhagic stroke 19.8% ¹	~500/ year ²	✗	● High	} Public-ations
6	Knee arthroplasty	• Revision rate 3% 7 after surgery in line with Sweden's revision rate and lower than Norway and Denmark's	367/ year ³	✗	● High	
7	Hip arthroplasty	• Revision rate for total hip replacement 6% after 10 years higher than Sweden 's 3%	~635/ year ³	✗	● Medium	
8	Cataract	• Proportion of surgeries performed as day cases is 91% lowest in Nordics	~2653/year ³	✗	● Medium	} OECD
9	Diabetes	• Mortality index adjusted for prevalence is 2, avg. in Nordics • Highest index of acute admissions adjusted for prevalence	1.6% of population ³	✗	● Low	
10	Leukemia & lymphoma	• No quality indicators found	17 /year ³	✓		
11	Spine surgery	• No quality indicators found	~400 disc oper. /year ³	✓		
12	Schizophrenia	• No quality indicators found	0.3-0.7% of pop. ²	✗		See appendix for additional detail

1. Age adjusted 3.Data from publications 3. Official Icelandic data 4. Health at a Glance 2009
Source: OECD,



Reallocation is needed within the HC budget for 2012

Adjusted for inflation health expenditure has decreased 5% per annum '08-'10



Health exp. % of GDP

10.4 9.9 9.4 9.1 9.1 9.2 9.6 9.3

Increased as a result of lower GDP growth

Current savings target

To afford escalating costs in S-labelled drugs (0.8 B ISK), treatment abroad (0.6 B ISK) and private specialists (1.1 B ISK) reductions of the other budget post amounting to 2.2 B ISK is required

Translating budget savings into resources could hypothetically mean¹

- Cutting 23% of outpatient pharmaceutical budget, or
- Completely stop reimbursing medical aids
- Laying off 157 doctors, corresponding to 12% of total number of doctors and surgeons, or
- Laying off 314 nurses, corresponding to 12% of all nurses

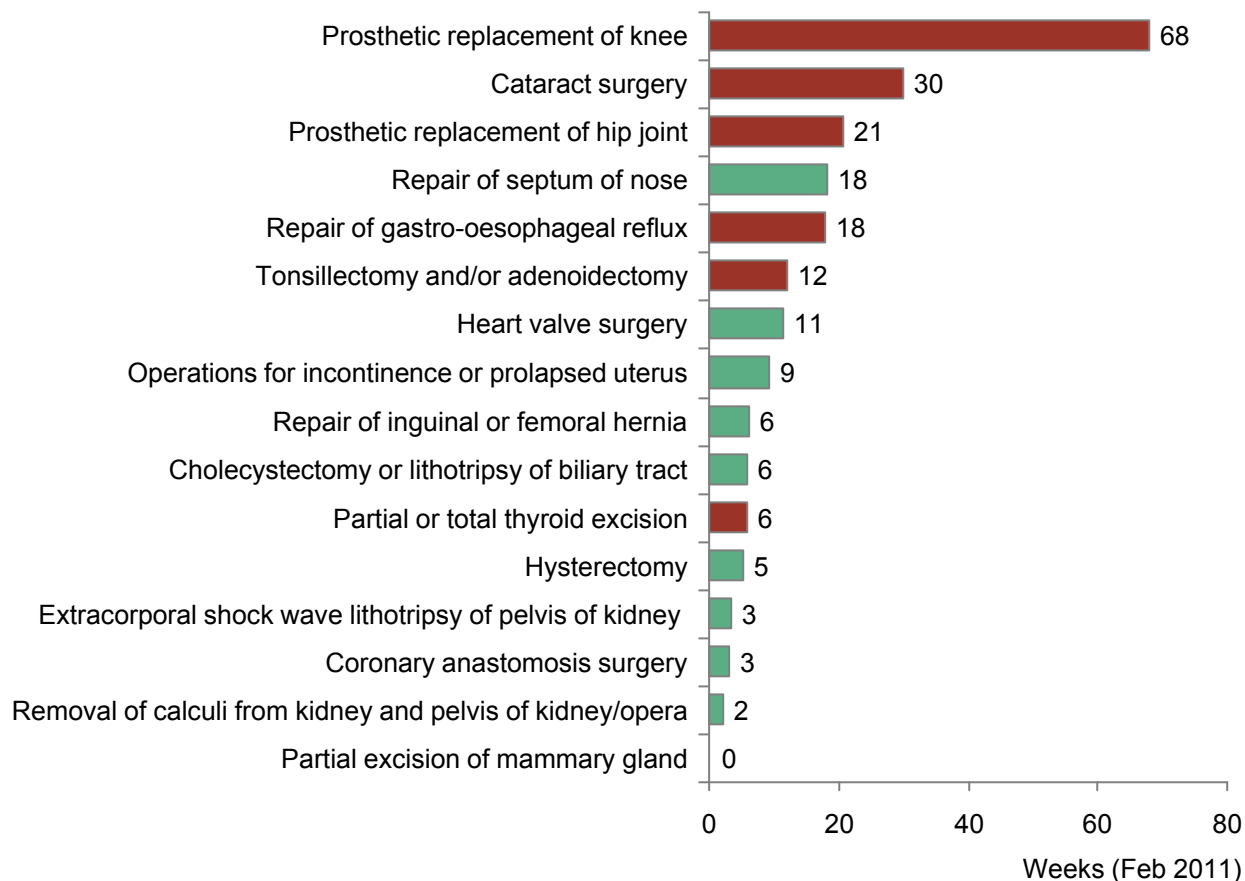
1. Average cost per doctor estimated at 14,000,000 ISK per year and nurse 7,000,000 ISK per year
Source: OECD, Iceland Statistics, Ministry of Welfare, BCG analysis

Landspítali has better access than Karolinska in most cases

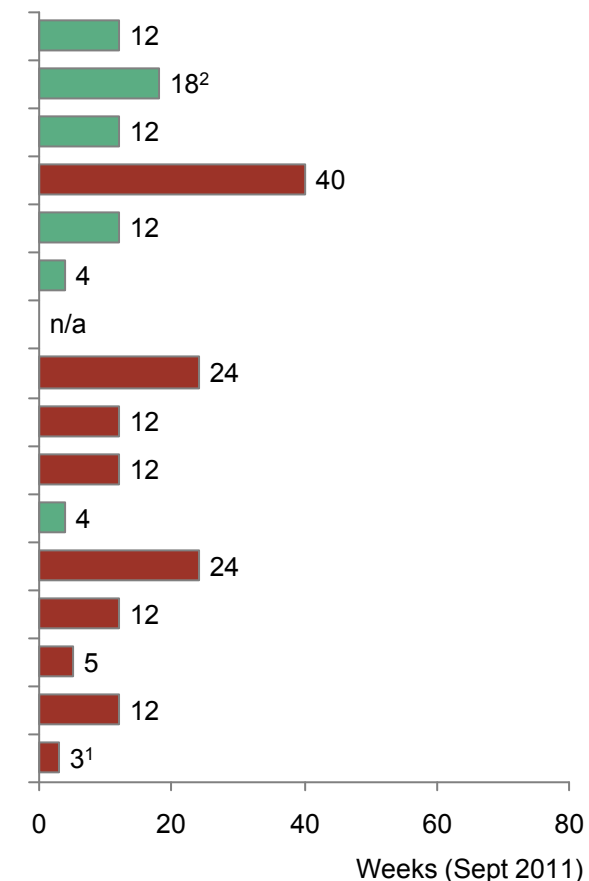
Note that it is inherently difficult to compare waiting times



Waiting times for selected procedures at Landspítali

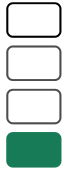


Waiting times at Karolinska in Stockholm



1. This number regards 2009 and not 2011; 2. Procedure executed at St Görans eye clinic and not at Karolinska
 Source: SLL; omvard.se; Öppna jämförelser av cancersjukvårdens kvalitet och effektivitet 2011

Overview of key hypothesis on efficiency



	Key hypothesis	Strength of hypothesis
Structural levers	1 Unequal and inefficient elderly care provision	
	2 Un-optimal hospital structure e.g. elective care, emergency care etc	
Market rule levers	3 Capitation for public and fee for service model for private providers in combination with lack of gate keeping causing issues <ul style="list-style-type: none"> • Large use of private GPs after hours • Overuse of private specialized care • Likely overuse of emergency rooms 	
	Patient flow levers	4 Over hospitalization resulting in long average length of stay
Direct expenditure levers		5 Drug spend too high in selected areas
	Other levers	6 Potential to optimize care service further with Lean approach
		7 Lack of planning, performance management, e-Health and in some areas of prevention

Elderly care should be equal, of high quality and efficient



Equal

- Although efforts have been made to benchmark and divide beds per inhabitant recent data indicated that there is an uneven distribution of elderly care today

High quality

- Limited performance management of quality in elderly care
- Recent report indicated that there are large quality issues in selected areas of elderly care

Efficient

- Likely to be some efficiency improvements given the lack of structured planning and performance management

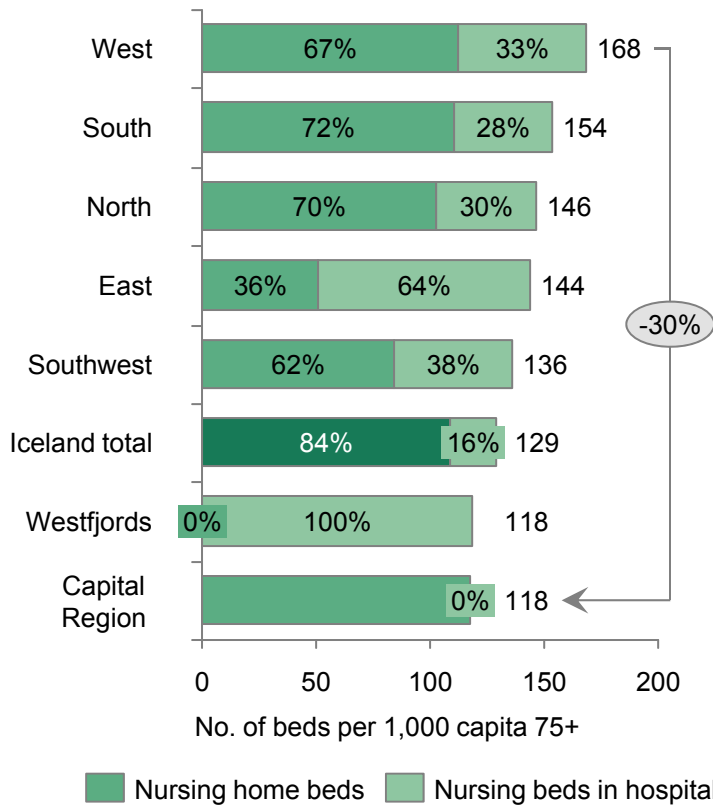
Large variation in elderly care provision between the regions

West and South consume more elderly care than Capital region

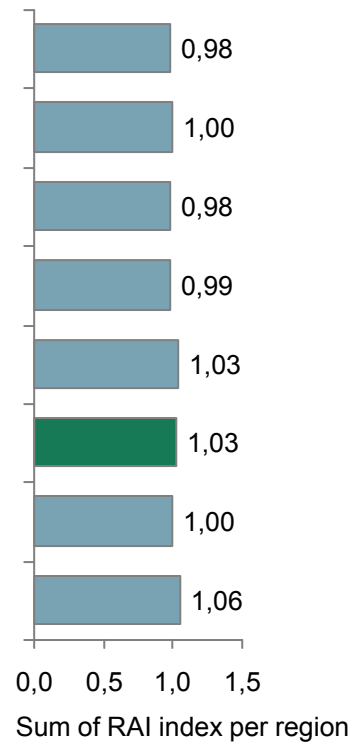


High variation in number of nursing beds across regions

Number of beds per region and type of bed

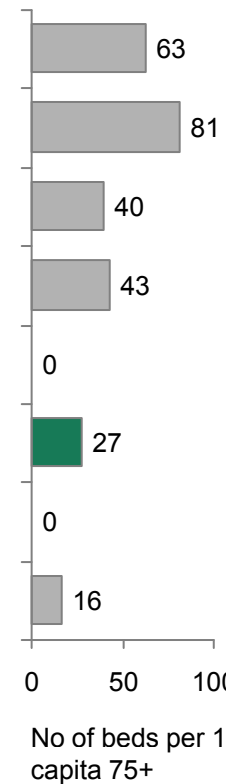


High RAI score in Capital region show high care need

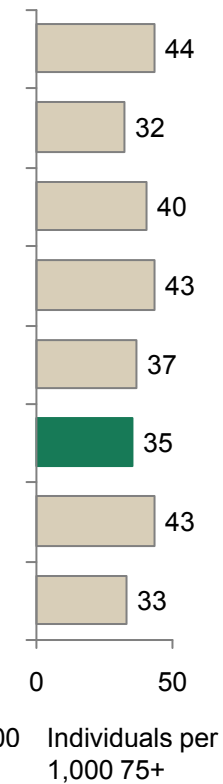


Same tendency for other elderly care

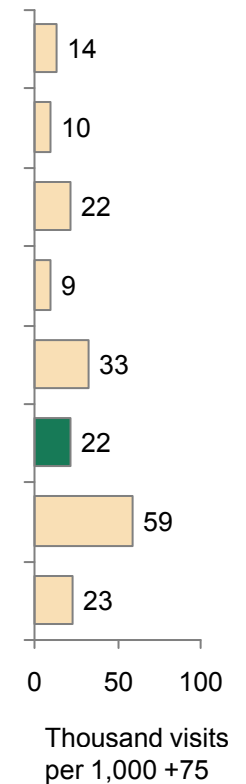
Other nursing beds¹



Day care



Home nursing



1. Non-RAI elderly care beds, to higher extent patient co-financed
 Note: Data from 2011
 Source: Reported by Ministry of Welfare 2011



Key findings on structure of specialized care delivery

Emergency care

- Ambulances
- ERs
- GPs on call

Ambulance services covering large part of the country with 78 ambulances

- Potential to optimize level of emergency response because of overcapacity in ambulances on several locations

Wide network of GPs on call every night

- Opportunity for savings by reducing GPs on call, but situation needs to be evaluated region by region

Two large ERs complemented with 6 smaller ones with limited access

- Potentially an opportunity to limit opening hours and staffing of small, low volume ERs

Obstetric services

Obstetric services offered in 9 places in Iceland

- Structural shift towards high volume places
- Signs that length of stay longer in smaller places

Quality of care and efficiency in current model unclear. Some smaller units have identified this as a short term savings opportunity for next year

Surgeries

Surgeries performed on nine locations throughout country

- Very small volumes in some places, e.g Saudarkroki and Vestmannaeyar

Data of very poor quality due no joint coding system making it very difficult to evaluate how optimal the current structure is. This needs to be further analyzed than we possible

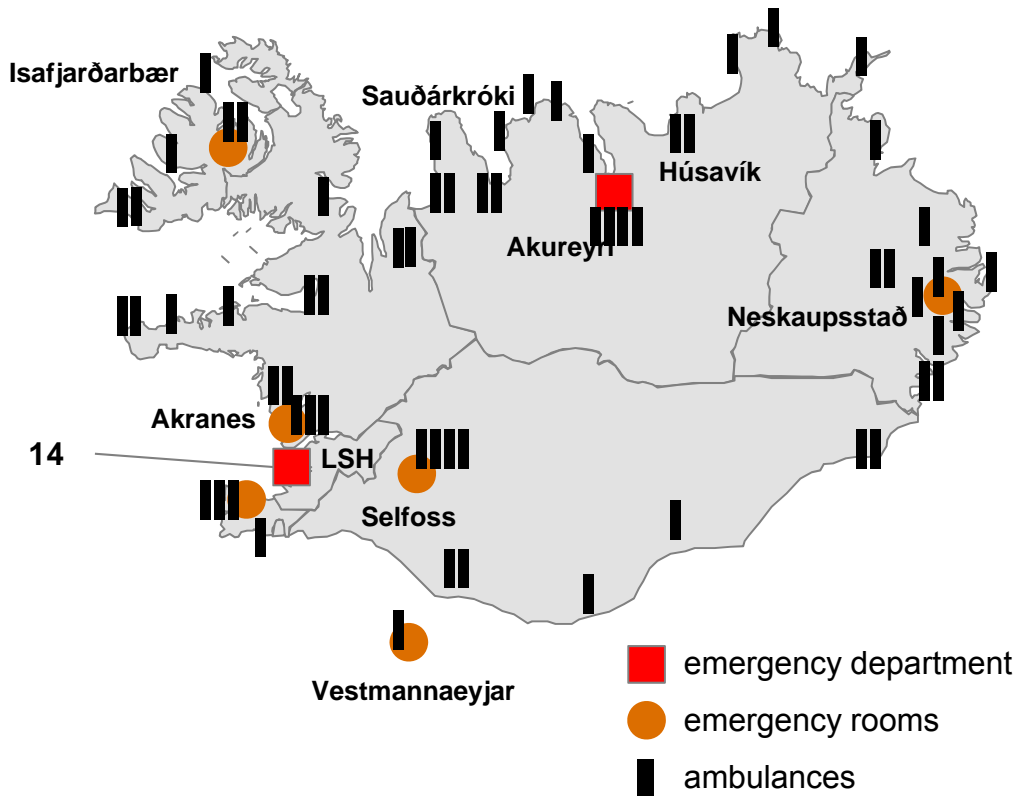


Ambulance services covering large part of the country

Complemented by 2 large around the clock ERs and 6 small with limited access

Wide network of 78 ambulances and ERs across Iceland

2 large emergency departments and 6 smaller ERs



Two main emergency rooms

- Landspítali with ~90,000 visits¹
- Akureyri with ~12,000 visits

6 small emergency rooms

- Four with lighter opening hours: Mon-Fri, 8-16
 - Akranes – staffed from hospital during day, with 4 on-call physicians during off hours
 - Vestmannaeyjar – staffed with primary care physician during daytime and with 3 on-call during off hours
 - Isafjörður – staffed with hospital physician daytime and primary care physician and surgeon on call during off hours
 - Neskaupsstaður – staffed with hospital physician during daytime, and hospital physicians on call during off-hours
- Two ERs with increased opening hours
 - Selfoss, ER in hospital opened 24/7 with on-site/on-call service from 1 physician
 - Reykjanesbaer, ER in hospital opened 8-20 Monday to Friday and 10-13/17-19 on weekends, with on-site/on-call service from 2 physicians

1. Including visits to trauma room, pediatric ER, psychiatric ER and obstetric ER.

Note: Number of ambulances from 2009

Source: Emergency Health Care in Iceland, a brief overview September 2011, Ministry of Welfare, data collected by Data Group September 2011, BCG analysis

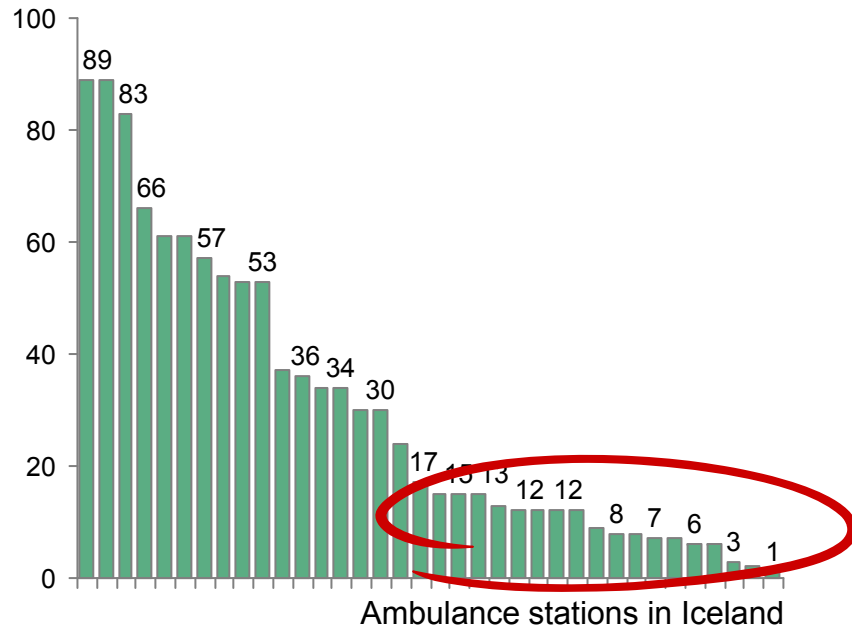


Potential to optimize level of emergency response

Overcapacity in ambulances on several locations

Very low utilization of several ambulance stations

Number of F1 and F2 transports per station per year¹



Opportunity to reduce ambulances and optimizing emergency response level

Over-capacity in ambulance care

Very low utilization of some ambulances

- Potential to limit number of ambulances to reduce costs for staffing and limiting expensive replacement of old ambulances

Low level of education of staff

Educational level off ambulance staff low

- Basic level ~130 hours education
- Intermediate level ~320 hours
- Target to have at least one intermediate in each vehicle

Current efforts to improve emergency response

- Improve skill level of ambulance personell
- Implement light emergency response with less costly vehicles

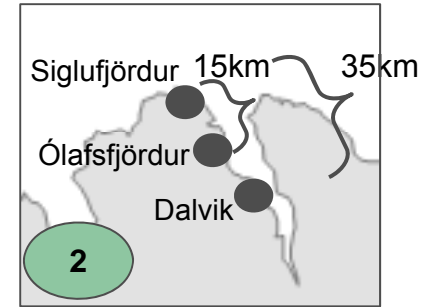
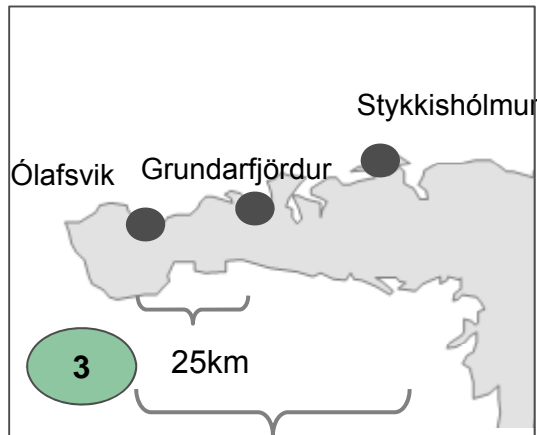
1. Stations can have more than one ambulance, e.g. Husavik. F1 and F2 transports are acute, prioritized transports
 Note: Data from 2009
 Source: Ministry of Welfare, expert interviews, BCG analysis

Opportunity for savings by reducing GPs on call

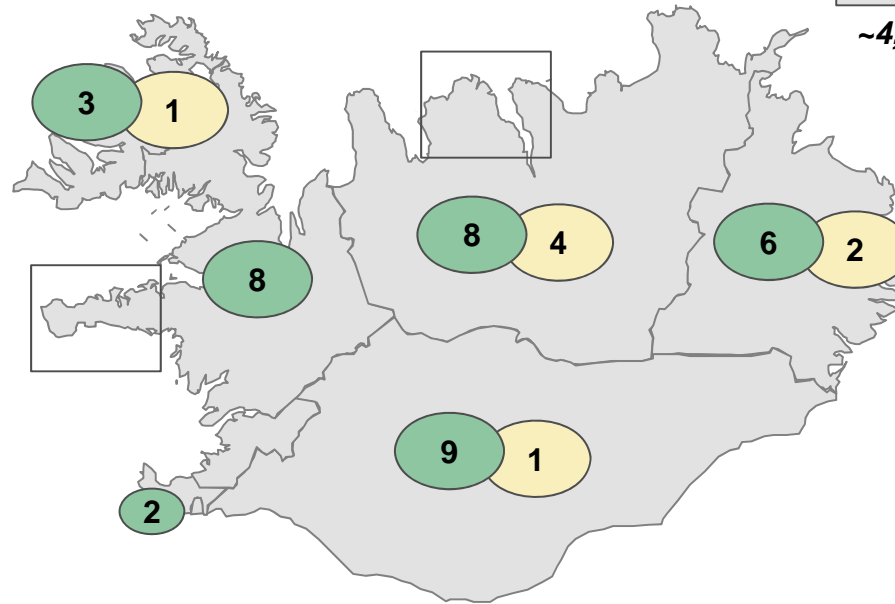
Situation needs to be evaluated region by region

- X GP1s on call in Health Care Region¹
- X GP2s on call in Health Care Region

~3,900 inhabitants



~4,200 inhabitants



According to interviews there is opportunity to decrease number of GPs on call in some regions but further investigation needed

1. GP1 is a physician less than 30 minutes away, GP2 is a physician less than 120 minutes away. Approximate cost of a GP1 is ~2 MISK/year and 0,5 MSIK/ year for a G2
 Note. Capital Region excluded
 Source: Ministry of Welfare, interviews, BCG analysis

Key findings in the area of private specialists

Overall number of visits

In general, Icelanders prone to visit doctor, second after Denmark in doctor visits per capita

- Especially high number of visits per capita to specialist doctors

Resources

Population of doctors skewed towards specialists

- Clear overweight of specialists to GPs in Iceland compared to Nordics although GPs are in line with for example Sweden and likely to be higher than OECD data shows
- Data indicating that especially specialists in internal medicine, surgeons and pediatricians are overrepresented in Iceland

Private specialists

- Cataract surgeries
- Cardiologists
- Pediatricians

Expenditures on private specialists growing with 7% p.a. since 2008

- Patients share of this growing by 13% and governments share by 4%
- Diagnostic specialties, anesthesiologist, pediatric and ophthalmology are the large categories
- Increase in number of visits driver of health insurance cost

Increased access likely to drive growth in specialist visits

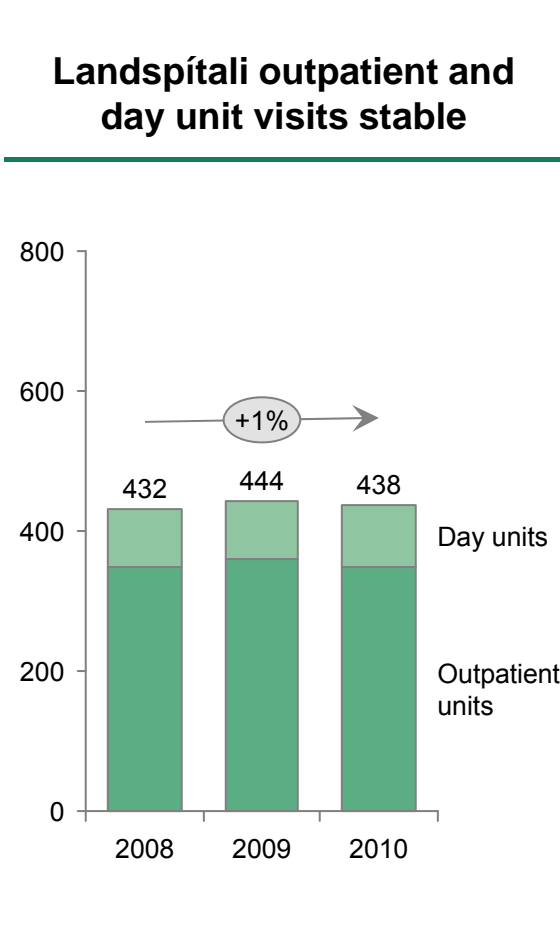
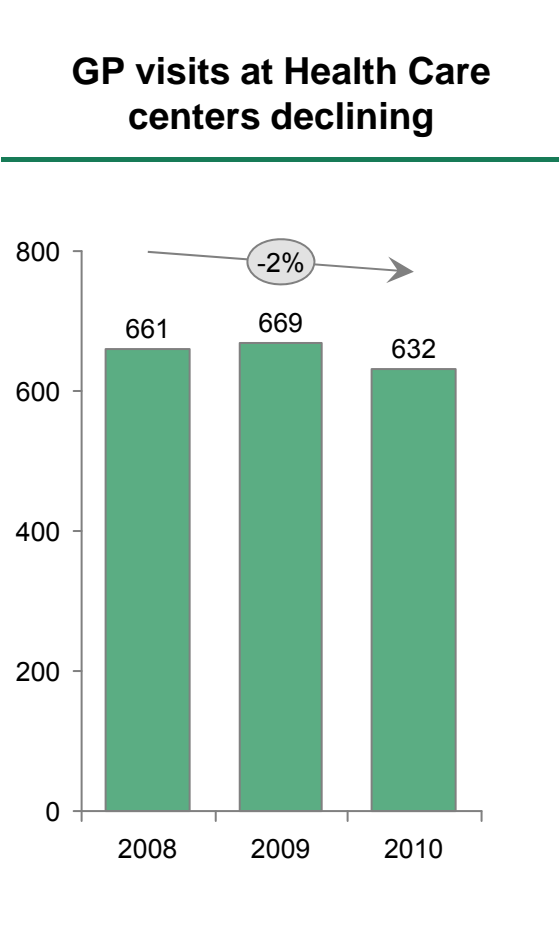
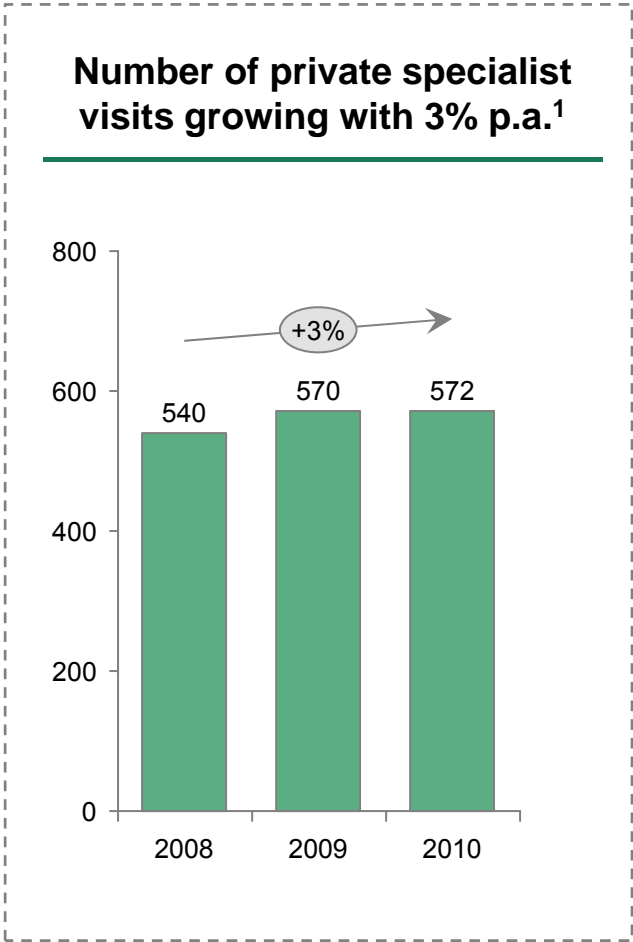
- Surge in cardiologist visits when contract signed in 2008 and gatekeeping abandoned

Clear signs of overconsumption of some specialist care, e.g. cataract surgeries

The whole private provision model needs to be reviewed and market rules put in place which will secure a optimal provision of the right volume of care

Trend that people visit specialists more and GPs less

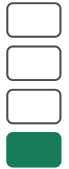
Hospitals increasing their outpatient and daycare activities



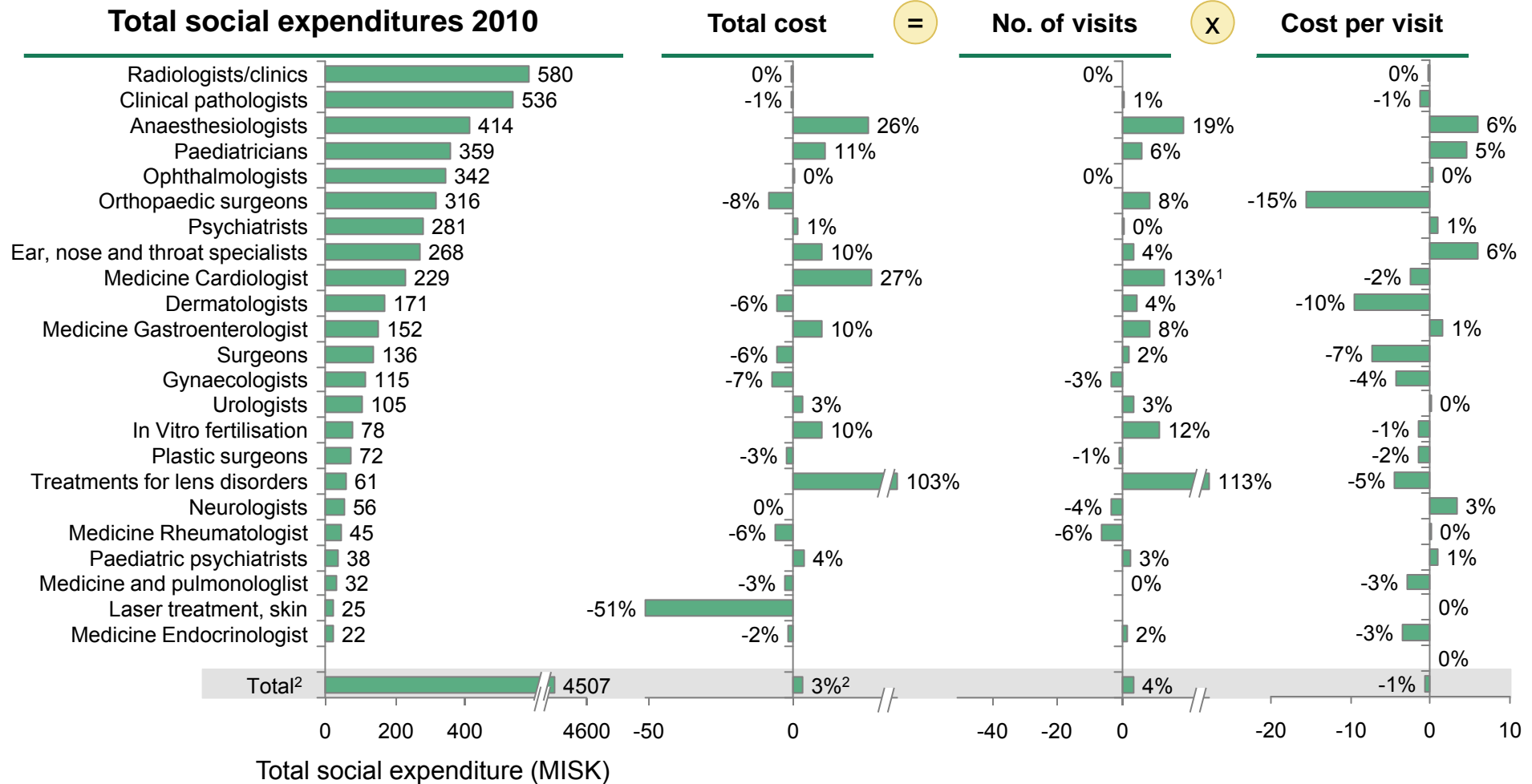
1. Data from Iceland Health Insurance, excluding Laboratory research at hospitals, contracts w/health institution other than laboratory research and material costs.
Note: Data for 2010
Source: Ministry of Welfare, Landspítali, Directorate of Health

Increase in number of visits driver of health insurance cost

On individual specialty level, cost per visit driving up costs for some specialist areas



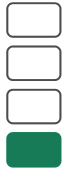
Growth 2008-2010



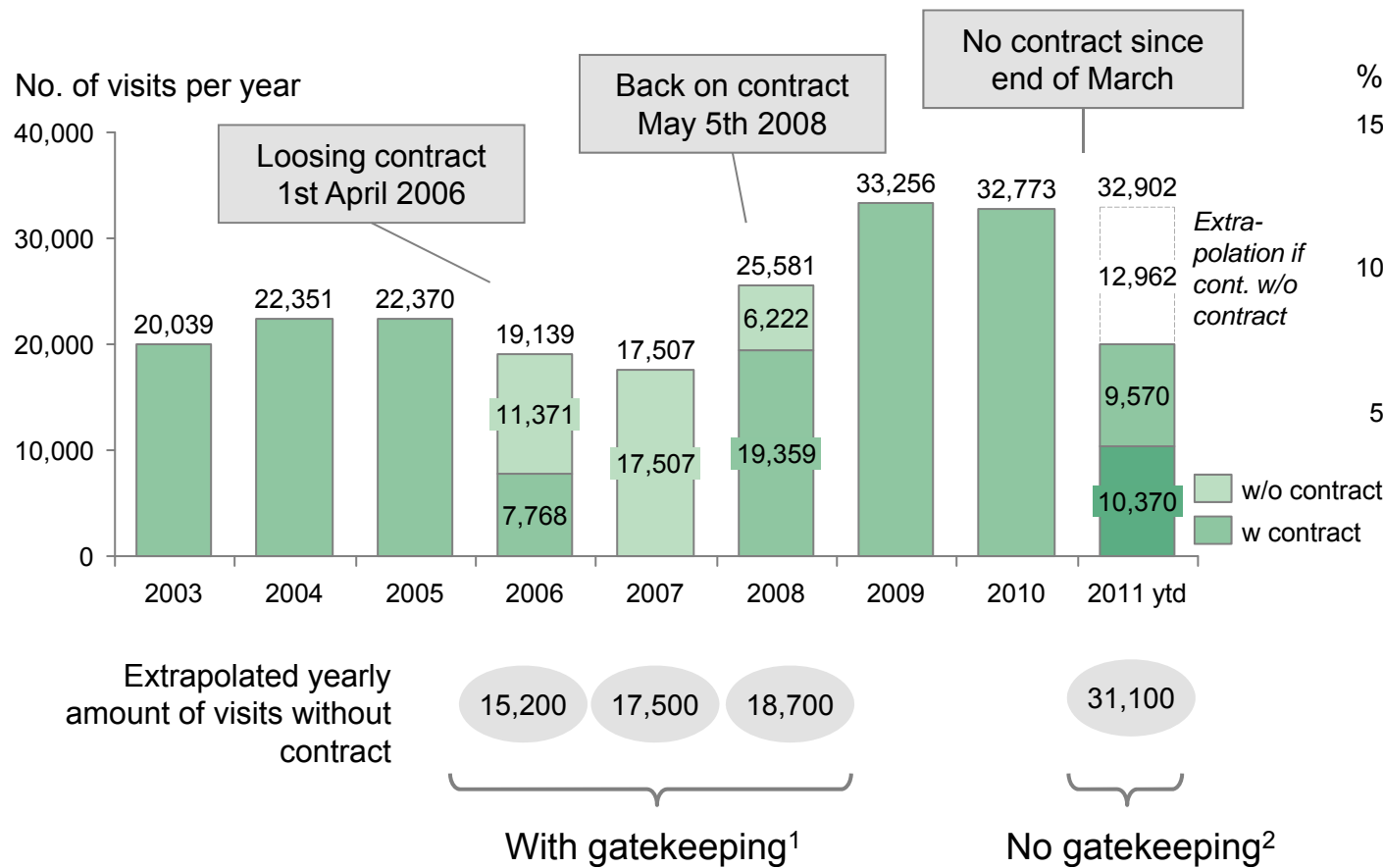
1. Added 6,222 visits for the first four months of 2008 when cardiologists did not have a contract
 2. Total excluding Laboratory research at hospitals, contracts w/health institution other than laboratory research and material costs, explaining the difference between 4% and 3% growth.
 Source: Reported by Ministry of Welfare (Specialists and care outside institutions)

Increased access likely to drive growth in specialist visits

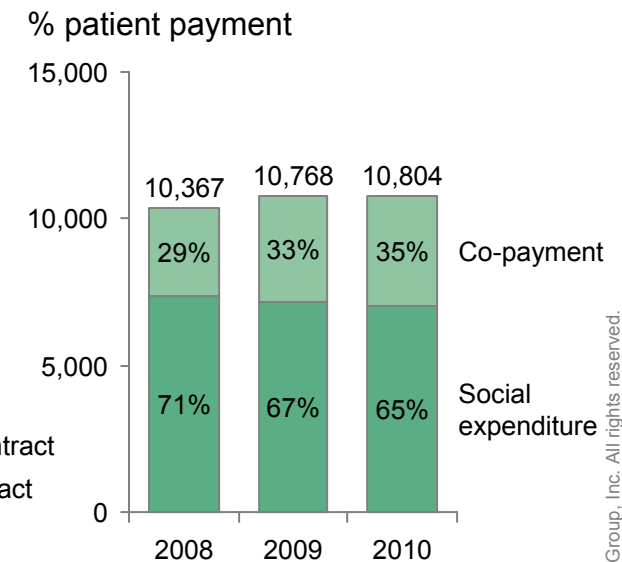
Example for cardiologists



Surge in visits to private cardiologists since contract signed in 2008



6%-p increase in patient co-payment since 2008



1. During time without contract 2006-2008, patient needed referral from a primary care physician in order to visit cardiologist. 2. During the five months without contract in 2011, no referral needed to visit cardiologist

Source: Ministry of Welfare, Iceland Health Insurance

Key findings in the primary care area

Focus on Capital Region



GPs and gatekeeping

Primary care models are varying in countries – but no 'golden standard' – every system has its issues

- Iceland stands out with no gatekeeping and the mix of fee-for-service for private and fixed budget for public
- Private provision mainly after hours

Lack of GPs has historically been one argument against gatekeeping, while in fact Iceland does not appear to have fewer GPs than for example Sweden

- Although, there are concerns of future lack of GPs due to age structure of current GP population

Primary care in capital region

There is an unequal reimbursement model for private and public primary care
– Mix of fee-for-service and fixed remuneration likely limiting daytime productivity

Primary care in the Capital Region in need of reform, with organizational issues and political uncertainty holding back organization

- Central management and dual leadership of clinics, with one head nurse and one head GP often operating separately and the level of cooperation decided by each clinic
- Analysis showing large differences in productivity between clinics that is not explained by age structure of patient population

The primary care model in the capital region needs to be reviewed and reformed



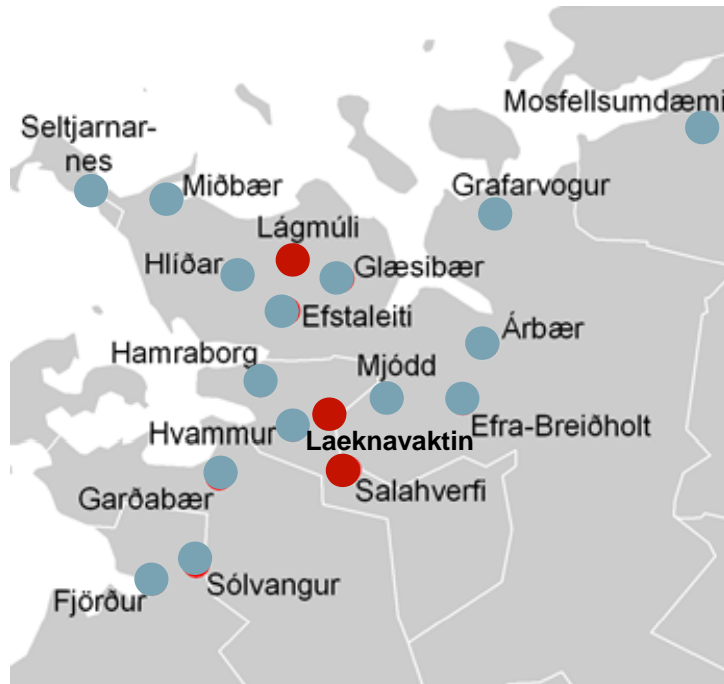
The Icelandic model stands out in three ways

	Country	GPs per 1000 pop.	Financing	Privatization	Structure	GP role
Public system	Sweden	0.6	Mix of budget, fee for service and capitation	20% private	50% of clinics >5 doctors	Mostly gatekeepers
	Denmark	0.7	Capitation with some additional fees	100% private	40% 1 doctor clinics	Gatekeeper
	Norway	0.8	Capitation (40%) and fee for service	80% private	90% 1 doctor clinics	Gatekeeper
	Iceland	0.7	Budget for public and fee for service for private	16% private (only after hours)	On average 8 doctors per clinic	No Gatekeeper
	UK	0.8	Capitation	20% private	2 doctors/clinic	Gatekeeper
	Spain	0.7	Salary & capitation	10% private	5-6 doctors/HC center	Gatekeeper
Insurance based	France	1.6	Fee for service	70% private	40% 1 doctor clinics	Gatekeeper
	Netherlands	0.7	Capitation and fee for service	100% private	80% 1-2 doctor clinics	Gatekeeper
	Germany	0.7	Fee for service	100% private	~50% of GP offices 1 doctor	No Gatekeeper

Reimbursement differences between daytime and after hours

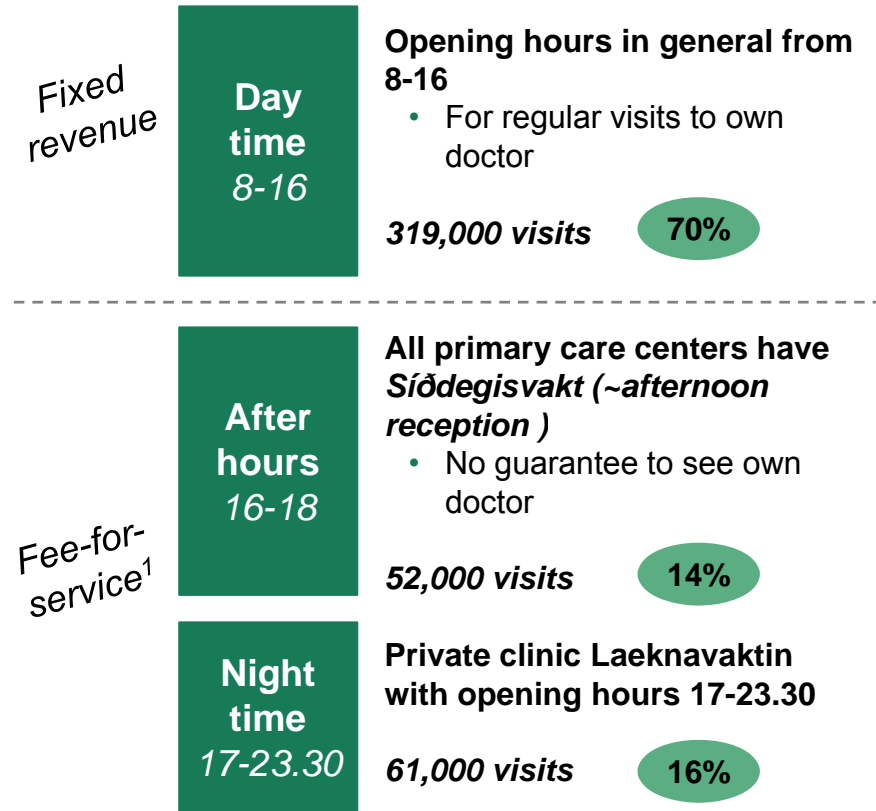
Public GPs also working under fee-for-service agreement after hours

15 public and 3 private primary care providers in Capital Region



- Private primary care provider
- Public Health Care Clinic

Reimbursement system differs between hours of the day



1. Individual doctors get fee-for-service during afternoon reception, Laeknavaktin operating on fixed budget under contract from the Ministry of Welfare, but doctors paid on fee-for-service basis.
 Note: Translation of *Síðdegisvakt* to 'afternoon reception'
 Source: Ministry of Welfare data market 2011, Directorate of Health "Contacts with Health Centers 2005-2010" data file, interviews with Heilsugaeslan and Ministry of Welfare, BCG analysis

Primary care in capital region facing lots of challenges

Organizational issues and political uncertainty holding back organization



Large health care provider in Iceland

- 2nd largest health care provider in Iceland – delivering primary care services to 2/3 of the population through 15 clinics
- Budget of 4.1 BISK 2011
 - 148 doctors and 156 nurses on payroll
- 835,000 doctor's contacts including visits, phone contacts and home visits
- Also serving 23,000 school children in 68 primary schools

Savings and reductions due to crisis

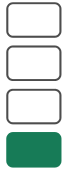
- Laying off 40 employees
- Reduction of extra payments and benefits
- Eliminating, to large extent, overtime work
- Renegotiated all contracts with suppliers
- etc.

Organizational difficulties hindering improvements

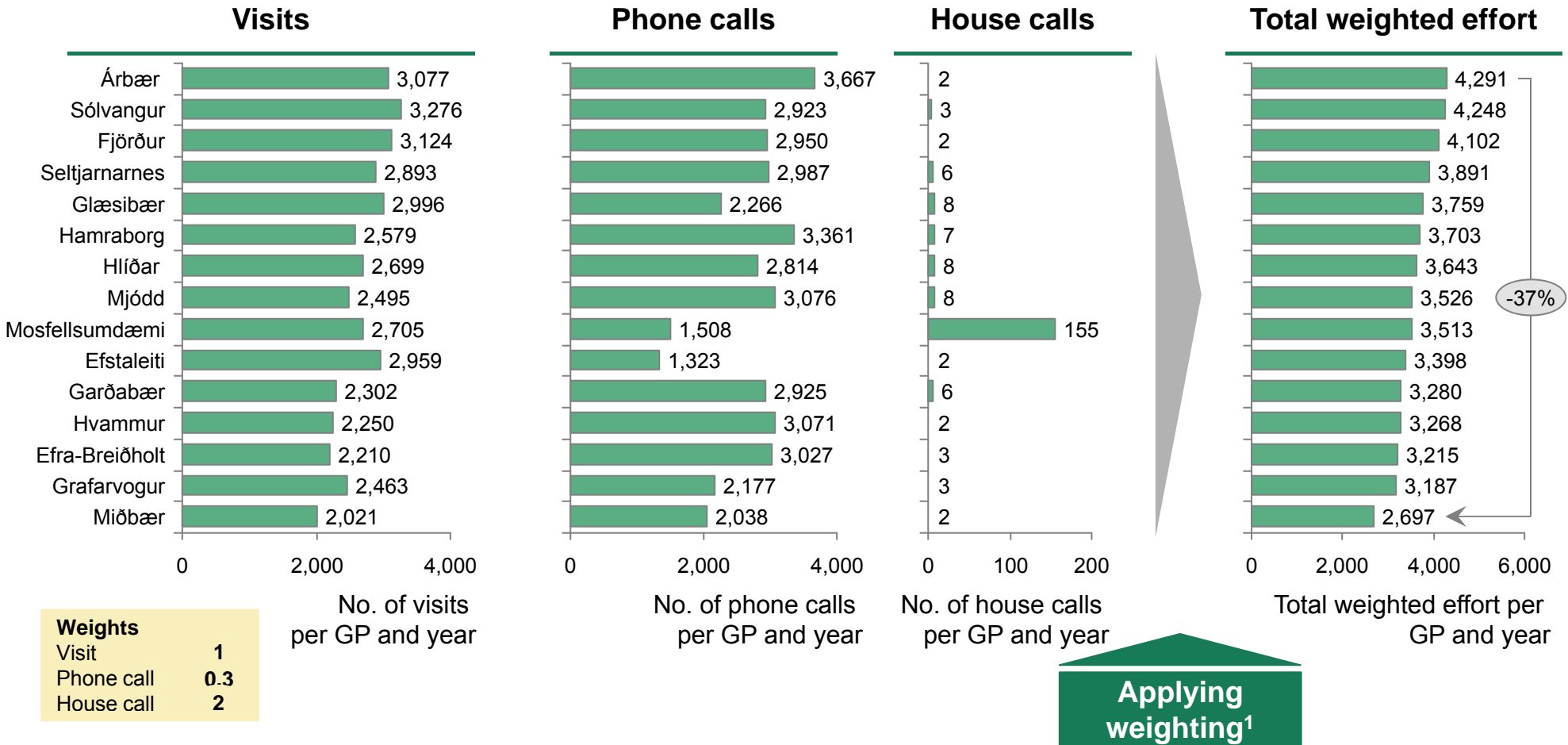
- Overall vision unclear and political uncertainties
- Disgruntled physicians due to reduced income
- Frictions between professional groups - and between management and physicians
- Organizational model potentially not optimal
- Historically lack other score card measures than financial: focus on waiting-times, patient satisfaction, employee job satisfaction
- Stagnation of improvement efforts - debates within the organization - *"can best practices be applied when operating 15 clinics?"*

Variations in productivity of the HCCs in the Capital Region

Comparison of visits in the Capital Region



2010 effort per physician in the clinics



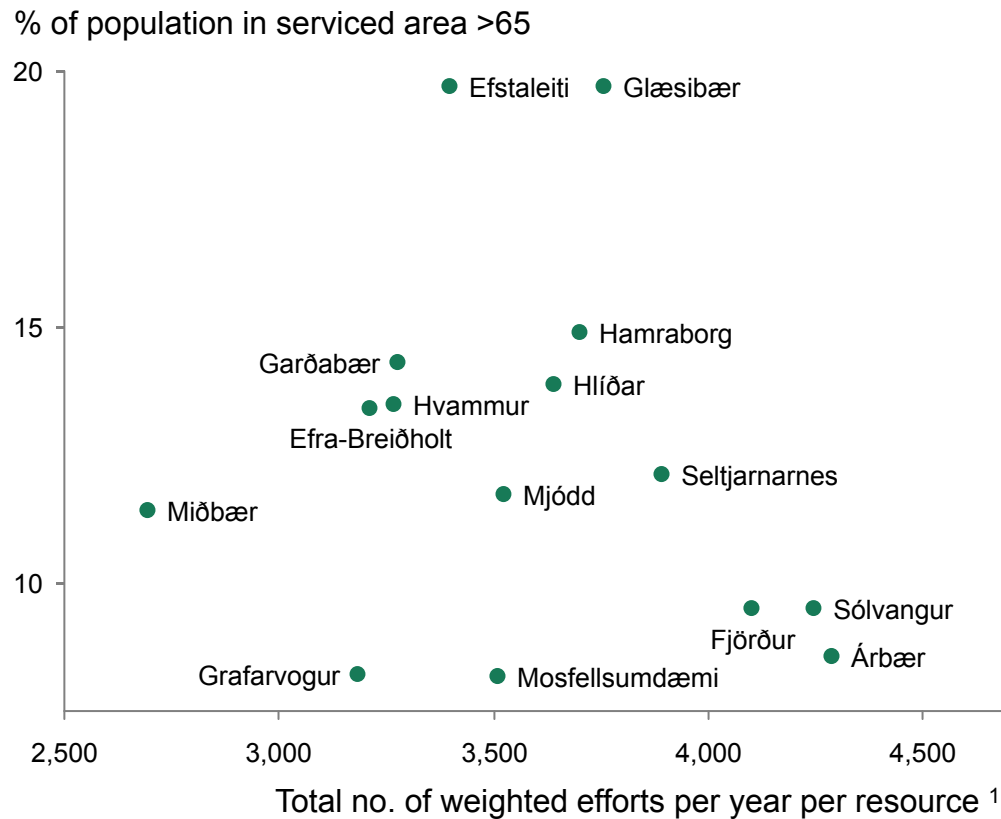
1. Visits have weight 1, phone calls 0,33 and house calls 2
 Note: 2010 data
 Source: Heilsugaeslan Reykjavik, data sent 29 Sept 2011 on visits and number of FTEs



Socioeconomic factors might explain some of the difference

However no signs of productivity of clinic and age of population

No signs of correlation between productivity of clinic and age of patient population



Lacking data points for further comparison

For complete comparison of productivity of health care clinics, need to look at other risk- and socioeconomic factors, e.g:

- Unemployment
- Obesity
- Share of population born outside Iceland
- Average income
- Educational level
- etc.

1. Including visits to GPs, phone calls by GPs, house calls by GPs weighted according to model described
Source: Heilsugaeslan Reykjavik, data sent 29 Sept 2011 on visits and number of FTEs

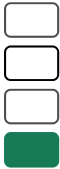
Key findings of direct expenditure and pharma

Overall pharma spend development

- Excluding VAT Iceland currently has lower spend per capita measured in EUR than Sweden and Denmark
- Overall pharma spend has increased by 7% per year 2008-10 measured in ISK but been reduced by 6% per year measured in EUR
 - Outpatient: 2% per year
 - Inpatient: 9% per year (dominated by S-labelled)
 - Outpatient co-payment: 12% per year
- Inpatient pharma spend, increased 9% per annum despite reforms

Spend on neurological drugs is still high driven by high consumption

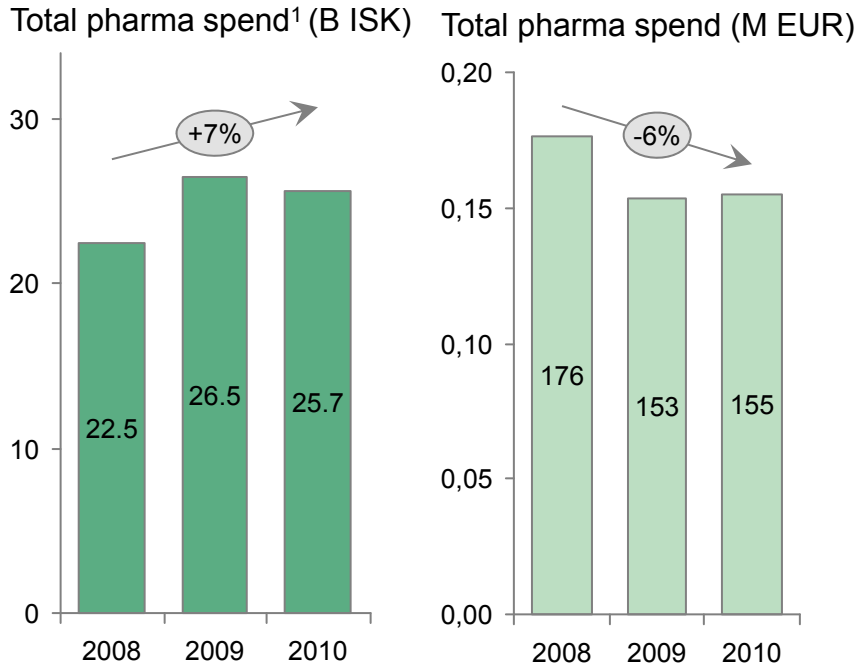
- 44% higher Defined Daily Dosage per capita in psychoanaleptics driven by 173% higher consumption of ADHD drugs
- 48% higher consumption of psychoeoptics primarily for antianxiety medication and sedatives
- If Sweden's level of consumption would be achieved, a yearly reduction in spend of 2 B ISK would be feasible



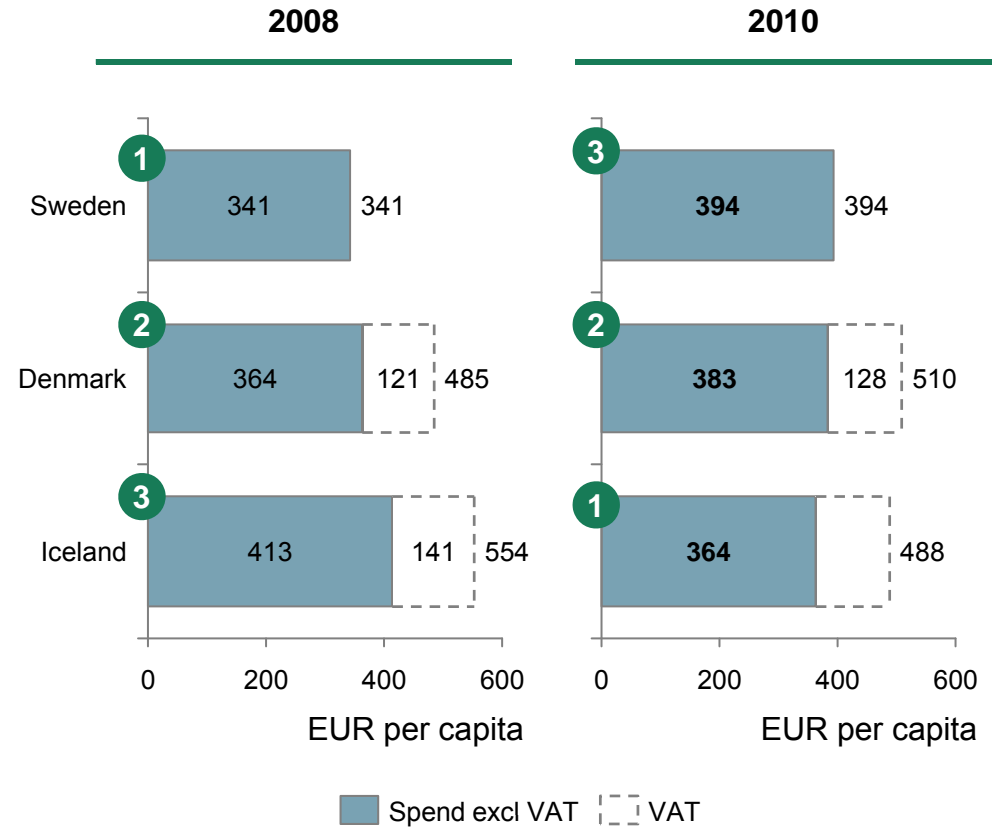
Iceland has lowered its relative pharmaceutical spend

Now lowest in Nordics due to deflation of currency and reforms

Spend in ISK have increased 14% since '08 but declined 12% converted to EUR



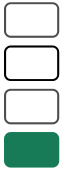
Excluding VAT Iceland currently have lower EUR spend than Sweden and Denmark



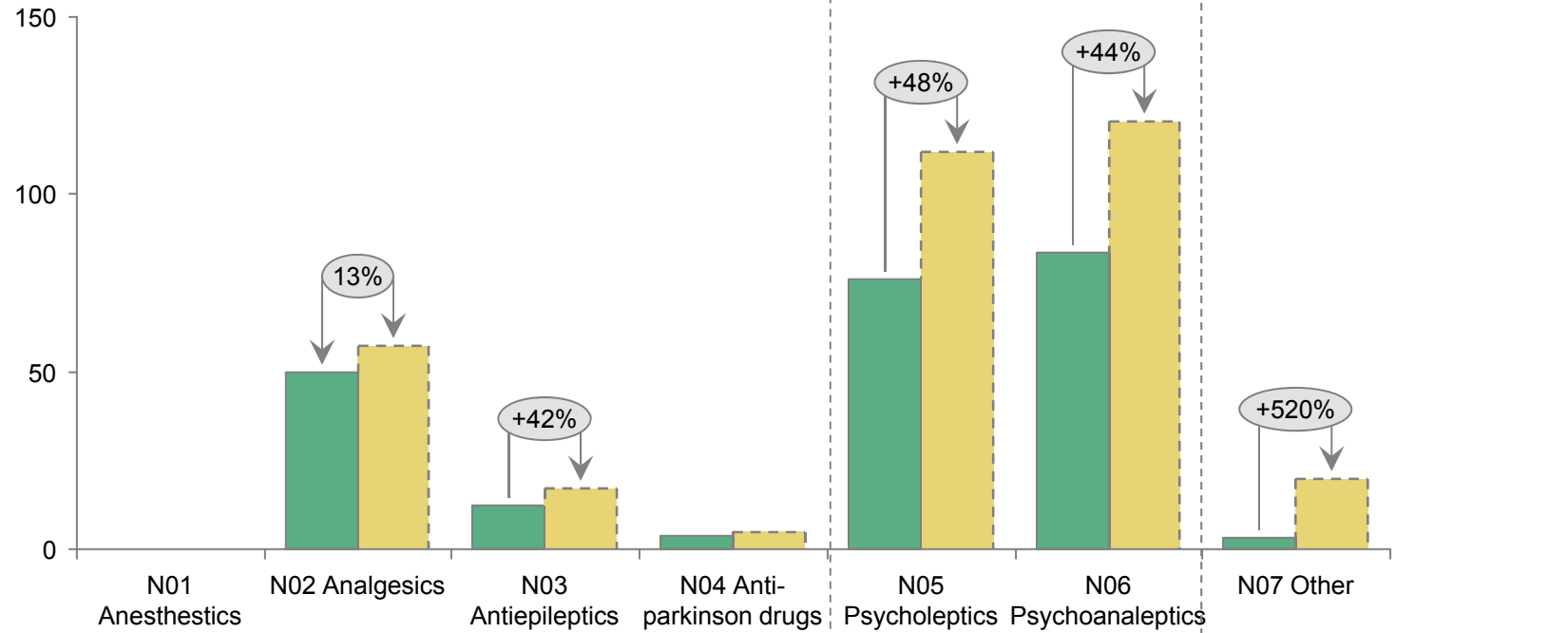
1. Data refer to total spend i.e inpatient and outpatient, state spend and patient co-payment
 Note: Original data in local currencies. Used OANDA's 2008 and 2010 yearly average fx rate
 Source: Swedish national board of health and Welfare, Icelandic Medicines agency, Danish medicines agency

Efforts should focus on psycholeptics and psychoanaleptics

Represent >50% of spend and dosage differ dramatically between Sweden and Iceland



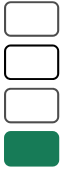
DDD per 1,000 inhabitants and day 2010



Source: Swedish National Board of Health and Welfare, Icelandic Medicines agency

Iceland HCS-Final report-short version.pptx

7 Good data gathering, budgeting and performance management is lacking



Iceland situation

Quotes from the organization

A
Data sourcing and analysis

- No clear accountabilities for data delivered
- Limited input guidance for the institutions in how to code
 - allocation principals for financials varying
 - coding of procedures and care volumes varying
- Limited user friendliness of input interface
- Large degree of manual analysis of data needed when extracting data from system

"There is no protocol for how to enter data in a correct way and mistakes are constantly made"

"I spend 20% extracting data and then 80% adjusting it and analyzing it in excel"

B
Budget and planning

- Budget is only set one year at a time and is communicated late to each institution
- As the input data is of poor quality it is very difficult to develop a good budget which incentivizes the organizations

"We can't build good budget as we don't know what things really cost"

C
Performance management

- No joint report structure that everyone uses so each unit has their own model
- Limited transparency on data between units hence no pressure to make sure input data is correct
- Bi-weekly follow-ups with the large institutions and 2/year with the smaller institutions

"There is no standard reports that everyone uses"

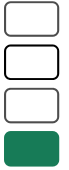
D
Organization and skill level

- Given new organizational model roles and cooperation model not completely defined yet
- Lack of financial and IT skill throughout all organizations

"There is no real accountability for the numbers in the organization"

"There is a lack of IT and finance skills in the organizations"

e-Health: Iceland system lacking central strategic alignment and integration between regions



1 IT strategy and business alignment	<ul style="list-style-type: none"> Limited/no strategic direction on national level
2 IT architecture	<ul style="list-style-type: none"> Gaps in architecture for payors, providers and patients e.g. current EPR is the same in each region but regions not linked Difficult for payor to gather data, no patient interfaces Strategic question: "continuing clean up" vs "invest in proven system"
3 IT investment & prioritisation	<ul style="list-style-type: none"> E-health has not been a prioritized investment area Unclear how prioritizations are made
4 IT sourcing & vendor management	<ul style="list-style-type: none"> Selective use of outsourcing, e.g. technical infrastructure, maintenance of medical equipment. ~30% outsourced today
5 IT organisation & skills	<ul style="list-style-type: none"> Varied skill level across country organizations due to size
6 IT projects & development	<ul style="list-style-type: none"> Difficult to run new initiatives with current savings target and budget constraints
7 IT service management	<ul style="list-style-type: none"> IT service management decentralized
8 IT cost management	<ul style="list-style-type: none"> Cost transparency high at Landspítali, not at all same level in other units
9 IT governance	<ul style="list-style-type: none"> IT governance model unclear

Agenda

Description of the Icelandic health care system

Current performance of the system

Key changes needed to secure a better system in the future

Iceland needs to balance short and long-term initiatives



Short term savings target for 2012

To afford escalating costs in S-labelled drugs (0.8 B ISK), treatment abroad (0.6 B ISK) and private specialists (1.1 B ISK) reductions of the other budget post amounting to 2.2 B ISK is required

Translating budget savings into resources could hypothetically mean¹

- Cutting 28% of outpatient pharmaceutical budget, or
- Completely stop reimbursing medical aids
- Laying off 157 doctors, corresponding to 12% of total number of doctors and surgeons, or
- Laying of 314 nurses, corresponding to 12% of all nurses



Long term reform need

The current system has a number of areas where it's not performing in an optimal which will require more mid- to long-term initiatives to address

Some will require substantial investment e.g. E-health and some less so but larger change programs e.g. primary care reform, reform of private specialized care provision

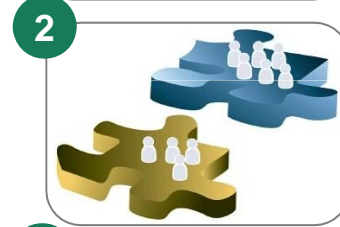
Five type of levers to improve Health Care System



1

Structural levers

- Levers governing structure among payors and providers



2

Market rule levers

- Levers for adjusting competition between providers through adjusting rules of the market; demand, supply, etc.



3

Patient flow levers

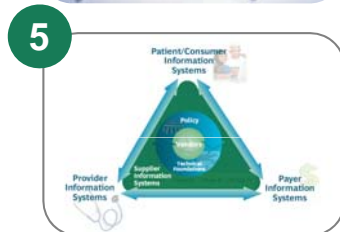
- Levers directing patient flow between providers directly or indirectly



4

Direct expenditure levers

- Levers for adjusting spend levels for providers and payors

















5

Other levers

- Levels to improve quality governance, use of eHealth and prevention

Improvement levers with different effects

	Trend / lever	Description	Example	Short term financial effect
1 Structural levers	Payor restructuring	<ul style="list-style-type: none"> Mergers of payors to increase synergies Shifting owners of care budget e.g. GPs become payor 	<ul style="list-style-type: none"> UK Norway, Denmark 	
	Provider restructuring	<ul style="list-style-type: none"> Mergers of large hospitals situated fairly close Resizing/re-profiling of hospitals 	<ul style="list-style-type: none"> Sweden / Norway Netherlands 	
2 Market rule levers	Reimbursement changes	<ul style="list-style-type: none"> Adjust reimbursement levels and create incentives for efficiency Introduce DRGs 	<ul style="list-style-type: none"> Sweden 	
	Competition among provider (and payors)	<ul style="list-style-type: none"> Providers competing over patients through e.g. increased freedom of choice for patient 	<ul style="list-style-type: none"> Sweden, Norway 	
	Only contract specific providers	<ul style="list-style-type: none"> Certification or authorization of providers with right to reimbursement etc. 	<ul style="list-style-type: none"> Sweden 	
	Gate keeping	<ul style="list-style-type: none"> Gate keepers used to direct patients through system, e.g. family doctor 	<ul style="list-style-type: none"> Most tax-based systems, e.g. Demark 	
3 Patient flow levers	Increase care integration	<ul style="list-style-type: none"> Incentives and processes in place to improve care integration 	<ul style="list-style-type: none"> Sweden 	
	Patient guidance e.g. disease management	<ul style="list-style-type: none"> Programs profiling risk groups with personalized guidance in the HC system to decrease care needs 	<ul style="list-style-type: none"> US Sweden 	
4 Direct expenditure levers	Drug & medtech purchasing and prescription	<ul style="list-style-type: none"> Professionalize drug & medtech purchasing and change prescription guidelines 	<ul style="list-style-type: none"> UK 	
	Limit coverage/increase co-pay	<ul style="list-style-type: none"> No payment/co-payment of certain products or services 	<ul style="list-style-type: none"> Sweden 	
	Hospital operational improvements/cost cutting	<ul style="list-style-type: none"> Improve efficiency resulting in lower LOS, higher throughput Increase waiting times, reduce staffing levels, postpone investments, reduce service levels etc 	<ul style="list-style-type: none"> Belgium France Sweden 	
5 Other levers	Prevention	<ul style="list-style-type: none"> Reducing obesity, reduce smoking and drinking, getting patients to take the right drugs, etc. 	<ul style="list-style-type: none"> Nordics 	
	Quality focus	<ul style="list-style-type: none"> Use of data and outcomes measurement leading to improved care 	<ul style="list-style-type: none"> Sweden 	
	E-Health	<ul style="list-style-type: none"> Introduction of e-health solutions to make care more efficient 	<ul style="list-style-type: none"> US 	

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Iceland needs a strategic plan to address long term

● First order of priorities

The system today

Areas for further investigation

Structural levers

- Current hospital structure not developed top down based on patient needs
- Unequal and likely inefficient elderly care with limited quality performance mgmt

- Top down structure redesign
 - Quick fixes e.g. ambulances
 - Long term design
- Elderly care review

1c
3
2

Market rule levers

- Current reimbursement model gives the wrong incentives
- Overall lack of strong GP system
- Privatization strategy not thought through

- Primary care reform incl. reimbursement
- Review of private specialist model

1a

Patient flow levers

- Pockets of innovation in integrating care e.g. home care

- Review of overall reimbursement of public specialized care
- Continue to improve integration model

Direct expenditure levers

- Unclear purchasing strategy
- Further improvements in drug spend management

- Implement best practice purchasing
- Launch drug spend savings in nervous system drugs

1d

Other levers

- Weak central planning function
- Very weak E-health
- Areas for improved preventive efforts e.g. obesity
- Limited Value Based Health Care focus

- Re-design central planning & performance mgmt
- Develop E-health strategy
- Launch aggressive obesity prevention
- Continued focus on building registries

1b