Health Consumer Powerhouse

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Report

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For the first time: consumer empowerment moves into heart care!

Heart disease is the major cause of death in Europe. Improved cardiac care is of highest importance – good access, efficient intervention and rehabilitation are hallmarks of responsible practice and policy.

In all fields of heart care there are huge variations in policy, resources and outcomes around Europe. This very first Euro Consumer Heart Index shows:

- Though publicly advocating the importance of prevention, few governments and authorities take efficient action; in less than a third of the measured countries there is something similar to a national cardiac screening programme. Ambitions *re* exercise in compulsory school seem even lower.
- As indicated by the Heart Index in most countries assessed – also in "old EU" – there is massive under-treatment of heart patients with high levels of lipids. Furthermore, there seems to be a general lack of impact of treatment guidelines, raising important questions about how to implement best practice policy and about the costs (human, economic) of the present situation.
- Only few countries seem to offer efficient rehabilitation to heart patients. This means that many people cannot return to an active and productive life. Disregarding the human aspects; is this financially wise?

The core message of the Health Consumer Powerhouse is that weak patients should grow into empowered consumers. Life-style, prevention, self-monitoring, choice and rehabilitation are areas suitable for such consumer activism.

One would imagine that governments and care providers would welcome the active consumer. Still no more than two out of 29 countries present consumer information about available cardiac care providers, facilitating transparency and choice? Action, please!

We are pleased to notice that other HCP Index initiatives have already inspired (or provoked?) action *re* public reporting and benchmarking of outcomes. We hope for a constructive discussion on the Heart Index findings and methodology, supporting the development of this tool for policy improvement and consumer awareness.

The HCP wishes to thank the Heart Index Expert Reference Panel for very valuable input and discussions, and for enthusiastic support in the Heart Index work.

Last but not least, I welcome our co-operation with Pfizer, Inc. providing an unrestricted grant for the Heart Index. Health Consumer Powerhouse keeps the full copyright to the Index and is independently in charge of the Index design, methodology and conclusions.

Brussels in July, 2008

Johan Hjertqvist

1. Summary of results

Luxembourg emerges as the 2008 winner of the Euro Consumer Heart Index. This coincides with the fact, that this little country, having the highest healthcare spend per capita in Europe, can probably afford the best healthcare for its citizens, which in the field of cardiac care seems to be significant, particularly as the top group also contains the #2 and #3 for healthcare spend, Norway and Switzerland. Luxembourg scores 836 out of 1000 maximum points closely followed by France (832), Norway (830) and Switzerland (825).

Luxembourg, with 400 000 inhabitants, does provide significant parts of specialized care by allowing its people to seek care in neighbouring countries. Naturally, this means that the neighbouring countries probably can take part of the credit for Luxembourg's top position.

France makes it into the top group by a strong performance on Prevention. This is not due to the famous red wine factor – that is not an indicator in the Index, and besides, the French do not differ much from their Mediterranean neighbours in this respect.

Behind the four leaders, with a rather large score gap, come a number of competent healthcare systems; Austria (769 points), Netherlands (761), and Sweden, Slovenia, U.K., Finland, Italy and Denmark, all above 700 points.

The observation that financial muscle seems to make it easier to attain really good cardiac care is confirmed by the fact that the CEE states are being punished by the scores of the Euro Consumer Heart Index, much more so than in the previous HCP generalist Euro Health Consumer Indexes.

One exception from the CEE pattern is Poland, which, despite a modest overall score in the Index, shows a high level of cardiac healthcare activity, a low heart disease death rate (on par with Germany or Sweden) and good case fatality rates for heart infarct treatment.

If healthcare officials and politicians took to looking across borders, and to "stealing" improvement ideas from their EU colleagues, there would be a good chance for a national system to come much closer to the theoretical top score of 1000.

The scoring has intentionally been done in such a way that the likelihood that two states should end up sharing a position in the ranking is almost zero. It must therefore be noted that Luxembourg, France, Norway and Switzerland are really very difficult to separate, and that very subtle changes in single scores modify the internal order of these four top countries.

Subsequent versions of the Euro Consumer Heart Index will in all likelihood have a modified set of indicators, as more data becomes available.

1.1 General observations

In specialist clinics in the 21st century, good cardiac care can be found in any European country.

Unlike what has been observed in the Euro Health Consumer Indexes describing healthcare systems all over, for cardiac care, countries that can really **afford vast resources allocated to healthcare** come out well in the Euro Consumer Heart Index.

Most countries seem to have room for significant improvements in the area of Prevention. This would require long-term commitment, and could result in very substantial reductions of the numbers of cardiac deaths across Europe.

Access/waiting times is less of a problem for cardiac care than generally – which is what one would hope to see.

The lack of correlation between the use of vital pharmaceuticals (statins and clopidogrel) and the prevalence of heart disease is an area for concern. The adherence to guidelines such as "statins given to patients having had a cardiac event" seems to vary a lot across Europe, with presumed under-treatment observed, which could be causing significantly more cardiac deaths than would be necessary if all patients were medicated according to guidelines. For a couple of countries, the per capita use of certain drugs is so high that it could actually represent what would be considered over-use of the drug.

Pre-hospital care seems to be an area, where there is room for significant improvement; some countries (Norway, Sweden, U.K., Ireland and the Netherlands) seem to have got their act together better than average.

Information to patients on where to seek cardiac care based on which clinic has the best results is still a European disaster area. It is a continued source of wonder why this should be so much more difficult to provide in Europe than on the other side of the Atlantic.

2. Background

The Health Consumer Powerhouse (HCP) has become a centre for visions and action promoting consumer-related healthcare in Europe. Tomorrow's health consumer will not accept any traditional borders. In order to become a powerful actor, building the necessary reform pressure from below, the consumer will need access to knowledge to compare health policies, consumer services and quality outcomes. HCP wants to add to this development.

The HCP has been publishing the Swedish Health Consumer Index (www.vardkonsumentindex.se, also in an English translation) since 2004. By ranking the 21 county councils by 12 basic indicators concerning the design of "systems policy", consumer choice, service level and access to information we introduced benchmarking as an element in consumer empowerment.

For the pan-European indexes in 2005 – 2008, HCP has been aiming to basically follow the same approach, *i.e.* selecting a number of indicators describing to what extent the national healthcare systems are "user-friendly", thus providing a basis for comparing different national systems.

HCP advocates that quality comparisons within the field of healthcare is a true win-win situation. To the consumer, who will have a better platform for informed choice. To governments, authorities and providers, the sharpened focus on consumer satisfaction and quality outcomes shows them the way to change. With such a view the Euro Consumer Heart Index 2008 is designed to become an important benchmark system supporting interactive assessment and improvement.

2.1 About the authors

Project Management for the Euro Consumer Heart Index 2008 has been executed by Arne Björnberg, Ph.D., Vice President Production, R&D for the HCP.

Dr. Björnberg has previous experience from Research Director positions in Swedish industry. His experience includes having served as CEO of the Swedish National Pharmacy Corporation ("Apoteket AB"), Director of Healthcare & Network Solutions for IBM Europe Middle East & Africa, and CEO of the University Hospital of Northern Sweden ("Norrlands Universitetssjukhus", Umeå).

Dr. Björnberg was and is also the project manager for the EHCI 2005 – 2008 projects.

Ms. Anne-Marie Yazbeck, MScBA, has been engaged as Senior Researcher on the project team.

Ms. Yazbeck has been on various international healthcare projects involving management development in healthcare. She also was employed as Advisor at the Ministry of Health of Slovenia, actively involved in the improvement of the quality of care, and worked at the WHO Regional Office for Europe, Copenhagen, in the division of Health Systems. She is presently also working on her Ph.D. thesis on hospital reengineering at the Faculty of Economics, University of Ljubljana.

3. Evolvement of the Euro Consumer Heart Index

The Euro Consumer Heart Index 2008 is based on the methodology developed during the work on the first three editions of the generalist Euro Health Consumer Index (EHCI). Therefore, the development history of that Index will be described below.

3.1 Scope and content of the Euro Health Consumer Index 2005

Countries included in the EHCI 2005 were: Belgium, Estonia, France, Germany, Hungary, Italy, the Netherlands, Poland, Spain, Sweden, the United Kingdom and, for comparison, Switzerland.

To include all 25 member states right from the start would have been a very difficult task, particularly as many memberships were recent, and would present dramatic methodological and statistic difficulties.

The EHCI 2005 was seeking for a representative sample of large and small, long-standing and recent EU membership states.

One important conclusion from the work on EHCI 2005 was that it is indeed possible to construct and obtain data for an index comparing and ranking national healthcare systems seen from the consumer/patient's viewpoint.

3.2 Scope and content of EHCI 2006 – 2007

The EHCI 2006 included all the 25 EU member states of that time, plus Switzerland using essentially the same methodology as in 2005.

The number of indicators was also increased, from 20 in the EHCI 2005 to 28 in the 2006 issue. The number of sub-disciplines was kept at five; with the change that the "Customer Friendliness" sub-discipline was merged into "Patient Rights and Information". The new subdiscipline "Generosity" (What is included in the public healthcare offering?) was introduced, as it was commented from a number of observers, not least healthcare politicians in countries having pronounced waiting time problems, that absence of waiting times could be a result of "meanness" – national healthcare systems being restrictive on who gets certain operations could naturally be expected to have less waiting list problems.

To achieve a higher level of reliability of information, one essential work ingredient has been to establish a net of contacts directly with national healthcare authorities in a more systematic way than was the case for the EHCI 2005. The weaknesses in European healthcare statistics described in previous EHCI reports can only be offset by in-depth discussions with key personnel at a national healthcare authority level. This is true also for the Euro Consumer Heart Index 2008.

4. Euro Consumer Heart Index 2008

The project work on the Heart Index is a compromise between which indicators were judged to be most significant for providing information about the different national healthcare systems from a user/consumer's viewpoint, and the availability of data for these indicators. This is a version of the classical problem "Should we be looking for the 100-dollar bill in the dark alley, or for the dime under the lamppost?"

It has been deemed important to have a mix of indicators in different fields; areas of service attitude and customer orientation as well as indicators of a "hard facts" nature showing healthcare quality in outcome terms. It was also decided to search for indicators on actual results in the form of outcomes and also indicators depicting procedures, such as "needle time" (time between patient arrival to an A&E department and thrombolytic injection), percentage of heart patients thrombolysed or given PCI, et cetera.

Unlike previous HCP Indexes, the Heart Index contains indicators measuring public health status, such as total heart disease mortality. Also, under the Prevention sub-discipline, the Heart Index goes outside the scope of healthcare services by including factors such as smoking and diet. Such indicators tend to be primarily dependent on lifestyle or environmental factors rather than healthcare system performance, as general lifestyle factors are governed by so many other aspects of life. In the Heart Index, there has been an endeavour to use indicators, which actually do reflect such circumstances, which an identifiable group of people (such as a national government) could possibly do something about. This means that the Index does not include indicators such as "the estimated amount of physical exercise per week for the average citizen", but rather "the national guideline for minimum amount of hours of physical exercise in statutory school". This last indicator is an example of something, that most certainly can be influenced by "an identifiable group of people".

4.1 Sub-disciplines chosen for the Heart Index 2008

Experience from the three consecutive annual Euro Health Consumer Index editions has been evaluated and applied when designing the Heart Index.

After thorough discussions at several meetings with the Expert reference panel, it was decided to compose the Heart Index in five subdisciplines:

Sub-discipline	**Number of indicators**
Information, consumer rights, choice	4
Access (including waiting times)	4
Prevention	8
Procedures (including medication)	7
Outcomes	5

The weight of a sub-discipline is entire independent of the number of indicators under each subdiscipline – it is given only by the applied weight coefficient (see 4.3.1). However, the effect of having a high number of indicators in a sub-discipline does reduce the relative weight of each single indicator in the final total score (see Table in Section 4.2.1).

4.2 Scoring in the Heart Index 2008

The performance of the respective national healthcare systems were graded on a three-grade scale for each indicator, where the grades have the rather obvious meaning of Green = good (●), Amber = so-so (◑) and red = not-so-good (○). A green score earns 3 points, an amber score 2 points and a red score (or a "not available") earns 1 point.

For each of the five sub-disciplines, the country score was calculated as a percentage of the maximum possible (*e.g.* for Prevention, the score for a state has been calculated as % of the maximum 8 x 3 = 24).

Thereafter, the sub-discipline scores were multiplied by the weight coefficients given in the following section and added up to make the final country score. These percentages were then multiplied by 100 (see Section 4.2.1), and rounded to a three digit integer.

One (minor) reason for this somewhat complex scoring methodology has been driven by the "competition" element of the Heart Index, *i.e.* to reduce the likelihood of two or more states ending up in a tied position; the "Eurovision Song Contest" method (where scoring was changed in the same direction after 4 countries ending up in a tie for 1st place in 1969).

4.2.1 Weight coefficients

The weighting mechanism used to determine the relative weights of the sub-disciplines was originally introduced for the HCP Euro Health Consumer Index 2006. Explicit weight coefficients for the five sub-disciplines were introduced after a careful consideration, and discussion with the expert reference panel, of which sub-disciplines should be considered for higher weight. In the Heart Index, the outcomes sub-discipline was decided as the main candidate for a high weight coefficient based mainly on the discussion with the expert reference panel and experience from a number of patient survey studies, reflecting the philosophy that for grading cardiovascular care, actual treatment results should be considered the most vital.

Thereafter, Prevention was chosen as the second most important subdiscipline. As there was a premonition in the research team and expert reference panel that Access problems for cardiac care would be less pronounced than for health care in general, Access was given a lower weight than in the previous generalist Euro Health Consumer Indexes. Here, as for the whole of the Index, we welcome input on how to improve the Index methodology.

In the Heart Index 2008, the scores for the five sub disciplines were given the following weights:

Sub-discipline	**Relative weight**	**"All Green" contribution to max score of 1000**	**Points for a Green score in each sub-discipline**
Information, consumer rights, choice	1.25	125	31.25
Access (including waiting times)	1.25	125	31.25
Prevention	2.5	250	31.25
Procedures (including medication)	1.5	150	21.43
Outcomes	3.5	350	70.00
Total sum of weights	**10.0**	**1000**	

Consequently, as the percentages of full scores were added and multiplied by 100, the maximum theoretical score attainable for a national healthcare system in the Index is 1000, and the lowest possible score 333.

It should be noted that, as there are not many examples of countries that excel in one sub-discipline but do very poorly in others, the final ranking of countries presented by the Heart Index 2008 is remarkably stable if the weight coefficients are varied within reasonable limits. The four states making up the top group in the Index results, remains the same also if weights are varied within quite wide limits. It is, of course, possible to create subtle differences in the internal order of countries placed close together (see Section 5.3) by changing the weights, but such subtle differences should not be the basis for any detailed conclusions.

The project has been testing other sets of scores for green, amber and red, such as 2, 1 and 0 (which would really punish low performers), and also 4, 2 and 1, (which would reward real excellence). The final ranking is remarkably stable also during these experiments. In addition, it would probably be grossly unfair to countries scoring Red to give that score the numerical value of 0. In 2008, the standards of cardiovascular care in Europe, also in states scoring low in the Index, are not so low that a Score 0 would be appropriate.

4.2.2 Regional differences within European states

The Health Consumer Powerhouse is well aware that many European states have very decentralised healthcare systems. Not least for the U.K. it is often argued that "Scotland and Wales have separate HNS services, and should be ranked separately".

The uniformity among different parts of the U.K. is probably higher than among regions of Spain and Italy, Bundesländer in Germany and possibly even among counties in tiny 9 million population Sweden.

Grading healthcare systems for European states does present a certain risk of encountering the syndrome of "if you stand with one foot in an ice-bucket and the other on the hot plate, on average you are pretty comfortable". This problem would be quite

pronounced if there were an ambition to include the U.S.A. as one country in a Health Consumer Index.

As equity in healthcare has traditionally been high on the agenda in European states, it has been judged that regional differences are small enough to make statements about the national levels of healthcare services relevant and meaningful.

4.3 "CUTS" data sources

Whenever possible, research on data for individual indicators has endeavoured to find a "CUTS" (Comprehensive Uniform Trustworthy Source). If data on the underlying parameter behind an indicator is available for all, or most of, the 29 states from one single, reasonably reliable source, there has been a definitive preference to base the scores on the CUTS.

As typical CUTS have been considered WHO databases, OECD Health data, Special Eurobarometers, scientific papers covering the situation in many countries based on a well-defined methodology, etc.

Apart from the sheer effectiveness of the approach, the basic reason for the concentration on CUTS, when available, is that data collection primarily based on information obtained from 29 national sources, even if those sources are official Ministry of Health or National Health/Statistics agencies, generally becomes contaminated with high noise levels. It is notoriously difficult to obtain precise answers from many sources, even when these sources are all answering to the same question.

This is eminently illustrated by the fact that the project was forced to exclude the seemingly simple indicator "Intensive Care Unit beds per million population" from the Access sub-discipline. After intense contact work with national agencies, 14 out of 29 states were able to supply a number at all. In one case, the Index project actually triggered a national manual count of ICU beds. Alas, as the 14 numbers reported varied from 11 beds p.m.p. (U.K.) to 840 beds (Luxembourg), it became evident that even such a simple indicator was affected by serious definition problems.

It has to be emphasized, that also when a CUTS for an indicator has been identified, the data of that are still checked through procedures described in section 4.5, as there have frequently been occasions where national sources, or scientific papers, have been able to supply more recent and/or higher precision data.

4.3.1 The "Rolls-Royce gearbox" factor

Another reason for preferably using a CUTS, whenever possible, is the same reason why Rolls-Royce (in their pre-BMW days) did not build their own gearboxes (but bodies, engines etc). The reason was stated as "We simply cannot build a better gearbox than those we can get from outside suppliers, and therefore we do not make them ourselves."

For the small size organization HCP, this same circumstance would be true for an indicator, where a Eurobarometer question, the WHO HfA database or another CUTS happens to cover an indicator.

4.4 Indicator definitions and data sources for the Euro Consumer Heart Index 2008

A more extensive description of the precise questions behind the indicators is found in section 8.2.

Sub-discipline	Indicator	Comment	Score 3	Score 2	Score 1	*Main* Information Sources
Information, consumer rights, choice	Quality information about CVH care providers?	Dr. Foster, www.sundhedskvalitet.dk would be typical Green; the French weekly LePoint a typical Yellow	Yes,easily and permanently available (www or publication)	Intermittently available and/or non-offical source	No	Survey commissioned by HCP from Patient View 2008. Interviews with healthcare officials.
	Right to choose among providers, domestic	Can patients visit any heart clinic/hospital of their choice in the country?	Yes	Yes, severely limited	No, you "get sent" to a certain hospital	Survey commissioned by HCP from Patient View 2008. Interviews with healthcare officials.
	Right to choose among providers, EU	Can patients choose to visit a heart clinic in another EU state?	Yes	Yes, with pre-approval, but usually no problem	Yes, with pre-approval, but usually problems or delays	Survey commissioned by HCP from Patient View 2008. Interviews with healthcare officials.
	Letters (e.g. from specialist to GP) copied to patients	Do patients letters (e.g. from specialist to GP) go also to patients	Yes, always	Yes, frequently	Normally not	Survey commissioned by HCP from Patient View 2008. Interviews with healthcare officials.
Access	# of centres p.m.p. with 24-hour PCI	Centres per million population	> 2	2 - > 1	≤ 1	Interviews with national CVD Experts and healthcare officials.
	Same-day access to doctor for chest pain		Yes.	Yes, but some problems for	No.	Survey commissioned by HCP from Patient View 2008. Interviews with healthcare officials.
	Same-day access to echocardiography and diagnostics for suspected heart disease	Are referrals to advanced diagnostic test effected on the same day?	Yes.	Yes, but some problems for immediate access.	No.	Survey commissioned by HCP from Patient View 2008. Interviews with healthcare officials.
	Waiting time for non-acute CABG/ PCI	What % of patients get the operation within 90 days?	> 90 %	50 – 90 %	< 50 %	Survey commissioned by HCP from Patient View 2007. Interviews with national CVD Experts and healthcare officials.
Prevention	National CVD screening programme?	% of population self-reporting having had b.p. and chol. check past 12 months	> 10 % above EU average indexed rate	within ±10 % of EU average indexed rate	> 10 % below EU average indexed rate	Special Eurobarometer 272 "Health in the European Union", Sept 2007
	HC providers incentivised for preventive measures?	Such as screening for blood pressure and blood lipids,	Yes.	Some degree of incentives	No.	Interviews with national CVD Experts and healthcare officials.
	Hypertension; mean systolic pressure	Hypertension; mean systolic pressure in population	< 125	125 - 129	> 129	WHOSIS 2002, www.fhi.no,
	Smoking cessation assistance	% of smokers having sought HC assistance to stop	≥ 20	19 - 10	≤ 9	Special Eurobarometer 272 "Attitudes of Europeans Towards Tobacco", May 2007
	Smoking restrictions	TCS scores on 6 proven measures against tobacco	≥ 60	59 - 50	≤ 49	Progress in Tobacco Control in 30 European Countries, 2005 to 2007, Luk Joossens & Martin Raw. France public smoking ban 2008.
	Exercise in compulsory school	Total hours of compulsory sports in statutory school	> 800	799 - >500	≤ 500	www.eurydice.org
	Diet: Fruit & vegetable consumption	Kilos of fruit & veg per person per year	> 250	250 - 200	< 200	WHO HfA database, nov. 2007.
	Obesity	Obesity; % of population with BMI >30	< 11 %	11.1 - 16 %	> 16 %	The SuRF Report 2 (2005), WHO.

Sub-discipline	Indicator	Comment	Score 3	Score 2	Score 1	*Main* Information Sources
Procedures	Ambulance swiftness	Mean time between call and ambulance arrival at patient's home	≥ 10 min.	10 ≤ x ≥ 20	≤ 20 min.	European Heart Journal 1997 and interviews with national CVD Experts and healthcare officials.
	"Door to needle" time	Time from hospital door to catheter insertion	≥ 45 min	46 - 89 min	≤ 90 min.	Interviews with national CVD Experts and healthcare officials, national registries and/or studies.
	Reperfusion (Thombolysis/PCI)	% of patients admitted for ACS/MI who get PCI/thrombolysis	≥ 60 %	59 - 30 %	< 30 %	Interviews with national CVD Experts and healthcare officials, national registries and/or studies.
	Medication; statins	Standard Units of ATC C10A1 drugs per capita >40 years of age	> 50, "saturated".	50 - >30	≤ 30, "unsaturated".	IMS Health
	Medication; clopidogrel	Standard Units of clopidogrel per capita >40 years of age	> 8, "saturated".	8 - >4	≤ 4, "unsaturated".	IMS Health
	Pre-hospital thrombolysis		Yes.	Yes, but limited.	No.	Interviews with national CVD Experts and healthcare officials, national
	Defibrillators available in public places?	Widely, in a few locations, or essentially not	Yes.	Yes, but only in specific public places.	No.	Interviews with national CVD Experts and healthcare officials, national registries and/or studies.
Outcomes	AMI 30-day case fatality	30-day case fatality of hospitalised MI patients	Clearly better than EU average	Not clearly far from EU average	Clearly not as good as EU average	Compilation from OECD Health at a Glance; December 2007, MONICA, national heart registries
	Ischaemic stroke 30-day case fatality	30-day case fatality of hospitalised stroke patients	≤ 10 % and low death rate	≤ 12 % or high death rate	> 12 % and high death rate	OECD Health at a Glance, December 2007, Interviews with national CVD Experts and healthcare officials.
	Death rates from CHD (SDR / 100 000)	Males age 60 - 74 to minimize demographic effects	≤ 300	301 - 600	> 600	WHO HfA Mortality database, nov. 2007.
	Death rates from stroke (SDR / 100 000)	Males age 60 - 74 to minimize demographic effects	≤ 100	101 - 200	> 200	WHO HfA Mortality database, nov. 2007.
	Rehabilitation/post-event programme	% of patients treated for symptom x back at work after 6 months	Rehabilation needs well met.	Rehabilitation provided but limited.	Rehabilation needs not well met.	Interviews with national CVD Experts and healthcare officials.

Table 4.4: Indicator definitions and data sources for the Euro Consumer Heart Index 2008

4.4.1 Additional data gathering/evaluation - survey

In addition to public sources, as has been the practice for all editions of the generalist Euro Health Consumer Index, an e-mail survey to Patient organisations was commissioned from PatientView, Woodhouse Place, Upper Woodhouse, Knighton, Powys, LD7 1NG, Wales, Tel: 0044-(0)1547-520-965 · E-mail: info@patient-view.com.

For the Heart Index 2008, this survey covered all four Information, consumer rights & choice indicators, three Access indicators (with exception for "the number of PCI centres plus the Participation in Screening Programme, Smoking Cessation, Availability of Defibrillators and Rehabilitation indicators). A total of 350 responses were obtained on this survey patient organisations responded to the survey.

The results of the survey have been used mainly to assess the "real situation" regarding some of the indicators.

4.4.2 Additional data gathering – feedback from National Ministries / Agencies and particularly national cardiovascular experts!

In the second half of May 2008, the individual country preliminary score sheets were sent out to several parties where contact has been established such as the respective Ministries of Health and / or national agencies and especially cardiovascular experts and their respective professional associations of all 29 countries, giving the opportunity to supply more recent data and/or higher quality data than what is available in the public domain.

Gathering data took place primarily throughout March, April and May 2008 in forms of personal meetings, telephone meetings and extensive e-mail exchanges with officials at national Ministries of Health and/or health agencies and cardiovascular experts. Feedback responses were provided by the countries presented in the table below, which shows which countries returned an actual updated score sheet with comments.

In addition to these score sheets, feedback was provided in several ways, both written and oral, from all 29 countries except five.

Country	**Responded in forms of feedback on the preliminary score sheet in 2008**	**Country**	**Responded in forms of feedback on the preliminary score sheet in 2008**
Austria	--	Lithuania	√
Belgium	√	Luxembourg	--
Bulgaria	√	Malta	√
Cyprus	√	Netherlands	√
Czech Republic	--	Norway	--
Denmark	√	Poland	--
Estonia	√	Portugal	--
Finland	--	Romania	--
France	--	Slovakia	√
Germany	--	Slovenia	√
Greece	√	Spain	√
Hungary	--	Sweden	--
Ireland	√	Switzerland	--
Italy	--	United Kingdom	√
Latvia	√		

Corrections were accepted only in the form of actual data and evidence or background information and not by merely changing a score. Surprisingly, honesty often prevailed and scores were revised downwards after reconsideration of the scores on the individual country preliminary score sheets.

4.5 Threshold value settings

It has not been our ambition to establish a global, scientifically based principle for threshold values to score green, amber or red on the different indicators. Threshold levels have been set after studying the actual parameter value spreads, in order to avoid having indicators showing "all Green" or "totally Red".

Setting threshold values, for indicators where the data are numerical values, is typically done by studying a bar graph of country data values on an indicator sorted in ascending order. The usually "S"-shaped curve yielded by that is studied for notches in the curve, which can distinguish clusters of states, and such notches are often taken as starting values for scores.

A slight preference is also given to threshold values with even numbers. An example of this is the "Exercise in compulsory school" indicator, where the cut-offs for Green and Amber were set at 800 and 500 respectively, although a mathematical algorithm searching for "notches" in the S-curve might have found those at slightly different numbers.

Also, the HCP is a value driven organisation driving Patient/Consumer Empowerment meaning that the development of actively monitoring quantitative and qualitative monitoring of healthcare services is of highest importance. As is illustrated by the "Quality information about CVH care providers" indicator, this sometimes leads to the inclusion of indicators where only few countries, theoretically none, score Green (in this case, only Denmark and the U.K. do).

4.6 Symmetry of in-data

It is important to note that there is absolutely no symmetry in the data used for the scores in the Heart Index.

The project has consequently been using "latest available" statistics. As an example, this means that the Heart Index compares WHO Health for All data from 1997 from one country with 2006 data from other countries. In accordance with the HCP mission of driving active quantitative and qualitative monitoring of healthcare services, this is in HCP Index projects considered a problem owned by countries not monitoring/reporting, rather than a HCP problem.

For many indicators, perhaps most notably the "30-day AMI case fatality", in the Euro Consumer Heart Index, data from several sources have been piled on top of each other in order to obtain what could be considered the least inaccurate picture of the real situation.

HCP has also allowed itself to test official policy decisions in a patient survey, and also by interviews with healthcare officials. In some cases, where real life practice does not seem to coincide with official policy decisions, scores have been modified accordingly.

5. Where does the European health consumer in 2008 find the most user-friendly cardiovascular care?

5.1 General overview of European conditions

The situation for European healthcare systems was commented in 2005 by the following quote from the WHO European Health Report:

"Good health is a fundamental resource for social and economic development. Higher levels of human development mean that people live longer and enjoy more healthy years of life.

While the health of the 879 million people in the WHO European Region has in general improved over time, inequalities between the 52 Member States in the Region and between groups within countries have widened. In addition to the east–west gap in health, differences in health between socioeconomic groups have increased in many countries.

Reducing inequality is increasingly vital. As most countries have declining birth rates and growing elderly populations, it is particularly important to help children to avoid ill health and to become resilient enough to remain in good health long into old age."

This and several other reports provide thorough descriptions of the public health situation in European countries.

There is less good availability of reports on the actual performance of healthcare systems, expressed in "customer value" terms such as quantitative and qualitative output, service and information levels and value for money spent. The statistics on European healthcare systems has traditionally focussed on quantitative resource inputs such as staff numbers, beds and bed occupancy, and at best statistics on procedures such as "needle time" or "% of patients receiving thrombolysis treatment".

For a country like the USA, where healthcare financing and provision has been looked upon as a service industry, statistics on performance quantity and quality are abundant.

5.2 The Index outcomes

As is illustrated by the Index Matrix, the Heart Index 2008 consists of a total of 28 indicators in five sub-areas, describing 29 national healthcare systems. The aim has been to select such indicators, which should be relevant for describing a healthcare system viewed from the consumer/patient's angle.

The performance of the respective national healthcare systems was graded on a three-grade scale for each indicator, where the grades have the rather obvious meaning of Green = good (), Amber = so-so () and Red = not-so-good (), equalling 3, 2 and 1 points respectively.

The total scores are calculated (see Section 4.2) by taking the "% of maximum score for each sub-discipline", multiplying that by a weight coefficient and then normalizing so that a country having "all Green" gets 1000 points total score. Consequently, the 3, 2 and 1 point scores do not "add up".

Euro Consumer Heart Index 2008

SUBDISCIPLINE	INDICATOR	Austria	Belgium	Bulgaria	Cyprus	Czech Republic	Denmark	Estonia	Finland	France	Germany	Greece	Hungary	Ireland	Italy	Latvia
Information, consumer rights, choice	Quality information about CVH care providers?	●	○	○	○	○	●	◐	○	◐	○	○	○	◐	○	○
	Right to choose among providers, domestic	●	◐	●	◐	●	●	●	○	●	◐	○	●	◐	●	●
	Right to choose among providers, EU	○	○	○	○	○	◐	○	◐	○	○	○	○	◐	◐	○
	Letters (e.g. from specialist to GP) copied to patients	◐	○	○	○	◐	○	○	●	○	◐	○	○	○	◐	◐
	Subdiscipline score	9	5	6	5	7	9	7	7	7	6	4	6	7	8	7
Access	Number of centers per million population with 24-hour PCI	●	●	○	●	●	◐	●	◐	●	●	○	●	○	n.a.	○
	Same-day access to doctor for chest pain	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Same-day access to echocardiography and diagnostics for suspected heart disease	◐	●	○	●	◐	◐	●	●	●	●	○	◐	◐	◐	◐
	Waiting time for non-acute CABG/ PCI	●	●	●	◐	●	◐	◐	●	●	◐	○	●	○	◐	○
	Subdiscipline score	11	12	8	11	11	9	11	11	12	11	6	11	7	8	7
Prevention	National CVD screening programme?	◐	●	○	●	○	○	◐	◐	●	◐	●	◐	○	◐	◐
	HC providers incentivised for preventive measures?	●	○	●	○	◐	○	◐	●	●	n.a.	○	◐	●	◐	●
	Hypertension; mean systolic pressure	◐	●	◐	◐	◐	●	◐	◐	◐	○	◐	○	○	◐	○
	Smoking cessation assistance	◐	●	○	◐	○	●	◐	●	◐	◐	○	○	◐	◐	○
	Smoking restrictions	○	◐	◐	○	○	○	◐	◐	●	○	○	○	●	◐	○
	Exercise in compulsory school	●	◐	○	◐	◐	◐	◐	◐	●	●	◐	●	○	●	○
	Diet: Fruit & vegetable consumption	◐	○	○	●	○	◐	○	○	◐	◐	●	○	○	●	○
	Obesity	○	●	○	◐	○	●	●	○	●	○	○	◐	○	◐	◐
	Subdiscipline score	16	18	12	16	11	16	16	16	21	13	14	13	13	18	12
Procedures	Ambulance swiftness	◐	◐	○	◐	◐	●	◐	◐	◐	●	○	◐	n.a.	◐	◐
	"Door to needle" time	●	n.a.	○	◐	●	○	●	○	○	●	●	●	●	○	●
	Reperfusion (Thombolysis/PCI)	●	●	◐	◐	●	●	◐	●	◐	n.a.	◐	●	◐	n.a.	○
	Medication; statins	○	●	○	n.a.	◐	●	○	●	●	◐	◐	◐	●	○	○
	Medication; clopidogrel	◐	◐	○	n.a.	○	○	○	○	●	◐	●	○	◐	○	○
	Pre-hospital thrombolysis	●	○	○	○	○	○	○	●	●	n.a.	○	○	●	○	●
	Defibrillators available in public places?	◐	○	○	○	○	◐	○	◐	◐	◐	○	◐	◐	○	○
	Subdiscipline score	16	13	8	10	13	14	11	15	16	14	13	14	16	8	12
Outcomes	AMI 30-day case fatality	◐	◐	◐	◐	◐	◐	◐	◐	●	◐	◐	○	◐	◐	○
	Ischaemic stroke 30-day case fatality	●	◐	○	◐	◐	●	○	●	◐	◐	◐	○	◐	●	○
	Death rates from CHD (SDR / 100 000)	◐	◐	○	●	○	◐	○	◐	●	◐	●	○	◐	●	○
	Death rates from stroke (SDR / 100 000)	●	◐	○	◐	◐	◐	○	◐	●	●	◐	○	●	●	○
	Rehabilitation/post-event programme	◐	◐	○	○	◐	◐	●	◐	◐	●	○	◐	◐	◐	○
	Subdiscipline score	12	10	6	10	9	11	8	11	13	12	10	6	11	13	5
	TOTAL SCORE	769	691	468	638	605	711	619	718	834	693	576	553	652	715	473
	RANK	**5**	**14**	**28**	**18**	**21**	**12**	**19**	**10**	**2**	**13**	**23**	**24**	**16**	**11**	**27**

● = Good
◐ = Intermediary
○ = Poor
n.a = Data not available

Euro Consumer Heart Index 2008

SUBDISCIPLINE	INDICATOR	Lithuania	Luxembourg	Malta	Netherlands	Norway	Poland	Portugal	Romania	Slovakia	Slovenia	Spain	Sweden	Switzerland	United Kingdom
Information, consumer rights, choice	Quality information about CVH care providers?	◐	○	○	◐	◐	○	◐	○	○	○	○	◐	○	●
	Right to choose among providers, domestic	●	●	●	◐	●	○	○	●	●	●	○	◐	●	◐
	Right to choose among providers, EU	○	●	○	◐	◐	○	○	○	○	◐	○	◐	◐	○
	Letters (e.g. from specialist to GP) copied to patients	◐	○	○	○	○	◐	○	○	●	●	◐	○	◐	◐
	Subdiscipline score	8	8	6	7	8	5	5	6	8	9	5	7	8	8
Access	Number of centers per million population with 24-hour PCI	●	●	●	◐	●	n.a.	n.a.	○	◐	◐	n.a.	●	●	○
	Same-day access to doctor for chest pain	●	●	●	●	●	●	◐	●	●	●	●	●	●	●
	Same-day access to echocardiography and diagnostics for suspected heart disease	◐	●	●	○	●	◐	○	○	●	●	○	○	●	○
	Waiting time for non-acute CABG/ PCI	○	●	●	◐	◐	○	○	○	○	◐	◐	◐	●	◐
	Subdiscipline score	9	12	12	8	11	7	5	6	9	10	7	9	12	7
Prevention	National CVD screening programme?	◐	●	◐	○	◐	◐	●	○	●	◐	◐	○	●	○
	HC providers incentivised for preventive measures?	●	○	●	◐	◐	n.a.	n.a.	○	●	●	○	○	○	●
	Hypertension; mean systolic pressure	○	●	n.a.	◐	○	◐	◐	◐	○	◐	●	◐	●	○
	Smoking cessation assistance	○	◐	◐	○	●	○	◐	○	○	○	◐	◐	◐	●
	Smoking restrictions	○	○	●	◐	●	◐	○	◐	○	◐	◐	●	○	●
	Exercise in compulsory school	◐	◐	○	○	◐	◐	○	○	◐	●	○	○	◐	●
	Diet: Fruit & vegetable consumption	○	○	◐	●	○	○	●	◐	○	◐	●	○	◐	◐
	Obesity	◐	◐	○	●	●	◐	◐	●	◐	○	◐	●	◐	○
	Subdiscipline score	13	15	15	15	17	13	15	13	14	16	16	14	16	17
Procedures	Ambulance swiftness	◐	●	◐	●	●	n.a.	n.a.	◐	◐	●	○	●	◐	◐
	"Door to needle" time	◐	●	n.a.	◐	●	n.a.	n.a.	n.a.	◐	◐	◐	◐	n.a.	●
	Reperfusion (Thombolysis/PCI)	○	●	◐	◐	◐	n.a.	n.a.	◐	○	●	n.a.	●	●	◐
	Medication; statins	○	●	●	●	●	◐	●	○	◐	◐	◐	◐	◐	●
	Medication; clopidogrel	○	●	n.a.	○	○	○	●	○	○	○	◐	○	◐	◐
	Pre-hospital thrombolysis	○	○	●	●	●	n.a.	n.a.	○	◐	○	◐	●	○	●
	Defibrillators available in public places?	○	○	○	●	●	○	◐	○	○	◐	○	◐	●	●
	Subdiscipline score	9	17	13	17	18	8	12	9	11	14	11	16	14	18
Outcomes	AMI 30-day case fatality	◐	●	◐	●	●	●	○	○	○	◐	●	●	●	◐
	Ischaemic stroke 30-day case fatality	○	●	◐	●	●	○	●	○	◐	◐	◐	●	●	●
	Death rates from CHD (SDR / 100 000)	○	●	◐	●	●	◐	●	○	○	●	●	◐	●	◐
	Death rates from stroke (SDR / 100 000)	○	●	◐	●	●	○	◐	○	◐	◐	●	●	●	●
	Rehabilitation/post-event programme	○	●	◐	◐	◐	○	○	○	●	◐	○	◐	●	○
	Subdiscipline score	6	15	10	14	14	8	10	5	9	11	12	13	15	11
	TOTAL SCORE	517	836	670	761	830	504	579	441	611	721	650	730	825	719
	RANK	**25**	**1**	**15**	**6**	**3**	**26**	**22**	**29**	**20**	**8**	**17**	**7**	**4**	**9**

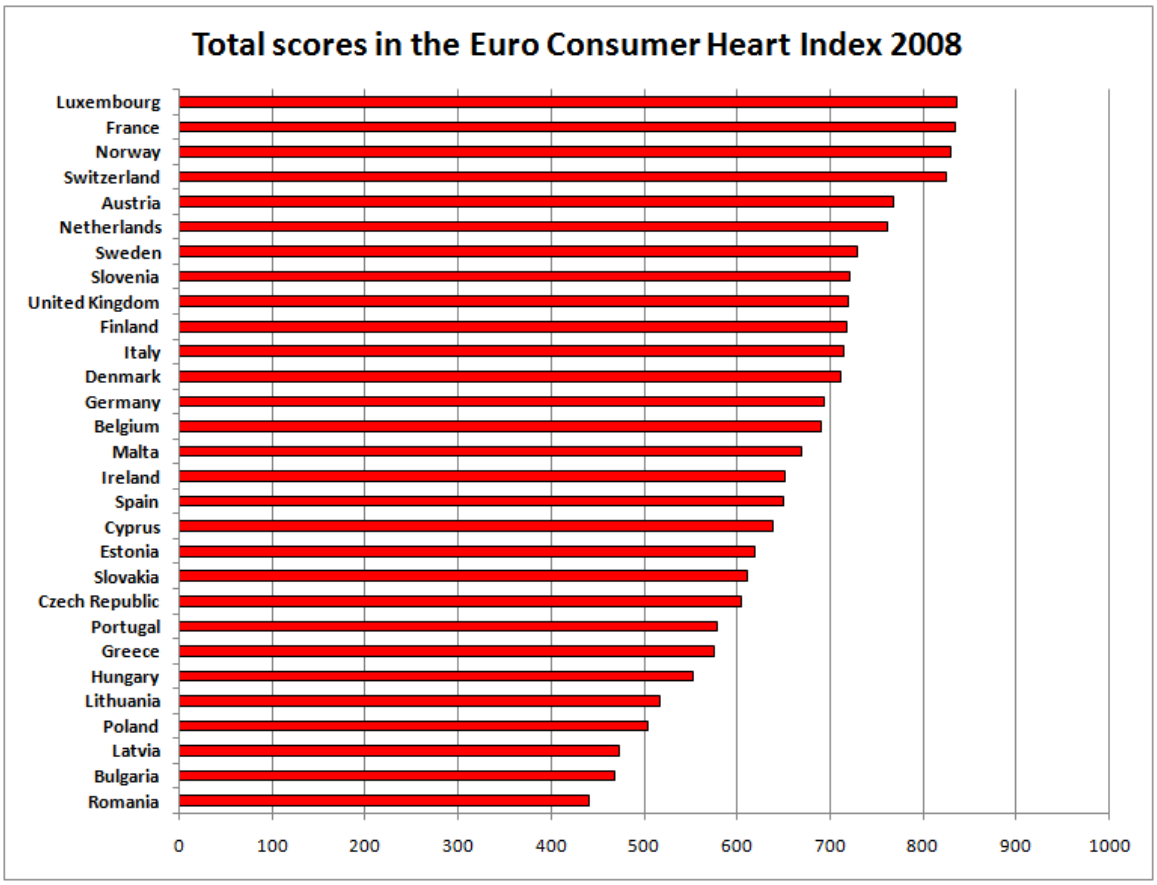
● = Good
◐ = Intermediary
○ = Poor
n.a = Data not available

5.3 Results Summary

The scoring has intentionally been done in such a way that the likelihood that two states should end up sharing a position in the ranking is almost zero. It must therefore be noted that Luxembourg, France, Norway and Switzerland are really very difficult to separate, and that very subtle changes in single scores modify the internal order of these four top countries.

Luxembourg emerges as the 2008 winner of the Euro Consumer Heart Index. This coincides with the fact, that this little country, having the highest healthcare spend per capita in Europe, can probably afford the best healthcare for its citizens, which in the field of cardiac care seems to be significant, particularly as the top group also contains the #2 and #3 for healthcare spend (see Section 6.2). Luxembourg scores 836 out of 1000 maximum points closely followed by France (832), Norway (830) and Switzerland (825).

Luxembourg, with 400 000 inhabitants, does provide significant parts of specialized care by allowing its people to seek care in neighbouring countries. In publicly financed sectors, there is frequently a desire to provide everything "in house", so it is not self-evident that even a small country would do this. Naturally, this means that the neighbouring countries probably can take part of the credit for Luxembourg's top position.



France makes it into the top group by a strong performance on Prevention. This is not due to the famous red wine factor – that is not an indicator in the Index, and besides, the French do not differ much from their Mediterranean neighbours in this respect.

Behind the four leaders, with a rather large score gap, come a number of competent healthcare systems; Austria (769 points), Netherlands (761), and Sweden, Slovenia, U.K., Finland, Italy and Denmark, all above 700 points.

The observation that financial muscle seems to make it easier to attain really good cardiac care is confirmed by the fact that the CEE states are being punished by the scores of the Heart Index, much more so than in the previous HCP generalist Euro health Consumer Indexes.

If healthcare officials and politicians took to looking across borders, and to "stealing" improvement ideas from their EU colleagues, there would be a good chance for a national system to come much closer to the theoretical top score of 1000.

Subsequent versions of the Heart Index will in all likelihood have a modified set of indicators, as more data becomes available.

5.4 General observations from the Heart Index 2008 results

- In specialist clinics in the 21st century, good cardiac care can be found in any European country.
- Unlike what has been observed in the generalist Indexes describing healthcare systems all over, for cardiac care, countries that can really **afford vast resources allocated to healthcare** come out well in the Heart Index. Norway, Luxembourg and Switzerland (along with France) make up the top group, with a noticeable gap to competent but lower healthcare spending states such as Austria, the Netherlands and Sweden. CEE countries are trailing in the Heart Index, much more so than in the generalist Indexes, confirming this conclusion. The top countries are those who get high scores on actual Outcomes (medical results), which is the Index subdiscipline having the highest weight.
- Access/waiting times is less of a problem for cardiac care than generally – which is what one would hope to see.
- There is a surprising lack of correlation between the use of vital pharmaceuticals (statins and clopidogrel) and the prevalence of heart disease. The adherence to guidelines such as “statins given to patients having had a cardiac event” seems to vary a lot across Europe. For clopidogrel, the highest per capita use is found in Greece, with France second; both countries have heart disease prevalences well below the European average, and the per capita use is so high that it could actually represent what would be considered over-use of the drug. (The low French heart disease prevalence has been known since long before the arrival of this drug, which means that although clopidogrel has been shown to be beneficial, its use can hardly explain this low prevalence.)
- Pre-hospital care seems to be an area, where there is room for significant improvement; some countries (Norway, Sweden, U.K., Ireland and the Netherlands) seem to have got their act together better than average.

- Information to patients on where to seek cardiac care based on which clinic has the best results is still a European disaster area. Only Denmark, Austria and the U.K. can provide such information (and British patients do not seem to know, according to the responses to the survey done for this Index).

There are no countries, which excel across the entire range of indicators. The national scores seem to reflect more of "national and organisational cultures and attitudes", particularly the extent of use of pharmaceuticals. The cultural streaks in all likelihood have deep historical roots. Turning a large corporation around takes a couple of years – turning a country around can take decades!

In an attempt to summarize the main features of the scoring of each country included in the Euro Consumer Heart Index 2008, the following gives a somewhat subjective synopsis. To the care consumer – *i.e.* most of us – describing and comparing healthcare will require some simplifications. (A medical information system dealing with scientific evidence such as individual diagnosis or medication guidelines of course requires very strict criteria; the EHCI must be regarded as consumer information, and can by no means be considered as scientific research).

5.4.1 Sub-discipline: Information, consumer rights, choice

The results illustrate that hardly any country in the EU offers clear and transparent quality information about cardiovascular healthcare providers. It turns out that Austria, Denmark and the United Kingdom provide their citizens with latest quality information such as: Where are the good cardiovascular clinics? What are the success rates, fatality rates?

It is essentially impossible to get any type of official data on the quality of cardiovascular healthcare in most European countries. It seems that citizens mainly need to rely on the word-of-mouth information of where good cardiovascular healthcare is provided. In many instances they simply trust the fact that cardiac care is provided at the same standard in any clinic, or rely on the opinion and referrals made by their GPs or specialists (which might be just fine, if the GP is experienced and knowledgeable). It is been noticed that specialists' letters frequently are sent to the GP with the patient – making the patient the courier; and in many cases it is up to the patient to make a copy of this letter for own record.

In many countries, the EU healthcare consumer has the right to choose among providers of healthcare anywhere in their country. The exceptions to this are Finland, Poland, Portugal and Spain, where patients are assigned to a specific district GP or specialist. In terms of choosing healthcare providers across borders, there are many barriers and no smooth mechanisms have been put in place to make it easier for patients who choose to be treated outside their national borders. Many national officials say that their citizens hardly ever take advantage of going abroad and would prefer to be treated at home. If Europeans feel that the cross-border option is not offered despite the decisions of the European Court of Justice, that is hardly surprising. Many countries also choose not to inform citizens that they could be treated cross-borders in the EU.

Main observation: national healthcare systems should make quality information of their cardiovascular healthcare providers transparent. Consumers/patients should have the right

to choose where to go for cardiovascular treatment on the basis of publicly available quality information; *e.g.*: Who are the best cardiovascular surgeons?, Which clinic provides the best cardiac care?. Also, users should have the choice of cross-border care, and get it without facing barriers and time-constraints.

5.4.2 Subdiscipline: Access

All the 29 states, possibly except Portugal, provide same-day access to doctor within the same day for patients where there is suspected heart disease, and many of these countries will provide same-day echocardiography and diagnostics for suspected heart disease. In Greece, the Netherlands, Portugal, Romania, Spain, Sweden and the United Kingdom, the patient would be referred to these procedures at a later stage.

In most countries it is possible to access a PCI-centre (PCI: Percutaneous Coronary Intervention; balloon dilation of heart arteries via a catheter) at any time of the day, with most of the population living close to a centre which is open 24 hours, 7 days a week. Countries which provide limited access to PCI-centers are Bulgaria, Greece, Ireland, Latvia, Romania and the United Kingdom. Countries like Italy and Poland, Portugal and Spain could not provide any data on the number of 24-hour PCI centres.

Waiting times for non-acute CABG / PCI (CABG: Coronary Artery Bypass Graft) varies across Europe. It has been observed that 90% of patients normally get the operation within 90 days in Austria, Belgium, Bulgaria, the Czech Republic, Finland, France, Hungary, Luxembourg, Malta and Switzerland, whereas more than 50% of patients have to wait longer than 90 days in countries like Greece, Ireland, Latvia, Lithuania, Poland, Portugal, Romania and Slovakia.

Main observations: In terms of access to cardiovascular healthcare, European healthcare services provide better service than for more trivial problems (i.e. for healthcare in general). However, there can be long waiting times for GABG / PCI in some countries; and some of those and other countries may need to consider improving access to 24-hour PCI for their citizens. The role models in terms of access to cardiovascular healthcare are countries such as Belgium, France, Luxembourg, Malta and Switzerland, followed by Austria, the Czech Republic, Hungary and Norway. The greatest challenges citizens would face in terms of accessing care for a cardiovascular event are found in Greece, Portugal and Romania.

5.4.3 Subdiscipline: Prevention

No single country scored a perfect score. According to the data, no country has systematically tackled prevention of heart disease. In a few states, healthcare providers are incentivized to carry out preventive measures, but that is still fairly rare. France comes closest to having a comprehensive preventive “programme” for their citizens, and is followed by Italy, Belgium, Norway and the United Kingdom. Few countries systematically screen for cardiovascular diseases.

Surprisingly, a low percentage of smokers are supported by healthcare services to stop smoking. Countries where this number is high: United Kingdom, Ireland, Malta and

Norway. Hours of physical activities in compulsory schools, where it is believed that a person would pick up good habits in keeping fit, is not as high as expected. France leads Europe on this parameter.

Main observations: It seems there is still a lot for national governments to do in terms of prevention of cardiovascular diseases: from screening their population and follow the trends to encouraging their citizens are actively engaged on regular basis in pursuing physical activies, to developing proper eating habits and support those who decide to quit smoking. In terms of smoking restrictions, it seems that all countries to some degree have engaged in increasing taxes on tobacco, restrict smoking in public places, are prohibiting tobacco advertisement etc., but still this field remains a challenge for many countries.

Systematic screening for CVD does not require very sophisticated tests, and would presumably be a lot cheaper per year of life added than most screening programmes deployed (such as those for various cancer forms).

5.4.4 Subdiscipline: Procedures

This field was probably the most difficult field to follow-up on in many countries, as data was not readily available. Ambulance swiftness – the time needed from when the patient calls the ambulance till its actual arrival – in Denmark, Germany, Luxembourg, the Netherlands, Norway, Slovenia and Sweden is less than 10 minutes, whereas in Bulgaria, Greece and Spain, the wait is usually more than 20 minutes. For “door-to-needle” time: a few countries could not provide data (Belgium, Germany, Malta, Poland, Portugal, Romania and Switzerland). Most other countries fall into two groups; the first group are those countries (the Czech Republic, Estonia, Greece, Hungary, Latvia, Luxembourg, Norway and the United Kingdom) where the patient gets the catheter insertion within less than 45 minutes from the moment he comes through the hospital door. Most other countries need between 46 - 89 minutes. The Swedish Riks-HIA report observes that on average, 30 minutes are wasted *inside* the hospital before the patient gets to the right department. Such poor logistics are probably not confined to the Swedish healthcare system.

The percentage of patients admitted for Acute Coronary Syndrome/Myocardial Infarction (ACS/MI) who get PCI or thrombolysis is lowest in Latvia, Lithuania and Slovakia. France, Luxembourg and Portugal have the highest rate of clopidogrel or statin use per capita. Countries like Bulgaria, Estonia, Italy, Latvia, Lithuania and Romania have the lowest statin or clopidogrel consumption.

Main observations: Norway, closely followed by Sweden, the United Kingdom, Ireland and the Netherlands have formulated and set standard procedures for handling cardiac events. From the Heart Index results, it can be noted that the other countries, depending on their stage of development of standards, either do not properly measure or observe the procedures provided by their cardiac care providers and / or would need to invest in tools to improve their procedural approaches to come close to the results of the champion countries.

5.4.5 Subdiscipline: Outcomes

Luxembourg and Switzerland, closely followed by Norway and the Netherlands, are the champions of cardiovascular healthcare outcomes in terms of the rate of Acute Myocardial Infarction (AMI) 30-day case fatality, ischaemic stroke 30-day case fatality (30-day case fatality of hospitalised stroke patients), death rates from Coronary Heart Disease (CHD) and stroke.

Certain countries have either dismissed the rehabilitation process, do not offer any kind of rehabilitation or post cardiac treatment support or provide rehabilitation to a very limited extend. These countries are: Bulgaria, Cyprus, Greece, Latvia, Lithuania, Poland, Portugal, Romania, Slovakia, Spain and the United Kingdom. Oftentimes, the national officials and experts said that the patients themselves were not interested in rehabilitation and were seeking to retire earlier than expected. Most other countries offer rehabilitation programmes on different levels and seek to rehabilitate those who could go back to work as soon as possible.

In some countries the outcomes of cardiovascular healthcare are rather poor in comparison: Bulgaria, Hungary, Latvia, Lithuania, and Romania.

5.4.6 Main observations

From the Heart Index 2008 it can be concluded that there still are tremendous gaps in terms of CVD outcomes throughout the countries under investigation. Extremes in terms of death rates, fatalities, and rehabilitation still exist in the 21st century.

5.5 National and organisational cultures

Some indicators seem to reflect national and organisational culture streaks rather than formal legislative or financial circumstances.

Access and waiting times, usually considered to be of vital interest to healthcare consumers, seems to be one such indicator area. As was also observed by Siciliani & Hurst of the OECD Health Group, the existence of waiting times is strongly correlated to the presence of regulations forcing the patient to access specialist care by going through a primary care procedure in order to get a referral to a specialist ("GP gate-keeping"). In general, countries with gate-keepers exhibit waiting lists – countries where patients are allowed direct access to specialists do not.

It has also been observed that in countries where GP gatekeeping is not required, primary care is more appreciated by patients than in countries having the gatekeeper requirement[1].

In general, countries which have a long tradition of plurality in healthcare financing and provision, *i.e.* with a consumer choice between different insurance providers, who in turn do not discriminate between providers who are private for-profit, non-profit or public, show common features not only in the waiting list situation, but also in the readiness to allow the seeking of healthcare in other countries than the patient's homeland.

[1] Kroneman, M.W. *et al*, Health Policy 76 (2006) 72 – 79.

5.6 Results in "Pentathlon"

The Euro Consumer Heart Index is made up of five sub-disciplines. As no country excels across all aspects of measuring a healthcare system, it can therefore be of interest to study how the 29 countries rank in each of the five parts of the "pentathlon". The scores within each sub-discipline are summarized in the following table:

Sub-discipline	Austria	Belgium	Bulgaria	Cyprus	Czech Republic	Denmark	Estonia	Finland	France	Germany	Greece	Hungary	Ireland	Italy	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Norway	Poland	Portugal	Romania	Slovakia	Slovenia	Spain	Sweden	Switzerland	United Kingdom	Average
Information, consumer rights, choice	9	5	6	5	7	9	7	7	7	6	4	6	7	8	7	8	8	6	7	8	5	5	6	8	9	5	7	8	8	6,8
Access	11	12	8	11	11	9	11	11	12	11	6	11	7	8	7	9	12	12	8	11	7	5	6	9	10	7	9	12	7	9,3
Prevention	16	18	12	16	11	16	16	16	21	13	14	13	13	18	12	13	15	15	15	17	13	15	13	14	16	16	14	16	17	15,0
Procedures	16	13	8	10	13	14	11	15	16	14	13	14	16	8	12	9	17	13	17	18	8	12	9	11	14	11	16	14	18	13,1
Outcomes	12	10	6	10	9	11	8	11	13	12	10	6	11	13	5	6	15	10	14	14	8	10	5	9	11	12	13	15	11	10,3

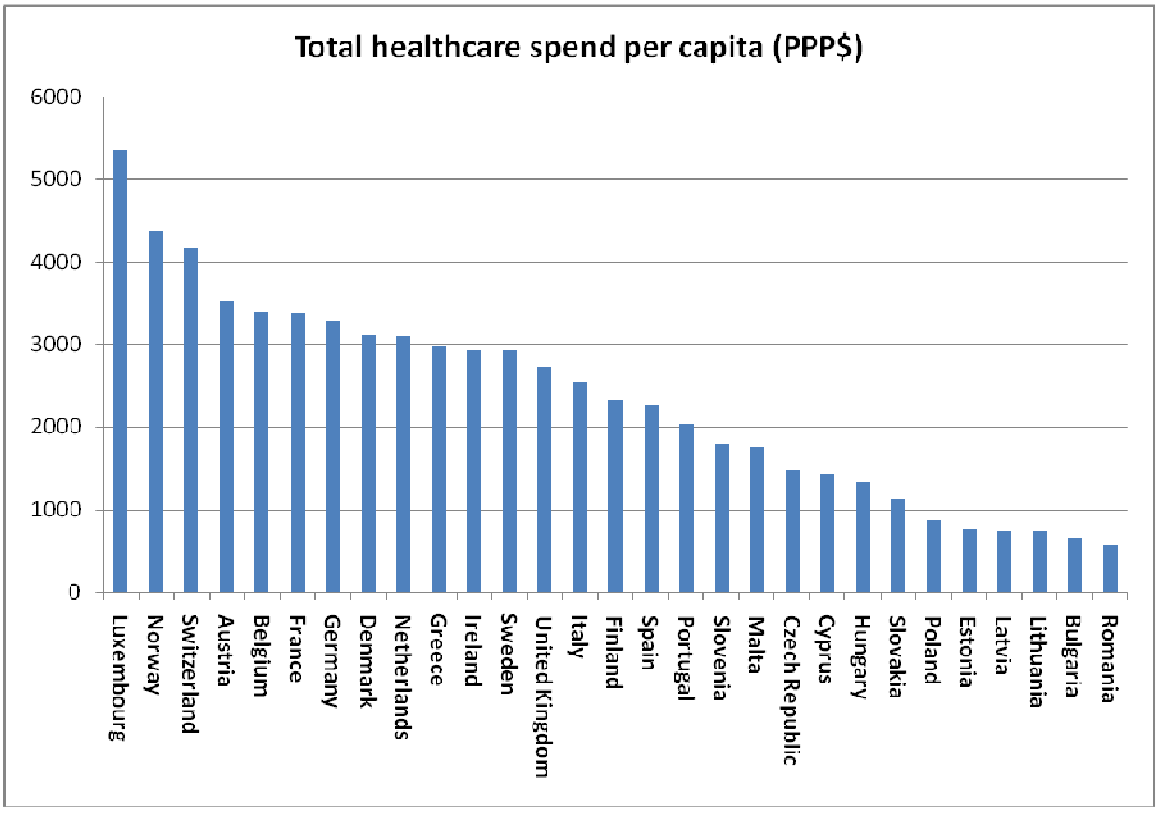
As the table indicates, the total top positions of Luxembourg and Swiss cardiac care is to a great extent a product of good accessibility and very good medical quality. The two sub-disciplines carrying the highest weight coefficients are **Outcomes** and **Prevention**. The performance of France on prevention largely explains why that country, having a healthcare spend per capita closer to the European average, makes its way into the top four.

As in the Euro Health Consumer Index 2007, Denmark is top in the **Information, consumer rights and choice** discipline, in the present Index together with Austria and Slovenia.

6. The Heart Index scores related to healthcare spend per capita

With all these 29 European states included in the Euro Consumer Heart Index, it is difficult to avoid making the observation that for cardiac care, there seems to be a definite advantage if a nation has strong financial resources. Three of the four top countries in the Index, Luxembourg, Norway and Switzerland, also top the European table of healthcare spend per capita.

Healthcare spends per capita in PPP dollars have been taken from the WHO HfA database (November 2007; latest available numbers, most frequently 2005) as illustrated in the Graph below:



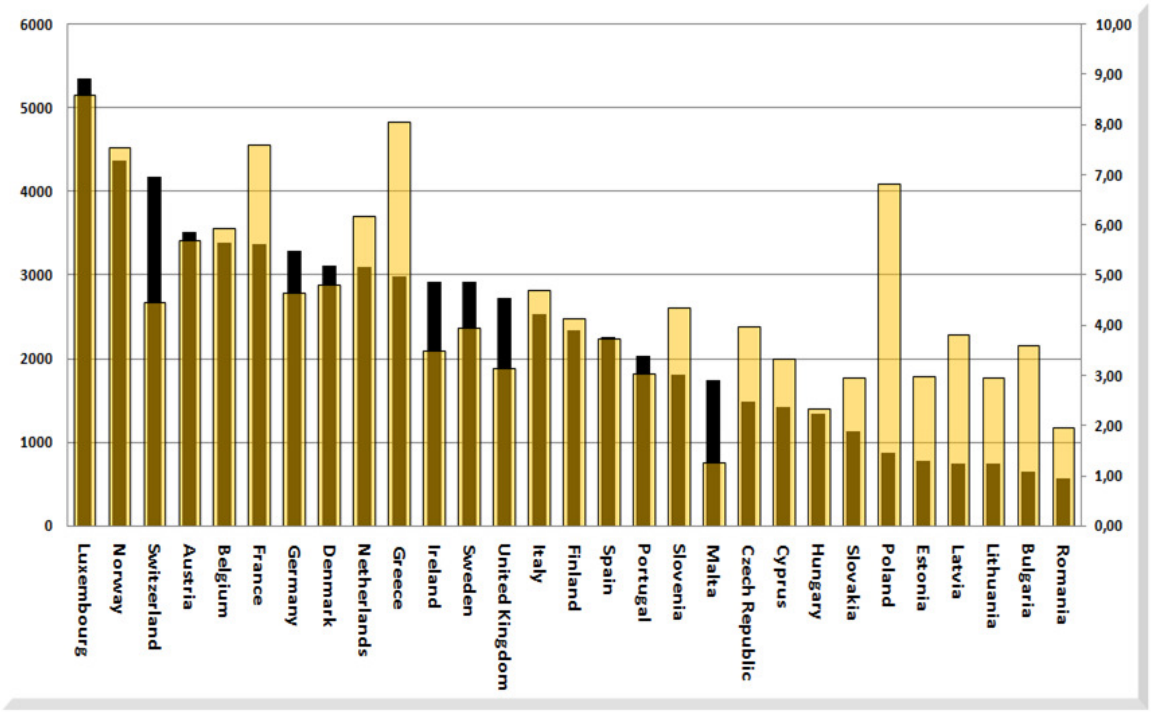
*) For Bulgaria and Romania, the WHO HfA database (November 2007) actually seems to contain errors for the healthcare spend; it is given as $214 and $314 respectively, which are unreasonably low numbers. The European Observatory HiT report (http://www.euro.who.int/Document/E90023brief.pdf) on Bulgaria quotes the WHO, giving the number $648, also confirming the fact that this is slightly higher than the Romanian figure. The number for Romania was taken from a report from the Romanian MoH (http://www.euro.who.int/document/MPS/ROM_MPSEURO_countryprofiles.pdf), also quoting the WHO.

6.1 The "LAP" indicator

As a check on the significance of financial muscle for excellence in cardiac care, a slightly original exercise was undertaken in the form of the "Level-of-Attention-to-the-

Problem" (LAP) ratio. This ratio was obtained by taking the "absolute number of deaths from ischaemic heart disease" for each state, and dividing it by "the number of hospital discharges for ischaemic heart disease", all data being taken from the WHO HfA (Nov 2007) databases.

This ratio cannot be said to be of large clinical significance, as the relation between what cohort of patients have been hospital treated for IHD (Ischaemic Heart Disease), and which is the cohort having died, is undefined. What the LAP ratio could possibly indicate is precisely what the acronym says: what sort of Level of Attention to heart disease is paid in different countries. A high number would indicate that healthcare services of a country can simply afford to give heart disease a high level of attention, but could also indicate that a country has decided to make a determined effort to curb heart disease. The result of the LAP exercise is shown in the graph below.



Healthcare spend per capita (narrow black/brown bars; left Y-axis) and hospital discharges per IHD death (broad pale bars; right Y-axis). It deserves to be mentioned that the low number of hospital discharges in Malta is from a period before the start-up of the Mater Dei hospital (November 2007), when many Maltese heart patients were treated abroad, not least in the U.K.

As can be seen from the graph above, there is a very noticeable correlation between the LAP, and the amount of money spent on healthcare per capita. The less affluent CEE states typically have a lower number of care episodes in relations to the size of the cardiac disease problem, measured as cardiac deaths.

However, a few outliers deserve comment. France, Greece and above all Poland deviate in showing high LAP ratios. This is particularly interesting in the Polish case: Poland has a rather low SDR for heart disease for a CEE state (118 per 100 000, which is on par with Sweden, Austria or Germany, and far below the 172 – 355 of the other CEE states; WHO-

HfA). Also, the 30-day case fatality of Poland reported to the OECD is a very respectable 8.0 %, which puts Poland right among the top EU states.

Apart from the Polish example, it is difficult to avoid the observation that for cardiac care, being able to afford large healthcare resources seems to be an important factor for cardiac care, as the outcome of the Heart Index 2008 does have the top healthcare spenders topping the Index in a much more pronounced way than in previous HCP Euro Indexes.

From states having modest LAP ratios, and still achieving good outcomes, it could probably not unjustly be argued that the care models of countries showing high LAP ratios is a sign of less cost-efficient healthcare services. As mentioned earlier in this report, the Heart Index does not take cost-effectiveness into account – that would be a problem of the providers rather than for healthcare consumers.

7. Comment from International Expert Reference Panel member

"Based to the efforts and experience of the Euro Health Consumer Index 2005 – 2007, the Health Consumer Powerhouse presents the Euro Cardiovascular Index 2008. Since years there are intensive endeavours to improve health care, and it seems that the standard has improved indeed over the years. But anyway there are enormous gaps within Europe, which can be overcome with a general new line in financing medicine. In some areas is an overuse of interventions to observe, in some countries an enormous deficit in pre-hospital care. Prevention will become more and more significantly in fighting cardiac death. The standard in cardiac interventions is high and can compete with the standards of the USA, so sending patients to the US should be history.

Single indicators do not give the right picture; all indicators have to be taken in account for better servicing our patients."

(Prof.Dr.Dr.h.c. Felix Unger)

8. This is how the Heart Index 2008 was built

8.1 Strategy

In April 2004 the HCP first launched the Swedish Health Consumer Index (www.vardkonsumentindex.se, also in a translation to English). By ranking the 21 county councils (the regional parliaments responsible for funding, purchasing and generally also providing healthcare) by 12 basic indicators concerning the design of "systems policy", consumer choice, service level and access to information, we introduced benchmarking as an element in consumer empowerment.

There is a pronounced need for improvement. The very strong media impact of the Index all over Sweden confirmed that the image of healthcare is rapidly moving from rationed public goods into consumer-related services measurable by common quality perspectives,

For the Euro Health Consumer Indexes and for the Heart Index, the Health Consumer Powerhouse has been aiming to follow basically the same approach, *i.e.* selecting a number of indicators describing to what extent the national healthcare systems are "user-friendly", thus providing a basis for comparing different national systems.

The Index does not take into account whether a national healthcare system is publicly or privately funded and/or operated. The purpose is health consumer empowerment, not the promotion of political ideology. Aiming for dialogue and co-operation, the ambition of HCP is to be looked upon as a partner in developing healthcare around Europe.

8.1.1 The reasoning behind indicator selection

The aim has been to select a limited number of indicators, within a definite number of evaluation areas, which taken together can present a good picture of how the healthcare consumer is being served by the respective systems.

8.2 Content of indicators in the Heart Index 2008

The aim has been to select a limited number of indicators, within a definite number of evaluation areas, which taken together can present a telling tale of how the healthcare consumer is being served by the respective systems.

After the first two meetings with the Expert Reference Panel (July and October 2007), and exploratory research on data availability on a number of aspects of cardiovascular care, the abovementioned five sub-disciplines (Section 4.1) were selected to describe important aspects of cardiovascular care. In the following, each indicator, with the actual indicator question asked, is briefly described.

On indicators where scores are based on a CUTS (Comprehensive Uniform Trustworthy Source), this is noted under each indicator bullet. The HCP survey commissioned from Patient View is not awarded CUTS status.

"Interviews with national CVD Experts and healthcare officials" normally means that HCP staff have been paying personal visits to Ministries of Health and/or National Health Agencies, National Statistical Agencies, individual CVD experts – frequently in positions of trust in National Cardiac Societies. The usual meeting form has been a two hour sitting with groups of 2 – 10 people. In some cases, these contacts have been conducted over the telephone. These meetings have also served as preparation for the "preliminary score sheet send out" (Section 8.3.3).

8.2.1 Indicators for Information, consumer rights, choice

- Is *Quality information about CVH care providers* readily available to the public? *I.e.* accessible on the www or in widely spread publication(s), *with data on*

outcomes. www.drfoster.co.uk/ and www.sundhedskvalitet.dk give the only Green scores; the French weekly LePoint ("Les 750 meilleurs cliniques en France") or the Swedish "Riks-HIA" annual report (comprehensive, but not widely spread among the public) typical Yellows.

- *Right to choose among providers, domestic* (*i.e*. Do patients have a free choice of which hospital or clinic they want to go to after referral from primary care doctor?). This situation seems to be changing for the better, with *e.g.* the U.K. having instigated this as late as April 2008 – however, in the 2008 edition of the Heart Index, this has not been deemed to have fully taken effect yet for the U.K.
- *Right to choose among providers across borders in the EU?* No country seems to really have taken this radical decision. Danish patients responding to the survey answered unanimously that they have that right, our input from several Danish patient organization says differently and it could not totally without reservations be confirmed by the Danish National Board of Health. Luxembourg gets a "cheap" Green score due to their long-standing tradition of seeking care in their neighbouring countries.
- *Patients' letters copied to patients?* Do patients' letters (*e.g.* from specialist to GP after a specialist examination) systematically and automatically go also to patients, as a separate copy for the patient? In some states, patients are employed as "postmen" carrying such letters back to their GP, sometimes sealed (Red score), sometimes open (Yellow).

8.2.2 Indicators for Access (including waiting times)

- *Number of centers, per million population, with 24-hour PCI capability.* A better indicator would probably have been of the nature "What % of patients needing it have access to acute PCI?", but statistics on that for Europe could not be found, so this was chosen as an approximation.
- *Same-day access to doctor for chest pain*. Even in states such as Sweden or Ireland, scoring low on Access in the generalist Euro Health Consumer Index 2007 (and in the Special Eurobarometer on Health, December 2007), patients seem to confirm that for acute severe symptoms, they can see a doctor on same-day basis. The only state, where this was not confirmed, was Portugal; according to the European Observatory HiT report on this country, Portugal does suffer from access problems.
- *Same-day access to echocardiography and diagnostics for suspected heart disease.* As the European champion on Access to healthcare services, Belgium, is showing, there is nothing that forces a situation where patients have to wait for examinations or treatments decided by physicians, and to get a Green score, responses in the Patient View survey and feedback from national sources should have no reservations of the nature "after the degree of acuteness has been assessed".

- *Waiting time for non-acute CABG/PCI.* The basic data for this indicator come from the HCP generalist Euro Health Consumer Index 2007. States responding with credible information on improvement of the waiting time situation have got better scores than in the previous year.

8.2.3 Indicators for Prevention

In the expert reference panel discussions, it was agreed that the main factors affecting risk for heart disease are Hypertension, Smoking, Physical exercise, Diet and Obesity (apart from hereditary factors). The objective of indicator design then became: To design indicators as to reflect circumstances which an identifiable group of people could influence/change, rather than just reflecting "global" public health parameters?

Also, it was observed that screening for heart disease can be done cheaper per QALY (Quality Adjusted (additional) Life Year) for heart disease rather than for probably any other prominent disease (such as various cancer forms), for which formal screening programmes are in place in most countries. Here again, the challenge became: How do find an indicator, that is not just a plan or policy, as HCP indexes do not award scores for good intentions?

The prevention indicators became:

- Is there a *National CVD screening programme?* As the Heart Index does not award scores for policies, the data for this indicator come from the Special Eurobarometer on Health, September 2007. The % of positive responses to the question "Have you had a blood pressure check in the past 12 months?", and the same % on the question "Have you had a blood lipid check in the past 12 months?" were each indexed with the average EU % set to = 100, and the average of these two indexes for each state used as the indicator data. Equivalent data were reported by the Swiss Bundesamt für Statistik. CUTS data.
- *Are healthcare providers (physicians, primary care centres) incentivised for preventive measures?, i.e.* are there defined extra payments for performing tests, or special extra-long consultations for prevention? Can be direct per test or consultation (Denmark, U.K.), or additional payment for having performed this service on a certain minimum share of patients (*e.g.* 60 % in Lithuania).
- *Hypertension; mean systolic pressure in population*. It would have been preferable to have the indicator "prevalence of blood pressure above 140/90", but such data were found only for five large Western European states (plus the U.S. and Canada), and for Portugal. Data from WHOSIS. CUTS data.
- *Smoking cessation assistance*; data from Special Eurobarometer on Health, September 2007. "What percentage of smokers having tried to quit, have responded that they did so with the assistance from healthcare services." CUTS data.
- *Smoking restrictions*. The data for this indicator consists of the Tobacco Control Scores (TCS) on a scale of 0 – 100 awarded in the report "Progress in Tobacco

Control in 30 European Countries, 2005 to 2007", Luk Joossens & Martin Raw, which grades states on their performance in 6 areas of counter-measures to smoking, such as level of tobacco tax, smoking ban in public places, restrictions on advertising etc. CUTS data.

- *Exercise in compulsory school*. In accordance with HCP methodology of using indicators, which describe "things which an identifiable group of people could amend", the indicator on Physical exercise is not "average hours of physical exercise per capita in population, but rather "The total number of compulsory physical exercise in statutory school". Data from a report on the topic from www.eurydice.org , "The Information Network on Education in Europe". CUTS data.
- *Diet: Fruit & vegetable consumption* measured as "kilos of fruit and vegetables per capita per year". Data from WHO HfA database, November 2007. CUTS data.
- *Obesity; %* of population with BMI >30. Data from the WHO SuRF Report 2 (2005). Obesity rather than overweight (BMI > 25) was chosen, as modest overweight is not associated with a noticeably increased risk for CVD. CUTS data.

8.2.4 Indicators on Procedures (including medication)

- *"Call, to ambulance arrival at patient's home" time;* mean/medium time from call until the ambulance arrives. This average number for a state does primarily reflect the coverage and swiftness of ambulance services. The effect of populations being spread over large, sparsely populated areas, which would give states such as the Netherlands a good score and Sweden or Finland a poor score, seems grossly overrated, presumably because a relatively low % of the population actually live in such areas. Data from European Heart Journal (1997), numerous national reports and interviews with national CVD Experts and healthcare officials. Definitively non-CUTS data.
- *"Door to needle" time*; mean time from hospital door to catheter insertion. Various national reports and interviews with national CVD Experts and healthcare officials. Definitively non-CUTS data.
- *Reperfusion* was initially in the Index work designed as two indicators: % of patients receiving thrombolysis, and % of patients receiving PCI ("Percutaneous Coronary Intervention"; expanding coronary arteries with a balloon inserted with a catheter through a vein in the groin). As it was found that several countries have more or less abandoned thrombolysis for PCI, it seems unfair to burden those countries with a Red score for the low use of thrombolysis. The two indicators have therefore been merged into one. Mainly national, non-CUTS data.
- *Medication; statins*; the data for this indicator is the total sales of statins (ATC: C10AA[2]) in IMS Health Standard Units (similar to but not identical with Daily

[2] ATC is the international classification system for pharmaceuticals. The first three positions denote the disease area, the next two the class of chemical substance. The final two denote individual producers' preparations. "All statins" are defined by five positions.

Defined Doses; DDD:s) divided by the number of population >40 years of age for each state. Data from IMS Health; proprietary. The assumption has been that no state *exceeds* the guidelines recommendations for statin use, and that therefore high numbers are Good. The most striking circumstance is the total absence of correlation between statin use and CVD prevalence. An Irish HEARTBEAT report claims that Ireland has 100% compliance on statin use for CVD patients. It is very unlikely that anything like 100% compliance exists in the real world, but as the U.K. and Ireland do have the highest statin use, the report is probably not entirely unfounded. CUTS data.

- *Medication; clopidogrel*; the data for this indicator is the total sales of clopidogrel (ATC: B01AC04) in IMS Health Standard Units (similar to but not identical with DDD:s) divided by the number of population >40 years of age for each state. Data from IMS Health; proprietary. The assumption has been that no state *exceeds* the guidelines recommendations for clopidogrel use, and that therefore high numbers give a full score. The most striking circumstance is the total absence of correlation between clopidogrel use and CVD prevalence, which possibly could mean that Greece and France, with the highest per-capita use and low CVD prevalence, in fact are close to over-use of this drug. For clopidogrel use, there is a very noticeable correlation with GDP/capita. CUTS data.
- *Pre-hospital thrombolysis*; availability as part of treatment given in ambulances. The data on this indicator is a rather rough estimate based on interviews with national CVD Experts and healthcare officials. Definitively non-CUTS data.
- *Defibrillators available in public places*; The data on this indicator is a rather rough estimate based on interviews with national CVD Experts and healthcare officials. A few countries have been able to actually supply the number of defibrillators in public places. In general, this availability is a lot lower in Europe than in *e.g.* the U.S.A.. One basic problem is organising training of non-medical staff on the use of defibrillators. Definitively non-CUTS data.

8.2.5 Indicators on Outcomes

- *30-day case fatality rate of hospitalized AMI patients*; Data availability on this vital indicator is shockingly fragmented and incoherent over Europe. The OECD Health at a Glance Report (December 2007) lists this parameter. To illustrate the problem, the best number in Europe, 6.4% for Denmark, should be compared with official communication from the Danish Sundhedsstyret that the Danish number (Hjaerteregistret, 2004) is 15.5%. One explanation could be that the OECD asked for the "*in-hospital* 30-day case fatality", which is a different (and lower) number. The scores on this indicator are therefore based on a compilation of data from various sources and points in time (back to MONICA data), national registries and finally checked against the SDR:s for ischaemic heart disease – in this checkup, scores have been given a negative bias for states with high SDR:s (Standardized Death Rates), and *vice versa*. The logic behind that would be that if a country

claims excellent case fatality rates, and still has high SDR:s it could be feared that this excellent care is not accessible to everybody. **Definitively non-CUTS data.**

- *Ischaemic stroke 30-day case fatality*; Data on this parameter probably suffer from the same shortcomings as the for the previous indicator. The OECD Health at a Glance Report (December 2007) has been used as the basic data (CUTS). These data have been complemented by data from national registries and/or such data that has been provided by national sources. Partially non-CUTS data.
- *Death rates from CHD (SDR /100 000)*; males age 60 – 74 only, to minimize effects of demographic differences between states. Also, when age group 60 – 74 is selected in order to reduce the effects of demographic differences between countries, the event rate for women becomes low, which gives a high noise ratio in the data for women. WHO HfA database (November 2007). CUTS data.
- *Death rates from stroke (SDR /100 000)*; Death from cerebrovascular diseases, males age 60 – 74 only, to minimize effects of demographic differences between states. WHO HfA database (November 2007). CUTS data.
- *Rehabilitation/post-event programme*; The original ambition was to find data on "% of patients < 65 years of age back at work within 6 months of a cardiac event". However such data turned out to be either unavailable, uncertain or affected by circumstances unrelated to healthcare such as "northern Swedes in high unemployment areas not really wanting to go back to work". Therefore, HCP (as many scientific studies do) settled for **the extent of rehab provided, as an approximation of the benefit delivered**, and as the expert reference panel agreed, it was also important enough to want it to stay in Outcomes where a Green gives 70 out of the total 1000 points. The final scores are largely based on results of contacts with national agencies and/or experts, and consist essentially of their (and HCP:s) judgement on how well rehabilitation needs are being met.

8.3 Production phases

The Heart Index 2008 was constructed under the following project plan:

8.3.1 Phase 1

Start-up meeting with the Expert Reference Panel (2007-07-26)

Mapping of existing data

Thereafter, the major area of activity was to evaluate to what extent relevant information is available and accessible for the selected countries. The basic methods were:

- Web search
- Telephone and e-mail interviews with key individuals
- Personal visits when required

Web search:
a) Relevant byelaws and policy documents
b) Actual outcome data in relation to policies

Information providers:

a) National and regional Health Authorities

b) Institutions (EHMA, Cochrane Institute, Picker Institute, University of York Health Economics, others)

c) Private enterprise (IMS Health, pharmaceutical industry, others)

Interviews (to evaluate findings from earlier sources, particularly to verify the real outcomes of policy decisions):
a) Phone and e-mail

b) Personal visits to key information providers

8.3.2 Phase 2

- Data collection to assemble presently available information to be included in the Heart Index 2008.
- Identification of vital areas, where additional information needed to be assembled was performed.
- Collection of raw data for these areas
- A round of personal visits by the researchers to Health Ministries and/or State Agencies for supervision and/or Quality Assurance of Healthcare Services.
- Further meetings with the Expert Reference Panel (2007-10-15, 2007-12-12, 2008-03-10 and finally on 2008-05-16). At those meetings, several indicators were discussed, which could not be included in the Index due to lack of data. Also, the discrepancies between data from different sources were analyzed.

8.3.3 Phase 3

8.3.3.1 Consulting European patient advocates and citizens through HCP survey, performed by external research facility (Patient View, U.K.).

The Heart Index survey contained the questions mentioned in Section 4.4.1, and is also found in Appendix 1 of this report. The survey was posted on the Internet in mid-March in English, German, French, Spanish, Swedish and Greek. The closing date should have

been April 28, but this was extended to May 5. 350 responses were submitted, but there were only 14 countries represented by more than 10 responses. This means that the survey essentially has not been used as stand-alone data for any indicator.

8.3.3.2 "Score update sheet" send-out.

On May 23, 2008, all 29 states received their respective preliminary score sheets (with no reference to other states' scores) as an e-mail send-out asking for updates/corrections by June 6. The send-out was made to contacts at ministries/state agencies as advised by states during the contact efforts of the spring of 2008. Two reminders were also sent out. Corrective feedback from states was accepted up until June 17th, by which time replies had been received as listed in section 5.5.2 above.

8.3.4 Phase 4

Project presentation and reports

- A report describing the principles of how the Heart Index 2008 was constructed
- Presentation of Heart Index 2008 at various events on 2008-07-03 in Brussels and other venues in the following months.
- On-line launch on www.healthpowerhouse.com .
- One poster presentation, and a presentation for the Hot Line/Clinical Trial Update session are accepted for the European Society of Cardiology Congress in Munich on August 30 – September 3.

8.4 External expert reference panel

As is the standard working mode for all HCP Indexes, an external Expert Reference Panel was recruited. The panel met for five 6-hour sittings during the course of the project, the Panel Members having been sent the Index working material in advance. The following persons have taken part in the Expert Reference Panel Work:

Name	Affiliation
Renata Cifkova, Dr., PhD, FESC	Associate Professor of Internal Medicine, Head of Department of Preventive Cardiology, Institute for Clinical and Experimental Medicine, Prague, Czech Republic
Dr. **Nicholas B. Karatzas**	Professor of Cardiology, Athens, Greece
Ulrich Keil, Dr.med, MPH, PhD, FRCP(London), FESC, FAHA	Professor of Epidemiology and social medicine, director of the institutute of Epidemiology and social medicine of the University of Münster, Germany

Philip A. Poole-Wilson, MD FRCP F Med Sci.	Professor, British Heart Foundation Simon Marks Chair of Cardiology, Head of Cardiac Medicine, Imperial College London, United Kingdom
Felix Unger, M.D., Ph.D., FESC, FACC	Professor of Cardiac Surgery, Director of the Univ.Klinik für Herzchirurgie, Paracelsus University of Salzburg, Austria
Lars Wilhelmsen, MD, PhD	Professor of Medicine, Former chief physician of the Department of Medicine, Sahlgrenska University Hospital at Östra. Gothenburg, Sweden

The Expert Reference Panel for a HCP Index has two core tasks:

A. To assist in the design and selection of sub-disciplines and indicators. This is obviously of vital importance for an Index, if the ambition is to be able to say that a state scoring well can truly be considered to have good, consumer-friendly healthcare services.

B. To review the final results of research undertaken by HCP researchers before the final scores are set. If the information obtained seems to clash too violently with the many decades of cardiac care experience represented by the panel members, this has been taken as a strong signal to do an extra review of the results.

The HCP wishes to extend its sincere thanks to the members of the panel for their fundamentally important contribution to the Index work, and for very valuable discussions.

9. The Heart Index in one indicator – the "Grandmother Indicator"

During the course of the work with particularly the prevention indicators, the idea materialized to try to see if the entire Heart Index could be expressed in *one* indicator, using the following logic:

- Determining the essential risk factors deciding what would be the expected standardized death rate (SDR) from Ischaemic Heart Disease (IHD) for a country.
- If these risk factors could be identified, and shown to have a significant correlation with IHD SDR:s, the Expected SDR for countries could then be calculated using multivariable linear regression.
- The expected SDR:s could then be compared with the Actual Observed SDR:s, and countries showing a lower Actual SDR than Expected SDR could then be assumed to have good cardiac care, provided that significant risk-factor dependent differences could be accounted for.

The Grandmother indicator exercise took into account the risk factors:

% of daily cigarette smokers in population	(negative – higher IHD risk)

"Binge-drinking adjusted" per capita consumtion of spirits	(negative – higher IHD risk)
Consumption of fruit and vegetables, kg per capita per year	(positive – lower IHD risk)
Wine consumption, litres of alcohol per capita per year	(positive – lower IHD risk)
Obesity, % of population with BMI > 30	(negative – higher IHD risk)

In order to observe significant correlations, data had to be broken down by gender, as men and women show significantly different exposure to these risk factors and also very different IHD SDR:s.

The Grandmother Indicator exercise was not successful in that it did not yield a totally conclusive model from which cardiac care quality in countries could be deduced. However, the model did yield some rather interesting results, among them a hypothesis which explain the well-known "French paradox"; the fact that the French have been known for a very long time to have the lowest IHD SDR:s in Europe, in spite of having a similar diet as their Mediterranean neighbours, if anything with more dairy fat than those.

The Grandmother Indicator has been accepted for publication at the European Society of Cardiology in Munich on August 30 – September 3, 2008.

10. European data availability on cardiovascular care

10.1 Medical outcomes indicators included in the Heart Index 2008

There is one predominant feature, which characterizes European public healthcare (and other welfare state), systems as opposed to their more industrialised counterparts in countries such as the U.S.A.: there is an abundance of statistics on input of resources, but a traditional scarcity of data on quantitative or qualitative *output*.

Organisations like the WHO and OECD are publishing easily accessible and frequently updated statistics on topics like:

- the number of doctors/nurses per capita
- hospital beds per capita
- share of patients receiving certain treatments
- number of consultations per capita
- number of MR units per million of population
- health expenditure by sources of funds
- drug sales in doses and monetary value (endless tables)

Systems with a history of funding structures based on grant schemes and global budgeting often exhibit a management culture, where monitoring and follow-up is more or less

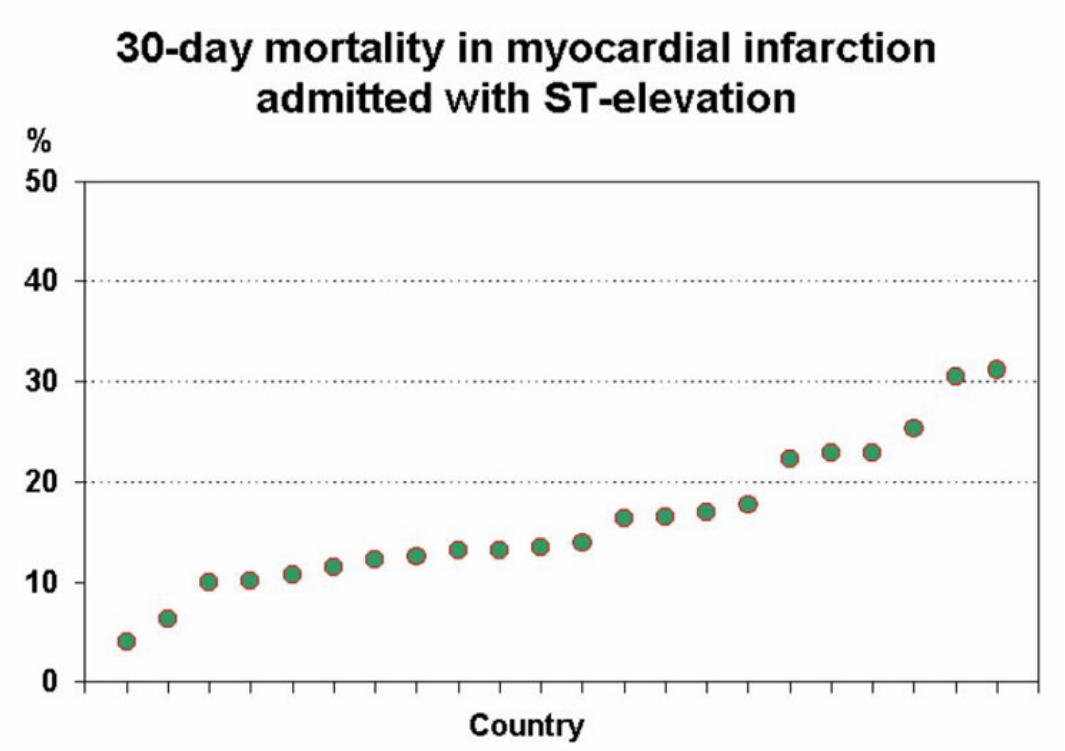
entirely focused on input factors. Such factors can be staff numbers, costs of all kinds (though not usually put in relation to output factors) and other factors of the nature illustrated by the above bullet list.

Healthcare systems operating more on an industrial basis have a natural inclination to focus monitoring on *output*, and also much more naturally relate measurements of costs to output factors in order to measure productivity, cost-effectiveness and quality.

The Heart Index project has endeavoured to obtain data on the quality of actual healthcare provided. Doing this, the ambition has been to concentrate on indicators, where the contribution of actual healthcare provision is the main factor.

Heart infarct mortality <28 days after hospitalisation (de-selecting such parameters as total heart disease mortality, where the Mediterranean states have an inherent, presumably life-style dependent, leading position) is one parameter, where data availability is surprisingly limited, as described in Section 8.2.5.

There is a surprising lack of more recent data on this the #1killer disease in modern-day Europe. The graph shown below is in its original form from material published by the European Society of Cardiology, (with the identities of countries not given) based on what is by now very ancient MONICA data.



The Health Consumer Powerhouse wishes the best of success to the European Society of Cardiology in its efforts on the Euro Heart Survey, the EUROASPIRE and EUROCISS projects (the two latter of which were started fairly recently), which will in all likelihood remedy the lack of outcomes data in this very vital field.

However, concerning the EUROASPIRE study, it is difficult to avoid the conclusion that this study does possibly not contain very representative samples of patients. The study

essentially has ~700 patients having had a cardiac event from one centre in each of 22 countries. Part of the data is from follow-up interviews ~14 months after the event, for which typically 350 – 500 patients of the 700 showed up.

Particularly the data from these follow-up interviews might suffer from a positive bias. For statin use, most centres report 70 – 95 % of patients being on statins at the time of the follow-up interview, which is difficult to make compatible with the numbers of actual statin sales used in the Euro Consumer Heart Index indicator. Also, near-perfect data from western Sweden[3] on statins being collected from pharmacies by Myocardial Infarction (MI) patients show 41.4% of patients having had a statin prescription dispensed from a pharmacy during the 12 months after hospital discharge for MI.

11. How to interpret the Index results?

The first and most important consideration on how to treat the results is: "With great care and restrictions against drastic conclusions!"

The Euro Consumer Heart Index 2008 is an attempt at measuring and ranking the performance of cardiovascular care provision from a consumer viewpoint. The results definitely contain information quality problems. There is a shortage of pan-European, uniform set procedures for data gathering.

But again, we find it far better to present our outcomes to a public, and to promote constructive discussion rather than staying with the only too common opinion that as long as healthcare information is not a hundred percent complete you had better keep it in the closet. Again we want to stress that the Index displays consumer information, not medically or individually sensitive data.

While by no means claiming that the Heart Index 2008 results are dissertation quality, the findings should not be dismissed as random findings. On the contrary, previous experience from the general Euro Health Consumer Indexes reflects that consumer ranking by similar indicators is looked upon as an important tool to display healthcare service quality. The HCP hopes that the Heart Index 2008 results can serve as inspiration for how and where European cardiovascular care can be improved.

12. References

12.1 Main sources

The main sources of input for the various indicators are given in Table 4.4 above. For all indicators, this information has been supplemented by interviews and discussions with

[3] *Saving lives, money and resources – drug use and CABG/PCI after myocardial infarction in a Swedish record-linkage study.* Wilhelmsen, L., Welin, L., Odén, A. and Björnberg, A., Submitted for publication.

healthcare officials in both the public and private sectors, and by data from national registries and communication from national Ministries of Health, state agencies and local cardiac societies and /or CVD experts.

12.2 Useful links

Web search exercises have yielded useful complementary information from, among others, these websites:

Links to trans-national data

A prospective survey of the characteristics, treatments and outcomes of patients with acute coronary syndromes in Europe and the editerranean basin - The Euro Heart Survey of Acute Coronary Syndromes	http://www.ncbi.nlm.nih.gov/pubmed/12127921
An update on regional variation in cardiovascular mortality within Europe	http://www.scribd.com/doc/3261376/An-update-on-regional-variation-in-cardiovascular-mortality-within-Europe
Attitudes of Europeans towards Tobacco Fieldwork October - November 2006	http://ec.europa.eu/public_opinion/archives/ebs/ebs_239_en.pdf
British Heart Foundation Statistics	http://www.heartstats.org/homepage.asp
Dr Foster	http://www.drfoster.co.uk/
Drinking patterns and their gender difference in Europe	http://alcalc.oxfordjournals.org/cgi/reprint/41/suppl_1/i8.pdf
ESC Knowledge Centre	http://www.escardio.org/knowledge/
Euro Heart Survey	http://www.escardio.org/knowledge/ehs/
EUROASPIRE III	http://www.escardio.org/knowledge/ehs/survey/scheduled-surveys/Euroaspire_III.htm
EUROCISS Project (European Cardiovascular Indicators Surveillance Set)	http://www.cuore.iss.it/eurociss/en/project/project.asp
European cardiovascular disease statistics 2008	http://www.ehnheart.org/files/statistics%202008%20web-161229A.pdf
European Heart Journal Search	http://eurheartj.oxfordjournals.org/search.dtl
European Heart Network	http://www.ehnheart.org/content/default.asp?level0=1450
European Observatory	http://www.euro.who.int/observatory
Health and food Fieldwork November – December 2005	http://ec.europa.eu/health/ph_publication/eb_food_en.pdf

Health in the European Union Fieldwork October - November 2006 (Publication September 2007)	http://ec.europa.eu/health/ph_publication/eb_health_en.pdf
Medscape	http://www.medscape.com
OECD Health Policy & Data Department	http://www.oecd.org/department/0,2688,en_2649_33929_1_1_1_1_1,00.html
Patient View	http://www.patient-view.com/hscnetwork.htm
Progress in Tobacco Control in 30 European Countries 2005 – 2007	http://www.ensp.org/files/30_european_countries_text_final.pdf
The List Of Smoking Bans	http://en.wikipedia.org/wiki/List_of_smoking_bans
The Public Health Portal of the European Union	http://ec.europa.eu/health-eu/index_en.htm
The second Euro Heart Survey on acute coronary syndromes: characteristics, treatment, and outcome of patients with ACS in Europe and the Mediterranean Basin in 2004	http://www.ncbi.nlm.nih.gov/pubmed/16908490
WHO "Health for All" database	http://www.euro.who.int/hfadb
WHO European Country Profiles on Tobacco Control 2003	http://www.euro.who.int/InformationSources/Publications/Catalogue/20050114_3
WHO HfA Mortality database	http://www.who.int/healthinfo/statistics/mortdata/en/
WHO tobacco control database	http://data.euro.who.int/tobacco/
WHO Tobacco control database	http://data.euro.who.int/tobacco
World bank Country & Regional Profiles and Economics of Tobacco Briefs	http://www1.worldbank.org/tobacco/database.asp
World health statistics 2008	http://ww.who.int/whosis

Links to national data

Belgium	Enquête de Santé par Interview Belgique 2004	http://www.iph.fgov.be/EPIDEMIO/epifr/crospfr/hisfr/his04fr/hisfr.pdf
Belgium	Registration of Stroke through the Belgian Sentinel Network and Factors Influencing Stroke Mortality	http://www.ncbi.nlm.nih.gov/pubmed/12865616
Belgium	Registration of Stroke through the Belgian Sentinel Network and Factors Influencing Stroke Mortality	http://www.ncbi.nlm.nih.gov/pubmed/12865616

Denmark	Diagnostik og behandling af iskæmisk hjertesygdom i Danmark – KAG, PCI, by-pass- og klapkirurgi	http://www.sst.dk
Denmark	Sundhedskvalitet	www.sundhedskvalitet.dk
Finland	Health in Finland	http://www.ktl.fi/hif/hif.pdf
Greece	In-hospital mortality of habitual cigarette smokers after acute myocardial infarction. The 'smoker's paradox' in a countrywide study.	http://eurheartj.oxfordjournals.org/cgi/content/short/22/9/776
Greece	Epidemiological Characteristics, Management and Early Outcome of Acute Myocardial Infarction in Greece: The HELlenic Infarction Observation Study	http://www.hellenicjcardiol.com/archive/full_text/2007/6/2007_6_325.pdf
Ireland	Health Protection Surveillance Center, Ireland 2006	http://www.ndsc.ie/hpsc/AboutHPSC/AnnualReports/File,2667,en.pdf
Latvia	Health Compulsory Insurance State Agency (HCISA) – supervisory state authority of Ministry of Health	http://www.voava.gov.lv/eng/
Lithuania	Lithuanian Health Information Centre	http://www.lsic.lt/html/en/lhic.htm
Netherlands	Health Council report 2007/01	http://www.gr.nl/index.php
Norway	Folkehelseinstituttet	www.fhi.no
Norway	Norwegian Board of Health: Annual Supervision Report	http://www.helsetilsynet.no/upload/Publikasjoner/tilsynsmelding/annual_supervision_report_2006.pdf
Romania	Prevalence and control of cardiovascular risk factors in Romania – Cardio-zone national study	http://www.maedica.ro/articole/nr4_2007/277-288_Cardiozone.pdf
Slovenia	Akutni koronarni sindrom v Sloveniji	http://ecenter.fov.uni-mb.si/Studenti/Predmeti/Prezentacije/Predstavitev%20RP%20KC.pdf
Slovenia	Primary percutaneous coronary intervention and mild induced hypothermia in comatose survivors of ventricular fibrillation with ST-elevation acute myocardial infarction	http://linkinghub.elsevier.com/retrieve/pii/S0300957207000305
Spain	Increasing trends of acute myocardial infarction in Spain: the MONICA-Catalonia Study	http://eurheartj.oxfordjournals.org/cgi/content/abstract/26/5/505
Sweden	RIKS-HIA OCH SEPHIA Arsrapport 2006	http://www.ucr.uu.se/rikshia/
UK	The coronary heart disease national service framework: Shaping the future - progress report for 2006	http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_063168
UK	The Coronary Heart Disease: National Service Framework - Building for the future, Progress report for 2007	http://www.dh.gov.uk/publications

UK	British Heart Foundation's Statistics: Heartstats	http://www.heartstats.org/atozpage.asp?id=5450

In addition to the above mentioned references and links used to support the data and information acquired, we also carefully studied information from all the national professional cardiology societies and associations.

13. FAQ:s

What is the Euro Consumer Heart Index?

The Euro Consumer Heart Index measures the performance of countries on differing aspects of delivery of cardiovascular care. The information is presented as a series of easy to understand rankings, designed to empower consumers of healthcare services in obtaining the best outcomes form their cardiac care. It is produced by the Health Consumer Powerhouse (HCP), who also produces the Euro Health Consumer Index. The HCP believes that increasing transparency in healthcare systems can only benefit consumers, and that revealing differing levels of performance can help healthcare delivery to improve overall.

Who will use the Heart Index?

The main audiences for the Heart Index are those involved in healthcare policy formation: civil servants, clinicians and, of course, journalists. The ultimate goal is to reach the consumer directly via for example media coverage of the Index findings!

Will consumers be able to understand this information easily?

Yes. Healthcare consumers have a clear interest in knowing more to enable them to make the best possible decision. For professional services, which can be complex to explain, there is always of over simplification. The HCP already has experience in communicating complex information on health in a concise way, clearly illustrating the good and the bad. We work hard to ensure our information is as accessible and consumer-friendly as possible while ensuring we do not 'dumb down'.

The European Commission has also declared that transparency and competition are essential in making European healthcare more efficient. Improved insight into to the standards of our European neighbours will support patient mobility within the EU.

What kind of impact will the Heart Index have?

The HCP expects governments to look into the findings, draw conclusions and take appropriate action to remedy the problems in their healthcare systems, as they have with our existing indexes. We have created a set of recommendations for each country; these can be found on www.healthpowerhouse.com .

Can all countries really afford to follow your recommendations?

It is not as simple as making blanket recommendations – on some levels there are common failings across many healthcare systems, such as lack of information. On other levels it could be inexpensive steps such as increasing transparency in the system.

Is it really possible to measure and compare healthcare in this way?

Absolutely: You can measure and compare in many ways; the HCP feels the advantage of this approach is that it:

- Focuses on those measures which impact the ability of the consumers to best use the available healthcare services,
- Focuses on such aspects of healthcare delivery, which the medical profession, administrators and/or regional or national politicians could actually do something about if they want to,
- Highlights the difference between countries, helping consumers understand where they could and should reasonably expect more from their providers.

Does the WHO or the EU not already provide this kind of data?

Our information is complementary to the existing WHO and EU data; they provide statistical information on overall public health which we use, but the Heart Index also needs qualitative date to focus on providing consumer information. The comparative analyses we provide are not delivered by other institutions.

Is this really research?

It is compiled consumer information. It is not clinical research and is not to be looked upon as research in the true academic sense.

How reliable are the Heart Index data? Some of it seems dated, and there appear to be a number of 'gaps'.

We bring data together from public sources and our own investigations and research. This is consumer information, and our philosophy is that providing data – even where seemingly inconsistent – is better than saying nothing at all.

The data are as reliable as we can possibly make them, and is always based upon "latest available". Healthcare data can be inconsistent, difficult to access and frequently outdated. For one country the latest data may be quite recent, for another one several years old. The HCP has a system to assess and validate all data, which includes collecting feedback from national authorities on the preliminary findings of the Index research.

Ministries of Health or state agencies are given the opportunity to correct/update/validate the results. We have also commissioned a survey with patients. Highlighting this data quality issue is one benefit of the Index exercise; it is a challenge to European governments and institutions, not an Index weakness.

How were the indicators and weighting selected, and why?

The indicators were developed through dialogue between the HCP, the Expert Reference Panel and numerous stakeholders. They were chosen to provide the best overall indication of outcomes in cardiovascular disease.

How were the indicators selected?

A limited number of indicators were chosen within closely defined evaluation areas. Taken together they can present a telling tale of how well – or badly - the consumer is being served by their respective healthcare systems.

Why is Luxembourg the winner?

A combination of affording a high level of per capita spending on healthcare, and the good sense to provide the best care for its citizens by accessing high-quality services from Belgium, France and Germany. It must also be pointed out that the approach leads to excellent outcomes, which is the most heavily weighted sub-sector of the index.

Is it really useful to provide overall measurements when many European systems are increasingly decentralised/regionalised?

There still are national common streaks also in decentralised healthcare systems, which definitely motivates comparing healthcare delivery on national level. (See section 4.2.2)

It seems in this index like money matters – are you not just pushing for more expenditure in healthcare?

No – but possibly for more intelligent expenditure. However we do believe that it is increasingly important for all countries to invest in health and that the countries will get return on investment if doing so. This index also demonstrates that prevention is cost-effective; France is in the top group of countries as a result of their efforts on prevention.

Who is behind the Heart Index?

The Index was initiated by, and is produced by, the Health Consumer Powerhouse, who holds the copyright to the **Euro Consumer Heart Index**. The HCP is a private healthcare analyst and information provider, registered in Sweden.

Who supports the Heart Index?

This work has been undertaken via an unrestricted grant from Pfizer, Inc.

Appendix 1. Questionnaire used in the survey commissioned from Patient View for the Euro Consumer Heart Index 2008.

The compiler of the annual EuroHealth Consumer Index, the Brussels and Stockholm-based HEALTH CONSUMER POWERHOUSE (HCP), has now started looking at how well each country in Europe treats individual diseases.

CARDIOVASCULAR DISEASES are one of the first such disease groupings to be examined by HCP.
The questionnaire below allows you to contribute your views to HCP's forthcoming Euro Consumer Heart Index 2008. The questionnaire has only twelve questions, followed by some very brief profiling questions. Filling it in should take no more than about 5 (or, at most, 10) minutes.

The survey is being conducted online on this specialist survey site, so allowing all responses to be completely ANONYMOUS. No IP addresses or email details can reach the survey managers (unless you choose to mention such information in the survey). If, however, you would like to be sent the weblink to the completed Euro Consumer Heart Index 2008 when it is published in June 2008, you can specify your CONTACT DETAILS at the end of the questionnaire.

The survey will close on Monday, 28th April 2008 (but we would welcome your input earlier than that, as your opinions can help to quickly establish some trends). The survey is being administered by PatientView (a UK-based publishing and research organisation) on behalf of Health Consumer Powerhouse, and is being supported by an unrestricted grant from Pfizer.

Should you have any questions regarding this survey, please do not hesitate to contact the survey administrator (name and contact details given).

QUESTION 1
Is HIGH-QUALITY information about the providers of cardiac care (hospitals/clinics) easily available to you?
[In this survey, "high-quality information" means up-to-date information on the performance of your hospitals/clinics (and especially on how well they treat cardiovascular diseases).]
[Please specify only one option]

- Yes, and it includes statistics on the results of these providers of care.
- Information is available, but it is hard to get.
- No such information is available.
- I do not know.

QUESTION 2a
Can you choose which hospital/specialist clinic you attend (without you having to pay extra to attend it)?
[Please specify only one option]

- Yes.
- Yes, but only to a limited number of hospitals/clinics.
- No, the referring doctor chooses where I go.
- I do not know.

QUESTION 2b
And, to your knowledge, is this typical for your country?

- Yes.
- Possibly/sometimes.
- No.
- I do not know.

QUESTION 3
If you are unable to get the treatment and care you need in your own country (either because it is unavailable, or because of a long waiting list), will your country's healthcare system send you to another EU country to obtain that treatment/care (again, without you having to pay extra)?
[You may specify more than one option if you wish]

- Yes.
- Yes, but I have to go alone (a relative/carer does not get paid travel costs, and so cannot come with me to help me).
- Yes, but the process of arranging the treatment/care is bureaucratic and slow.
- No.
- I do not know.

QUESTION 4
In your country, do patients get sent a copy of the written correspondence about them that passes between doctors?
[One such example might be the correspondence sent by a specialist to the GP after a patient's appointment with the specialist.]
[You may specify more than one option if you wish]

- Yes, all such correspondence is automatically sent to patients.
- Yes, but only a summary of the correspondence.
- Yes, but only if the correspondence is test results.
- Yes, but only if we request it.
- No, but we can read such correspondence when we access our medical records electronically.
- No.
- I do not know.

QUESTION 5
If you have pains in your chest, how long would you have to wait to see your GP?
[Please specify only one option]

- Less than half a day.
- Longer than half a day, but within the same day.
- One to three days.
- Longer than three days.
- I do not know.

QUESTION 6
If you have chest pains, and your doctor recommends that you take a high-tech diagnostic test, how long would you have to wait to get the test?
[One such high-tech diagnostic test is echocardiography, which involves the use of sound waves to make detailed images of the heart.]
[Please specify only one option]

- I would get an examination on the same day.
- I would have to wait more than one day, but less than a week.
- More than one week, but less than a month.
- More than one month, but less than three months.
- More than three months, but less than six months.
- More than six months.
- It depends on what the doctor thinks is my risk of developing serious heart disease or having a stroke.
- I do not know.

QUESTION 7
If your doctor/specialist recommends non-acute surgery, how long would you have to wait for an operation?
[Such surgery includes a heart bypass, and also includes percutaneous coronary intervention (PCI, which is angioplasty, or stenting).]
[Please specify only one option]

- Less than a week.
- More than one week, but less than a month.
- More than one month, but less than three months.
- More than three months, but less than six months.
- More than six months.
- I do not know.

QUESTION 8
Before you were diagnosed with a heart problem, had you ever participated in a national screening programme for heart disease?
[Please specify only one option]

- Yes.
- Possibly.
- No.
- I do not know.

QUESTION 9
If you are (or have been) a smoker, does your healthcare system offer services to help you quit smoking?
[You may specify more than one option if you wish]

- Yes.
- No, but I know that some people in my country have been offered such services.
- No. If I wished to stop smoking, I would have to do it myself.
- I am not a smoker, so I do not know.

QUESTION 10
In your country, are defibrillators (electrical devices that restart hearts) available in public places?
[For instance: in airports, bus stations, gyms, healthcare facilities, restaurants, swimming pools, train stations, etc.]
[Please specify only one option]

- Yes, widely available.
- They are available, but only in a few places.
- No.
- I do not know.

Question 11
If you are discharged from hospital after a serious operation, does your country's healthcare system offer you rehabilitation (to get back to work or manage daily life)?
[Please specify only one option]

- Yes. Rehabilitation is organised just before (or right after) discharge, and will be prescribed until no longer needed.
- Yes. But rehabilitation does not start until a few weeks after being discharged (or the rehabilitation process is far too short, and would not bring me back to a satisfactory state).
- No.
- I do not know.