

Analysis and Comparison of Healthcare Systems: Moscow 15 -16th February 2008

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Your Learning Objectives

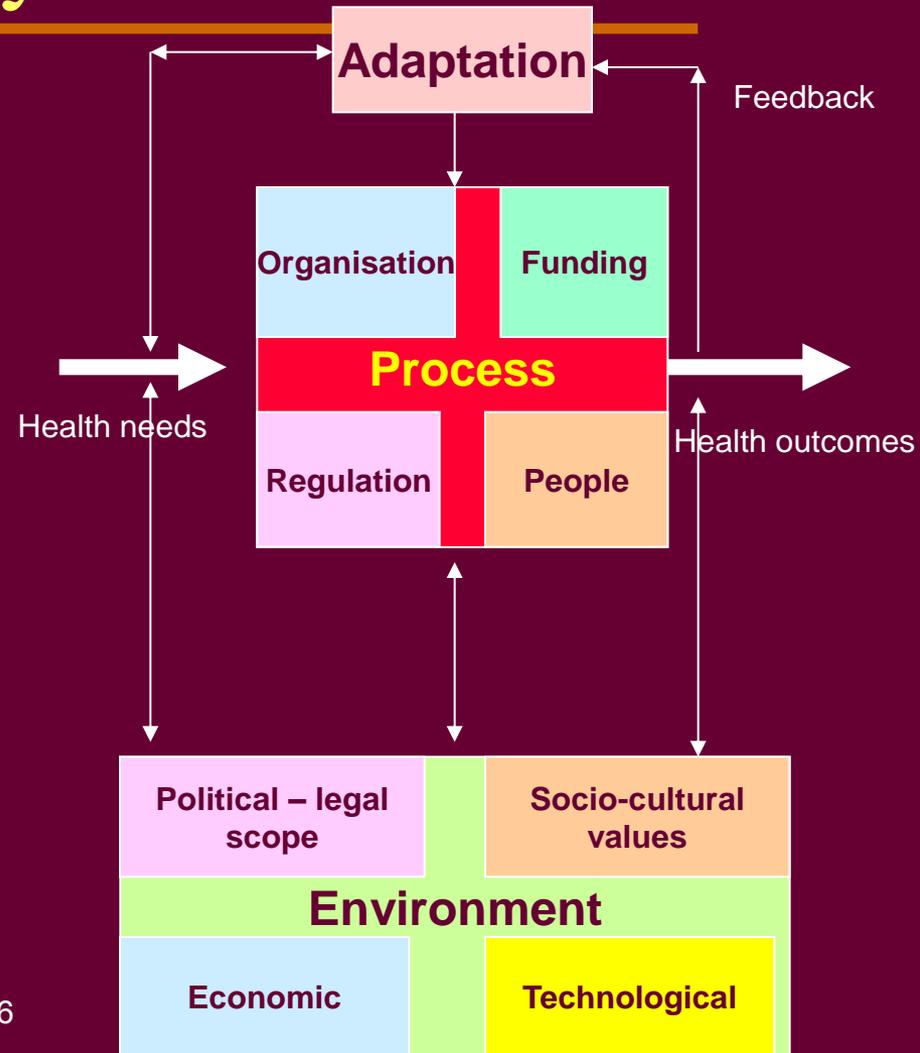
- ◆ The aim of this course is
 - To understand how health systems can be described, measured and and compared.
- ◆ Discuss how you would apply this
 - To evaluate your own system?
 - To learn lessons from other countries?
 - To consider future challenges?
 - To improve your ability as a manager?

Learning Sessions

- ◆ Day 1 Understanding healthcare systems
 - Describing healthcare systems
 - Comparing features of health systems
- ◆ Day 2 Measuring health systems performance
 - Measuring health status
 - Comparing health systems performance

1 Understanding Healthcare As a dynamic open system

- ◆ Open systems theory* helps us to think about health as a complex adaptive system
- ◆ Health systems both adapt to changing needs and outcomes and to the changing environment
- ◆ To understand part of the system you need to understand the whole



See for example "Perspectives of General Systems Theory"
Ludwig van Bertalanffy 1974 (published after his death)
And Katz and Kahn "The Social Psychology of Organisations" 1996

1 Understanding the System

- ◆ The Socio Economic Health environment
 - Scope
 - Values
 - Health needs and determinants
 - Resources
- ◆ The Healthcare System
 - Organization
 - Funding
 - People
 - Delivery process

1 Scope of healthcare

- ◆ Systems differ in scope e. g.
 - Public health and health promotion
 - Mental health
 - Dentistry
 - Long term health and social care
- ◆ Countries now evaluating scope e.g.
 - Norway – professional consultation
 - France – public consultation (failed)
 - Netherlands – public choice
 - UK - NICE – independent evaluation
- ◆ How was the scope of your healthcare decided?

1 Values: WHO Ljubljana European Charter on healthcare reforms 1996

◆ **Driven by values**

- Human dignity, equity, solidarity and professional ethics.

◆ **Targeted on health**

- Clear targets for health gain, protection and promotion of health.

◆ **People centred**

- Ensuring voice, choice and representation and responsibility

◆ **Focused on quality**

- Continuous improvement, including cost-effectiveness.

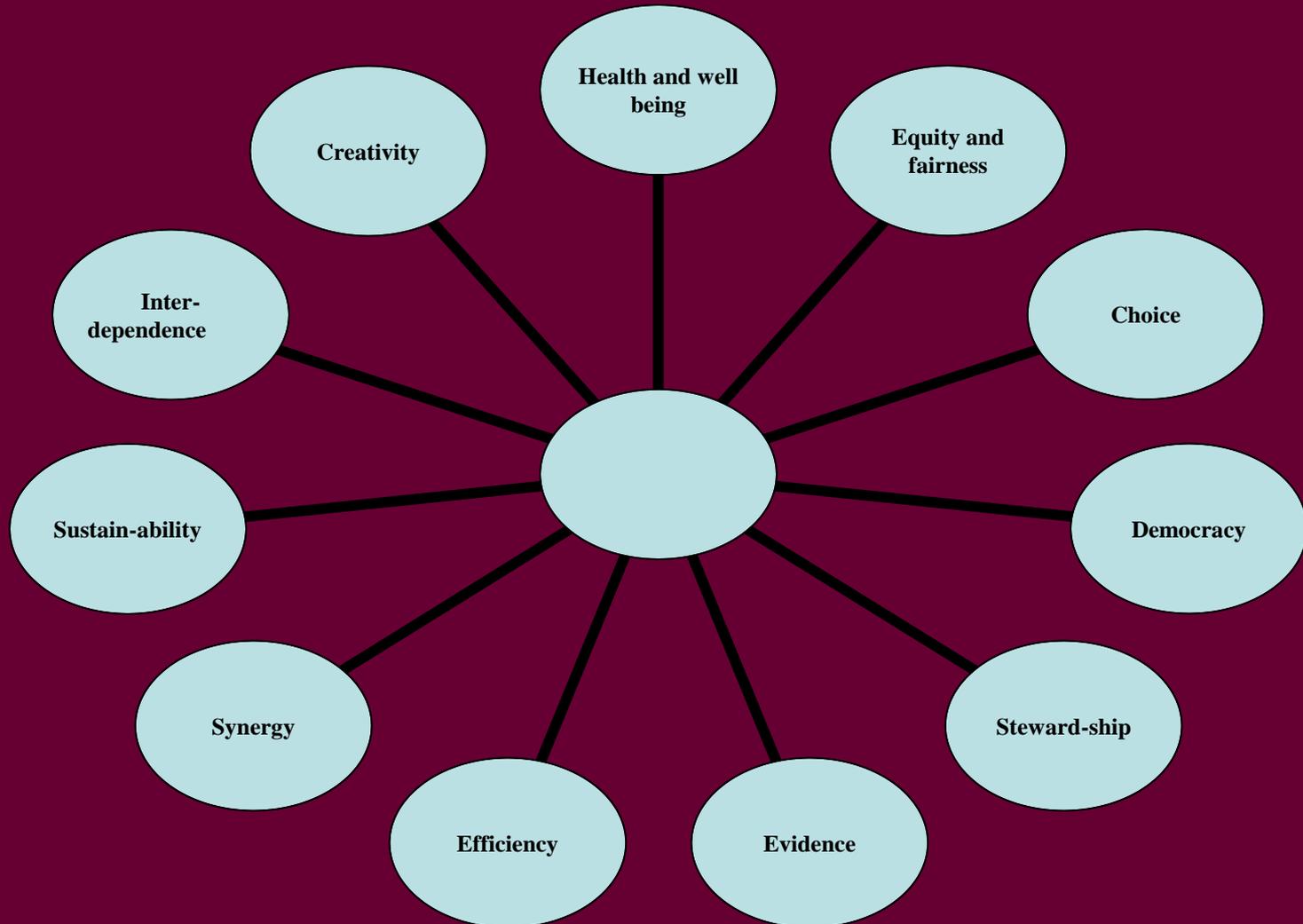
◆ **Based on sound financing**

- To ensure care can be delivered to all citizens sustainably.

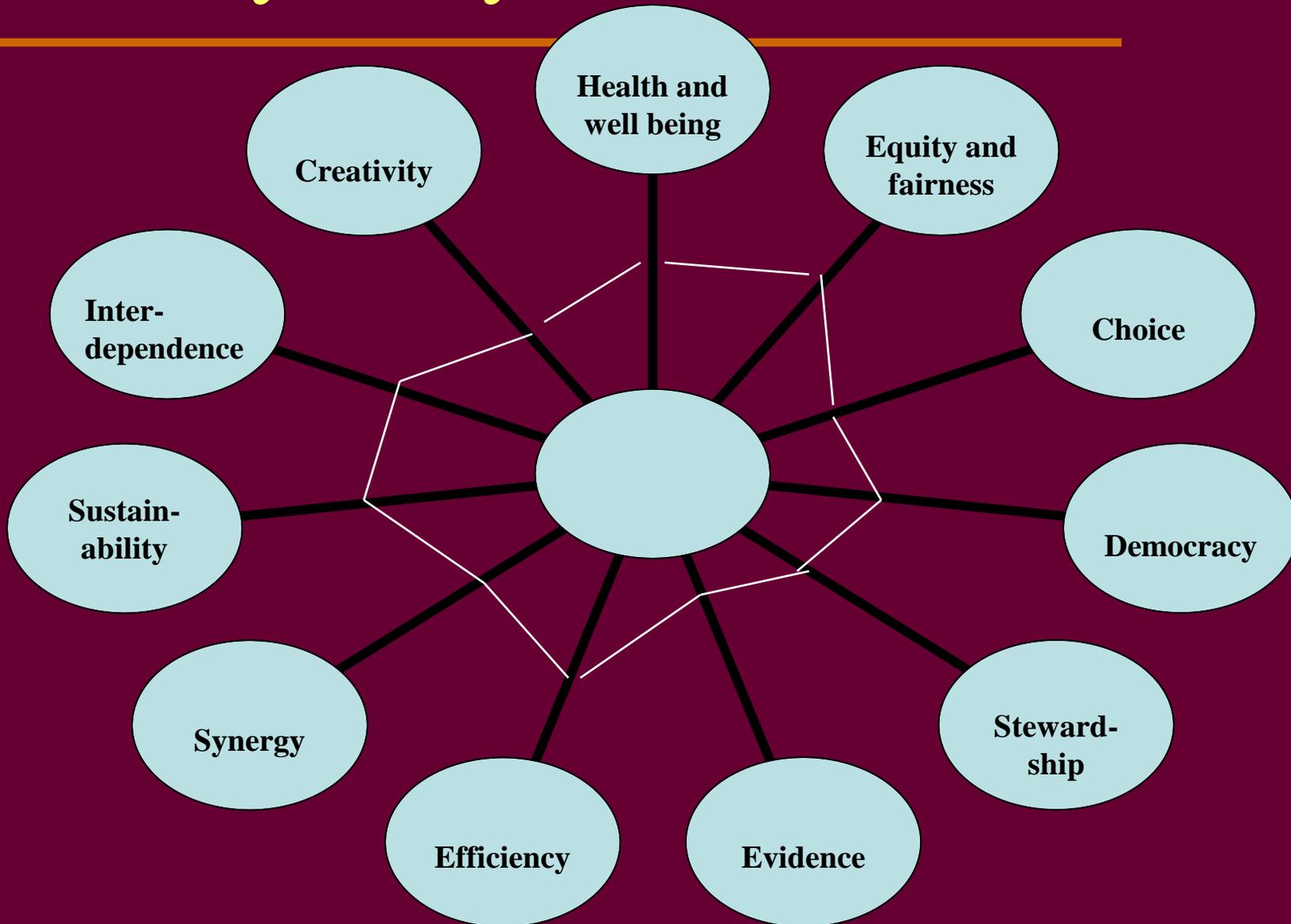
◆ **Oriented towards primary health care**

- Joint decision-making by the patient and care providers

1 Values: The Madrid Framework 2003



1 Describe your system values



1 Health Needs

- ◆ Demographic profile
 - Age profile, gender balance, ethnicity, birth rate
- ◆ Social determinants
 - Poverty, unemployment, housing, environment and?
- ◆ Lifestyles
 - Diet, activity, sexual health, alcohol, smoking, drugs
- ◆ Health status
 - Physical and mental illness morbidity /mortality
- ◆ What are the key features of your health needs?

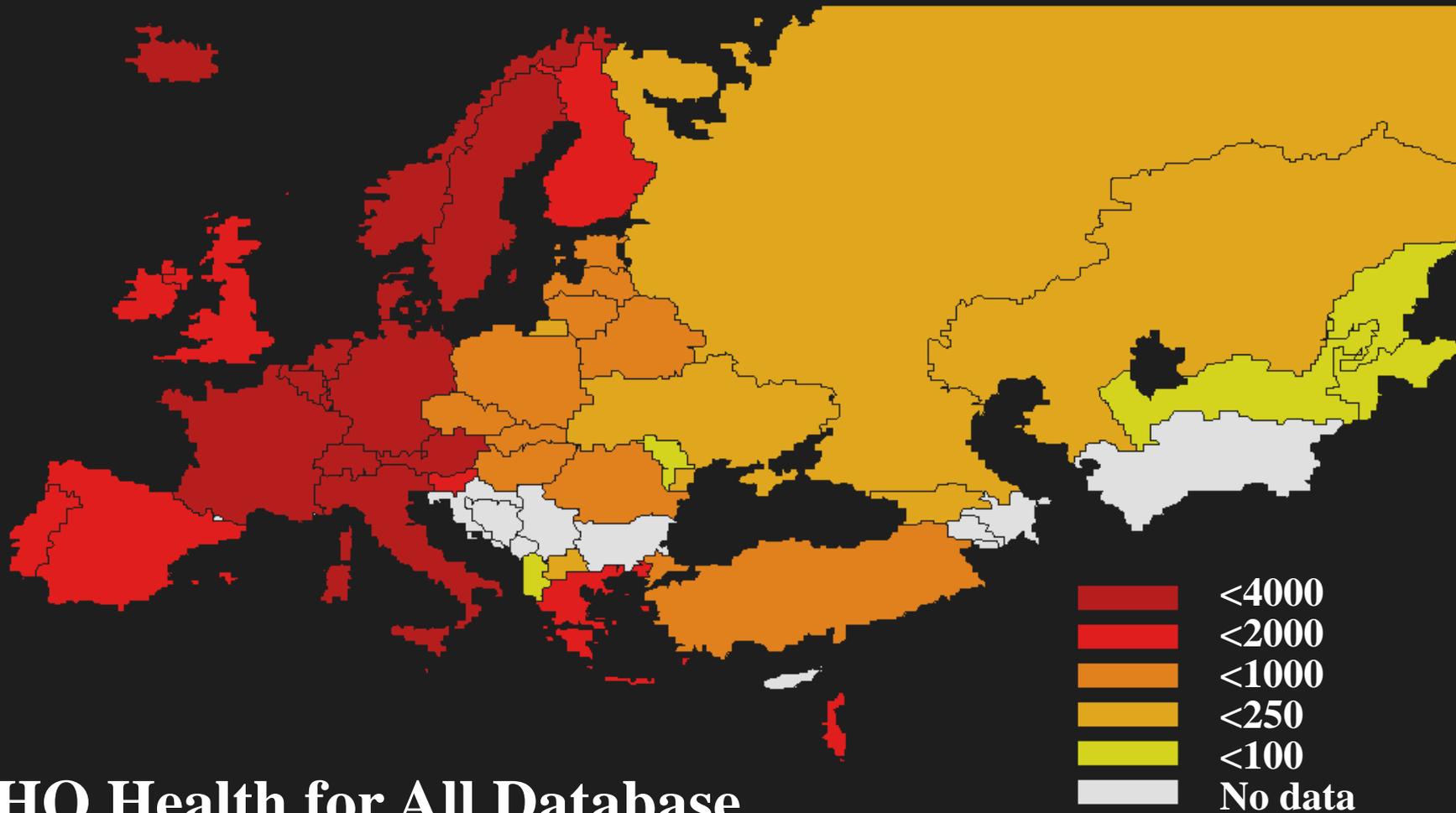
1 The Determinants of Health

FIGURE 10: The main factors for health systems re-design



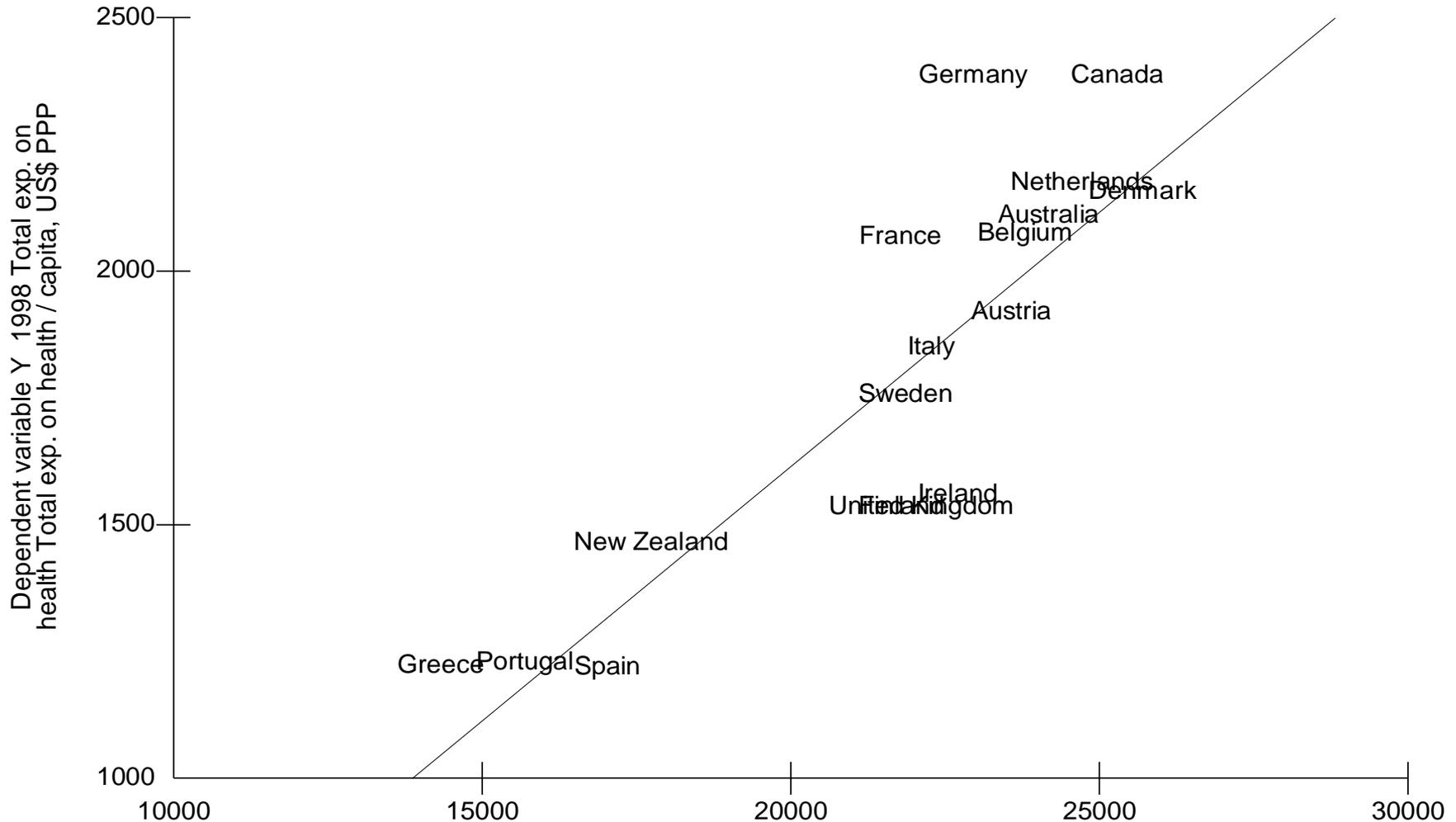
Dahlgren and Whitehead

1 Health Resources: Expenditure PPP US \$ 2000



WHO Health for All Database

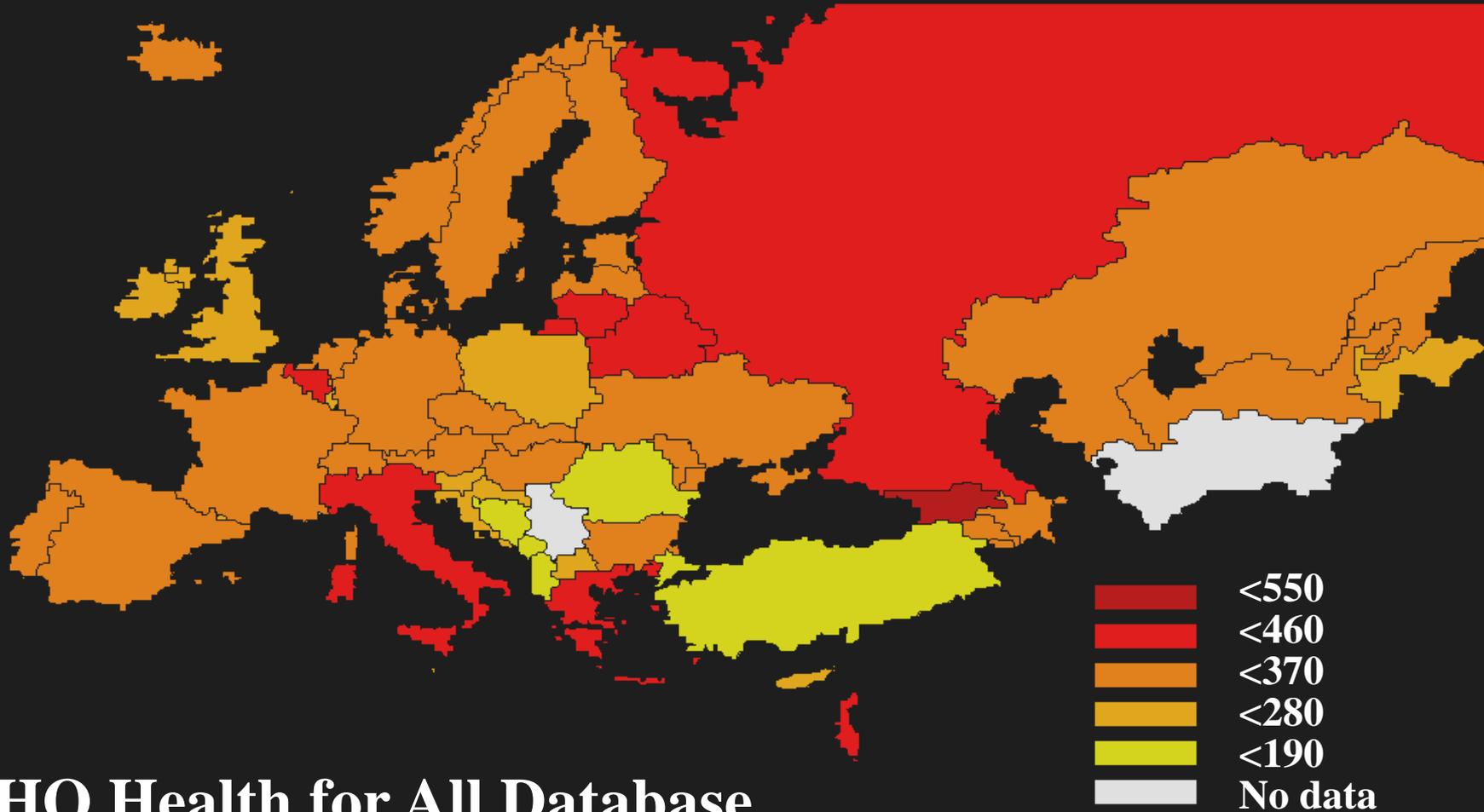
1 Health expenditure and wealth 1998



Correlation coefficient : 0.85
OECD HEALTH DATA 2001

Slope : 0.10
Constant : 201.6

1 Health Resources: Physicians per 100,000 2000



WHO Health for All Database

1 Health resources are not obvious

- ◆ In Europe health expenditure
 - Ranges from $< \$100$ to $> \$3000$ per head
 - Increases with GDP of countries
 - And with ageing of population
- ◆ But does not correspond to
 - Numbers of doctors
 - Numbers of nurses
 - Numbers of hospital beds
- ◆ Health outcomes better in high income countries
 - But within high income there is no correlation

1 Health Systems are complex

- ◆ Organization
 - Governance structure
 - Ownership
 - Regulation
 - Commissioning
- ◆ Funding
 - tax / social insurance/ private
- ◆ People –
 - public and professional roles
- ◆ Delivery process
 - patient/ professional



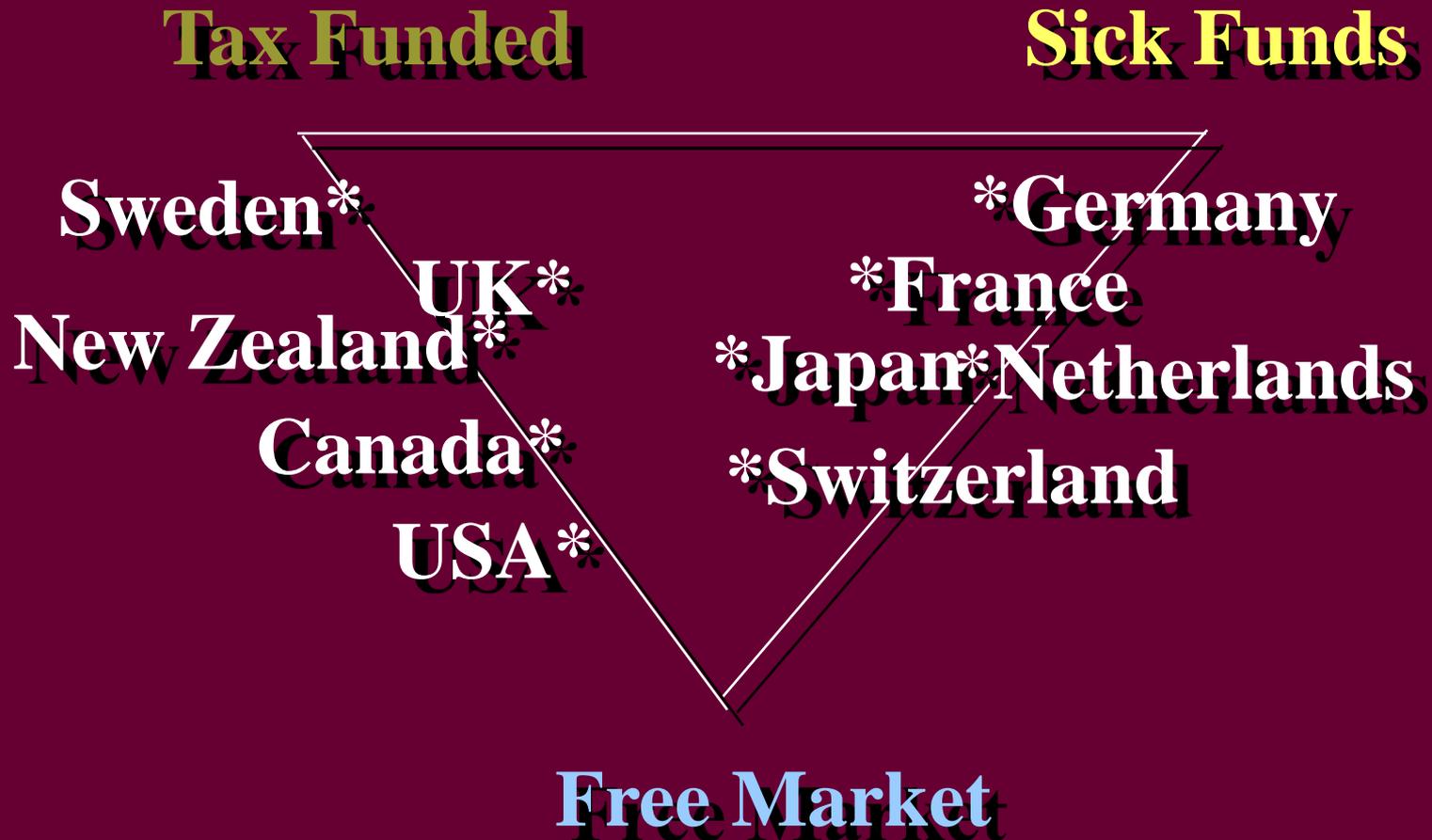
1 Healthcare systems are complex

- ◆ National and/or regional governance
- ◆ Public, private and charity sector ownership
- ◆ Commissioning
 - By social insurers e.g. Netherlands, Germany
 - By local authorities e.g. Sweden, Norway
 - By primary care agencies e.g. UK, Finland
- ◆ National and regional regulation
- ◆ Separate or integrated Public Health

1 Types of health funding

- ◆ Health systems are often described as:
 - “Bismarck” systems based on social insurance
 - “Beveridge” systems based on tax funding
 - “Open” based on private sector insurance
- ◆ But in practice funding is mixed and complex
 - In poor countries self pay is often a main source as fees or as “gratitude payments”
 - In the US Government Medicaid and Medicare is more than UK Government spend per capita but 17% of people have no health insurance

1 Health funding is usually mixed



1 Understanding Health Systems: People and professionals

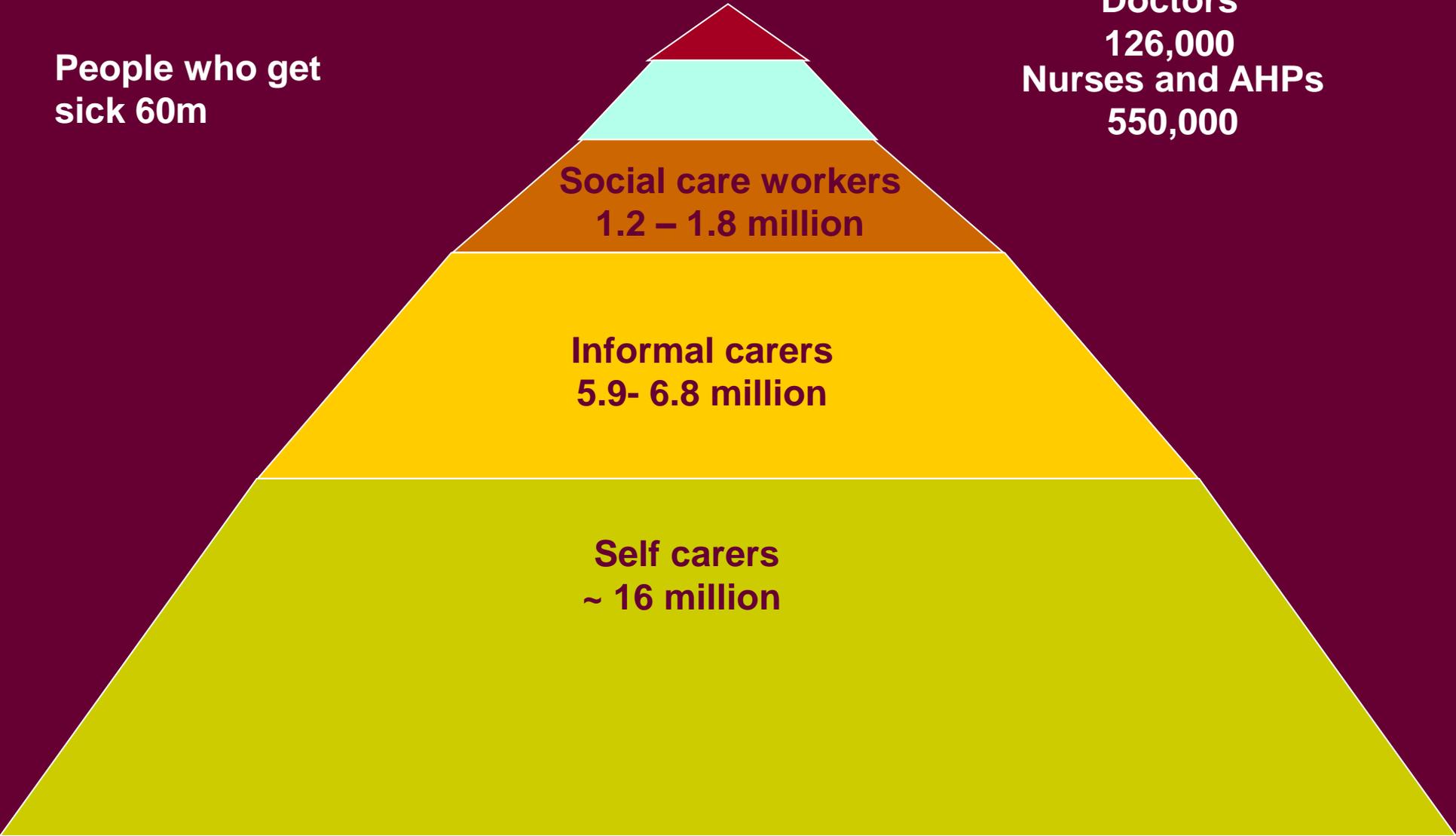
People who get
sick 60m

Doctors
126,000
Nurses and AHPs
550,000

Social care workers
1.2 – 1.8 million

Informal carers
5.9- 6.8 million

Self carers
~ 16 million



1 Professional roles

- ◆ Public health specialist and public health nurses
 - Advisors, regulators,
- ◆ General Practitioners
 - Clinic based, gatekeeper, prevention focus
 - Family medicine or separate specialists
- ◆ Nursing practice
 - Degree or diploma based
 - Advanced nursing practice
 - Management and clinical roles

1 Delivery of treatment and care

- ◆ Support for self care and informal care
 - E.g. Public health nurses Sweden, NHS Direct UK
- ◆ Access to treatment and care
 - E.g. GP gatekeeping Netherlands or direct access Germany
- ◆ Continuity of care vs episodic care
 - E.g. Denmark vs France
- ◆ Integration of primary, secondary, tertiary care
 - E.g. Norway vs Italy
- ◆ Use of information and technology
 - E.g. Finland

1 Understanding Health Systems:

Exercise to compare systems

- ◆ Consider the reports available at
 - <http://www.euro.who.int/countryinformation>
- ◆ Pick a country and summarise the main features of the health system.
- ◆ At this stage do not consider health outcomes just describe the system.
- ◆ Working in groups use the items noted in the previous slide to compare different systems

Country Reports

- ◆ Russian Federation English Russian
- ◆ Kyrgyzstan English Russian
- ◆ Moldova English Russian
- ◆ Ukraine English Russian
- ◆ Azerbaijan English Russian
- ◆ These are all “Health in Transition” summary reports from the WHO European Observatory
- ◆ Plus India WHO Health System Profile
 - India

1 Feedback

- ◆ Groups should summarise the main features of the systems and point out potential issues and potential for system reforms.
- ◆ Note that it should be possible to download relevant “Health System in Transition” reports in Russian. These are rather long so it would be better for groups to read papers in advance.

Evidence for Health Policy

- ◆ The European Health Observatory
 - <http://www.euro.who.int/observatory>
 - Reviews of health systems
- ◆ The WHO Euro Health Evidence Network
 - <http://www.euro.who.int/HEN>
 - Reviews of evidence on health policy
- ◆ Both in Russian and other WHO languages
- ◆ As a professional health manager
 - Your role is to take a wider perspective and
 - To join a global knowledge network

1 Understanding health systems: Reflections

- ◆ Our aim was
 - “to understand how to describe health systems”
- ◆ Has our session helped?
- ◆ Do you have further questions?
- ◆ How has this changed your thinking?

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2 Measuring Health Systems

- ◆ Our aim is to understand how to measure and compare health system performance and health status
- ◆ Discuss how you would apply this
 - To evaluate your own system?
 - To learn lessons from other countries?
 - To consider future challenges?
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2 Measuring health performance

- ◆ Start with the objectives of the system e. g.
 - Health improvement
 - High quality services
 - Health equity and public demand
 - Affordability and efficiency
- ◆ Select relevant comparator systems
- ◆ Generate comparative measures based on:
 - European Health Observatory descriptions
 - WHO Health for All database
 - OECD Health Database

2 Measuring Health

- ◆ What is “health”?
 - a state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity.
- ◆ How is it measured for a population?
 - Life Expectancy (LE) at birth or
 - Health Adjusted Life Expectancy (HALE) : years lived in reported good health over the lifespan.
- ◆ **Discuss what this table tells you....** *Source: www.statistics.gov.uk*

	Women		Men	
Year	1981	2001	1981	2001
LE	76.8	80.4	70.9	75.7
HALE	66.7	68.8	64.4	67.0
%	86.9	85.6	90.0	88.5

2 Measuring health outcomes and status

- ◆ Health outcomes often measured as QALYs
 - Quality adjusted life years added i.e.
 - Number of years of life saved x quality of life adjustment
 - Quality of life measured by perception of patients
- ◆ Burden of health measured as DALYs
 - Disability adjusted life years lost to death and illness
 - Life years lost in comparison with Japan (LE 81)
 - Adjustments valued by panel of health officials
 - Health status measured as Disability Adjusted Life Expectancy

2 QALYs and DALYs

◆ QALYS

- Depends on who is asked
- Depends on when asked
- Inconsistent for conditions
- Differs between countries
- Weighted for age
- Measures improvement

◆ DALYs

- Set by international panel
- Does not reflect patients
- Consistent for conditions
- Same across countries
- Weighted for age
- Measures burden

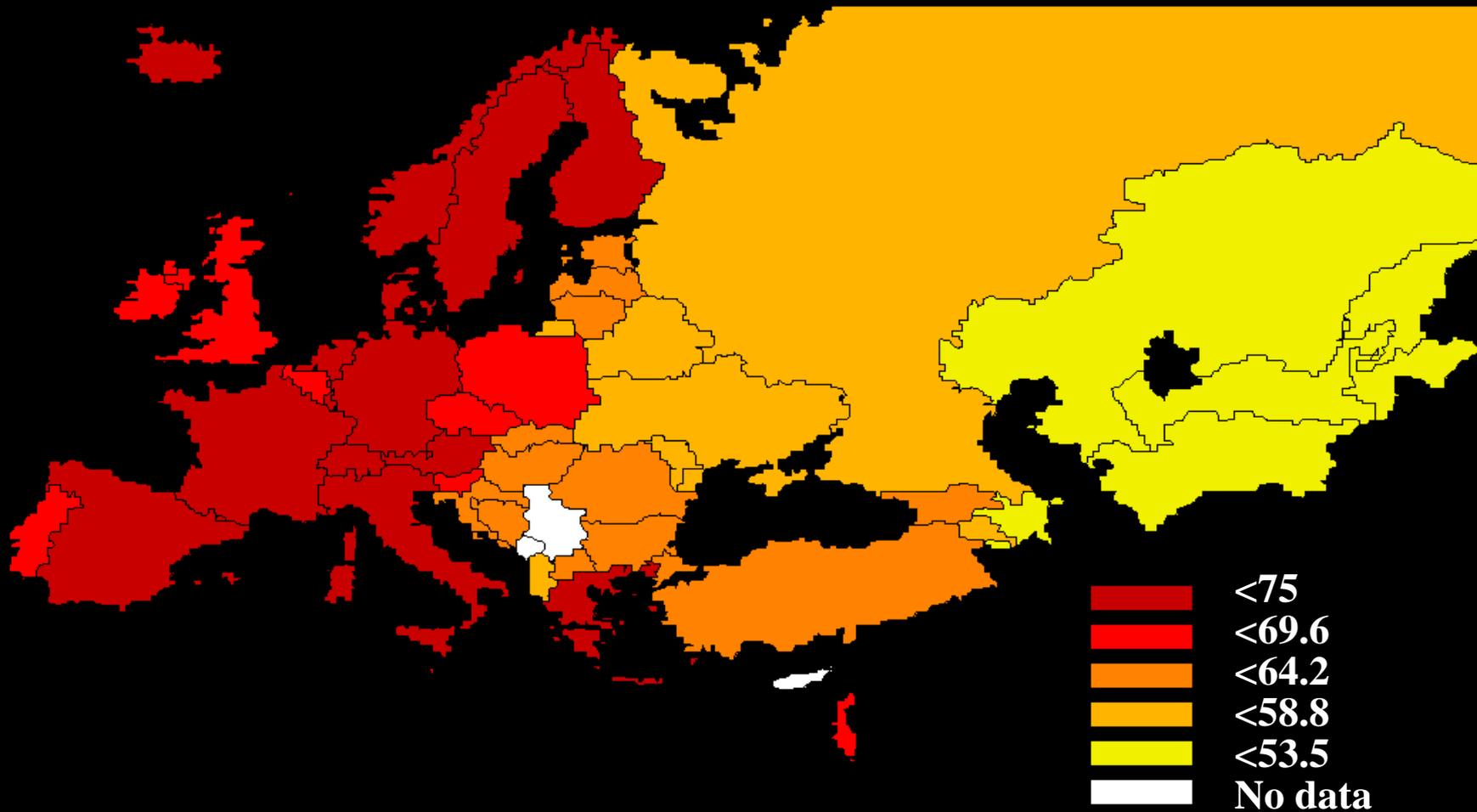
- ◆ E.g. a treatment enables a patient to live for ten years with a quality of life of 50% this is 5 QALYs this reduces the burden of disease by ~ 5 DALYs

2 Examples of costs per QALY

For treatments

Intervention	Cost per QALY
Pacemaker for atrioventricular heart block	£700
Hip replacement	£750
Valve replacement for aortic stenosis	£900
CABG (severe angina; left main disease)	£1 040
CABG (severe angina; triple vessel disease)	£1 270
CABG (moderate angina; left main disease)	£1 330
CABG (severe angina; left main disease)	£2 280
CABG (moderate angina; triple vessel disease)	£2 400
CABG (mild angina; left main disease)	£2 520
Kidney transplantation (cadaver)	£3 000
CABG (moderate angina; double vessel disease)	£4 000
Heart transplantation	£5 000
CABG (mild angina; triple vessel disease)	£6 300
Haemodialysis at home	£11 000
CABG (mild angina; double vessel disease)	£12 600
Haemodialysis in hospital	£14 000

2 DALE European Region 2000



2 Discussion

- ◆ What are the implications of the gap in DALE
 - Between CES countries and EU
 - Between different CES countries
- ◆ How can this gap best be reduced?

2 A comparison of 10 systems

- ◆ Ten Countries:
 - Canada C
 - Switzerland CH
 - France F
 - Japan J
 - Germany G
 - Netherlands N
 - New Zealand NZ
 - Sweden S
 - United Kingdom UK
 - United States US
- ◆ Each considers themselves “best in the world”

2 Measuring against values

◆ Ljubljana Charter

- Values: equity, dignity
- Health targeted
- People centred
- Quality
- Affordable
- Primary care focus
- (Health promotion)

◆ Criteria

- Access and use
- Health outcomes
- Patient perception
- Availability staff equipment
- % of GDP, efficiency
- % Spend on primary care
- % Spend on prevention

2 Measures of access and equity

- ◆ Coverage of public system
- ◆ Geographic and social equity
- ◆ Extent of co-payment



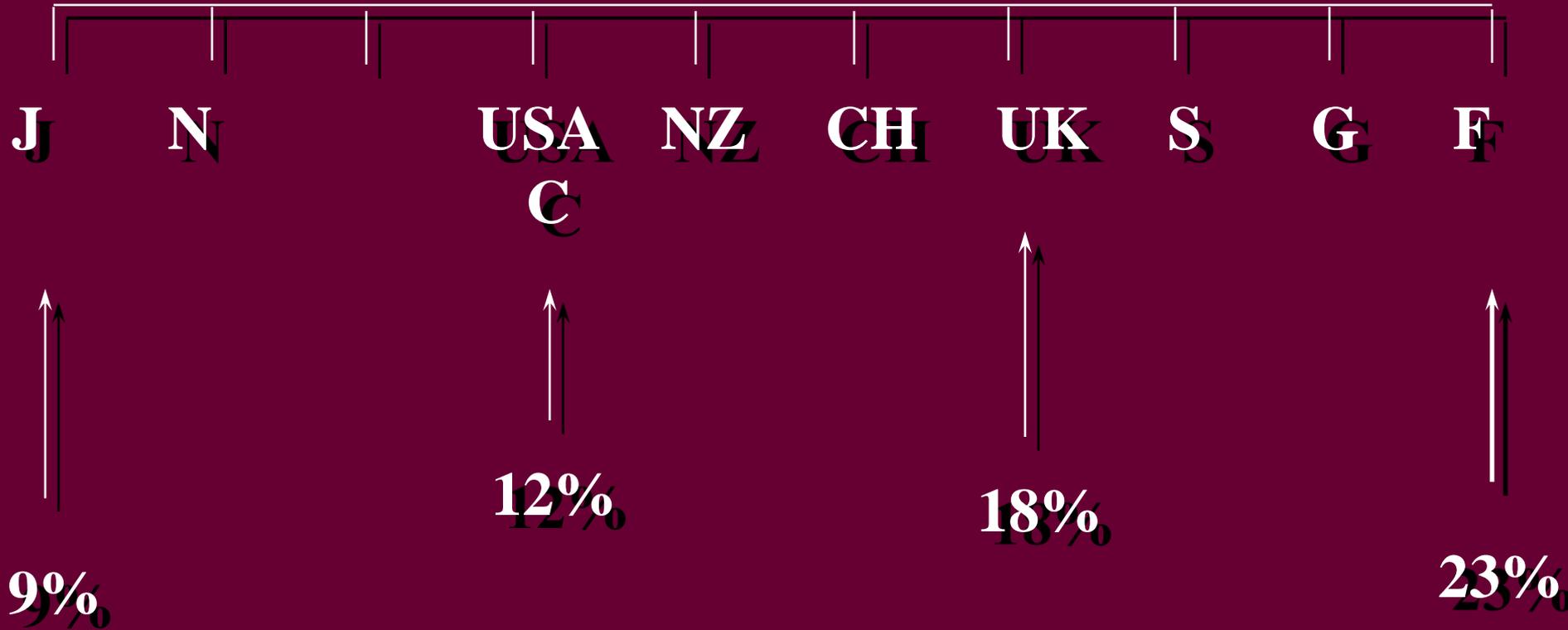
2 Primary Care Consultation Rates

How many times a year do people visit their doctor



2 Hospital use

How many people receive hospital treatment per year



2 Health targets:

Health Promotion Focus

- ◆ Sweden long term focus on health promotion
- ◆ Switzerland 1.2% of health spend
- ◆ UK 1.1 % of spend, high vac & imm rates
- ◆ Japan rapidly expanded public health nurses
- ◆ Canada also high vacc & imm rates
- ◆ Netherlands 1% of spend
- ◆ Germany 0.8% of spend
- ◆ France 0.5% of spend
- ◆ New Zealand ?
- ◆ USA ?

2 Health outcome measures

- ◆ **Infant mortality rate**
- ◆ **Life expectancy at birth of women**
- ◆ **Potential years life loss (PYLL)**
 - ◆ **Men < 70 ischaemic heart disease**
 - ◆ **Women < 70 malignant neoplasms**
 - ◆ **Men < 70 suicide**
- **Rate of improvement of these since 1990**

2 Health Outcomes

Worst
Outcomes

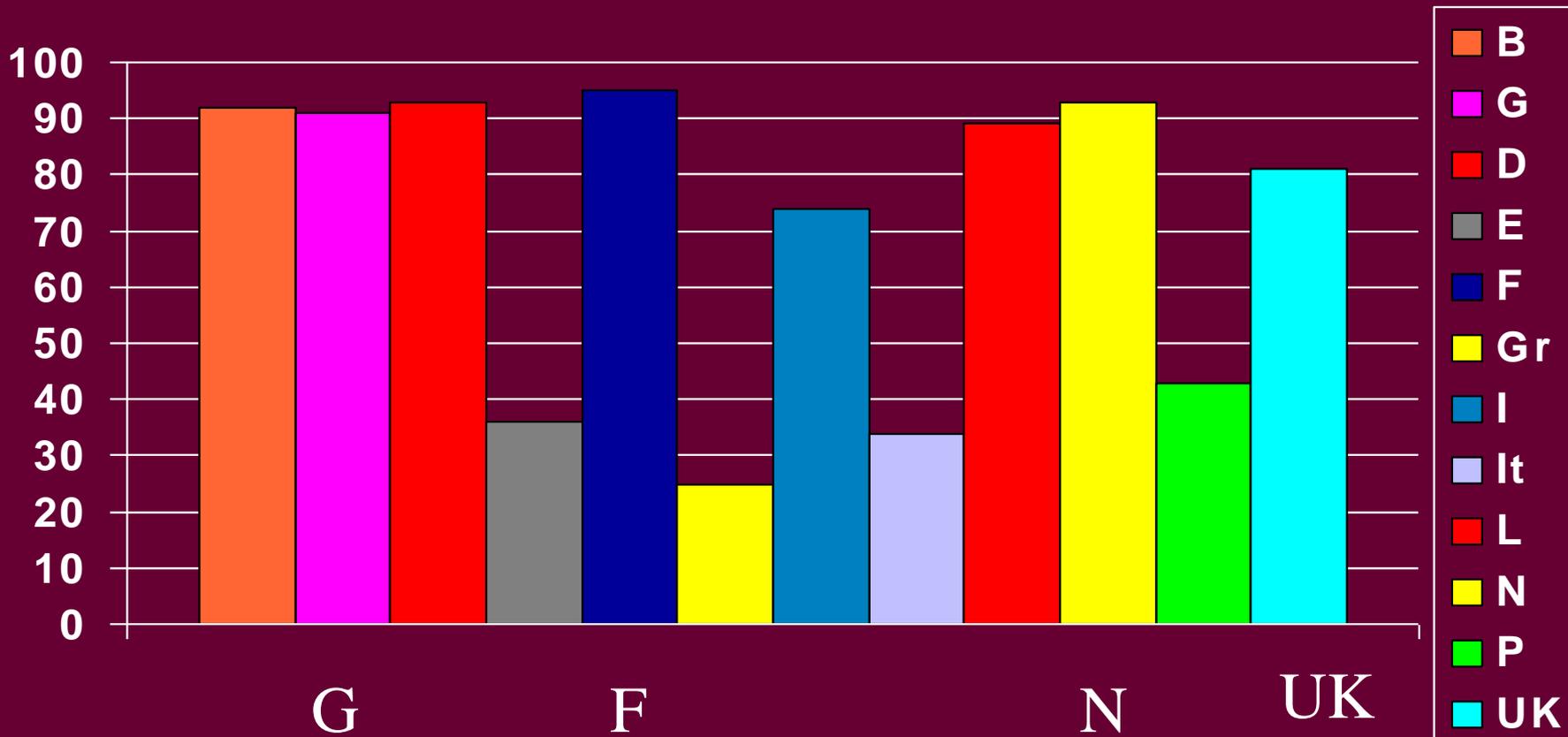
Best



Improvement



2 Patient perceptions:.....do you think the quality of health care is good.....



2 More opinion polls on health.....

◆ Percent of consumers reporting very satisfied

– Canada 75%

– USA 47%

◆ Percent respondents saying fundamental changes are needed 1990

– Canada 42%

– Germany 48%

– UK 69%

– USA 89%

2 Resources and Staffing

How well resourced are the health services ?

- ◆ Typical indicators of different types of resource
 - ◆ Acute beds per 1000
 - ◆ Nurses per patient
 - ◆ Physician per 1000
 - ◆ Primary care Doctors per 1000
 - ◆ Computerised tomography scanners per 1000
- ◆ Resource levels were compared as high medium and low
- ◆ An overall order was established

How long do patients wait for services ?

2 Quantity and quality of services

Facilities and staff

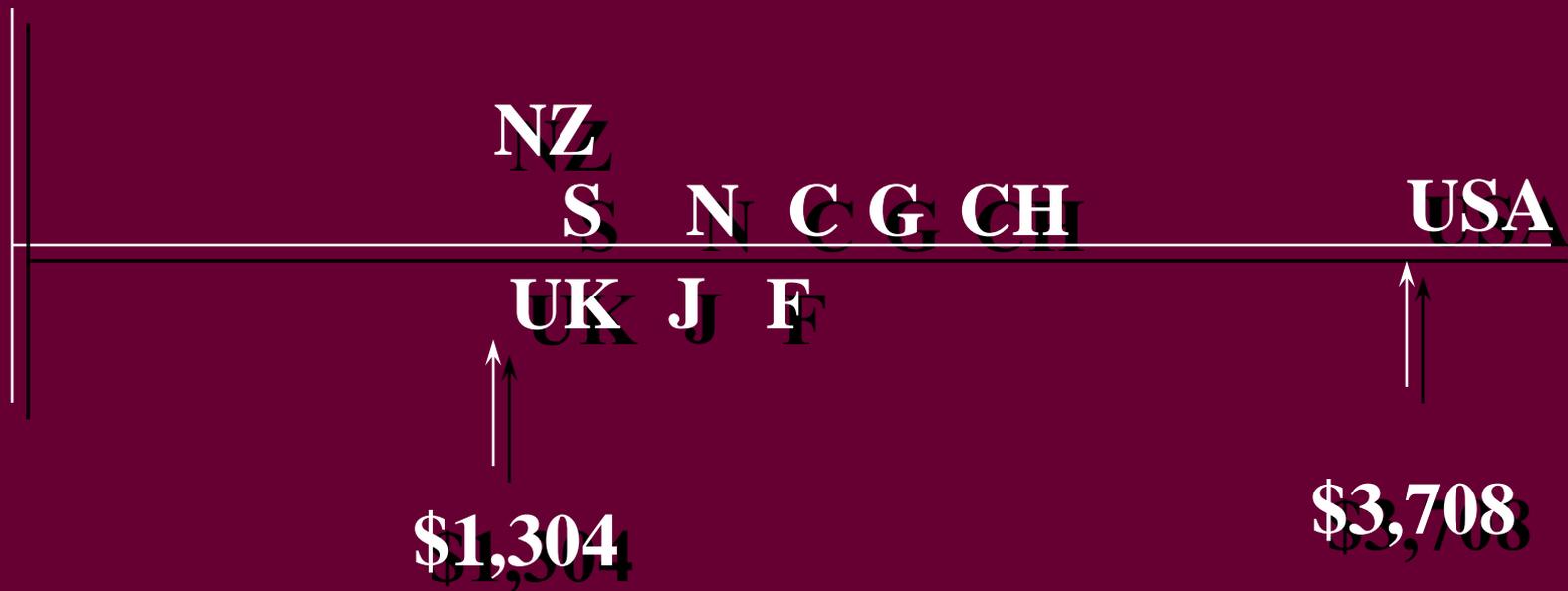
UK NZ N S C F J USA G CH

Waiting times

UK NZ N S C F J USA G CH

2 Affordability

Expenditure on Health per capita in \$ PPP 1996



2 Efficiency: Primary care

Patient services per doctor

C F USA UK N J

3,800

7,600

9,200

Control of medicines

F J USA C G CH UK,S,NZ

\$335 per cap

\$217

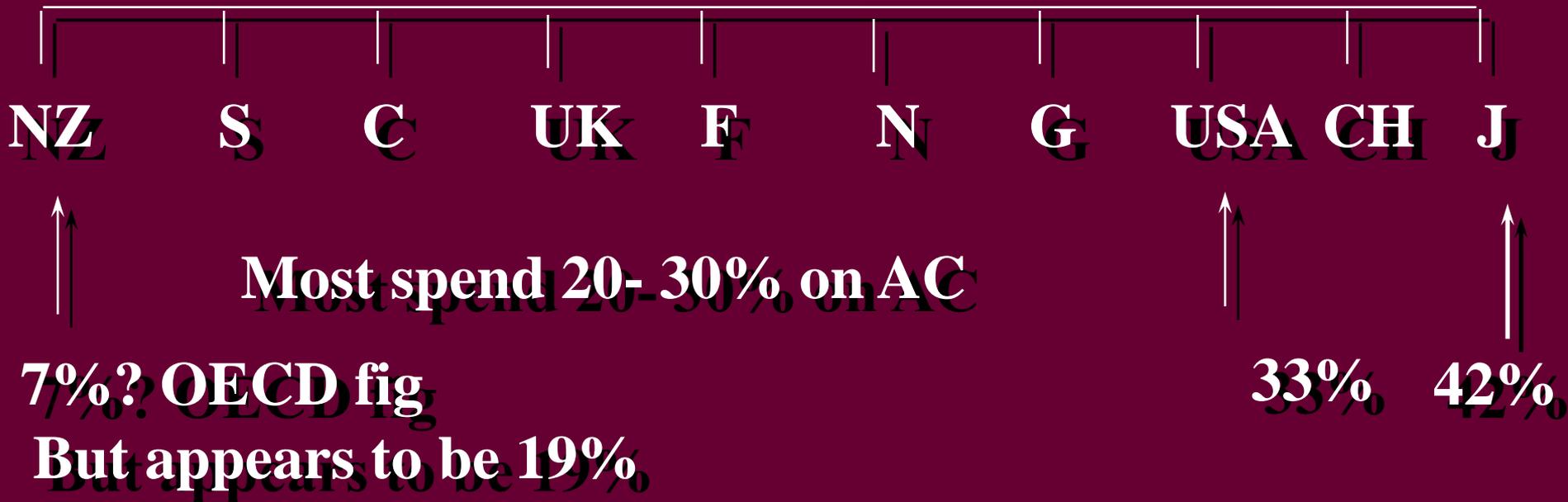
2 Efficiency: Hospital Bed Turnover

How many patients pass through the average bed ?



2 Primary care focus

Ambulatory care spend %



2 and the winner is.....

◆ Switzerland

has many excellent qualities but very expensive

◆ Japan

shows good outcomes and coverage but it is inefficient and costs are increasing

◆ On balance the best health system is

Sweden

◆ But problems in Primary Care and motivation of staff

2 But that is just my point of view

- ◆ This is purely my opinion
- ◆ What would you conclude
- ◆ What else would you look at
- ◆ What is most important

- ◆ Remember the main point is to learn from comparisons
- ◆ Look at the OECD health data base
- ◆ And my report on systems comparison



2 A view from WHO

- ◆ Methodology developed by Chris Murray of WHO
 - 25% Health Outcomes in Disability Adjusted Life Expectancy
 - 25% Equity of child survival
 - 12.5% Responsive to patients*
 - 12.5% Fair distribution of responsiveness**
 - 25% Fairness of financial contribution

== Health system attainment

- * Estimates only
- ** Same for high income countries



2 WHO System Performance Measures

◆ Performance for Health

= Actual DALE/ DALE achievable for given level of expenditure and development*

◆ Performance overall

= Actual system attainment/ Sa achievable for level of expenditure and development*

- * Measured by educational achievement



2 WHO rankings of health services

	F	J	Ne	UK	CH	S	G	C	US	NZ
Outcome	3	1	13	14	8	4	22	12	24	31
Equity	12	3	15	2	10	28	20	18	32	16
Responsive	16	6	9	26	2	10	5	7	1	22
Dist Resp	3	3	3	3	3	3	3	3	3	3
Fair co-pay	27	8	20	8	38	12	6	17	54	23
System attain	6	1	8	9	2	4	14	7	15	26
Perform H	4	9	19	24	26	21	41	35	72	80
Perform O	1	10	17	18	20	23	25	30	37	41

2 And the WHO winners are

- ◆ Japan for system attainments
(followed by Switzerland)
- ◆ Oman for performance on health
(followed by Malta and Italy)
- ◆ France for overall performance
(followed by Italy)
- ◆ Performance ranking depends
upon education achievement
measure



2 Where did the Russian Federation come?

- ◆ The WHO system performance report of 2000 upset nearly everyone, scores for the Russia and India were:

	Russia	India
– Health Outcomes	91	134
– Health equity	69	153
– Responsiveness	69	108
– Dist responsiveness	86	127
– Fair copayment	185	42
– System attainment	100	121
– Health performance	127	118
– Overall Performance	130	112

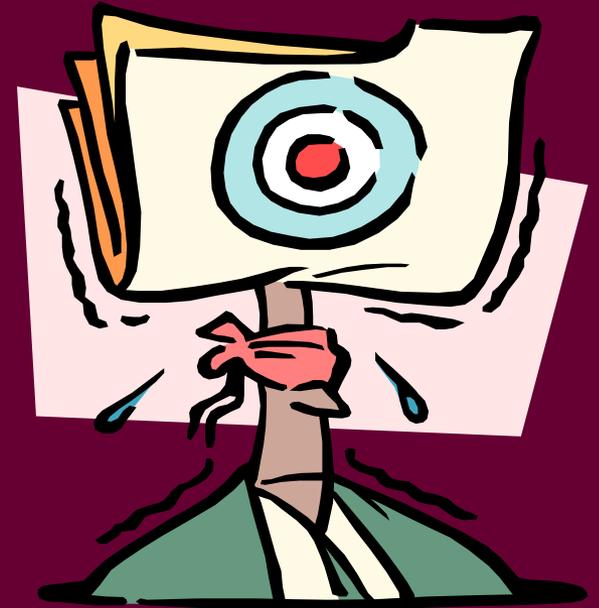
- ◆ Discuss why you think the Russian Federation came 130th out of 191 countries and India came 112th

Other Countries. Performance

- ◆ You can examine data for other countries
 - In English and Russian
- ◆ These are the statistical annexes to the WHO Report 2000 Health Systems Improving Performance

2 Comparisons are risky

- ◆ Understand the systems
- ◆ Set clear criteria
- ◆ Measure what is important
- ◆ Ordinal, numbers or weights
- ◆ Do not trust statistics alone
- ◆ Statistics have errors and omissions
- ◆ They are only a starting point
- ◆ Result depends on your point of view



2 Exercise to compare performance

- ◆ Try to compare maternal child health services
- ◆ For 3 relevant comparator countries
 - Review the European Health for All Database
 - At <http://data.euro.who.int/hfad/>
 - Select parameters and produce a brief report

2 Feedback

- ◆ Groups should summarise their conclusions and advise on lessons from better performing systems to advise those performing less well.
- ◆ It should be possible to download statistical measures for relevant countries in Russian.
- ◆ However, this is not a simple process because often data is missing and it is important to understand definitions so it would be good to give student teams the opportunity to do this in their own time.

2 Measuring health system performance: Reflections

- ◆ Our aim was
 - “to understand how to measure and compare health system performance and health status”
- ◆ Has our session helped?
- ◆ Do you have further questions?
- ◆ How has this changed your thinking?