What is a health system?

“All the organizations, institutions and resources that are devoted to producing health actions”

“A health action is defined as any effort, whether in personal health care, public health services, or through intersectoral initiatives, whose primary purpose is to improve health”

(WHO 2000)
Boundaries of the health system

Challenges for Health Systems

- Definition of the objectives of a health system
- **Different groups of ‘clients**
  - patients; family members
  - Funding Agencies; social partners, managers
  - health professionals: physicians, nurses, ...
- **Big Challenges** - contradictory ??
  - Need
  - Quality
  - Equity
  - Cost
Definition of Health

• The essential objective of the ‘business activity’
  – unclear, not well defined & not shared by all.
• Definition of a global measure of success ??
• The meaning of ‘health’
  – mortality and morbidity
  – WHO definition:
    • “Health is a state of complete mental, physical and social well-being and not merely the absence of disease or infirmity.”

The design of a health system

• Has never been ‘designed’ as such
  – evolved historically
• Is influenced by ‘values’,
  – e.g. US vs. Sweden – ‘European Values’
• Great difficulty of the ‘re-design’
  – multiples interests - and interest groups
• Acceptance of a series of defects in the ‘big design’,
  – minimize opposition.
The 4 big principles

- The health system has to cover all the needs - **NEED**
- All have to get the best quality service - **QUALITY**
- The system has to be equitable - **EQUITY**
- The costs have to be controlled - minimized - **COST**

**NEED**

- Need - capacity to benefit from the health service.
  - necessary condition = existence of an effective treatment
  - definition adapts to existing supply
  - increase of the utility of a given service ➔ increase need
    - Impossible to reduce the need with an increased offer of services
    - = Supply induced Demand
- Need at the appearance of illness
  - depends on the definition of the illness, which is defined by the system.
  - This definition excludes ‘health promotion ’ or preventive activities.
- Need - subject to expert judgment
  - agent - theory
**Needs vs. Demand vs. Supply**

Implications:
- health promotion / education
- allocation of resources
- Private / Public Mix – public vs. private roles!
  1. Not needed: Plastic surgery
  2. Not demanded: Prevention; e.g. smoking
  3. Not supplied: e.g. waiting lists
  4. Perfect state / goal
     - Education, rise the right Demand
     - Adjust Supply to Needs

**QUALITY**

Co-existing multiple definitions
- Quality as Art
- Quality as satisfaction of
  - Needs (Agent / physician defines)
  - Expectations (patient defines)
  - Clinical guidelines (independent definition)
- Predicted level of uniformity and reliability
  - low cost and adjusted to the market
- Meet specifications
- Utility for what is required
Preconditions for the judgment of Quality

- Existence of standards to measure
- Knowledge & understanding
  - aim/objective of a good or process
  - specification defined before setting of standards
- Evaluation quality of a complex service
  - necessary to identify its dimensions
- Judgement quality
  - Necessary to know / experience good or process.

EQUITY

Definition of Equity - limited resources!

“All persons should have the same possibilities to access to available health services in a given moment.”

- Equality in the access - geographical equality
- Not separated by class - gender - race - talent - age - ....
- Prioritised access depending on the need
  - who defines the level of need?
  - Needs comparable - can they be treated as equal?
- Compared to other basic needs (National Food Service?)
- Equity for different risks - related to lifestyle?
Different versions of Equality

General equality
– access to the medical services for all
  • without any additional consideration

Prioritisation in equality
– Priority access depending on ‘clinical needs
  • i.e. based on medical aspects
– Priority access depending on general need
  • i.e. global vision: ‘the most needing’

Equity: Some hypothesis (& questions)

• Health services are a special case
  – should be treated in a special way
  – different from other ‘good things’ in life.
    ➔ What is special is ‘health’ not health services.

• The illness does not respect the persons
  ➔ Health is not always a questions of ‘luck’
  ➔ one can influence the probability of health risks
  ➔ Personal Responsibility (vs. the public one)
COST

Chosen use is the best of all possible uses of resources

"the best care within the available resources"

Cost of a health system

• Monetary cost
  • price / cost of service provision.
• Cost as a sacrifice (opportunity costs)
  • cost of using resources compared to the best which could have been
done with this resources otherwise
• Not accounted costs
  • Waiting times, pain, transport, etc.

What is the product of a health system?

• The product is health - definition?
• How to measure a unit of health?

"Health is priceless, but health systems have a high cost."

COST: Health Expenditure as % of GDP

The Economist, 24/6/95
Health expenditure as a percentage of GDP

COST: Health Expenditure as % of GDP

OECD, 2002
Composition of world spending on health (2000)

- Social insurance: 24%
- Taxes: 31%
- Private insurance: 25%
- Out-of-pocket: 16%
- External funds: <1.00%
- Other: 4%

Relation between health services and health status

Life Expectancy in different demographic regions

- Western Countries
- China
- India
- Africa Sub-Saharan

World Development Report, 1993
Relation between health services and health status

Evolution of Life Expectancy as function of per capita income

Technological advances

World Development Report, 1993

Relation between health services and health status

Deviation over the predicted Life Expectancy in years

Deviation over the predicted Health Expenditure as % of GDP

World Development Report, 1993
## Health Economy

### Table: Health Expenditure

<table>
<thead>
<tr>
<th>Demographic Region</th>
<th>Total health expenditure (billions of dollars)</th>
<th>Health expenditure as percentage of world total</th>
<th>Per capita health expenditure (dollars)</th>
<th>Ratio of per capita spending (1999-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Established market economies</td>
<td>1405</td>
<td>87</td>
<td>63 (billions of dollars)</td>
<td>1880</td>
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<tr>
<td>Formerly socialist economies of Europe</td>
<td>49</td>
<td>3</td>
<td>71 (billions of dollars)</td>
<td>142</td>
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<tr>
<td>Latin America</td>
<td>47</td>
<td>3</td>
<td>60 (billions of dollars)</td>
<td>105</td>
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<tr>
<td>Middle Eastern countries</td>
<td>39</td>
<td>2</td>
<td>58 (billions of dollars)</td>
<td>77</td>
</tr>
<tr>
<td>Other Asia and Oceans</td>
<td>42</td>
<td>2</td>
<td>39 (billions of dollars)</td>
<td>51</td>
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<td>India</td>
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<td>China</td>
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<td>World</td>
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<td>100</td>
<td>60 (billions of dollars)</td>
<td>329</td>
</tr>
</tbody>
</table>

World Development Report, 1993

## Design of a Health System

### Objectives of the system – a HEALTHY Population

**Indicators:**

- Health indicators (WHO)
- Socio-demographic indicators
- Life Expectancy at different ages, Mortality, Infant Mortality.
- Morbidity indicators (incidence and prevalence of health problems)
- Indicators on sick leave
- Indicators of the environment
- Life styles
- Indicators on available resources
- Indicators on the utilisation of health services
Imagine an experiment in which people in different countries and at different times throughout history were asked to draw a picture of a hospital...

Images of a “hospital”

Important differences
Continuous change
The earliest hospitals

- Where nature took its course and patients waited “patiently”

Asepsis and anaesthesia
Changes in health and health care

• Changing health
  – The decline in some infectious diseases
  – … but the (re) emergence of others

• Changing health care
  – Obstetric forceps changing childbirth

• Interconnections
  – The changing nature of orthopaedic surgery
The changing nature of orthopaedic surgery

The case for hospitals

- Concentration of scarce resources
  - Operating theatres
  - Laboratories
  - Imaging equipment
But some bits were overlooked

• “120 patients were seen and dismissed in an hour and ten minutes, each with a doubtful dose of physic ordered almost at random as if the main object were to get rid of a set of troublesome customers rather than to cure their ailments”

Lancet, 1869

The extended role of the hospital

• Training
• Research
• Civic symbolism
The pressures for change

• Demand
  – Changing health needs
  – Public expectations
• Supply
  – Changing scope and nature of health care

The pressures for concentration

• Specialisation
  – General surgery ? orthopaedic, urological, vascular, breast, GI, etc. surgery
• Gaining adequate experience
• Restrictions on working hours
• Cost savings (but often illusory)
• Improved outcomes (but less than is often thought)
The pressures for dispersion

• Technological developments
  – Safer anaesthesia
  – Near patient testing
  – New forms of imaging
• Public expectations
  – Convenience
  – Resistance to closures

The people speak …
Emergency room services

- Deconstructs into:
  - Major trauma <1%
  - Minor trauma & primary care up to 65%
  - Medical admissions
  - Surgical admissions
  - Children
- Is often not the most appropriate place

(But not in TV soaps, where everything is an emergency!)

Alternative pathways to care
Now

- Self referral
- Ambulance
- Referrals
- Emergency Room
- Other
- Admission
- Home

The future

- Children
- Minor Injury
- Primary Care
- Medical Assessment
- Major trauma

- GP Telephone Help Line
- Walk in Centre
- Ambulance
- Patient
- Home
Patients that could go home – medicine in the UK

- Nursing home (NHS) 10%
- Community hospital 7%
- Intensive home care 5%
- Residential home 7%
- Less intensive home care support 5%
- Social support at home 9%
- Sheltered accommodation <1%
- Go home 11%
- Total 53%

Other areas are changing too

- Surgery
  - Minimally invasive procedures, ambulatory surgery
- Children
  - Fewer high tech facilities and greater community care
- Obstetrics
  - Competing pressures
The hospital of the past

A&E

Outpatients

Radiology

Surgery

Surgery

Theatres

ICU

Paeds

Geriatrics

Maternity

Pathology

Geriatrics

The hospital of the future?

Primary Care

Minor Injury

Imaging

Pathology

Diagnosis

Ambulatory care

Theatres

Major Trauma

Medical Assessment

Pathology

Imaging

High Dependency

Theatres

Imaging

ICU

Paediatrics

Specialist Imaging

Pathology

Source: Edwards & McKee

University of Navarra
The workforce

• Developing specialist teams
• Working time restrictions
• Changing professional roles

Moving forward

• Hospitals cannot be seen in isolation
  – Links with each other
  – Links with other parts of the health care system – primary care – integrated care, …
• Accept mistakes ?? Errors??
• Resource Planning: how many beds ??
• Invest in management
• Re-orientate capital planning and financing
Conclusion

The Future Hospital

• The hospital of the future will be different from the hospital of today
• Important: design for maximum flexibility
• Importance of Management capacities !!

Thanks!!