Health Workforce

Managing and Researching Health Care Systems

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FG Management im Gesundheitswesen, Technische Universität Berlin (WHO Collaborating Centre for Health Systems Research and Management) &

European Observatory on Health Systems and Policies
WHO building blocks

THE WHO HEALTH SYSTEM FRAMEWORK

SYSTEM BUILDING BLOCKS

SERVICE DELIVERY 23 Nov
HEALTH WORKFORCE 24 Nov
INFORMATION 22 Nov (seminar)
MEDICAL PRODUCTS, VACCINES & TECHNOLOGIES 24 Nov
FINANCING 21 to 23 Nov
LEADERSHIP / GOVERNANCE 23 Nov

OVERALL GOALS / OUTCOMES

ACCESS
COVERAGE 27 Nov

IMPROVED HEALTH (LEVEL AND EQUITY) 29 Nov
RESPONSIVENESS 30 Nov
SOCIAL AND FINANCIAL RISK PROTECTION 28 Nov
IMPROVED EFFICIENCY 30 Nov

QUALITY
SAFETY 28 Nov

Week 8

21 Nov

27 Nov

28 Nov

30 Nov/1 Dec

WHO 2007
# Outline of the course - Week 1

<table>
<thead>
<tr>
<th>Topic</th>
<th>Date</th>
<th>Lecturer</th>
</tr>
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<tbody>
<tr>
<td>Introduction and Outline of the course</td>
<td>20.11.2017</td>
<td>Wilm Quentin and Daniel Opoku</td>
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<tr>
<td></td>
<td>15-17 Uhr</td>
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<td>Introduction and frameworks</td>
<td>21.11.2017</td>
<td>Reinhard Busse</td>
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<tr>
<td></td>
<td>09-12 Uhr</td>
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<tr>
<td>Financing I: Raising Resources</td>
<td>13.30-17 Uhr</td>
<td>Wilm Quentin</td>
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<td>Seminar on health system relevant databases and information for term paper</td>
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<td>Anne Spranger</td>
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<td></td>
<td>10-12 Uhr</td>
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<td>(H8173/74)</td>
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<td>Financing II: Pooling and re-allocation</td>
<td>13.30-17 Uhr</td>
<td>Reinhard Busse</td>
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<td>Financing III: Purchasing and payment systems</td>
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<td>09-12 Uhr</td>
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<td>Leadership and Governance + Care Delivery</td>
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<td>Reinhard Busse</td>
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<td>Medical products</td>
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<td>9-10.30 Uhr</td>
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<td>Introduction to group exercise</td>
<td>10.30-12 Uhr</td>
<td>Anne Spranger</td>
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<tr>
<td>Workforce</td>
<td>13.30-17 Uhr</td>
<td>Claudia Maier</td>
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# Outline of the course - Week 2

<table>
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<tr>
<td>Preliminary Summary of building blocks</td>
<td>27.11.2017 09-10.30 Uhr</td>
<td>Reinhard Busse</td>
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<tr>
<td><strong>Presentation by GIZ on health system related German development cooperation</strong></td>
<td>10.30-12 Uhr</td>
<td>Ursula Bürger, Fachplanerin Kompetenz-Center Gesundheit und Soziale Sicherung, GIZ</td>
</tr>
<tr>
<td>Access and Coverage</td>
<td>13.30-17 Uhr</td>
<td>Reinhard Busse</td>
</tr>
<tr>
<td>Quality and Safety</td>
<td>28.11.2017 09-12 Uhr</td>
<td>Reinhard Busse</td>
</tr>
<tr>
<td>Financial and social risk protection</td>
<td>13.30-17 Uhr</td>
<td>Wilm Quentin</td>
</tr>
<tr>
<td>Improved Health</td>
<td>29.11.2017 13.30-17 Uhr</td>
<td>Wilm Quentin</td>
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<tr>
<td>Efficiency and Responsiveness</td>
<td>30.11.2017 09-12 Uhr</td>
<td>Reinhard Busse</td>
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<tr>
<td>Summary of Health System Performance Assessment</td>
<td>13.30-17 Uhr</td>
<td>Reinhard Busse</td>
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<tr>
<td><strong>Group Presentations and Wrap-up</strong></td>
<td>01.12.2017 09-12 Uhr</td>
<td>Reinhard Busse or Wilm Quentin</td>
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Action to avert an 18 million health worker shortfall announced at the 4th Human Resources for Health Forum in Dublin

Dublin, Friday November 17: The largest-ever forum focusing on health workers and global health has concluded with a series of actions to prevent a projected shortfall of 18 million health workers. These have been laid out in the Dublin Declaration, agreed to by representatives of over 70 countries who attended the Forum.

Actions include setting up of an international fund, the Working for Health Multi-Partner Trust Fund (MPTF), to support countries to expand and transform their health workforce.

Read more...
• Importance, definition and indicators of health workforce

• Distribution of health workforce & health staff shortage

• Shifting demands and rising pressures on health workers

• International mobility of health workforce
Employment in health & social sector compared with total employment, 1990-2014

Canada

United States

France

Italy

Total employment (Thousands)

Employment in health and social sector (Thousands)

Health and social sector employment

Total employment

Health and social sector employment

Total employment

Health and social sector employment

Total employment

Health and social sector employment

Total employment
HIV/AIDS. Impact of antiretroviral therapy on life expectancy: rural Kzwa Zulu Natal, South Africa

Adult life expectancy, 2000–2011. Adult life expectancy is the mean age to which a 15-year-old could expect to live if subjected to the full pattern of age-specific mortality rates observed in a population for a given period of time. Annual estimates of adult life expectancy (blue squares) are shown for each year, 2000 to 2011.

The health workforce: a good investment

- Health sector is a key economic sector and a job generator

- Demand for health workers expected to increase with around 40 million new health worker jobs created by 2030, particularly in high- and middle-income countries

- Adequate investment in the health system and its workforce can offer high economic returns


Source: James.40
High on the international agenda

Action to avert an 18 million health worker shortfall announced at the 4th Human Resources for Health Forum in Dublin

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Actions include setting up of an international fund, the Working for Health Multi-Partner Trust Fund (MPTF), to support countries to expand and transform their health workforce.

Read more...
“Health workers are all people primarily engaged in actions with the primary intent of enhancing health.” (World Health Report 2006)

“A well-performing health workforce is one that works in ways that are responsive, fair and efficient, to achieve the best health outcomes possible, given available resources and circumstances.” (WHO, 2007)

Health workforce includes different occupations:

- Physicians, nurses and midwifery personnel
- Dentistry & pharmaceutical personnel
- Laboratory health workers
- Environmental and public health workers
- Community and traditional health workers
- Other health service providers
- Health management and support workers

...working in curative, preventive and rehabilitative care services as well as health education, promotion and research.
Four critical dimensions of human resources for health:

- Availability of HRH
- Accessibility to HRH
- Acceptability of HRH
- Quality of HRH

Theoretical coverage by ‘availability’ of health workforce

EFFECTIVE COVERAGE GAP

Source: adapted from Campbell et al. 27 and Campbell et al. 48.

Source: A Universal Truth: No Health Without a Workforce
Third Global Forum on Human Resources for Health Report
Four dimensions

Availability
Sufficient supply of health workers, with competencies and skill mix that correspond to population needs

Accessibility
Equitable distribution of health workers in terms of travel time and transport (spatial), opening hours (temporal), referral mechanisms (organizational); direct and indirect cost of services (formal & informal)

Acceptability
Characteristics and ability of the workforce to treat all patients with dignity, create trust and enable/promote demand for services (age/religion/social & cultural values etc.)

Quality
Competencies, skills, knowledge and behaviour of health worker as assessed according to professional norms and as perceived by users

Can these dimensions be influenced and how?

- Governance! Based on data/evidence
- E.g. health workforce policies
  - Legislation & regulation, e.g. incentives/-
Key indicators

Health worker density
- measured by physician/nurse/midwife/dentist or pharmacist rate per 1000 population

Distribution of health workers
- health workers by occupation, geographical region, facility type, country-of-birth, age and sex/the total number of health workers

Annual number of graduates
- N° of graduates from health profession educational institutions/total population

Skill mix/composition of workforce
- nurse/physician ratio, GP/physician ratio

Employment characteristics
- Total annual number of working hours/number of active health workers, defined in headcounts
And a better way to visualise (and compare) numbers...

**Note:** In Portugal and Greece, data refer to all doctors licensed to practice, resulting in a large over-estimation of the number of practising doctors (e.g. of around 30% in Portugal). Data are for 2014 or latest available year.

**Source:** OECD Health Statistics 2016.
Why health workforce is important

Ebola outbreak in West Africa in 2014

Healthcare systems were too weak to control the outbreak

• Inadequate services and workforce to control the outbreak – cases other than Ebola were often not treated (malaria etc.)
• Problems with adequate and timely payment of health workers for their services as well as appropriate training and education

Shortage of health workforce was a major challenge in controlling Ebola during the West African outbreak but workforce itself was also severely affected by the outbreak.

WHO defines minimum threshold of 2.3 doctors, nurses and midwives per 1 000 population that are necessary to deliver essential maternal and child health services (MDG 4).
Mortality: Ebola deaths among health workers?
Are health workers (more) at risk?

% mortality (caused by Ebola) among total population compared to health workforce

<table>
<thead>
<tr>
<th>Country</th>
<th>% mortality due to Ebola among total population</th>
<th>% mortality among doctor, nurse/midwive workforce</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guinea</td>
<td>0.02</td>
<td>1.45</td>
</tr>
<tr>
<td>Liberia</td>
<td>0.11</td>
<td>8.07</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>0.06</td>
<td>6.85</td>
</tr>
</tbody>
</table>

Source: Evans et al 2015
Density of physicians (per 1000 population, 2014)

Liberia: 0.014
Sierra Leone: 0.024
Guinea: 0.097
Russia: 3.3
Australia: 3.4
Germany: 4.1
Norway: 4.4
USA: 2.6
Canada: 2.5
Libya: 2.1
Argentina: 3.8
Brazil: 1.8
South Africa: 0.8
India: 0.7
China: 1.5

Transferred to Germany, this would mean 1,150 to 8,000 physicians!

Source: http://apps.who.int/gho/data/node.main.A1444?lang=en&showonly=HWF
Density of nurses & midwives (per 1000, 2014)

Transferred to Germany, this would mean 22,000 to 38,000 nurses!

Source: http://apps.who.int/gho/data/node.main.A1444?lang=en&showonly=HWF
In Ghana?

Density of health workforce in Ghana and WHO African region in 2008

- Physicians: 0.11 (Ghana), 0.22 (Africa)
- Nurses and Midwives: 1.17 (Ghana), 0.98 (Africa)
- Dentists and technicians: 0.01 (Ghana), 0.04 (Africa)
- Pharmacists and technicians: 0.07 (Ghana), 0.06 (Africa)
- Community health: 0.19 (Ghana), 0.45 (Africa)

http://www.hrh-observatory.afro.who.int/countries/ghana-2/
### Uneven distribution of health workers

#### Table 4. Population-weighted density of health workers (per 1000 population) by cadre and income group, 2013

<table>
<thead>
<tr>
<th>INCOME</th>
<th>PHYSICIANS</th>
<th>NURSES/MIDWIVES</th>
<th>ALL OTHER CADRES</th>
<th>TOTAL HEALTH WORKERS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2013</td>
<td>2013</td>
<td>2013</td>
<td>2013</td>
</tr>
<tr>
<td>High</td>
<td>2.9</td>
<td>7.1</td>
<td>3.8</td>
<td>13.8</td>
</tr>
<tr>
<td>Upper middle</td>
<td>1.6</td>
<td>2.7</td>
<td>1.8</td>
<td>6.1</td>
</tr>
<tr>
<td>Lower middle</td>
<td>0.8</td>
<td>1.7</td>
<td>1.4</td>
<td>3.9</td>
</tr>
<tr>
<td>Low</td>
<td>0.3</td>
<td>0.6</td>
<td>0.5</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**REGION**

<table>
<thead>
<tr>
<th>Region</th>
<th>Physicians</th>
<th>Nurses/Midwives</th>
<th>All Other Cadres</th>
<th>Total Health Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>0.3</td>
<td>1.2</td>
<td>0.7</td>
<td>2.2</td>
</tr>
<tr>
<td>Americas</td>
<td>2.1</td>
<td>4.8</td>
<td>2.7</td>
<td>9.6</td>
</tr>
<tr>
<td>Eastern Mediterranean</td>
<td>1.2</td>
<td>2.1</td>
<td>1.6</td>
<td>4.9</td>
</tr>
<tr>
<td>Europe</td>
<td>3.2</td>
<td>6.8</td>
<td>4.0</td>
<td>14.0</td>
</tr>
<tr>
<td>South-East Asia</td>
<td>0.6</td>
<td>1.5</td>
<td>1.2</td>
<td>3.3</td>
</tr>
<tr>
<td>Western Pacific</td>
<td>1.5</td>
<td>2.5</td>
<td>1.6</td>
<td>5.6</td>
</tr>
<tr>
<td>World</td>
<td>1.4</td>
<td>2.9</td>
<td>1.8</td>
<td>6.2</td>
</tr>
</tbody>
</table>

An uneven distribution of health workers...

...by health expenditure and burden of disease by WHO Region

Median density of skilled health professionals per 10 000 population, 118 countries grouped by quintiles of total health expenditure by the government (%)

Countries with a high proportion of public health expenditure tend to have higher health workforce-to-population ratios.
Density levels also differ significantly within countries.

Geographical variation in physician density per 100,000 population by countries’ national, highest and lowest physician density region (NUTS 2 level), 2014.
Density levels also differ significantly within countries

Geographical variation in physician density per 100,000 population by countries’ national, highest and lowest physician density region (NUTS 2 level), 2014

Maldistribution leads to both under- and over-served areas

Source: Maier 2017, based on Eurostat database 2016
Urban-rural discrepancies: a different way to look at intra-country variation

7.10. Physicians density in predominantly urban and rural regions, selected countries, 2013 (or nearest year)

Note: The classification of urban and rural regions varies across countries.
Source: Australia: AIHW National Health Workforce Data Set (NHWDS) 2013; Canada: Scott’s Medical Database, 2013, Canadian Institute for Health Information; France: RPPS médecins au 1er janvier 2015; Other: OECD Regions at a Glance 2015.
Ghana? What data on urban/rural divide?

Total numbers of health workforce by geographic distribution in Ghana in 2004

- Physicians: 2338 Urban, 902 Rural
- Midwives: 2346 Urban, 1564 Rural
- Dentists: 5 Urban, 99 Rural
- Radiographers: 18 Urban, 0 Rural
- Medical assistants: 236 Urban, 551 Rural

-> Only absolute numbers and from 2004

Source: http://apps.who.int/gho/data/node.main.A1444?lang=en&showonly=HWF
Rising numbers of doctors in OECD countries

... but numbers should rise in low-income countries, especially in Africa, not in Europe

Table 2. Total numbers of health workers needed (total need) to reach the SDG threshold estimated for 2013 and forecasted for 2030 (by income group and WHO region)

<table>
<thead>
<tr>
<th>INCOME</th>
<th>PHYSICIANS</th>
<th>NURSES/MIDWIVES</th>
<th>OTHER CADRES</th>
<th>TOTAL HEALTH WORKERS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2013</td>
<td>2030</td>
<td>2013</td>
<td>2030</td>
</tr>
<tr>
<td>High</td>
<td>1 612 259</td>
<td>1 704 610</td>
<td>4 058 748</td>
<td>4 291 235</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper middle</td>
<td>3 069 815</td>
<td>3 354 235</td>
<td>7 728 044</td>
<td>8 444 051</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower middle</td>
<td>3 274 396</td>
<td>4 088 220</td>
<td>8 243 062</td>
<td>10 291 805</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>991 190</td>
<td>1 403 036</td>
<td>2 495 252</td>
<td>3 532 045</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REGION</th>
<th>PHYSICIANS</th>
<th>NURSES/MIDWIVES</th>
<th>OTHER CADRES</th>
<th>TOTAL HEALTH WORKERS</th>
</tr>
</thead>
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<tr>
<td></td>
<td>2013</td>
<td>2030</td>
<td>2013</td>
<td>2030</td>
</tr>
<tr>
<td>Africa</td>
<td>1 080 315</td>
<td>1 629 671</td>
<td>2 719 618</td>
<td>4 102 581</td>
</tr>
<tr>
<td>Americas</td>
<td>1 229 723</td>
<td>1 411 814</td>
<td>3 095 741</td>
<td>3 554 141</td>
</tr>
<tr>
<td>E. Mediterranean</td>
<td>797 180</td>
<td>1 068 102</td>
<td>2 006 845</td>
<td>2 688 871</td>
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<tr>
<td>Europe</td>
<td>1 146 722</td>
<td>1 175 823</td>
<td>2 886 792</td>
<td>2 960 050</td>
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<tr>
<td>South-East Asia</td>
<td>2 382 718</td>
<td>2 811 979</td>
<td>5 998 325</td>
<td>7 078 959</td>
</tr>
<tr>
<td>Western Pacific</td>
<td>2 311 002</td>
<td>2 452 713</td>
<td>5 817 784</td>
<td>6 174 532</td>
</tr>
<tr>
<td>Total</td>
<td>8 947 661</td>
<td>10 550 101</td>
<td>22 525 105</td>
<td>26 559 136</td>
</tr>
</tbody>
</table>

Ghana over time? Density of physicians and nurses/midwives in Ghana 2004, 2007-10

Source: http://apps.who.int/gho/data/node.main.A1444?lang=en&showonly=HWF
Global health workforce deficit

Global demand for health workers still far outstrips supply, and the gap is growing every year.

Driving forces are:
- population growth
- demographic and epidemiological transitions
- ageing of the existing health workforce
- international migration and recruitment of health personnel from low- and middle-income countries

Since 2000, the number and share of foreign-trained doctors has increased in many OECD countries.


- adopted by all 193 WHO member states
- Aim: to stem the brain drain from poor to rich countries
- establishes and promotes voluntary principles and practices for the ethical international recruitment of health personnel
Ghana: migration of physicians and nurses

- Physicians: annual registrations in the UK of from selected African countries: 1.1% (Ghana), 2.0% (South Africa), and 0.7% (Zimbabwe) of the total number of doctors registering in the UK.

- Nurses: the number of nurses from Ghana, South Africa and Zimbabwe: 1% from Ghana, 0.6% (SA) and 2.6% (Zimbabwe) registering annually in the UK as a proportion of the total number of nurses registering in the UK yearly increasing trend (Ghana)


Table 1: Ghanaian Nurses Verification – Country Verified for and Year

<table>
<thead>
<tr>
<th>Country of Destination</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>Total</th>
<th>%</th>
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<tr>
<td>USA</td>
<td>50</td>
<td>42</td>
<td>44</td>
<td>129</td>
<td>81</td>
<td>80</td>
<td>426</td>
<td>13.8</td>
</tr>
<tr>
<td>UK</td>
<td>97</td>
<td>265</td>
<td>646</td>
<td>738</td>
<td>405</td>
<td>317</td>
<td>2468</td>
<td>80.0</td>
</tr>
<tr>
<td>Canada</td>
<td>12</td>
<td>13</td>
<td>26</td>
<td>46</td>
<td>33</td>
<td>10</td>
<td>140</td>
<td>4.5</td>
</tr>
<tr>
<td>S. Africa</td>
<td>9</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>-</td>
<td>24</td>
<td>0.8</td>
</tr>
<tr>
<td>Others</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>8</td>
<td>5</td>
<td>-</td>
<td>29</td>
<td>0.9</td>
</tr>
<tr>
<td>TOTAL</td>
<td>172</td>
<td>328</td>
<td>727</td>
<td>923</td>
<td>530</td>
<td>407</td>
<td>3,087</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Ghana National Medical Council (cited in DFID 2004); 2003 is until May only

Source: Anarfi et al 2010
https://www.researchgate.net/profile/John_Anarfi/publication/2425841c0cf238c6ea7411cf.pdf
Shifting demands on health professionals


Driving forces
- Health needs
- Demographics
- Disease burden
- Epidemics
- Health systems
  - Financing
  - Technology
  - Consumer preferences
- Context
  - Labour and education
  - Public sector reforms
  - Globalization

Workforce challenges
- Numbers
  - Shortage/excess
- Skill mix
  - Health team balance
- Distribution
  - Internal (urban/rural)
  - International migration
- Working conditions
  - Compensation
  - Non-financial incentives
  - Workplace safety

Population growth & ageing, epidemiological transition

Retirement, supply of graduates
Many healthcare workers face:

• daunting working environments,
• poverty-level wages,
• unsupportive management,
• insufficient social recognition,
• weak career development.
• lack of collaboration between nurses and physicians.

Do bad working conditions result in bad health outcomes?
The RN4CAST Research project on the nursing workforce (2009-2011) found evidence on the relationship between aspects of the nursing work environment and nurse & patient health outcomes.

The survey

• was conducted in 12 European countries,
• 488 hospitals, and
• replies in total from 33659 care professionals
Public policy levers to shape health labour markets

Conclusions

• Health workers are the backbone of strong, resilient health systems.

• Demand for health workforce expected to increase (e.g. demographic and epidemiological transitions, technology, changing patients expectations) -> access to safe & quality health services

• Health workforce shortages widen inequities in access to & quality of health services -> economic consequences and development (HIV/AIDS / Ebola in West Africa)

• Equity? International health worker mobility affects low resource countries that already have shortages -> but mobility of health workers may also bring benefits to source nations (brain drain to brain gain/circular migration?).
Group work (I)

• „You have been requested by the Ghanian Ministry of Health to support the preparation of the next national health workforce strategic plan that will cover the period 2017-2030“.

• „The Director of Planning with whom you will work is well experienced in the health system of her country but relatively new in the position.“

• „Although some data are available, there are gaps in the existing information about resources and performances of the health workforce and health system.“
Group work (II)

• Please form three groups, on:
  • Education
  • Migration
  • Retention

• Please discuss and present:
  • What data and evidence gaps exist; suggest 1-2 priority research projects (incl. design) to close the gaps
  • Suggest 2-3 main strategies/policies to improve HRH in the country