Health Economics

Dr. Pratap C. Mohanty

Department of Humanities and Social Sciences,

Indian Institute of Technology Roorkee

Week – 07

Lecture 35- Health Systems Around the World

Welcome friends once again to our NPTEL MOOC module on Health Economics. This is our week number 7 or unit number 7. We have been discussing the aspects related to the economics of the health system. This is indeed our last lecture in this week. It is on understanding the health system around the world.

We have discussed different types of health systems and their features, criteria, etc. Now, we will discuss the evolution of different health system and their status. Of course, this is the perspective of the world, and the experience of the different countries in terms of equity will also be emphasized. It has a genesis connected to the different time paths through which the health system is conceptualized.

We refer to the period 1980s, especially the late 1980s, where especially before that period, it is largely dominated by tax-based systems or even social health-based systems, health insurance-based systems. But presently, we will be, or we are actually going by a system that is characterized by a mix of private and public. So it has sub-components as well, and we will be emphasizing and discussing, already discussed, the different characteristics of the present health system in our lecture as well. But we will now be discussing on what were the different evidence of the health system, especially from the 1980s onwards. So there are major changes occurred.

We are referring to the late end of the 1980s, and this has involved innovations in mixing public and private roles in the health system. So, in short, it refers to public plus private health systems. So now, we have different historical profiles from the period from the 1980s onwards. So, in the mid-1980s, the health system was largely characterized as a public-private spectrum. The purely public refers to the concept introduced at the time, which is called the Semashko system, so here it is purely public.

So this actually refers to the former communist countries of Central and Eastern Europe, and in this system, we usually have a centrally and publicly financed structure, which means all services are free of charge. So, we are actually referring to countries such as former Germany, the Democratic Republic, and Uganda, where the Semashko system was

largely practiced. In contrast to this, what about private and VHI, or voluntary health insurance? That means a limited number of countries have also adopted this private and VHI-based method. This coexists with the form of cover or compulsory arrangements. The US was the first and most prominent country that relied on this set of arrangements.

So we need to explain in practice, the Semashko system divergence reported, and substantial under-the-counter payments seem to have been made by patients to secure services, which is a form of default privatization. So, though we have been saying that the Semashko system is purely public-based, there are some reports with little diversion. Even in the practice of the Semashko system, we find some to secure services through under-the-counter payments, and that is called a form of default privatization. So, there are other case studies we will be referring to as experiences of different countries. We start with the UK health system, then we will also discuss the Federal Republic of Germany's health system, and we will also emphasize Latin American countries and their health systems.

The UK health system is largely a publicly provided and financed national health service, which we discussed in our previous lecture as well. This included some user charges, such as for dental and optical services and prescriptions. The small private insurance sector outside the NHS scheme, which is national insurance, was also in the UK. Most resources are owned and employed publicly, but primarily for the primary care doctors they have since 1948. And so that means most resources are owned or publicly owned, but primary care doctors have since 1948 been contracted by private individuals or firms.

This period is especially noted for dealing with primary care doctors. And there are some examples noted. They are like Denmark, Sweden, and New Zealand. You can read the paper of OECD 1992 and 1994 to verify these discussions. So, they have a health system largely called the Bevanite health system.

So, this is named after the person called Aneurin Bevan. Another case study is from the Federal Republic of Germany. That model is largely called the Bismarck model of social insurance. We also discussed in our earlier lectures and introduced that in Germany, 75 percent of the population was insured compulsorily. Then, that is roughly around 13 percent voluntarily with the same sickness funds, and 10 percent of the population was insured privately.

So, 13 percent of those voluntary are also called quasi-public insured persons. Both public and private providers account for 51 percent of the hospital beds, where 51 percent of the hospital beds are public. Ambulatory care physicians and pharmacies were largely private. We need to know and note very clearly that even if it is public-based dealings, some of the categories, called ambulatory physicians and pharmacies, are still under private financing. Belgium adopted the co-payment structures that we discussed earlier, and a more substantial and higher proportion, largely tax-based finance, was adopted.

France is 99 percent insured with statutory sickness funds, but it is a reimbursement model for many health sector transactions whereby health service users paid and were later reimbursed. In the case of the Netherlands and Austria, you will also find the structure, and you can use the same structure. You can follow from the OECD papers of 1992 and 1994. Coming to the last case study in this section is on Latin American countries. They used to have a parallel system.

What are they? That is called three subsystems: public, social insurance, and private. So, it has implications, basically implication, in terms of insurance and out-of-pocket finance structure. We are referring to Mexico and the countries of Central and South America, excluding the Caribbean island nations. This covers different segments of the population in terms of the coverage. We are counting the transition period to the recent period.

We refer to the transition period of the 1980s because lots of discussions started on this aspect of health systems emphasizing the payment structure. So, after the mid-90s, a series of innovative health system designs started, and the Semashko system, which we already mentioned, has transitioned to a market-oriented system. So, the transition is from Semashko to market-oriented, where it is largely private-based. Bismarck's model of social insurance has also transitioned to varying degrees of success in different time periods, and the Bismarck model we already discussed. However, the Czech Republic adopted a social insurance model in 1991, with several insurance-financing healthcare providers based on contracts.

So, you can prepare your objective questions in these directions, like we may ask you the cases of which kind of model. So far, we have discussed Semashko, market-oriented, Bismarck, Bevanite system, etc. So, we are again unfolding the discussion of the Bevanite system. This introduced contracts between public purchasers and public providers of the services. That is all about the role of private investment funding in public functioning as well.

That is about called the Bevanite system. For example, the UK's responsibility for purchasing services was separated from the responsibility of providing them in 1991. They started with the earlier system, and then there has been a transition. So, poorer countries modeled on Semashko or Bevanite systems introduced reforms to improve the performance of the public sector and to better regulate the private sector. New forms of partnership arise in the transition basically between the public and private sectors.

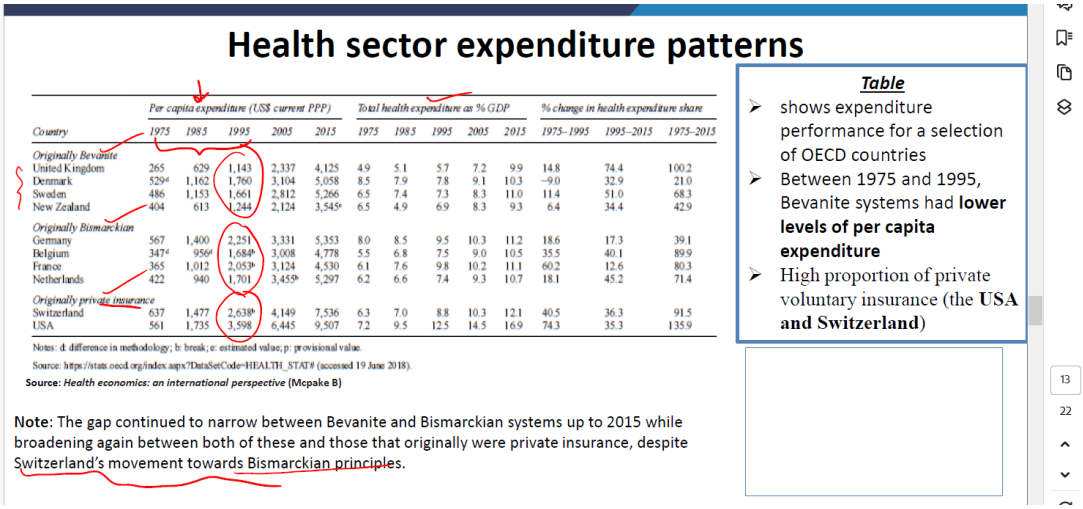
An example we have already cited. However, we can discuss this in terms of partnerships in pharmaceutical and vaccine distribution, technology diffusion, and seeking to extend the availability of HIV and isolated treatments. These reforms have not changed the plural nature of these health systems. In some respect, they may have increased their diversity. Referring to the Bismarckian health system, they introduced the greater roles of public

regulation and, in some cases, provision, but also new and larger co-payments arose. Several Latin American countries sought to achieve greater universality in terms of distribution and to lower the boundaries between segments of their systems.

For example, Brazil introduced the Unified Health System, which is called SUS, in 1988, and Colombia started to integrate its public and social insurance system through deforms, which came into effect in 1996. Here are some of the patterns based on different models and experiences of the different countries. We are referring to earlier papers or work. So, it is related to the original Bevanite system, then the Bismarckian system, and then the private insurance format. Different countries are referred to, and you can check them out.

This is a Bevanite picture and private insurance-based formulation. You can easily see their total health expenditure from different periods. We are referring to the transition period; you can just have a check. So, between 1975 and 1995, the Bevanite system had lower levels of per capita expenditure.

You can just have a check. So, per capita expenditure is mentioned in this column, and we are referring to the 75 to 95 period. So you can just check this period in terms of per capita expenditure, total health expenditure, and percentage of health expenditure. We will refer to the table; you will also find out the high proportion of private voluntary insurance in the US and Switzerland. Here, the voluntary, private insurance of a high percentage. In particular, we are referring to these private insurance cases, and the number of cases is very high.



Country	Per capita expenditure (US$ current PPP)					Total health expenditure as % GDP					% change in health expenditure share		
	1975	1985	1995	2005	2015	1975	1985	1995	2005	2015	1975–1995	1995–2015	1975–2015
Originally Bevanite													
United Kingdom	265	629	1,143	2,337	4,125	4.9	5.1	5.7	7.2	9.9	14.8	74.4	100.2
Denmark	529[d]	1,162	1,760	3,104	5,058	8.5	7.9	7.8	9.1	10.3	−9.0	32.9	21.0
Sweden	486	1,153	1,661	2,812	5,266	6.5	7.4	7.3	8.3	11.0	11.4	51.0	68.3
New Zealand	404	613	1,244	2,124	3,545[e]	6.5	4.9	6.9	8.3	9.3	6.4	34.4	42.9
Originally Bismarckian													
Germany	567	1,400	2,251	3,331	5,353	8.0	8.5	9.5	10.3	11.2	18.6	17.3	39.1
Belgium	347[d]	956[d]	1,684[b]	3,008	4,778	5.5	6.8	7.5	9.0	10.5	35.5	40.1	89.9
France	365	1,012	2,053[b]	3,124	4,530	6.1	7.6	9.8	10.2	11.1	60.2	12.6	80.3
Netherlands	422	940	1,701	3,455[b]	5,297	6.2	6.6	7.4	9.3	10.7	18.1	45.2	71.4
Originally private insurance													
Switzerland	637	1,477	2,638[b]	4,149	7,536	6.3	7.0	8.8	10.3	12.1	40.5	36.3	91.5
USA	561	1,735	3,598	6,445	9,507	7.2	9.5	12.5	14.5	16.9	74.3	35.3	135.9

Notes: d: difference in methodology; b: break; e: estimated value; p: provisional value.

Source: https://stats.oecd.org/index.aspx?DataSetCode=HEALTH_STAT# (accessed 19 June 2018).

Source: ***Health economics: an international perspective*** **(Mcpake B)**

The gap continues to narrow between Bevanite and Bismarckian systems, and you can just see this difference between these and these. Even these, as compared to these, have changed. Even in later periods, cross-comparison was also possible. The gap continued to narrow between the Bevanite and Bismarckian systems up to 2015 while broadening again between both of these and those that originally were private insurance, despite

Switzerland's movement towards the Bismarckian principle. It is noteworthy. So, even if that occurs still, you will see the gap continue to narrow between this Bevanite and Bismarckian system.

Now, we are emphasizing performance in terms of equity, though we have a dedicated chapter to clarify the principles of equity in healthcare. However, equity really matters in terms of a better healthcare system. We have already discussed performance in terms of equity and related terms such as the Lorenz curve, concentration indices, and others in unit number 4. We will be discussing the different experiences in terms of equity in Sweden, where it was not possible to separate GP and specialist doctor utilization and the pattern accorded with that for specialists that is inequitable in favor of high-income groups. This was the case for total physician utilization across most countries.

You just make a note that you can also refer to our appendix. We have given all the details, especially to get an overview of the healthcare system of 10 developed countries based on the economics of health reconsidered by Thomas Rice. That is, with the title Health Administration, the press called Health Administration Press, Chicago. We are emphasizing inequality and inequity in utilization.

We are referring to OECD countries, and we are also clarifying through the CI the concentration index and horizontal inequity index of Doorslaer and Masseria's 2004 paper. Here, you can see this is the comparison given by different income quintiles, especially poorest to richest, and their confidence interval is given. Again, the check is through the Bismarckian system, the Bevanite system, and private health insurance. Devaux and de Looper, especially in 2012, discussed this aspect as well and concluded with few exceptions that patterns of inequity in GP and specialist utilization have remained relatively stable between the period 2000 to 2009. The rich tend to favor insurance policies with high deductibles, and this may explain why they are using less health insurance and contribute to poor pro-poor inequity, as emphasized and observed by Doorslaer and Masseria's 2004 paper.

Contd…

Inequality and inequity in utilisation, selected OECD countries: need-standardised utilisation of income quintiles 1 and 5 of the population, concentration index (CI) and horizontal inequity index (HI)

ountry	*General practitioner utilisation (visits in 12 months)*				*Specialist utilisation (visits in 12 months)*				*Hospital care utilisation (days inpatient stay in 12 months)*			
	Poorest	*Richest*	*CI*	*HI*	*Poorest*	*Richest*	*CI*	*HI*	*Poorest*	*Richest*	*CI*	*HI*
Originally Bevanite												
UK	4.351	3.564	**−0.119**	**−0.042**	1.437	1.562	**−0.062**	0.017	0.907	0.893	**−0.181**	0.013
Denmark	2.579	2.411	**−0.104**	**−0.028**	0.752	1.049	**0.009**	**0.093**	1.636	1.054	**−0.205**	−0.093
Sweden*	3.248	3.928	0.012	**0.042**	–	–	–	–	0.714	0.906	**−0.122**	−0.006
Originally Bismarckian												
Germany	4.978	4.491	**−0.075**	−0.021	2.599	3.719	**−0.003**	**0.045**	2.053	1.376	**−0.059**	−0.029
Belgium	5.745	4.468	**−0.144**	**−0.057**	1.713	2.072	**−0.031**	**0.038**	1.369	1.079	**−0.222**	−0.048
France	4.597	4.665	**−0.027**	−0.005	1.969	2.653	0.037	**0.063**	0.794	1.039	−0.019	0.035
Netherlands	3.180	2.710	**−0.098**	**−0.038**	1.558	1.739	**−0.051**	0.019	0.825	0.690	**−0.158**	−0.040
Originally private insurance												
Switzerland	2.208	1.956	**−0.062**	−0.024	1.174	1.724	**0.051**	**0.074**	1.158	0.099	**−0.128**	−0.063
USA**	2.982	4.223	**−0.020**	**0.068**	–	–	–	–	0.088	0.072	**−0.167**	**−0.038**

Source: van Doorslaer and Masseria (2004).

Notes: *Data entered in general practitioner columns for Sweden are for total physician utilisation (general practitioner and specialist utilisation) and have been adjusted for the shorter length of recall period (3 months) in the Swedish country survey relative to the other (12 months) country surveys.

**Data entered in general practitioner columns for the USA are for total physician utilisation (general practitioner and specialist utilisation).
Bold indicates that there are significant differences in utilisation between population income groups, and that the index can be said to be significantly different from 0.

Source: *Health economics: an international perspective* (Mcpake B)

Table

- ✓ Analysis by Devaux and de Looper (2012)
- ✓ Conclusions → with few exceptions, **patterns of inequity in GP and specialist utilization** have remained relatively **stable** between 2000 and 2009

Analysis by Bago d'Uva et al. in 2009 emphasized alternative methods to those by Doorslaer and Masseria using European data, which includes Belgium, Denmark, and the Netherlands. They found similar patterns of pro-poor inequity in GP utilization and pro-rich inequity in specialist visits for these countries. For low- and middle-income countries, different types of health service utilization are most relevant. We are referring to low and LMICs, low and medium-income countries. As you know, this is usually referred to the World Bank data, and the emphasis here is on inequity in utilization.

Then, again, it is modeled through Bavenite or Semashko-based, then segmented-based, private and public segmentations, and even Semashko-based, which is mentioned with their countries' relevance. So just check that almost all the indices are positive and many of these are statistically significant. This indicates that pro-rich inequity generally applies across the group of countries for the services. There are some exceptions. Exceptions are pro-poor inequities observed in Kenya, Uganda, and the Kyrgyz Republic in the proportion of children with diarrhea who are given appropriate treatment.

Contd…

Inequity in utilisation: selected low- and middle-income countries

Country	*Full basic immunisation coverage*			*% births attended by medically trained person*			*% seen medically if ill: diarrhoea*			*% seen medically if ill: acute respiratory infection*		
	Poorest	*Richest*	*CI*	*Poorest*	*Richest*	*CI*	*Poorest*	*Richest*	*CI*	*Poorest*	*Richest*	*CI*
Modelled on Bevanite/Semashko												
Bangladesh 2007	79.6	88.4	**0.026**[a]	4.9	50.7	**0.479**	75.6	85.9	0.019	40.2	66.5	**0.106**
Ghana 2008	74.6	85.2	**0.029**	46.1	98.6	**0.15**	46.2	55.2	**0.052**	36.9	78.7	**0.129**
India 2005–2006	24.6	71.6	**0.215**	19.6	89.1	**0.293**	19.4	43.3	**0.16**	60.5	80.4	**0.061**
Kenya 2008–2009	62.1	69.2	0.02	21.3	81.8	**0.275**	75.3	73.5	−0.019	54.2	54.3	−0.004
Pakistan 2006–2007	26.8	65	**0.171**	15.9	79.1	**0.312**	45.3	49.9	0.02	51.4	85.4	**0.103**
Uganda 2006	6.8	11.4	0.062	29	78.2	**0.209**	49.1	43.9	**−0.032**	76.8	81.6	−0.003
Segmented												
Bolivia 2008	67.9	63.5	−0.008	39	99.3	**0.175**	38.5	40.6	0.033	40.6	69.9	**0.098**
Colombia 2010	65.2	66.9	0.015	84.4	99.4	**0.036**	57.9	62.3	0.009	52.8	64.1	**0.059**
Nicaragua 2001	55.7	66.1	0.018	78	99.5	**0.054**	51.8	48.2	0.002	45.5	74.5	**0.091**
Peru 2004–2008	48.7	60.7	**0.044**	44	99.3	**0.16**	31.3	59.8	**0.12**	64.6	67.2	0.012
Semashko												
Kazakhstan 2006	82.1	70.1	0.035	na	na	na	na	na	na	na	na	na
Kyrgyz Republic 1997[b]	69.3	73.1	0.0007	96	100	0.00445	44.6	53.7	−0.09935	na	na	0.08576
Uzbekistan 1996[b]	80.9	77.5	0.0124	91.7	100	0.015	na	na	0.17977	na	na	0.14977

Notes: [a]bold indicates significant at 5% significance level; [b]the data in this table are not directly comparable with the equivalent table in the second edition due to differences in data sources; na, not available.

Source: World Bank (2012) *Health Equity and Financial Protection Datasheets*, Washington, DC: World Bank. Available at: www.worldbank.org/povertyandhealth.

Source: *Health economics: an international perspective* (Mcpake B)

Table

- ✓ Almost **all the indices** are **positive**, and many of these are statistically significant → indicating that **pro-rich inequity** generally applies across this group of countries for these services
- ✓ **Exceptions** are pro-poor inequities observed in **Kenya**, **Uganda** and the **Kyrgyz Republic** in the proportion of children with diarrhoea given appropriate treatment

So, this is what is mentioned. However, the exceptions are pro-poor inequities, which I just mentioned in the context of Kenya, Uganda, and Kyrgyz Republic, and pro-pro inequities also observed in Bolivia in the proportion of children aged 12 to 23 months who received BCG, missiles, and three doses of polio and DPT. On average, this group of countries has higher levels of inequity than the segmented health system of Latin America, which in turn has higher levels of inequity than the Semashko health systems, with the exceptions of the pro-poor patterns for treatment of diarrhea and acute respiratory infection noted for Kenya and Uganda in particular. So, since this is our last lecture, we are here to summarize the entire five lectures. Here, we discuss the differences between private health insurance, social health insurance, and even tax-based health systems. And we clarified what happens to the impact of all these on out-of-pocket spending or their health spending.

In some cases, when we say private, we refer to voluntary payments, whereas in social, we usually refer to the Semashko system, and also we refer to the insurance, which is taken up by the public institutions or largely by the government. In some cases, we discuss the co-payments. And we also modeled the discussion through the effective implications of each of the insurance schemes. It is observed that at the point of implications or the point of access and if the payment is made, moral hazard is considered to be lesser. And so far as private health insurance is concerned, we refer to the countries predominantly with this PHI in the USA, whereas in social insurance, the European countries, mostly France, Germany, Luxembourg, and Netherlands, whereas tax-based financing healthcare was in Denmark, Finland, Ireland, Italy, Norway, Portugal, Spain, Sweden, and the UK.

They have already mentioned different ways of dealing with moral hazard issues. Based on co-insurance or deductible-based or no-claim bonuses, etc., there will be a considerably low level of moral hazard, whereas in other cases, you will find a higher amount of moral hazard. So, different health insurance is categorized based on financing mechanisms, such as tax-based social health insurance and private health cases. In short, methods for rationing the highest priority applications for maximizing social welfare, such as gatekeeping, setting the supply of services, waiting lists, queues, and others, have already been discussed.

Now, there are two other important points to summarize as well. We have discussed this. However, we discussed these rationing issues. Rationing is through price competition or non-price competition. Largely, price competition itself is considered to be a high degree of rationing method. So We even discuss retrospective reimbursement in different structures or compulsory insurance in which payments are related to the ability to pay.

Anyway, we have all discussed it. If you follow these lectures, I am sure you will be able to get it. So, the experiences of different countries on the basis of equity, healthcare expenditure, and others are discussed. To follow the content and understanding, we will refer to it once again. What are there in our next unit? We will be discussing the theory and

principles of economic evaluation, the foundation of economic evaluation, and decision rules for different approaches.

With this, it is my privilege to close the lecture, and we will look forward to the next content. Thank you.