THE URBAN BIAS IN THE DISTRIBUTION OF PRIVATE DOCTORS

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Abstract

Due to the different stages of maturity in healthcare development in the higher and lower level of urbanisation region, a variety of barriers may also be faced in this instance. The urban concentration of health professionals is a recurring problem as well. Typically, only public hospitals populate the lower level of urbanisation areas as not only are people sparsely distributed but also they are generally unable to pay market rates for healthcare. Malaysia is not an exception in this case, and hence it faces similar problems since private hospitals proliferate only in the higher level of urbanisation centres since the early 1980s. Also, urbanisation areas are more attractive to health professionals because of the social and professional amenities there. Imbalances in the distribution of healthcare professionals can exacerbate social disparities in a country. While Malaysia's healthcare system has a glorious past, privatisation initiatives may undermine these achievements as private hospitals tend to locate where there is a market for them. For these reasons, it is important to examine if there is a strong urban bias in the distribution of private doctors.

Key Words: Urbanisation, Higher Level of urbanisation, Lower Level of Urbanisation, Doctors, Distribution.

Introduction

In both developed and developing countries, higher level of urbanisation areas almost invariably has a substantially higher concentration of hospitals' doctors than lower urbanisation areas. The urban concentration of health professionals is a recurring problem as well. Typically, only public hospitals populate the lower level of urbanisation areas as not only are people sparsely distributed but also they are generally unable to pay market rates for healthcare.

Malaysia is not an exception in this case, and hence it faces similar problems since private hospitals proliferate only in the higher level of urbanisation centres since the early 1980s. Also, urbanisation areas are more attractive to health professionals because of the social and professional amenities there. Imbalances in the distribution of healthcare facilities and professionals can exacerbate social disparities in a country.

Every state in the country has a general hospital that is equipped to provide a full range of healthcare services but they are located in urban areas. However, while the main public hospitals are located in urban areas, rural people have strong access to them as they are linked to rural government clinics. Also district hospitals are often accessible to rural people.

While Malaysia's healthcare system has a glorious past, privatisation initiatives may undermine these achievements as private hospitals tend to locate where there is a market for them. For these reasons, it is important to examine if there is a strong urban bias in the distribution of private hospitals and doctors.

According to the Population Distribution and Basic Demographic Characteristics Report (2010) the highly urbanised area is defined as gazetted areas with their adjoining built-up areas which had a combined population of 10,000 or more. Built-up areas were defined as areas contiguous to a gazetted area and had at least 60 per cent of their population aged 15 years and over engaged in non-agricultural activities.

Table 1: Level of Urbanisation by State, Malaysia

Rank	State	Level of Urbanisation (%)
1	Kuala Lumpur	100
2	Selangor	91.4
3	Penang	90.8
4	Melaka	86.5
5	Johor	71.9
6	Perak	69.7
7	N. Sembilan	66.5
8	Kedah	64.6
9	Terengganu	59.1
10	Sabah	54.0
11	Sarawak	53.8
12	Pahang	50.5
13	Kelantan	42.4

Source: Department of Statistics, Malaysia (2010).

Doctors by Higher and Lower Urbanisation States

The distribution of doctors in higher and lower urbanisation states was one of the disturbing issues that were noticed in Asian Countries. This is because the tertiary care hospitals are situated in cities, which have better facilities and living conditions which, along with the mushrooming of private hospitals in urban areas, have created big demand for health professionals in the urbanised states. Nearly all countries have skill imbalances, creating huge inequalities. Also, skill mix depends a lot on the experience of doctors. The urban concentration of workers is a problem everywhere, which is also the case with the distribution of doctors in public and private hospitals.

In Malaysia, resources in public health care are distributed to various part of the country based on the size and need of the populations in different districts and states. Because of better urban incentives, the lower level of urbanisation states housemen doctors tend to prefer practising in the higher urbanisation states which is the main reason explaining the shortage of doctors to meet rural health care needs.

The growth of private healthcare simply provided an avenue for doctors to flock to acquire this incentive. Government deployment conditions of health professionals to the lower urbanisation states are also unattractive, and discourages health professionals from helping to deliver medical services in these areas because it is financially unrewarding (Noor Sulastry, 2011).

The number of doctors in higher urbanisation states such as Selangor, Federal Territory of Kuala Lumpur and Penang were really high compared to the lower urbanisation states such as Sabah, Sarawak, Kelantan, Terengganu and Pahang in 1990, which was due to the high concentration of doctors in the private sector in the three states. In order to overcome the inequitable distribution of doctors amongst the states, the Government recruited foreign doctors on contract, increased the intake of medical students in local universities and utilised the services of retired health personnel (Malaysia 1993: 350). Yet, it failed to avert the unequal distribution of doctors.

The growth of private health sector has triggered a steady movement of senior doctors, specialist and experienced allied health professionals from the public sector to the more lucrative private health care sector. The ensuing imbalances are seriously straining human resource in the public health sector. Table 2 shows the number of doctors in public and private in all the states in Malaysia.

The share of doctors started to increase tremendously in private hospitals since the 1990s, after the launching of the Privatisation Master Plan in 1991. Selangor had the highest private-public share of doctors followed by Federal Territory of Kuala Lumpur. Meanwhile the lowest share of doctors in the private healthcare sector can be observed in Kelantan and Terengganu.

Table 2: Distribution of Doctors in Public and Private Hospitals in Malaysia by States, 1990-2009

Years/ States	Kuala Lumpur				Selangor				Penang				Melaka				Johor			
	Pub	%	Pri	%	Pub	%	Pri	%	Pub	%	Pri	%	Pub	%	Pri	%	Pub	%	Pri	%
1990	894	-	823	-	182	-	684	-	197	-	438	-	93	-	28	-	247	-	426	-
1991	938	4.9	845	2.7	209	14.8	715	4.5	203	3.0	440	0.5	117	25.8	128	357.1	258	4.5	441	3.5
1992	1052	12.2	885	4.7	250	19.6	747	4.5	218	7.4	452	2.7	111	-5.1	125	-2.3	327	26.7	433	-1.8
1993	1311	24.6	919	3.8	252	0.8	811	8.6	199	-8.7	483	6.9	113	1.8	134	7.2	307	-6.1	474	9.5
1994	1420	8.3	988	7.5	294	16.7	907	11.8	213	7.0	513	6.2	136	20.4	139	3.7	289	-5.9	519	9.5
1995	1468	3.4	1072	8.5	322	9.5	992	9.4	229	7.5	542	5.7	147	8.1	176	26.6	329	13.8	577	11.2
1996	1467	-0.1	1116	4.1	339	5.3	1101	11.0	219	-4.4	574	5.9	126	-14.3	207	17.6	348	5.8	628	8.8
1997	2675	82.3	1130	1.3	561	65.5	1273	15.6	481	119.6	612	6.6	260	106.3	225	8.7	647	85.9	671	6.8
1998	2802	4.7	1234	9.2	552	-1.6	1400	10.0	508	5.6	655	7.0	239	-8.1	234	4.0	695	7.4	705	5.1
1999	2487	-11.2	1292	4.7	759	37.5	1469	4.9	494	-2.8	679	3.7	291	21.8	243	3.8	732	5.3	745	5.7
2000	1546	-37.8	1374	6.3	677	-10.8	1606	9.3	282	-42.9	728	7.2	173	-40.5	252	3.7	352	-51.9	777	4.3
2001	1560	0.9	1434	4.4	651	-3.8	1685	4.9	294	4.3	773	6.2	186	7.5	268	6.3	367	4.3	807	3.9
2002	1691	8.4	1558	8.6	615	-5.5	1830	8.6	311	5.8	796	3.0	185	-0.5	283	5.6	407	10.9	846	4.8
2003	1867	10.4	1639	5.2	685	11.4	1891	3.3	320	2.9	781	-1.9	173	-6.5	293	3.5	456	12.0	862	1.9
2004	1794	-3.9	1801	9.9	721	5.3	2044	8.1	346	8.1	841	7.7	239	38.2	333	13.7	461	1.1	874	1.4
2005	1941	8.2	1843	2.3	1336	85.3	2097	2.6	666	92.5	853	1.4	388	62.3	344	3.3	1088	136.0	891	1.9
2006	2402	23.8	1563	-15.2	1752	31.1	2103	0.3	849	27.5	822	-3.6	444	14.4	326	-5.2	1026	-5.7	924	3.7
2007	2761	14.9	1762	12.7	2079	18.7	2337	11.1	941	10.8	874	6.3	465	4.7	378	16.0	1295	26.2	981	6.2
2008	2590	-6.2	1881	6.8	1393	-33.0	2508	7.3	559	-40.6	938	7.3	322	-30.8	363	-4.0	752	-41.9	1041	6.1
2009	1944	-24.9	1952	3.8	2877	106.5	2624	4.6	1171	109.5	960	2.3	651	102.2	406	11.8	1588	111.2	1072	3.0

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Years/	Perak	Negeri Sembilan	Kedah	Terengganu

States	Pub	%	Pri	%	Pub	%	Pri	%	Pub	%	Pri	%	Pub	%	Pri	%
1990	305	-	489	-	136	-	142	-	151	-	181	-	119	-	58	-
1991	301	-1.3	501	2.5	122	-10.3	153	7.7	158	4.6	187	3.3	113	-5.0	58	0.0
1992	316	5.0	503	0.4	131	7.4	156	2.0	169	7.0	191	2.1	127	12.4	60	3.4
1993	306	-3.2	527	4.8	158	20.6	160	2.6	178	5.3	202	5.8	124	-2.4	74	23.3
1994	343	12.1	556	5.5	136	-13.9	172	7.5	198	11.2	222	9.9	104	-16.1	81	9.5
1995	377	9.9	572	2.9	167	22.8	177	2.9	208	5.1	255	14.9	131	26.0	90	11.1
1996	391	3.7	598	4.5	185	10.8	191	7.9	224	7.7	283	11.0	134	2.3	99	10.0
1997	732	87.2	614	2.7	307	65.9	203	6.3	393	75.4	331	17.0	287	114.2	103	4.0
1998	768	4.9	638	3.9	326	6.2	221	8.9	480	22.1	346	4.5	294	2.4	113	9.7
1999	762	-0.8	666	4.4	330	1.2	245	10.9	461	-4.0	364	5.2	353	20.1	118	4.4
2000	411	-46.1	711	6.8	194	-41.2	265	8.2	255	-44.7	382	4.9	141	-60.1	123	4.2
2001	427	3.9	741	4.2	219	12.9	271	2.3	282	10.6	398	4.2	156	10.6	127	3.3
2002	418	-2.1	777	4.9	227	3.7	280	3.3	326	15.6	411	3.3	174	11.5	135	6.3
2003	507	21.3	764	-1.7	259	14.1	290	3.6	316	-3.1	410	-0.2	210	20.7	140	3.7
2004	514	1.4	892	16.8	290	12.0	320	10.3	338	7.0	447	9.0	201	-4.3	144	2.9
2005	1059	106.0	919	3.0	442	52.4	334	4.4	597	76.6	457	2.2	461	129.4	153	6.3
2006	1207	14.0	773	-15.9	720	62.9	319	-4.5	853	42.9	444	-2.8	559	21.3	141	-7.8
2007	1244	3.1	803	3.9	710	-1.4	341	6.9	822	-3.6	458	3.2	497	-11.1	166	17.7
2008	759	-39.0	835	4.0	401	-43.5	401	17.6	484	-41.1	483	5.5	266	-46.5	182	9.6
2009	1807	138.1	854	2.3	942	134.9	372	-7.2	1124	132.2	482	-0.2	658	147.4	193	6.0

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Years/ States	Sabah				Sarawak				Pahang				Kelantan			
	Pub	%	Pri	%	Pub	%	Pri	%	Pub	%	Pri	%	Pub	%	Pri	%
1990	112	-	179	-	159	-	190	-	158	-	143	-	235	-	88	-
1991	116	3.6	182	1.7	151	-5.0	205	7.9	153	-3.2	152	6.3	199	-15.3	96	9.1
1992	150	29.3	181	-0.5	181	19.9	200	-2.4	176	15.0	152	0.0	266	33.7	94	-2.1
1993	156	4.0	196	8.3	207	14.4	208	4.0	146	-17.0	158	3.9	319	19.9	100	6.4
1994	153	-1.9	198	1.0	202	-2.4	218	4.8	161	10.3	164	3.8	334	4.7	107	7.0
1995	199	30.1	208	5.1	229	13.4	227	4.1	171	6.2	168	2.4	391	17.1	115	7.5
1996	271	36.2	216	3.8	230	0.4	243	7.0	198	15.8	172	2.4	435	11.3	128	11.3
1997	405	49.4	230	6.5	465	102.2	253	4.1	348	75.8	186	8.1	604	38.9	151	18.0
1998	417	3.0	245	6.5	501	7.7	269	6.3	342	-1.7	208	11.8	544	-9.9	163	7.9
1999	461	10.6	260	6.1	490	-2.2	281	4.5	391	14.3	221	6.3	610	12.1	166	1.8
2000	202	-56.2	277	6.5	205	-58.2	276	-1.8	201	-48.6	235	6.3	531	-13.0	170	2.4
2001	239	18.3	292	5.4	220	7.3	286	3.6	243	20.9	252	7.2	582	9.6	172	1.2
2002	284	18.8	309	5.8	262	19.1	311	8.7	272	11.9	274	8.7	623	7.0	176	2.3
2003	200	-29.6	288	-6.8	308	17.6	343	10.3	286	5.1	289	5.5	574	-7.9	186	5.7
2004	268	34.0	329	14.2	327	6.2	362	5.5	305	6.6	311	7.6	584	1.7	186	0.0
2005	841	213.8	337	2.4	859	162.7	377	4.1	583	91.1	319	2.6	552	-5.5	194	4.3
2006	883	5.0	312	-7.4	784	-8.7	339	-10.1	691	18.5	311	-2.5	983	78.1	192	-1.0
2007	871	-1.4	342	9.6	797	1.7	357	5.3	634	-8.2	355	14.1	1012	3.0	209	8.9
2008	592	-32.0	358	4.7	543	-31.9	378	5.9	440	-30.6	378	6.5	784	-22.5	207	-1.0
2009	1204	103.4	379	5.9	1101	102.8	382	1.1	963	118.9	385	1.9	776	-1.0	218	5.3

Source: Ministry of Health, (various years)**.**

•Pub: Public, Pri: Private and % : Percentage Increase Over Previous Years

The growth of doctors in Selangor from 1990 to 2009 is around 284 per cent, meanwhile for Kuala Lumpur is 137 per cent. Comparing with the previous year, Selangor recorded the highest growth of doctors in 1997; the year government introduces health tourism. Health tourism has made the demand for doctors in private hospitals increases greatly, especially in higher level of urbanisation states. In Kedah and Terengganu, the average growth of doctors per annum was around 5 to 6 per cent only. This reflected that the doctors have less interest in working at the lower urbanisation states.

However, in Sabah and Sarawak states, the balance of doctors in public and private were almost the same. The government expected that the private health sector would absorb rich patients and free some public resources for the benefit of the poor. Although the private hospitals did partially achieve that objective, they also created tremendous pseudo demand to attract doctors from the public sector, partly from the rural hospitals. The doctors are reluctant to relocate to Sabah and Sarawak especially in the areas that offer poor communications with the rest of the country and fewer amenities for health professionals and their families. Higher levels of urbanisation states are more attractive to the doctors for their comparative social, cultural and professional advantages. Moreover, metropolitan centres like Kuala Lumpur and Selangor offer more opportunities for career and educational advancement, better employment prospects and better access to education opportunities for their children. Government doctors, like doctors in private practice, are concentrated in the higher urbanisation states. In fact, the distributions of government doctors among the states are not very different from the distribution of private doctors.

During the financial crisis in 1997, private hospitals were badly affected during which time almost all the public hospitals enjoyed a marked rise in doctors. A number of the private hospitals were closed down forcing a number of the doctors from private hospitals to return to the public hospitals. However, it was during this time some of the private hospitals were encouraged by the government to attract patients from foreign countries.

Health tourism had been targeted by the Malaysian government as a strategy for increasing revenue from tourism, as well as, an industry that should be developed in its own right. The government had chosen 34 private hospitals from the more urban states and federal territory such as Penang, Kuala Lumpur and Selangor. The aggressive promotion of medical tourism had added to the exodus of experienced doctors from the lower level of urbanisation states to higher level of urbanisation states.

Generally, as can be observed from the Table 3, the total number of doctors is high in higher level of urbanisation states compared to the lower level of urbanisation states. In 1990, Federal Territory of Kuala Lumpur was ranked as first followed by Selangor and Perak states. The same scenario can be seen in the year 2000, except Perak fell from third rank to fourth. Perak was overtaken by the Johor state. Interestingly, in 2009 Selangor was in the first rank out of thirteen states, having highest number of doctors, followed by Federal Territory of Kuala Lumpur and Perak, meanwhile Kelantan and Terengganu were the lowest. The result indicated that most of the doctors were concentrated in the higher level of urbanisation states compared to the lower level of urbanisation states.

Table 3: Total Number of Doctors by State, Malaysia (1990-2009).

Year/States	1990		2000		2009	
	Total Doctors	Rank	Total Doctors	Rank	Total Doctors	Rank
Kuala Lumpur	1717	1	2920	1	3896	2
Selangor	866	2	2283	2	5501	1
Penang	635	5	1010	5	2131	5
Melaka	121	13	425	12	1057	11
Johor	673	4	1129	3	2660	4
Perak	794	3	1122	4	2661	3
N. Sembilan	278	11	459	10	1314	10
Kedah	332	7	637	7	1606	6
Terengganu	177	12	264	13	851	13
Sabah	291	10	479	9	1583	7
Sarawak	349	6	481	8	1483	8
Pahang	301	9	436	11	1348	9
Kelantan	323	8	701	6	994	12

The MOH (1999) reported that 58.8% of specialists in 1997 were located in the private sector but manage only 27% of the in-patients in the country, while the remaining 41.2% of specialists in the public sector manage 70% of in-patients. The trained doctors especially specialists leaving public hospitals continuously to destabilise the Malaysian health care system, which then caused the expert services offered to stall, because the requisite expertise had been lost through this exodus.

In critically short staffed services such as neurosurgery, the public sector had to occasionally buy the services of private neurosurgeons to attend to their patients, especially during emergencies. Currently, in Kota Kinabalu, Sabah, cardiology and cardiac surgical services are purchased through weekly rotation of specialists from the corporatized IJN, at hefty prices (Quek, 2011).

In term of ratio of doctors to population is still far short when viewed by states, especially in the lower level of urbanisation states (see Table 4). Though, the ratio is decreasing over the years, it is still far short of WHO minimum standard of 1: 600 in the case of doctors to population ratio in whole Malaysia. Table shows the ratio of doctors to population in all the states in Malaysia from 1990 to 2009.

The higher level of urbanisation states have lower doctor to population ratios compared to the lower level of urbanisation states. Sabah and Sarawak are identified as having a very high doctor to population ratio over the years, though; Sarawak shows a decreasing trend in 2008 and 2009. Sabah and Sarawak seem to be far worse than the other states in Peninsular Malaysia. Federal Territory has the lowest ratio of doctor to population, despite having a smaller ratio to Pahang, Sabah and Sarawak.

Almost every two out of five doctors are in Kuala Lumpur and Selangor. Also, the Sabah and Sarawak general hospitals are generally under-staffed and crowded. The over-worked care givers often succumb to their stress and take it out on rural patient (Sim, 2009). In any case, they may not give the kind of attention that patients deserve. The gravity of the issue instead of improving has worsened over the years i.e. the ratio of doctors to population is increasing dramatically without a focus on quality. If this situation continues, the quality and efficiency of a doctor treating a patient will be questionable.

An example that can be highlighted here is, a patient that goes to the public hospital might need to get an appointment with the doctor and the duration to diagnose might take a year. There is a possibility of increased mortality of a patient due to the delay in treatment due to the lack of doctors or specialist in a public facility.

Most of the wealthy population might not wait and they might choose to go to a private facility because they can get immediate treatment. This suggests unfairness especially for those who are less financially fortunate and even more so for those who are living in lower level of urbanisation states such as Pahang, Sabah and Sarawak. This phenomenon, which is common in part-industrial countries such as the United Kingdom raises the question of whether Malaysia is headed in that direction.

In general, the descriptive statistic shown in Table 4 reflects that there is an inequality of doctor to population ratio between higher urbanisation states and lower urbanisation states. The doctor to population ratio among the states shows a converging trend since the changes of the ratio are quite significant. There is a positive relationship with urbanisation by state and the doctor to population ratio, and a negative relationship between the economic index by state and the percentage of private doctors. The WHO (2008) indicated that inequities in access to care and in health outcomes are usually the greatest in cases where health is treated as a commodity and care is driven by profitability.

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Table 4: Total Doctors and Ratio of Doctors to Population in Malaysia by States, 1990-2009.

Years/ States	Kuala Lumpur		Selangor		Penang		Melaka		Johor	
	Total Doctors	Doc:Pop.	Total Doctors	Doc:Pop.	Total Doctors	Doc:Pop.	Total Doctors	Doc:Pop.	Total Doctors	Doc:Pop.
1990	1717	1:717	866	1:2288	635	1:1798	121	1:2640	673	1:3130
1991	1783	1:642	924	1:2478	643	1:1656	245	1:2051	699	1:2968
1992	1937	1:663	997	1:2097	670	1:1758	236	1:2568	760	1:2896
1993	2230	1:586	1063	1:1993	682	1:1765	247	1:2512	781	1:2876
1994	2408	1:555	1201	1:1827	726	1:1677	275	1:2291	808	1:2845
1995	2540	1:529	1314	1:2148	771	1:1554	323	1:1768	906	1:2697
1996	2583	1:526	1440	1:2021	793	1:1526	333	1:1731	976	1:2560
1997	3805	1:361	1834	1:1636	1093	1:1118	485	1:1200	1318	1:1938
1998	4036	1:345	1952	1:1584	1163	1:1061	473	1:1242	1400	1:1865
1999	3779	1:372	2228	1:1431	1173	1:1063	534	1:1111	1477	1:1808
2000	2920	1:395	2283	1:1839	1010	1:1077	425	1:1174	1129	1:1843
2001	2994	1:423	2336	1:1613	1067	1:1142	454	1:1183	1174	1:1724
2002	3249	1:454	2445	1:1795	1107	1:1255	468	1:1440	1253	1:2307
2003	3506	1:445	2576	1:1807	1101	1:904	466	1:1138	1318	1:1622
2004	3595	1:401	2765	1:1511	1187	1:975	572	1:1066	1335	1:1810
2005	3784	1:411	3433	1:1380	1519	1:967	732	1:974	1979	1:1567
2006	3965	1:398	3855	1:1258	1671	1:893	770	1:942	1950	1:1626
2007	4523	1:353	4416	1:1123	1815	1:836	843	1:876	2276	1:1423
2008	4471	1:488	3901	1:1085	1497	1:817	685	1:879	1793	1:1571
2009	3896	1:425	5501	1:929	2131	1:740	1057	1:728	2660	1:1273

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Years/ States	**Perak**		**Negeri Sembilan**		**Kedah**		**Terengganu**	
	Total Doctors	Doc:Pop.	Total Doctors	Doc:Pop.	Total Doctors	Doc:Pop.	Total Doctors	Doc:Pop.
1990	794	1:2799	278	1:2604	332	1:4253	177	1:4249
1991	802	1:2344	275	1:2513	345	1:3782	171	1:4508
1992	819	1:2804	287	1:2625	360	1:4084	187	1:4268
1993	833	1:2824	318	1:2421	380	1:3973	198	1:4123
1994	899	1:2645	308	1:2542	420	1:3653	185	1:4548
1995	949	1:2183	344	1:2284	463	1:3201	221	1:4172
1996	989	1:2106	376	1:2122	507	1:2970	233	1:4070
1997	1346	1:1556	510	1:1589	724	1:2114	390	1:2502
1998	1406	1:1498	547	1:1505	826	1:1882	407	1:2467
1999	1428	1:1483	575	1:1455	825	1:1915	471	1:2194
2000	1122	1:1406	459	1:1284	637	1:1967	264	1:1835
2001	1168	1:1354	490	1:1319	680	1:1965	283	1:2231
2002	1195	1:1809	507	1:1770	737	1:2365	309	1:3052
2003	1271	1:1454	549	1:923	726	1:1931	350	1:2397
2004	1406	1:1534	610	1:1214	785	1:1901	345	1:2177
2005	1978	1:1141	776	1:1219	1054	1:1753	614	1:1656
2006	1980	1:1153	1039	1:926	1297	1:1451	700	1:1489
2007	2047	1:1130	1051	1:930	1280	1:1495	663	1:1611
2008	1594	1:1039	802	1:859	967	1:1445	448	1:1421
2009	2661	1:899	1314	1:772	1606	1:1245	851	1:1317

Continue

Years/ States	**Sabah**		**Sarawak**		**Pahang**		**Kelantan**	
	Total Doctors	Doc:Pop.	Total Doctors	Doc:Pop.	Total Doctors	Doc:Pop.	Total Doctors	Doc:Pop.
1990	291	1:5061	349	1:4786	301	1:3509	323	1:3782
1991	298	1:6011	356	1:4630	305	1:3399	295	1:4019
1992	331	1:4788	381	1:4592	328	1:3382	360	1:3596
1993	352	1:4692	415	1:4317	304	1:3730	419	1:3161
1994	351	1:4887	420	1:4369	325	1:3566	441	1:3092
1995	407	1:5870	456	1:4134	339	1:3509	506	1:2720
1996	487	1:5180	473	1:4058	370	1:3281	563	1:2506
1997	635	1:4195	718	1:2722	534	1:2320	755	1:1917
1998	662	1:4249	770	1:2585	550	1:2299	707	1:2099
1999	721	1:4120	771	1:2629	612	1:2110	776	1:1962
2000	479	1:3325	481	1:2719	436	1:2035	701	1:1569
2001	531	1:3439	506	1:2544	495	1:1904	754	1:1508
2002	593	1:4604	573	1:3781	546	1:2465	799	1:1783
2003	488	1:2348	651	1:1665	575	1:1699	760	1:1426
2004	597	1:2765	689	1:2115	616	1:1818	770	1:1628
2005	1178	1:2514	1236	1:1871	902	1:1582	746	1:2018
2006	1195	1:2508	1123	1:2099	1002	1:1452	1175	1:1303
2007	1213	1:2524	1154	1:2082	989	1:1497	1221	1:1278
2008	950	1:2454	921	1:2032	818	1:1639	991	1:1863
2009	1583	1:2022	1483	1:1688	1348	1:1145	994	1:1644

Source: Ministry of Health, (various years).

Summary

The share of doctors in the higher urbanisation states and lower urbanisation states is a major challenge for health policy makers since doctors are the most important input of any health system. The share of doctors in hospitals is skewed towards the higher level of urbanisation such as Kuala Lumpur, Selangor, Penang and Johor. The lower level of urbanisation states faces low share of hospitals and doctors especially in Sabah, Sarawak and Pahang. The population to doctors' ratio are also skewed towards the higher level of urbanisation states. These results clearly indicate that there is still an inequality of doctors' ratio between higher urbanisation states and lower urbanisation states.

Although government efforts to expand the supply of doctors through approving the number of medical colleges has resulted in falling population-doctor ratios, it has yet to generate improvements in the quality of the services rendered at public hospitals.
While the numbers of doctors have increased sharply since 2000, most of the doctors are concentrated in the higher level of urbanisation states. The evidence shows that healthcare privatisation has driven the unequal distribution of doctors to be concentrated in higher level of urbanisation states than in the lower level of urbanisation states.

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