

How to Create A World-Class Medical System





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 - (2.2) Competency gap: A retiring doctor is far more experienced than a young doctor. The 420 students who will be joining medical school are supposed to replace the boomer doctors, but will not graduate until 2018. Individually, their experience is less than the 5,000 doctors reaching their retirement age between now and 2030. In fact, not until mid-2020s will the 420 doctors have accumulated enough experience to become specialists
 - (2.3) Generation gap: In line with changing society norms, young doctors demand shorter work hours, better work-life balance and preference for specialising in “less challenging” disciplines

- (2.4) More female doctors: The number of female per 100 male doctors has doubled over the past 30 years from 19 to the highest point at 40. Female doctors tend to retire and/or switch to part-time when they reach their 30's to take up maternity and childcare responsibilities. The rising trend of more female doctors therefore reduces the hours worked
- (2.5) Very high entry barriers for overseas-qualified doctors: The pass rate remained low at 5% to 8% between 2006 and 2010. Only an average of nine overseas doctors (or 2% of annual new doctors intake) were added to the medical workforce each year
- (2.6) Insufficient support staff: Shortage in nurses, administrative staff etc. further burdens doctors' workload, and reduces efficiency of facilities and personnel

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- (3.2) Underinvestment in medical equipment: Budget cuts over the period 2000 to 2009 have caused severe hardware deficiencies; 36% of public medical equipment is over ten years old and is succumbing to technological obsolescence
- (3.3) Growth of private hospitals is stunted by constrictive government policies: A quarter of incoming patients have to wait over ten days for available surgical theatres; Private hospitals wish to expand but government policies are restraining their growth

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- (1.1) Best rankings: Hong Kong can boast some of the world's longest life expectancies, lowest infant mortality rates, and highest cancer and organ transplant survival rates
- (1.2) Best medical schools: HKU's medical school ranks top two in Asia and CUHK and PolyU's World-Class faculty produce international award-winning medical research and cures
- (1.3) Quality services at lowest costs: Our healthcare expenditure per capita is amongst the lowest in developed countries (a third of USA, two thirds of UK, 72% of OECD average)
- (1.4) High patient satisfaction: Over 80% rank the public hospital system as "Very Good" & "Excellent" and only 3% were dissatisfied with Hong Kong Hospital Authority's (HKHA) services which account for c. 80% of our city's inpatient numbers

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- (1) Increase annual medical students intake from 420 to c. 800 (+90%)
- (2) Introduce overseas qualified doctors to bridge the quickly developing shortage in specialists
 - (2.1) Introduce new “Restricted Registration” to admit qualified specialists from overseas
 - (2.2) Introduce Approved List of Medical Schools whose graduates could practise in Hong Kong without passing the Licensing Exams under Limited Registration
 - (2.3) Introduce third year medical students or fresh medical graduates at top overseas medical schools back to Hong Kong through the Pre-Employment Grant
 - (2.4) Improve Transparency and Relevance in Licensing Exams for Overseas Qualified Doctors
 - (2.5) Restructure composition of Medical Council to enhance responsiveness to community priorities
- (3) Establish a committee for centralised manpower planning
- (4) Facilitate doctors in private practice to return to HKHA should they wish to do so
- (5) Increase medical support staff by at least one-third
 - (5.1) Train allied health professionals outside of universities
- (6) Enhance Primary Healthcare for the Community
 - (6.1) Invest in Integrative Medicine
 - (6.2) Establish multi-disciplinary community centre and nursing homes targeted at elderly people
 - (6.3) Explore feasibility of adopting part of Japan’s Golden Plan for homecare
 - (6.4) Establish mental health centres
 - (6.5) “Return to Work” program for disabled citizens
- (7) Promote Medical Tourism

P. 78 **Action 2: Build World-Class Medical Hardware**

- (8) Increase hospital capacity by 5,000 hospital beds (or 14% of our current 35,525 beds) from building new hospitals and expanding existing facilities
 - (8.1) Build new public hospitals
 - (8.2) Build nursing homes and add hospital beds to badly undersupplied districts
 - (8.3) Increase private hospital capacity
 - (8.4) Develop medical hub at Gateway To The World (GTTW) at the airport
- (9) Replace and upgrade medical equipment over ten years old
- (10) Expand facilities of HKU and CUHK medical schools

1: Summary: Hong Kong has a World-Class Medical System yet Cracks are Fast Appearing—It is high time we Augmented our Medical Capacity and Capabilities by Investing in Medical Hardware and Personnel

This is the fourth research report by HKGolden50, an independent not-for-profit research organisation whose mission is to illustrate through hard facts and figures the significant tasks the community and the government must undertake in order to convert the tremendous inflows of business opportunities, talents and capital during 2010 to 2014, “the Golden 5 Years” as we term it, into foundation for a more prosperous, vibrant and compassionate society for the next generation. HKGolden50 has two core beliefs: (1) the best 50 years of Hong Kong are ahead of us, and not behind us (2) taking over the baton to make Hong Kong a better place is the responsibility of the post-80's, our most-educated generation.

“How to Create a World-Class Medical System” builds on the argument of our first three reports and specifies the actions Hong Kong should take in these Golden 5 Years in order to become a World City. A World City attracts talents from all over the world and is where every global citizen wishes to live and bring up a family in. Therefore a crucial component of achieving World City status is a sense of security that when our health deteriorates due to illness, accidents or old age, we would have access to the best medical care. This protection from harm, among the other factors (page 3, second report, “How to become a World City: Lessons from London”), is a critical ingredient to a World City as money cannot buy health, so sickness is the one risk that can only be mitigated by access to World-Class medical system.

This report aims to alert our community that despite our World-Class standard in Western and Chinese medicine, our healthcare system is on the brink of breaking down due to insufficient hardware and personnel coupled with surging local and foreign demand for our quality medical services. Having taken into consideration the favourable factors for Hong Kong to become a medical service leader in the region and the bottlenecks our system is experiencing due to the self-induced cutback in both public and private healthcare investment over the past decade or so, we list out below 13 reasons for augmenting our medical capacity and capabilities.

Hong Kong cannot be a World City without a World-Class medical system

Our healthcare system is World-Class but is on the brink of breaking down due to growing shortage in both hardware and medical personnel

(1) 13 reasons why we must expand our medical services capacity:

(1) Demand for medical services is surging ahead at an increasing pace

- (1) Ageing demographics: Our elderly population (defined as people aged 65 or above) is expected to almost-double the current number to over 2m by 2029 (i.e. up over 4% p.a.);
- (2) Elderly people require almost six times as much inpatient care than those younger;
- (3) Population growth: According to government forecast, our population will grow 1.9m to 8.9m by 2039, or an increase of 27% in 30 years (i.e. up some 0.8% p.a.);
- (4) Surging demand for quality private healthcare from the region: Patients from mainland China demanding non-maternity medical care at private hospitals surged 50% in the past four years (i.e. roughly 11% growth p.a.). This rate of growth is expected to remain high, a phenomenon similar to dynamics that lie beneath the 50% leap in tourist arrivals between 2009 and 2011

(2) Supply of doctor service is stagnant

- (1) Retirement tide: 5,000 doctors (or 40% of our current c. 12,800 doctor workforce) from the baby boomers' generation will be retiring in the next two decades, just as our ageing population requires unprecedented amount of medical care. The upshot is that the shortfall in doctor hours against what is required, will widen significantly – from the 4% in 2009 to 25% by 2019 (i.e. up 2.1% p.a. from 2009 to 2019) , to 45% by 2029 (i.e. up 2.0% p.a. from 2019 to 2029) and to 47% by 2039 (i.e. up 0.2% p.a. from 2029 to 2039). This suggests that our wonderful medical system is at or is fast approaching a “breaking point”;

(2) Competency gap: A retiring doctor is far more experienced than a young doctor. The 420 students who will be joining medical school are supposed to replace the boomer doctors, but will not graduate until 2018. Individually, their experience and ability are less than the 5,000 doctors reaching their retirement age between now and 2030. In fact, not until mid-2020s will the 420 doctors have accumulated enough experience to become specialists;

(3) Generation gap: In line with changing society norms, young doctors demand shorter work hours, better work-life balance and preference for specialising in “less challenging” disciplines;

(4) More female doctors: The number of female per 100 male doctors has doubled over the past 30 years from 19 to the highest point at 40. Female doctors tend to retire and/or switch to part-time when they reach their 30's to take up maternity and childcare responsibilities. The rising trend of more female doctors therefore reduces the hours worked;

(5) Very high entry barriers for overseas-qualified doctors: The pass rate remained low at 5% to 8% between 2006 and 2010. Only an average of nine overseas doctors (or 2% of annual new doctors intake) were added to the medical workforce each year;

(6) Insufficient support staff: Shortage in nurses, administrative staff etc. further burdens doctors' workload, and reduces efficiency of facilities and personnel

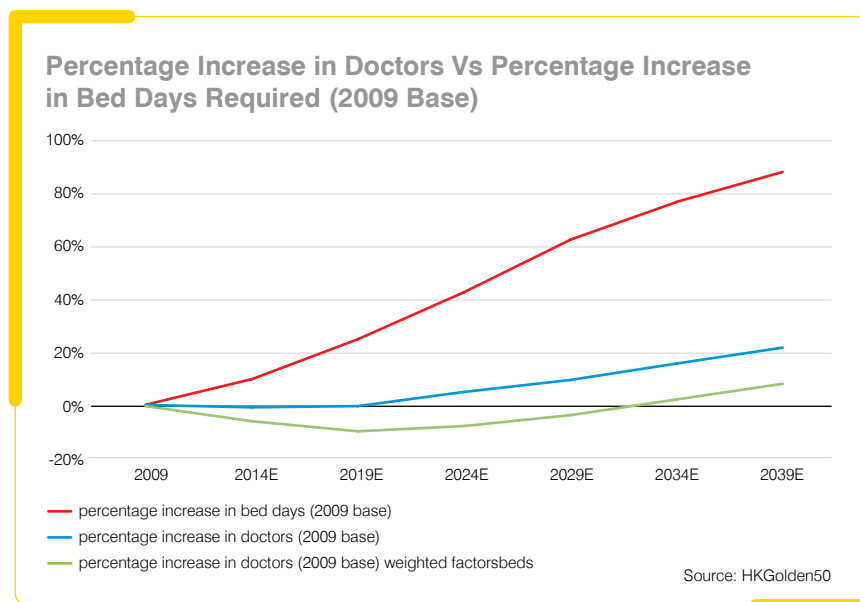
(3) Deficiencies in hospital facilities are worsening

(1) Stagnant public hospital facilities: Despite 6% growth in population and ageing of our population, 8% growth in inpatient admissions over the past decade, hospital beds grew by a mere 1% and zero hospitals were built when eight were established in the preceding decade; Public hospitals account for c. 80% of total inpatient numbers and c.75% of total hospital beds;

(2) Underinvestment in medical equipment: Budget cuts over the period 2000 to 2009 have caused severe hardware deficiencies; 36% of public medical equipment is over ten years old and is succumbing to technological obsolescence;

(3) Growth of private hospitals is stunted by constrictive government policies: A quarter of incoming patients have to wait over ten days for available surgical theatres; Private hospitals wish to expand but government policies are restraining their growth

The chart below shows the ever-widening gap between demand for healthcare and supply of doctor service over the next 30 years – a very worrying trend that requires immediate (supply measures take long lead time to take effect) and aggressive supply response (the gap is not self-stabilising):



The widest gap between demand and supply of healthcare in living memory lies right ahead

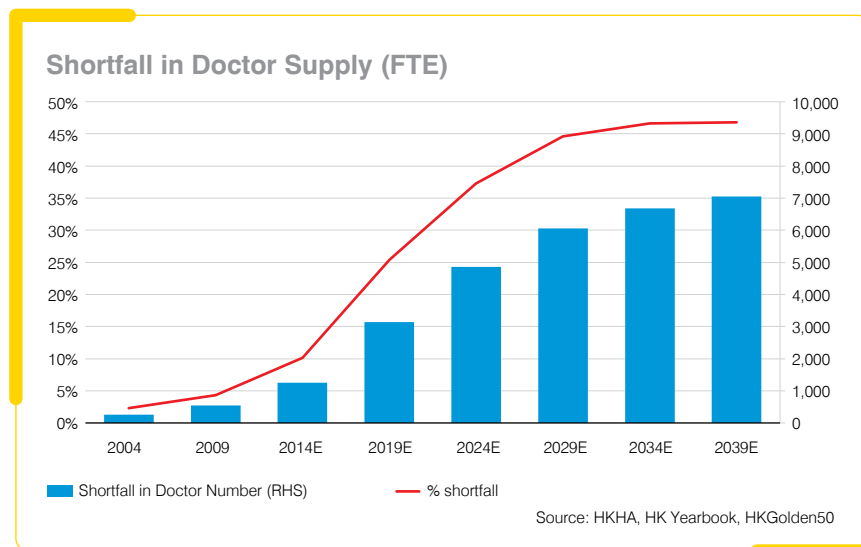
***Weighted factors:**

1. Younger doctors quitting the public system earlier on and hence working fewer hours in their late 30s
2. Female doctors working 2.8% less than male doctors (based on statistics from American Medical Association)

Upon the retirement of baby-boomers (currently aged 45-54), over 5,000 experienced doctors (equivalent to 40% of all doctors) are expected to retire in the next two decades just as the population of elderly people hit record high at over 2m by 2029 (or close to twice the number of elderly people in 2012; c. 4% p.a.). Various studies have already shown that Hong Kong was short of over 200 doctors (or c.1.5% of our doctors' workforce) in 2009 within the HKHA alone. Our projection shows that the 4.5% shortage of total doctors will worsen at an increased speed of c. 280 (c. 2% of total doctors) each year, for the coming two decades. At this rate of deterioration alarmingly, by 2029, we will be short by c. 6050 (or c. 45% of total doctors), and by 2039, we will be short by c.7,000 (or c. 46% of total doctors).

The current 4.5% doctor shortage will quickly worsen by 2% a year. Numbers show that if SARS hit again, our over-stretched medical system will not cope

These numbers suggest that if an epidemic like SARS were to hit Hong Kong again, our over-stretched medical system simply would not be able to cope. The doctors we interviewed have also expressed their belief that without any "designed redundancy" left for contingencies, our current medical system cannot accommodate any shock.



(2) Four metrics underlining the excellence of our medical system

Section 3 lists four metrics why Hong Kong scores very highly globally in four key performance metrics. Such service excellence should easily attract users from overseas and hold a huge potential of Hong Kong becoming a World-Class Medical Hub:

Four metrics evidencing Hong Kong's Medical Service is World-Class

- (1) Best rankings: Hong Kong can boast some of the world's longest life expectancies, lowest infant mortality rates, and highest cancer and organ transplant survival rates;
- (2) Best medical schools: HKU's medical school ranks top two in Asia and CUHK and Poly U's World-Class faculty produce international award-winning medical research and cures;
- (3) Quality services at lowest costs: Our healthcare expenditure per capita is amongst the lowest in developed countries (a third of USA, two thirds of UK, 72% of OECD average);
- (4) High patient satisfaction: Over 80% rank the public hospital system as "Very Good" & "Excellent" and only 3% were dissatisfied with Hong Kong Hospital Authority's (HKHA) services which account for c. 80% of our city's inpatient numbers

(3) Two signs why our medical system is deteriorating

Even with best medical standards, cracks in our medical system are fast appearing:

- (1) Medical blunders are on the rise: sentinel events (serious medical blunders) increased by a third between 2009 and 2010; HK\$40m were spent on settling medical blunder disputes over some 600 patients between 2006 and 2011;
- (2) Long waiting times will delay treatment and jeopardise full recovery: Access to healthcare is limited when patients have to wait for 3.5 hours for Accident & Emergency services, and over a year for specialist medical attention

These are first signals to our overstretched system, confirming our projections. The two graphs above on page 8 and page 9 spell out an urgent need to recruit more doctors, yet a specialist takes over ten years to train. In other words, even if we took action now to boost the number of medical students intake, these new medical students will only receive their specialist qualifications no sooner than 2025. Hence, during the 13 year vacuum between now and 2025, hiring qualified overseas doctors to make up for the shortfall is an inevitable move.

We note that the full registration of foreign qualified doctors in Hong Kong is constrained by Section 8 of the Medical Registration Ordinance, which basically specifies that non-graduates of HKU or CUHK cannot be qualified for registration as a medical practitioner in Hong Kong unless the person has:

1. passed the Licensing Examination; and
2. completed a period of assessment (normally 12 months) as the Medical Council may determine in an approved hospital or approved institution

The relevant sections of the Medical Registration Ordinance may have to be revised to allow for more flexibility in importing foreign registered doctors. While Article 142 of the Basic Law states that professional organizations “may, on their own, assess and confer professional qualifications,” it is important to note that this provision does not confer the professional organization the sole right to assess and confer professional qualifications on their own. The choice of using the word “may” suggests that it is an option but not a requirement. Therefore, the government may also assess and confer professional qualifications jointly with the Medical Council. may also assess and confer professional qualifications jointly with the Medical Council.

Article 142 also states that the government “may, as required by developments in society and in consultation with the parties concerned, recognize new professions and professional organizations.” This suggests that the government has the right to introduce a new professional organization to work alongside or independently of the Medical Council if necessary. The law states that it is the duty of the government to “formulate provisions on its own for assessing the qualifications for practice” so it has very wide powers to reorganize how the medical profession qualifications are assessed.

The Basic Law grants the government very wide powers to reorganize how the medical profession qualifications are assessed

(4) Ten Improvements we Must Make to Meet Surging Demand and Realise our Potential of Becoming a World-Class Medical Hub

In Section 4, we set out the action plan with the objective to enlarge and improve the medical hardware and personnel of our medical system so that there would be sufficient resources to provide for our community within the next ten years when shortage should become acute and realise the potential of becoming a medical hub.

It is up to our community to safeguard the fate of Hong Kong’s medical system amidst our ageing demographics: to direct more resources to medical care with the expected total fiscal surplus of HK\$350bn in the first four years of the Golden 5 Years. Medical care is an item that should always be built for redundancy so that there is capacity to cope with the inevitable calamity, yet we have been doing the opposite (zero hospitals were built) for the past decade. It is crucial to invest in a healthy future for our people as soon as possible, starting from today.

Proposed Investments

Build World-Class Medical Software	Capital Expenditure HK\$bn	Operating cost per year HK\$bn
(1) Increase annual medical students intake from 420 to c. 800 (+90%)	N.A.	1
(2) Introduce overseas qualified doctors to bridge the quickly developing shortage in specialists	N.A.	0.5
(2.1) Introduce new "Restricted Registration" to admit qualified specialists from overseas		
(2.2) Introduce Approved List of Medical Schools whose graduates could practise in Hong Kong without passing the Licensing Exams under Limited Registration		
(2.3) Introduce Clinical Year Recruitment Scheme to attract medical students or fresh medical graduates from top universities back to Hong Kong		
(2.4) Improve Transparency and Relevance in Licensing Exams for Overseas Qualified Doctors		
(2.5) Restructure composition of Medical Council to enhance responsiveness to community priorities		
(3) Establish a committee for centralised manpower planning	N.A.	0
(4) Facilitate doctors in private practice to return to HKHA should they wish to do so	N.A.	0.5
(5) Increase medical support staff by at least one-third	N.A.	5
(5.1) Train allied health professionals outside of universities		
(6) Enhance Primary Healthcare for the Community	10	3
(6.1) Invest in Integrative Medicine		
(6.2) Establish multi-disciplinary community centre and nursing homes targeted at elderly people		
(6.3) Explore feasibility of adopting part of Japan's Golden Plan for homecare		
(6.4) Establish mental health centres		
(6.5) "Return to Work" program for disabled citizens		
(7) Promote Medical Tourism	N.A.	N.A.
Build World-Class Medical Software		
(8) Increase hospital capacity by 5,000 hospital beds (or 14% of our current 35,525 beds) from building new hospitals and expanding existing facilities	20	10
(8.1) Build new public hospitals		
(8.2) Build nursing homes and add hospital beds to badly undersupplied districts		
(8.3) Increase private hospital capacity		
(8.4) Develop medical hub at Gateway To The World (GTTW) at the airport		
(9) Replace and upgrade medical equipment over ten-years old	7	2
(10) Expand facilities of HKU and CUHK medical schools*	3	N.A.
Total	40	22

We sincerely hope that you find this report informative and valuable. Feel free to send us your comments and suggestions by emailing friends@hkgolden50.org and please stay in touch through our website www.hkgolden50.org.

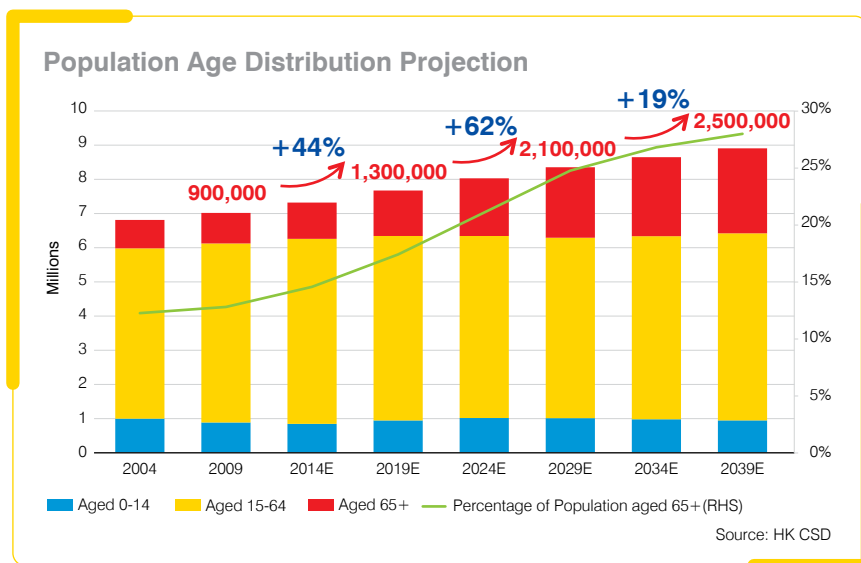
2: Hong Kong's Excellent Medical System is On the Brink of Breaking Down—Upsurge in Demand for and Stagnating Supply of Medical Services will Startle our Medical System within These Few Years

(1) Demand for medical services is surging ahead at an increasing pace

(1.1) Ageing demographics: Our elderly population (defined as people aged 65 or above) is expected to more than double the current number to over 2m by 2029

Our population statistics show that Hong Kong will be experiencing a demographic phenomenon that has never occurred before. The number of elderly people will more than double in 20 years' time from c.900,000 to c. 2.1m (i.e. up over 4% p.a.), and close to triple (up 170% from 900,000 to 2.5m) by 2039. This has serious social implications, as our services for elderly people, including demand for medical services, will undoubtedly shoot up at a pace that our services cannot catch up with.

Medical attention will spike in 15 years, and the effects of ageing population will witness an unprecedented change in our society's resource distribution

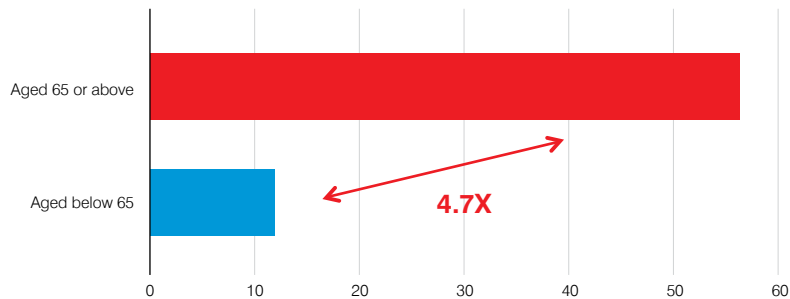


(1.2) Elderly people require almost six times as much inpatient care than those younger

Elderly people require almost six times the amount of inpatient care compared to those younger. This is because elderly patients pay on average 4.7 times the number of visits to hospitals compared to those younger and still an elderly inpatient's average length of stay at hospitals is 1.3 times that of younger patients. In other words, even if our population did not grow, medical attention would increase at a pace that Hong Kong has never experienced before, let alone the fact that our population will be increasing by 0.7% each year. In public hospitals alone, elderly people account for 42% of all inpatient admissions.

Elderly people require almost six times the amount of inpatient care compared to those younger

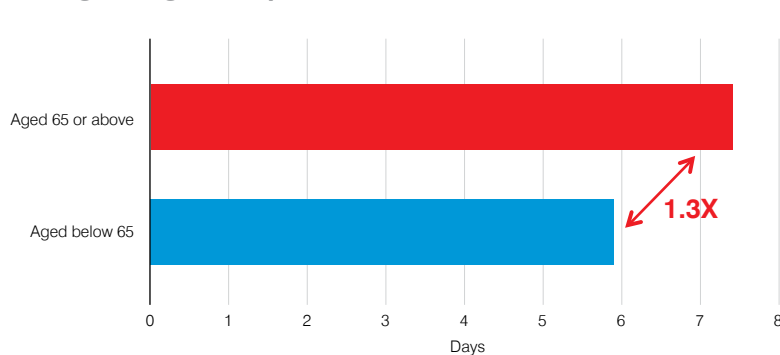
Average Number of Inpatient Visits to Public Hospitals Per 100 Persons



Source: HKHA

Elderly patients pay on average 4.7 times the number of visits to hospitals compared to those younger

Average Length of Inpatient Visits



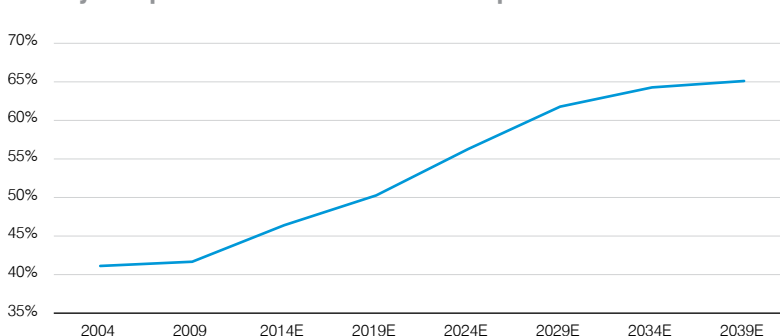
Source: HKHA

An elderly inpatient's average length of stay at hospitals is 1.3 times that of younger patients

Elderly people account for 42% of all inpatients, and this proportion has been increasing from c.38% to 42% between 2000 and 2009 when the elderly population has increased by 165,000 (or 23%). This proportion is expected to increase to 50% by 2019 (or up 1.9% p.a.) and 62% by 2029 (or up 2% p.a.).

Elderly people account for 42% of all inpatients, and this proportion has been increasing from c.38% to 42% between 2000 and 2009 when the elderly population has increased by 165,000 (or 23%)

Elderly People Over 65 as % of Total Inpatient Admissions

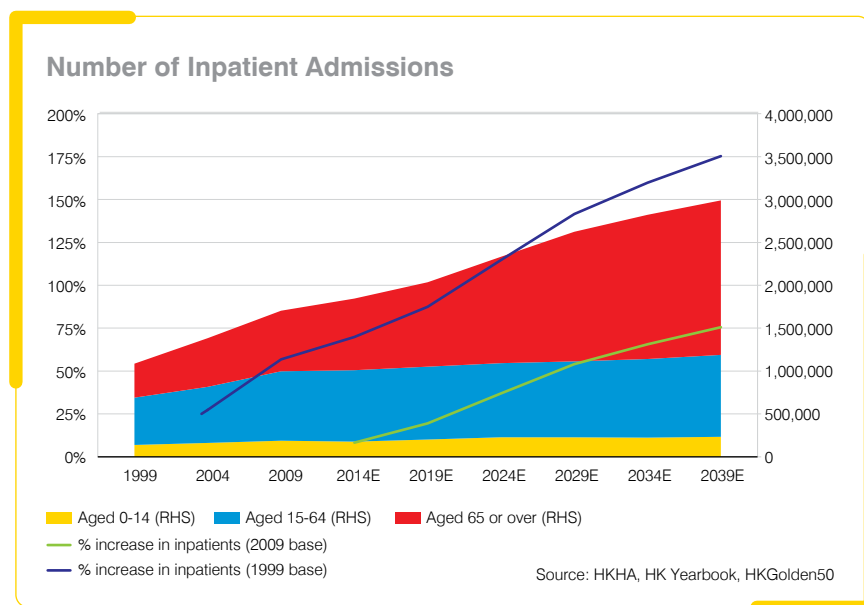


Source: HKHA

(1.3) Population growth: According to government forecast, our population will grow 1.9m to 8.9m by 2039, or an increase of 27% in 30 years

According to government forecast, our population will grow 1.9m to 8.9m by 2039, or an increase of 27% in 30 years. Combining the effects of ageing and population growth, our population demographics will increase inpatient admissions number by 55% in 20 years (adding c.900,000) and 75% (adding c.1.3m) in 30 years, even if we assume that patients do not request for more services in the future (which is highly unlikely in Hong Kong's experience). In other words, Hong Kong will have an 1.9% increase in patients per year, 1.1% faster than our population growth rate. If we cannot handle an upsurge of 42,000 more births to 89,000 since 2003, how can we expect our system to carry 1,300,000 more inpatients? Anyone with chronic disease who looks at the chart below would most likely come up with a backup plan to move elsewhere in 20-30 years' time.

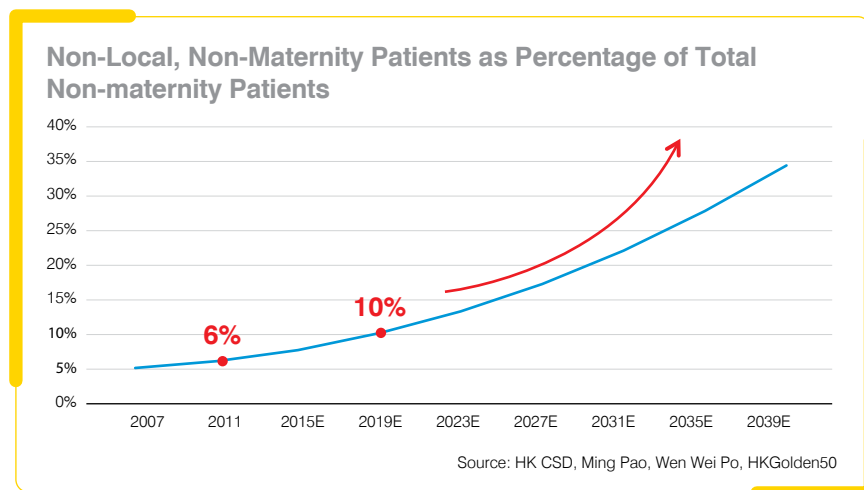
Currently, Hong Kong has c.1.7m inpatients per year, this will be up 55% in 20 years and 75% in 30 years; if we cannot handle an upsurge of 42,000 more births to 89,000 since 2003, how can we expect our system to carry 1,300,000 more inpatients by 2039 with our current capacity?



(1.4) Surging demand for quality private healthcare from the region: Patients from mainland China demanding non-maternity medical care at private hospitals surged 50% in the past four years (i.e. roughly 11% growth p.a.). This rate of growth is expected to remain high, a phenomenon similar to dynamics that lie beneath the 50% leap in tourist arrivals between 2009 and 2011

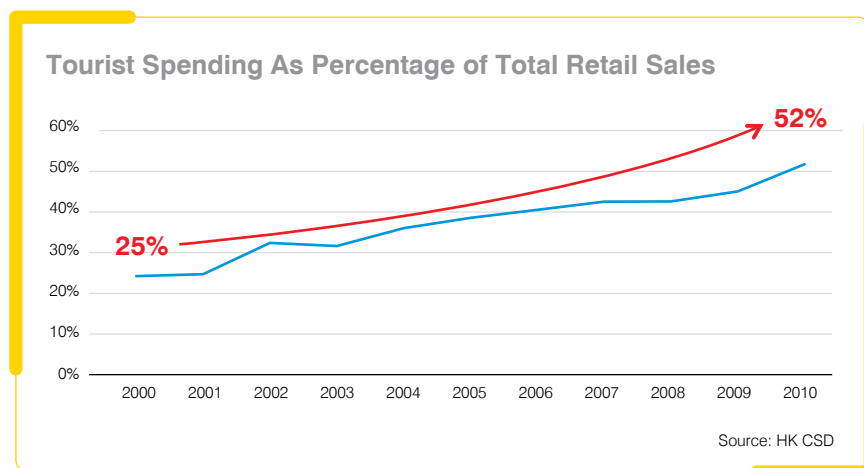
Besides our growing local demand for medical healthcare, mainland demand for our medical services is increasing concurrently. For the past few years, we have been flooded by media reports on mainland demand for maternity services, yet this phenomenon is not only an isolated case. Between 2007 and 2011, non-local non maternity patients at private hospitals increased by 50%, achieving a 11% growth p.a., double the growth of local patients (p.a. 6%). In the upcoming 20 years, non-local non-maternity patients will make up an increasing proportion of our total private medical demand, expected to take up one fifth by 2030 and up to 35% by 2039.

Mainland patients for non-maternity care grew 11% p.a. between 2007 and 2011



This growth parallels with 16% growth p.a. in our mainland tourist arrivals, which has been increasing by 80% since 2007. As more mainland tourists come to Hong Kong and discover our World-Class medical services offering on top of quality retail services, mainland tourists will soon be bitten by our “Hong Kong medical bug”. (Please refer to section 3 to appreciate the huge gap in medical service performance between Hong Kong and the mainland). This trend is already forthcoming—a 48,000 sf Medical Centre taking up the entire 12/F of Ocean Centre was recently opened in 2012 at the heart of our “mainland tourist district”. Comprehensive medical services from Matilda Hospital’s clinic, Medinet Health Centre and other private practitioners are now readily available to mainland customers after their shopping spree on Canton Road.

Upsurge trend likely to parallel our J-curving mainland tourist arrivals, up 80% since 2007



A typical affluent Chinese middle class first goes through the consumption of brands, and the consumption of quality services like medical care and education follows. With the opening of the HK\$62bn Guangzhou-Shenzhen-Hong Kong Express Rail Link in early 2016, Hong Kong will put the rapidly growing middle class of the affluent Guangdong cities of Guangzhou, Dongguan and Shenzhen within an easy 48 minutes’ reach of World-Class Hong Kong healthcare services. It is highly likely that our medical services will ride a similar trend parallel to our tourist spending’s growth—In 2010, tourist spending accounted for 52% of our total retail sales, up by c.30% since 2000.

By 2016, the Guangzhou-Shenzhen-Hong Kong Express Rail Link will offer Guangzhou’s affluent middle class quality Hong Kong medical services 48 minutes away

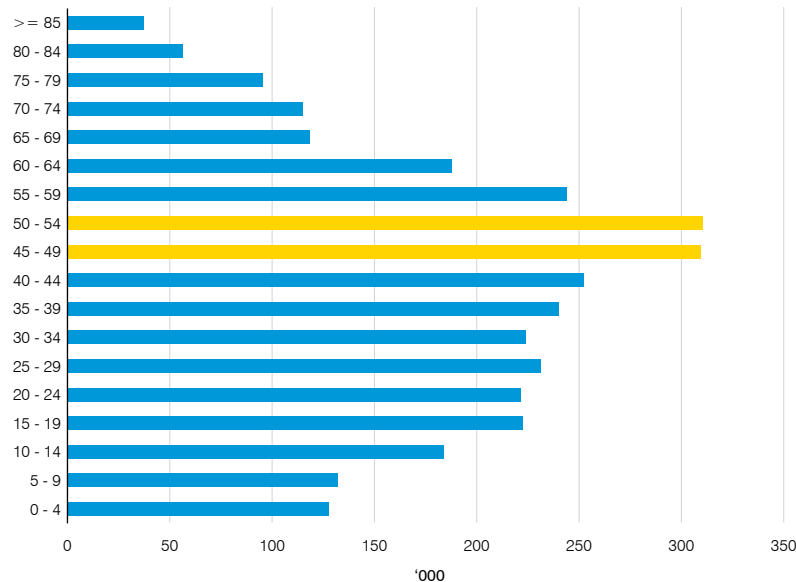
(2) Supply of doctor service is stagnant

(2.1) Retirement tide: 5,000 doctors (or 40% of our current c. 12,800 doctor workforce) from the baby boomers' generation will be retiring in the next two decades, just as our ageing population requires unprecedented amount of medical care. The upshot is that the shortfall in doctor hours against what is required, will widen significantly – from the 4% in 2009 to 25% by 2019 (i.e. up 2.1% p.a. from 2009 to 2019) , to 45% by 2029 (i.e. up 2.0% p.a. from 2019 to 2029) and to 47% by 2039 (i.e. up 0.2% p.a. from 2029 to 2039). This suggests that our wonderful medical system is at or is fast approaching a “breaking point”

Our third report highlighted the effects of our ageing population's retirement tide—our labour force has been growing by c.10% over the last decade, yet with the big bulk of baby boomers retiring in a decade or two, our labour force will contract by some 7% in ten years' time. A similar case applies to doctors. Take doctors working within the HKHA for example, which accounts for approximately 40% of the total registered doctors in Hong Kong; there are some 1,100 doctors aged 47 or above within HKHA, or approximately 20% of the public doctor workforce. Many of these are senior doctors with rich experience and have the best medical skills. However, within the next two decades, these doctors will be retiring and hopefully they will have passed the baton of knowledge to the new generation. The number of private doctors is even more startling, as many of them set up private practices earlier in their career-- c. 4,000 doctors aged 46 or above are still registered as practicing in the private sector. These 4,000 boomer private doctors together with the 1,100 retiring HKHA doctors (c. 5,000 doctors in total) account for 40% of the total doctor population.

Increasing medical demand coupled with the retirement tide of doctors will cripple our system

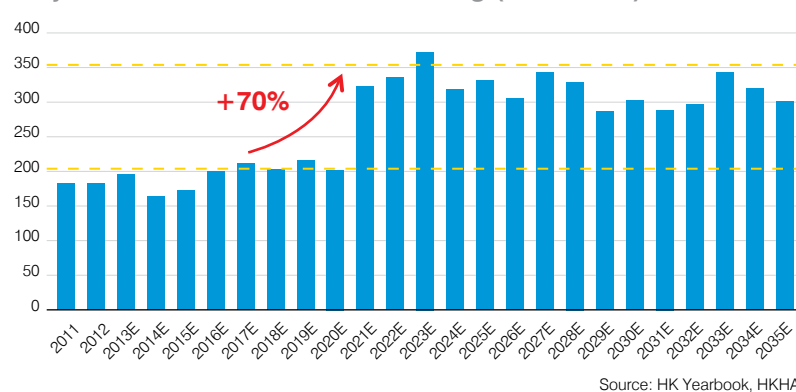
Biggest Age Group of HK Male: 45-54 (The Golden 50)



By the early 2020s, there will be a spike in retirees, with more than 300 doctors retiring each year. Retirement trend will gap up 70% within the next few years and between 2025 to 2035, there will be some 3,000 doctors retiring in total, accounting for 25% of the total number of doctors. In other words, a quarter of our doctors will retire at the same time as the number of elderly people hit a new high at 2m, accounting for one-fourth of our total population. This calls for an urgent increase in medical hardware and software.

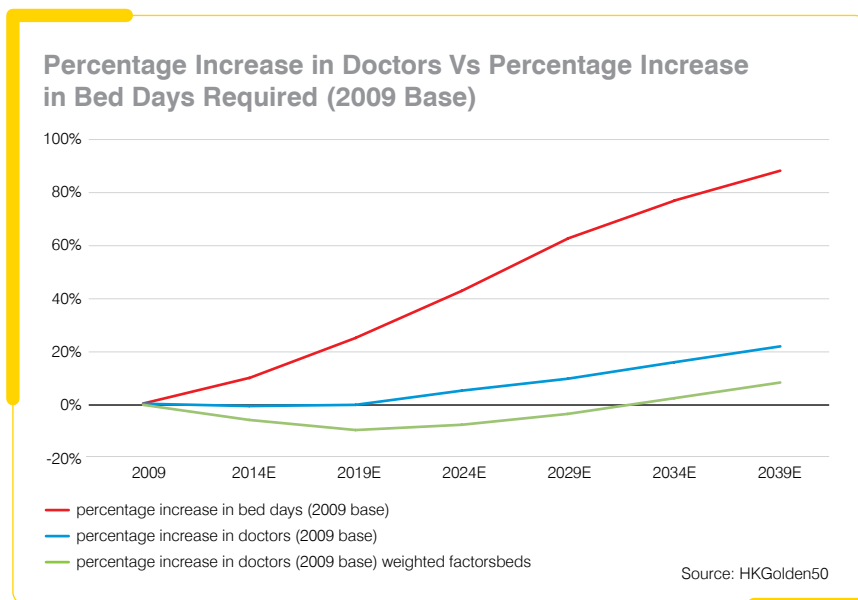
Retirement trend will gap up 70% within the next few years: A quarter of our doctors are retiring in a decade between 2025 to 2035

Projected Number of Doctors Retiring (2011-2035)



With 5,000 retiring and only some 280 doctors on average trained annually for the past decade, the number of doctors will be stagnant for another ten years. By 2019, we will only have 12,400 doctors, essentially the number of doctors in 2009, despite a 25% increase in medical demand for inpatient services. By 2029, the 13,600 doctors make up a 10% increase in doctors since 2011, yet medical demand would have risen by c.63%. By 2039, there will only be c.15,000 doctors in total, an increase of 20% of doctors from 2009, yet the number of inpatients by itself is expected to surge by 88% due to an upsurge in elderly population. A severe shortfall of doctors is hence imminent.

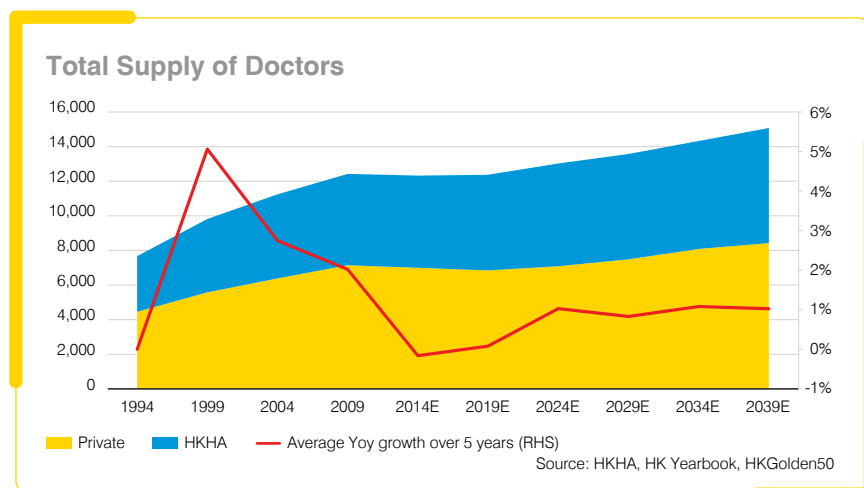
The total number of doctors will be stagnant for the next decade, and will only grow by 25% 30 years from now



(2.2) Competency gap: A retiring doctor is far more experienced than a young doctor. The 420 students who will be joining medical school are supposed to replace the boomer doctors, but will not graduate until 2018. Individually, their experience is less than the 5,000 doctors reaching their retirement age between now and 2030. In fact, not until mid-2020s can the 420 doctors have accumulated enough experience to become specialists

Even though the government has just approved funding for 420 university places (up 30% from the 1990s, but up c.50% from the 2000s) for medical students per year starting in 2012 to make up for the substantial shortage in the last decade, the replenishment rate will not be fast enough to meet the demand for the next ten years because the 420 medical students will not graduate until 2018, and their experience and ability are most likely incomparable to the 5,000 doctors reaching their retirement age between now and 2030. In fact, only by 2025 will the first batch of 420 doctors have accumulated enough experience to be specialists. Consequently, not only are we not replacing enough doctors by a quantitative measure, we are also not replacing the retiring doctors with the same level of experience.

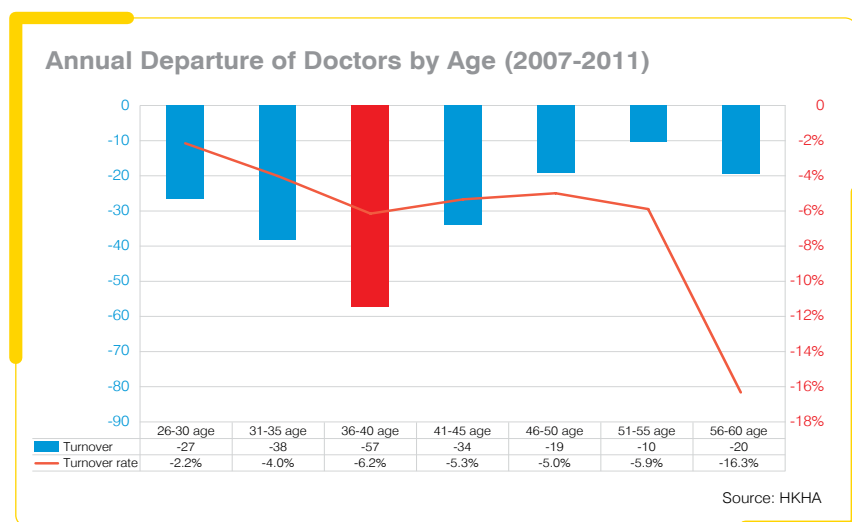
Replenishment rate is not fast enough—one-third of all doctors will retire in the next two decades



(2.3) Generation gap: In line with changing society norms, young doctors demand shorter work hours, better work-life balance and preference for specialising in less challenging disciplines

While demand for healthcare continues to grow and effective supply of doctors continues to shrink, junior doctors are also demanding shorter work hours—a common phenomena among the younger generation. Compared to firefighters' demand of 48 work hours per week, a request for working less than 65 hours a week from the 70+ hours work week appears to be reasonable. Professor Joseph Sung Jao Yiu, the Vice Chancellor of Chinese University, noted in an SCMP interview in April 2012 that “the social values of young doctors have changed”. The request for shorter work hours reflects the trend that new doctors appreciate and value a better work-life balance, and perhaps treat their work more as an occupation and less of a mission. Many of them are hence turning to private sector, where they can work shorter and more flexible hours, once they have obtained their specialist training at the age of 36-40. The graph below shows this phenomenon—c. 30% of HKHA doctors leaving the system come from this particular age group. This age group also has the second highest departure rate (6.2% p.a.), only lower than the 56-60 (16% p.a.) group. The latter group has a high departure rate as those doctors are near retirement age. On the other hand, those aged 36-40 leave mostly because they have decided to switch to private practice after obtaining their specialist recognition.

Call for shorter work hours per worker heightens demand for more doctors



Apart from demanding better work-life balance, junior doctors are less inclined to take up the more challenging specialities such as Internal Medicine. With similar pay and much longer working hours, statistics are showing that the new generation of doctors has shyed away from very demanding specialties. For the past two years, only two doctors registered to become specialists in Internal Medicine (a specialty especially important for our ageing population, as all chronic disease patients have to consult internal medical specialists). This critical specialty's increase in numbers pales in comparison with the twenty doctors added to Anaesthesiology, which is one of the new favourites among junior doctors, as the specialty offers relatively shorter hours and fewer overnight shifts.

New generation of doctors prefer less challenging areas of medicine

Number of Newly Registered Specialists

Specialists registered	5-Year Growth (2006-2010)	5-Year Growth (2006-2010)	10-Year Growth (2001-2010)	10-Year Growth (2001-2010)
Internal Medicine	0	0%	2	2%
Paediatric Surgery	9	7%	28	26%
Paediatrics	48	11%	139	41%
Obstetrics and Gynaecology	38	12%	75	26%
Plastic Surgery	5	12%	15	47%
General Surgery	66	20%	168	71%
Anaesthesiology	64	25%	157	93%
Geriatric Medicine	21	27%	46	85%
Psychiatry	79	46%	149	145%
Emergency Medicine	82	57%	164	260%
Total specialists	984	24%	2169	76%

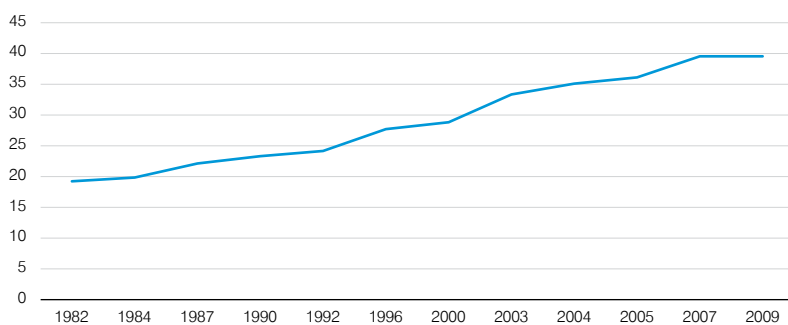
Source: HKHA

(2.4) More female doctors: The number of female per 100 male doctors has doubled over the past 30 years from 19 to the highest point at 40. Female doctors tend to retire and/or switch to part-time when they reach their 30's to take up maternity and childcare responsibilities. The rising trend of more female doctors therefore reduces the hours worked

Over the past three decades, the number of female per 100 male doctors has doubled for the past 30 years from 19 to the highest point at 40. This trend is set to continue, as the current intake of students from our two local medical schools have admitted more female than male students for three years out of five years between 2004-2009.

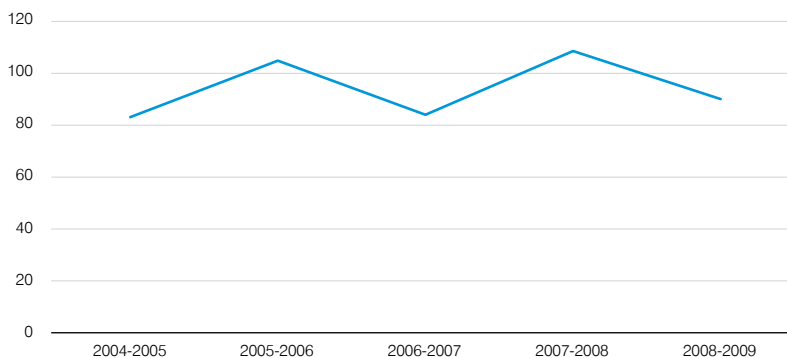
The number of female per 100 male doctors has doubled for the past 30 years from 19 to the highest point at 40

Number of Female Doctors Per 100 Males



Source: HK Dept. of Health

Number of Female Medical Students Per 100 Males

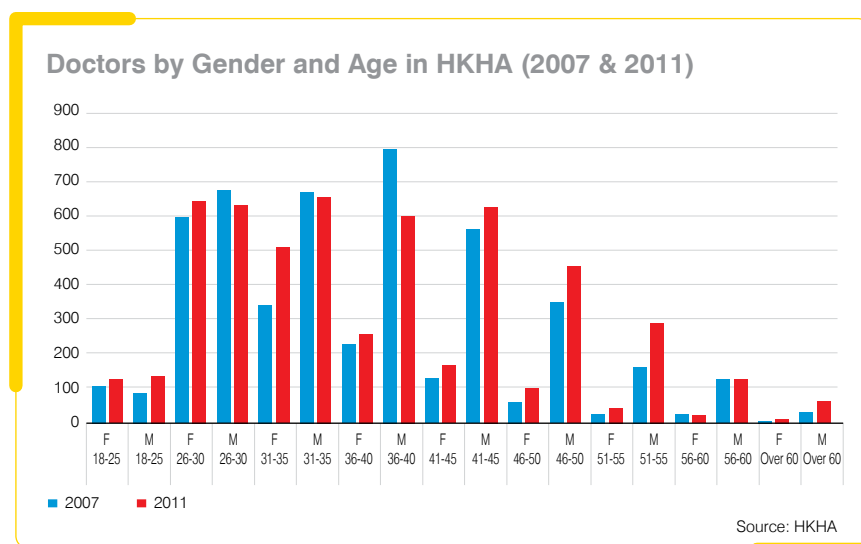


Source: HKU, CUHK

Female doctors tend to retire earlier and switch to part-time more than their male counterparts. A survey by Women Doctors' Association shows that over 70% female doctors state that they are not spending enough quality time with their family, and 65% of female doctors wish to work 45 hours or less each week, while only a mere 10% are willing to work over 56 hours per week. As of today, close to 50% of medical graduates are female, which suggests that the total work hours of all doctors will decrease especially when female doctors hit their mid thirties. Between 2007 and 2011, 15% of the female doctors (c.100) left the HKHA system by the time they reached their early 30s, (12ppt more than the 3% men who leave the system).

Our current workforce consists of 30% female doctors; more will retire at an earlier age, or work part time

As women especially have to juggle between taking care of family and work, it is understandable for them to opt for a more flexible work schedule in the private sector. Overseas research also suggests that female doctors carry less workload. An American Medical Association study revealed that on average, female doctors' total work hours are equivalent to 97.2% of male doctors. There are no official studies conducted in Hong Kong, but given so many more females quit the HKHA system after they have obtained a specialist recognition, it is reasonable to assume that female doctors in Hong Kong work even less than their American counterparts. Accordingly, the rising trend of more female doctors will continue to reduce the total number of doctor hours offered to our patients.



(2.5) Very high entry barriers for overseas qualified doctors:
Between 2006-2010, only an average of nine overseas doctors
(or 2% of annual new doctors intake) were added to the medical
workforce each year

Currently, our supply of doctors is heavily reliant on local graduates, the annual intake of overseas qualified doctors remains at single-digit. Between 2006-2010, only an average of nine overseas doctors (or 2% of annual new doctors intake) were added to the medical workforce each year. Our current system requires overseas doctors to pass three Licensing Exams and complete a 12-month internship before they can attain full registration as medical practitioner in Hong Kong.

The Licensing Exams are held annually in Hong Kong and consists of three parts:

Part I: Examination in Professional Knowledge

Part II: Proficiency Test in Medical English

Part III: Clinical Examination

In theory, the Licensing Exams are a great method for screening subpar doctors from entering the Hong Kong market to ensure that we protect the quality of medical care. However, the Licensing Exams are criticised by many doctors due to the following reasons:

(1) Lack of transparency: Detailed syllabus and past exam papers are not readily available; candidates have to rely on word of mouth as to what subject areas form the knowledge to be examined when they prepare for the exams;

(2) Textbook/Technical/Impractical nature of examination questions: the Part I exam tests mostly textbook knowledge and includes questions that rarely appear in real-life clinical cases. Many experienced doctors have practised for years and cannot readily answer these questions because such knowledge is not required on their day-to-day clinical work. Many doctors have expressed that the exam is an out-of-date assessment and ineffective way to screen for competent doctors.

(3) Low pass rates: Pass rates of the licensing exams remained at 5-8% in the past five years. While it is debatable whether or not the level of difficulty is set too high, many local experienced doctors have expressed the view that they would fail the exams were they to take it today due to the impractically academic nature of the exams. As an analogy, it would be like examining a Nobel prize-winning molecular physics professor on O-level chemistry for his application to join the Institute of Nuclear Energy – even an over-qualified individual would not easily pass an exam that tests knowledge from his school days.

Pass Rates for Licensing Exams

Year	Number of examinees sitting in Examination Professional Knowledge (Part 1 of 3)	Licenses issued	% of successful candidates (estimated)
1999	165	16	10%
2000	132	10	8%
2001	124	10	8%
2002	104	7	7%
2003	76	9	12%
2004	77	7	9%
2005	81	10	12%
2006	105	5	5%
2007	117	8	7%
2008	138	9	7%
2009	158	12	8%
2010	168	11	7%

Source: HK Medical Council

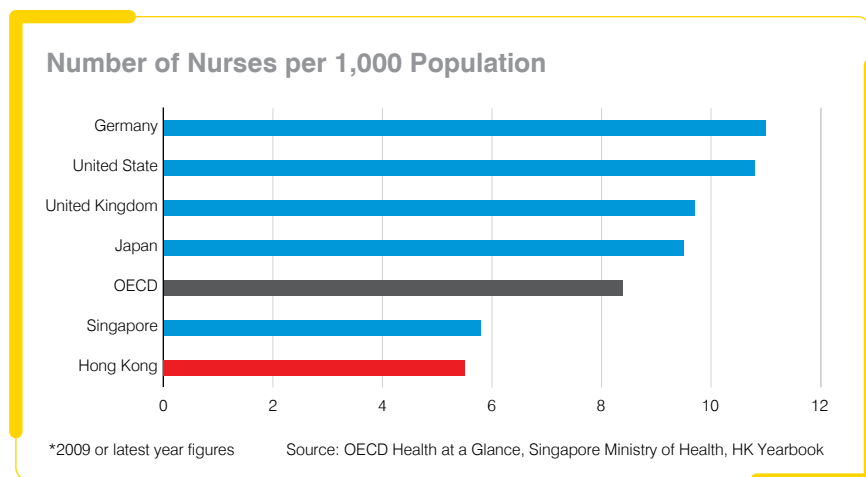
The existing system is rigid for scaling supply of specialists because the HKHA are limited to hiring from existing specialists in the market or the few overseas qualified doctors who have passed the three Licensing Exams and have completed the 12-month internship. Realistically, we are unable to cope with the decade-long lead time that is required to add capacity for our foreseeable increase in medical attention. Hence, the recruitment of qualified doctors from overseas is the most practical way for us to maintain the standards of our system. Management level doctors have estimated that Hong Kong can recruit c. 150-200 (or 1% of total doctors population) overseas qualified doctors per year if barriers were normalised.

Loosening existing requirements will add c. 150 (or 1%) extra doctors each year

(2.6) Insufficient support staff: Shortage in nurses, administrative staff etc. further burdens doctors' workload, and reduces efficiency of facilities and personnel

Nurses and allied healthcare professionals, as well as administrative staff are key supporters of doctors' work and crucial in providing quality medical services. However, nurses are similarly short in both the private and public sectors. With the closure of nursing schools between 1999 and 2008, the number of nurses trained each year dropped 76% from 1,391 to 336 each year. The total number of nurses working within HKHA saw a cutback by 5.6% from 20,435 nurses in 1999 to 19,273 in 2008, despite an increase in inpatients of 17% in public hospitals alone. The re-emergence of nursing schools in 2008 helped pick up speed in training nurses but the growth is not fast enough to compensate for the loss of manpower over the past decade. Consequently, the ratio of nurses to population dropped from 5.8 per 1,000 population to 5.4 within those nine years, which is significantly below the OECD average at 8.4. Despite efforts to train more nurses through nursing schools and associate degree programs in recent years, our nurses to population ratio (5.5 nurses per 1,000 population) remains dangerously low when compared to other developed countries (OECD average at 8.4) to the point that HKHA has admitted that it is still short of 1,000 nurses (c. 2.5%) even after spending HK\$200m to recruit 1,600 nurses last year.

Doctors' supporting staff is in shortage as well

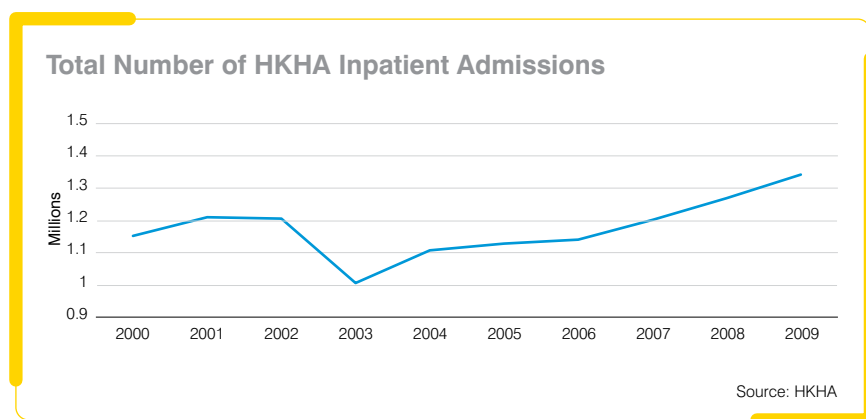


(3) Deficiencies in hospital facilities are worsening

(3.1) Stagnant public hospital facilities: Despite 6% growth in population and ageing of our population, 8% growth in inpatient admissions over the past decade, hospital beds grew by a mere 1% and zero hospitals were built when eight were established in the preceding decade; Public hospitals account for c. 80% of total inpatient numbers and c.75% of total hospital beds

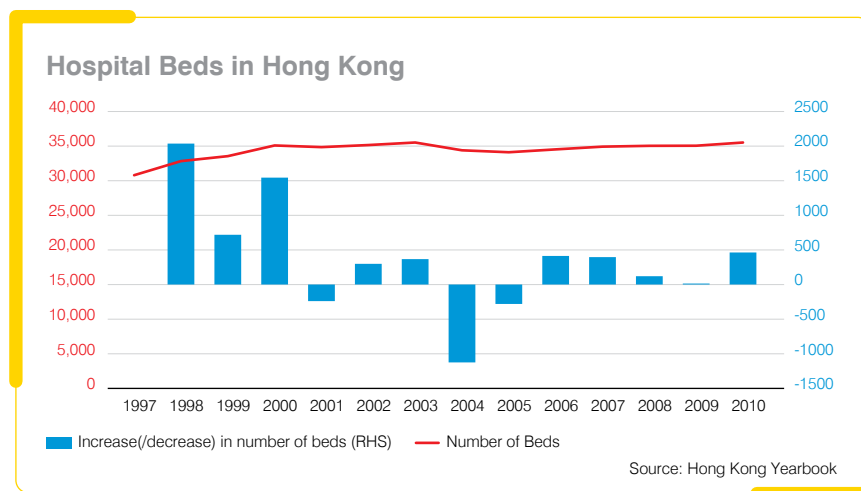
For the past decade, our population grew by 5.5% (or c.380,000) and the number of hospital admissions in public hospitals increased by 8% (or c.90,000), yet our medical facilities have not been growing to keep pace with the increased demand and need for medical attention. The first decade of the 21st Century (2001-2010) of Hong Kong has been a “Lost Decade” in terms of hospital development – not a single new hospital came into operation, a stark contrast against the government’s active engagement in constructing eight hospitals between 1990 and 2000. While there are plans for new hospitals in various locations, none of them will be fully operational until 2016.

Hardware is deficient; zero hospitals built in our lost decade (2001-2010) when number of inpatients increased by 8%



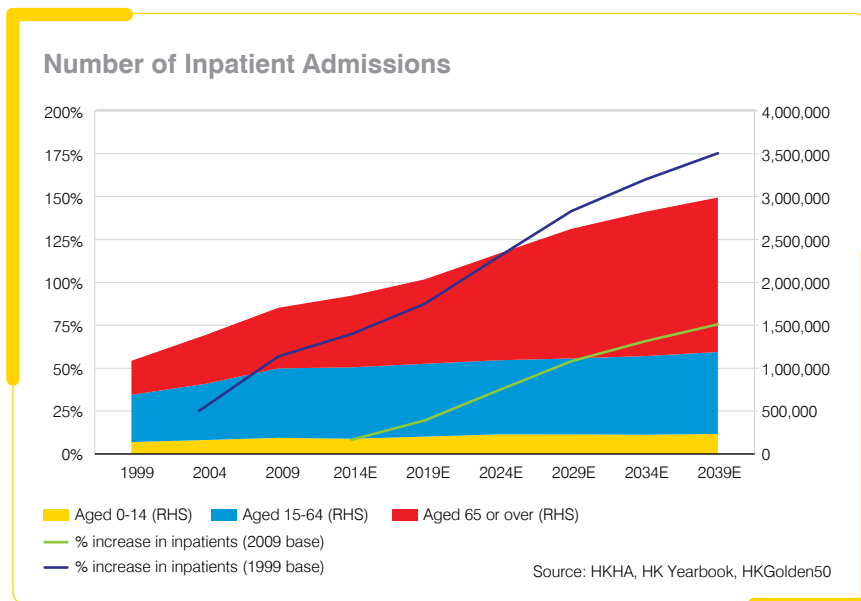
The number of beds has been stagnant from 2000 onwards. There were 34,860 hospital beds back in 2000, and the total number of beds grew by a mere 2% to 35,525 in 2010. Only 11 hospitals in the city hold over 1,000 beds, and three of them hold a c.90% occupancy rate. This is a dangerously high occupancy rate compared to global health standards that recommend a less than 85% occupancy rate on average. In emergency situations, the availability of beds becomes critical. The servicing capacity of beds in Tseung Kwan O Hospital, Princess Margaret Hospital and Tuen Mun Hospital has been stretched to the limits. These three hospitals in particular often have to set up temporary canvas beds as a band-aid policy to cater for the bed crunch, leaving patients to receive treatment and recover from their illness in cold corridors-- the shortage of beds has led to a decline in our quality of medical care.

Hospital beds grew by a mere 2% and major hospitals are being stretched to limits



Many Hong Kong citizens have witnessed the alarming shortage of medical resources. The government has not responded sufficiently to our overstretched medical system with appropriate urgency. The two reconstruction projects at Queen Mary and Kwong Wah hospitals are not adding new beds to the system despite an increase of inpatients by 25-35% by the time the reconstruction projects are finished. It is certain that demand for beds will only increase when the projects are completed in 2020 and 2025 respectively; thus it is a lost opportunity to not increase number of beds as part of these reconstruction projects.

Still no active planning from the Government's side—the two new key hospitals' reconstruction plans do not include adding new beds despite an increase of inpatients by 25-35% by the time the reconstruction projects are finished



(3.2) Underinvestment in medical equipment: Budget cuts over the period 2000 to 2009 have caused severe hardware deficiencies; 36% of public medical equipment is over ten years old and is succumbing to technological obsolescence

Since the budget cuts for HKHA expenditure in 2000, many hospitals could no longer afford to replenish new equipment on a timely manner. Currently, 36% of all medical equipment at public hospitals is over ten years old. Medical facilities are not well-equipped to produce reliable and timely detection of diseases. Senior management doctors have pointed out that there are even times when hospitals have to turn down generous donors' offers to purchase new equipment, as their recurrent budget is insufficient to cover the maintenance cost of these equipment (c.20-30% of equipment cost). Many doctors have expressed concerns in replacing all equipment over 20 years old, yet their complaints and pleading requests were ignored, causing frustration and hurting staff morale.

36% of all medical equipment at public hospitals is over ten years old



Head of Surgery at Queen Mary Hospital Lo Chung Mau pointed out that medical equipment at public hospitals almost parallels that of third world countries. Medical equipment sometimes fall apart during operations, due to insufficient funding for maintenance and replacement. Dr. Ho Pak-leung, President of the Centre for Infection of HKU, also pointed out that almost 100% of the apparatus at the Centre for Infection are at least 20 years old. Facing a lack of adequate equipment, doctors often have to re-invent the equipment; for example, the UV-Light Box for rapid genetic testing/diagnosis at the Centre of Infection is “home-made” by the medical staff. While we appreciate innovation from the medical staff, Hong Kong is not so impoverished that we cannot replace such equipment. There are no excuses why we have to endure third world hospital facilities when our government has a HK\$699bn fiscal reserve. Surely, life and death issues are worth investing in.

*Life and death issues matter—
HK\$699bn fiscal reserve can
prevent medical blunders
induced by outdated medical
equipment*

(3.3) Growth of private hospitals is stunted by constrictive government policies: A quarter of incoming patients have to wait over ten days for available surgical theatres; Private hospitals wish to expand but government policies are restraining their growth

Growth in inpatients and hospital beds in private hospitals (2007/2011)

Private hospitals inpatients	2007	2011	Growth
Total	301,400	387,900	29%
Total, non maternity	270,530	337,565	25%
Local, non maternity	268,900	334,700	24%
Non local, non maternity	13,500	20,200	50%
Non-local, maternity	19,000	33,000	74%
Growth in private hospital beds	3,438	4,098	19%

Source: HK CSD, Ming Pao, Wen Wei Po, HKGolden50

The waiting times to be admitted into hospitals are getting longer at Hong Kong's 13 private hospitals. On average, more than a quarter of incoming patients have to wait for more than ten days before their surgery can take place because no beds are available for them to be admitted into the surgical department. Many doctors, including top cardiologist Professor Lau Chu Pak sometimes need to turn away patients' requests for surgeries because doctors cannot guarantee bed spaces to perform surgeries on their patients in a timely manner. The 4,000 beds provided by private hospitals in total, representing 11% of total hospital beds in Hong Kong, are insufficient to accommodate for the imminent upsurge in inpatient demand. As mentioned in section 1.4, total inpatients in private hospitals increased by c.30% (7.5% p.a.) between 2007 and 2011, with a 50% increase in non local inpatients for non-maternity care.

Hardware is also lacking in the private sector

Number of Inpatients in Public and Private Hospitals

Inpatients	2009	2010
HKHA hospitals	1,341,885 (79%)	1,423,705 (79%)
Private hospitals	361,563 (21%)	381,554 (21%)
Total	1,703,448 (100%)	1,805,259 (100%)

Source: HKHA, HK Yearbook

Distribution of Hospital Beds in Hong Kong (2009-2011)

Total hospital beds	2009	2010	2011
Public hospitals	26,824 (77%)	26,981 (76%)	27,041 (75%)
Private hospitals	3,818 (11%)	3,949 (11%)	4,098 (11%)
Nursing homes	3,573 (10%)	3,803 (11%)	4,190 (12%)
Correctional institutions	799 (2%)	792 (2%)	792 (2%)
Total	35,014 (100%)	35,525 (100%)	36,121 (100%)

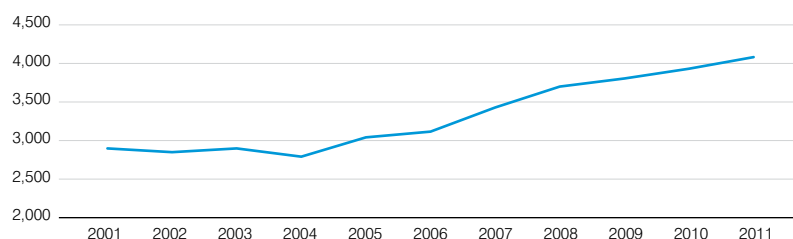
Source: HK Yearbook

Number of Beds in Public and Private Hospitals

Total hospital beds	2009	2010	2011
HKHA hospitals	26,824 (88%)	26,981 (87%)	27,041 (87%)
Private hospitals	3,818 (12%)	3,949 (13%)	4,098 (13%)
Total	30,642 (100%)	30,930 (100%)	31,139 (100%)

Source: HKHA, HK Yearbook

Number of Beds in Private Hospitals



Source: LegCo Secretariat

Compared with public hospitals, private hospitals are more responsive to the increasing demand for hospital care: total number of private hospital beds increased by 19% from 3,438 to 4,098 between 2007 and 2011 with the continuous expansion of private hospitals. However, the growth rate is still behind the 29% increase in private inpatients. However, more expansion works have been put on hold due to lack of space. Sanatorium hospital has been trying to increase its service capacity by building two 21-storey blocks to accommodate for a surge in medical demand, yet the project is still stalling due to limited space and government restrictions.

Including hospital beds in correctional institutions and nursing homes, there are 36,121 hospital beds in Hong Kong in 2011. 14% are located in correctional institutions and nursing homes, 75% are in public hospitals, and 11% are in private hospitals

In private and public hospitals alone, there are a total of 31,139 beds in 2011. HKHA hospital beds make up 87% of beds

Private hospitals are reacting to market demand for more hospital care but shortage of expansion space remains a problem

Four sites for Private Hospital Development



Wong Chuk Hang

GFA: 2.5ha

Estimated capacity: 6-8 Floors



Tai Po

GFA: 2.6ha

Estimated capacity: 6-8 Floors



Tseung Kwan O

GFA: 2.2ha

Estimated capacity: 8 Floors



Lantau Tung Chung

GFA: 1.6ha (Private only) or 2.4ha (Private and public collaboration)

Estimated capacity: 8-9 Floors

Source: Food and Health Bureau

Plans to open new private hospitals are also in place. More than 30 bidders expressed interest in the four plots of land reserved for hospitals in Tai Po, Tseung Kwan O, Lantau and Wong Chuk Hang since 2009. However, talks are still in progress, leaving the four pieces of land idle for three years. The tender that came out in mid-April required bidders to offer at least 300 beds at each site by the second year of the hospital's operation. It is unlikely that the expected 5,500 beds to be provided by all private hospitals by 2017 can come in time with the delayed operation of these four hospitals. Accordingly, such delay will lower our medical care standards as medical demand cannot catch up with.

Four plots of land reserved for private hospital development have been put on hold for more than three years-- the government needs to speed up its process to alleviate the bottleneck problem in increasing demand for private healthcare



The proposed establishment of a private hospital in Clearwater Bay by 2014 remains delayed, as the original plan to house 300 beds is still under scrutiny by the Town Planning Board's strict plot ratio requirements. The hospital is now expected to offer a mere 235 beds, not enough to alleviate the shortage of beds in the cluster. According to global standards, a hospital cannot fully achieve economies of scale until they reach 300 beds. The restrictions in place should therefore be reconsidered, especially under the macro context where Kowloon East is under acute shortage of medical services. Such examples reveal inefficiencies of medical demand planning and how unreasonable the government is with respect to medical investment.

Originally planning to offer 300 beds to fully achieve economies of scale, Clearwater Bay Hospital can now only provide 235 beds under government restrictions

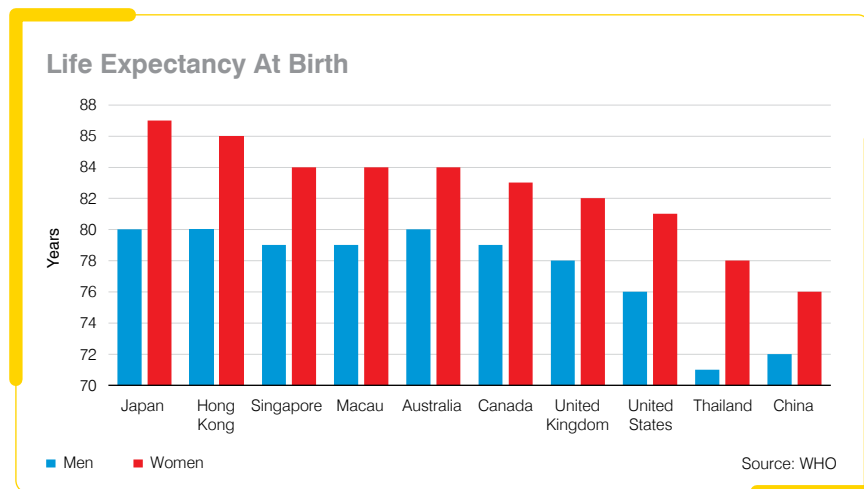
3: Hong Kong has Great Potential to Become a World-Class Medical Hub

(1) Hong Kong has the best medical care to offer: High quality at a low cost

(1.1) Best rankings: Hong Kong carries some of the world's longest life expectancies, lowest infant mortality rates, and highest cancer and organ transplant survival rates

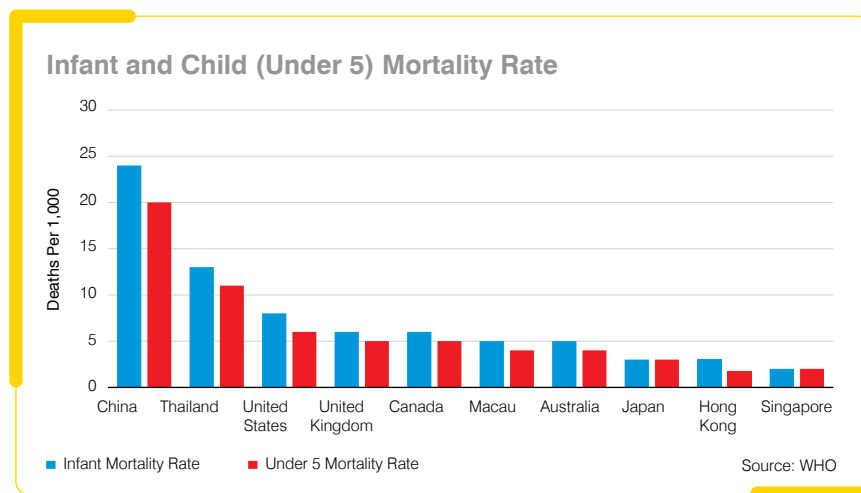
Despite all the hardware and software constraints mentioned in Section 2, Hong Kong's medical care is top-notch, and we are ranked top in many areas. Our male life expectancy at birth is the highest in the world (80), while females' (86) ranks second, closely behind Japan (87).

Our medical potential needs to be unleashed—we have the skills and quality care, yet poor planning in hardware and software are limiting our development as a service exporter



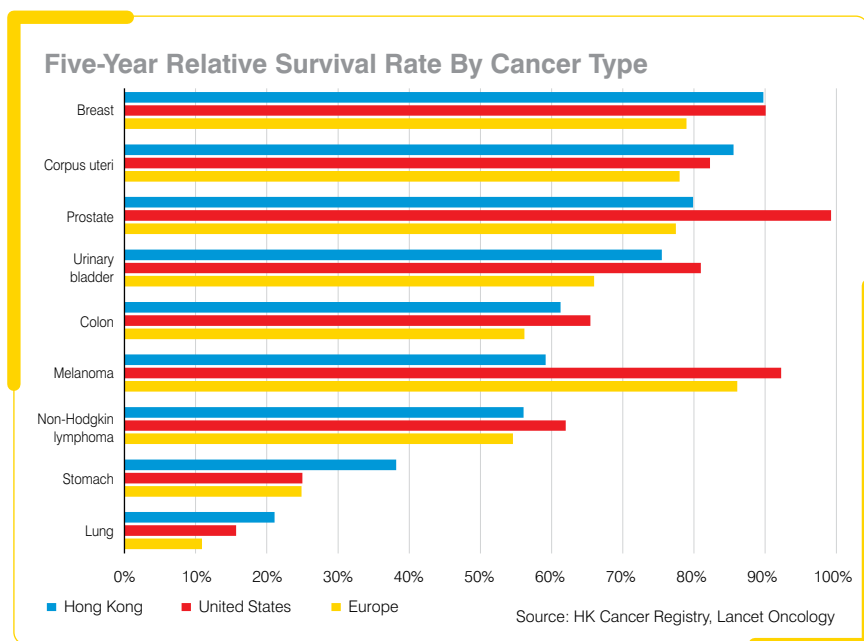
Infant mortality rate is another key indicator of quality medical care. Hong Kong has the world's lowest child (under-5) mortality rate at two per 1,000 births and infant mortality rate is second lowest at three per 1,000 births, closely behind Singapore.

World's lowest child (under-5) and second lowest infant mortality rate



Hong Kong is also blessed to have a top-notch team of doctors in curing cancer. Breast cancer, corpus uteri cancer and prostate cancer patients, all among the top ten most common cancers in Hong Kong, enjoy higher five-year survival rate compared to their European and North American counterparts. The five-year survival rate of breast cancer in Hong Kong is 89.8%, just 0.2% less than the United States, one of the best medical hubs in curing breast cancer. Hong Kong beats Europe and the US by 13 percentage points in five-year survival rate in stomach cancer, the city's 6th most common cancer. Lung cancer and corpus uteri cancer also takes the lead in survival rates.

Cancer survival rates trumps Western countries



If we rank the top five most common cancer survival rates, Hong Kong follows closely behind the United States in most cancer types, and outperforms Europe in all categories. The results are as follows: (1=Best, 3 = Worst)

Among the top five most common cancer types, Hong Kong outperforms Europe and follows closely behind the United States

Survival Rate Rankings of Five Most Common Cancers in Hong Kong

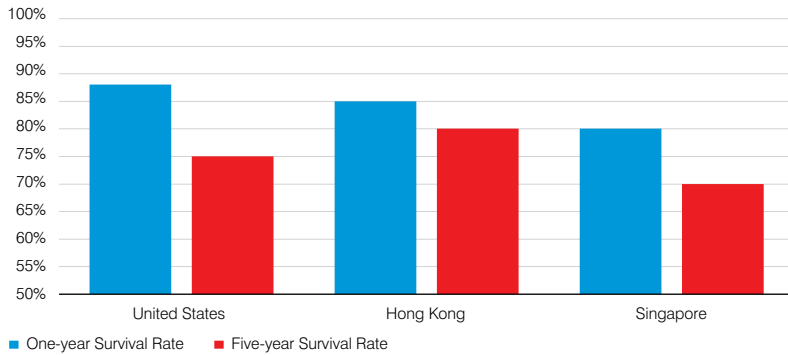
	Hong Kong	United States	Europe
Colon	2	1	3
Lung	1	2	3
Breast	2	1	3
Prostate	2	1	3
Liver	2	1	3

Source: HK Cancer Registry, International Agency for Research on Cancer, American Cancer Society

In the United States, about 88% of patients survive the first year after a heart transplant surgery, and 75% survive for five years. Hong Kong's heart transplantation one year and five-year survival rates were of similar standards, standing at 85% and 80%, respectively in 2007. By 2011, the one-year survival rate increased to 92%, surpassing that of the United States.

Hong Kong's organs transplantation achieves leading survival rates

Heart Transplant Survival Rates

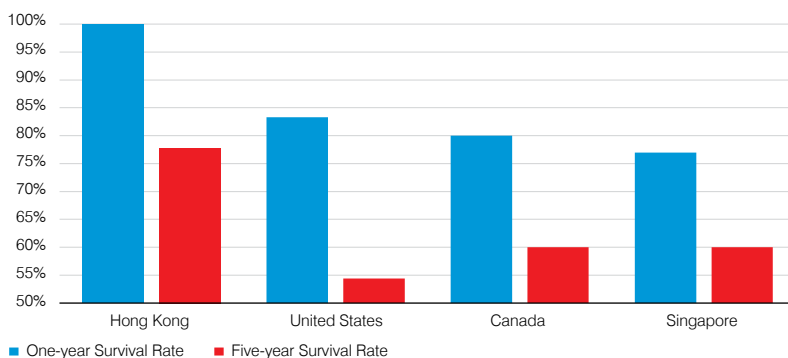


Source: Singapore Heart Foundation, Hong Kong Society of Transplantation, National Heart Lung and blood institute

Hong Kong's lung transplant again takes the lead in global rankings and outperforms the United States and Canada. The survival rate reaches 100% within a year, and 78% within five years of the transplant. Such rates are more than 20 percentage points higher than Singapore's, the city that is trying to develop itself as a transplant medical hub. In March 2009, the Singapore government legalised the organ sales, which attracted many foreigners to the Lion City's state of the art hospitals. Hong Kong may not be an organ transplant centre, yet its deepcraft in skill-intensive operations is still better than Singapore's.

Lung transplant survival rate is the highest worldwide

Lung Transplant Survival Rates



Source: Scientific Registry of Transplant Recipients, Public Health Agency in Canada, SingHealth

(1.2) Best medical schools: HKU's medical school ranks top two in Asia and CUHK and PolyU's World-Class faculty produce international award-winning medical research and cures

World rankings show Hong Kong has the best medical services to offer-- not at all surprising given that we have a solid foundation in medical research and education. Hong Kong's deepcraft in medicine originated over 150 years ago. Hong Kong's first medical school—the Hong Kong College of Medicine for Chinese, or the soon-to-be University of Hong Kong's medical faculty, was established in 1887. Founder of the College, Sir Patrick Manson, a doctor dubbed as the “Father of tropical medicine”, the same man who founded the London School of Tropical Medicine brought with him not only his breadth of knowledge on tropical medicine, but also the vision to develop Hong Kong into a “centre and distributor, not for merchandise only, but also for science”. These words were taken into action when the school became the pioneer centre for tropical medicine in Asia. Medical researchers from around Asia travelled to Hong Kong for the school's reknown tropical medical expertise.

Up till today, medical education in Hong Kong is still upholding its World-Class quality that it boasted back a Century ago. In the 2010-2011 clinical, pre-clinical and health universities, Times Higher Education ranked the Medical Faculty of Hong Kong University at 22, making Hong Kong the host of Asia's best medical school of the year. University of Tokyo overtook HKU in 2011, but Hong Kong still maintained its lead ahead of Singapore.

Hong Kong's medical school was established 150+ years ago

Our medical education tops Asia

Medical School	2010	2011
University of Hong Kong	#22	#34
University of Tokyo	#37	#32
National University of Singapore	#39	#41

Source: Times Higher Education

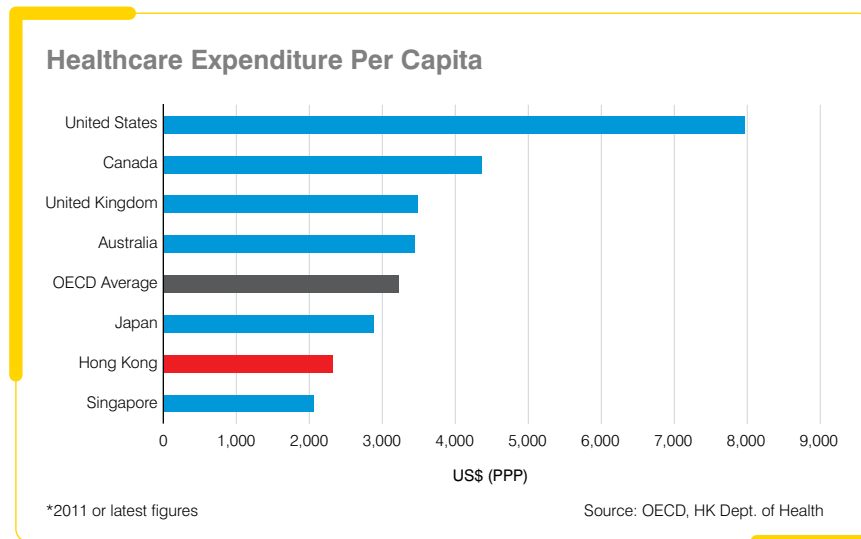
Hong Kong's medical research is also a pioneer in the field. HKU's medical faculty has over 140 highly cited papers which are among the top 1% in the world. Its findings are impactful in medical breakthroughs, like discovering the use of the Chinese herbal medicine 'gouqizi' to alleviate symptoms of Alzheimer's Disease. The city's other prestigious medical institution Chinese University of Hong Kong (CUHK) celebrated its 30th anniversary this January also has a strong medical research team and made important breakthroughs such as inventing new tools to detect Kidney Disease in type two diabetes patients. CUHK's proud faculty member Professor Rossa Chiu of the Department of Chemical Pathology's breakthrough piece in clinical applications of non-invasive prenatal diagnosis gained prestigious international awards-- International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) Young Investigator Award and the 2011 Professors' Prize given by the Association of Academic Heads of Clinical Biochemistry Departments in the UK.

Recently in April, 2012, Hong Kong's medical inventions snatched away three prizes out of the 1,000 inventions debuted at the 40th International Exhibition of Inventions in Geneva. Polytechnic University's joint product with Rehab-robotics the "Hand of Hope" won the Grand prix of the exhibition. The portable robotic device that helps stroke survivors relearn how to move affected hand using their own muscle signals, a breakthrough invention in the field. Professor MM Zheng from Polytechnic University snatched away another gold award with his radiation-free assessment of scoliosis using 3D ultrasounds. Professor Marcus Yuen and Dr Joanne Yip's Hygienic Socks also won a gold medal for its rapid cure (two weeks' treatment) for athlete's foot by using Antifungal Microcapsules for patients. This HK\$1m R&D cost spent on the award-winning antidote is a case in point that just a little bit more funding in our medical R&D can stimulate and bring our local innovation to its full potential.

Our medical schools equipped with top faculty produce World-Class research and cures to diseases

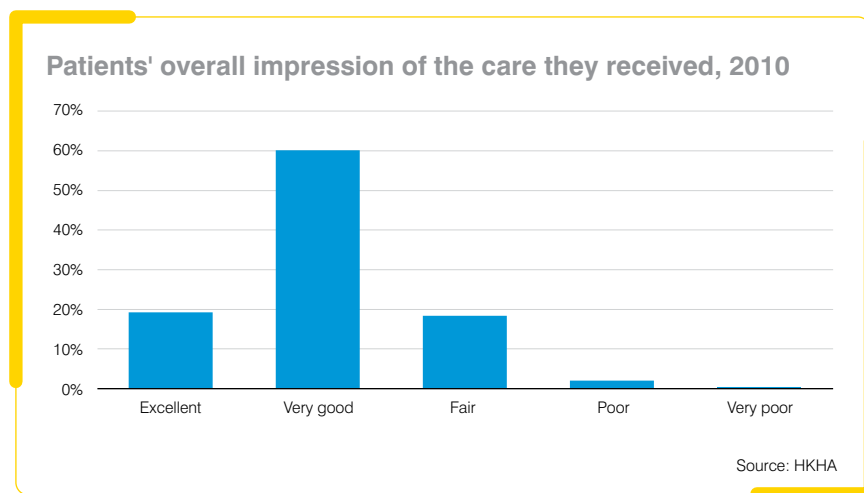
Little did we know that Hong Kong produces international award-winning in medical technology and innovative cures Little did we know that Hong Kong produces international award-winning in medical technology and innovative cures

(1.3) Quality services at lowest costs: Our healthcare expenditure per capita is amongst the lowest in developed countries (a third of USA, two thirds of UK, 72% of OECD average)



Quality healthcare can be easily bought; Quality healthcare that comes at low costs is truly World-Class in nature. The cost of Hong Kong's medical services is amongst the lowest in developed countries. Our total healthcare expenditure per capita is one third of the United States', half that of Canada's, two thirds of United Kingdom, and 72% of OECD average. Hong Kong's standards are of equivalent quality as these developed countries, if not better. This shows that we are clearly a World-Class medical system that not only offers quality healthcare delivery, but also at a relatively much lower budget.

(1.4) High patient satisfaction: Over 80% rank the public hospital system as “Very Good” & “Excellent” and only 3% were dissatisfied with HKHA’s services which account for c. 80% of our city’s inpatient numbers



Hong Kong’s public hospital services are also very well received by its patients. The patient satisfaction survey 2010 conducted by the HKHA indicated a c. 80% satisfaction rate for all medical services received. 95% of patients were satisfied with hospital facilities and 88% of all patients were confident in medical staff quality. The only rating that achieved lower scores were the availability of staff. 25% of patients believed that there were not enough nurses at the hospital.

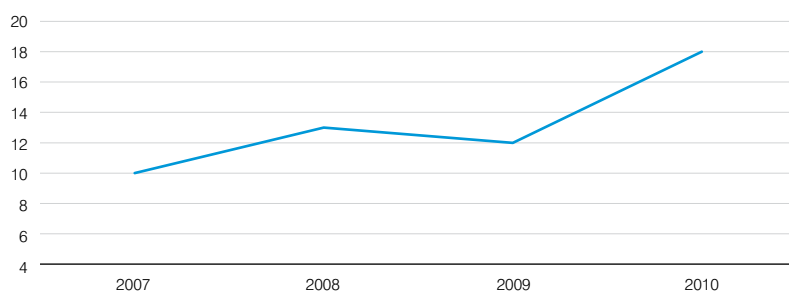
(2) Cracks in the system: Increasing medical blunders and long waiting times are fast undermining our excellent system

(2.1) Medical Blunders are on the rise

With state-of-the-art medical knowledge by the top medical research school in Asia and a team of professional and dedicated doctors who weathered tough battles like SARS and the H1N1 epidemic, Hong Kong's doctors and medical researchers are undoubtedly competent guardian angels of the city's health and well-being. In recent years, however, doctors have been committing more mistakes than before. HKHA's sentinel events (serious medical blunders) increased by a third from 33 cases in 2009 to 44 in 2010, and from 2009-2011, there were eight more (or 60% more) cases of retained instruments or other material in patients' bodies after surgery. As for cases related to medical blunders (less serious than sentinel events), the HKHA had to fork out HK\$40m to some 600 patients over the past five years.

Shortage of manpower is straining our top-notch system

Number of Incidents Related to Retained Instruments Or Other Material After Surgery / Interventional Procedure



Source: HKHA

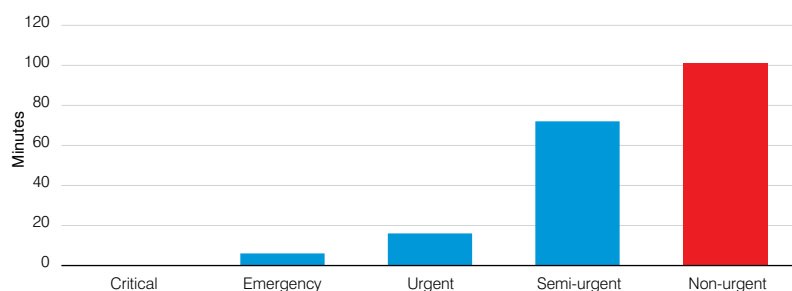
The ever-increasing workload for doctors is ringing a bell, and this needs to be addressed as soon as possible to prevent lower morale. The record number of turnover also indicates that public hospital doctors are not as dedicated to the public health system as before—a dangerous trend if this were to continue, as public hospitals account for 85% of inpatient services.

(2.2) Long waiting times will delay treatment and jeopardise full recovery

For a non-urgent case admitted into the A&E department, the median time for waiting is close to two hours. During peak season, many patients labeled as non-urgent cases have to wait for at least 3.5 hours for medical attention.

Waiting times in Accident & Emergency (A&E) departments go up to 3.5 hours

Average Waiting Times at Accident & Emergency Department of Different Categories of Patients (2011-2012)

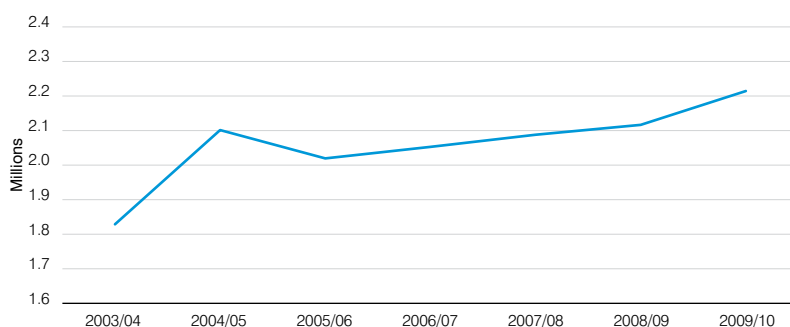


Source: HKHA

While A&E patients are continuously on the rise (c. 3% p.a.), many new trainees in A&E quit the department after one or two years of training because of the heavy workload. Last year, the HKHA opened 42 spots for new recruits at the Accident and Emergency Department, yet only 25 places were filled when some 20 doctors leave the system. As of January 2012, the HKHA estimated a shortfall of 30 doctors in the A&E department. This trend is especially straining our system, as A&E is the frontline defense of our medical system. Our access to acute medicine will be severely restricted if this trend continues.

Culprit of long waiting time? Doctors supply is not meeting demand: as A&E patients increases by 22% between 2003 and 2010, less doctors are specialising in A&E medicine

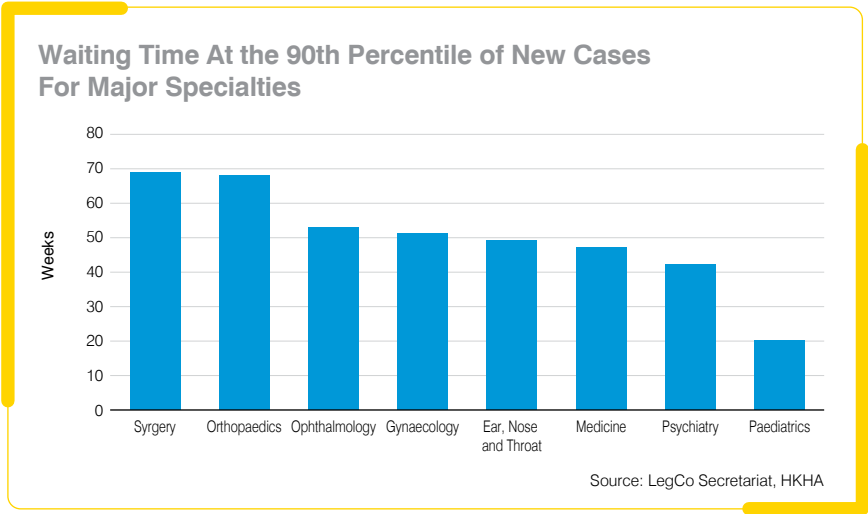
Number of Accident and Emergency Patients



Source: Hong Kong Yearbook

A similar case applies to outpatients’ waiting list. Patients on “non-urgent” cases have to wait for months or even years to get treatment. The waiting time for specialist treatment at public hospitals is long, especially for cases labeled as “non-urgent”, ranging from cataract surgeries to orthopedics treatment. Four out of eight specialties’ waiting times are over a year long.

Waiting time is long for specialist outpatient treatment as well



Kowloon East and Kowloon West residents in particular, have to wait especially long for medical attention, and the issue needs to be addressed urgently, as the two districts are amongst the most densely elderly populated areas. Tuen Mun Hospital, one of the hospitals sitatued in the New Territories West Cluster with the least experienced doctors, urology patients have to wait for six years before they can receive medical attention, while patients waiting for specialists in the internal medicine and geriatrics department, mostly elderly people have to wait for over ten months. 90% of the waiting list exceed 20 weeks.

Shortage of manpower crowds the waiting list to as high as 336 weeks for outpatients

Waiting Time at the 90th Percentile in Major Specialties

Specialties	HK East	HK West	KL Central	KL East	KL West	NT East	NT West
Ear, Nose and Throat	23	28	11	106	42	80	52
Gynaecology	20	21	29	144	31	70	39
Medicine	46	29	36	47	57	64	48
Ophthalmology	41	17	45	90	34	99	45
Orthopaedics	42	36	49	113	101	83	49
Paediatrics	7	29	12	31	13	32	14
Psychiatry	19	58	25	55	32	76	29
Surgery	50	56	39	129	103	70	34

Source: HKHA

Given that our medical system has enormous potential to become a World-Class medical hub with our excellent medical expertise at low costs, it is a shame to give away our quality healthcare solely because of insufficient supply in hardware and medical personnel. Especially when our government has mounted HK\$669bn in its fiscal reserves, we have plenty of resources to fix the existing cracks in our system. In our next section, we will discuss three major actions to fulfill Hong Kong's destiny as a World-Class Medical Hub.

With HK\$669bn in our fiscal reserves, we can easily fix the cracks in our healthcare system and to become a World-Class medical hub

4: Ten Improvements We Must Make to Meet Surging Demand and Realise our Potential of Becoming a World-Class Medical Hub

Hong Kong certainly has the potential and momentum to become a World-Class medical hub if the infrastructural and institutional obstacles that are holding back our medical advancement are removed quickly. We hereby set forth an action plan with the objective to enlarge and improve the hardware and software of our medical system so that there would be sufficient resources to provide for our community and realise the potential of becoming a World-Class medical hub within the next ten years when shortage should become acute.

Proposed Investments

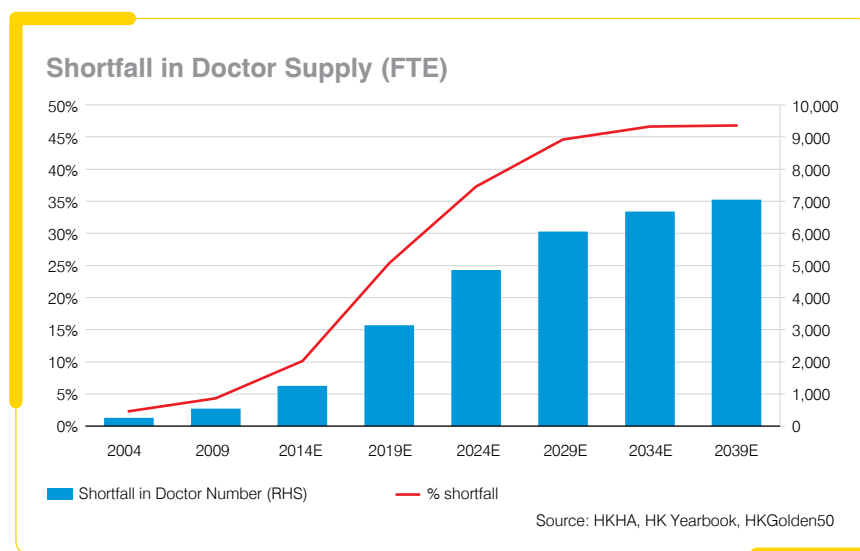
Build World-Class Medical Software	Capital Expenditure HK\$bn	Operating cost per year HK\$bn
(1) Increase annual medical students intake from 420 to c. 800 (+90%)	N.A.	1
(2) Introduce overseas qualified doctors to bridge the quickly developing shortage in specialists	N.A.	0.5
(2.1) Introduce new "Restricted Registration" to admit qualified specialists from overseas		
(2.2) Introduce Approved List of Medical Schools whose graduates could practise in Hong Kong without passing the Licensing Exams under Limited Registration		
(2.3) Introduce Clinical Year Recruitment Scheme to attract medical students or fresh medical graduates from top universities back to Hong Kong		
(2.4) Improve Transparency and Relevance in Licensing Exams for Overseas Qualified Doctors		
(2.5) Restructure composition of Medical Council to enhance responsiveness to community priorities		
(3) Establish a committee for centralised manpower planning	N.A.	0
(4) Facilitate doctors in private practice to return to HKHA should they wish to do so	N.A.	0.5
(5) Increase medical support staff by at least one-third	N.A.	5
(5.1) Train allied health professionals outside of universities		
(6) Enhance Primary Healthcare for the Community	10	3
(6.1) Invest in Integrative Medicine		
(6.2) Establish multi-disciplinary community centre and nursing homes targeted at elderly people		
(6.3) Explore feasibility of adopting part of Japan's Golden Plan for homecare		
(6.4) Establish mental health centres		
(6.5) "Return to Work" program for disabled citizens		
(7) Promote Medical Tourism	N.A.	N.A.
Build World-Class Medical Software		
(8) Increase hospital capacity by 5,000 hospital beds (or 14% of our current 35,525 beds) from building new hospitals and expanding existing facilities	20	10
(8.1) Build new public hospitals		
(8.2) Build nursing homes and add hospital beds to badly undersupplied districts		
(8.3) Increase private hospital capacity		
(8.4) Develop medical hub at Gateway To The World (GTTW) at the airport		
(9) Replace and upgrade medical equipment over ten-years old	7	2
(10) Expand facilities of HKU and CUHK medical schools*	3	N.A.
Total	40	22

*Cost included in HK\$15bn budget to increase university capacity in our third report "How to Invest HK\$100bn for Our Future"

Action 1: Build World-Class Medical Software

(1) Increase annual medical students intake from 420 to c. 800 (+90%)

As our system will be short by 360 doctors each year in the next two decades, it is crucial to increase the supply of doctors starting from today.



There are only two ways of increasing the supply of doctors:

- (1) Train more doctors locally; or
- (2) Attract medical talents from overseas

In Hong Kong, it takes HK\$3m to train a doctor, and the number of doctors trained each year is highly dependent on University Grants Committee (UGC) funding availability.

The current 420 quota for medical students is one of the most generous quotas in Hong Kong's history, given that the UGC only offered funding for an average of some 280 spots over the past decade. The quota limit depends highly on the economic cycle—back in 2003, the UGC could only sponsor 220 doctors' training program each year due to a bleak economic outlook. This is an unreasonable approach to determine an appropriate amount of doctors because economic cycles do not reflect the demand for medical services.

Manpower planning needs to be carried out independent of economic cycles, according to medical services demand

Even if we kept the medical students quota at 420 per year, we would still be short of 8,000 doctors by 2039. It takes HK\$3m to train a doctor, and in other words, the medical stream takes up 4% of the UGC's budget of HK\$34bn per year. Ideally, even if Hong Kong's medical schools' capacity can train several hundred more doctors per year, and assuming that we can fund HK\$800m more per year to train them, our medical system would not have enough senior doctors to train them and ultimately, the overall quality would still be subpar because we would be offering many new doctors who do not possess as much experience as their predecessors. Training new doctors is important, but more importantly, we need senior doctors with experience to lead and guide junior doctors.

We need at least 260 more doctors each year to meet the demand of doctors by 2039

In the light of doctors' shortage of 7,000 doctors by 2039 in 27 years' time, we need c.300 extra doctors each year. We therefore recommend increasing medical students intake from 420 to c.800 per year by expanding the medical school facilities of HKU and CUHK, and potentially adding a third medical school.

Increase annual medical students intake from 420 to c.800

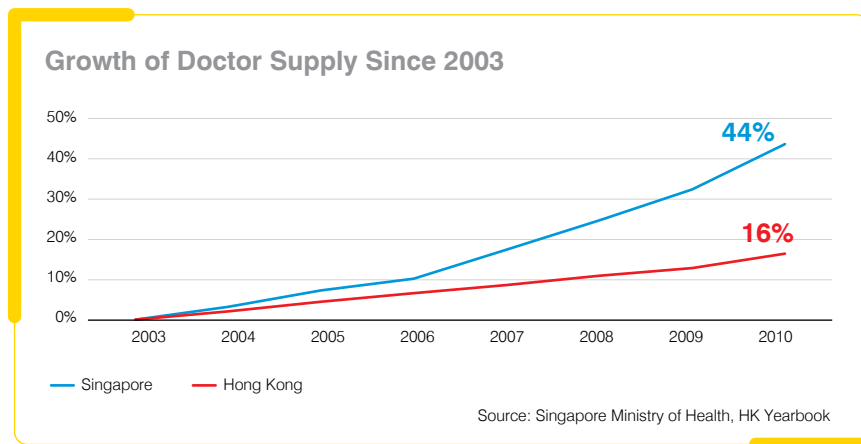
(2) Introduce overseas qualified doctors to bridge the quickly developing shortage in specialists

Medical demand is skyrocketing and we must hire overseas qualified doctors to address the shortage of doctors because it takes medical students more than ten years to become a specialist. The Hong Kong Public Doctors' Association conducted a survey 1,000 doctors from their registry and revealed that 90% of the respondents found that doctors are in shortage in the public sector, while 80% agreed that introducing overseas trained doctors could instantly alleviate this shortage.

90% of public doctors find a shortage of doctors in the public sector

Overseas examples have proven that importing doctors can create a boost to doctors' supply and alleviate manpower shortage problems. For instance, Singapore's loosened policies in introducing overseas qualified doctors since 2003 led to a 40% increase in doctors' intake between 2003-2010. In the same period, our growth only grew by 16%.

Singapore's loosened policies in introducing overseas qualified doctors since 2003 led to a 40% increase in doctors' intake between 2003-2010. In the same period, our growth only grew by 16%.



Hong Kong needs to hire overseas qualified specialists for three important purposes:

- (1) Alleviate the burden on mid-level doctors in the public sector
- (2) Increase diversity of knowledge and learn from the best overseas practices
- (3) Train junior doctors for the expected increase of medical students from 420 to 800 per year

By all means we need more doctors hired within the HKHA, yet the HKHA has been trying to control their expenditure and often emphasize that 73% of total costs are already spent on medical staff's salary. Hiring more doctors will definitely incur more expenditure, yet not a huge proportion of HKHA's expenditure, let alone our total government expenditure. On average, a middle management doctor's salary is HK\$100,000 per month. In the case of 2009, back when our system was short of 160 doctors, recruiting those missing doctors to meet medical staff demand would incur around HK\$3.2bn per year, or only 1% more of the total expenditure spent on staff. This is a small amount given our government has an average of HK\$70bn surplus per year.

Expenditure surge in hiring doctors—reason for not hiring more doctors?

(2.1) Introduce new “Restricted Registration” to admit qualified specialists from overseas

We propose a new category of registration: Restricted Registration, whereby overseas qualified specialists could practise in their specialty in Hong Kong if they pass a specialist exam. This specialist exam would be targeted at testing the applicant’s ability to practise in their area of specialty and would not encompass the entire syllabus of the Licensing Exams. The introduction of Restricted Registration is aimed to accommodate a sudden upsurge in medical demand because overseas qualified doctors could begin practicing immediately and so the recruitment of specialists becomes more flexible. Currently, HKHA recruitment is very rigid and has no option to hire more specialists within a short time frame.

(2.2) Introduce Approved List of Medical Schools whose graduates could practise in Hong Kong without passing the Licensing Exams under Limited Registration

Facing a shortage of doctors, HKHA invited overseas qualified doctors to apply to work in the public hospitals under a limited registration. Out of the 160 applicants, HKHA successfully hired nine overseas trained doctors (5.6% acceptance rate). These nine doctors were restricted to work in the public sector and did not have to pass the Licensing Exams.

Graduates of top medical schools such as Harvard and Stanford should be more than qualified to practise in Hong Kong

With only 8-12 overseas qualified doctors passing the Licensing Exams, our supply of doctors will continue to be heavily reliant on local supply that can only produce fresh graduates. The existing shortage of doctors in pediatrics, NICU, internal medicine and obstetrics and gynecology is severe resulting in hospitals continuously turning patients away as the departments are already stretched to maximum capacity. Currently, the nine doctors admitted to the HKHA are only allowed to work in Accident and Emergency and Anesthesia departments. HKHA should reexamine the areas where we need more medical manpower and recruit more overseas qualified doctors via this limited registration route to meet the immediate shortage of doctors.

We should expand this limited registration program by making all graduates of the global top medical schools automatically eligible for Limited Registration. The list of eligible medical schools should be flexible such that medical schools could be added to or taken off the list, similar to the list in Singapore. Since 2003, Singapore has expanded its list of recognised medical schools to select overseas qualified doctors to alleviate medical personnel shortage.

Positive lessons to learn from other top medical systems: Singapore's effective program in selecting top overseas qualified doctors to alleviate medical personnel shortage

Global Top 10 Medical Schools

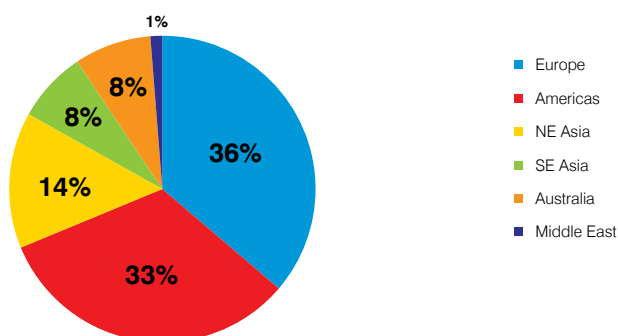
Ranking	University
1	University of Oxford
2	Harvard University
3	Imperial College London
4	University of Cambridge
5	Johns Hopkins University
6	Stanford University
7	University College London
8	Yale University
9	University of California Los Angeles
10	Duke University

Source: Times Higher Education

Number of Medical Schools Recognised by Singapore by Region

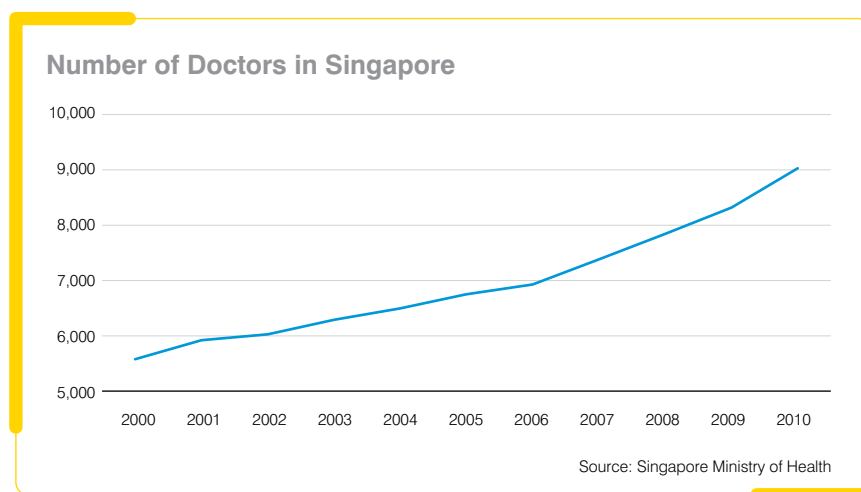
	1971	2003	2006	2007	2009
Americas	13	28 (+15)	42 (+14)	52 (+10)	52 (-)
Europe	8	28 (+20)	54 (+26)	56 (+2)	58 (+2)
NE Asia	0	2 (+2)	7 (+5)	15 (+8)	23 (+8)
SE Asia	0	0 (-)	2 (+2)	12 (+10)	12 (-)
Australia	2	12 (+10)	12 (-)	12 (-)	13 (+1)
Middle East	0	0 (-)	2 (+2)	2 (-)	2 (-)
Total	23	70 (+47)	119 (+49)	149 (+30)	160 (+11)

Geographical Distribution of Recognised Medical Schools in Singapore (2011)



Source: Singapore Medical Council

Singapore's success in recruiting overseas qualified doctors' to alleviate its manpower shortage and upcoming surge in medical demand offers positive lessons for Hong Kong. Compared to Hong Kong's system, Singapore has a much more flexible system and allows hospitals to recruit freely globally to meet the demand of upsurge in patients at specific departments. The country allows any doctor employed by a Singaporean hospital to practise on conditional registration, which allows an international medical graduate to work in a Singapore Medical Council (SMC)-approved healthcare institution under the supervision of a fully registered medical practitioner, as long as they are a graduate from a medical school recognized by the SMC. The list of approved foreign medical schools was expanded from 23 to 140 in 2003 to meet the rising demand of healthcare, and the country successfully attracted 40% more overseas qualified doctors each year by 2010.

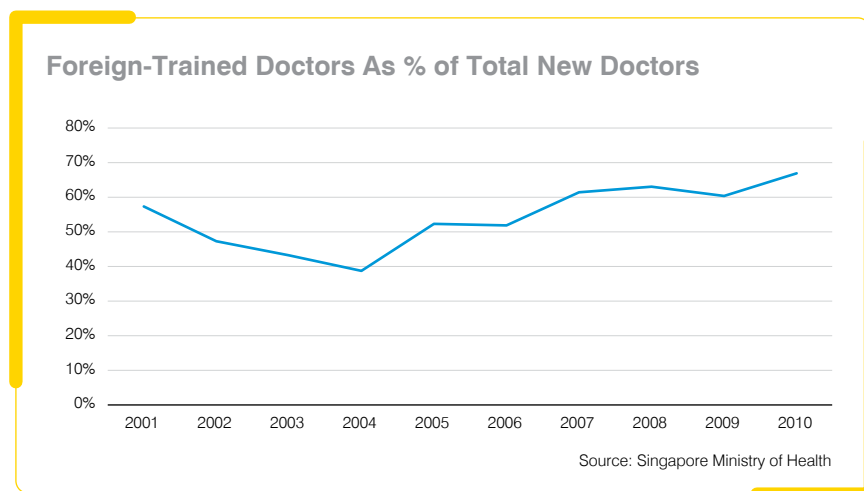


With the active recruitment of overseas doctors, Singapore nearly doubled its medical manpower between 2000 and 2010, increasing the supply of doctors by 3,500 over the course of ten years, with an annual growth of 5% on average. The active boost in doctors alleviated the workload of Singaporean doctors with huge strides. In 2000, a Singaporean doctor had to care for on average 70 patients, and this figure dropped by c.30% to 55 by 2010, leaving more time for doctors to serve each patient.

Singapore increased its medical manpower by 60% in ten years; loosening overseas approved schools remain a major role

In Singapore, the medical manpower surge relied heavily upon the loosened policy to absorb more global medical talents. With only two medical schools producing only 150 doctors at the beginning of the 2000s, Singapore understood that even with a 50% increase in medical school places by the end of the decade, the country would still be short of junior doctors. It adopted an aggressive strategy of expanding its medical school and opening the gates to more doctors from around the world. By 2010, overseas trained doctors accounted for 67% of Singapore's newly registered doctors. Such an increase is crucial to meeting Singapore's goal to improve its low physicians per capita ratio as the overall number of doctors soared by 40% between 2003 and 2010.

Overseas trained doctors make up 70% of junior doctors in Singapore

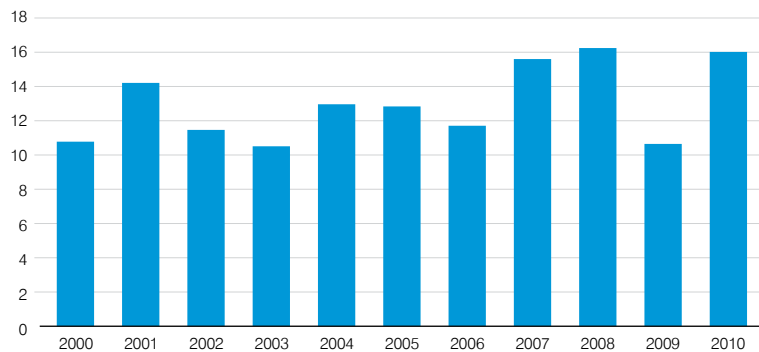


Despite a sudden surge in manpower, quality of Singaporean healthcare did not deteriorate. Mortality rates for Tuberculosis continued to drop steadily for males, and the same applies to mortality rates for cancer. Female cancer death rates have also dropped over the decade indicating that medical quality can improve even with hiccups in between.

Singapore's track record in its healthcare planning over the past decade is the perfect showcase that quality can coexist with a quantity boost

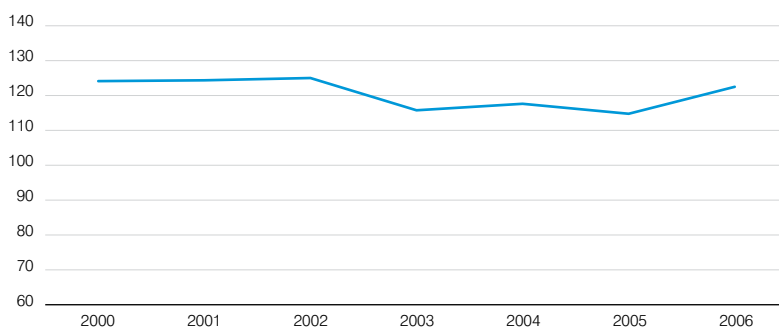
The number of complaints per 1,000 doctors remained the same after recruiting overseas qualified doctors, which suggests that the quality of medical care should not deteriorate if Hong Kong adopted a policy similar to Singapore's.

Complaints Per 1000 Doctors in Singapore



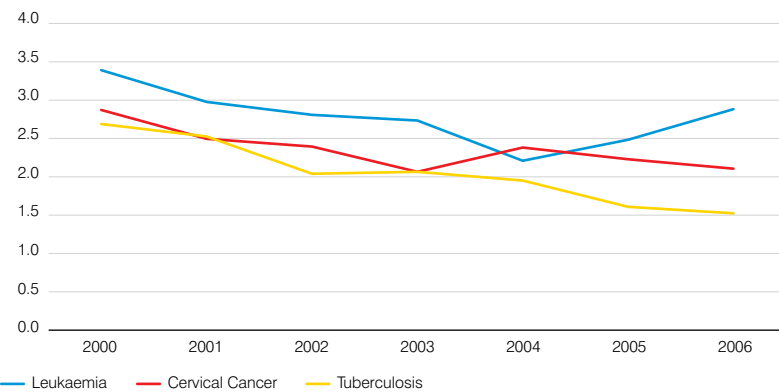
Source: Singapore Medical Council

Singapore's Overall Cancer Death Rate Per 100,000 Population



Source: WHO

Singapore's Death Rates of Various Diseases Per 100,000 Population



Source: WHO

Results of Singapore's policies are evident as shown in the charts above. By the end of 2010, the number of doctors in Singapore more than doubled while Hong Kong starkly in contrast with only a 20% increase in total doctors supply. Unfortunately Hong Kong pales in comparison not only in our magnitude in increasing our healthcare workforce, but also our determination to protect our citizens' well-being by breaking the protectionist policy local doctors have managed to defend for over a decade. We need to break down these walls as soon as possible, and recruit more overseas qualified doctors to fill the gap, as well as boost our local medical trainees to safeguard Hong Kong people's healthcare interests.

As a Non-Governmental Organization (NGO), we could not access data that are more recent than 2006 but we believe HKU and CUHK should have much better relationship with their Ministry of Health and NUS LKY School of Public Policy so that their experience with new doctors can be shared with us. This knowledge will significantly lower the execution risk of importation of doctors should we need to do so in order to make up for medium term shortfall before we can train local talents to fill such needs.

Singapore's active manpower planning has increased its supply of doctors by 60% over the past decade. By 2012, the doctor population in Singapore will exceed Hong Kong's. Since the increase, complaints launched against doctors remained low and mortality rates of patients did not increase either, which means the quality of healthcare services was not affected by recruiting overseas qualified doctors. Many Singaporean doctors acknowledged the government's efforts in reducing doctors' workload and thereby improving the quality of services. This is the case in point where a quantity boost can go side by side by an improvement in quality.

Sharp contrast with Hong Kong—Singapore

The Singapore Experience – HKU and CUHK studies should investigate this in detail; a separate study by LKY School may be commissioned to provide “outside looking in” perspectives

By 2012, the doctor population in Singapore will exceed Hong Kong

(2.3) Introduce Clinical Year Recruitment Scheme to attract medical students or fresh medical graduates from top universities back to Hong Kong

Another strategy for securing medical talents from overseas is to attract these medical students to return to Hong Kong before they settle down overseas. We can consider attracting medical students who have completed their pre-clinical training back to Hong Kong to complete their clinical training. Singapore has a similar scheme, known as the Pre-Employment Grant, to attract overseas trained Singaporean medical students back to their country. Singapore's Health Minister Khaw Boon Wan mooted the program in 2010 to offer up to c. HK\$240,000 a year for overseas students on a medical degree in exchange for their service in Singaporean public hospitals for three years upon graduation. We may wish to include such a grant depending on the initial response.

Many students aspiring to be doctors get rejected by medical schools each year because of Hong Kong's limited resources to train medical students. Within the Early Admission scheme alone, some 180 brilliant students with 6As or above place medical school as their first choice, but only 62.5% of them receive offers. The remaining 70 students have to enroll in a subject they are not as interested in, and few have to go overseas to pursue their dreams to become a doctor. With this medical student recruitment scheme, these potential doctors could enroll in top medical schools outside of Hong Kong to finish their medical training, and we would gain 70 more doctors (17% of new doctors per year) each year.

Recruit overseas medical talent as soon as they graduate

There are plenty of aspiring doctors who are top 0.5% students but get rejected because of the lack of university places in Hong Kong

Clearly there are enough bright students from Hong Kong who wish to practise medicine in Hong Kong. Recruiting them back after their pre-clinical or medical school training is a win-win solution for both aspiring doctors and patients. The scheme will ensure these overseas recruits to be able to communicate and understand the patient culture, and familiar with the local diseases. This recruitment will address the concern that overseas medical graduates may not satisfy the local requirement. In addition, expending only the last 2 years of the medical curriculum will be an efficient way to produce medical graduates in the short term. The quota can be adjusted quickly depending on the need of doctors in Hong Kong.

The HKHA has started comprehensive schemes to train radiologists, including sending 25 trainees to the United Kingdom for specialist training on the condition that they will work in the HKHA for at least five years. Along the same lines, the HKHA has hired a total of 36 overseas trained radiologists, mainly from the UK in 2010 to alleviate the heavy workload and shorten waiting times for FMRI and CT scans. These are adoptable measures and should be applied widely to other departments as well.

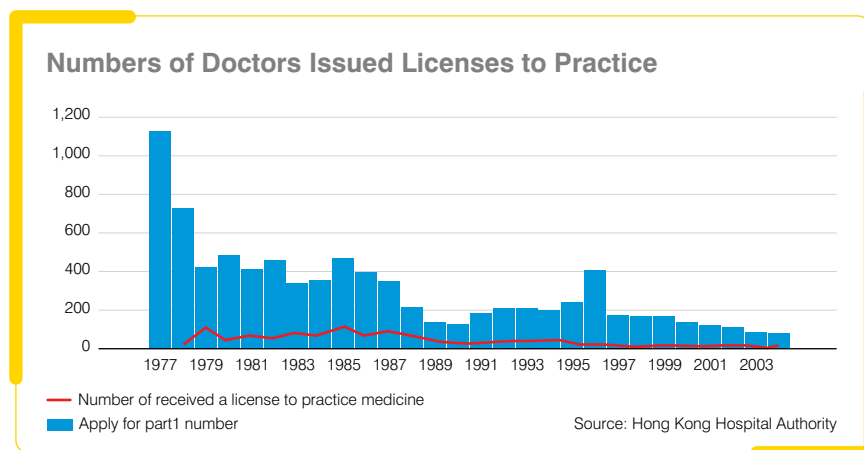
Clearly there are enough bright students who wish to become a doctor, recruiting them back after their medical school training is a win-win solution for both aspiring doctors and patients

Hong Kong has started offering overseas training schemes for radiologists and this can be adopted to other medical staff as well

(2.4) Improve Transparency and Relevance in Licensing Exams for Overseas Qualified Doctors

Prior to 1997, doctors qualified in commonwealth countries were automatically allowed to practise in this former British colony, and those qualified elsewhere could take a conversion exam that could easily get them a training spot in the public hospitals. However, since 1997, overseas qualified doctors, including the ones trained in the reliable commonwealth countries, were no longer welcome to our city to practise. Doctors, however qualified they are or wherever they were trained, have to go pass three Licensing Exams to obtain a full registration license to practise medicine in Hong Kong. Theoretically, this is an excellent method to safeguard our citizens from subpar doctors, but when Harvard and Cambridge medical students were denied from our local practice because they failed to pass the Licensing Exams (net passing rate at 8-10%), many people question whether the Licensing Exams are protectionist measures to safeguard doctor's level of remuneration.

Since 1997, overseas qualified doctors had to go through Licensing Exams with a passing rate of 8-10%



Number of licenses granted dropped significantly since 1997

We recommend a reform for the Licensing Exams to make the examinations more relevant to the practice of medicine. For instance, the nature of the exams should reflect the competence of a surgeon's ability to perform operations skillfully, instead of testing textbook knowledge that is not required in actual medical practice.

Reform the licensing exams to better reflect doctors' competence in clinical practice

There are many doctors around the world who want to practise in Hong Kong but are deterred by the Licensing Exams which has no detailed syllabus of the topics the exams cover, nor any official textbooks for revision. We recommend the release of past papers and provide a detailed syllabus to make the Licensing Exams transparent to attract more foreign medical talents to fuse the world's best practices in our medical care provision.

Increase transparency of Licensing Exams syllabus and past papers to ensure a fair system for all exam takers

Since our system is vulnerable against any sudden upsurge in demand, in light of our foreseeable increase in medical attention, we need to revise this policy as soon as possible. Management level doctors have estimated that Hong Kong can recruit c. 150-200 (or 1% of total doctors population) overseas qualified doctors per year if barriers were lowered. The entrance of more overseas qualified doctors can help alleviate our manpower shortage. These doctors can also bring in their expertise and break the monopoly of to enhance our medical knowledge of best medical practices.

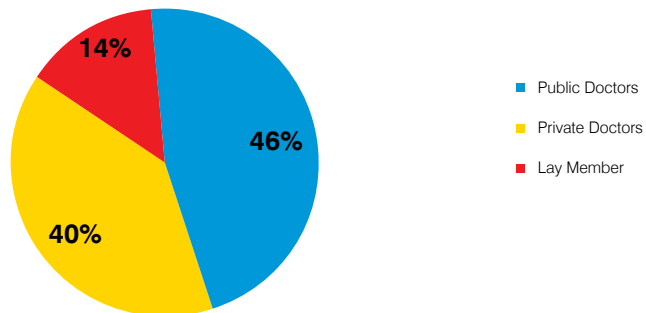
Loosening existing requirements will add c. 150 (or 1%) extra doctors each year

(2.5) Restructure composition of Medical Council

The Licensing Exams are monitored by the Medical Council, which is composed of 28 members. Section 3 of the Medical Registration Ordinance sets out who may be appointed to the Medical Council. While the provision does not set a quota for how many members should be in the public or private sector, nearly half of them are doctors practicing in the private sector, and the rest are made up of a mix of doctors in the public healthcare system, professors and doctors of different universities and lay members. In other systems such as the UK, Australia and New Zealand, lay members account for over half of a medical council's members for the sake of safeguarding public's interests ahead of doctors' interest; Hong Kong's system only allows four lay members appointed by the Chief Executive. Thus, the composition of the Hong Kong Medical Council is not neutral in comparison. To ensure that our patients' interests are represented, we recommend a restructure of the composition of Medical Council to have more lay member representatives. Ideally, at least 50% of the members, i.e. 14 out of 28, should be lay members.

Current composition of Medical Council vulnerable to bias due to high proportion of doctors vs lay members

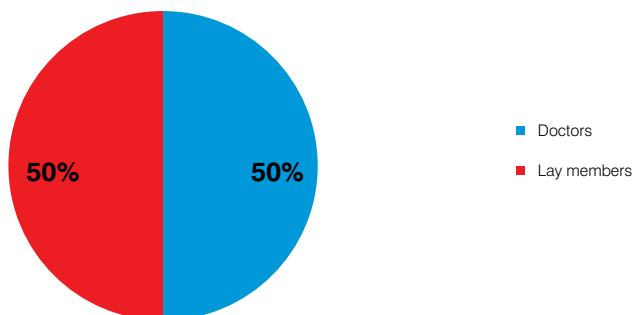
Composition of Hong Kong Medical Council



*As of June 2012

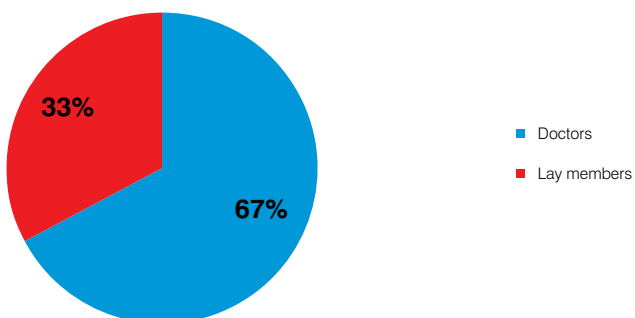
Source: HK Medical Council

Composition of UK General Medical Council



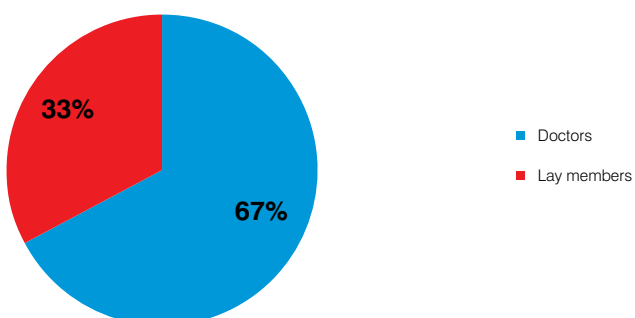
Source: UK GMC

Composition of Medical Board of Australia



Source: Medical Board of Australia

Composition of Medical Council of New Zealand



Source: Medical Council of New Zealand

(3) Establish a committee for centralised manpower planning

There is no single committee for a comprehensive manpower planning; the University Grants Committee (UGC) plans the annual medical students intake, and this process is separated from the HKHA, the agency that plans the number of doctors and nurses to hire in public hospitals. If HKHA needed more doctors and nurses, the UGC could reject the request for training more medical and nursing students. There should be a centralised planning committee that oversees the entire healthcare ecosystem from private to public, from therapists to nurses to healthcare assistants; benchmark the quantity, salary, work hours and other numbers against peers such as the OECD countries; and trace the development of our medical services against demographic and other social trends. The aim of the committee is to ensure cross-discipline coordination of manpower in the healthcare ecosystem.

The aim of the committee is to ensure cross-discipline coordination of manpower in the healthcare ecosystem

(4) Facilitate doctors in private practice to return to HKHA should they wish to do so

Our World-Class doctors practicing in the private sector should have the option to return to the HKHA system to help train junior doctors with the aim to ensure that our senior doctors are passing their World-Class baton of knowledge to the junior doctors. The HKHA should continue their efforts to establish a 'revolving door' policy in general such that doctors in the private sector can easily move back into the public sector by undergoing an induction program.

Our World-Class doctors practicing in the private sector should have the option to return to the HKHA system to help train junior doctors with the aim to ensure that our senior doctors are passing their World-Class baton of knowledge to the junior doctors

(5) Increase medical support staff by at least one-third

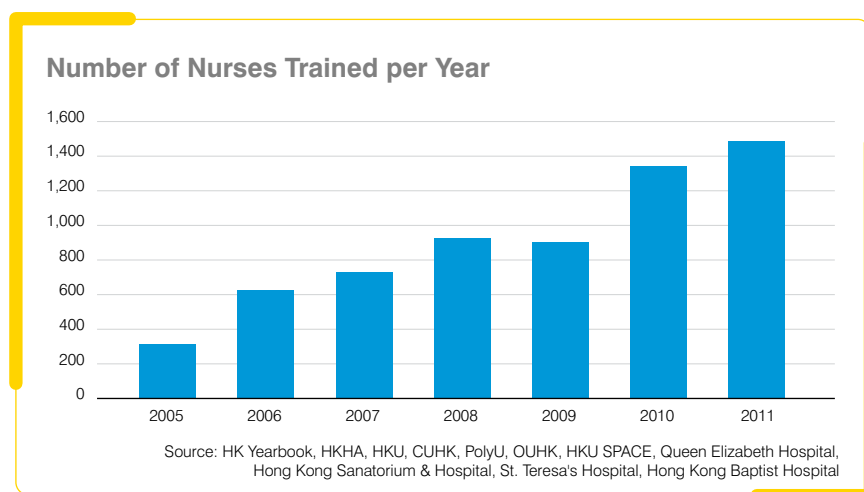
An efficient medical system requires teamwork within and across departments. Doctors need a team of competent nurses, healthcare assistants, therapists and other allied health professionals to take care of the full spectrum of a patient's needs.

Currently, Hong Kong is especially in lack of nurses and healthcare assistants that are specialised in Geriatrics and Psychiatry among other specialties. Mental health in particular is often neglected due to lack of beds to house patients with mental problems. Many chronic diseases can lead to depression which could be treated by therapists rather than doctors, and healthcare assistants could help ensure patients with mental problems take their medication by conducting frequent home visits. With the imminent spike of senior citizens, we must hire and train medical support staff to support doctors in their objective to promote better mental and physical health of their patients.

(5.1) Train allied health professionals outside of universities

Reinstating nursing school is a sound policy, and should be applied to all other medical support staff systems. Since nursing schools were reestablished in 2008, the number of nurses increased by more than 100%. Private hospitals including Sanatorium, Baptist and St. Teresa are short of nurses to the extent that they are paying nursing students HK\$7,000-HK\$8,000 a month during their training to attract more students. Since the medical demand will continue to spike as our society ages, the government and institutional vocational schools should channel more resources to train allied health professionals such as physiotherapists to radiologists to meet the healthcare demand.

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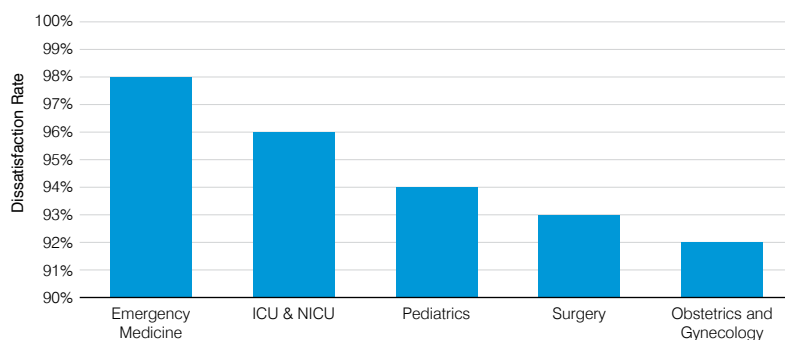


Despite the huge increase in nursing talent, the public system is still short of nurses, when turnover rate is as high as 5% per year, and 8-9% for specific departments like Obstetrics and Gynecology and Pediatrics department. A survey conducted by the Association of Nursing Staff showed that the nurses to patients ratio has continued to plunge, especially for night shifts. While international standards recommend nurse to patient ratio to hover between 1:4 and 1:6, Hong Kong's standards are averaging 1:20 to 1:24, which is four to five times the recommended ratio. Those departments with the most stringent manpower also see a higher dissatisfaction rate. We need more nurses for these departments in the hospitals as well as for community centres and nursing homes.

Train nurses according to specialty

	Morning Shift	Afternoon Shift	Overnight Shift
2011	1 : 12 - 14	1 : 14 - 16	1 : 22 - 24
2010	1 : 10 - 12	1 : 12 - 14	1 : 20 - 22
2009	1 : 8 - 10	1 : 11 - 12	1 : 20 - 21

Top 5 Most Stressful Specialties For Nurses



Source: Association of Hong Kong Nursing Staff

(6) Enhance Primary Healthcare for the Community

Primary healthcare has been lacking in Hong Kong for many years. With the imminent spike in demand for hospital care, enhancing our primary healthcare can alleviate the pressure on our hospitals. WHO has stated that the ultimate goal of primary healthcare is better health for all. Accordingly, a successful primary healthcare system requires a robust supply of generalist family doctors that can act as gatekeepers and provide continuous healthcare process and prevent illnesses and diseases in the population in a more cost-effective basis.

The enhancement of primary healthcare is a global trend as studies have shown that a country with a stronger primary healthcare system generally has a healthier population. Even the Dubai Health Authority has recently acquired land in Jumeirah to build a state of the art primary healthcare centre because it believes primary healthcare centres are frontline in the fight for better health of its population.

Apart from better health for all, primary healthcare is encouraged by the WHO and many governments because it is cost effective. Hospitalization is very expensive thus a primary healthcare system can reduce hospitalization rates by preventing illness and diseases in the first place. Hong Kong has introduced some preventative measures in recent years but generally, the funding for screening and prevention program remains severely lacking. Accordingly, Hong Kong can be more cost-effective with our health expenditures if we invest more in primary healthcare.

Currently, primary healthcare is predominantly provided by private general practitioners and funded out of pocket. Consequently, primary healthcare has been criticised as being fragmented and uncoordinated due to the following reasons: lack of recognition of family medicine as a specialty, doctor shopping habit, lack of clear clinical standards, lack of register of primary healthcare practitioners and lack of comprehensive data system.

Primary healthcare is cost-effective—more investment in primary healthcare lead to better outcomes per healthcare dollar

Primary Healthcare has been criticised for being fragmented and uncoordinated

We should rapidly invest in community healthcare centres, where consultations, diagnostics and medication services can be provided in one location. This concept of community healthcare centre has been proposed in many reports in the past 20 years but the Hong Kong government has yet to take action for reform. With the substantial reserve Hong Kong has today and the imminent spike in healthcare demand, this is the time to invest in a robust primary healthcare system and lead the world in providing the most cost-effective World-Class medical system.

(6.1) Invest in Integrative Medicine

Integrative medicine is the practice of combining western medicine with alternative medicine, such as Chinese medicine. Hong Kong citizens have long practised integrative medicine on their own. For example, many cancer patients endure side effects from chemotherapy and use Chinese medicine on the side to alleviate these side effects. Instead of disregarding their intake of Chinese medicine, innovative clinics and hospitals such as Kwong Wah Hospital has developed a coordinated practice of Integrative medicine by providing Chinese medicine to patients and keeping a record of their dosage.

Hong Kong is in a unique position to become the global number one hub in integrative medicine because it already has the hardware and software of Chinese medicine and we have a track record of quintessential success at merging and advancing Western and Chinese practices. Chinese medicine centres in Hong Kong have already computerised the entire system through detailed patient records of dosage. Advanced technology has made the practice of Chinese medicine more systematic and gives self-empowerment to patients who can now identify the different herbs in their dosage and take the medicine by adding powdered mixture with hot water. This leap in technology has enhance the quality of Chinese medicine.

*Opportunity to become
the global number one in
Integrative Medicine*

Developing the practice of Chinese medicine also provides huge benefits to senior citizens. One of the biggest risks for senior citizens is slip and fall accidents. As soon as senior citizens require hip replacement, their health deteriorates very quickly. Studies have shown that if senior citizens practise Tai Chi, which strengthens the leg muscles in particular, then their risk of slip and fall accidents is drastically reduced. Also, Chinese medicine is integral to an effective primary healthcare strategy as it promotes a holistic approach to healthcare. For example, acupuncture and Tuina therapy are suitable for senior citizens and can be administered periodically for a gradual promotion of health to prevent the emergence of acute failure. With the imminent spike in the number of senior citizens, the development of integrative medicine can alleviate the burden of hospitals and promote better health for Hong Kong citizens.

As Chinese medicine continues to receive more attention from the global scientific community, Hong Kong should beef up its efforts to ride this wave, especially when we have plenty of Chinese medicine practitioners who are unacknowledged experts. Currently, however, the growth of Hong Kong's Chinese medicine industry is hampered by the lack of resources dedicated to Chinese medical research and development and poor career prospects – starting salaries for new Chinese medical practitioners are significantly lower than supporting Western medical staff including nurses, physiologists and occupational therapists, not to mention registered doctors practicing Western medicine. The meager HK\$77m allocated to Chinese medical research in the 2010 government budget also pales in scale when compared to that the HK\$450 m dedicated to just the control of infectious diseases in Western Medicine alone. There is plenty of space to develop this industry and the hidden dragons whom are Chinese medicine experts in our World City to offer the best of both worlds to serve international patients as well as Hong Kong's ageing population. We recommend investing more into Chinese medicine research at universities and funding Integrative Medicine services in all public hospitals and clinics.

Slip and fall accidents are common and detrimental to elderly's health conditions; Chinese medicine and primary healthcare can mitigate these risks effectively

(6.2) Establish multi-disciplinary community centre and nursing homes targeted at elderly people

There will be plenty of demand for community centres and nursing homes as baby boomers age. We need to start developing these centres and training nurses and other allied health professionals to take care of our senior citizens. These measures should aim to enhance the quality of life of our senior citizens. While the life expectancies are one of the highest in the world, we do not want our senior citizens to be suffering longer.

With the aim to have better health for all, we should take the lead to subsidise preventive care to all eligible citizens and full vaccination program as recommended by the Centre for Disease Control. These investments are cost-effective in the long run as fewer citizens would fall ill.

(6.3) Explore feasibility of adopting part of Japan's Golden Plan for homecare

Apart from hugely increasing supply of manpower through training locally and recruiting overseas, we can also curb demand for institutionalised healthcare provision by Japan's model of shifting institutionalised care into homecare. In 1989, Japan launched an ambitious ten-year plan with the goal of building a national infrastructure to care for its ageing population whilst reducing costs at the same time. The Golden Plan, as it came to be known, included a US\$40bn investment, up four times compared to the previous decade. The program included a major shift from long-term institutionalised care in hospitals and nursing homes to home programs and community-based rehabilitation facilities. According to Professor Takashi Ohmori from Osaka University, the program saved the country up to 1.3% of their GDP. In the 1990s, the government encouraged stay-at-home care by increasing the number of home helpers from 40,900 in 1991 to 100,000 in 1999 and the number of nursing home beds from just over 144,600 to 240,000. Since then, Japan has planning its healthcare services for elderly people every ten years (and later on every five years), including targets to provide healthcare facilities enough for the elderly population upsurge.

Lessons from Japan's Golden Plan—home care can save money; train homecare staff

(6.4) Establish mental health centres

Living in Hong Kong can be very stressful due to the fast pace of life and small apartments. With a population of 7m, an estimate of 1m to 1.7m (c. 10%) have a mental disorder and an estimate of 70,000 – 200,000 persons suffer from severe mental illness. According to the HKHA Mental Health Service Plan for Adults 2010-2015, there are around 40,000 (0.5%) diagnosed schizophrenia patients, 38,000 (0.5%) of affective disorders (depression & bipolar), 32,000 (0.5%) who are diagnosed to have neurotic, stress-related and somatoform disorders, and 8,000 (0.1%) diagnosed to have dementia.

We need to enhance support for mental illness and establish mental health centres to treat our increasing population of mental patients. The mental health centres will provide a space for discharged mental patients to rehabilitate in a less intense environment and integrate with the community under the supervision of professionals. It is clear that outpatient services are inadequate for mental patients, and our inadequate facilities had led mental patients to commit crime after they leave the hospital. WHO has identified depressive disorders to be the number one disability in the world by 2030, so it is critical that Hong Kong takes mental illness seriously and establish the community support and mental health centres to treat our citizens.

(6.5) “Return to Work” program for disabled citizens

We need more community support for disabled citizens to enter the labor market after full recovery. Many disabled patients, especially those after slip and fall accidents, leave the hospital recovered physically but unable to accept their new disabilities mentally. Currently, NGOs are providing support to disabled citizens in collaboration with private employers. The government can further support our disabled citizens through an official ‘Return to Work’ program to help disabled citizens regain self-confidence and return to the community with an appropriate job. Ultimately, the aim of medical care is to bring our patients back into our community and thus, we should see that patients do indeed leave the hospital and continue living at an acceptable quality of life.

(7) Promote Medical Tourism

The growing affluence of China, especially in our immediate hinterland comprising the 104m-peopled Guangdong Province which boasts both the most populous and richest province and the country’s highest-income city of Shenzhen, will create huge demand for Hong Kong medical, especially surgical services. This demand will likely follow the J-curve pattern experience in other segments of our economy, from retail to finance.

Future upsurge in demand for medical services is a no brainer, and we are only at the early stages of this pattern developing. Given the bad experience with maternity issues, with only 150,000 more mainland mothers coming in over the past five years, it is more than likely that worse is to come when our private healthcare is swamped by seekers of service in other disciplines. The correct approach is to welcome this opportunity to grow Hong Kong’s healthcare industry, by significantly adding to capacity and capability of our medical schools and by recruiting overseas talents at the same time.

Build them and they will come-- Structural demand for HK medical service will likely exhibit itself via a J-curve ascent-- the next “locusts” issue

We can promote medical tourism by following successful examples from Singapore. The Singapore government demonstrated its commitment to develop into a medical hub by establishing the Singapore Medicine in 2003, a multi-agency government industry body targeted at attracting medical tourists. This initiative launched by the Ministry of Health and the Tourism Board successfully leveraged on Singapore's high quality medical services, actively marketing and reinforcing Singapore's brand as the leading healthcare provider in South East Asia. Singapore Medicine actively promotes to potential medical tourists and has a marketing budget to sponsor publications such as "Patients Beyond Borders" and hold industry conferences. Their marketing strategy has helped them yield the Best Medical Wellness Tourism Destination award by TravelWeekly (Asia) for two consecutive years in 2007 and 2008.

Singapore has a clear objective to develop into Asia's medical hub

The incentives together with the private expansion in Singapore's medical care drew more than 400,000 medical tourists in 2006 which is double of the medical tourists in 2003. The composition of medical tourists is also significantly diversified. Over 10% of medical tourists come from countries with advanced medical care. Canadian, American and British medical tourists, accounting for 9% of medical tourists are willing to 8-20 hours long-haul flights for Singapore's medical services. On average, a US medical traveler to Singapore pays a mere third of what similar treatment would cost back home.

Singapore enjoys close to 30% growth in total expenditure on medical services in 2004-2008

The Lion City has a target to more than double its medical service coverage to foreign patients and serve 1m foreign patients by the year 2012. Frost & Sullivan reported Singapore's foreign patients hit some 660,000 in 2009, a 3% gain from 2008. 2010 gained some 700,000 medical tourists, soon to reach its target of 1m patients by 2012.

Since 2006, Singapore has planned to more than double its medical services capacity to serve 1m foreign patients by 2012

Foreseeing the upcoming medical demand, the Singapore government actively recruited 3,500 doctors (doubling its doctor supply) over the course of ten years. In 2000, a Singaporean doctor had to care for on average 70 patients, and this figure dropped by 28% to 50 in 2010 with the Singaporean government's proactive role in healthcare manpower planning. Since the Singaporean government expanded the list of approved foreign medical schools from 23 to 140 in 2003, the number of doctors grew by 5% on average each year.

The Singapore government recruits foreign-trained doctors actively

Action 2: Build World-Class Medical Hardware

(8) Increase hospital capacity by 5,000 hospital beds (or 14% of our current 35,525 beds) from building new hospitals and expanding existing facilities

The public sector's share of the overall healthcare system is likely to rise when the "service gap" widens at an increasing rate in the coming ten years. Currently, 43% of Hong Kong's population, or 2.9m people are entitled through their employment arrangements to use private medical services. Only approximately 35% of Hong Kong's population, or 2.4m people are covered by Private Health Insurance purchased by themselves. With the upcoming retirement tide, many of the 3m people covered by company insurance will be uninsured. Only one or two insurance companies in Hong Kong offer inpatient insurance schemes for those who are 65 or above, and joining a plan after 65 will incur around 50% more charges, a high deterrent for people to purchase their own insurance plans.

Currently only 38% of those aged 55-64 have private healthcare insurance. In other words, there will be 500,000 people retiring over the next decade who will very likely be uninsured and reliant on public healthcare. This group alone will add 80% to the number of patients our public hospitals are serving now. If we do nothing, public hospitals will have waiting lists almost twice as long as those we have now ten years hence. The case is clear: we need either to build more public hospitals to accommodate this surge, or divert some of these users towards private services which also have to grow rapidly.

Some 62% of the boomers group aged 55-64 do not have private insurance and will likely rely on public provision as they retire over the next ten years – this will add 80% to our current load

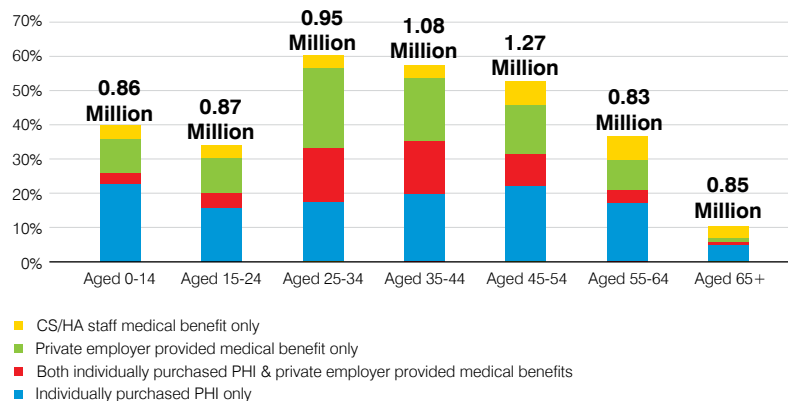
As the current shortage in capacity grows increasingly acute over the coming decade, there is little point in hoping we can shift part of public sector's patients to the private sector since the private sector will have to recruit from public sector for doctors to enable its growth. Thus increasing the supply of doctors from local and overseas talent pools must be the top priority for the coming ten years. A discussion as to how much of the new capacity can be shifted to private sector, given that the public sector will have to accommodate an 80% increase in non-insured boomers in the coming decade, will only marginally mitigate the public purse's burden in providing cover. A recent example of this logic is the decision by Tseung Kwan O Hospital to delay the opening of its maternity ward on the basis that it will draw doctors and nurses from the other public hospitals to support its use. Hence, until more doctors can be found from beyond the existing pool, it is not effective to bring on the facility.

A practical alternative worth exploring is to step up significantly the "premium" category of public hospital bracket. A case can also be made that at times of severely strained capacity, given the higher "moral hazard" in the private sector (which may create more work than necessary), the bigger the public sector's share of the total healthcare system, the more efficient overall provision can be. There is also scope for a system of means testing for public hospitals so that for those families and patients who can afford a higher medical bill, less subsidies are given. Currently, the recovery rate for the cost per patient is a paltry 7%. We should revamp the public healthcare system into different classes and allow for better financial returns from providing middle-class patients, who are willing to spend more money, with premium services such as a private room and menu selection.

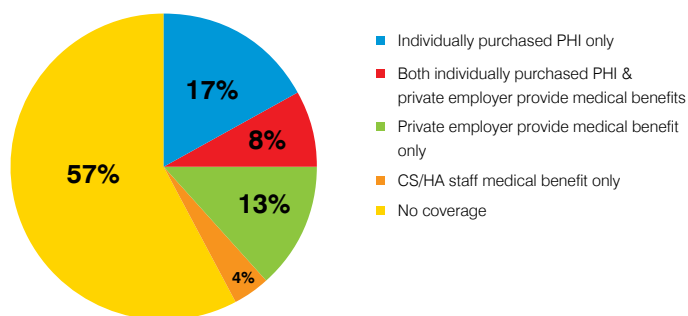
Given the gaping shortage of doctors ahead, our priority must be over creating overall capacity as opposed to working out precisely how to split the supply function between the public and the private sectors

Help those who need it: a more equitable charging system which levies higher fees on the better off can improve the cost recovery in public sector from the paltry 7%

Percentage Insured by Age Group



Population Coverage of Medical Insurance or Benefit



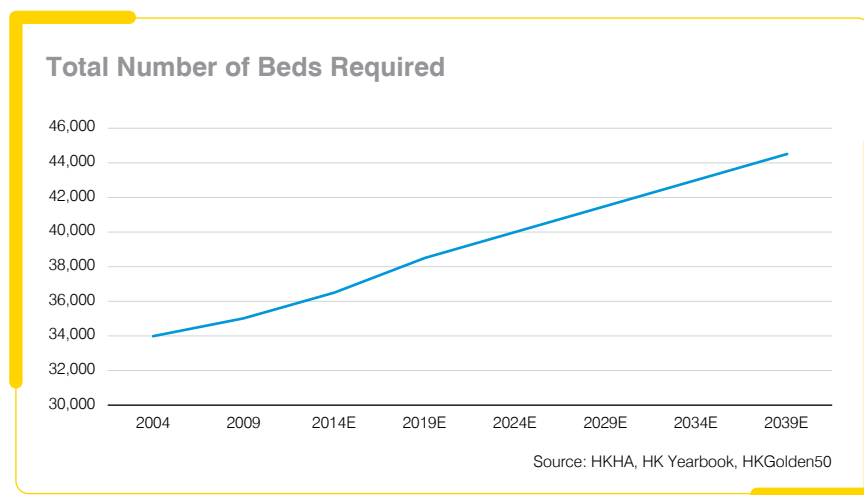
(8.1) Build new public hospitals

The number of hospital beds in Hong Kong increased a mere 1% in the last decade. When our population has grown 6% larger and ten years older over the past decade, the growth in hospital capacity simply has not kept pace, even after the amelioration of new technology and treatment methods. By 2014, we would need some 270 extra beds (1%) and c. 3,000 (10%) more by 2019. This latter shortfall equates c. 10% of the current beds supply or twice the beds at Queen Mary Hospital. In other words, we need to provide space equivalent to the size of two Queen Mary Hospitals, or eight Tseung Kwan O hospitals to accommodate for the increase in demand for hospital beds in the coming eight to ten years.

At our current pace of providing new beds, we will be 3,000 beds (10%) short by 2019, equivalent to twice the number of beds at Queen Mary Hospital

The biggest problem we face is the long delay in producing a hospital. Dr. Lo Chung Mau, Chair Professor and Head of HKU's Department of Surgery, mentions that it will take ten years to complete Queen Mary Hospital's reconstruction. If it takes a similarly long lead time to produce a new hospital, we must start producing according to our community demand ten years out ie 2022. With the population increasing to 8m (+14%) by 2024, we will need to add at least 5,000 beds (+14%) in the next 12 years, and c.9,000 (+29%) in 30 years.

Taking into account the long lead time of ten years to produce a new hospital, we must target c. 5,000 beds (+14%), a scale equivalent to three Queen Mary Hospitals in the coming decade



If we maintained our current production of beds provision, which is only around 200 beds per decade, our beds provision would fall short by 20% in 20 years. The government needs to increase at least 400 beds to 600 beds per year. The existing expansions and reconstruction should take this upsurge in future demand into account. The reconstruction plans of Kwong Wah and Queen Mary Hospital, announced a few weeks ago, are not adding beds at all. This looks unreasonable given the existing shortage and the inevitable pick-up in demand in the next two decades.

Just as the costs of the Shatin-Central (rail) Link surged some HK\$30bn to HK\$80bn after nearly three years' delay, in the current environment when we have high domestic generated inflation of 5-8% but sagging global prices for building materials, it pays us to start building out our medical hardware as soon as possible. The delay in the Shatin-Central Link, for instance, has cost the equivalent of some four Queen Mary Hospitals. The cost for this new capacity of c.5,000 beds is estimated at HK\$22bn (present cost) but as the cost will be incurred over a long period, the actual spending will exceed this the further out the construction is carried out. To be prudent, we have assumed final cost of HK\$20bn accounting for a 6-8% inflation.

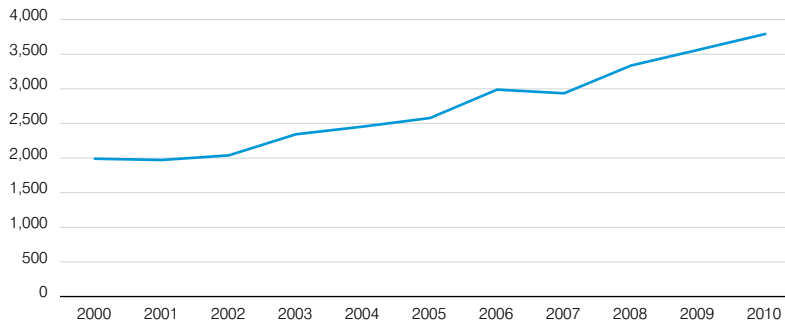
We should build capacity as soon as possible to take full advantage of low material costs and before construction inflation erodes our budgets

(8.2) Build nursing homes and add hospital beds to badly undersupplied districts

There are only fewer than 4,000 beds at the 46 registered nursing homes in Hong Kong, yet the waiting list for such facilities is already at 6,500 as of 2012, with an average of three years' waiting time. Some 75% of these elderly people die before the government could attend to their death bed's wish—a simple request for a place to take care of them. Nursing homes are social assets that are urgently in need, especially when they can alleviate the bed space taken up by elderly patients in hospitals. Currently, 40% of patients staying at public hospitals are elderly people. More nursing homes offering professional medical attention to the elderly population can divert the milder geriatric cases to nursing homes and better optimise our hospital space for those who have more urgent or medically more serious demands.

Some 75% of the elderly people on the waiting list for nursing homes died while waiting

Number of Beds in Nursing Homes



Source: Hong Kong Yearbook

(8.3) Increase private hospital capacity

Private hospitals serve 20% of total inpatients in Hong Kong, with only 15% of bed space. As mentioned earlier, the inadequate bed space has forced some doctors to refer their patients back to the public system. Although there are potential moral hazards in expanding private medical provision, as the doctors are often far more knowledgeable than the patients and those that are unscrupulous can steer their patients to undergo and pay for unnecessary procedures, private hospital provisions are integral part of a world class healthcare system as they offer choice to those who can afford it.

The government has reserved four pieces of land since 2009 for private hospitals. Yet after three years they are still untouched. The delay in action for two years has already caused an 8% increase in cost thanks to inflation. For this amongst other reasons, the original 10+ bidders who expressed interest in the Wong Chuk Hang and Tai Po area have now narrowed down to two. The government needs to release land as soon as possible to catch up with the demand for medical services and hedge against the inflation induced medical expenses spike. The tenders ask bidders to provide at least 300 beds upon commencement of Hospital operation, sparing half of its service capacity to Hong Kong residents, at least 30% servicing local patients through packaged charges, and restraining the number of obstetrical beds to 20%.

	Wong Chuk Hang	Tai Po
Gross Floor Area	28,050 - 46,750 sqm	38,742 - 64,570 sqm
Land Area	27,500 sqm	54,851 sqm
Beds	>300	>300

(8.4) Develop medical hub at Gateway To The World (GTTW)

We mentioned in our third report that a multi-purpose complex can be constructed in the current golf course situated right next to the Chek Lap Kok airport. The complex, GTTW as we name it, can serve as a one-stop medical complex for international travellers who wish to use our World-Class services. This can cater to our mainland demand for Hong Kong's medical services and displace the demand and alleviate the pressure on our local hospitals, both public and private. The 1m sf medical centre can provide 400 beds, twice the size of Adventist Hospital.

A medical centre to expand the capacity of private services kill two birds in one stone

With the abundance of space at GTTW (with a gross floor area 35% larger than St. Teresa's Hospital, currently the largest private hospital in Hong Kong by area), the medical centre can be much more than an ordinary hospital – it can be built into a comprehensive medical tourism destination that can provide one-stop healthcare solutions for every age group of customers. In addition to hospital beds and surgical rooms, “recreational healthcare” facilities eg health spas, massage centres, water parks and yoga clubs can certainly provide a more pleasant and less stressful experience when compared to a regular hospital setting. The medical centre can not only serve the purpose of freeing up supply of local hospital service for locals in need, but it can also position Hong Kong as a prime medical tourism destination alongside Singapore, a current leader in the field. The ensuing influx of demand for Hong Kong medical service can be a stimulant to our already world-leading medical research industry.

(9) Replace and upgrade medical equipment over ten years old

Only 4% (around HK\$1.6bn) of HKHA's total expenditure of some HK\$40bn is spent on medical equipment. With the government's one-off funding in the two fiscal years to 2009/10 of HK\$1.2bn, or a mere 1% of our public surplus in 2012, HKHA was able to reduce major equipment over ten years old from 42% to 36%. With the rapid advancement of science, technological obsolescence sets in quickly and it is likely that anything new may be multiple times more effective than equipment over ten years old. When servicing capacity is severely strained, replacing old equipment must be a very quick way of extracting productivity, especially when a 1% spending of a year's fiscal surplus can already lower old stock by 6% and a 6% spending can remove all old stock.

Spending 6% of one year's fiscal surplus can bring all our equipment older than ten years up-to-date and instantly boost medical productivity

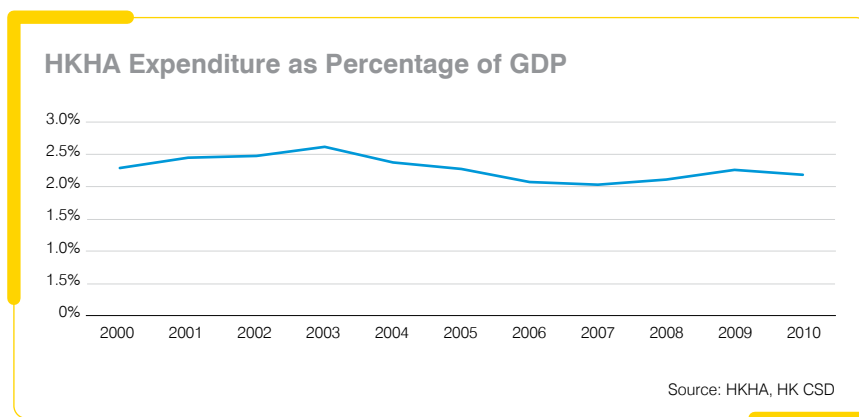
Medical equipment bought by HKHA with one-off fiscal funding from 2007/08 - 2009/10

Equipment Group	Cost (HK\$m)
Radiological Equipment	522
Physiologic Equipment	91
Ventilator	46
Anaesthetic Machine	41
Pathology Equipment	82
Nuclear Medicine	17
Surgical Equipment	59
Operating Table	20
Renal Equipment	10
Endoscopic Equipment	29
Sterilizer	20
Telephone System	59
Ophthalmic Equipment	12
Radiotherapy Equipment	144
Other Equipment (e.g. Speech diagnosis unit; Walker, Lift)	128
Total	1,280

Source: LegCo

(10) Expand facilities of HKU and CUHK medical schools

To accommodate the increase in medical student intake from 420 to c. 800 per year, we must scale up our medical school facilities and expand the teaching capacity of HKU and CUHK medical schools, if not potentially building another top medical school. We should install state of the art equipment and hire world-renowned professors to teach our next generation of aspiring doctors. Our potential to become a World-Class medical hub that produces top notch medical practitioners and provides pioneer knowledge resources can then be realised.

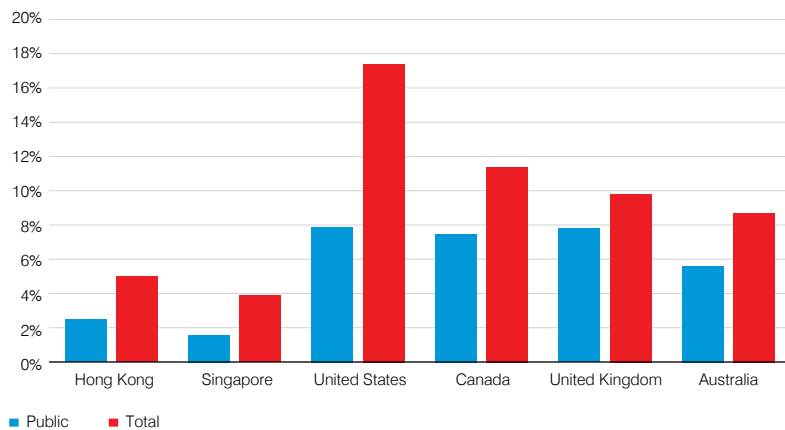


Investing in both our public and private healthcare capacity and capabilities is a win-win. We should spend appropriately to defend the core values of our system—to respect the older generation who have contributed significantly to our society, and stray away from denying our elderly people from healthcare out of financial reasons, especially when we are affluent enough to fund our medical system. Currently, our public hospitals' expenditure accounts for only c. 2.1% of our GDP (i.e. c. HK\$5,400 per capita). This figure has been dropping since 2003 and slightly picked up since 2007. As mentioned earlier, our healthcare spending per capita is one third of USA, two thirds of UK and 72% of OECD average.

Spend appropriately to defend one of our core values-- we will not let senior citizens be denied from healthcare out of financial reasons, especially when we can afford it

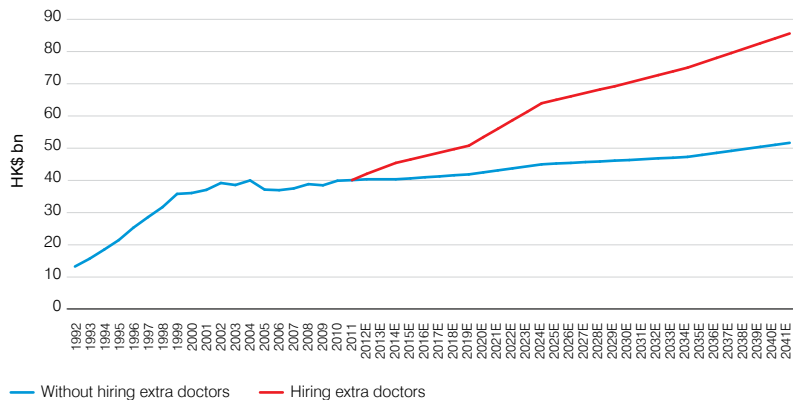
Our total healthcare expenditure is 5% of our total GDP, and public expenditure stays low at 2.5%, when most developed countries (e.g. United States, Canada, United Kingdom and Australia etc.) exceeds 5% in their public healthcare expenditure as a % of GDP.

Healthcare Expenditure as Percentage of GDP



Our total and public healthcare expenditure as % of GDP is amongst the lowest in the world

Annual Medical Cost With or Without Expansion in Staff Numbers



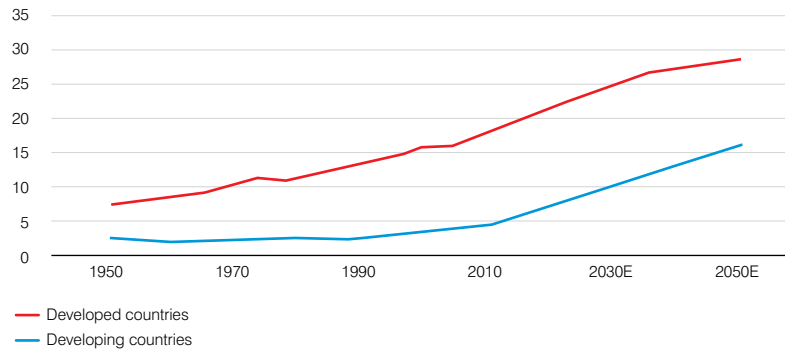
If we hired adequate amount of doctors, our healthcare expenditure will be up HK\$8.8bn (or 0.5% of 2011 GDP) by 2019, HK\$22.9bn (or 1.2% of 2011 GDP) by 2029 and HK\$31.9bn (or 1.7% of 2011 GDP) by 2039

If we hired the adequate amount of doctors in the public system, our healthcare expenditure will be up HK\$8.8bn (or 0.5% of 2011 GDP) by 2019, HK\$22.9bn (or 1.2% of 2011 GDP) by 2029 and HK\$31.9bn (or 1.7% of 2011 GDP) by 2039. Not only can we afford such spending, the positive externalities generated from investing in our healthcare industry are tremendous. A bigger medical service capacity is undeniably good for the sick and older population, it is also beneficial to the active working population, since the labour-intensive healthcare industry can spin off more jobs. The ready availability of quality healthcare services also contributes to a healthier and happier population.

Positive externalities can also spin off from healthcare investments

Hong Kong has all the potential to develop the medical sector into one of our pillar credibility industries. We have the technology, the talents, the facilities, and the reputation to offer World-Class medical services. All that is lacking is our commitment to scale this up into an industry where millions of jobs can be created. We need to build up our medical capacity to serve our ageing population's demand as well as grasp the inflow of the next booming industry of the century, and we need to do it fast. With the global ageing population speeding up, not only Hong Kong is not alone and will soon hit a shortage tide in doctors. It is only to our advantage if we expanded our medical capacity now rather than later. The solution is simple—we need to start building our medical hardware – more hospitals, nursing homes, medical centres, while actively growing our medical personnel by importing and training medical talents.

Percentage of Global Population Aged 60 and Over



Source: "World Population Prospects", United Nations, 2009

We sincerely hope that you find this report informative and useful and has helped you to understand better both the huge potential open to Hong Kong in the coming 50 years and the challenges and opportunities that we face, as a community, in these pivotal Golden 5 Years. We are eager to know any comments or suggestions that you may have about our report. Please let us know your thoughts by emailing friends@hkgolden50.org and please stay in touch through our website www.hkgolden50.org.

Disclaimers

This report is provided for information purposes only. It is not a complete analysis of every material fact with respect of any industry or economy. Statements of fact have been obtained from sources considered reliable but no representation is made by HKGolden50 or any of its affiliates as to their completeness or accuracy. All estimates, opinions and recommendations expressed herein constitute judgments as of the date of this report. Neither this report, nor any opinion expressed herein, should be construed as an advice of any kind. HKGolden50 accepts no liability whatsoever for any direct or consequential loss arising from the use of this report or its contents. This report should not be relied upon in connection with any contract or commitment whatsoever.



In the immediate 5 years, Hong Kong will enjoy some of the strongest inflows of business opportunities and talents in our history. If Hong Kong people think through the issues calmly and sensibly, we can capture these and enhance the long-term growth and quality of our economy, thereby supporting jobs and fostering social harmony for the next generation. If we choose to do nothing and allow these opportunities to disappear, we may well regret the decline that may follow the Golden 5 Years.

Our younger generation, in particular, should be more proactive in changing to a pro-growth mindset in the Golden 5 Years as what they choose will likely define their next 50 years.

HKGolden50 is an optimist – we believe Hong Kong's golden years will run far into the future because Hong Kong people will choose wisely. Our mission is to encourage awareness, discussion, research and ownership of these immediate issues in society in the hope that Hong Kong can move forward boldly again.



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HKGolden50 is committed to protecting the environment.