For discussion on
12 July 2024

Legislative Council Panel on Health Services

Healthcare Manpower Projection 2023

PURPOSE

The Government commissioned the Hospital Authority ("HA") to conduct the latest round of healthcare manpower projection. This paper reports to Members the results of the projection.

BACKGROUND

2. The Government published the "Report of the Strategic Review on Healthcare Manpower Planning and Professional Development in June 2017", setting out ten recommendations to lay the foundation for healthcare manpower planning and the direction for professional development and regulation of healthcare professionals, with a view to ensuring that there were qualified healthcare professionals to support the healthy and sustainable development of the healthcare system in Hong Kong.

3. Among these recommendations, one of them was that the Government should conduct manpower planning and projections for healthcare professionals once every three years in step with the triennial planning cycle of the University Grants Committee ("UGC"). In this connection, the Government has commenced the exercise of Healthcare Manpower Projection since 2013 on a regular basis, to update the demand and supply projections of healthcare professionals, including doctors, dentists, dental hygienists, nurses, midwives, Chinese medicine practitioners, pharmacists, occupational therapists, physiotherapists, medical laboratory technologists, optometrists, radiographers and chiropractors.

4. The Health Bureau commissioned HA to conduct a new round of manpower projection and briefed the Legislative Council Panel on Health Services on the background, methodology and schedule of this round of projection on 10 March 2023 (LC Paper no. CB(4)/169-3) (**Annex A**). HA has completed the Healthcare Manpower Projection 2023 (with 2019 as the base year), the projection period of which is the coming 20 to 30 years.

5. This round of projection has factored in the externalities and policy options for individual professions, as well as the views expressed by various stakeholder groups (including HA, the Department of Health, and representatives of universities, regulatory Boards and Councils, professional organisations and the private sector) in a series of engagement meetings on healthcare professions in 2023 (a list of the healthcare professional organisations and statutory bodies which participated in the consultation is at **Annex B**). HA has developed a generic manpower projection model that suits local circumstances and is adaptable to the changing parameters in utilisation patterns among individual professions, which has factored in population ageing and the resulting changes in prevalence of chronic diseases. The manpower projection model has factored in the baseline manpower shortage at the base year of 2019, and aims at quantifying the difference between the projected demand for and supply of healthcare professionals in terms of full time equivalents ("FTEs"). In gist –

(a) for **manpower demand**, the future healthcare manpower demand of the public, private and social welfare sectors is projected according to the growth in demand for healthcare service, which is driven mainly by factors including demographic changes and the increasing prevalence of chronic diseases[1]. The demand and supply projection models of individual professions are formulated after considering the views of key stakeholders on the model parameters and assumptions. Impact on the future manpower demand and supply arising from the known and planned policy initiatives / new services[2] collected from various Government bureaux and departments are also incorporated into the projection model; and

(b) for **manpower supply**, with regard to the projection for a

[1] The demand projection covers healthcare professionals working in the academic sector, and assumes that the growing number of training places will correspondingly lead to a greater demand for teaching professionals.

[2] This round of projection has factored in impact resulting from known and planned policy options as of 2023, (including Chronic Disease Co-Care Pilot Scheme, new initiatives to improve the overall level of community oral health, Primary Dental Co-care Pilot Scheme for Adolescents, the establishment of the Chinese Medicine Hospital and increasing quota of subsidised outpatient consultations in Chinese Medicine Clinics across the 18 districts)

particular year, the number of registrants practising in a particular profession at the end of each year is first projected taking into consideration the number of new registration of healthcare professionals trained locally and non-locally and attrition during that particular year. The projected number of registrants is then converted into FTEs based on the specific work patterns by age and sex. In this round of projection, the impact on manpower supply arising from the upsurge of departure of healthcare professionals from 2020 to 2022 and the additional non-locally trained doctors admitted through special registration have also been taken into consideration.

PROJECTION RESULTS

6. The results of this round of projection reveal **manpower shortages** in the following healthcare professions –

(a) Doctors

(i) when compared with the projection in the previous report in 2021, manpower shortage of doctors persists in the short to long term owing to general demographic factors such as population growth and population ageing, coupled with growing medical burden associated with chronic diseases. The manpower gap will narrow from 2032 to the end of the projection period with the increase in medical places in the past few triennia which increased the supply of locally trained graduates and the introduction of non-locally trained doctors;

(ii) the manpower gap is projected to be 1 570, 1 400 and 1 200* respectively in 2030, 2035 and 2040;

(iii) initiatives to continue to increase supply of both locally and qualified non-locally trained doctors, including further increasing local medical places, recruiting and retaining doctors working in the public sector, and providing facilitations for the newly created pathways of special and limited registration, etc., are recommended.

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* Positive figures indicate a shortfall; negative figures indicate sufficient manpower. All figures expressed in full-time equivalents ("FTEs") with rounding. Same apply to manpower gap figures that follow.

(b) Dentists

(i) this round of projection has factored in the impact on manpower arising from new initiatives to improve the oral health of the community, including the expansion of primary dental services targeting different age groups and strengthening of dental services for the underprivileged groups (such as the Outreach Dental Care Programme for the Elderly, the Community Care Fund Elderly Dental Assistance Programme, and the Healthy Teeth Collaboration for persons with intellectual disabilities). It is projected that manpower of dentists will be inadequate in the short to medium term, becoming sufficient towards the end of the projection period as a result of the implementation of measures to increase supply of dentists (in particular the increase in local dental places in the past few triennia);

(ii) the manpower gap is projected to be 180, 120 and -20[3] respectively in 2030, 2035 and 2040;

(iii) measures to address the short to medium term manpower shortage, and further observation of the long term demand and supply situation in manpower , are recommended.

(c) Dental hygienists

(i) with the publication of the Interim Report of the Working Group on Oral Health and Dental Care by the Government in 2023, the dental services to be provided will gradually focus on preventive dental care, leading to a significant increase in demand for dental hygienists[4]. The impact of the gradual increase of training places for dental hygienists starting from academic year 2024/25 has been factored in for this round of projection;

(ii) the manpower gap is projected to be 1 250, 940 and 680

[3] The Dentists Registration (Amendment) Bill 2024 is under deliberation of the Legislative Council. As such, impact of the proposed pathways for admitting qualified, non-locally trained dentists is not included HMP 2023.

[4] Dental therapists currently work only under DH to provide the School Dental Care Service. HMP 2023 has not factored in the corresponding manpower situation. The Dentists Registration (Amendment) Bill 2024 is under deliberation of the Legislative Council, for the purpose of introducing a statutory registration system for ancillary dental workers. Projections for dental therapist manpower may be considered in due course.

respectively in 2030, 2035 and 2040;

(iii) further increase in the number of training places for dental hygienists, and the establishment of their professional status to enhance attractiveness of the profession, are recommended.

(d) Nurses (General)

(i) despite the measures adopted by the Government to increase the supply of general nurses, when compared with the previous projection, manpower gap for general nurses will further widen in the short to medium term, reflecting growing demand from both medical and welfare sectors and from existing and newly planned services. Growing demand for public hospital services further widens the manpower gap. Demand for general nurses from the welfare sector will also grow steadily when new initiatives of planned elderly and rehabilitation services are implemented;

(ii) the manpower gap is projected to be 8 700, 6 900 and 6 000[5] respectively in 2030, 2035 and 2040;

(iii) measures to proactively address the manpower shortage of nurses as soon as possible, including the introduction of qualified non-locally trained nurses and further expansion of local training, are recommended.

(e) Nurses (Psychiatric)

(i) mainly as a result of increasing demand for psychiatric nurses in both medical and welfare sectors, there will be a shortfall of manpower in the short term (projected manpower gap of 320 in 2025). With a continued steady supply of graduates, sufficient manpower is expected after 2030;

(ii) the manpower gap is projected to be -60, -600 and -1 220 respectively in 2030, 2035 and 2040;

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[5] The Nurses Registration (Amendment) Bill 2023 is still under deliberation of the Legislative Council. As a result, impact of the proposed pathways for admitting qualified, non-locally trained registered and enrolled nurses is not factored in for HMP2023.

(iii) further observation of the long term demand and supply situation in manpower, and timely adjustment of training strategy in line with policy measures for mental health services, are recommended.

(f) Chinese Medicine Practitioners ("CMPs")

(i) manpower will be inadequate in the short to medium term as a result of Government initiatives to strengthen Chinese medicine related services (including the Chinese Medicine Hospital), which induce an increase in demand for CMPs. Owing to a continued steady supply of local and non-local graduates, the projected manpower of CMPs in the long term is adequate, with no manpower gap after 2038;

(ii) the manpower gap is projected to be 240, 130 and -190 respectively in 2030, 2035 and 2040;

(iii) a moderate increase in training places for CMPs, and further observation of the long term demand and supply situation in manpower, are recommended.

(g) Pharmacists

(i) while demand for public hospitals inpatient services, specialty outpatient services and general outpatient services of members of the public will grow in the projection period, in view of the continued steady supply of manpower of pharmacists arising from local and non-local graduates, manpower will be sufficient in the medium to long term from 2032 onwards in the current projection;

(ii) the manpower gap is projected to be 70, -60 and -190 respectively in 2030, 2035 and 2040;

(iii) introduction of suitable non-locally trained pharmacists to address the short term manpower demand, and further observation of the long term demand and supply situation in manpower, are recommended.

(h) Occupational therapists

(i) while demand for occupational therapists in the medical and welfare sectors is expected to continue to rise leading to a considerable shortfall in the short term (projected manpower gap of 420 in 2025), the manpower gap is expected to close in 2030 with no manpower gap projected afterwards, owing to an increased and steady supply of graduates (with new places provided by more self-financing institutions from 2017);

(ii) the manpower gap is projected to be 0, -300 and -490 respectively in 2030, 2035 and 2040;

(iii) introduction of suitable non-locally trained occupational therapists to fulfill short term manpower demand, and further observation of the long term demand and supply situation in manpower, are recommended.

(i) Physiotherapists

(i) manpower will be inadequate in the short term (projected manpower gap of 610 in 2025) in view of the growing demand for physiotherapists in the medical and welfare sectors, but the manpower gap is expected to narrow in the medium to long term with no shortfall after 2029 owing to the increased and steady supply of graduates (including the increased number of graduates trained by self-financing institutions joining the profession beginning in 2024);

(ii) the manpower gap is projected to be -340, -1 060 and - 1 610 respectively in 2030, 2035 and 2040;

(iii) introduction of suitable non-locally trained physiotherapists to fulfill short term manpower demand, and timely adjustment of training strategy in line with related policy measures, are recommended.

(j) Medical Laboratory Technologists ("MLTs")

(i) owing to the surge in demand by members of the public for healthcare service in the public and private sectors since 2020 as a result of the COVID-19 epidemic, and

enhanced surveillance by the relevant authorities for the prevention of other prevailing seasonal and sporadic infection outbreaks, manpower of MLTs in the short and long term is expected to be inadequate, with a peak of shortfall expected in 2027;

(ii) the manpower gap is projected to be 420, 280 and 220 respectively in 2030, 2035 and 2040;

(iii) increase in training places as appropriate, and further observation of the long term demand and supply situation in manpower, are recommended.

(k) Optometrists

(i) supply of optometrists has continued to drop substantially since 2019 as a result of cohort retirement, further widening the manpower gap in the projection period. Demand for optometrists is expected to peak at 2035 and decline thereafter. As the majority of optometrists are in private practice with varying retirement ages and work patterns, some degree of flexibility in manpower supply exists;

(ii) the manpower gap is projected to be 840, 940 and 870 respectively in 2030, 2035 and 2040, all of these gaps are expected to be increased as compared to the previous round of projection;

(iii) increase in training places as appropriate is recommended.

(l) Radiographers

(i) mainly due to the increased and steady supply of graduates, the manpower gap for radiographers is projected to narrow gradually in the medium to long term with no shortfall expected after 2037;

(ii) manpower shortfall situation of radiographers of the therapeutic stream is expected to continue due to increasing demand from the public and private sectors, whereas no shortfall for radiographers of the diagnostic stream is expected from 2033 onwards;

(iii) the manpower gap for radiographers as a whole is projected to be 200, 50 and -100 respectively in 2030, 2035 and 2040;

(iv) introduction of suitable non-locally trained radiographers and expansion in training of local radiographers of the therapeutic stream to fulfill short to medium term manpower demand, as well as further observation of the long term demand and supply situation in manpower and training strategy, are recommended.

7. On the other hand, projection results reveal **sufficient** manpower supplies for the following healthcare professions in the short, medium and long term–

(m) Midwives

(i) demand for midwife is based on the utilisation volume of pre-natal and live birth services, and related to the number of newborns. At present, there is training for new entries every year through local post-registration diploma course. Hence, even with cohort retirement of midwives expected in the coming 10 years, the total number of registered midwives should be adequate to meet the demand in the years to come;

(ii) the manpower gap is projected to be -1 070, -1 120 and – 1 140 respectively in 2030, 2035 and 2040;

(iii) discussions with the midwife profession to explore the feasibility of manpower exchange between midwives and registered general nurses for efficient utilisation of manpower resources is recommended. At the same time, adjustment in training curriculum of midwifery could be considered.

(n) Chiropractors

(i) training of chiropractors is not provided by local training institutions. Non-locally trained chiropractors are all along able to meet service demands. Supply of chiropractors will be adequate, due to increasing number of new registrants graduated from overseas;

(ii) the manpower gap is projected to be -70, -120 and -150 respectively in 2030, 2035 and 2040.

8. The executive summary of the projection results of all the above-mentioned healthcare professions of Healthcare Manpower Projection 2023 is at **Annex C**.

NEXT STEPS

9. To further refine the manpower planning and projection, the Government has commissioned HA to start conducting manpower projection for specialist doctors to provide relevant data for reference. The report on the Healthcare Manpower Projection 2023 will be promulgated in the second quarter of 2024.

ADVICE SOUGHT

10. Members are invited to note the projected gaps of individual professions, and other observations detailed in this paper.

Health Bureau
June 2024

For discussion on
10 March 2023

Legislative Council Panel on Health Services

Healthcare Manpower Projection 2023

PURPOSE

This paper briefs Members on a new round of healthcare manpower projection.

BACKGROUND

2. In June 2017, the Government published the Report of the Strategic Review on Healthcare Manpower Planning and Professional Development, setting out ten recommendations on healthcare manpower planning, professional development and regulation to ensure the healthy and sustainable development of the healthcare system in Hong Kong.

3. One recommendation of the Report is that the Government should conduct manpower planning and projections for healthcare professionals once every three years in step with the triennial planning cycle of the University Grants Committee ("UGC"). The scope of projection covers the 13 healthcare professions subject to statutory registration, namely doctors, dentists, dental hygienists, nurses, midwives, Chinese medicine practitioners, pharmacists, occupational therapists, physiotherapists, medical laboratory technologists, optometrists, radiographers and chiropractors.

4. Regarding the last round of projection (i.e. Healthcare Manpower Projection 2020), the former Food and Health Bureau reported the projection results to the Legislative Council Panel on Health Services on 24 March 2021 (LC Paper No. CB(4)600/20-21(05)).

NEW ROUND OF HEALTHCARE MANPOWER PROJECTION

5. For the new round of healthcare manpower projection, the Government has commissioned the Hospital Authority ("HA") to provide technical support for updating the supply and demand projections of healthcare professionals. HA has inherent strengths in conducting such projections, including data kept on the utilisation of various healthcare services, which enable it to better grasp the trend of the past service utilisation rates and hence facilitate its projection of the future healthcare manpower demand. Also, HA has set key performance indicators for its major clinical services, which will be taken into consideration in projecting the manpower demand induced by service enhancement.

6. In gist, the model adopted in this round of projection will take 2019 as the base year. In projecting the future healthcare manpower requirement to meet the service needs, the utilisation rates of various healthcare services will first be calculated with reference to historical data, with the assumption that these rates under the base case scenario remain unchanged during the projection period, and taking account of factors such as the demographic changes, the increase in chronic patients, the known and planned services and developments, etc. The future manpower supply will be projected based on the existing and planned local programmes, as well as the non-locally trained new registrants. The demand projections so calculated will then be compared with the projected supply of healthcare professionals during the same period while taking into account the known shortage in the public and subvented sectors as at the end of the base year (i.e. 2019), so as to assess whether the future manpower demand and supply in the projection period will be substantially at equilibrium, in shortage or relatively sufficient.

7. This round of projection will in tandem consider the concerns raised by Members and relevant stakeholders in the last round of projection, such as workload indicators adopted in the public sector, the need to enhance healthcare services (e.g. shortening the waiting time for specialist outpatient services in public hospitals), etc.

LATEST DEVELOPMENTS

8. A number of engagement meetings with the professions have been held since 17 February 2023, with the aim to introduce the rationale and methodology of the present projection exercise, and to listen to the latest views of the representatives from their own professions on the existing and expected future manpower estimations. This round of engagement meetings is scheduled for completion in March 2023.

NEXT STEPS

9. HA is now collecting and collating data on profession-specific service utilisation, manpower, local training situation, etc. for conducting the projections. As in the past, Health Bureau and HA will hold engagement meetings with the 13 professions and take views of stakeholders from the respective professions as appropriate to update the projections. We expect that the projection exercise will be completed before the end of 2023.

10. Subject to the projection results, the Government will review the strategies for increasing healthcare manpower and consider whether to further raise the number of healthcare training places in the next UGC triennium.

ADVICE SOUGHT

11. Members are invited to note the content of this paper.

Health Bureau
March 2023

Healthcare Manpower Projection 2023
Engagement with Healthcare Professional Organisations and Statutory Bodies

1. Hospital Authority
2. Department of Health
3. Social Welfare Department
4. The Medical Council of Hong Kong
5. Hong Kong Academy of Medicine
6. Hong Kong Medical Association
7. Hong Kong Doctors Union
8. The Association of Licentiates of Medical Council of Hong Kong
9. The Hong Kong Private Hospitals Association
10. Hong Kong Public Doctors' Association
11. The Federation of Medical Societies of Hong Kong
12. Public Hospital Consultant Association
13. Federation of Private Healthcare Centers of Hong Kong
14. Association of Private Medical Specialists of Hong Kong
15. Li Ka Shing Faculty of Medicine, The University of Hong Kong
16. Faculty of Medicine, The Chinese University of Hong Kong
17. The Dental Council of Hong Kong
18. Hong Kong Dental Association Limited
19. Faculty of Dentistry, The University of Hong Kong
20. The Prince Philip Dental Hospital
21. The College of Dental Surgeons of Hong Kong
22. Government Dental Hygienists' Association
23. Hong Kong Dental Hygienists' Association
24. The Nursing Council of Hong Kong
25. Midwives Council of Hong Kong
26. College of Nursing Hong Kong
27. The Hong Kong Society for Nursing Education Limited

28. The Hong Kong College of Mental Health Nursing Limited
29. Association of Hong Kong Nursing Staff
30. Nurses Branch, Hong Kong Chinese Civil Servants' Association
31. Enrolled Nurses Branch, Hong Kong Chinese Civil Servants' Association
32. Hong Kong Nurses General Union
33. The Hong Kong Academy of Nursing
34. Hong Kong Midwives Association
35. School of Nursing, The University of Hong Kong
36. The Nethersole School of Nursing - Faculty of Medicine, The Chinese University of Hong Kong
37. School of Nursing, The Hong Kong Polytechnic University
38. School of Nursing and Health Studies, Hong Kong Metropolitan University
39. School of Nursing, Tung Wah College
40. School of Health Sciences, Caritas Institute of Higher Education
41. Chinese Medicine Council of Hong Kong
42. Chinese Medicine Practitioners Board, Chinese Medicine Council of Hong Kong
43. Chinese Medicine Practice Subcommittee, Chinese Medicine Development Committee
44. Sin-Hua Herbalists' and Herb Dealers' Promotion Society Limited
45. Hong Kong Chinese Herbalists Association Limited
46. Hong Kong Association of Traditional Chinese Medicine
47. Hong Kong Registered Chinese Medicine Practitioners Association Limited
48. China Society of Practitioners of Chinese Medicine Limited
49. The Kowloon Chinese Herbalists Association Limited
50. International General Chinese Herbalists and Medicine Professionals Association Limited
51. The Hong Kong T.C.M. Orthopaedic & Traumatic Association Limited
52. Association of Hong Kong and Kowloon Practitioners of Chinese Medicine Limited
53. Hong Kong Chinese Medicine Practitioners Association Limited
54. Hong Kong Acupuncturists Association

55. The Hong Kong Federation of China of Traditional Chinese Medicine
56. Hong Kong Listed Chinese Medicine Practitioners Association
57. Union of Frontline Chinese Medicine Pratitioners (Hong Kong)
58. School of Chinese Medicine, The University of Hong Kong
59. School of Chinese Medicine, The Chinese University of Hong Kong
60. School of Chinese Medicine, Hong Kong Baptist University
61. Pharmacy and Poisons Board of Hong Kong
62. The Society of Hospital Pharmacists of Hong Kong
63. The Pharmaceutical Society of Hong Kong
64. The Practising Pharmacists Association of Hong Kong
65. College of Pharmacy Practice
66. Hong Kong Pharmacists Union
67. The Hong Kong Association of the Pharmaceutical Industry
68. School of Pharmacy - Faculty of Medicine, The Chinese University of Hong Kong
69. Department of Pharmacology and Pharmacy, The University of Hong Kong
70. Supplementary Medical Professions Council
71. Occupational Therapists Board
72. Hong Kong Occupational Therapy Association
73. Hong Kong Institute of Occupational Therapy
74. Department of Rehabilitation Sciences, The Hong Kong Polytechnic University
75. School of Medical and Health Sciences, Tung Wah College
76. Physiotherapists Board
77. Hong Kong Physiotherapy Association
78. Hong Kong Physiotherapists' Union
79. Medical Laboratory Technologists Board
80. Hong Kong Institute of Medical Laboratory Sciences Limited
81. Institute of Biomedical Science (HK Branch)
82. Medical Technicians & Technologists Branch, The Hong Kong Chinese Civil Servants' Association
83. Hong Kong Biomedical Scientists Association
84. Hong Kong Association of Medical Laboratories Limited

85. Department of Health Technology and Informatics, The Hong Kong Polytechnic University
86. HKU School of Professional and Continuing Education
87. Optometrists Board
88. The Hong Kong Society of Professional Optometrists
89. The Hong Kong Optometric Association
90. The Hong Kong Association of Private Practice Optometrists
91. School of Optometry, The Hong Kong Polytechnic University
92. Radiographers Board
93. The Hong Kong Radiographers' Association
94. The Hong Kong Radiological Technologists' Association
95. Hong Kong Association of Radiation Therapists
96. The Hong Kong College of Radiographers and Radiation Therapists
97. Chiropractors Council
98. Hong Kong Chiropractors Association Limited
99. Hong Kong Association of Professional Chiropractors
100. Chiropractic Doctors' Association of Hong Kong
101. China Hong Kong Macao Chiropractic Association
102. Hong Kong Registered Chiropractors' Association

(Listed in no particular order)

Annex C

HEALTHCARE MANPOWER PLANNING AND PROJECTION (BASE YEAR 2019)

Projection Results and Observations
of the Thirteen Professions subject to Statutory Registration

Table of Contents

Foreword

In 2012, the Government set up a high-level steering committee (chaired by the then Secretary for Food and Health) to conduct the Strategic Review on Healthcare Manpower Planning and Professional Development. To assist the steering committee in making informed recommendations to the Government, we commissioned the University of Hong Kong ("HKU") to conduct a comprehensive manpower projection for the 13 healthcare professions which were subject to statutory registration, viz. doctors, dentists, dental hygienists, nurses, midwives, Chinese medicine practitioners, pharmacists, occupational therapists, physiotherapists, medical laboratory technologists, optometrists, radiographers and chiropractors. The Report on the Strategic Review on Healthcare Manpower Planning and Professional Development was then published in 2017 by the Government.

Based on the same model and methodology, another round of projection (taking 2017 as the base year) was completed, with results publicised in 2021. Taking 2019 as the base year in the latest round of projection, the Government has commissioned the project team of Hospital Authority to take up the overall task of projecting the demand and supply of the aforementioned professions from 2019 to 2045, and on that basis to project the manpower gaps.

Apart from incorporating demographic changes, demand projection also factors in baseline shortfalls and prevalence of chronic diseases which affect service demand, together with known and planned policy options and externalities that exist among various sectors of service provision. On the other hand, supply projection factors in the manpower contribution from all planned local educational programmes related to the aforementioned professions along the same projection period, as well as number of new registrants with recognised non-local qualifications.

The updated projection results for all the 13 healthcare professions concerned are summarised in this report.

Background

The Number of Healthcare Professionals (2020 vs 2023)

1. The healthcare system of Hong Kong is supported by dedicated healthcare professionals. As at end of 2023, there are over 120 000 healthcare professionals from the 13 healthcare professions which are subject to statutory registration.

Table 1 –The number of healthcare professionals from individual professions

	2020	**2023**
Doctors	15 298	16 196
Dentists	2 651	2 876
Dental Hygienists	497	615
Nurses	61 295	68 752
Midwives	4 561	4 572
Chinese Medicine Practitioners	10 422	10 582
Pharmacists	3 097	3 317
Occupational therapists	2 571	3 204
Physiotherapists	3 685	4 583
Medical Laboratory Technologists	3 983	4 647
Optometrists	2 266	2 303
Radiographers	2 554	2 901
Chiropractors	282	338
Total	**113 162**	**124 886**

2. The majority of doctors, nurses, midwives, occupational therapists, physiotherapists, medical laboratory technologists and radiographers work in the public sector, whereas most of the dentists, dental hygienists, Chinese medicine practitioners, pharmacists, optometrists and chiropractors practise in the private sector.

Increasing training places of healthcare professions

3. Healthcare professionals are the cornerstone safeguarding the health of the general public. Over the years, the Government has stabilised and strengthened the supply of healthcare manpower through various means, with a view to enhancing the quality of healthcare services as a whole. UGC-funded training places for healthcare professions concerned have been expanded substantially by the Government. Moreover, through Study Subsidy Scheme for Designated Professions/Sectors ("SSSDP") under the Education Bureau, students who enroll in designated self-financing programmes are subsidised, and the self-financing post-secondary education sector is encouraged to offer relevant programmes in order to cultivate talents for particular professions with pressing needs of manpower resources. The number of training places for various healthcare professions provided by UGC-funded and self-financing institutions, have been increased from 1 320 in the triennium of 2012/13 - 2015/16, to 2 035 in the triennium of 2022/23 - 2024/25, with the corresponding growth as tabulated below (see Table 2).

Table 2 – Number of training places for various healthcare professions (all first-year undergraduate enrollment, unless otherwise specified) provided by (a) UGC-funded and (b) self-financing institutions

	2017/18		2018/19		2019/20		2020/21		2021/22		2022/23		2023/24	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Doctor	470	-	470	-	530	-	530	-	530	-	590	-	590	-
Dentist	73	-	73	-	100*	-	100*	-	100*	-	100*	5^	100*	5^
Registered nurse#	755#	1 280	755#	1 347	815#	2 183	815#	2 183	815#	2 223	815#	2 435	815#	2 696
Enrolled Nurse@	-	840	-	874	-	834	-	834	-	934	-	918	-	953
Occupational Therapist	100	-	100	50	100	50	100	50	100	60	100	60	100	60
Physiotherapist	130	-	130	-	150	50	150	50	150	140	150	150	150	170
Medical laboratory technologists	54	20	54	30	54	45	54	45	54	45	60	45	60	105
Optometrists	40	-	40	-	45	-	45	-	45	-	49	-	49	-
Radiographers	110	12	110	15	110	15	110	15	110	15	115	20	115	20
Total	1 732	2 152	1 732	2 316	1 904	3 177	1 904	3 177	1 904	3 417	1 979	3 633	1 979	4 009

*** Including 20 and 10 taught postgraduate programmes launched in 2019/20 - 2021/22 and 2022/23 - 2023/24 respectively**

^ Training places of research post-graduate programme(s)

 # Including 125 places of UGC-funded senior year intake degree programme

@ Not first-year-first-degree programme

4. As it takes time to train healthcare professionals (see Table 3), training places offered by both UGC-funded and self-financing institutions can efficiently enhance training capacities in the short to medium term. This can be the most effective approach to maintain the supply of healthcare professionals, addressing the existing manpower gaps of various healthcare professions, and ensuring a stable number of locally-trained graduates.

Table 3 – Training period of different professions

Healthcare professions	Years of study (Year of internship required)
Doctors	6 (1)
Dentists	6
Dental Hygienists	2
Registered Nurses	5
Registered Chinese Medicine Practitioners	6
Pharmacists	4 (1)
Occupational Therapists	4
Physiotherapists	4
Medical Laboratory Technologists	4
Optometrists	5
Radiographers	4

Hospital Authority's Manpower Demand and Supply Projections

5. The Hospital Authority ("HA") has developed a generic manpower projection model that suits local circumstances and is adaptable to the changing parameters in utilisation patterns among individual professions, and which has factored in population ageing and the resulting changes in prevalence of chronic diseases. The manpower projection model has factored in the baseline manpower shortage at the base year of 2019, and aims at quantifying the difference between the projected demand for and supply of healthcare professionals in terms of full time equivalents ("FTEs").

6. Adopting 2019 as the base year in this round projection, the manpower demand and supply of the 13 healthcare professions are projected in terms of full-time equivalents ("FTEs"), the projection period of which is the coming 20 to 30 years. The demand and supply projection models of individual professions are formulated after considering the views of key stakeholders on the model parameters and assumptions. Impact on the future manpower demand and supply arising from the known and planned policy initiatives collected from various Government bureaux and departments are also incorporated into the projection model.

7. In general, the future healthcare manpower demand of the public, private and social welfare sectors is projected according to the growth in demand for healthcare service, which is driven mainly by factors including demographic changes and the increasing prevalence of chronic diseases. The demand projection also covers the healthcare professionals working in the academic sector, in which the manpower requirement is assumed to grow according to the projected growth of the number of local students under healthcare training. Meanwhile, the present round of projection has also factored in additional manpower required for implementing the planned new services and the service commencement of new hospitals or hospitals after expansion.

8. On the other hand, the future healthcare manpower supply is projected based on a stock-and-flow model. In gist, with regard to the projection for a particular year, the number of registrants practising in a particular profession at the end of each year is first projected taking into consideration the number of new registration of healthcare professionals trained locally and non-locally and attrition during that particular year. The projected number of registrants is then converted into FTEs based on the specific work patterns by age and sex. In this round of projection, the impact on manpower supply arising from the upsurge of departure of healthcare professionals from 2020 to 2022 and the additional non-locally trained doctors admitted through special registration have also been taken into consideration.

9. It should be noted that the manpower projections are based on the following key assumptions:

(1) Demand projection

(a) the growth in service demand, and thus the projection of future manpower requirement, are not constrained by limiting factors such as the supply of facilities or manpower;

(b) the projection parameters are constructed mainly based on the existing service delivery model and assumed to remain the same as in the base year over the projection horizon; and

(c) the impact of advancement in medical technologies and changes in the macroeconomic environment are not considered, assuming that these factors do not affect the future service and manpower requirement.

(2) Supply projection

(d) the projection parameters are formulated based on the current participation and work pattern of professionals in individual healthcare professions. In general, such parameters, as well as the training and registration systems, are assumed to remain unchanged as in the base year throughout the projection period[1].

10. By comparing the projected figures of manpower demand and supply, while taking into account the known shortages in the public, subvented and private sectors as at the end of the base year (if any), the manpower situation during the projection period will be assessed for a review of whether the manpower demand and supply are substantially at equilibrium, in shortage or surplus. The projection results of the 13 healthcare professions are summarised in the next sections.

[1] The attrition rates in 2020 to 2022 are compiled according to the actual data, in order to factor in the impact of attrition waves on the healthcare manpower supply.

MANPOWER PROJECTION FOR EACH PROFESSION

Section 1 Doctors

1.1 The projections of manpower for doctors along the projection horizon are shown in the following Figure and Table.

Base case and Policy options

Figure 1 – Manpower Gap Projection (in FTEs) for Doctors (Up to 2045)

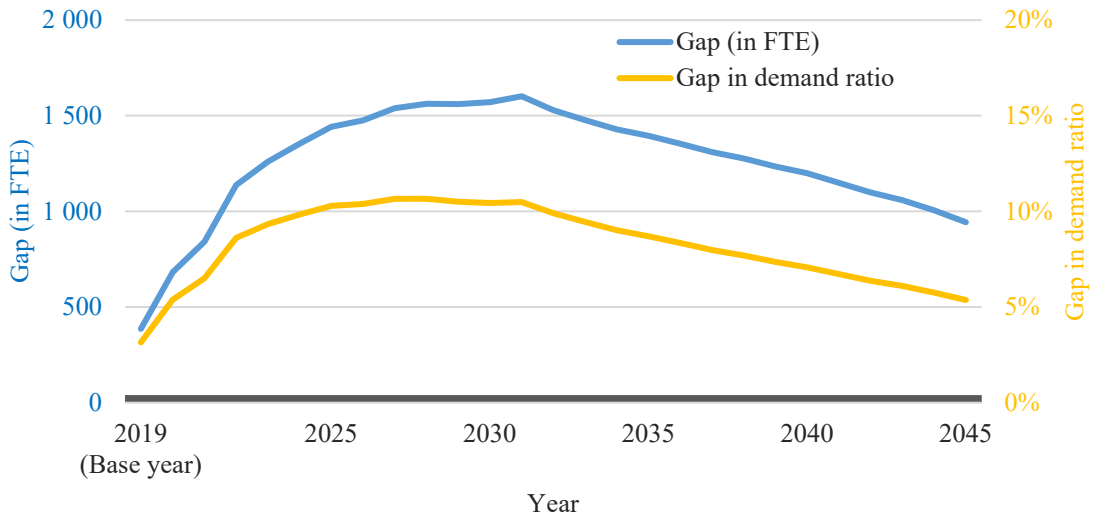


Table 4 – Summary of Manpower Gap in FTEs Numbers in 2025, 2030, 2035, 2040 and 2045

Year	**2025**	**2030**	**2035**	**2040**	**2045**
Gap (in FTEs)	1 440	1 570	1 400	1 200	940
Gap in demand ratio	(10.3%)	(10.4%)	(8.7%)	(7.1%)	(5.4%)

- Projected gap (in FTEs) are rounded to the nearest ten.
- Projected gap in demand ratio is the projected gap expressed as a percentage of projected demand.
- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Note:
Manpower requirements arising from Chinese Medicine Hospital, new development of private hospitals, Hong Kong Genome Project and Chronic Disease Co-Care Pilot Scheme have been taken into account in this round of projection (with 2019 as the base year).

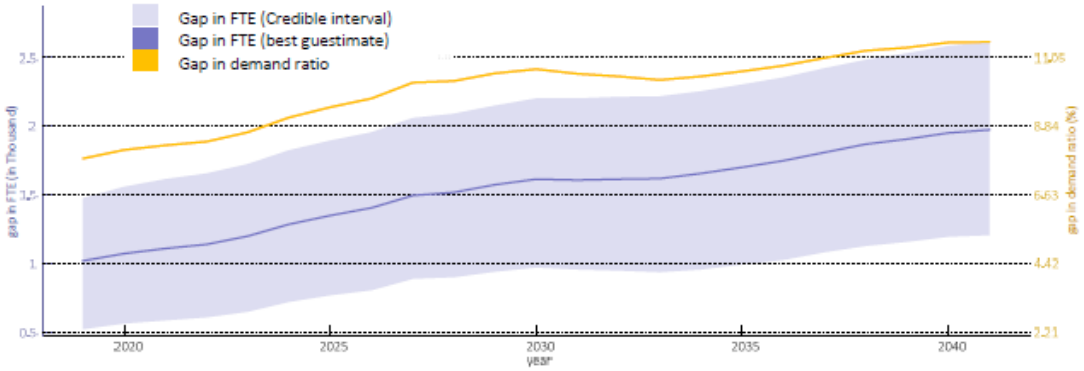
1.2 Observations

Owing to general demographic factors such as population growth and population ageing, coupled with growing medical burden associated with chronic diseases, manpower shortage of doctors persists in the short to long term. However, with the increase in medical places in the past few triennia which increased the supply of locally-trained graduates, together with the introduction of non-locally trained doctors, the manpower gap will narrow from 2032 to the end of the projection period.

Despite the aforementioned initiatives which will increase the supply of both locally and non-locally trained doctors, manpower shortage of doctors (particularly in the public sector) remains a concern. Initiatives to continue to increase supply of both locally and qualified non-locally trained doctors, including further increasing local medical places, recruiting and retaining doctors working in the public sector, and providing facilitations for the newly created pathways of special and limited registration etc., are recommended.

Projection results of the last exercise are shown below for comparison:

Doctors



Year	2020	2025	2030	2035	2040
5th percentile	560	764	967	991	1 192
(%)	(4.4)	(5.6)	(6.7)	(6.5)	(7.4)
Best guestimate	1 070	1 345	1 610	1 700	1 949
(%)	(8.1)	(9.4)	(10.7)	(10.6)	(11.5)
95th percentile	1 555	1 892	2 200	2 299	2 583
(%)	(11.3)	(12.8)	(14.0)	(13.8)	(14.7)

- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Section 2 Dentists

2.1 The projections of manpower for dentists along the projection horizon are shown in the following Figure and Table.

Base case and Policy options

Figure 2 – Manpower Gap Projection (in FTEs) for Dentists (Up to 2045)

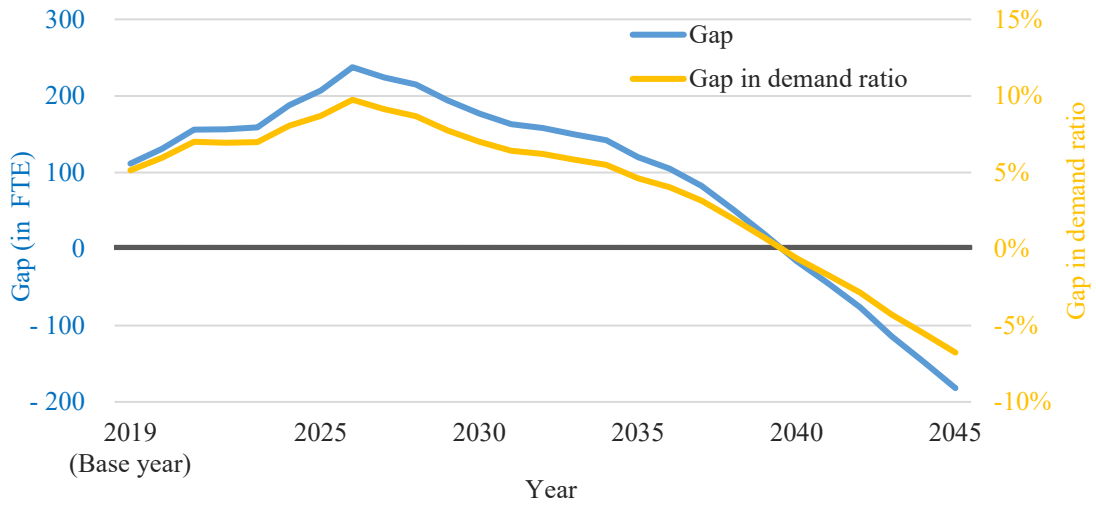


Table 5 – Summary of Manpower Gap in FTEs Numbers in 2025, 2030, 2035, 2040 and 2045

Year	2025	2030	2035	2040	2045
Gap (in FTEs)	210	180	120	-20	-180
Gap in demand ratio	(8.7%)	(7.0%)	(4.6%)	(-0.6%)	(-6.8%)

- Projected gap (in FTEs) are rounded to the nearest ten.
- Projected gap in demand ratio is the projected gap expressed as a percentage of projected demand.
- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Note:
Enhancement of public dental services, known and planned new measures of the public sector to enhance oral health of the community have been taken into account in this projection.

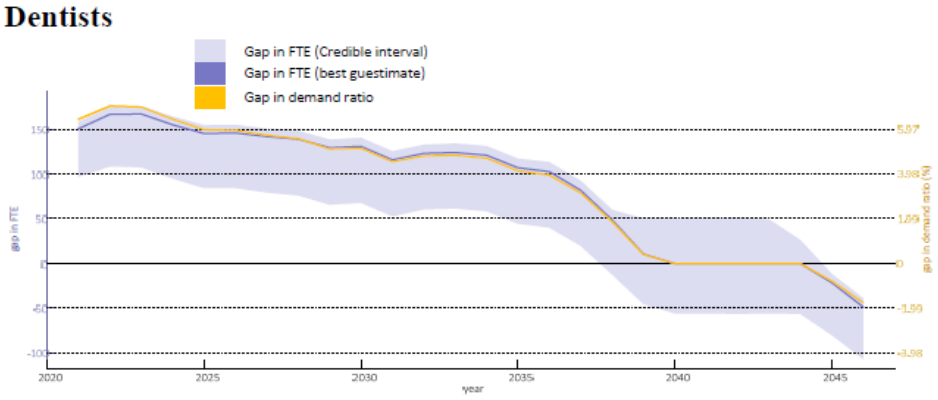
2.2 Observations

It is projected that manpower of dentists will be inadequate in the short to medium term, with the shortfall becoming less evident towards the end of the projection period, as a result of initiatives to increase local dental places in the past few years that have been implemented.

On the demand side, this round of projection has factored in the impact on manpower arising from new initiatives to improve the oral health of the community, including the expansion of primary dental services targeting different age groups and strengthening of dental services for the underprivileged groups (such as the Outreach Dental Care Programme for the Elderly, the Community Care Fund Elderly Dental Assistance Programme, and the Healthy Teeth Collaboration for persons with intellectual disabilities).

Measures to address the short to medium term manpower shortage, and further observation of the long term demand and supply situation in manpower, are recommended.

Projection results of the last exercise are shown below for comparison:



Year	2020	2025	2030	2035	2040
5th percentile	97	84	53	40	-56
(%)	(4.2)	(3.5)	(2.1)	(1.6)	(-2.1)
Best guestimate	150	146	115	102	0
(%)	(6.4)	(5.9)	(4.5)	(3.9)	(0)
95th percentile	158	155	125	113	51
(%)	(6.7)	(6.2)	(4.9)	(4.3)	(1.9)

- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Section 3 Dental Hygienists

3.1 The projections of manpower for dental hygienists along the projection horizon are shown in the following Figure and Table.

Base case and Policy options

Figure 3 – Manpower Gap Projection (in FTEs) for Dental Hygienists (Up to 2045)
(Assuming a ratio of 1 Dentist to 1 Dental Hygienist in the private sector)

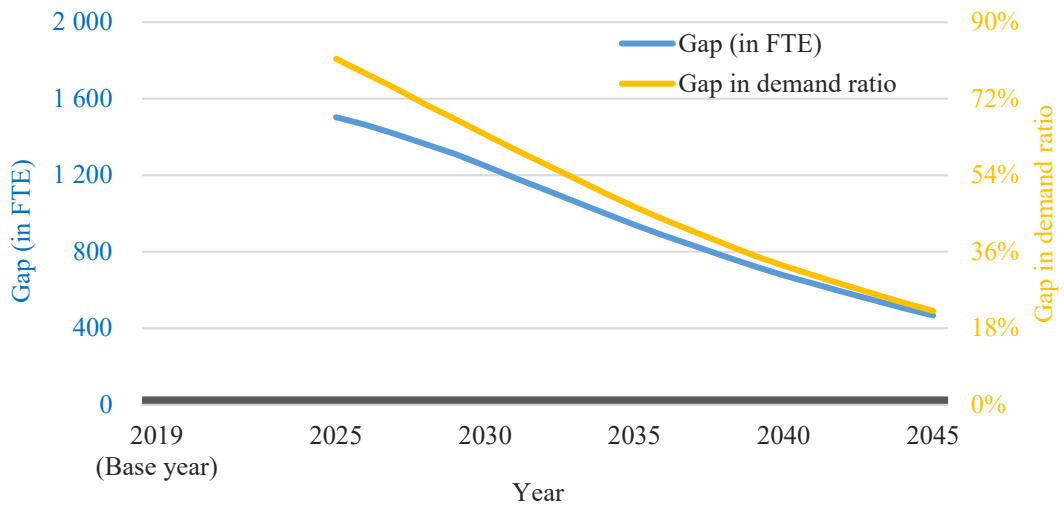


Table 6 – Summary of Manpower Gap in FTEs Numbers in 2025, 2030, 2035, 2040 and 2045

Year	2025	2030	2035	2040	2045
Gap (in FTEs)	1 500	1 250	940	680	470
Gap in demand ratio	(81.4%)	(63.6%)	(46.6%)	(32.7%)	(22.1%)

- Projected gap (in FTEs) are rounded to the nearest ten.
- Projected gap in demand ratio is the projected gap expressed as a percentage of projected demand.
- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Note:
Manpower requirements arising from the enhancement of dental services provided by the Department of Health and the Primary Dental Co-Care Pilot Scheme for adolescents etc., as well as impact of the Government's initiatives to gradually increase the number of training places for dental hygienists starting from the academic year 2024/25, have been factored in. An assumption of dentist to dental hygienist ratio of 1 to 1 in the private sector is made.

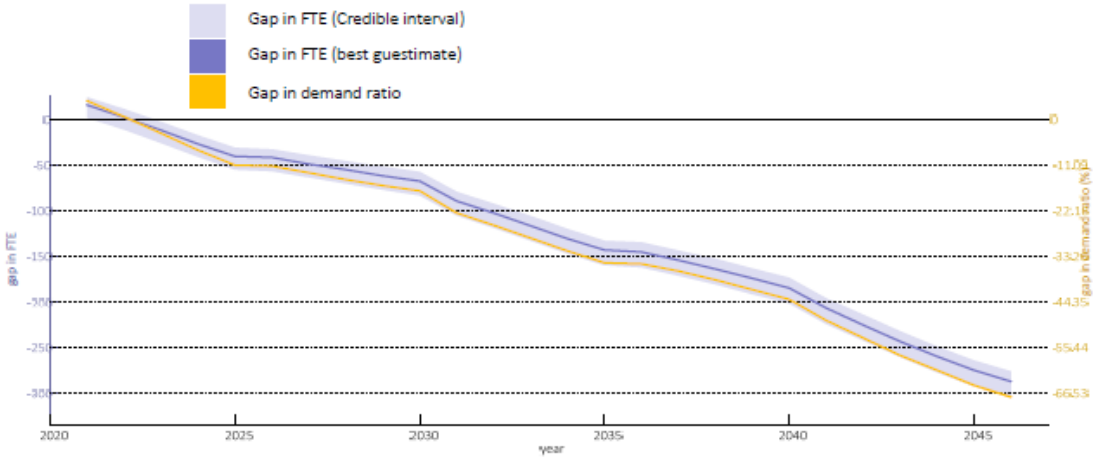
3.2 Observations

With the publication of the Interim Report of the Working Group on Oral Health and Dental Care by the Government in 2023, the dental services to be provided will gradually focus on preventive dental care, leading to a significant increase in demand for dental hygienists, which has been considered in this projection. The impact of the gradual increase of training places for dental hygienists starting from academic year 2024/25 has also been factored in for this round of projection.

Further increase in the number of training places for dental hygienists, and the establishment of their professional status to enhance attractiveness of the profession, are recommended.

Projection results of the last exercise are shown below for comparison:

Dental Hygienists



Year	2021	2025	2030	2035	2040
5th percentile	5	-52	-80	-156	-198
(%)	(1.5)	(-14.2)	(-20.4)	(-37.9)	(-46.7)
Best guestimate	15	-41	-68	-144	-185
(%)	(4.3)	(-11.2)	(-17.4)	(-34.9)	(-43.7)
95th percentile	24	-32	-58	-133	-174
(%)	(6.9)	(-8.6)	(-14.8)	(-32.3)	(-41.1)

- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Section 4 Nurses

4.1 Nurses (General)

4.1.1 The projections of manpower for general nurses along the projection horizon are shown in the following Figure and Table.

Base case and Policy options

Figure 4 – Manpower Gap Projection (in FTEs) for General Nurses (Up to 2045)

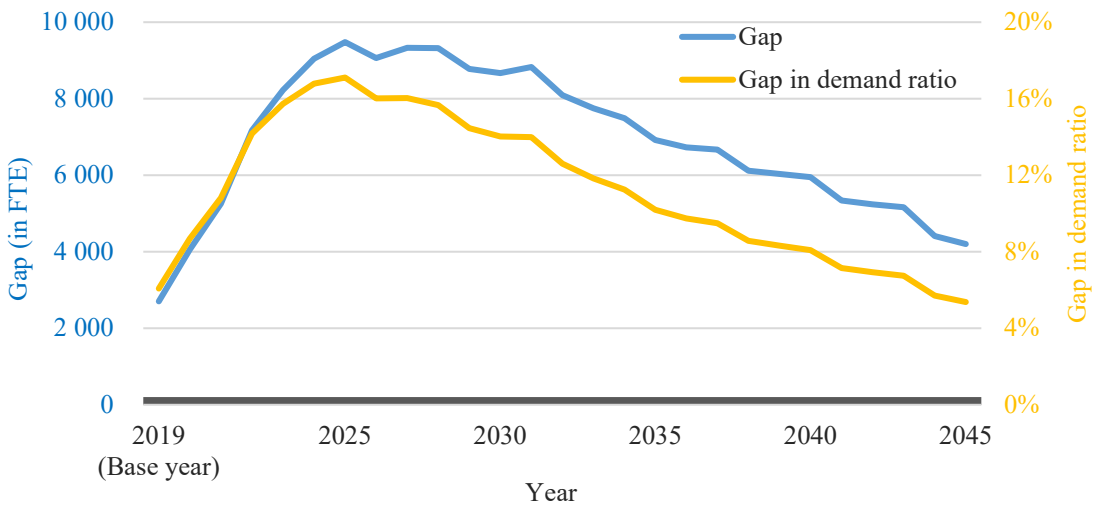


Table 7 – Summary of Manpower Gap in FTEs Numbers in 2025, 2030, 2035, 2040 and 2045

Year	2025	2030	2035	2040	2045
Gap (in FTEs)	9 500	8 700	6 900	6 000	4 200
Gap in demand ratio	(17.1%)	(14.0%)	(10.2%)	(8.1%)	(5.4%)

- Projected gap (in FTEs) are rounded to the nearest hundred.
- Projected gap in demand ratio is the projected gap expressed as a percentage of projected demand.
- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Note:
Manpower requirements arising from known and planned subvented and non-subvented elderly / rehabilitation / planned community services under the Department of Health, Chinese Medicine Hospital, Hong Kong Genome Project, new development of private hospitals, and District Health Centres / Chronic Disease Co-Care Pilot Scheme have been taken into account in this projection. However, impact on manpower supply arising from the introduction of qualified non-locally trained nurses has not been factored in for this projection.

4.1.2 Observations

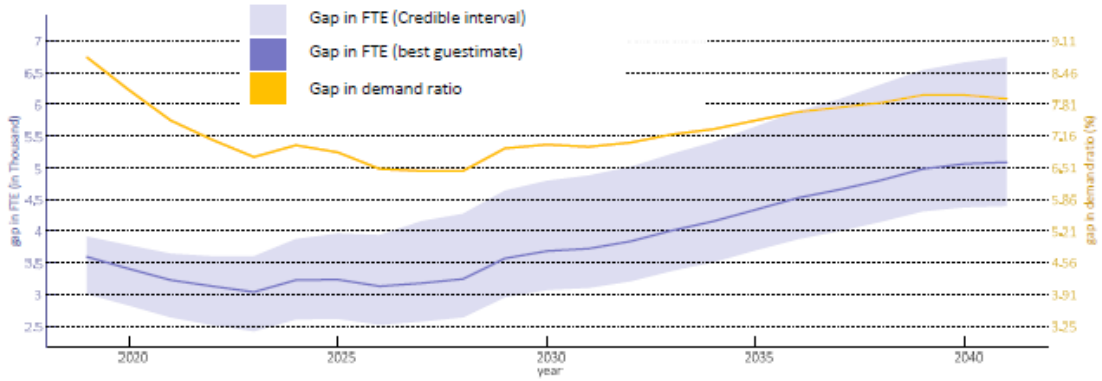
Compared with the previous projection, manpower gap for general nurses will further widen in the short to medium term, reflecting the growing demands from public, private and social welfare sectors (arising from existing and newly planned services and service delivery models).

The self-financing training places remain a relatively flexible approach to adjust the training places for general nurses in response to the market demand in a timely manner.

Measures to proactively address the manpower shortage of nurses as soon as possible, including the introduction of qualified non-locally trained nurses and further expansion of local training, are recommended.

Projection results of the last exercise are shown below for comparison:

General Nurses



Year	2020	2025	2030	2035	2040
5th percentile	2 830	2 617	3 068	3 696	4 376
(%)	(6.8)	(5.6)	(5.9)	(6.4)	(7.0)
Best guestimate	3 405	3 235	3 679	4 337	5 060
(%)	(8.1)	(6.8)	(7.0)	(7.5)	(8.0)
95th percentile	3 776	3 959	4 793	5 651	6 663
(%)	(8.9)	(8.2)	(8.9)	(9.5)	(10.3)

- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

4.2 Nurses (Psychiatric)

4.2.1 The projections of manpower for psychiatric nurses along the projection horizon are shown in the following Figure and Table.

Base case and Policy options

Figure 5 – Manpower Gap Projection (in FTEs) for Psychiatric Nurses (Up to 2045)

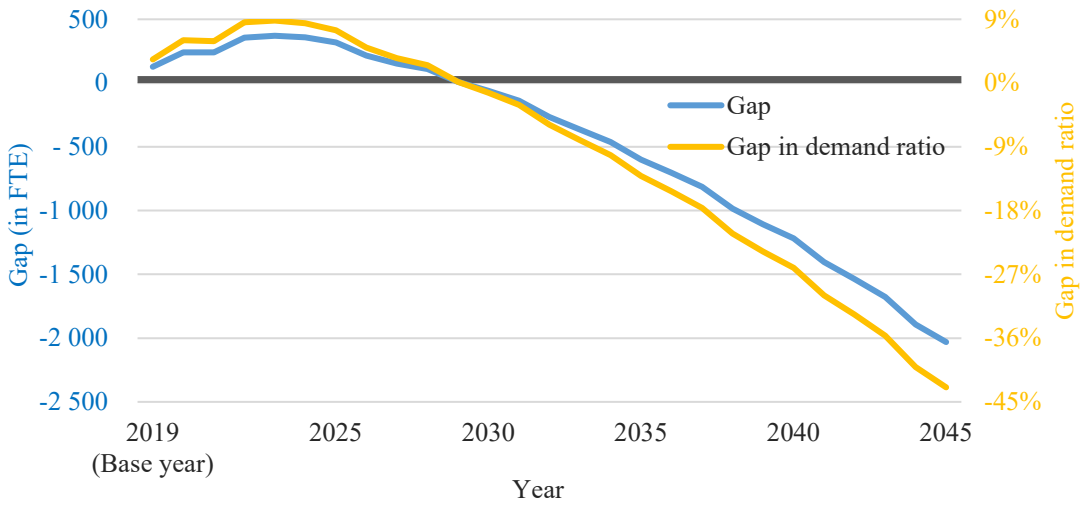


Table 8 – Summary of Manpower Gap in FTEs Numbers in 2025, 2030, 2035, 2040 and 2045

Year	2025	2030	2035	2040	2045
Gap (in FTEs)	320	-60	-600	-1 220	-2 030
Gap in demand ratio	(7.4%)	(-1.3%)	(-13.1%)	(-26.1%)	(-42.9%)

- Projected gap (in FTEs) are rounded to the nearest ten.
- Projected gap in demand ratio is the projected gap expressed as a percentage of projected demand.
- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Note:
Further enhancement of Personalised Care Programme in HA has been taken into account in this projection.

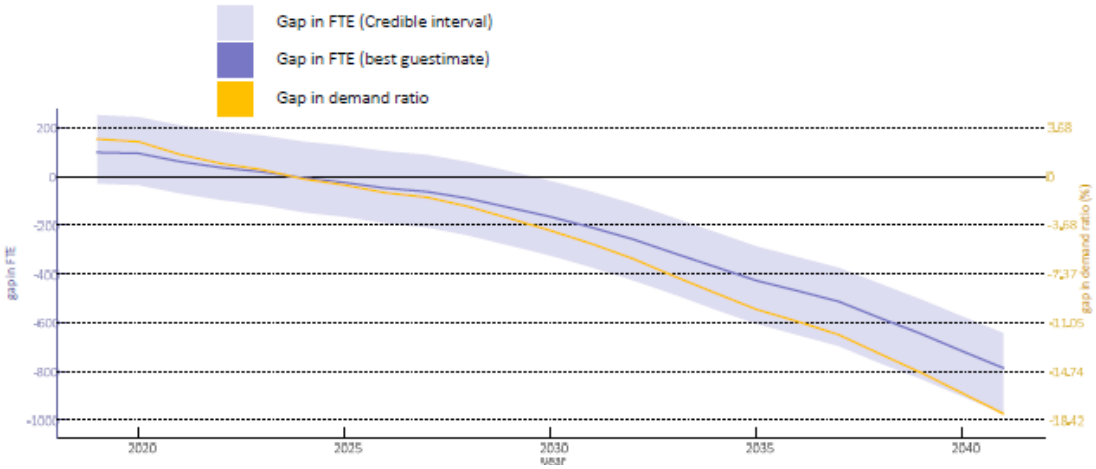
4.2.2 Observations

The manpower gap of psychiatric nurses is projected to narrow in the medium term, with no shortfall after 2030.

Further observation of the long term demand and supply situation in manpower, and timely adjustment of training strategy in line with policy measures for mental health services, are recommended.

Projection results of the last exercise are shown below for comparison:

Psychiatric Nurses



Year	2020	2025	2030	2035	2040
5th percentile	-36	-167	-326	-605	-902
(%)	(-1.0)	(-4.5)	(-8.3)	(-14.9)	(-21.6)
Best guestimate	93	-26	-167	-427	-716
(%)	(2.6)	(-0.7)	(-4.1)	(-10.1)	(-16.4)
95th percentile	241	124	-20	-288	-575
(%)	(6.5)	(3.1)	(-0.5)	(-6.6)	(-12.7)

- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Section 5 Midwives

5.1 The projections of manpower for midwives along the projection horizon are shown in the following Figure and Table.

Base case and Policy options

Figure 6 – Manpower Gap Projection (in FTEs) for Midwives (Up to 2045)

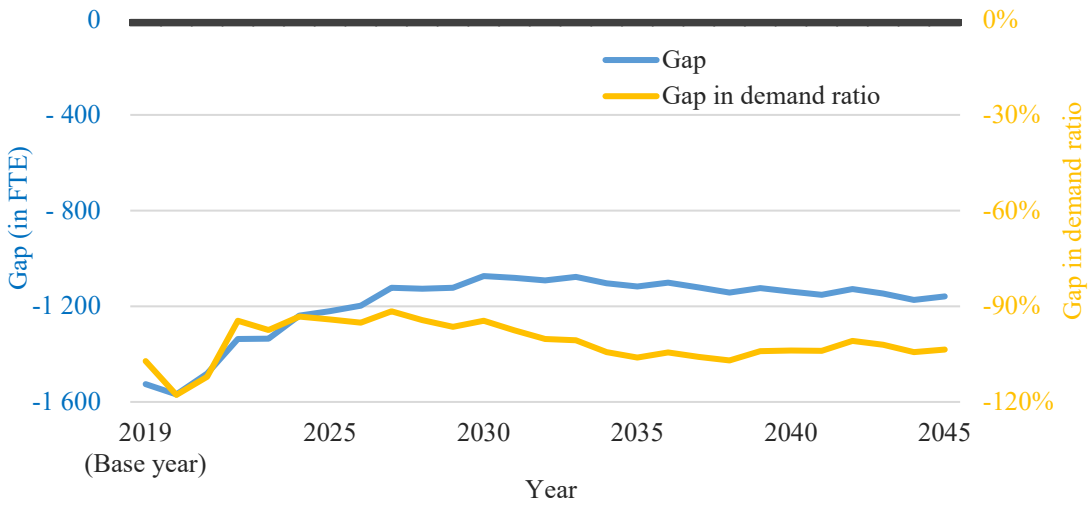


Table 9 – Summary of Manpower Gap in FTEs Numbers in 2025, 2030, 2035, 2040 and 2045

Year	2025	2030	2035	2040	2045
Gap (in FTEs)	-1 220	-1 070	-1 120	-1 140	-1 160
Gap in demand ratio	(-94.2%)	(-94.5%)	(-106.1%)	(-103.9%)	(-103.6%)

- Projected gap (in FTEs) are rounded to the nearest ten.
- Projected gap in demand ratio is the projected gap expressed as a percentage of projected demand.
- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

5.2 Observations

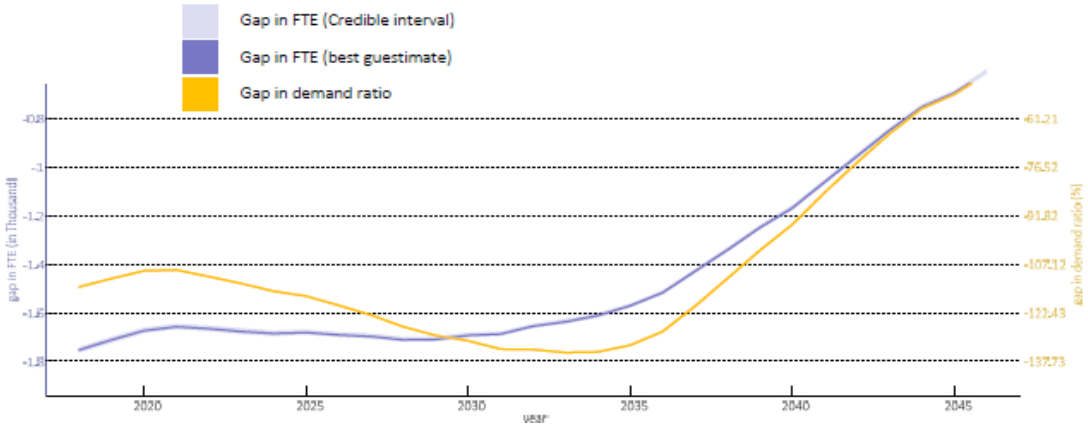
Demand for midwife is based on utilisation volume of pre-natal and live birth services, and is related to the number of newborns.

The delivery figures are projected to be on a decreasing trend in Hong Kong until recently. At this moment, the total number of registered midwives is around 4 511. Despite cohort retirement of midwives expected in the coming decade, with new entries graduated every year from the local 18-months post-registration diploma course, the current number of midwives should be adequate to meet the demand for the years to come.

Discussions with the midwife profession to explore the feasibility of manpower exchange between midwives and registered general nurses for efficient utilisation of manpower resources is recommended. At the same time, adjustment in training curriculum of midwifery could be considered.

Projection results of the last exercise are shown below for comparison:

Midwives



Year	2020	2025	2030	2035	2040
5th percentile	-1 723	-1 696	-1 719	-1 620	-1 258
(%)	(-113.2)	(-117.1)	(-131.1)	(-136.4)	(-104.2)
Best guestimate	-1 755	-1 686	-1 710	-1 612	-1 250
(%)	(-111.8)	(-115.6)	(-129.6)	(-134.9)	(-102.9)
95th percentile	-1 742	-1 674	-1 699	-1 602	-1 240
(%)	(-110.0)	(-113.8)	(-127.7)	(-132.9)	(-101.2)

- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.

(%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Section 6 Chinese Medicine Practitioners

6.1 The projections of manpower for Chinese Medicine Practitioners along the projection horizon are shown in the following Figure and Table.

Base case and Policy options

Figure 7 – Manpower Gap Projection (in FTEs) for Chinese Medicine Practitioners (Up to 2045)

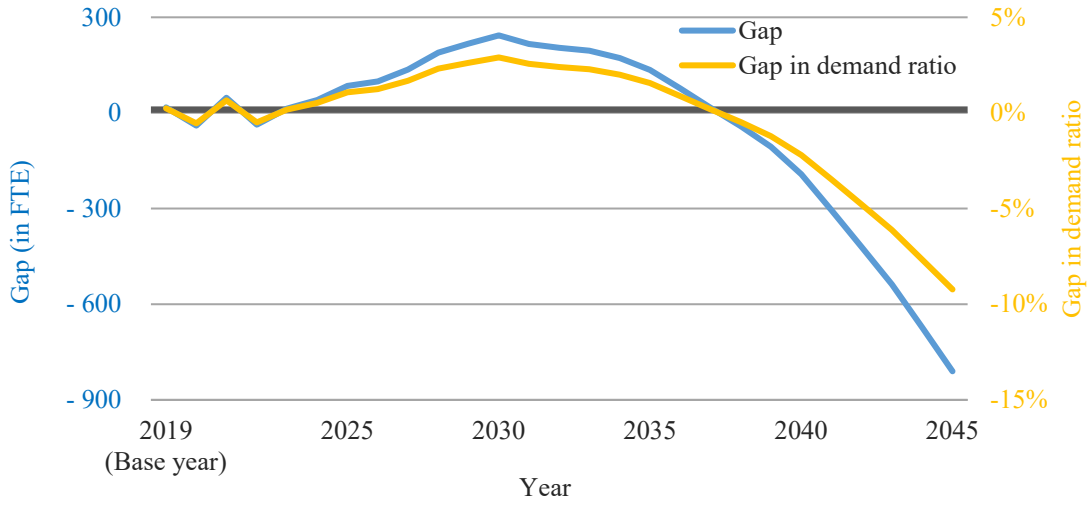


Table 10 – Summary of Manpower Gap in FTEs Numbers in 2025, 2030, 2035, 2040 and 2045

Year	2025	2030	2035	2040	2045
Gap (in FTEs)	80	240	130	-190	-810
Gap in demand ratio	(1.1%)	(2.9%)	(1.6%)	(-2.2%)	(-9.2%)

- Projected gap (in FTEs) are rounded to the nearest ten.
- Projected gap in demand ratio is the projected gap expressed as a percentage of projected demand.
- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Note:
Demands arising from Chinese Medicine Office under Health Bureau, Chinese Medicine Hospital, increase in quota of subsidised outpatient consultations in Chinese Medicine Clinics across the 18 districts, regularised Integrated Chinese-Western Medicine programme in HA, as well as District Health Centres have been taken into account.

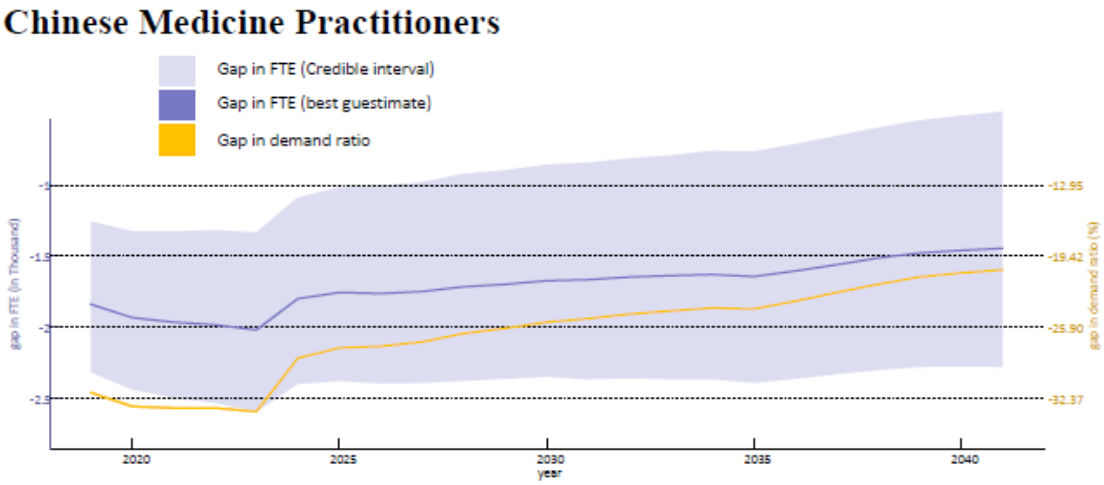
6.2 Observations

With the increasing awareness of the role of Chinese medicine by the public, particularly in disease prevention and health maintenance, the opening of Chinese Medicine Hospital in 2025, and the strengthening of services in both in-patient and out-patient settings, the demand for Chinese Medicine Practitioners is expected to grow steadily.

On the supply side, a peak of retirement wave is expected in the coming decade. However, with a steady supply of both local and non-local graduates, the manpower gap will close at around 2038.

A moderate increase in training places for Chines Medicine Practitioners, and further observation of the long term demand and supply situation in manpower, are recommended.

Projection results of the last exercise are shown below for comparison:



Year	2020	2025	2030	2035	2040
5th percentile	-2 434	-2 375	-2 346	-2 389	-2 272
(%)	(-45.6)	(-41.4)	(-39.8)	(-39.4)	(-36.3)
Best guestimate	-1 931	-1 756	-1 671	-1 642	-1 458
(%)	(-33.1)	(-27.8)	(-25.4)	(-24.4)	(-21.0)
95th percentile	-1 325	-1 017	-857	-761	-515
(%)	(-20.5)	(-14.4)	(-11.5)	(-10.0)	(-6.5)

- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Section 7 Pharmacists

7.1 The projections of manpower for pharmacists along the projection horizon are shown in the following Figure and Table.

Base case and Policy options

Figure 8 – Manpower Gap Projection (in FTEs) for Pharmacists (Up to 2045)

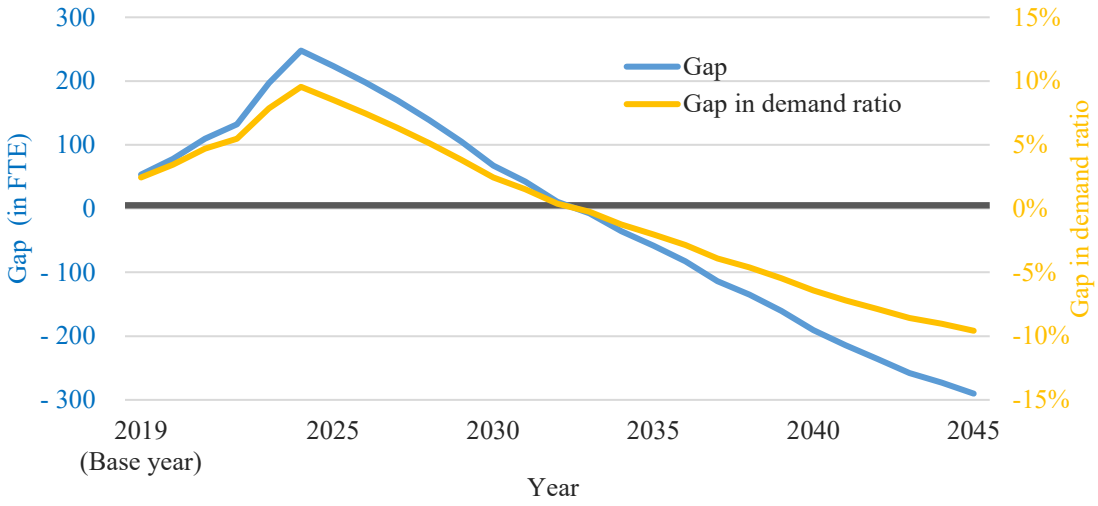


Table 11 – Summary of Manpower Gap in FTEs Numbers in 2025, 2030, 2035, 2040 and 2045

Year	2025	2030	2035	2040	2045
Gap (in FTEs)	220	70	-60	-190	-290
Gap in demand ratio	(8.5%)	(2.4%)	(-2.0%)	(-6.4%)	(-9.6%)

- Projected gap (in FTEs) are rounded to the nearest ten.
- Projected gap in demand ratio is the projected gap expressed as a percentage of projected demand.
- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

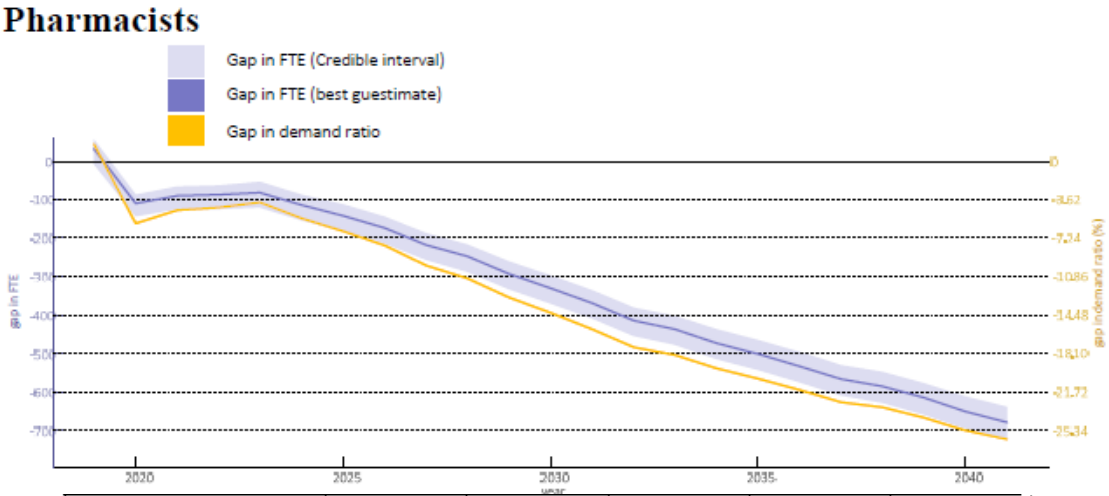
Note:
Demands arising from Chinese Medicine Hospital, new development of private hospitals, planned services under the Department of Health have been taken into account in this projection, as well as manpower requirements of District Health Centres.

7.2 Observations

Owing to the growth in demand for public services, manpower gap for pharmacists exists in the short term. With the continued steady supply of local and non-local graduates, no further gap is expected after 2032.

Introduction of suitable non-locally trained pharmacists to address the short term manpower demand, and further observation of the long term demand and supply situation in manpower, are recommended.

Projection results of the last exercise are shown below for comparison:



Year	2020	2025	2030	2035	2040
5th percentile	-143	-182	-370	-543	-696
(%)	(-7.8)	(-8.6)	(-16.3)	(-22.5)	(-27.5)
Best guestimate	-110	-142	-330	-502	-652
(%)	(-5.9)	(-6.6)	(-14.3)	(-20.5)	(-25.3)
95th percentile	-87	-113	-298	-465	-613
(%)	(-4.6)	(-5.2)	(-12.7)	(-18.7)	(-23.5)

- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Section 8 Occupational Therapists

8.1 The projections of manpower for occupational therapists along the projection horizon are shown in the following Figure and Table.

Base case and Policy options

Figure 9 – Manpower Gap Projection (in FTEs) for Occupational Therapists (Up to 2045)

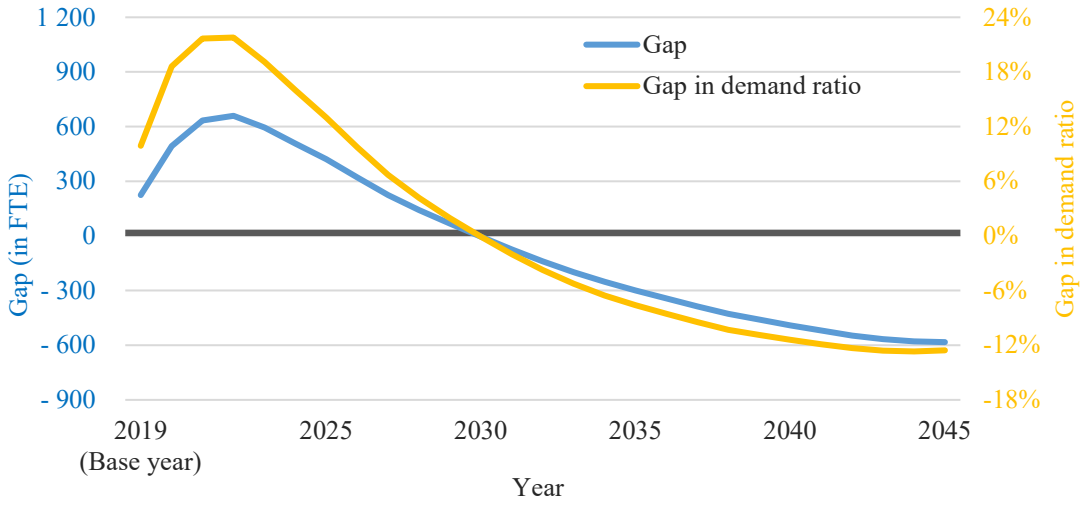


Table 12 – Summary of Manpower Gap in FTEs Numbers in 2025, 2030, 2035, 2040 and 2045

Year	2025	2030	2035	2040	2045
Gap (in FTEs)	420	0	-300	-490	-580
Gap in demand ratio	(13.0%)	(-0.1%)	(-7.6%)	(-11.4%)	(-12.6%)

- Projected gap (in FTEs) are rounded to the nearest ten.
- Projected gap in demand ratio is the projected gap expressed as a percentage of projected demand.
- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Note:
Demands arising from known and planned subvented and non-subvented elderly / rehabilitation / community services, Chinese Medicine Hospital and new development of private hospitals have been taken into account in this projection, as well as manpower requirements of District Health Centres.

8.2 Observations

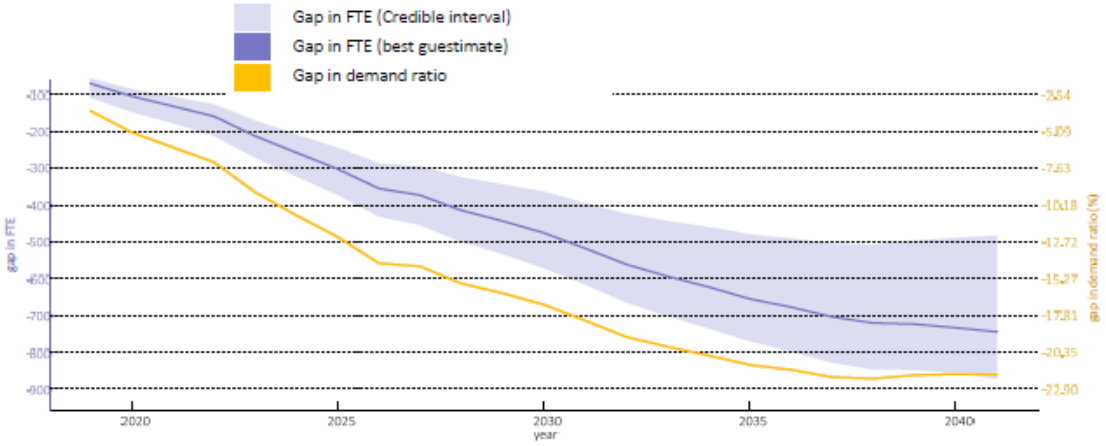
Despite demand for occupational therapists in the medical and social welfare sectors is expected to continue to rise, no manpower gap is expected after 2030, owing to an increased supply of graduates from Tung Wah College (since 2017).

Graduates from Master in Occupational Therapy programme (starting in 2012) of the Hong Kong Polytechnic University ("PolyU") remains a significant source of manpower for non-governmental organisations.

Introduction of suitable non-locally trained occupational therapists to fulfill short term manpower demand, and further observation of the long term demand and supply situation in manpower, are recommended

Projection results of the last exercise are shown below for comparison:

Occupational Therapists



Year	2020	2025	2030	2035	2040
5th percentile	-6.7	-176	-349	-516	-576
(%)	(-0.34)	(-7.2)	(-12.4)	(-16.5)	(-16.7)
Best guestimate	-6.6	-172	-336	-489	-536
(%)	(-0.33)	(-7.0)	(-11.8)	(-15.5)	(-15.3)
95th percentile	-6.5	-167	-324	-470	-515
(%)	(-0.33)	(-6.8)	(-11.4)	(-14.8)	(-14.6)

- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Section 9 Physiotherapists

9.1 The projections of manpower for physiotherapists along the projection horizon are shown in the following Figure and Table.

Base case and Policy options

Figure 10 – Manpower Gap Projection (in FTEs) for Physiotherapists (Up to 2045)

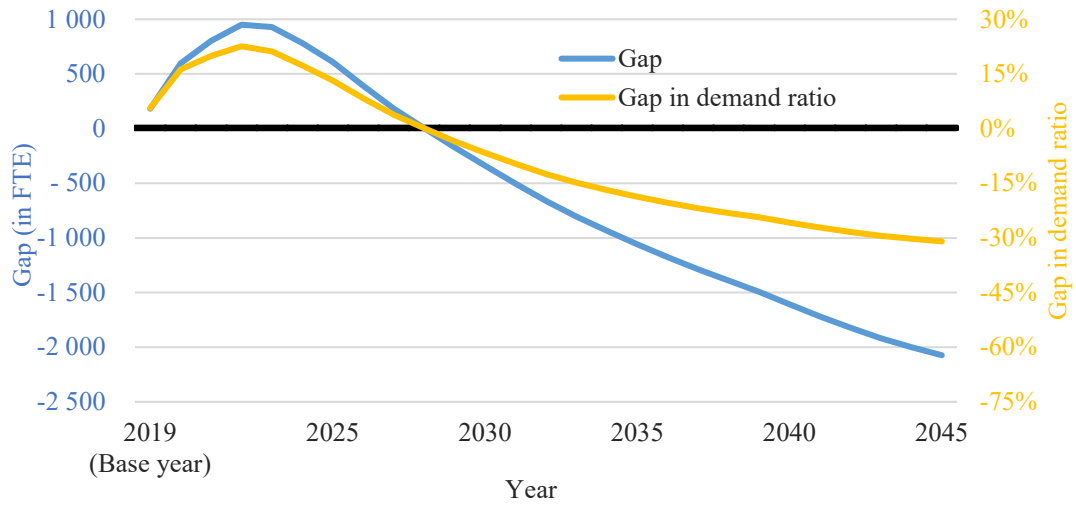


Table 13 – Summary of Manpower Gap in FTEs Numbers in 2025, 2030, 2035, 2040 and 2045

Year	2025	2030	2035	2040	2045
Gap (in FTEs)	610	-340	-1 060	-1 610	-2 070
Gap in demand ratio	(13.2%)	(-6.7%)	(-18.7%)	(-25.8%)	(-31.0%)

- Projected gap (in FTEs) are rounded to the nearest ten.
- Projected gap in demand ratio is the projected gap expressed as a percentage of projected demand.
- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Note:
Demands arising from known and planned subvented and non-subvented elderly / rehabilitation / community services, Chinese Medicine Hospital and new development of private hospitals have been taken into account in this projection, as well as manpower requirements of District Health Centres / Chronic Disease CoCare Pilot Scheme.

9.2 Observations

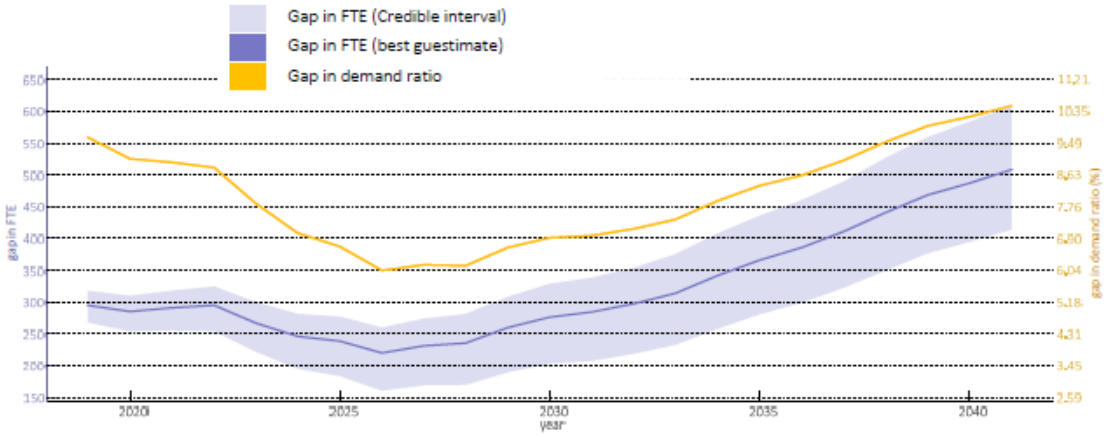
Manpower will be inadequate in the short term, as a result of growing demand for physiotherapists in the medical and social welfare sectors. With more graduates from the Hong Kong Metropolitan University and the Saint Francis University joining the profession starting from 2024 that increase the manpower supply, no shortfall is expected after 2029.

At the same time, graduates from the Master in Physiotherapy programme (starting in 2012) of PolyU remains a significant source of manpower for non-governmental organisations.

Introduction of suitable non-locally trained physiotherapists to fulfill short term manpower demand, and timely adjustment of training strategy, are recommended.

Projection results of the last exercise are shown below for comparison:

Physiotherapists



Year	2020	2025	2030	2035	2040
5th percentile	254	184	204	281	395
(%)	(8.1)	(5.2)	(5.2)	(6.5)	(8.4)
Best guestimate	285	239	276	366	487
(%)	(9.1)	(6.7)	(6.9)	(8.3)	(10.2)
95th percentile	310	277	328	436	583
(%)	(9.8)	(7.7)	(8.1)	(9.8)	(12.0)

- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Section 10 Medical Laboratory Technologists

10.1 The projections of manpower for medical laboratory technologists along the projection horizon are shown in the following Figure and Table.

Base case and Policy options

Figure 11 – Manpower Gap Projection (in FTEs) for Medical Laboratory Technologists (Up to 2045)

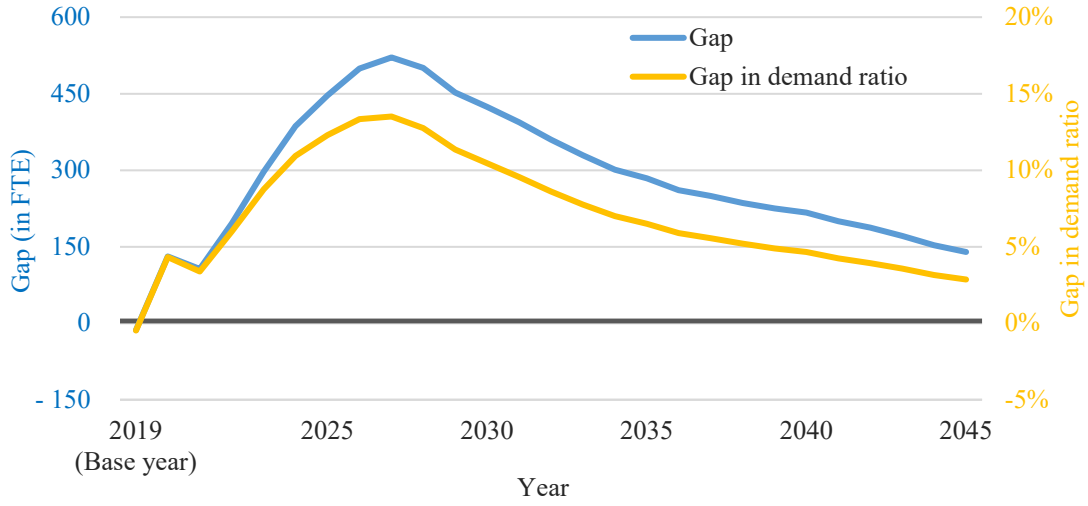


Table 14 – Summary of Manpower Gap in FTEs Numbers in 2025, 2030, 2035, 2040 and 2045

Year	2025	2030	2035	2040	2045
Gap (in FTEs)	450	420	280	220	140
Gap in demand ratio	(12.3%)	(10.5%)	(6.5%)	(4.7%)	(2.9%)

- Projected gap (in FTEs) are rounded to the nearest ten.
- Projected gap in demand ratio is the projected gap expressed as a percentage of projected demand.
- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Note:
Demands arising from Chinese Medicine Hospital, new development of private hospitals, Hong Kong Genome Project and Chronic Disease Co-Care Pilot Scheme have been taken into account.

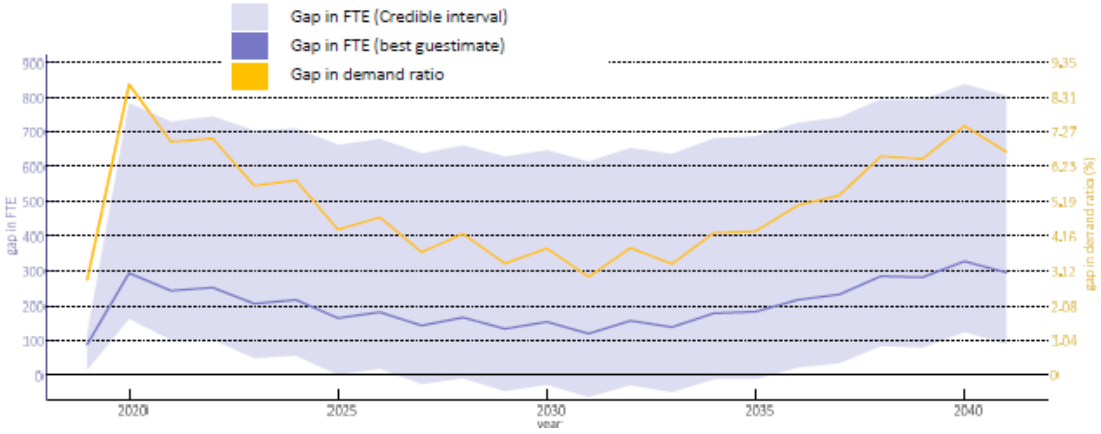
10.2 Observations

The manpower gap for medical laboratory technologist persists along the projection horizon. Due to the fact that graduates from the self-financing sector will increase the supply of manpower, a decline in manpower gap will appear.

Increase in training places as appropriate, and further observation of the long term demand and supply situation in manpower, are recommended.

Projection results of the last exercise are shown below for comparison:

Medical Laboratory Technologists



Year	2020	2025	2030	2035	2040
5th percentile	162	2	-28	-11	124
(%)	(5.0)	(0.1)	(-0.7)	(-0.3)	(3.0)
Best guestimate	294	164	153	182	328
(%)	(8.7)	(4.3)	(3.8)	(4.3)	(7.5)
95th percentile	783	662	647	688	837
(%)	(20.2)	(15.5)	(14.3)	(14.5)	(17.1)

- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Section 11 Optometrists

11.1 The projections of manpower for optometrists along the projection horizon are shown in the following Figure and Table.

Base case and Policy options

Figure 12 – Manpower Gap Projection (in FTEs) for Optometrists (Up to 2045)

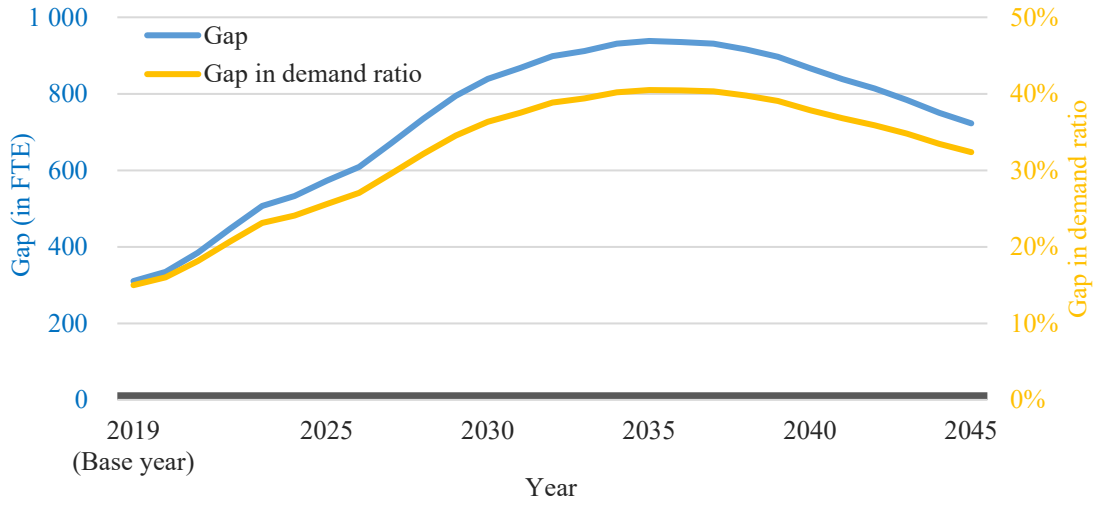


Table 15 – Summary of Manpower Gap in FTEs numbers in 2025, 2030, 2035, 2040 and 2045

Year	2025	2030	2035	2040	2045
Gap (in FTEs)	570	840	940	870	720
Gap in demand ratio	(25.6%)	(36.3%)	(40.5%)	(37.9%)	(32.4%)

- Projected gap (in FTEs) are rounded to the nearest ten.
- Projected gap in demand ratio is the projected gap expressed as a percentage of projected demand.
- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Note:
Demand arising from Chronic Disease Co-Care Pilot Scheme has been taken into account.

11.2 Observations

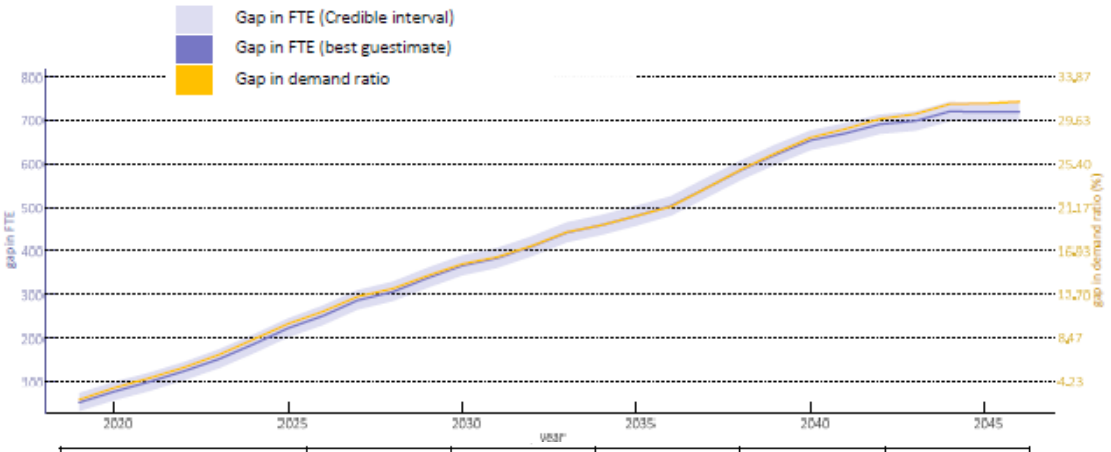
Supply of optometrists has dropped since 2019 as a result of cohort retirement, further widening the manpower gap along the projection period. Besides, demand for optometrists is projected to peak at 2035 and decline thereafter.

As the majority of optometrists are in private practice with varying retirement ages and work patterns, some degree of flexibility in manpower supply exists.

Increase in training places as appropriate is recommended.

Projection results of the last exercise are shown below for comparison:

Optometrists



Year	2020	2025	2030	2035	2040
5th percentile	57	202	344	458	632
(%)	(2.7)	(9.0)	(14.8)	(19.6)	(27.2)
Best guestimate	77	223	366	480	654
(%)	(3.6)	(9.8)	(15.6)	(20.3)	(27.9)
95th percentile	98	245	389	504	676
(%)	(4.5)	(10.7)	(16.4)	(21.1)	(28.6)

- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Section 12 Radiographers

12.1 The projections of manpower for radiographers along the projection horizon are shown in the following Figure and Table.

Base case and Policy options

Figure 13 – Manpower Gap Projection (in FTEs) for Radiographers (Up to 2045)

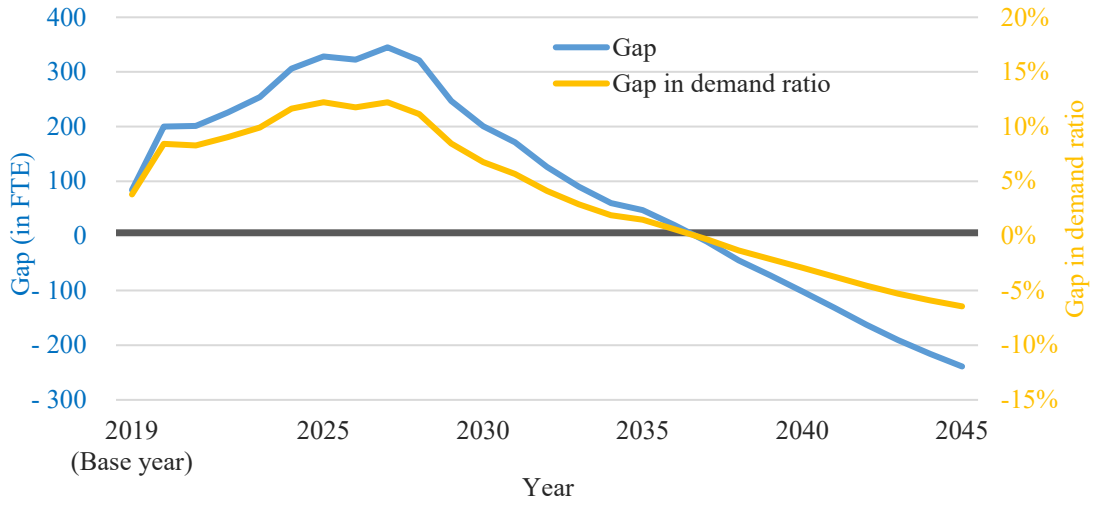


Table 16 – Summary of Manpower Gap in FTEs Numbers in 2025, 2030, 2035, 2040 and 2045

Year	2025	2030	2035	2040	2045
Gap (in FTEs)	330	200	50	-100	-240
Gap in demand ratio	(12.2%)	(6.8%)	(1.5%)	(-2.9%)	(-6.4%)

- Projected gap (in FTEs) are rounded to the nearest ten.
- Projected gap in demand ratio is the projected gap expressed as a percentage of projected demand.
- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Note:
Demands arising from Chinese Medicine Hospital, new development of private hospitals and Breast Cancer Screening Pilot Programme have been taken into account.

12.2 Observations

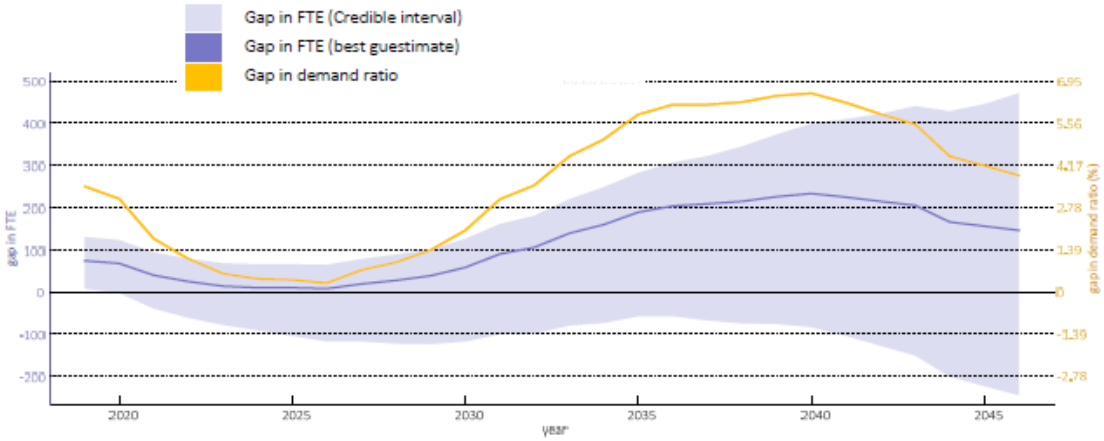
The manpower gap for radiographers as a whole is projected to decline starting from 2025, partly due to the increased supply of graduates from Tung Wah College, and the Master programme of PolyU.

However, manpower shortfall situation of radiographers of the therapeutic stream is expected to continue throughout the projection period, due to increasing demand from the public and private sectors.

Introduction of suitable non-locally trained radiographers and expansion in training of local radiographers of the therapeutic stream to fulfill short to medium term manpower demand, as well as further observation of the long term demand and supply situation in manpower and training strategy, are recommended.

Projection results of the last exercise are shown below for comparison:

Radiographers



Year	2020	2025	2030	2035	2040
5th percentile	-3	-103	-118	-58	-83
(%)	(-0.1)	(-4.3)	(-4.4)	(-1.9)	(-2.6)
Best guestimate	68	10	59	190	233
(%)	(3.1)	(0.4)	(2.0)	(5.9)	(6.6)
95th percentile	123	66	125	282	399
(%)	(5.5)	(2.5)	(4.3)	(8.4)	(10.7)

- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Section 13 Chiropractors

13.1 The projections of manpower for chiropractors along the projection horizon are shown in the following Figure and Table.

Base case and Policy options

Figure 14 – Manpower Gap Projection (in FTEs) for Chiropractors (Up to 2045)

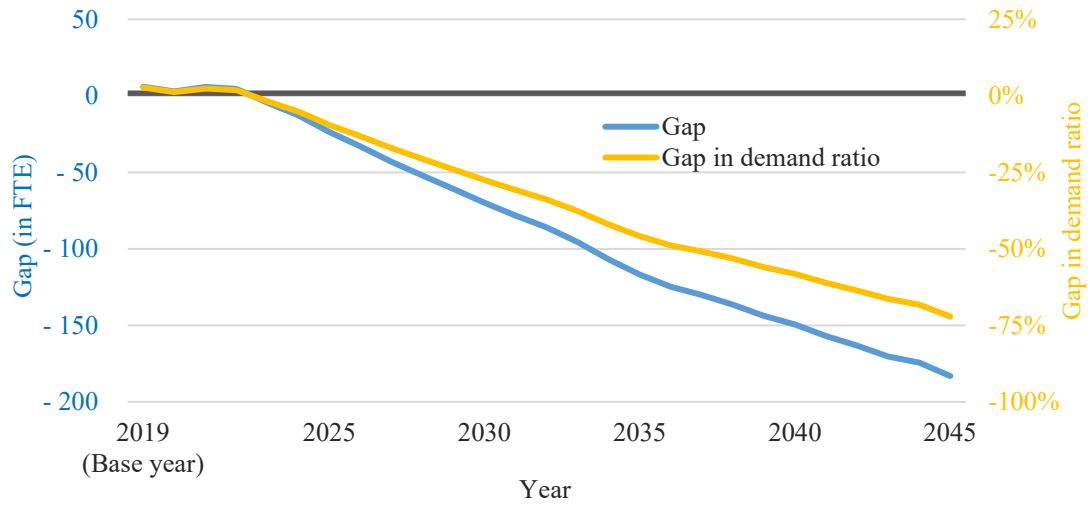


Table 17 – Summary of Manpower Gap in FTEs Numbers in 2025, 2030, 2035, 2040 and 2045

Year	2025	2030	2035	2040	2045
Gap (in FTEs)	-20	-70	-120	-150	-180
Gap in demand ratio	(-9.5%)	(-27.5%)	(-45.9%)	(-58.2%)	(-72.1%)

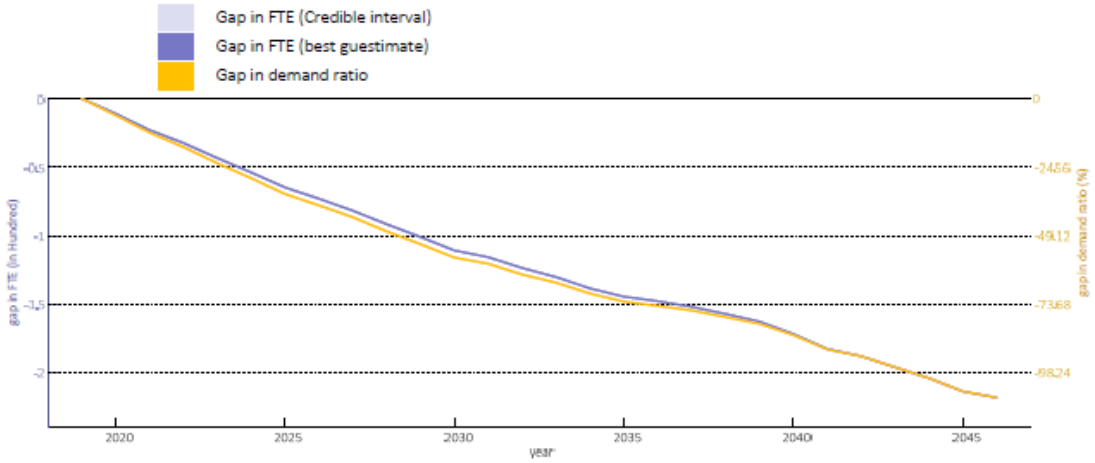
- Projected gap (in FTEs) are rounded to the nearest ten.
- Projected gap in demand ratio is the projected gap expressed as a percentage of projected demand.
- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

13.2 Observations

Due to a stable supply of new registrants graduated from overseas, no obvious shortfall of chiropractors is projected from 2025 onwards. On the other hand, the growth on manpower demand remains slow.

Projection results of the last exercise are shown below for comparison:

Chiropractors



Year	2020	2025	2030	2035	2040
5th percentile	-10	-62	-105	-137	-163
(%)	(-5.5)	(-32.5)	(-54.1)	(-69.2)	(-80.6)
Best guestimate	-11	-65	-111	-145	-172
(%)	(-5.8)	(-34.2)	(-57.0)	(-72.8)	(-84.8)
95th percentile	-11	-68	-116	-152	-180
(%)	(-6.1)	(-35.9)	(-59.9)	(-76.4)	(-89.0)

- A positive gap figure indicates shortfall in manpower, whereas a negative number indicates sufficient manpower.
- (%) shortfall or surplus are expressed as percentage of demand in the omnibus scenario.

Health Bureau
June 2024