

THE HONG KONG COLLEGE OF PAEDIATRICIANS
(Incorporated in Hong Kong with Limited Liabilities)

Committee for Subspecialty Boards

Application for the Accreditation of the Subspecialty of Paediatric Cardiology.

1. Declaration :

1.1 We, the undersigned, would like to apply for accreditation of the subspecialty of Paediatric Cardiology, this being a new and different from existing subspecialties.

1.2 We submit that the subspecialty is needed in Hong Kong.

Proposed manpower estimates :

- (i) 32-35 (number) of Fellows could be qualified as First Fellow
- (ii) 36 (number) of subspecialists existed.
- (iii) 23-25 (number) of subspecialists projected as required locally in the next 10 years.

1.3 This subspecialty also exist in other countries such as United Kingdom and United States .

Two paediatric cardiologists per million population is proposed by the UK NHS England Commissioning Standards (2020).

In 2015 USA there were 2,521 paediatric cardiologists (data from the Association of American Medical Colleges), equivalent to 8 specialists per 1 million population.

2. Justification for establishment of subspecialty:

We have also submitted a descriptive narrative, stating that our subspecialty satisfies all the Criteria laid down by the Academy of Medicine for the recognition of a Subspecialty (**Appendix I**).

- (i) the subspecialty is needed in Hong Kong
- (ii) the subspecialty is new and different from existing subspecialties
- (iii) the knowledge, skills and practice required by that subspecialty are identifiably distinct and are deemed appropriate and compatible with the practice of paediatrics
- (iv) the subspecialty exists in other countries
- (v) the subspecialty is recognized at the institutional level; with the appointment of academic staff for that subspecialty at the Associate Professor level in a university in Hong Kong or the appointment of a Consultant for that subspecialty in one of the Hospital Authority Hospitals or the Department of Health
- (vi) the subspecialty has the administrative support of one or more constituent Colleges of the Academy.

Please also include justification for the subspecialty to be recognized and that the subspecialty has enough members, activities, a training programme ready for accreditation and unanimous agreement

of the programme by all Fellows interested in the subspecialty.

3. Proposed training programme :

3.1 We propose the training programme would be 3 years with 36 months of full clinical activities.

3.2 One (number) training programme in form of a subspecialty training cluster within the territory of HK would be adequate at any one time.

3.3 We provide local statistics for our subspecialty :

a. Estimated patient load in Hong Kong:

i. Inpatients - new cases/month:

- <5
- 6-10
- 10-15
- 16-20
- 21-25
- 26-30
- >30

ii. Outpatient attendance- new cases/month

- <5
- 6-10
- 10-15
- 16-20
- 21-25
- 26-30
- >30

iii. Outpatient attendance- old cases/month

- < 20
- 21-40
- 41-60
- 61-80
- 81-100
- > 100

iv. Estimated number of cases in general population:

_____ per 1 million

Worldwide the incidence of congenital heart disease per 100 live birth is around 0.6-0.8. With a number of live birth around 50,000 per year locally, each year there will be 300-400 babies born with heart diseases.

There is no local data on prevalence of congenital plus acquired heart disease in children. However, there are roughly 200 new cases of outpatient per month in the Hospital Authority (HA) system, not counting the cases in private sector.

b. Local facilities:

i. Designated inpatient bed numbers * :

General cardiology bed	23 (21 HKCH, 2 PMH) *
HDU bed	4 (HKCH)
ICU bed	7 (HKCH)

* HKCH: Hong Kong Children’s Hospital, PMH: Princess Margaret Hospital

ii. Designated outpatient attendance per month (HA hospitals) *

190	(number of new cases)
1385	(number of old cases)
82	(frequency of outpatient clinics)

* **Appendix II:** Details of inpatient beds and outpatient attendance in HA hospital

iii. Details of facilities relevant to the subspecialty:

iv.

Type of facilities	Number
<u>Haematology, microbiology,</u>	<u>all HA hospitals</u>
<u>Clinical Pathology lab</u>	<u>all HA hospitals</u>
<u>Molecular/ Genetic lab</u>	<u>3 HA hospitals</u>
<u>Radiology Department</u>	<u>all HA hospitals</u>
<u>Non-invasive laboratory</u>	<u>all HA hospitals</u>
<u>Cardiac cath laboratory (paed)</u>	<u>2 HA hospitals</u>

c. Resources

The development of this subspecialty requires extra resources

Yes No

If yes the extra resources include:

1. Manpower

Yes No

2. Equipment

Yes No

3. Space for use by subspecialty

i) Bed space

Yes No

ii) Laboratory space

Yes No

iii) Rehabilitation space

Yes No

iv) Others:

Yes No

d. Manpower

i)	Number of subspecialists needed in Hong Kong	25
ii)	Number of peer-recognized subspecialists currently practicing in Hong Kong:	22 (full time equivalent, FTE in HA) 30 (FTE + part time in HA) 10-14 (private)
iii)	Number of Paediatricians currently practicing this subspecialty	32-35
iv)	Number of trainees that need to be trained to meet the current need	10-15
v)	Number of qualified trainers currently available	15-20
vi)	Number of trainees that can be accommodated with the existing provision of manpower and facilities	2-3 new trainees/year
vii)	Number of trainees currently under training in this subspecialty	10-15

3.4 Career structure

Based on the analysis of the above information, we deduce the following:

1. Number of fully-trained subspecialists required for whole of Hong Kong	25
2. Number of subspecialists trainees required to be trained after their FHKAM (Paediatrics) Fellowship Exit Examination in order to maintain a steady state in the next 10 years (i.e. all fully-trained subspecialists can function full-time in that subspecialty and the “a” can be reached just right), taking into account of retirement and projection of needs in the next 10 years, etc.	10-15
3. Number of fellows (FHKAM Paediatrics) required to be working with the subspecialists to reach a desirable level of service and training for the whole of Hong Kong.	15
4. Number of trainees (pre-fellows) required to be working in the subspecialty to reach a desirable level of service and training for the whole of Hong Kong.	15
5. Number of centres or clustered network required for this subspecialty in the whole of Hong Kong.	1 clustered network

3.5 We also submit additional information on the justification of establishment of our subspecialty, with reference to: **(Appendix 1)**

3.51 Curriculum:

a) Duration of subspecialty training

- 2 years post-higher training in general paediatrics
- √ 3 years (incorporating 1 year of training in that particular subspecialty during the higher training in general paediatrics and 2 years of extra subspecialty training)

b) Maximum duration (**6 months**) of recognition for specified qualification or training within the subspecialty training programme

	Yes	No
i) Ph. D	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) M. Phil.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) M. Med. Sc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

c) Clinical experience

i) Minimum

- 24 months
- 30 months
- 36 months

ii) Maximum

- 24 months
- 30 months
- 36 months

iii) Minimum number of new out-patient consultation in that subspecialty during the whole period of subspecialty training

- 50-100
- 100-150
- 150-200
- 200-300
- Others

iv) Minimum number of old out-patient consultation in that subspecialty during the whole period of subspecialty training

- 300-400
- 400-500
- 500-600
- 600-700
- 700-800
- Others

v) Minimum number of subspecialty clinics per week

- 2
- 3
- 4

vi) Necessity of log sheet or log book

- Yes
- No

vii) Availability of checklist for minimum number of special procedures for that subspecialty
 \checkmark Yes* No

*** Appendix III: Checklist on all special procedures required for the subspecialty**

d) Research activities required

\checkmark Yes No

If yes,

(i) Clinical research programme

\checkmark Yes No

(ii) Basic research programme (eg. laboratory experience)

\checkmark Yes (optional) No

If yes, please specify minimum duration

\checkmark 6 months

12 months

Please also specify maximum duration allowed

6 months

\checkmark 12 months

e) Teaching required

\checkmark Yes No

If yes, please specify minimum percentage of time

\checkmark 5%

10%

15%

Please also specify maximum percentage allowed

10%

15%

\checkmark 20%

i) Undergraduate

\checkmark Yes No

ii) Postgraduate

\checkmark Yes No

f) Administration within subspecialty (e.g. medical audit, involvement of service development, co-ordination & administration within subspecialty)

\checkmark Yes No

If yes, please specify minimum percentage of time

5%

\checkmark 10%

15%

Please also specify maximum percentage allowed

- 10%
- 15%
- 20%

g) Subspecialty training is done in

- A trainee should receive supervised training in at least two but not more than four accredited centres in the clustered network,

h) Overseas training required

- Yes (strongly recommended) No

If yes, what is the minimum duration?

Please specify 6 months to 12 months

If yes, please also describe

(i) setting Overseas paediatric cardiology tertiary referral centre, with approval from the Training Programme Director

(ii) objectives Widened exposure to paediatric cardiology

i) Pre-set curriculum for their elective period

- Yes No

3.52 Assessment of training :

a) Profolio assessment

Yes No

If yes, please describe

- | | | |
|---|--|---|
| (i) Oral | <input type="checkbox"/> <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| (ii) Written | <input type="checkbox"/> Yes | <input type="checkbox"/> <input checked="" type="checkbox"/> No |
| (iii) Course work | <input type="checkbox"/> Yes | <input type="checkbox"/> <input checked="" type="checkbox"/> No |
| (iv) Postgraduate Degree or Certificate | <input type="checkbox"/> Yes | <input type="checkbox"/> <input checked="" type="checkbox"/> No |
| (v) Published papers | <input type="checkbox"/> <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |

3.6 Institution / Functional Training Unit

3.61 Please describe the statistics for THE Programme :

The training programme (one) in Hong Kong consists of a comprehensive paediatric cardiology training centre, supported by 3 regional centres providing training in general paediatric cardiology

Cardiology Centre, Hong Kong Children's Hospital			
1. Case load per year	(new)	420	(old) 6480
2. Case profile	* Complex	20	%
	* Intermediate	30	%
	* Simple	50	%
a) No. of specialists working in the programme	9		
b) _____ 100 _____ % of time working in the subspecialty			
3. No. of sub-specialists (FTE) (FTE = at least 35-50% of time working in the sub-specialty)			
4. Having a structure for centre e.g. Director on service, training or research etc	<input type="checkbox"/> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
5. No. of trainees	3		
6. No. of supporting staff	Research assistants	1	

7. Structured training programme	<input type="checkbox"/> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
8. Clinical guidelines/protocols	<input type="checkbox"/> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
9. Clinical audit	<input type="checkbox"/> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
10. Research projects – No.	3-5

Cardiology Team, Department of Paediatrics and Adolescent Medicine, QEH			
1. Case load per year	(new)	396	(old) 3120
2. Case profile	* Complex	5	%
	* Intermediate	20	%
	* Simple	75	%
a) No. of specialists working in the programme (at least 35-50% of time working in the sub-specialty)	3		
3. No. of sub-specialists (FTE) (FTE = at least 35-50% of time working in the sub-specialty)			
4. Having a structure for centre e.g. Director on service, training or research etc	<input type="checkbox"/> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
5. No. of trainees	3		
6. No. of supporting staff			
7. Structured training programme	<input type="checkbox"/> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
8. Clinical guidelines/protocols	<input type="checkbox"/> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
9. Clinical audit	<input type="checkbox"/> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
10. Research projects – No.	1		

Cardiology Team, Department of Paediatrics and Adolescent Medicine, PWH			
1. Case load per year	(new)	360	(old) 1440
2. Case profile			
	* Complex	5	%
	* Intermediate	20	%
	* Simple	75	%
a) No. of specialists working in the programme (at least 35-50% of time working in the sub-specialty)	3		
3. No. of sub-specialists (FTE) (FTE = at least 35-50% of time working in the sub-specialty)			
4. Having a structure for centre e.g. Director on service, training or research etc	<input type="checkbox"/> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
5. No. of trainees	2		
6. No. of supporting staff			
7. Structured training programme	<input type="checkbox"/> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
8. Clinical guidelines/protocols	<input type="checkbox"/> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
9. Clinical audit	<input type="checkbox"/> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
10. Research projects – No.	2		

Cardiology Team, Department of Paediatrics and Adolescent Medicine, PMH			
1. Case load per year	(new)	96	(old) 960
2. Case profile			
	* Complex	5	%
	* Intermediate	20	%
	* Simple	75	%
a) No. of specialists working in the programme (at least 35-50% of time working in the sub-specialty)	2		
3. No. of sub-specialists (FTE) (FTE = at least 35-50% of time working in the sub-specialty)			
4. Having a structure for centre e.g. Director on service,	<input type="checkbox"/> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		

training or research etc			
5. No. of trainees	1		
6. No. of supporting staff			
7. Structured training programme	<input type="checkbox"/> √ Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
8. Clinical guidelines/protocols	<input type="checkbox"/> √ Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
9. Clinical audit	<input type="checkbox"/> √ Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
10. Research projects – No.	2		

* Please define clearly each category for your subspecialty, citing clinical examples and the case mix necessary for a viable programme.

Appendix IV: Definition of case complexity and case mix requirement of training units

3.7 Supportive Service considered as mandatory to the programme :

								Comments
1. Coordination with other relevant paediatric subspecialties (please specify)								
	Yes	No	NA	emergency	elective	On site	Other location	
e.g. PICU/NICU	√	<input type="checkbox"/>	<input type="checkbox"/>	√	√	√	√	
Medical subspecialties	√	<input type="checkbox"/>	<input type="checkbox"/>	√	√	√	√	
Surgical subspecialties	√	<input type="checkbox"/>	<input type="checkbox"/>	√	√	√	√	
Orthopaedic subspecialties	√	<input type="checkbox"/>	<input type="checkbox"/>	√	√	<input type="checkbox"/>	√	
Oncology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transplant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Others (please specify)								
2. Special investigatory support								
a. Laboratory								
	Yes	No	NA	emergency	elective	On site	Other location	
Chemical pathology	√	<input type="checkbox"/>	<input type="checkbox"/>	√	√	√	√	
Histo-pathology	√	<input type="checkbox"/>	<input type="checkbox"/>	√	√	√	<input type="checkbox"/>	

Microbiology	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Immunology	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Others (please specify)								
Haematology	yes			Onsite, / emergency and elective				
Genetic	yes			Onsite, /elective				
b. Radiology								
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
MRI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Isotope Scan	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Special therapeutic support								
Radiotherapy	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Interventional radiology	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Chemotherapy	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Pharmacy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Total parental nutrition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Nutritionist	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Clinical psychologist	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Medical Social workers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Allied health	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Others (please specify)								
4. Special management modalities (eg Parents support groups) (Please specify)								

3.8 Proposed requirement of Trainers

a) Number of training staff in a centre recommended :

- 1-2 (networking support unit)
 2 (paediatric cardiology centre : HKCH)

b) In possession of the necessary skills in laboratory, special procedure or basic sciences practice

- Yes No

c) Active in carrying out clinical audit and setting up of management guidelines

- Yes No

3.9 Proposed educational activities :

	<u>Location</u>	<u>Frequency</u>
Grand round (Joint Cardiac meeting)	HKCH	weekly
Journal Club	HKCH	2 monthly
X-ray/imaging meeting (Joint cardiac meeting with radiologists)	HKCH	2 per month
Audit (mortality and morbidity meeting)	HKCH	2 monthly
* other CME Activities	Fellowship training HKCH	1 per month

*** (please note that CME activities will be required for recognized subspecialties)**

3.10 The field of research available in our subspecialty and existing in HK
(please describe in details) :

(i) Clinical	Outcome of congenital heart diseases
	Cardiac mechanics
	Kawasaki disease
	Cardiac oncology
(ii) Laboratory	Stem cell model of congenital heart disease
	Circulating DNA in cardiac damage
	Anthracycline cardiotoxicity
(iii) Epidemiological	Congenital heart disease
	Cardiac arrhythmias

3.11 Four (Number) of candidates are potential programme director(s) for HK (> 50% of time spent on subspecialty)

3.12 HKCH (8) PWH(3) PMH(2) QEH(3), total 16 (Number) of candidates are potential trainers of the programme

3.13 We submit in details the curriculum of our subspecialty training programme under the headings of knowledge, skills and attitudes as separate document.

4. We have obtained the supporting letters from two external referees as required for our programme:

- (a) **Professor Shakeel Qureshi**, Consultant Paediatric Cardiologist of Evelina London Children's Hospital, United Kingdom, and
- (b) **Professor Quek Swee Chye**, Senior Consultant and Head, Pediatric Cardiology, National University Hospital, Singapore.


We propose the following two overseas experts as potential external assessors for our programme:


- (a) **Professor Michael Cheung**, Director of Cardiology, The Royal Children's Hospital, Melbourne, Australia, and
- (b) **Professor Dan Penny**, Chief of Pediatric Cardiology, Texas Children's Hospital, U.S.A.

On behalf of the core groups of Paediatric Cardiology subspecialty

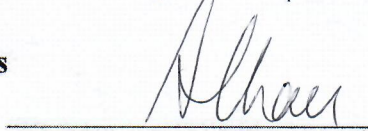
Co-ordinators of the subspecialty:


Co-convenors

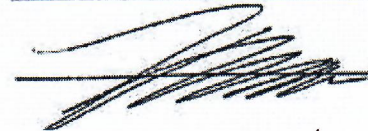
 Professor Yiu Fai CHEUNG


 Dr Tak Cheung YUNG


Members

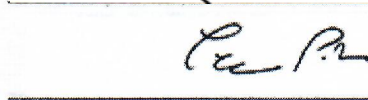
 Dr Kai Tung CHAU

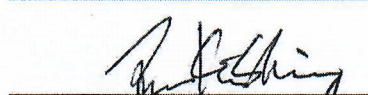
 Dr Robin Hay Son CHEN

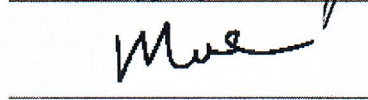
 Dr Eddie Wai Yin CHEUNG

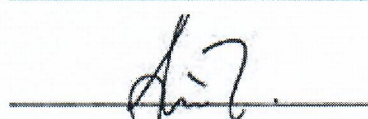
 Dr Nai Chung FONG

 Dr Maria Shuk Han LEE

 Professor Maurice Ping LEUNG

 Dr Kin Shing LUN

 Dr Geoffrey Chi Fung MOK

 Dr Simon Pui On TO

 Dr Dora May Ling WONG

 Dr Man Ching YAM

Contact person Professor Yiu Fai CHEUNG

(i) Telephone 3513 6667

(ii) Email xfcheung@hku.hk

Appendix I

Descriptive narrative of the justifications for the establishment of Paediatric Cardiology as a subspecialty

Criteria required by HKAM	Descriptive narrative
1. The subspecialty is needed in Hong Kong	<p>Paediatric cardiology is the branch of paediatric medicine concerned with the study of congenital cardiac malformation, acquired heart diseases, systemic and pulmonary circulatory abnormalities, and cardiac arrhythmias in paediatric patients. Importantly, congenital heart disease is the most common congenital malformation with an incidence is 6 to 8 per 1000 live births. This is an internationally well-recognized subspecialty. In the United States, there are 8.8 paediatric cardiologists per million population and in Europe, a study showed a median of 4.2 per million population (range: 0.9-11.8 per million population) (McMahon et al Cardiology in the Young 2022). Our survey showed that the number of new case referrals to cardiac clinics in Hong Kong was 190 cases per month. The number of old case follow-ups at cardiac clinics was 1400 per month. There were 19320 echocardiograms performed yearly, and the waiting period is increasing rapidly. Therefore, a sizable patient population needs to be served by well-trained paediatric cardiologists in the local arena.</p> <p>A well-structured training programme with accreditation of the specialty in Hong Kong should therefore be established to provide trainees with a comprehensive clinical and research training experience, that will ensure a</p>

	<p>structured training of the next generation of capable, independent, compassionate paediatric cardiologists.</p>
<p>2. The subspecialty is new and different from existing subspecialties</p>	<p>Paediatric cardiology has been practised in Hong Kong for more than 30 years. It is a well-recognized paediatric subspecialty in Hong Kong with colleagues practicing in the public, private, and academic sectors. Paediatric cardiology differs from other paediatric subspecialties in the requirement of considerable practical skills and hands-on experience in addition to the basic knowledge; examples include echocardiography, cardiac catheterization, and management of arrhythmias, cardiac implantable electronic devices and mechanical circulatory support. Furthermore, the close collaboration with cardiac surgeons, anaesthetist, intensivists, and nurses is unique among other subspecialties in paediatrics.</p>
<p>3. The knowledge, skills and practice required by that subspecialty are identifiably distinct and are deemed appropriate and compatible with the practice of paediatrics.</p>	<p>The knowledge, skills and practice required by paediatric cardiology are unique and distinct. These include the practice of echocardiography, cardiac catheterization and cardiac intervention, cardiac intensive care, cardiac implantable electronic devices, mechanical circulatory support, and heart transplantation. With completion of the core training programme, the trainee will acquire the knowledge and practical skills to evaluate, diagnose and manage cardiovascular diseases in young patients. The programme also includes the development of academic skills in presentation, teaching and research. It is expected that the trainee can continuously educate himself throughout his career and make scholarly contributions to the speciality. Advanced subspecialty training is available for trainees who desire higher</p>

	<p>proficiency in specific areas such as interventional cardiology, electrophysiology, advanced cardiac imaging, fetal cardiology, advanced heart failure, mechanical circulatory support and heart transplantation.</p>
<p>4. The subspecialty exists in other countries</p>	<p>Paediatric Cardiology is a well-established subspecialty in the United States, United Kingdom, Canada, Australia, New Zealand and many European countries. In 1961, paediatric cardiology became the first subspecialty board in paediatrics in the United States. There are 65 ACGME-accredited paediatric cardiology fellowship programmes in the United States. Twenty European countries have formally accredited paediatric cardiology training programmes. There are pediatric cardiology curricula in India, Malaysia and Singapore.</p>
<p>5. The subspecialty is recognized at the institutional level; with the appointment of academic staff for that subspecialty at the Associate Professor level in a university in Hong Kong or the appointment of a Consultant for that subspecialty in one of the Hospital Authority Hospitals or the Department of Health</p>	<p>Currently, one Professor and one Associate Professor at the University of Hong Kong specialize in paediatric cardiology. Five Consultants and two Associate consultants are doing full-time paediatric cardiology at the Hong Kong Children's Hospital. Twenty-one Consultants or Associate Consultants are dedicated to paediatric cardiac service in 11 regional Hospital Authority Hospitals.</p>
<p>6. The subspecialty has the administrative support of one or more constituent Colleges of the Academy</p>	<p>The administrative support is provided by the Hong Kong College of Paediatricians.</p>

Appendix II

Current inpatient paediatric cardiology bed numbers and outpatient attendance in HA Hospitals

Paediatric Cardiology: local facilities														Last update: 16/2/2023
	HKCH	QEH	QMH	PWH	PMH	PYNEH	TMH	KWH	CMC	UCH	TKOH	AHNS	Overall	
In Patient bed number (Designated Cardiology)														
General ward	21	-	-	-	2	-	-	-	-	-	-	-	23	
HDU	4	-	-	-	-	-	-	-	-	-	-	-	4	
ICU	7	-	-	-	-	-	-	-	-	-	-	-	7	
Day Centre	9	-	-	-	-	-	-	-	-	-	-	-	9	
Out patient														
New case (per month)	35	33	15	30	8	20	30	8	3	4	1	7	190	
Old case (per month)	540	260	20	120	80	55	95	60	20	40	25	70	1,385	
OPD session (per week)	6.8	3	1	2	1	1	1	1	0.5	1	1	1	21	

Appendix III

Checklist on all special procedures required for paediatric cardiology

Procedure	Minimum Number
Imaging-related	
Transthoracic echocardiogram	500 (at least 400 in neonates, infants, children, and adolescents with the full spectrum of cardiac pathologies)
Transesophageal echocardiogram	30
Fetal echocardiogram (observation on echocardiographic evaluation and counselling)	5
Catheter-related	
Cardiac catheterization (as assistant or supervised primary operator with supplementary training on interpretation of haemodynamics using paper cases and angiograms)	50
Balloon atrioseptostomy (with video demonstration where necessary)	2
Electrophysiology-related	
Electrophysiologic studies and ablation procedure (observation)	5
Implantation of pacemaker/ implantable cardioverter-defibrillator / implantable loop recorder (observation)	2
Pacemaker interrogate and testing	5
Holter monitor	50
ECG-atrial/ventricular electrogram using temporary pacing wires	5

Exercise test	
Treadmill	50 (including at least 20 cardiopulmonary exercise test)
Cardiopulmonary exercise test	20
Others	
Pericardial aspiration (as assistant or supervised primary operator, with simulation where necessary)	2

Appendix IV

Definition of case complexity and case mix requirement of training units

Definition of case complexity

i) Complex

Paediatric structural cardiac malformations, acquired heart disease, cardiomyopathies, and arrhythmias that require extensive and special diagnostic workup, close monitoring, multidisciplinary management (including but not limited to advanced medical therapies, surgical and catheter interventions, device therapy), and possible cardiac intensive care support.

Examples include

Congenital heart disease: all forms of cyanotic congenital heart disease, acyanotic congenital heart disease requiring interventions

Acquired heart disease: Kawasaki disease with giant coronary aneurysms, Marfan syndrome with significant dilation of aortic root

Myocarditis and cardiomyopathies: fulminant myocarditis, all types of cardiomyopathies

Heart rhythm disorders: channelopathies: LQTS, CPVT, Brugada syndrome, complete heart block, post pacemaker implantation, post ICD implantation

Advanced heart failure: end-stage heart failure conditions requiring advanced medical therapies, mechanical circulatory support, and heart transplantation

ii) Intermediate

Paediatric structural cardiac malformations, acquired heart disease, and arrhythmias that require detailed cardiac workup, periodic review, and can be cared jointly between specialist in paediatric cardiology and general paediatricians with interests in paediatric cardiology.

Examples include

Congenital heart disease: moderate-sized left-to-right shunts, moderate degree of left or right

ventricular outflow obstructive lesions, post surgical repair of simple congenital heart conditions.
 Acquired heart disease: Kawasaki disease with small coronary artery aneurysm, Marfan syndrome with moderately dilated aortic root, cardiac dysfunction post chemotherapy and in association with neuromuscular and metabolic disorders, pericarditis
 Heart rhythm disorders: frequent premature ventricular contractions, isolated Wenckebach 2nd degree AV block, WPW syndrome, supraventricular tachycardia, ventricular tachycardia (idiopathic)

iii) Simple

Paediatric structural cardiac malformations, acquired heart disease, arrhythmias, and common paediatric cardiac presenting complaints that require only standard diagnostic evaluation, straightforward in terms of management, infrequent follow-up, and no anticipated invasive interventions.

Examples include

Congenital heart disease: small left-to-right shunts, mild valvar pulmonary or aortic stenosis, mild mitral valve incompetence, repaired left-to-right shunts without residua
 Acquired heart disease: Kawasaki disease with no coronary artery aneurysm, Marfan syndrome with normal or mildly dilated aortic root, mild mitral valve prolapse
 Heart rhythm disorders: isolated premature atrial contraction, isolated infrequent premature ventricular contraction, isolated prolonged PR interval, isolated Wenckebach 2nd degree AV block
 Common paediatric cardiac complaints: chest pain, palpitations

	Centre	Networking Unit
Type of training offered		
	Comprehensive training	Acute admission and inpatient consultation, outpatient cardiac clinic, echocardiography Non-invasive cardiac testing
Case complexity Mix		
Complex (%)	20	0-5
Intermediate (%)	30	20-25
Simple (%)	50	70-80