

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 Clinical Genetics (醫學遺傳科).

1. Declaration:

1.1 We, the undersigned, would like to apply for accreditation of the subspecialty of Clinical Genetics, 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) 5 (number) of Fellows could be qualified as First Fellow
- (ii) 5 (number) of subspecialists existed.
- (iii) 14 (number) of subspecialists projected as required locally in the next 10 years (7 Consultant and 7 Associate Consultant Grade Clinical Geneticists; Ref: Zimmern R et al, A Review of Genetic and Genomic Services in Hong Kong, 2011).

1.3 This subspecialty also exists in other countries such as (country A) United Kingdom, (country B) Canada.

- (i) 190 of specialists are required in United Kingdom (i.e. 1 in 333,333 (population) Ref: Royal College of Physician consensus 2011; and >90 in Canada ie 1 in 400,000 (population) Ref: Canadian Medical Residency Guide 2013.

## 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 a minimum of 30 months of full clinical activities.

3.2 One (number) proposed training programme 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:

~1,100 acute hospital admissions per 1 million per year  
(Chung et al. 25<sup>th</sup> International Congress of Paediatrics, 2007)

b. Local facilities:

i. Designated inpatient bed numbers (N/A if not applicable):

N/A (on Consultation basis) (please specify number)  
(please specify type: eg  
neonatology, haematology-  
N/A (on Consultation basis) oncology, renal, PICU, etc)

ii. Designated outpatient attendance per month

100 (please specify number of new cases)  
400 (please specify number of old cases)  
(please specify frequency of out  
30 patient clinics)

iii. Details of facilities relevant to the subspecialty (eg diagnostic laboratories, electrophysiology laboratories, imaging facilities):  
(please specify number and type of facilities)

Type of facilities	Number
<u>Molecular/biochemical laboratories</u>	<u>5 (CGS, TYH, QMH, PWH, PMH)</u>
<u>Cytogenetic laboratories</u>	<u>2 (CGS, TYH)</u>
<u>Diagnostic Radiology</u>	<u>Most HA hospitals</u>
<u>Bioinformatics</u>	<u>2 (HKU and CUHK)</u>

(Some of these facilities will co-localize as a hub in the HK Children's Hospital in 2018)

iv. Details of facilities might need to be given – subspecialty specific:

(e.g. Neonatology: ventilator bed, paediatric surgery etc) (please specify)

Type of facilities	Number
<u>P/NICU</u>	<u>8</u>
<u>Paediatric surgical centers</u>	<u>3</u>
<u>Neurosurgical centers</u>	<u>5</u>
<u>ENT/Eye/orthopedic unit</u>	<u>Most HA hospitals</u>
<u>Oncology centers</u>	<u>5</u>

(Most of these facilities will co-localize as a hub in the HK Children's Hospital in 2018)

c. Resources

- v. 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

If yes, please specify:

Manpower:

Training of genetic counsellors/nurses and clinical  
bioinformaticians

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Lab space and equipment

Bioinformatics support system

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(Ref: Zimmern R et al, A Review of Genetic and Genomic Services  
in Hong Kong, 2011)

d. Manpower

i)	Number of subspecialists needed in Hong Kong	<u>14</u>
ii)	Number of peer-recognized subspecialists currently practicing in Hong Kong:	<u>5</u>
iii)	Number of Paediatricians currently practicing this subspecialty	<u>5</u>
iv)	Number of trainees that need to be trained to meet the current need	<u>8-10 in phases</u>
v)	Number of qualified trainers currently available	<u>5</u>
vi)	Number of trainees that can be accommodated with the existing provision of manpower and facilities	<u>4-5</u>
vii)	Number of trainees currently under training in this subspecialty	<u>0</u>

### 3.4 Career structure

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

- |  |   |
|--|---|
| 1. Number of fully-trained subspecialists in (e.g. neonatology) required for whole of Hong Kong  | <u>14</u>   |
| 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. | <u>8-10 in phases</u>                                   |
| 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.   | <u>2-4</u>  |
| 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.  | <u>2-4 equivalents (share with general paediatrics)</u> |
| 5. Number of centres or clustered network required for this subspecialty in the whole of Hong Kong.  | <u>2-3 training centers (1 training programme)</u>      |

3.5 We also submit additional information on the justification of establishment of our subspecialty, with reference to:

#### 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 type="checkbox"/>
ii) M. Phil.	✓	<input type="checkbox"/>
iii) M. Med. Sc.	✓	<input type="checkbox"/>
iv) Others	✓	<input type="checkbox"/>
Please specify	Postgraduate diploma in medical genetics and/or genetic counselling	

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

Please specify \_\_\_\_\_

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

Please specify \_\_\_\_\_

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

Yes\*  No

**\* (please submit a separate check list on all special procedures required for the subspecialty – Appendix II)**

d) Research activities required

Yes  No

If yes,

(i) Clinical research programme

Yes  No

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

Yes  No

If yes, please specify minimum duration

6 months

12 months

Please also specify maximum duration allowed

6 months

12 months

e) Teaching required

Yes  No

If yes, please specify minimum percentage of time

5%

10%

15%

Others

Please specify \_\_\_\_\_

Please also specify maximum percentage allowed

10%

15%

20%

Others

Please specify \_\_\_\_\_

i) Undergraduate

Yes  No

ii) Postgraduate

Yes  No

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

Yes     No

If yes, please specify minimum percentage of time

- 5%
- 10%
- 15%
- Others

Please specify \_\_\_\_\_

Please also specify maximum percentage allowed

- 10%
- 15%
- 20%
- Others

Please specify \_\_\_\_\_

g) Subspecialty training is done in

- two centres (CGS, QMH+TYH and in the future HKCH)
- more than two centres \_\_\_\_\_

h) Overseas training required

Yes     No

If yes, what is the minimum duration?

- 3mths
- 6mths
- 12mths
- others:

Please specify \_\_\_\_\_

If yes, please also describe

- (i) setting                      Tertiary care facilities with a recognized training programme
- (ii) objectives                To broaden clinical and laboratory experience in the diagnosis and management of genetic diseases

i) Pre-set curriculum for their elective period

Yes     No (but preferred options will be advised by Training Director)

3.52 Assessment of training:

a) Portfolio assessment

Yes     No

If yes, please describe

(i) Oral  Yes     No

(ii) Written  Yes     No

(iii) Course work  Yes     No

(iv) Postgraduate Degree or Certificate  Yes     No

(v) Published papers  Yes     No

3.6 Institution/Functional Training Unit

3.61 Please describe the statistics for EACH Programme:

			Comments
1. Case load per year	(new) <u>1000</u> (old) <u>4000</u>		
2. Case profile	* Highly Complex	10	%
	* Complex	30	%
	* Intermediate	30	%
	* Simple	30	%
a) No. of specialists working in the programme	3-4		
b) <u>    </u> >50 <u>    </u> % of time working in the subspecialty			
3. No. of sub-specialists (FTE) (FTE = at least 35-50% of time working in the sub-specialty)	3-4		Not single handed, best 3-5 subspecialists for cover
4. Having a structure for centre e.g. Director on service, training or research etc	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
5. No. of trainees	8-10 in 10 years		
6. No. of supporting staff (Please specify)	Scientific officer	3-4	
	Medical technologists	10	
	Research fellows/assistants	1-2	
	Genetic counsellors/Nurses	4-5	
7. Structured training programme	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		

8. Clinical guidelines/protocols	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
9. Clinical audit	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	
10. Research projects – No.	2-3			

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

\*Highly complex – requires advanced knowledge and considerable experience for optimal management, often rare or uncommon conditions demanding sophisticated diagnostic techniques, complicated treatment regimen and multidisciplinary team approach e.g. multiple congenital anomalies in P/NICU, undiagnosed diseases, inherited cancer syndrome, genetic counselling in presymptomatic testing/ incidental findings in next-generation sequencing testing

\*Complex – requires special diagnostic tests and careful therapeutic monitoring, or newly identified conditions with diagnosis and treatment under development e.g. emerging genomic disorders, mosaic disorders, genetically heterogeneous conditions including intellectual disability, autism spectrum disorders or complex neurological conditions

\*Intermediate – serious/ life-threatening / organ-specific disorders, or conditions requiring extensive diagnostic evaluation e.g. connective tissue disorders, skeletal dysplasia, cardiomyopathies, inherited arrhythmias, rare but well known genetic syndromes and inborn errors of metabolism

\*Simple – common conditions that are generally managed at secondary level if hospitalization is required and diagnosis and treatment are straight forward e.g. common genetic syndromes – Down syndrome, Williams syndrome, 22q11.2 deletion syndrome, Prader Willi syndrome, etc.

**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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Medical subspecialties	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Surgical subspecialties	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Orthopaedic subspecialties	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Oncology	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Transplant	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Others (please specify)								
<b>2. Special investigatory support</b>								
<b>a. Laboratory</b>								
	Yes	No	NA	emergency	elective	On site	Other location	
Chemical pathology	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>	✓	
Histo-pathology	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>	✓	
Microbiology	<input type="checkbox"/>							
Immunology	<input type="checkbox"/>							
Cytogenetics	✓	<input type="checkbox"/>	<input type="checkbox"/>	✓	✓	✓	<input type="checkbox"/>	
Molecular genetics	✓	<input type="checkbox"/>	<input type="checkbox"/>	✓	✓	✓	<input type="checkbox"/>	
IEM lab	✓	<input type="checkbox"/>	<input type="checkbox"/>	✓	✓	<input type="checkbox"/>	✓	
Others (please specify)								
<b>b. Radiology</b>								
US	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>	✓	
CT	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>	✓	
MRI	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>	✓	
Isotope Scan	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>	✓	
Others (please specify)								
<b>3. Special therapeutic support</b>								
Radiotherapy	<input type="checkbox"/>	✓	<input type="checkbox"/>					
Interventional radiology	<input type="checkbox"/>	✓	<input type="checkbox"/>					
Chemotherapy	<input type="checkbox"/>	✓	<input type="checkbox"/>					
Pharmacy	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>	✓	
Total parental nutrition	✓	✓	<input type="checkbox"/>					
Nutritionist	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>	✓	
Clinical psychologist	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>	✓	
Medical Social workers	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>	✓	
Allied health	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>	✓	
Others (please specify)								
<b>4. Special management modalities (e.g. Parents support groups ) (Please specify)</b>					Parents support groups			

3.8 Proposed requirement of Trainers (NB this only counts trainers from our College, under the cross-discipline Genetic and Genomic training programme of the HKAM, Trainers from other Colleges will be cross accredited to provide training sessions including lectures, seminars, practical trainings, clinical and laboratory rotation to our fellows)

a) Number of training staff in a centre recommended:

- 1
- 2-3
- 3-4
- >4

Please specify \_\_\_\_\_

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>
Joint Institute meeting	Inter-institute	Every 3-4 months
Case conference	Local	Every 1-2 weeks
Postgraduate meeting	Local	Every 1-2 weeks
Journal Club	Local	Every 1-2 weeks
Lab meeting	Local	Every 1-2 weeks
X-ray/imaging meeting	Local	Every 3-4 months
Audit	Local /inter-institute	Every year
* other CME Activities	Conference	Every 1-2 years

**\* (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	<b>CGS</b>
	Clinical review of Fragile X syndrome in Hong Kong
	Review of Costello Syndrome in Hong Kong
	<b>QMH/TYH (HKU)</b>
	Quality of Life Studies for Patients with genetic syndromes
	Clinical spectrum of <i>PIK3CA</i> -related disorders
(ii) Laboratory	<b>CGS</b>
	Genetic study of Retinitis pigmentosa in Hong Kong
	<b>QMH/TYH (HKU)</b>
	Clinical application of whole genome technologies
	Copy number variation analysis for Autism Spectrum Disorders
	<b>CGS</b>
(iii) Epidemiological	Epidemiological study of Prader Willi syndrome in Hong Kong
	Epidemiological study of Angelman Syndrome in Hong Kong

\_\_\_\_\_

Kong

\_\_\_\_\_

**QMH/TYH (HKU)**

Physical measurement of Chinese Children in Hong  
Kong

\_\_\_\_\_

- 3.11 1-2 (Number) of candidates are potential programme director(s) for HK (> 50% of time spent on subspecialty)
- 3.12 4 (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 Appendix III (on describing the training programme, please take reference from the handbook of Guideline on Postgraduate Training & Accreditation published by the College).
4. We propose (a) Dr./Prof. \_\_\_\_\_ of \_\_\_\_\_  
(Institution) in \_\_\_\_\_ (country) and
- (b) Dr./Prof. \_\_\_\_\_ of \_\_\_\_\_  
(Institution) in \_\_\_\_\_ (country) to be external  
assessor of our programme.

**(This will be discussed and included in the next version)**

On behalf of the core groups of Clinical Genetics subspecialty

Co-ordinators of the subspecialty: (in alphabetical order)

  
\_\_\_\_\_  
Dr. Chung H.Y.B.

  
\_\_\_\_\_  
Dr. Lam T.S.S.

  
\_\_\_\_\_  
Dr. Lo F.M.I.

  
\_\_\_\_\_  
Dr. Luk H.M.

\_\_\_\_\_  
Dr Tsui K. M.

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Kong

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**QMH/TYH (HKU)**

Physical measurement of Chinese Children in Hong Kong

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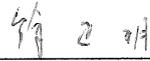
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Dr. Lam T.S.S.

\_\_\_\_\_  
Dr. Lo F.M.I.

\_\_\_\_\_  
Dr. Luk H.M.

\_\_\_\_\_  
  
Dr Tsui K. M.

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