



Anaesthesia Training and Undergraduate Education in Hong Kong

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Health Care System in Hong Kong:

- 1840's British Colony
- 1997 Hand-back China
 - Special Administrative Region
 - Internal affairs – Independent (Legislative Council)
 - Foreign policy – Beijing
- 1991 – I started work at CUHK (25y ago)

Medical Schools in Hong Kong:

- 1890s - Hong Kong University



- 1981 – Chinese University of Hong Kong
– (University established in 1963)



香港中文大學醫學院
Faculty of Medicine
The Chinese University of Hong Kong



Health Authority (HK):

- Before 1990 – Government run hospitals
 - Staffed by specialist from Britain
 - Local staff grade doctors
- After 1990 – Health Authority formed
 - 42 Public Hospitals
 - Multiple clinics



Hong Kong Public Hospitals and Clusters

Chinese University & Prince of Wales Hospital

Distribution of Clusters, Hospitals & Institutions



Hong Kong University & Queen Mary Hospital



Hong Kong Island

Hong Kong East Cluster

- Cheshire Home, Chung Hom Kok
- Pamela Youde Nethersole Eastern Hospital
- Ruttonjee Hospital
- St. John Hospital
- Tang Shiu Kin Hospital
- Tung Wah Eastern Hospital
- Wong Chuk Hang Hospital

Hong Kong West Cluster

- Grantham Hospital
- MacLehose Medical Rehabilitation Centre
- Queen Mary Hospital
- The Duchess of Kent Children's Hospital at Sandy Bay
- Tsan Yuk Hospital
- Tung Wah Group of Hospitals Fung Yiu King Hospital
- Tung Wah Hospital

Kowloon

Kowloon Central Cluster

- HK Red Cross Blood Transfusion Service
- Hong Kong Buddhist Hospital
- Hong Kong Eye Hospital
- Kowloon Hospital
- Queen Elizabeth Hospital

Kowloon East Cluster

- Haven of Hope Hospital
- Tseung Kwan O Hospital
- United Christian Hospital

Kowloon West Cluster

- Caritas Medical Centre
- Kwai Chung Hospital
- Kwong Wah Hospital
- North Lantau Hospital
- Our Lady of Maryknoll Hospital
- Princess Margaret Hospital
- TWGHs Wong Tai Sin Hospital
- Yan Chai Hospital

New Territories

New Territories East Cluster

- Alice Ho Miu Ling Nethersole Hospital
- Bradbury Hospice
- Cheshire Home, Shatin
- North District Hospital
- Prince of Wales Hospital
- Shatin Hospital
- Tai Po Hospital

New Territories West Cluster

- Castle Peak Hospital
- Pok Oi Hospital
- Siu Lam Hospital
- Tuen Mun Hospital

Professional regulatory bodies in Hong Kong:

- Previously most specialists belonged to overseas colleges in either Britain, North America or Australia.
- 1993 – Academy of Medicine
 - HK Jockey Club Building
- Colleges established
 - Over 50 today
- Hong Kong College of Anaesthesiologists:
 - Coordinate training, etc.



Private practice in Hong Kong:

- 11 accredited Private Hospitals
- Plus many private clinics
- <50% doctor work in private
- Medical tourism for SE Asia & China



仁安醫院
UNION HOSPITAL

Situation in Hong Kong today:

- One of the best public health care systems in Western World
- 17% of Government expenditure
- Flourishing private system





ANAESTHESIA TRAINING IN HONG KONG:

Training:



Previously:

Linked to the Australia & New Zealand College

Influence of Professor Teik Oh

Dual Fellowship as also

Fellowship of the HK College of Anaesthesia.

Last few year become delinked:

FHKAM now recognized by UK and ANZCA

Training a copy of FANZCA

Separate Intensive Care and Pain fellowships

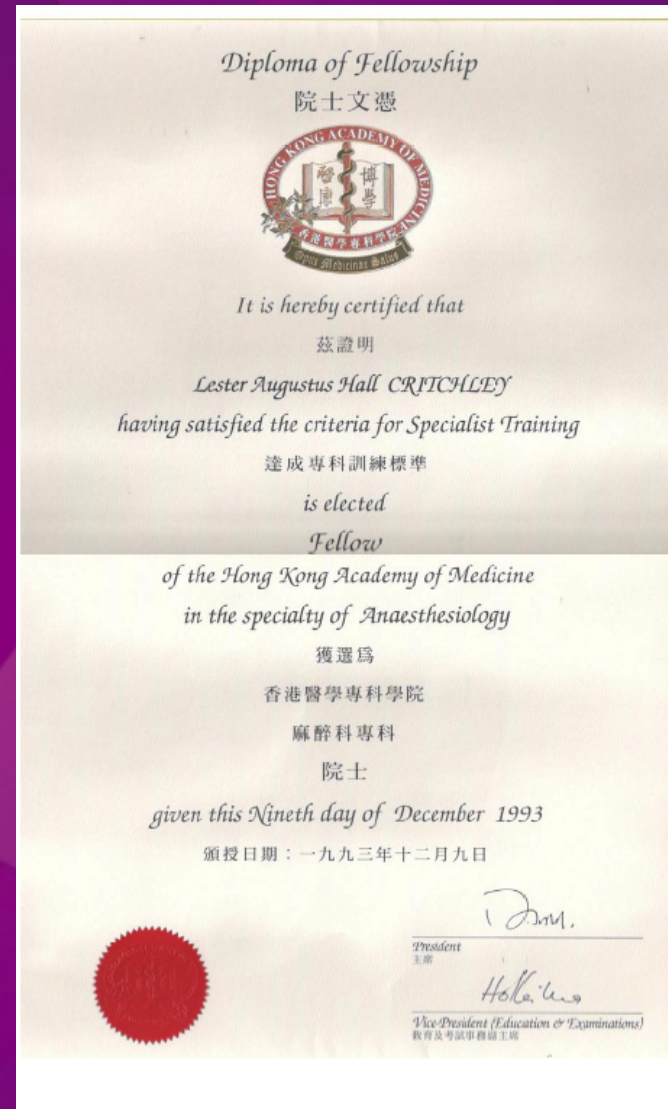
Training in Anaesthesia:

- Hold an accredited training position
- NTEC – 5 new trainees per year
 - Anaesthesia & Intensive Care
- PWH and NTEC have 30-40 trainees in workforce

Six year training programme in anaesthesiology:

Professional examinations

- Intermediate Fellowship
 - after 2y / Basic sciences
- Final Fellowship
 - after 4-5y training
- Accreditation
 - completed 5y of training
- Post fellowship year
 - optional training



Six year training programme in anaesthesiology:



- 6y / 72m of clinical attachments

- Log book of cases

- Formal Project

- Post fellowship year*

- EMAC course

- (Effective Management of Anaesthesia Crisis)

Duration	Experience
3m	Non-anaesthesia clinical experience
48m	Clinical Anaesthesia
6m	Intensive Care
15m	Elective options*

Log book cases:



The Clinical Anaesthesia experience [referred to under section 1.6.2 and 1.6.4] must include an adequate exposure to all of the following CORE areas in anaesthesia. To ensure adequate exposure, a trainee is expected to have managed a minimum number of cases in each core subspecialty¹ (as defined in the brackets) over the 6 years of training

- 1.8.1 anaesthesia for general surgery /urology /gynaecology (500 cases)
- 1.8.2 anaesthesia for orthopaedics and traumatology (500 cases)
- 1.8.3 obstetric anaesthesia (100 cases) and obstetric regional analgesia (50 cases)
- 1.8.4 neuroanaesthesia (100 cases)
- 1.8.5 thoracic anaesthesia (50 cases)
- 1.8.6 paediatric anaesthesia (100 cases of children \leq 6 years, including neonates)
- 1.8.7 anaesthesia for Head & Neck / ENT/ Oro-facio-maxillary (100 cases)
- 1.8.8 emergency / trauma anaesthesia (500 cases)
- 1.8.9 acute pain management (300 patient-days)

Employment in Hong Kong:



- Sufficient jobs in HA for all exiting trainees
 - Continuing expansion of the HA hospital
 - Movement of HA anaesthetists from public to private

- 500 Anaesthesia Fellows



Working as a doctor in Hong Kong:

- Issue of Mainland trained doctors
 - flooding Hong Kong workforce
- Registered with the Hong Kong Medical Council
 - Licensing Exam with 5-10% pass rate
 - Complete one year as house officer
- Clause for University employed clinical staff
- I am registered with the HKMC
 - As I came to HK before 1997
 - (UK qualified)

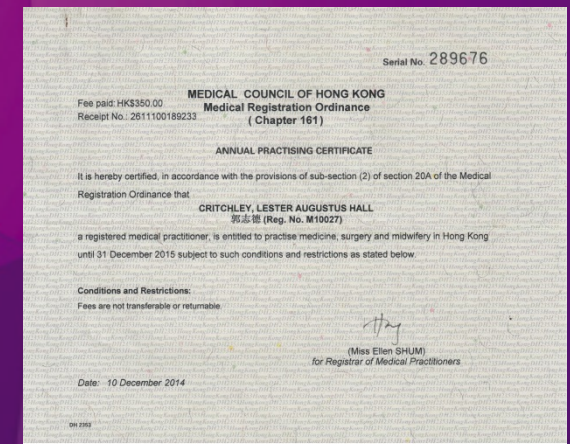


TABLE 1
Outline of anaesthesia course content

Clinical sessions	Tutorials	Workshops
Elective surgery	Preoperative assessment	Airway management
Emergency theatre	Obstetric anaesthesia	Intravenous skills
Acute pain rounds	Intravenous fluid therapy	Head injury simulator session
Obstetric unit	Blood products and transfusion	
	Oxygen therapy	
	Arterial blood gas analysis	
	Staff safety issues	
	Local anaesthetics and toxicity	
	Safe patient sedation	

Anaesthesia and Intensive Care, Vol. 37, No. 4, July 2009

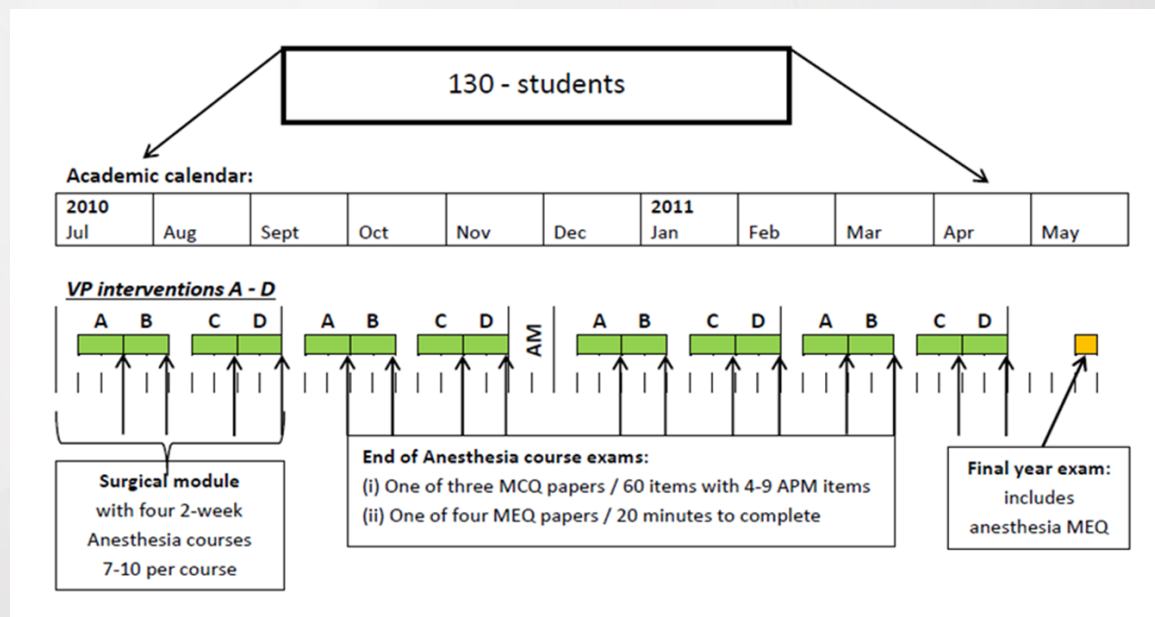
UNDERGRADUATE ANAESTHESIA SYLLABUS AT CHINESE UNIVERSITY:

Undergraduate Anaesthesia:

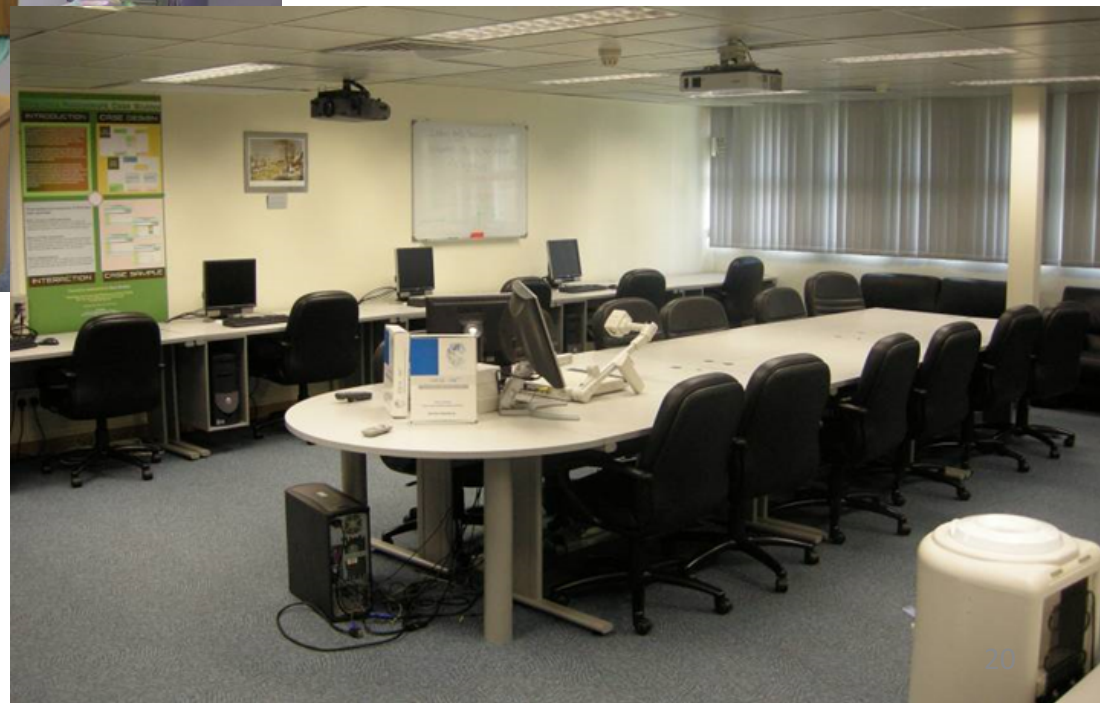
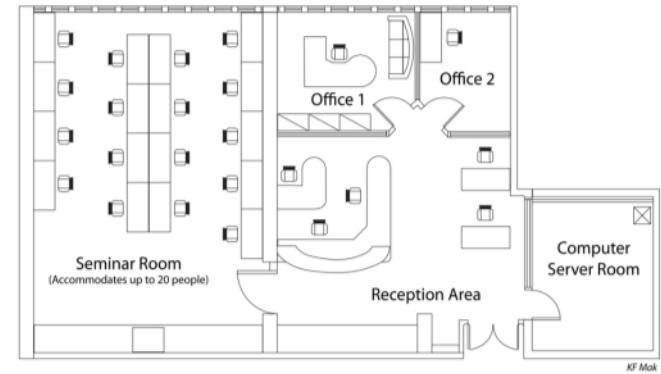
- Since 2005 – Head of U/G Anaesthesia teaching
- 140 medical students /year
 - (but increasing to 230)
 - Similar at sister university [Hong Kong University]
- Now 6 year course:
 - First year is basic 6th form sciences
 - Biology, Chemistry & Physics
- Does NOT include residency years

Undergraduate Anaesthesia:

- Anaesthesia taught as a 2-week module
 - 7-12 students in Final year.
 - Clinical attachments, tutorials and E-learning materials*



The Teaching & Learning Resources Centre at the Chinese University



Introduction of e-learning



- TLRC facilitated e-learning on anaesthesia course
- Difficulties teaching preoperative assessment
- In 2006 we wrote 6 interactive case studies, or FACS
- They are still in use today

Anaesthesia teaching initiatives supported by the TLRC at CU

MCQ Database & Virtual patient

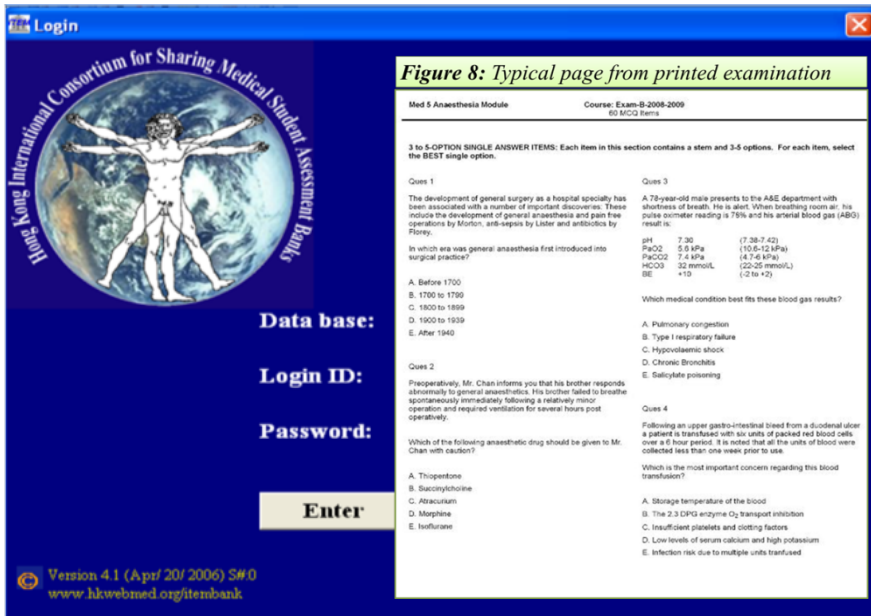


Figure 8: Typical page from printed examination

Med 5 Anaesthesia Module Course: Exam-8 2006-2009 60 MCQ items

3 to 5-OPTION SINGLE ANSWER ITEMS: Each item in this section contains a stem and 3-5 options. For each item, select the BEST single option.

Ques 1
The development of general surgery as a hospital specialty has been associated with a number of important discoveries. These include the development of general anaesthesia and pain free operations by Morton, anti-sepsis by Lister and antibiotics by Florey.
In which era was general anaesthesia first introduced into surgical practice?
A. Before 1700
B. 1700 to 1799
C. 1800 to 1899
D. 1900 to 1999
E. After 1940

Ques 2
Preoperatively, Mr. Chan informs you that his brother responds abnormally to general anaesthetics. His brother failed to breathe spontaneously immediately following a relatively minor operation and required ventilation for several hours post-operatively.
Which of the following anaesthetic drug should be given to Mr. Chan with caution?
A. Thiopentone
B. Succinylcholine
C. Atrocurium
D. Morphine
E. Isoflurane

Ques 3
A 78-year-old male presents to the A&E department with shortness of breath. He is alert. When breathing room air, his pulse oximeter reading is 75% and his arterial blood gas (ABG) result is:
pH 7.30 (7.38-7.42)
PaO₂ 5.9 kPa (10.6-12 kPa)
PaCO₂ 7.4 kPa (4.7-6 kPa)
HCO₃⁻ 32 mmol/L (22-26 mmol/L)
BE +13 (-2 to +2)
Which medical condition best fits these blood gas results?
A. Pulmonary congestion
B. Type I respiratory failure
C. Hypovolaemic shock
D. Chronic Bronchitis
E. Salicylate poisoning

Ques 4
Following an upper gastro-intestinal bleed from a duodenal ulcer a patient is transfused with six units of packed red blood cells over a 6 hour period. It is noted that all the units of blood were collected less than one week prior to use.
Which is the most important concern regarding this blood transfusion?
A. Storage temperature of the blood
B. The 2,3 DPG enzyme O₂ transport inhibition
C. Insufficient platelets and clotting factors
D. Low levels of serum calcium and high potassium
E. Infection risk due to multiple units transfused

Interactive case studies



ANAESTHESIA FACS CASES

FACS Med5 Two-Week Module - Logout

FACS

- Home
- FACS Cases
- Virtual Patient
- Feedback to Us
- Contact Us

Anaesthesia Topics

- Supplementary Material

Anaesthesia FACS Cases

Pre-operative assessment A 43-year old man is admitted for retinal detachment surgery. To be done first	Diabetes A 49-year-old diabetic man is admitted with a back abscess. To be done in week 2
Heart Disease A 25 year-old woman is admitted with sudden onset of lower abdominal pain. To be done in week 2	Laboratory data An elderly woman has a traumatic hip fracture. To be done in week 1
Spinal Anaesthesia An elderly hypertensive man with BPH requires TURP under Spinal Anaesthesia. To be done in week 1	Chronic Lung Disease An elderly man with chronic bronchitis is scheduled for a total abdominal gastrectomy. To be done in week 2
Pain Management Case A Mr. Chan is scheduled for abdominal surgery. To be done first.	Pain Management Case B Mr. Tong arrives in the ward after surgery. To be done second.
Pain Management Case C Mrs. Dong needs an abdominal operation. To be done last.	

Teaching & Learning Resource Centre
Room 103, Block A, Prince of Wales Hospital.

FACULTY OF MEDICINE
THE CHINESE UNIVERSITY OF HONG KONG

Virtual Patient

Section 1

**The
Pre-admission
Clinic**

Section 2A

**Admission
To
The Ward**



Publications on Medical Education by Anaesthesia at CU

1. Critchley LAH, Short TG, Buckley T, O'Meara ME, Gin T, Oh TE. **An adaptation of the objective structured clinical examination to a final year medical student course in anaesthesia and intensive care.** Anaesthesia. **1995**;50:354-358.¶
2. Cheung V, Critchley LAH, Hazlett C, Wong E, Oh TE. **A survey of undergraduate teaching in anaesthesia.** Anaesthesia. **1999**;54:4-12.¶
3. Shen J, Joynt GM, Critchley LAH, Tan IKS, Lee A. **A survey of the current status of intensive care teaching in English speaking medical schools.** Critical Care Medicine. **2003**;31:293-298.¶
4. Critchley LAH, Wong JWY, Leung JYC. **Virtual patients and undergraduate anaesthesia teaching.** Medical Education. **2008**;42:1120-1121.¶
5. Critchley LAH, Kumta SM, Ware J, Wong J. **Web-based Formative Assessment Case studies on a final year medicine 2-week anaesthesia course.** Anaesthesia and Intensive Care. **2009**;37:637-645.¶
6. Leung JCY, Critchley LAH. **Introduction of Virtual Patients onto a final year Anaesthesia Course: Hong Kong Experience.** Advances in Medical Education and Practice. **2011**;2:71-83¶
7. Leung JYC, Critchley LAH, Yung ALK, Kumta SM. **Evidence of virtual patients as a facilitative learning tool on an anesthesia course.** Adv in Health Sci Educ. (In Press Accepted Nov 2014)¶
8. Ho AM, Critchley LAH, Leung JYC et al. **Introducing final year medical students to pocket-sized ultrasound imaging: Teaching transthoracic echocardiography on a 2-week anesthesia rotation.** Teaching and Learning in Medicine. (In Press Accepted Oct 2014)¶

Very BASIC

Acute Medicine Course

Design

2-week module

Final Year Medical Students

Involves 170 students [All Year-5]

Teaching Materials

Book - *Course Manual*

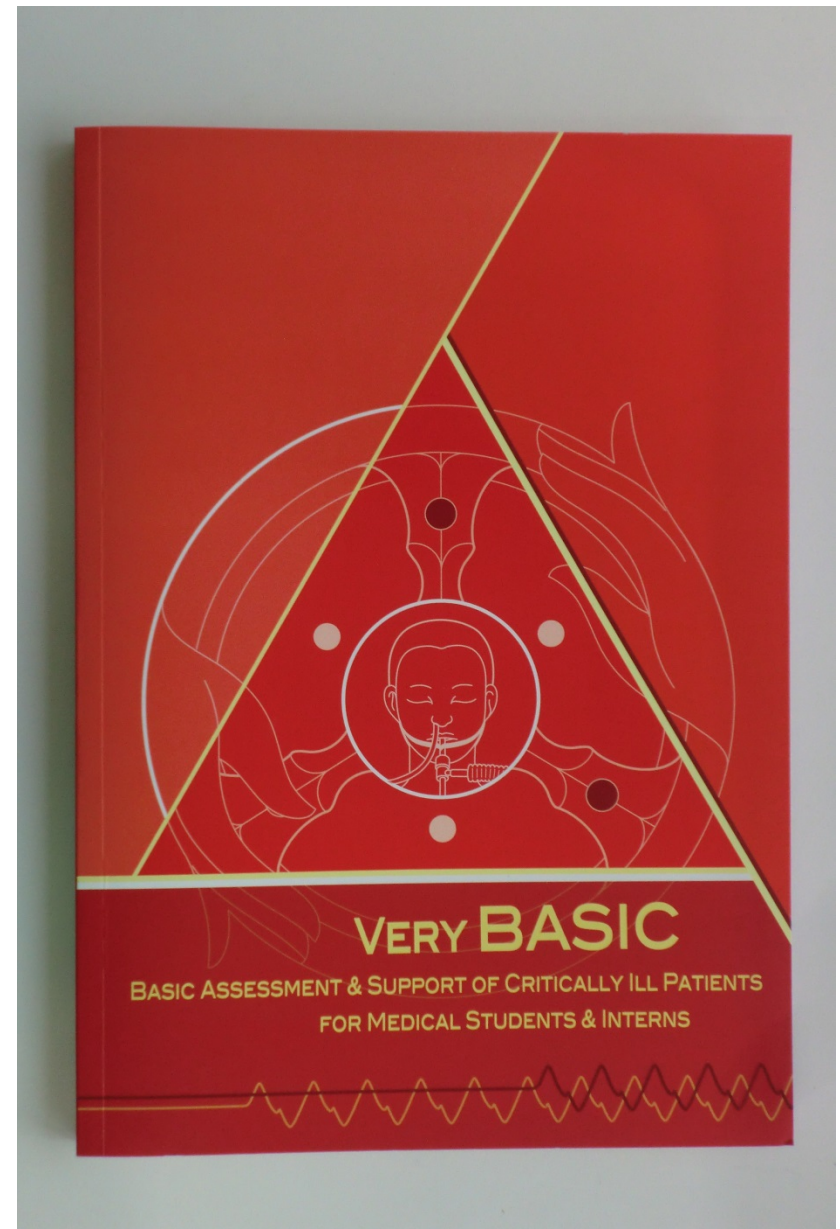
e-lectures – *20 to 30 min narrated slides with videos*

Case Discussions – *Tutorials*

Skill stations

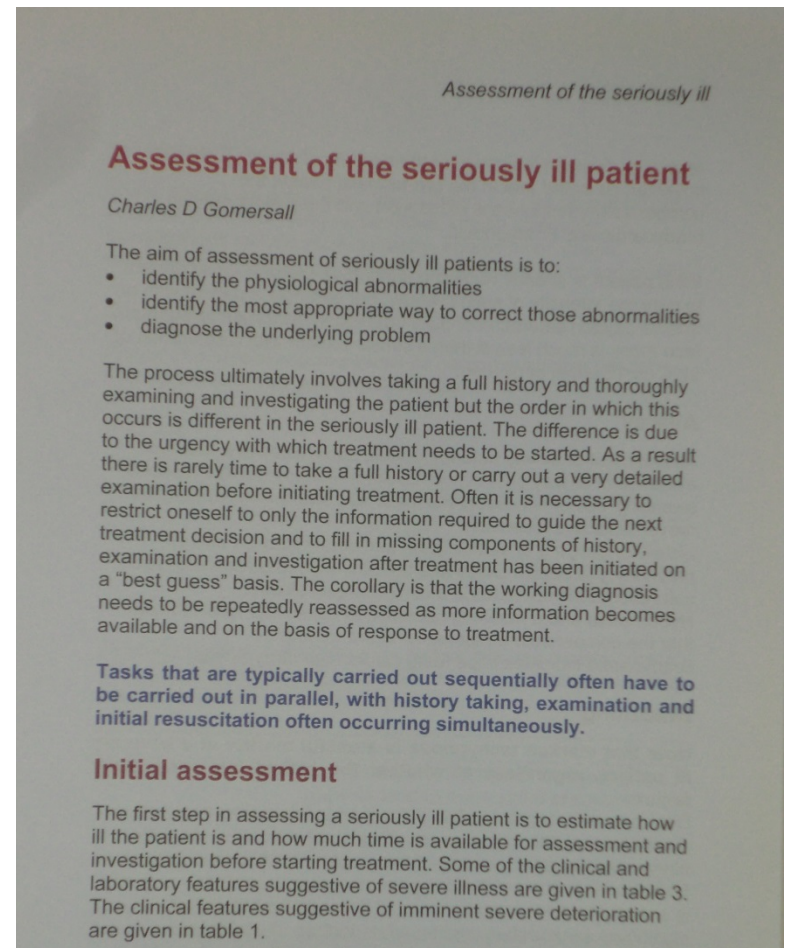
15 stations (groups of 6-students)

e-learning resources – MCQs, Quizzes
i.e. interactive radiology & arrhythmias



Curriculum - Essential Topics

- Assessment - critically ill
- Airway management & Obstruction
- Circulatory shock
- Basic haemodynamic monitoring
- Acute trauma
- Anaphylaxis
- Cardio-pulmonary Resuscitation



E-learning materials

- E-lectures
 - *Narrative with Videos*
- Formative Quizzes, MCQs
- **Mobile Application**
(Mac/Android)
- **FAQ - Frequently Asked Questions Forum**
- **Track student usage**
 - *used for assessment*
- **Platform – Moodle**



Practical skill stations

- Basic CPR skills
- Defibrillation test
- Airway skills
- Arterial blood sampling
- Blood cultures & Hand cleansing



Interactive Tutorials

SBAR – *Situation, background, assessment, recommendation*

- A. Video of communication: doctor speaking to patient's family
- B. Case scenario – expected to call for help
- C. Video of Crisis Resource Management





Thank you!



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