

# ULTRASOUND-ENHANCED EMERGENCY & CRITICAL MANAGEMENT CYCLE

26-27 January 2010

Alexandra Hospital, Singapore

## COURSE PROGRAMME

### 26 JAN 2010, TUESDAY

0800 – 0815 (15 mins)	<b><u>Welcome</u></b> Greetings, registration	
0815 – 0830 (15 mins)	<b><u>Introduction</u></b> “Point-of-care ultrasound in emergency and critical care medicine: the level 1 ultrasound-enhanced critical management cycle (USCMC)”	Dr. Francis Lee
0830 – 0900 (30 mins)	<b><u>Ultrasound Enhanced Technical Thinking</u></b> Image generation: ultrasound physics, technology, instrumentation Image acquisition: scanning techniques and procedures Image interpretation: sonographic semeiotics, tips and pitfalls Image administration: reporting, archiving and communications	Dr Bret Nelson
0900 – 0930 (30 mins)	<b><u>Ultrasound Enhanced Clinical Thinking : Airway</u></b> Airway ultrasound semeiotics and windows <b>Assessment</b> Airway obstruction, tracheal lesions and displacement, compressive hematomas, prandial status <b>Procedures and treatment</b> Endotracheal tube placement, cricothyroidotomy, nasogastric tube placement <b>Clinical protocol</b> Ultrasound enhanced airway management	Dr Francis
0930 – 1015 (45 mins)	<b><u>Ultrasound Enhanced Clinical Thinking : Breathing</u></b> Lung and pleural ultrasound semeiotics and windows <b>Assessment</b> Pleural effusion, pneumothorax, alveolar consolidation, interstitial syndrome, lung contusion, ARDS staging, emphysema, bullae <b>Procedures and treatment</b> Needle aspiration, chest tube placement <b>Clinical protocol</b> Ultrasound enhanced approach to a dyspneic patient (e.g. BLUE protocol)	Dr Dana Sajed
1015 – 1030 (15 mins)	Morning tea break	

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1030 – 1115 (45 mins)	<b><u>Ultrasound Enhanced Clinical Thinking : Circulation (Cardiac)</u></b> Cardiac ultrasound semeiotics and windows <b>Assessment</b> Qualitative assessment of cardiac performance and filling states, cardiac tamponade, pulmonary embolism, IVC assessment, PEA vs non-PEA states <b>Procedures and treatment</b> Pericardiocentesis, defibrillation and pacing <b>Clinical protocol</b> Ultrasound guided advanced cardiac life support	Dr Bret Nelson
1115 – 1145 (30 mins)	<b><u>Ultrasound Enhanced Clinical Thinking : Circulation (Arterial)</u></b> Arterial system ultrasound semeiotics <b>Assessment</b> Abdominal aortic aneurysm, thoracic aortic dissection <b>Procedures and treatment</b> Incorporation of US in chest pain / epigastric pain protocol.	Dr Dana Sajed
1145 – 1230 (45 mins)	<b><u>Ultrasound Enhanced Clinical Thinking : Circulation (E-FAST)</u></b> Pericardial, pleural and peritoneal ultrasound semeiotics and windows <b>Assessment</b> Free peritoneal, pericardial, pleural fluid <b>Clinical protocol</b> E-FAST enhanced trauma resuscitation <b>Procedures and treatment</b> Abdominal paracentesis	Dr Suthaporn Lumlertgul
1230 – 1330 (60 mins)	Lunch	
1330 – 1400 (30 mins)	<b><u>Ultrasound Enhanced Clinical Thinking : Circulation (Venous)</u></b> Venous system ultrasound semeiotics and windows <b>Assessment</b> Venous thrombosis in lower limb and other sites, other causes of lower limb swelling <b>Clinical protocol</b> An ultrasound enhanced approach to lower limb swelling <b>Procedures and treatment</b> <b>Ultrasound guided vascular catheterization of peripheral veins and central venous lines (internal jugular &amp; subclavian)</b>	Hong Kong Trainer

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### 26 JAN 2010, TUESDAY

1410 – 1440 (30 mins)	Hands-on training session I	Trainers
1440 – 1510 (30 mins)	Hands-on training session II	Trainers
1510 – 1540 (30 mins)	Hands-on training session III	Trainers
1540 – 1555 (15 mins)	Afternoon tea break	
1555 – 1625 (30 mins)	Hands-on training session IV	Trainers
1625 – 1655 (30 mins)	Hands-on training session V	Trainers
1655 – 1725 (30 mins)	Hands-on training session VI	Trainers
1725	End of day 1	

### Day 1 Hands-on training session

	Station I	Station II	Station III	Station IV	Station V	Station VI
	Cardiac	CVP	DVT	Cardiac	E-FAST	AAA
Trainer						
	Group A	Group B	Group C	Group D	Group E	Group F
	Group F	Group A	Group B	Group C	Group D	Group E
	Group E	Group F	Group A	Group B	Group C	Group D
	Afternoon tea break					
	Group D	Group E	Group F	Group A	Group B	Group C
	Group C	Group D	Group E	Group F	Group A	Group B
	Group B	Group C	Group D	Group E	Group F	Group A

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### 27 JAN 2010, WEDNESDAY

<p>0830 – 0900 (30 mins)</p>	<p><b><u>Ultrasound Enhanced Clinical Thinking : Circulation (Ectopic Pregnancy)</u></b></p> <p>Gynaecologic ultrasound semeiotics and windows</p> <p><b>Assessment</b></p> <p>Intrauterine pregnancy, fetal heart beat (1<sup>st</sup> trimester)</p> <p><b>Procedures and treatment</b></p> <p>?</p> <p><b>Protocol</b></p> <p>An approach to abdominal pain and per vaginal bleeding in the first trimester</p>	<p>Hong Kong Trainer</p>
<p>0900 – 0920 (20 mins)</p>	<p><b><u>Ultrasound Enhanced Clinical Thinking : Disability (Cerebral)</u></b></p> <p>Optic nerve sheath ultrasound semeiotics and windows, transcranial doppler</p> <p><b>Assessment</b></p> <p>Optic nerve sheath diameter, midline shift, cerebral arteries stenosis</p> <p><b>Clinical protocol</b></p> <p>Ultrasound enhanced neurological management</p> <p><b>Procedures and treatment</b></p> <p>Ultrasound guided lumbar puncture</p>	<p>Dr Suthaporn Lumlertgul</p>
<p>0920 – 1000 (40 mins)</p>	<p><b><u>Ultrasound Enhanced Clinical Thinking : Disability (Musculoskeletal and soft tissue)</u></b></p> <p>Musculoskeletal-soft tissue ultrasound semeiotics and windows</p> <p><b>Assessment</b></p> <p>Muscle-tendon-ligament tear, fractures, abscess, cellulitis, necrotizing fasciitis, foreign body localization.</p> <p><b>Procedures and treatment</b></p> <p>Removal of foreign body, needle aspiration of abscess, loco-regional analgesia (esp femoral nerve block)</p> <p><b>Clinical protocol</b></p> <p>?Ultrasound enhanced approach to a painful red limb.</p>	<p>Hong Kong Trainer</p>
<p>1000 – 1015 (15 mins)</p>	<p>Morning tea break</p>	

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### 27 JAN 2010, WEDNESDAY

1015 – 1055 (40 mins)	<p><b><u>Supplementary module: Hepatobiliary and Kidney ultrasound</u></b></p> <p>Hepatobiliary and renal ultrasound semeiotics and windows</p> <p><b>Assessment</b></p> <p>Cholecystitis, choledocholithiasis, urolithiasis, hydronephrosis, liver hematoma and lacerations, renal hematoma and lacerations</p> <p><b>Procedures and treatment</b></p> <p>Suprapubic catheterization</p> <p><b>Clinical protocol</b></p> <p>Ultrasound enhanced approach to abdominal pain.</p>	Dr Bret Nelson
1055 – 1110 (15 mins)	<p><b><u>Ultrasound Enhanced Resuscitation: Nontraumatic hypotension</u></b></p> <p><b>Clinical protocol</b></p> <p>A suggested ultrasound approach to a hypotensive medical patient</p>	Dr Dana Sajed
1110 – 1145 (35 mins)	<p><b><u>Interactive case studies and demonstration**</u></b></p> <p>Airway:</p> <p>Breathing:</p> <p>Circulation (cardiac):</p> <p>Circulation (arterial):</p> <p>Circulation (E-FAST):</p> <p>Circulation (venous):</p> <p>Circulation (Ectopic Pregnancy):</p> <p>Disability:</p> <p>Hepatobiliary and renal ultrasound:</p>	Dr Dana Sajed
1145 – 1245 (60 mins)	Lunch break	
1245 – 1330 (45 mins)	Hands-on training session I	Trainers
1330 – 1415 (45 mins)	Hands-on training session II	Trainers
1415 – 1500 (45 mins)	Hands-on training session III	Trainers
1500 – 1515 (15 mins)	Afternoon tea break	
1515 – 1600 (45 mins)	Hands-on training session IV	Trainers

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### 27 JAN 2010, WEDNESDAY

1600 – 1645 (45 mins)	Hands-on training session V	Trainers
1645 – 1730 (45 mins)	Hands-on training session VI	Trainers
1730 – 1740 (10 mins)	Adjourn to Seminar Room	Trainers
1740 – 1750 (10 mins)	<b><u>Ultrasound Enhanced Organizational and Social Thinking</u></b> Local and international development plans: WINFOCUS.	Dr. Francis Lee
1750 – 1800 (10 mins)	Closing of course, certificate presentation, photo-taking	All
1800	End of day 2	

### Day 2 Hands-on training session

	Station I	Station II	Station III	Station IV	Station V	Station VI
	Patient *Cardio	Mannequin: Femoral nerve block / Ectopic	Patient *Renal / Hepatobil	Patient *Free peritoneal fluid	Patient *Cardio	Patient *Pulmonary
Trainer						
	Group A	Group B	Group C	Group D	Group E	Group F
	Group F	Group A	Group B	Group C	Group D	Group E
	Group E	Group F	Group A	Group B	Group C	Group D
	Afternoon tea break					
	Group D	Group E	Group F	Group A	Group B	Group C
	Group C	Group D	Group E	Group F	Group A	Group B
	Group B	Group C	Group D	Group E	Group F	Group A

\*System to be examined may be changed due to patient related factors.