

INSTITUTE OF ADVANCED NURSING STUDIES
Advanced Specialty Training in Cardiac Care Nursing
Cardiovascular implantable electronics devices care (2024/25)
(28 Aug 2024 – 31 March 2025)

Course Book

The Nursing Council of Hong Kong has approved the Hospital Authority as a provider of Continuing Nursing Education (CNE) for the period since 2005.

Date : 28/08/2024 – 31/3/2025
Mode of learning : Lecture, Workshop & Clinical Practicum

AIM(S)

1. To enhance the competence of nurses who are working or preparing to take up the roles and responsibilities in cardiac device nurse clinic and/or related service
2. To equip nurses with knowledge and skills in independent assessment and management, with an intention for provision of clinical services involving care of cardiac device patients.

INTENDED LEARNING OUTCOME(S)

Upon completion of the course, the participants should be able to:

1. Describe the physiology and pathophysiology of cardiac arrhythmias and indications for different types of CIEDs
2. Describe the basic parameters and science of cardiac devices
3. Understand the basic trouble shooting and describe the management
4. Realize the normal and pathological changes on CIED care and management
5. Understand the principles of perioperative & pre-Magnetic resonance imaging (MRI) CIED and handling for the deceased
6. Perform education and counselling on living with a device for patients, families or care-givers
7. Take up the nursing roles in providing standard practice in CIED management in nurse clinic
8. Interpretation & Analysis of CIED interrogation report, basic electrocardiography and radiology
9. Assess CIED wound and manage complications after implantation
10. Perform health assessment, design and implement nursing care for CIED patients; monitor complications and provide appropriate nursing management independently (including appropriate management or adjustment of CIED settings when indicated)
11. Evaluate clinical outcomes for patients receiving CIED care

TARGET PARTICIPANTS

RN or above ranks

CLASS SIZE

21

LANGUAGE MEDIUM

Both English and Cantonese will be used.

ENTRY REQUIREMENTS

1. Registered nurses with valid practicing certificates issued by the Nursing Council of Hong Kong and have not less than 3 years post-registration experience.
2. Completed a Post Registration Certificate Course in Cardiac Care Nursing or *equivalent.
3. Priority will be given to nurses currently working in clinical Cardiac Care Specialty for more than 36 months.

**Equivalent: e.g. Master of Science in Cardiology, Master of nursing (critical care) etc.*

PRE-REQUISITES

1. E-learning programme from HA e-Learning Centre (eLC):
 - Cardiac Anatomy and Applied Physiology; and
2. Classroom-based program
 - Advanced Cardiac Life Support (ACLS) (American Heart Association)
 - ECG course of not less than 10 hours in duration (Class-room based or zoom based program)

EXEMPTIONS

Participants fulfilled entry requirement and also has obtained qualifications in #recognized training can be exempted from PART I

#Recognized training:

- Certified Cardiac Device Specialist training from IBHRE (International Board of Heart Rhythm Examiners or NAPSE (The North American Society of Pacing & EP)
- UCH or KEC Certificate Course on CIED Care for Cardiac Specialty Nurses

COURSE DESIGN

Mode	Duration	Date	Venue
Part I: Theory + workshop	3 Days	28 Aug 2024 6 Sept 2024 13 Sept 2024	G09, G/F, Block M, KH 106, 1/F, Block M, KH G09, G/F, Block M, KH
Part II: Clinical Practicum	10 sessions within 6 months (4 hours per session; 1 – 2 sessions per week)	From 2 October 2024 to 31 March 2025	Clinic with CIED service

ASSESSMENT

Part	Component	Requirements	Passing Criteria:
Part I	Theory	One-hour examination for 40 MCQs	50%
Part II	Clinical Practicum	Conducted in hospital with CIED service 10 sessions within a period of 6 months Log Cases (Individual practice) Supervised practice in 3 areas by mentors: i) Wound care: Observe and practice wound care for at least 10 cases ii) Education and counselling: Observe and practice education and counseling for at least 10 cases iii) Clinical assessment and interventions: Observe and practice clinical assessment and interventions, including interrogation and mode change, for at least 30 cases	Log Cases in 10 sessions within 6 months

TRAINING CONTENT**Fundamentals of CIED Care, Applied Science and Technology**

- Anatomy and Physiology of Cardiac arrhythmia. Types of CIEDs and technology
- Basic parameters (capture & sensing, mode selection) & Science (Lead status, impedance, battery,)
- Basic rates: Timing cycles, Rate sensors, MSR & MTR, Upper rates behavior & mode switching
- Basic trouble shooting and management: under-sense, over-sense, non-capture, fusion and pseudo-fusion

Clinical Assessment

- Electrocardiography (ECG) and Radiology of CIEDs. Differentiate physiologic pacing and sites
- Compare Pacemaker ECG with intra-cardiac ECG (IEGM), events interpretation and management
- Interpretation & Analysis of CIED interrogation report
- Hands-on practice on Programmers (Basic checking and Change mode)

Patient and Device Follow-Up Management

- Tailored cardiac device settings to patient
- Wound and Complications management. Intra-operative from physician's perspectives
- Peri-operative & Pre-MRI CIED management. CIED handling for the Deceased
- Counselling on Living with CIED, Electro-Magnetic Interference (EMI) and the Precautions
- Clinical application: CIED Cases Sharing and Discussion

AWARD OF CERTIFICATE

An electronic certificate of achievement will be awarded to those participants who have attended all parts of the course.

CNE POINTS

This course is equivalent to 41 CNE points (To Be Confirmed)

Theoretical input: 21 hours (CNE: 21 points)

Clinical Practicum: 40 hours (CNE: 20 points)

COURSE DIRECTOR

Ms. Rita LAM
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COURSE COORDINATOR

Ms. LEUNG Yuen Wa
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Nurse Consultant (Cardiac Care), KEC
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ENQUIRY

Ms. Rennie HO
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PROGRAM COMMITTEE

Cluster	Hospital	Name	Title
HAHO	-	Ms. Selina NG	Dep Head of IANS
HAHO	-	Ms. Rita LAM	M(N), HOCS & Course Director
HKEC	RTSKH	Ms. Gloria TSE	DOM(M&G, ICU)
HKEC	PYNEH	Ms. Eva LO	DOM(Med)
HKEC	PYNEH	Mr. Terence LEE	NC(Cardiac Care)
HKWC	GH	Ms. M Y LEE	DOM(CMU, PMU, OPH & SOPD)
HKWC	QMH	Mr. YIP Chun Ki	DOM(Med)
HKWC	QMH	Ms. CHAU Mei Yi	NC(MED/Cardiac Care)
KCC	KWH	Ms. Carol CHUNG	DOM(M&G)
KCC	QEH	Ms. LEUNG Fung Yee Cindy	DOM(M&G)
KCC	QEH	Ms. CHAN Miu Ching	NC(Cardiac Care)
KEC	TKOH	Ms. KWOK Man Kit	DOM(MED Specialties Services)
KEC	UCH	Ms. NG Yuen Bing	DOM (M&G)
KEC	UCH	Ms. TSANG Wai Yi	DOM(M&G)
KEC	UCH	Ms. LEUNG Yuen Wa	NC(Cardiac) & Course coordinator
KWC	PMH	Ms. YIK Wai Man Jessica	DOM (Med & Geri)
KWC	PMH	Ms. CHIU Sin Hing	NC(Cardiology)
KWC	CMC	Ms. WONG Wai Yee Teresa	DOM(MG)
KWC	YCH	Mr. W P LOK Vincent	DOM(MED)
NTEC	NDH	Mr. Terry KO	DOM(MED)
NTEC	PWH	Ms. YIU Lai Ping Alice	DOM (MED)
NTEC	PWH	Ms. CHEUNG Heung Wan	NC (Cardiac Care)
NTEC	AHNH	Ms. TAM Yee Kwan Irene	DOM(MED)/(ICU)
NTWC	POH	Ms. YUEN Wing Hon	DOM(M&G)
NTWC	TMH	Ms. CHI Chui Yee	DOM(M&G Acute)
NTWC	TMH	Ms. MOW Hoi Ching	NC(Cardiac Care)

WORKGROUP MEMBERS

Hospital	Name	Rank
UCH	Dr. YUE Chiu Sun Sunny	Head and Consultant of Division of Cardiology & advisor
TKOH	Dr. LEUNG Chun Yu Gary	Consultant Cardiologist & advisor
UCH	Ms. LEUNG Yuen Wa	KEC NC(Cardiac) & Course Coordinator
PMH	Ms. CHIU Sin Hing	KWC NC(Cardiac)
QMH	Ms. CHAU Mei Yan	HKWC NC(Cardiac)
TMH	Ms. MOW Hoi Ching	NTWC NC(Cardiac Care)
RTSKH	Ms. Gloria TSE	DOM(M&G, ICU)

MENTOR LIST

<u>Cluster/Hospital</u>	<u>Name</u>	<u>Rank</u>
HKWC/GH	Ms. Wong Bik Yi	APN(CMU)
HKWC/GH	Ms. Chan Sze Wan Calista	APN
KEC/UCH	Ms. Leung Yuen Wa	NC (Cardiac)
KEC/UCH	Ms. Kwan Kit Ying	APN(MED)
NTWC/TMH	Ms. MOW Hoi Ching	NC(Cardiac Care)
Other Hospitals with CIED service	Cardiologists	

SPEAKER LIST**Medical Speakers**

<u>Cluster/Hospital</u>	<u>Name</u>	<u>Rank</u>
HKWC/GH	Dr. Ian LING	AC(CMU)
KCC/QEH	Dr. Y W CHENG	AC(MED)
KEC/TKOH	Dr. LEUNG Chun Yu	CONS(MED)
KEC/UCH	Dr. Alexson LAU	CON(M&G)
KEC/UCH	Dr. YUE Chiu Sun	CON(M&G)
NTEC/PWH	Dr. CHAN Chin Pang	Deputy COS (MED)
NTWC/TMH	Dr. IP Ling Ling	Asso Cons(M&G)

Nursing Speakers

<u>Cluster/Hospital</u>	<u>Name</u>	<u>Rank</u>
HKWC/GH	Ms. WONG Bik Yi	APN(CMU)
KEC/UCH	Ms. KWAN Kit Ying	APN(MED)
KEC/UCH	Ms. LEUNG Yuen Wa	NC(Cardiac)
NTWC/TMH	Ms. MOW Hoi Ching	NC(Cardiac Care)

Guest Speakers

<u>Company</u>	<u>Name</u>
Abbott	Mr. Patrick HO
Biotronik	Ms. Christina KWONG
Medtronic	Mr. Bosco LEUNG
BSCI	Mr. Bosco SHIU

TIMETABLE

Day 1 28 Aug 2024 (Wednesday)

Time	Content	Invited speakers / facilitators	Hr (s)
0900-0930	Introduction on CIED Care Revision on Cardiac arrhythmia	Ms YW Leung Yor (NC Cardiac, KEC)	0.5
0930-1030	Types of CIEDs and technology Background knowledge of current clinical indications for different CIEDs	Ms HC Mow (NC Cardiac, NTWC)	1
1030-1045	Break		
1045-1200	Cardiac device parameters and settings (1) - Basic parameters (capture & sensing, mode selection) - Basic trouble shooting and management: under-sense, over-sense, non-capture, fusion and pseudo-fusion - Base rates, MSR & MTR; other rates (Hysteresis; rest rate) & upper rate behavior - Physiology pacing & Pacemaker syndrome - Promotion of intrinsic conduction (AICS, VIP, MVP, AV hysteresis, dynamic AVD, AV search+)	Ms YW Leung Yor (NC Cardiac, KEC)	1.25
1200-1245	Cardiac device parameters and settings (2) - Basic science (Lead status, impedance, battery), Ohm's law Special features (Boston Scientific)	Mr Bosco Shiu (BSC representative)	0.75
1245-1345	Lunch		
1345-1430	Cardiac device parameters and settings (3) - Stimulating threshold & Strength duration curve - Capture management & Autocapture Special features (Medtronic)	Mr Bosco Leung (Medtronic representative)	0.75
1430-1515	Cardiac device parameters and settings (4) - Rate sensors & optimization Special features (Biotronik)	Ms Christina Kwong (Biotronik representative)	0.75
1515-1530	Break		
1530-1630	CIED Care in Clinical Practice under different scenarios: Peri-operative; Pre-MRI; Peri-resuscitation	Dr C S Yue (Cons, UCH)	1
1630-1730	Patient Follow-up in nursing perspective (1): - Tailored device settings to patient - Device settings Optimization & Evaluation	Ms YW Leung Yor (NC Cardiac, KEC)	1

Day 2 6 September 2024 (Friday)

Time	Content	Invited speakers / facilitators	Hr (s)
0900-1000	Timing Cycles: - Single vs Dual chambers timing; Atrial & Ventricular-based timing - VA-interval, AVD, PVARP, PVAB, FFRW, Cross-talk, PMT - Upper rate behaviors & mode switching Special features (Abbott)	Mr Patrick Ho (Abbott representative)	1
1000-1100	Introduction on ICD - ICD detection, therapy and discrimination	Dr Gary Leung (Cons, TKOH)	1
1100-1115	Break		
1115-1215	Physiologic pacing Introduction on CRT: BiV, LV, RV pacing	Dr Y W Cheng (AC Med QEH)	1
1215-1315	Lunch		
1315-1415	CIED CXR and ECG interpretation	Dr TK Lau (Cons, UCH)	1
1415-1515	Intra-operative from Doctor's perspective: CIED implantations, lead placement, incision & suture Wound and Complications management	Dr LL Ip (AC, TMH)	1
1515-1530	Break		
1530-1630	Patient Follow-up in doctor's perspective - Interpretation on CIED functional report - General trouble-shootings & management	Dr CP Chan (Cons, PWH)	1
1630-1730	Patient Follow-up in nursing perspective (2): - Basic pacemaker ECG, events interpretation and management - Experience sharing on wound management	Ms YW Leung Yor (NC Cardiac, KEC)	1

TIMETABLE

Day 3 13 September 2024 (Friday)

Time	Content	Invited speakers / facilitators	Hr (s)
0900-1000	Living with CIED, Electro-Magnetic Interference (EMI) and Precautions CIED handling for the Deceased	Ms KY Kwan (APN, UCH)	1
1000-1100	Sharing the basics on CIED Remote monitoring	Dr Ian Ling & Ms. BY Wong	1
1100-1115	Break		
1115-1215	Clinical application: CIED Cases Sharing and Discussion	Ms YW Leung Yor (NC Cardiac, KEC)	1
1215-1315	Examination (40 MCQs)		1
1315-1415	Lunch		
1415-1545	Hands-on practice on Programmers (Basic checking and Change mode)	Ms KY Kwan (APN, UCH), in-charge facilitator	1.5
1545-1600	Break	Ms HC Mow (NC Cardiac, NTWC)	
1600-1730	Hands-on practice on Programmers (Basic checking and Change mode)	Ms. BY Wong, GH Ms. SW Chan Calista, GH Four representatives from CIED companies Nurses facilitators & Sales representatives	1.5