NEWSLETTER

Hong Kong Association of Critical Care Nurses Limited (HKACCN Ltd)

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香港危重病學護士協會有限公司
Hong Kong Association of Critical Care Nurses Ltd.

Message from the President

LEUNG Fung Yee
President
HKACCN

Dear Members,

2018/19 was a fruitful year of Hong Kong Association of Critical Care Nurses (HKACCN). We have made unremitting efforts to fulfill our Association's objectives to enhance the competence of our nurses in critical care. To achieve it, we sincerely thank the Professional Development Committee led by Ms Vivien LAI, Ms Tracy LI, and Ms Clares LUK. On top of the fundamental critical care nursing programmes, they strived to furnish our nurses with all-round knowledge and strengths to work in today's challenging environment. Here, I would like to highlight some of the key activities in the past year.

On 11 Jan 2019, we had the privilege to invite Mr. Alex LAM, Solicitor and Chairman of Hong Kong Patients' Voices, to give us a seminar on the topic of 'Handling Medical Incidents from a Legal Perspective'. Mr Lam's expertise in the legal profession and his experience in handling complaints has deepened our understanding of managing medical incidents.

To broaden our exposure in the field of big data, we were honored to be a supporting organization to organize a conference on 'The Era of Big Data for Modern Healthcare' hosted by the Management Society for Health Care Professional on 16-17 November 2019. It was also a great platform for networking and sharing. I trust that members who joined the conference have learnt from the rich topics of applying big data in healthcare.

To increase public's awareness about septicaemia, we were delighted to have joined the Hong Kong Society of Critical Care Medicine in a health exhibition titled '2019 年健康展覽活動： 敗血病知多 D' on 14-15 September 2019 in Lok Fu Centre. It was very meaningful that many of our ICU doctors and nurses, and citizens had participated in and supported this community event.

As an official training site of resuscitation programmes, we have renewed the Memorandum of Understanding (MOU) with the American Heart Association – Laerdal Alliance Laerdal International Training Centre (Greater China) for organizing the programmes of American Heart Association. We have also replaced old equipment from time to time and adding new ones to maintain highest teaching quality of our Association.

2019 年健康展覽活動： 敗血病知多 D

There was an abundance of events in the last year to be shared. Yet, the 2017-2019 term of Board of Directors is due to expire. We have successfully elected the new directors to serve our members for the coming two years. Herewith, I would like to take this opportunity to present the new Board of Directors (2019-2021) to you and sincerely thank the current Board of Directors (2017-2019) for their tremendous contributions to the Association and the nursing profession.

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Nursing perspective in delayed decannulation of peripheral VA-ECMO

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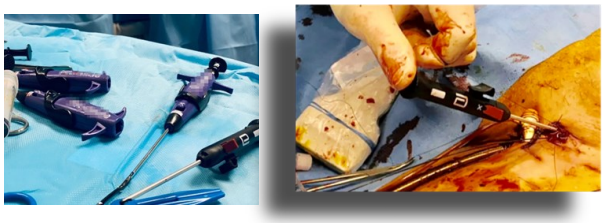
Background

Veno-Arterial Extracorporeal Membrane Oxy-genation (VA-ECMO) is a "bridge-to-decision" therapy. It is one of the mechanical circulatory life support devices for patients with various causes of refractory cardiogenic shock (Takayama at al., 2014). The main indication for VA-ECMO may be medical cardiogenic shock associated with acute

myocardial infarction, fulminant myocarditis, acute exacerbation of severe chronic heart failure, drug intoxication, hypothermia, and acute circulatory failure due to intractable arrhythmia. The therapy may also be used for patients with cardiac failure after cardiotomy or cardiac or pulmonary transplantation, or cardiac arrest requiring cardiopulmonary resuscitation (Ortuno at al., 2019).

In adults, there are two possible VA-ECMO configurations: central VA-ECMO (cV-A ECMO) and peripheral VA-ECMO (pV-A ECMO). For patients in cardiac arrest, by making the peripheral cannulation in particular femoral vessels, pV-A ECMO offers faster and easier accessibility at the bedside (Bonicolini at a., 2019). However, arterial femoral cannulation can cause ipsilateral limb ischemia related to reduce blood flow and oxygen delivery to the distal leg below the insertion point of cannula (Bonicolini at al., 2019). Yang et al., (2018) reported lower incidence of limb ischaemia (8.6%), while Tanaka et al., (2016) found 46 out of 139 (33%) patients with limb ischaemia occurred and required fasciotomy, even in the presence of a prophylactically inserted distal perfusion cannula (DPC).



It is well recognized that VA-ECMO bares potential damage on major vessels. In order to minimize undesired adverse effects to the neurological, gastrointestinal or renal systems, ICU doctors precisely initiate VA-ECMO de-cannulation when patient's cardiac function has improved. In our unit, the only option for VA-ECMO decannulation is to perform it in a surgical manner by vascular specialists in the operation theatre. The ECMO team including ICU doctors and ICU nurses are responsible to facilitate and ensure safe transportation of the critically ill patients to and return from the operation theatre, and to provide ECMO support during the decannulation process. Broman & Frenckner (2016) conducted a retrospective study about ECMO inter-hospital transport from a single centre, which found that 2.2% (n = 452) of transport had encountered immediate threats like clotting of ECMO circuit; inadequate ECMO (VV to VA); system/pump change; oxygenator clot; cannula clot; and air into circuit from intravenous access. In order to ensure patient safety, potential adverse events are not only the paramount concern for ECMO care, but also the burden to nurses in the ECMO team.

Intensive care nurses play an important role in caring for patients with complex health conditions who require ECMO support. Nurses in ICU are responsible to keep cardiogenic stability of the patients by maintaining an effective ECMO circuit, and to prevent complications like limbs ischaemia by frequent and precise monitoring (Rushton, 1990). High workload has been identified as a major concern in health care, in particular in ICUs. Patient care in the ICU is characterized by highly demanding tasks of support to patients for urgent therapeutic intervention (Hoonakker at al., 2011). Although there is no previous quantitative or qualitative study performed regarding the workload and stress of ICU nurses who care for patients with VV-ECMO or VA-ECMO support, the physical and psychological impact are not to be ignored.

Percutaneous closure device is commonly and conventionally used by vascular specialist for vascular repair in the operation theatre or catheterization laboratory. A trial practice of VA-ECMO decannulation by applying the percutaneous closure device showed evidence in improving the problems of prolonged decannulation process and transportation risks. The trial led to a positive impact on ICU nurses' perspective in alleviating the workload stress from caring of patients with ECMO support. The doctors and nurses of ICU ECMO team are trained for enhancing their knowledge and technical skills by conducting a skill-based simulation training programme. A procedure checklist is also developed to streamline the workflow of preparation and procedure.

Patients who fulfil the selection criteria and assessment of vessel condition by ultrasonogram is selected for VA-ECMO decannulation with percutaneous closure device. This is performed at bedside by doctors of the ICU ECMO team with the support of a vascular surgeon. It is anticipated that the risk of critically ill patient transportation was reduced while nursing manpower can retain in ICU to cope with unforeseeable adverse events, such as an inadvertent ECMO circuit clot.

Method

After ethical approval of the cluster's Institutional Review Board (IRB), a retrospective review of the findings from nursing audit about 'delay decannulation of VA-ECMO' during 2015 to 2018, and the outcomes of a trial practice of 'VA decannulation by using percutaneous closure device' during September 2018 to February 2019 at the ICU of Queen Elizabeth Hospital was conducted for the study.

Results

The review of audit results of 40 patients on VA-ECMO showed that the median time of delay decannulation was 24 hours. The major factors of

delay decannulation were operation theatre (all 40 patients), and surgeon availability (19). Other factors included ICU physician factors (16), ICU doctor and ICU nursing manpower (14), VA-ECMO decannulation decision making that fell on Sunday or public holiday (12), patient factors related to physiological fitness for transport (11), and special request by patients' relatives (4). Other reported factors contributed for delay of VA-ECMO decannulation included pulmonary haemostasis and the need for emergency operation; urgent conversion from VA-ECMO to VV-ECMO for physiological deterioration (shifted from cardiogenic to pulmonary problem); and the necessity of collaboration with cardio-thoracic specialist in the same operation session for decannulation that postponed the decannulation procedure. When surgical decannulation was successfully arranged, report showed that the median time was 3 hours for 40 patients who received surgical decannulation inside operation suites. In our unit, 1-2 ICU ECMO team nurses were usually deployed from ICU to escort and assist in managing the patients during decannulation process in the operation theatre. The manpower of ICU was relatively affected for about 3 hours.

The review also identified complications during the time of delay decannulation that increased the workload of ICU nurses. Those complications included severe blood oozing from ECMO cannula site that required frequent changing of site dressing; reduced ECMO circuit flow that nurses needed to have close monitoring and precisely inform doctors for resolving intervention; and abrupt discontinuation of circuit flow that demanded urgent preparation of new ECMO circuit to maintain patient's haemodynamic stability.

Regarding the use of percutaneous closure device in assisting VA-ECMO decannulation at the bedside, four patients on VA-ECMO were recruited for the trial over the period from September 2018 to February 2019. Average decannulation time by percutaneous closure device was found to be 55 to 65 minutes, and the mean blood loss control was 213 ml. The trial found that decannulation was also performed on public holidays that no delay and unavailability of operation theatre were founded. Furthermore, there is no immediate complications like wound haematoma or limb ischaemia observed.

Conclusion

Prolonged decannulation process precipitated haemodynamic instability, which demanded additional nursing care for bleeding at the catheter insertion site or other sites which would require frequent changes of dressing materials, direct pressure for achieving haemostasis, subsequent blood products transfusion, and fluid resuscitation to maintain ECMO circuit flow. The workload and additional stress burdened nurses the most and usually being neglected. Nurses in ICU also faced other demands and stress such as manpower deployment for outside ICU work; and risk management for safe transportation of critically ill patients to operation theatre. It is believed that the stress level is higher than caring for general ICU patients.

The trial of bedside decannulation of VA-ECMO with the use of the percutaneous closure device on four ICU patients found that the decannulation process based on puncture access haemostasis was achieved with lesser time than by surgical access. For the benefits of patients, the consequences of harmful outcomes like worsening of coagulopathy were observed. The focus of nursing care on haemostasis could then be spared with other nursing support or interventions. Without a comparison group, bedside VA-ECMO decannulation appeared to allow nurses spending less preparation time for surgical decannulation and reduce the risk of transporting critically ill patients out of ICU to the operation theatre. The time of decannulation process was also reduced from a mean of 3 hours to 55-65mins. Clinically, the practice of bedside decannulation of VA-ECMO with the use of the percutaneous closure device may be considered as an enhancement to nursing manpower for other unforeseeable and unstable conditions in ICU during the decannulation procedure. The results also suggested possibly positive impact to both patient's physiological outcomes and work-related stress of ICU ECMO team of doctors and nurses. Well-designed experimental studies of VA-ECMO decannulation with percutaneous closure devices is required to substantiate the initially observed results out of this review. Studies on the potential influence to nursing work in ICU is also recommended for the future.

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Tele-CU — My Experience in the USA

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During my overseas placement in Florida, USA, I visited several ICUs in West Palm Beach and followed some Nurse Practitioners. In this article, I share with you some information about an interesting unit, tele-ICU, during my visit in a tertiary hospital.

In recent years, due to medical advances, aging population, and expanding, there has been an increase in patients who need intensive care that created large demand for ICU nurses and physicians (Breslow, 2007). Not only patients, nurses are aging as well. A projection for 2010 to 2020 showed that over 40% of the registered nurses working in the USA would be over 50 years old, and many nurses are expected to retire (Hoonakker et al., 2013). Furthermore, quite a number of hospitals are lacking of patient volume or financial resources to justify hiring dedicated physicians and ICU nurses (Chapman, Gattas & Suntharalingam, 2004). For these reasons, tele-ICU has been initiated and developed.

Telemedicine has been around for almost 50 years and a surge of interest was observed in 1990s. Since then, telemedicine programs have expanded internationally at an accelerated rate (Bashshur & Shannon, 2009). The initial idea of a tele-ICU consultation actually emerged in the late 1970s, and soon major development in the 1990s brought the concept of tele-ICU to the bedside (Breslow, 2007). Tele-ICU offers a solution to many problems by enabling a relatively small number of physicians and nurses to oversee the care of a larger number of ICU patients.

Tele-ICU typically utilizes various forms of health information technologies to allow off-site physicians and critical care nurses to assist in the management of critically ill patients, and to support the sharing of information between the tele-ICU and remote ICUs (Chapman, Gattas & Suntharalingam, 2004; Hoonakker et al., 2012). It provides '24 hours a day, 7 days a week' care, support and advice from a distance to remote ICUs. One tele-ICU may provide support to several ICUs in different hospitals. Technologies allow specialist physicians and nurses in the tele-ICU to observe and monitor patients through medical devices in the patient room with cameras, and to communicate with bedside intensive care nurses and healthcare providers who are in the ICUs of remote areas. Tele -ICU provides a remote monitoring system that adds an additional layer of support for critically ill patients during the day, and protecting the patients during the most vulnerable time period at night (Goran & Mullen-Fortino, 2012; Mullen-Fortino, Sites, Soisson & Galen, 2012). Although a tele-ICU is not a substitute for direct and on-site physicians, the additional information and clinical expertise immediately available through the tele-ICU enhances the quality of care and improves the safety for patients (Mullen-Fortino et al., 2012).

The tele-ICU staff focus on immediate changes in patient physiology, as well as evolving trends in vital signs and laboratory values. The unique, quieter atmosphere creates an environment in which the tele-ICU staff are able to recognize subtle changes more rapidly because of less frequent interruption and immediate access to patient data (Venditti, Ronk, Kopenhaver & Fetterman, 2012). The tele-ICU team, "like a second set of eyes", is able to assist and augment the care processes of bedside team by providing them an additional level of support and clinical surveillance on each ICU patient (Goran, 2010).

There is much evidence showing that hospitals in the USA are increasingly adopting tele-ICU coverage. A systematic literature review and meta-analysis of 13 studies that covered more than 41,000 patients (Young, Chan, Lu, Nallamothu and Sasson, 2011) found that the tele-ICU coverage was associated with a significant reduction in both ICU mortality and length-of-stay (LOS). The emergence of tele-ICU may have also provided an opportunity for highly skilled and experienced ICU nurses to continue using and developing their critical care knowledge and skills in a high quality work environment (Hoonakker et al., 2012). Tele-ICU nurses may also provide support to ICU nurses when dealing with high demands and stress (Hoonakker et al., 2012).

Another benefit of tele-ICU is its return on investment (ROI) that relates to cost avoidance. The New England Healthcare Institute and the Massachusetts Technology Collaborative (2010) published an analysis of tele-ICU technology and suggested that "If tele-ICU systems were broadly implemented in Massachusetts the potential benefits to payers could amount to approximately $122 million annually" (p.37). In addition to less payment, total implementation costs of developing a new tele-ICU in a hospital (USD7,120,000) were recovered within 1 year, which is solely recoverable from the saving through reduction in LOS. Although tele-ICU has not been introduced to Hong Kong, it may, to a certain degree, be feasible to adopt in the near future.

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My ICU Diary 深晴密語

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Background

Apart from physical suffering, critically ill patients and their families are always facing psychological impact. Papathanassoglou (2010) stated that pain, noxious stimuli in ICU, fear, anxiety, isolation, loss of control, and negative expectations are the major mediators of the high levels of stress. Adverse psychological outcomes such as delirium, post-traumatic stress disorder, and depression have been reported (Nydahl, Backman, Bereuther & Thelen, 2013).

Provision of psychological support to patients is one of the nurses' roles. Intensive care diaries have been developed since the 80s to support patients and help families to cope (Phillips, 2011). Gjengedal, Storli, Holme, and Eskerud (2010) conducted a study in Norwegian ICUs which found that ICU diary had played both therapeutic and caring roles in closing the possible memory gap, and helped the patients to find meaning in their experience.

ICU Diary: A Pilot Poject

"Writing ICU diary" was firstly introduced as a pilot Continuous Quality Improvement (CQI) project in 2016 in Yan Chai Hospital ICU. Since it is a brand new psychological intervention in our ICU, we have developed a diary program and used a qualitative descriptive design to explore whether writing patient diary in ICU is useful in promoting psychological support to our ICU patients and their families.

During the initial stage, literature review was performed to identify the psychological needs of ICU patients and family. The Diary Team was set up, which consisted of four members (all ICU nurses), to facilitate the project. "My ICU Diary" design was a refreshing, colorful, and easy to use A5 booklet. The first page started with the purpose: to help patients and families to free up emotions, reduce worries, and promote nurse-patient communication. The booklet consisted of seven-day entries. On each day, it provided space for patients, families and nurses to make entry and lists of activities to be done with patients, like listening music, body massage, and praying. Two pages were designed for drawing, photos, or poems.

As writing the diary for patient was a brand new nursing care activity. To make the implementation smooth and efficient, briefing was delivered to all ICU nursing staff by The Diary Team during handover. A flowchart and briefing tips were prepared to guide nursing staff for the implementation.

All nurses were encouraged and supported to initiate the introduction and writing of ICU diary to patients and families. Patients who were endotracheal intubated and experienced an ICU stay for more than 24 hours were recruited in the project. After the stay of more than 24 hours, patients were stabilized. The Diary Team or nurses would consider to approach the patients or families with the use of diary. Prior to the selection of patient, permission was obtained from the head of ICU department. Verbal consent was obtained from patients or families before participation.

The "My ICU Diary" file, which consisted of flowchart, briefing tips, and a diary booklet, was placed in the documentary room. It was easily accessible for nurses. When the patients or the families agreed to participate in writing the diary,

the file was placed in patient's medical file for his/her entire ICU stay. Nurses would encourage them to make entries during the visiting hours, thereby facilitating a more fruitful communication with patients. The families were also informed that they could seek help or withdraw from the project at any time.

A total of eleven patients' families were approached. Eight of them agreed to involve in writing dairy for the patients. The reasons of not participating included inappropriate timing (sudden deteriorating condition of the patients), and refusal of families.

When patients were ready to discharge from ICU, the diary was returned to patients or the families. A questionnaire survey with interview was conducted with patients, family members who participated in writing the diary, and nurses respectively to explore and evaluate their experiences. As most of the patients were older persons and illiterate, their children could express their care and consideration by writing and reading the diary to their beloved. When patients were unconscious or being isolated due to physical condition since admission, we obtained verbal consent from their families. In this situation, writing diary acted as a way of communication and recording between family members and patients. Nurses helped reading the entries to patients. We found that writing ICU diary had provided a supportive experience for both patients and families. Furthermore, nurses were feeling gratified to promote this nursing activity. All the positive feedback is encouraging, and greatly enhances our development and provision of psychological care to patients and their families.

Full implementation

After initial evaluation and modification, the diary is redesigned as "My ICU diary 深晴密語" and fully implemented since October 2018. Briefing was firstly given to all ICU nurses and other health care providers. The diaries are placed in the usual forms drawer which is near the nurse station. Primary nurses take the role to introduce the diary to patients and families about the purpose and benefits. When they are willing to participate, the diary will be placed at patient's bedside area. This facilitates health care providers and families to use the diary. Feelings and blessings can be expressed in words, drawings, and photos in the diary. The diary remains with the patients throughout their ICU stay and return to them at the time of discharge.

During the implementation period, over 500 of patients were admitted to ICU. More than 30 patients and their families have been enrolled in "My ICU diary 深晴密語", and over 35 diaries were distributed to them. Nurses take an active role to encourage patients, families, and other health care providers to express their feelings and blessings in the diary. All patients and families are willing to receive the diary with them at the time of discharge. Feedback from them was received and explored during the visiting hours.

Feedback

Providing emotional support to the patients and families

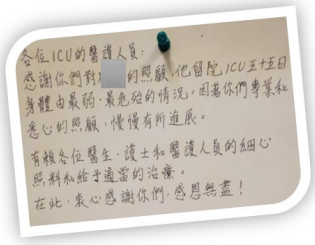
A middle aged male patient who had been diagnosed with meningitis regained his consciousness, and he was able to sit out of bed reading his ICU diary. He said, "Through the diary, I am amazed and touched that there were so much blessing and support to me while I were critically ill. I can hardly remember what I had experienced these days." The diary constituted a collection of memories and support to patients and families. It offered a channel for families to express their feelings towards patients. "I am at loss when my father was admitted to ICU. There is no way for me to ventilate my worries and distress." One of the patient's daughters felt helpless when seeing the loved one is suffering. Writing diary allowed her to accept the sudden and critical condition. It also enabled family to tell the patient that he was not alone in combating the illness. Some even found that expressing feelings in words were better than verbal communication.

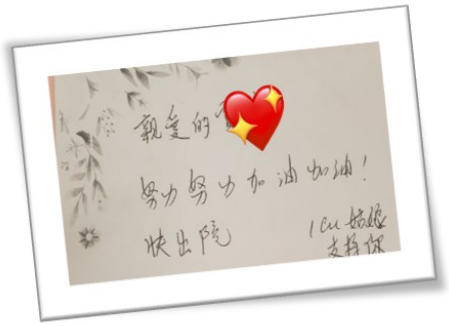
Enhancing communication between patient and family/ among family members

Family members always share different feelings and expressions on patient's condition. Surprisingly, many of them appreciated that writing the diary could enhance communication and understanding among family members.

Contributing to a mutual relationship between patients, families and health care teams

Families' emotion is of prime importance for health care providers. "My ICU diary 深晴密語" is a warm and caring approach for families to perceive the care and concerns. Most of them agreed that diary allowed them to understand more about patient's condition and nursing procedures. It strengthened their confidence towards the care received by patients. The comprehension and appreciation are reflected from the thank you letter.





Limitation/Obstacles

The stakeholders of "My ICU diary 深晴密語" are mainly ICU nurses. However, some of the raised factors like busy workload, short interaction time with patients, and immature relationship between nurses and family members were the resistance for them to use the diary. For example, when a patient was needed for prompt transportation, the family was desperate and needs time to understand patient's critical and possible deteriorating condition. Nurses found it difficult and inappropriate to introduce the diary at that moment.

On the other hand, there are some barriers from patients and families. Although some of the families accepted to write diary, they didn't frequently make entries or turned up during visiting hours. Nurses reinforced them by explaining that the diary had acted as an emotional support. Another family refused as they preferred direct contact and communication with patient rather than expressing their feelings and needs in the diary.

Ways Forward

Psychological support is one of the key elements in critical care. Nydahl et al. (2013) stressed that ICU diary could help patients and families during their stay in ICU and throughout their recovery in empowering them during the stressful plight. Undoubtedly, "My ICU diary 深晴密語" pacifies patients and families' negative emotions and eases their unpleasant feelings from loss and fragmentation of memory. Furthermore, it increases patients and families satisfaction in the nurse-patient interactions.

By promoting "My ICU diary 深晴密語", we hope to create and promote a caring culture and atmosphere in ICU, and to advance the quality of psychological care. To integrate "My ICU diary" well into daily ICU practice, ongoing evaluation is performed with the health care team. We are lately reforming the diary to be an even more heart-warming and sincere approach. With eye-catching outlook, convenient storage and lively stickers, we hope to greatly advocate the widespread usage of "My ICU diary" so as to accompany patients and their families in going through the ICU and recovery journey.

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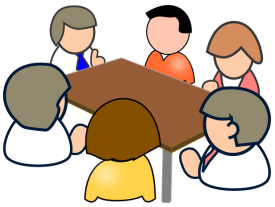

CONFERENCES / EVENTS

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A 2020 Vision of our Environment: The Spectrum of Intensive Care
4 - 6 Mar 2020
Napier, New Zealand
https://www.anzics2020.nz/

16th Emirates Critical Care Conference 2020 cum 16th WFCCN World Congress
2 - 4 Apr 2020
Dubai, UAE
http://eccc-dubai.com/

KSCCM.ACCC 2020
The 40th KSCCM Annual Congress-Acute and Critical Care 2020
"*Honoring our Past: Building a New Future*"
24 - 25 Apr 2020
Seoul, Korea
http://2020.accc.or.kr/html/

35th Annual BACCN Conference
Critical Care Nursing: The Next Decade
14 - 15 September 2020
Nottingham City Campus
https://www.baccn.org/conference/

ANZICS/ACCCN Intensive Care ASM
Harbouring Excellence in Intensive Care and Beyond
14 - 16 October 2020
Sydney, Australia
http://intensivecareasm.com.au/

香港危重病學護士協會
Hong Kong Association of Critical Care Nurses

USEFUL LINKS

International Nurses Day 2019
Theme: Nurses: A voice to lead - Health for all
https://www.icnvoicetolead.com/#

International Nurses Day 2020
Theme: Nurses: A Voice to Lead – Nursing the World to Health
https://www.icn.ch/what-we-do/campaigns/international-nurses-day

Australian College of Critical Care Nurses (ACCCN)
http://www.acccn.com.au/

Australian and New Zealand Intensive Care Society (ANZICS)
https://www.anzics.com.au/

British Association of Critical Care Nurses (BACCN)
https://baccn.org/

Canadian Association of Critical Acre Nurses (CACCN)
https://www.caccn.ca/

European federation of Critical Care Nursing association (EfCCNa)
http://www.efccna.org/

Hong Kong Academy of Nursing (HKAN)
http://www.hkan.hk

Hong Kong Society of Critical Care Medicine (HKSCCM)
http://www.hksccm.org/

Schools of Nursing
HKU: https://nursing.hku.hk/
CUHK: http://www.nur.cuhk.edu.hk/
PolyU: https://sn.polyu.edu.hk/en/home/

Taiwan Association of Critical Care Nurses (TACCN)
http://www.taccn.org.tw/

World Federation of Critical Care Nurses (WFCCN)
www.wfccn.org

Critical Care Nursing Journals
AACN Advanced Critical Care
http://acc.aacnjournals.org/

American Journal of Critical Care
http://ajcc.aacnjournals.org/

Australian Critical Care
https://www.journals.elsevier.com/australian-critical-care

Heart and Lung
http://www.heartandlung.org/

Intensive and Critical Care Nursing
https://www.journals.elsevier.com/intensive-and-critical-care-nursing

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