

Editorial

Acute life support in obstetrics: the way forward

Developed by the American Academy of Family Physicians, the Advanced Life Support in Obstetrics (ALSO) course is an evidence-based, inter-professional, and multidisciplinary training programme to equip the entire maternity care team with skills to effectively manage obstetric emergencies. The ALSO course aims to decrease mortality and morbidity of both the mother and baby by incorporating both didactic and practical hands on workstations with the use of manikins^{1,2}. The ALSO course encourages a standardised team-based approach among doctors, nurses, midwives, and other members of the maternity care team to improve patient safety and maternal outcomes. Participants must pass a written test and a practical hands-on case management of a birth (mega-delivery) incorporating many elements learned throughout the course. One feature of ALSO is the use of ALSO mnemonics to ‘immunise’ learners against forgetting steps or details in handling obstetric emergencies².

Development of the original ALSO course was based on a vastly different clinical scenario from that in Hong Kong. At that time in the United States, pregnant women were commonly looked after by general practitioners in rural hospitals, often single-handedly. In 1991, Jim Damos and John Beasley from the Department of Family Medicine at the University of Wisconsin developed an obstetric emergency course to help standardise the care of these women³. The course was purchased by the American Academy of Family Physicians in 1993⁴, and the ALSO course was launched as a national programme for all family physicians, registered nurses, and midwives. Since then, the ALSO course has been taught in more than 60 countries.

In 2001, the ALSO course was introduced to Hong Kong by Dr Chung Chin Hung who was then the Chief-of-Service of the Department of Emergency Medicine in North District Hospital. Since then, the course has been run annually, and over 2400 doctors, nurses, and midwives have participated. Hong Kong is one of the only places worldwide where ALSO is also taken up by emergency physicians. An early paper on ALSO specifically stated that “limited evidence suggests it can be effective and efficient in enhancing the knowledge and skills of prehospital and disaster medicine clinicians. Hong Kong provides a model in which emergency physicians have taken the lead in promoting the ALSO course”¹. The first course was taught

by four overseas instructors including Dr Charles Cox from Wolverhampton, UK and Dr Kim Hinshaw from Sunderland, UK (Figure 1). Dr Cox is also responsible for the development of the Management of Obstetric Emergencies and Trauma (MOET) courses. Dr Hinshaw subsequently returned to Hong Kong to teach the ALSO instructor courses in 2007 as well as the commissioned training programme of the Hospital Authority in 2008. He has been one of the overseas editors of our Journal since 2015.

In 2002, the Hong Kong College of Obstetricians and Gynaecologists (HKCOG) appointed Dr William To as the liaison officer to coordinate with the College of Emergency Medicine to organise the ALSO course. At that time, no local specialists had formally completed the ALSO instructor course yet to qualify as instructors and could only teach as guest instructors. Dr Mark Deutchmann, one of the founding members of the original ALSO board, participated in the 2002 courses as an overseas faculty (Figure 2). He did an excellent job to supervise and train the local faculty to teach using the ALSO mnemonics. In December 2003, the ALSO Board (Hong Kong) was established with Dr Chung as the founding chairman and Dr To as the honorary secretary. Since 2004, the ALSO has been jointly organised by the two colleges. A second instructor course was held in 2004, and specialists from our College were formally accredited as the first batch of



Figure 1. Participants of the first course of advanced life support in obstetrics in Hong Kong in 2001



Figure 2. Participants of the advanced life support in obstetrics instructor course in Hong Kong in 2002

bona fide instructors, along with emergency physicians, and midwives.

The Hong Kong ALSO has undergone many changes in the past years. Since Dr To's appointment as chairman of the board in 2006, it has been a tradition that the board is led by a chairman from our College, while the vice chairman is from the College of Emergency Medicine. In early years, the course was directly duplicated from the original course, comprising a 2-day programme with a mixture of formal lectures and hands-on skill sessions in the form of workstations. In 2007, case discussions and videos were introduced to replace some didactic lectures. In 2008, under the auspices of Dr To, the course was revamped by replacing more lectures with interactive case discussions and hands-on skill workstations and by introducing new modules such as breech delivery and neonatal resuscitation into the mega-delivery.

After I was appointed chairman of the board in 2021, with the support of other board members, I introduced maternal fetal resuscitation simulation training in the form of a scenario-based perimortem caesarean section drill using a manikin (Figure 3)⁵. In 2022, we evaluated the feedback of participants with regards to simulation training and published the results in the *Hong Kong Journal of Emergency Medicine*⁶. Among the participants, 97.8%, 98.5%, 97.0% agreed that the maternal fetal resuscitation simulation training could help their work, improve their knowledge and skills, and improve team training and co-ordination, respectively. 97.0% of participants felt more confident in managing maternal cardiac arrest, and 97.8% of participants felt that the perimortem caesarean section model was useful for such training.

In early days, most participants in the ALSO provider courses were residents, midwives, and registered



Figure 3. Perimortem caesarean section simulation training

nurses working in obstetrics and gynaecology units or accident and emergency departments in the public sector. As the ALSO becomes more well accepted and the ALSO mnemonics more popularly used, interested specialists from our College from both public and private sectors as well as midwives from private hospitals have also attended the ALSO courses. Faced with the pressure from non-entitled Mainland Chinese women in advanced pregnancy presenting to the accident and emergency department, emergency physicians have also eagerly attended the ALSO courses (Figure 4). Currently, the ALSO course is obligatory for all trainees in HKCOG. The Department of Health demands midwives working in private hospitals to have a valid ALSO (or other equivalent courses) provider status for re-accreditation of the hospital's obstetric practice. In addition, the ALSO board has run instructor courses in 2001, 2004, 2007, 2010, 2013, 2017, and 2019 to recruit obstetricians, emergency physicians, and midwives as instructors. In May 2023, an instructor course is scheduled to be held in parallel with the provider courses.

Apart from the ALSO and MOET, other courses with simulation training for obstetric emergencies include the Practical Obstetric Multi-Professional Training (PROMPT) and the Multidisciplinary Obstetric Simulated Emergency Scenarios (MOSES) from the UK. There are also short courses organised by the Royal College of Obstetricians and Gynaecologists or individual National Health Service Trusts focusing on certain clinical modules such as postpartum haemorrhage, instrumental delivery skills, or maternal resuscitation techniques⁷. The College



Figure 4. Participants of the advanced life support in obstetrics provider course

Table 1. Specialty and rank of participants of the advanced life support in obstetrics provider course in 2022

	No. of participants		
	Accident and emergency	Obstetrics and gynaecology	Others
Resident	33	13	0
Resident specialist	1	0	1
Associate consultant	2	0	0
Registered nurse	31	78	1
Registered midwife	1	7	0
Advanced practice nurse	7	0	0
Nurse officer	0	0	1
Total	75	98	3

of Family Physicians of Canada developed the Advanced Labour and Risk Management (ALARM), which serves the same purpose as the ALSO. The ALARM has also been taught in Australia. In Hong Kong in 2020, the Chinese University of Hong Kong under the auspice of Prof TY Leung launched the Safe Obstetrics Practice for High Risk and Emergency (SOPHIE). These various courses vary in scope and contents as well as the level of simulation training. For instance, the MOET and MOSES courses are generally considered to be more advanced than the ALSO, whereas the PROMPT course focuses more on team training than on individual skills training. The SOPHIE course is relevant to obstetric residents and midwives but is proved to be too sophisticated for emergency physicians or doctors or nurses not regularly practicing obstetrics or those with no foundation training in obstetrics. The ALSO remains to be the most acceptable and applicable to obstetric residents and midwives as well as to emergency physicians and nurses who handle obstetric emergencies.

With the onset of the COVID pandemic in early 2020, the ALSO course structure in the United States now features a 1-day online curriculum and a 1-day in-person hands-on skills workstation and a separate assessment session. Since 2022, the ALSO Board (Hong Kong) has adopted a hybrid programme with online lectures and a 1-day in-person skills training course. Participants are required to watch the recorded lectures and case discussions and read the training materials before attending the skills workstation. In May 2022, we conducted a survey of 178 participants in five provider courses. Of 176 participants responded, 55.7% were from obstetrics and gynaecology departments, 42.6% were from accident and emergency departments, and 1.7% were from other specialties, whereas 28.4% were doctors and 71.6% were nurses (Table 1). 69.9% of participants preferred the hybrid course ($p < 0.001$, Table 2). Those who preferred the hybrid course reported that they had more preparation and watched more recorded lectures

Table 2. Factors associated with preference for hybrid course among participants in 2022 advanced life support in obstetrics (ALSO) course

	Preferring hybrid course (n=123)*	Preferring in-person course (n=53)*	p Value
Specialty			<0.001
Accident and emergency	41 (33.3)	34 (64.2)	
Obstetrics and gynaecology (O&G)	81 (65.9)	17 (32.0)	
Others	1 (0.8)	2 (3.8)	
Rank			0.73
Doctors	34 (27.6)	16 (30.2)	
Nurses	89 (72.4)	37 (69.8)	
Clinical experience in specialty, y	6.15±5.47	4.1±3.56	0.013 [†]
Workplace support (for non-O&G only)	n=41	n=34	0.20
With on-site obstetric service	25 (61.0)	14 (41.2)	
Without on-site obstetric service	16 (39.0)	20 (58.8)	
Preparation before course			0.028
Nil	1	4	
Read <50% lectures	13	12	
Read 50% lectures	19	7	
Read >50% lectures	40	10	
Read 100% lectures	33	12	
Read ≥100% lectures	17	8	
Preparation before course >50%	90 (73.1)	30 (56.6)	0.03
Overall rating of recorded lectures			0.001
Excellent	24 (19.5)	8 (15.1)	
Good	86 (69.9)	26 (49.0)	
Fair	12 (9.8)	18 (34.0)	
Not satisfactory or poor	1 (0.8)	1 (1.9)	
Overall rating of practical workshops			0.77
Excellent	69 (56.1)	31 (58.5)	
Good	53 (43.1)	21 (39.6)	
Fair	1 (0.8)	1 (1.9)	
Not satisfactory or poor	0	0	
Overall rating of teaching materials			<0.001
Excellent	35 (28.5)	8 (15.1)	
Good	79 (64.2)	29 (54.7)	
Fair	9 (7.3)	16 (30.2)	
Not satisfactory or poor	0	0	
Achievement of the programme			
Improve obstetric management	105 (85.4)	38 (71.7)	0.033
Facilitate interactions between providers	94 (76.4)	33 (62.2)	0.054
Enhance care and abolish barriers	89 (72.4)	32 (60.4)	0.11
Format of ALSO course in future			<0.001
Keep current hybrid format	102 (82.9)	2 (3.8)	
Change to face to face	4 (3.3)	42 (79.2)	
Neutral	17 (13.8)	9 (17.0)	
Overall rating of ALSO course			0.011
Excellent	47 (38.2)	12 (22.7)	
Good	75 (61.0)	37 (69.8)	
Fair	1 (0.8)	4 (7.5)	
Not satisfactory or poor	0	0	

* Data are presented as No. or No. (%) of participants or mean ± standard deviation

[†] Mean difference= -2.05, 95% confidence interval= -3.66 to -0.43

Table 3. Reasons for preferring recorded lectures versus face-to-face lectures

Reasons	No. (%) of participants
Preferring recorded lectures (n=123)	
Can watch beforehand	21 (17.1)
Can watch at convenient time	9 (7.3)
Can watch repeatedly	4 (3.3)
Can watch after course to revise on particular topics	2 (1.6)
All of the above	87 (70.7)
Preferring face-to-face lectures (n=53)	
Can allow demonstration of certain skills	14 (26.4)
Can memorise better	9 (17.0)
Can ask questions easier	4 (7.5)
Can have protected learning time	2 (3.8)
All of the above	24 (45.3)

*Figure 5. Breech delivery and neonatal resuscitation workstations*

before attending the workstations. They were more likely to consider the recorded lectures and teaching materials to be good quality. They could watch the pre-recorded lectures beforehand, at their convenient time, and repeatedly. Nonetheless, some participants considered that the in-person course may facilitate question-asking, memorisation of taught materials, and demonstration of skills (Table 3). Overall, 59.1% of participants preferred to keep the hybrid format, 14.8% were neutral, and 26.1% preferred in-person course. Over 90% of participants gave an overall rating as good or excellent. Most agreed that the ALSO courses could improve their obstetric management, interactions between providers, and utilisation of care and could abolish barriers. Based on these results, the ALSO board decided to keep the hybrid courses, which are more cost-effective and enable organisation of more courses as needed. The workstations in the coming ALSO courses will include instrumental

delivery, shoulder dystocia, neonatal resuscitation, vaginal breech delivery, cord prolapse, postpartum haemorrhage, maternal resuscitation, and perimortem caesarean section simulation (Figure 5).

We hope that the ALSO (Hong Kong) Board continues to meet the needs of those who involve emergency obstetric care. We sincerely thank all board members, instructors, and participants for their support over these years.

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