

## Editorial

# European-Paediatric Advanced Life Support (PALS) Training

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### Introduction

The constant advancements in medical science have enabled healthcare professionals to provide advanced life support in life-threatening Paediatric emergencies. One exemplary training course is the European-Paediatrics Advanced Life Support (E-PALS), which equips healthcare providers with such skills and knowledge. In this editorial, we will discuss the significance of APLS training, its applications in various settings, and the importance of making it accessible to healthcare professionals.

Resuscitation Council UK, established in 1983, is the leading authority on resuscitation in the United Kingdom. Their primary goal is to enhance survival rates for both in and out of hospital emergencies including cardiac arrest cases. E-PALS course, now considered the global standard, aims to enhance the initial management of acutely ill or injured children by providing healthcare professionals with training, education, and resources. The course consists of a full-color manual, online learning, and a two-day face-to-face course which is highly organized and comprehensive, covering a wide range of topics. It is specifically designed for post-graduate trainees and Specialist nurse practitioners working with Paediatrics emergencies. Although it is slightly expensive at 590 pounds, considering the quality of training provided, it is worth it.

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### About the course

The main objective of the program is to enhance the competence and confidence of healthcare professionals when providing life-saving care to critically ill and injured children. This program is designed to apply the knowledge gained from the course manual and virtual learning environment (VLE) in the two-day face-to-face session that covers

- recognition of the seriously injured and ill child,
- performing basic life support,
- managing the airway,
- identifying cardiac rhythm abnormalities,
- administering defibrillation,
- accessing intraosseous sites,
- performing cardiopulmonary resuscitation (CPR),
- gaining intricate knowledge of emergency management for respiratory and circulatory failure in Paediatrics cases and
- the procedures involved in handling a child or infant experiencing cardiorespiratory arrest.

The program commences on the first day with registration and a welcome session, followed by a discussion on both basic and advanced life support. Participants engage in a variety of activities, such as attending lectures which serve as a concise summary of the extensive materials provided in the manual, workshops as well as taking part in breakout sessions and simulation practices. These activities are designed to demonstrate and reinforce the structured ABCDE approach, airway management, manual defibrillation, and other vital skills in dealing with time-critical Paediatrics scenarios. Furthermore, participants work collaboratively in small groups to enhance their understanding of managing and treating these urgent

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cases, which can rapidly progress to cardiac arrest. The instructors are knowledgeable and friendly, making an effort to ensure that the training remains engaging and enjoyable for all participants.

The course concludes with a written or multiple-choice exam. The participants' practical skills are evaluated through objective simulated clinical examinations and scenarios.

The scenarios and skills stations in the course were impressive as they simulated real-life cardiac emergencies and the material presented was up-to-date. Overall, it was a good course for middle-grade trainees but could be frustrating for those with a lot of experience as the testing and scenarios lacked flexibility, which meant that more experienced clinicians couldn't exercise their judgment and had to blindly follow protocols. This may be due to the course covering a broad range of topics for a variety of healthcare professionals. It serves as a comprehensive resource for learning how to assess and manage sick children until help arrives or they are transferred to a different facility.

The training also includes BLS, making it unique and applicable in various situations such as air travel where medical resources are limited, maritime emergencies, and land-based incidents like near-drowning, road traffic accidents, or severe injuries. With such training, healthcare professionals can effectively stabilize patients until they reach a medical facility.

### Prospects for Bangladesh

Bangladesh experiences high rates of death from conditions such as neonatal asphyxia, pneumonia, diarrhea, sepsis, and drowning, many of which can be reversed with proper resuscitation. E-PALS is a crucial training program for Pediatricians and specialist nurses working in critical Paediatric emergencies and postgraduate medical institutes in Bangladesh should prioritize funding and promoting it.

The Bangladesh College of Physicians and Surgeons (BCPS) has introduced the Advanced Trauma Life Support (ATLS) course for Surgeons and BLS course, however, there seems to be a lack of Paediatric advanced life support courses. Additionally, the Department of Anesthesia in Bangabandhu Sheikh Mujib Medical University (BSMMU) offers courses on Basic Life Support and Advanced Cardiac Life Support (ACLS) specifically tailored for adults.

- There are occasional Paediatric Advanced Life Support (PALS) courses, offered by the American Heart Association and American Academy of

Paediatrics. These courses are organized by agencies like the Institute of Healthcare Development, but their frequency depends on the availability of foreign trainers and logistics. Additionally, Evercare Hospital offers Basic Life Support (BLS) and PALS courses exclusively for their employees. While BIRDEM Hospital provides BLS and Advanced Cardiac Life Support (ACLS) training open to employees from other hospitals. Unfortunately, for the time being there is no regularly run course specifically for Paediatrics in Bangladesh. It is momentous to have regular courses for maximum training of healthcare professionals in acute care Paediatrics and to ensure periodic recertification rather than a one-time course.

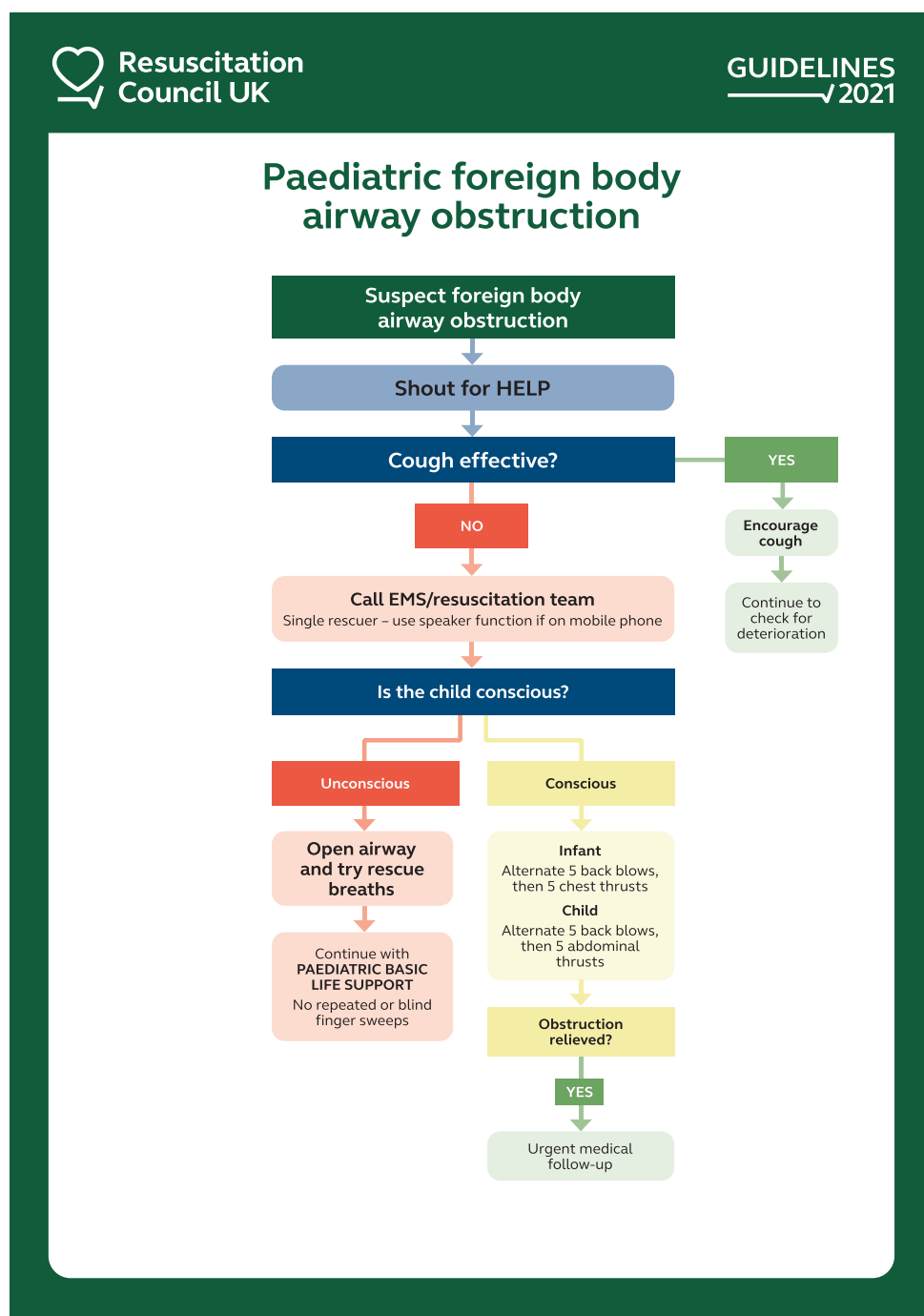
- Educators should consider incorporating simulation-based medical education (SBME) into resuscitation programs to optimize their effectiveness. In the UK, high-fidelity human patient simulators are commonly used for simulation-based medical education. However, these simulators are expensive and complex, making them less feasible for Bangladesh. Emphasizing low-cost and low-fidelity approaches can enhance the dissemination potential and sustainability of training programs in these settings. Many educational programs in Bangladesh have already incorporated simulation, with positive outcomes including the Helping Babies Breathe (HBB) initiative, created by the American Association of Paediatrics which aims to improve neonatal resuscitation and reduce mortality.
- It is important to address linguistic and cultural barriers in program development and implementation.
- The quality and relevance of protocols and teaching materials need input from local experts and stakeholders who understand the local context, including epidemiology, practice standards, available resources, and potential barriers to care. Modifications to existing international protocols are often necessary in settings with limited infrastructure and equipment.
- Securing finances for these programs can be achieved through partnerships with government bodies, healthcare institutions, and corporate entities with a focus on healthcare. By ensuring the availability of E-PALS training, we can cultivate a society that is well-equipped to address medical

emergencies effectively, consequently diminishing mortality rates resulting from insufficient initial care

### Conclusion

Stress of handling emergencies can cause even the most seasoned individuals to experience fear and palpitations. However, employing a well-organized and structured approach in such situations offers a sense of direction

and streamlines management. This program offers a structured approach to dealing with time critical Paediatric patients. The specific knowledge and skills gained from the course may vary depending on the trainees' background and experience in this area. However, overall, the course is top-notch and is highly recommended for Pediatricians as part of their continuing professional development requirements.



**Figure-1.** APLS Paediatric life support algorithm