Instructor guide for APLS 7e

Welcome to the 7th edition update of the Advanced Paediatric Life Support (APLS) course. The APLS working group has reviewed, revised, and updated all aspects of the course following the most recent international paediatric resuscitation guideline change. Both the manual, e-modules and the face-to-face teaching materials have been reviewed and are available on the ALSG website.

This instructor guide has been developed as an additional useful resource for all faculty. Instructor candidates (ICs) can use the guide to help them prepare to instruct on a course and it will provide established instructors with access to the changes made in the 7e structure of the course. It provides guidance on how to deliver the course to allow for the best educational experience for candidates.

You will also need to read all the supporting documents for the course that are found in the 'Course preparation' folder on the website as well as all the teaching materials.

The learning outcomes of this guide are that you will:

- Understand the running of an APLS course and the preparation required from you as an instructor or instructor candidate.
- Recognise what your contribution will be to the simulation stations.
- Understand the role of the 'faculty helper' (FH).
- Understand when and how teaching skills are delivered and embedded within the simulations.
- Identify the importance and key components of the learning conversations that you facilitate.
- Have an awareness of how continuous assessment is used during the course.

APLS programme

Pre-course faculty meeting: Teams or Zoom

About 1 week before the start of the 2-day face-to-face course, the course director (CD) holds an online faculty meeting that will last approximately 1 hour. As not everyone will be able to attend this meeting, it will be recorded and made available for all faculty to listen to before they attend the course. This meeting gives the faculty an opportunity to discuss the outline of the 7e course, update and any guideline or practice changes that are relevant to the course. They will also explain how the new 'faculty helper' (FH) role and embedded skills will work so that instructors have time to prepare their simulations when they meet face-to-face.

Welcome and introductions

The APLS course starts with a face-to-face faculty meeting while candidates attend for registration and refreshments. Faculty members will be welcomed by the course directors(s) and the meeting will start with introductions, with each faculty member introducing themselves, including their instructor status (full instructor, recertifying instructor, IC1 or IC2). All ICs will be introduced to the faculty mentor.

All instructors should have received pre-course information and will have been enrolled on to the course on the ALSG website (access in the ‘my courses’ section) which will also allow access to the candidate groups for assessment scoring once the progress logs become paperless.

APLS centres will vary in course set-up, so if needed, new instructors can be shown the rooms and layout of the centre and familiarise themselves with the equipment used.

Lectures

The Welcome lecture is usually delivered by the course director. It introduces the course and gives an overview of the programme and explanation of continuous assessment. The other lectures are either delivered by the course director or other experienced instructors and are followed by a simulation demonstration, again led by experienced instructors.

Lecture slides are available online in the instructor resources with speaker notes included. They are on PowerPoint and can be personalised to a degree as long as the content of the lecture is not changed, and it does not become longer than allocated on the programme. Any changes must be shared with the course director before the course. You should have plenty of notice to prepare your lecture if you have been allocated one on the programme. The lectures are interactive with some case studies for the candidates to **discuss in small groups** in the illness and trauma lecture, and an interactive discussion about Hs and Ts in the cardiac lecture.

All ICs and recertifying instructors are expected to attend the lectures.

Simulation demonstrations

All faculty are expected to attend the demonstrations during the course. The demonstrations are best delivered by experienced full instructors. **They are followed by two questions for candidates to discuss in partners.** These are more effective for their learning than watching a debrief because they are actively engaged. These need to be facilitated by the CD or the experienced instructor who gave the related lecture. They should allow and encourage genuine discussion amongst candidates.

These demonstrations should be as ‘perfect’ as possible, **without deliberate mistakes** and with a very clear purpose to show candidates what we expect from them throughout the course. Experienced faculty members should take on the role of instructor and candidate and can be helped by the rest of the faculty.

- Illness simulation demo – to demonstrate an ABCDE assessment and to introduce the simulation structure including a faculty helper and an embedded skill.
- Trauma simulation demo – to demonstrate a <c>ABCDE assessment (primary survey) and to demo the embedded trauma skills.
- Cardiac simulation demo – to demonstrate an ABCDE approach to arrest, the BLS algorithm and to demo defibrillation as a ‘silent run through’ skill.

Pre-brief with mentors in simulation rooms

Candidates and instructors are able to get a drink and take them into their allocated room to meet their mentors.

Mentors will be allocated per group and are placed together for the first simulation block. This session is an introduction to the course, an explanation of continuous assessment, learning conversations, the role of the faulty helper and expectations of candidates during simulations. It is an opportunity for candidates to familiarise themselves with the equipment that will be used and a time to address any questions.

Simulations with embedded skills

(see 'Guidance for running simulations' and 'Guidance for embedding skills')

If possible, all simulations should have 3 instructors in the room including no more than one IC1.

Faculty lead instructor

Faculty lead instructor will introduce the simulation to the candidates, brief the initial team leader and team member together and introduce the faculty helper. They will then allow a couple of minutes for the TL and TM to prepare before the faculty helper starts the simulation by placing the prompt card onto the manikin.

During the simulation the faculty lead instructor will 'manage' the simulation by controlling the patient and their observations through the patient monitoring system.

After termination of the simulation, the faculty lead instructor will facilitate the candidates' debrief at the end leading the learning conversation before the skills are practised, or the discussion point is opened up.

Faculty helper

The faculty helper will need to know the clinical information needed for the simulation to feed it in appropriately to enable the candidate(s) to ensure a thorough ABCDE assessment is carried out. To facilitate this for each simulation you will have a small, laminated card with information about the simulation, written suggestions of prompts and feedback about the condition and progress of the simulated patient. Not all prompts need to be used; they are examples to help you so feel free to improvise and use your own. At any point you might want to use things like:

- I need to get signed off for my primary survey, so can I do that?
- I'm sorry I got distracted, can we go back through the elements of the structured approach (when a candidate isn't making the ABCDE clear enough).
- I'm a bit confused at what's going on

The FH should do what they are directed to do by the TL. The faculty helper may also demonstrate the embedded skills during the simulation.

The faculty helper can give information to the other team members to feed into the simulation when they attach monitoring/perform skills so that the faculty helper doesn't become the only person feeding back. It is important to involve the other team members so that they can be assessed.

To allow for assessment of the candidate's knowledge and skills of the ABCDE assessment, the faculty helper will need to be careful not to 'over prompt' or to prompt the candidate too early. Other members of faculty should not prompt or provide feedback during the simulation. All faculty must be alert to the consequences of being too slow or too quick with the helper prompts.

Team leader
The team leader must demonstrate their knowledge of the structure and the skills of the ABCDE assessment, and so the initial patient assessment will be started by the team leader, assisted by a candidate team member and the faculty helper. The faculty helper will need to be careful not to 'over prompt' or to
prompt the candidate too early.

After the team leader has satisfactorily started the initial assessment (doing as much as is reasonable with the time/help that they have), the faculty will allow them to delegate this to a team member and further help should be provided. However, the team leader retains responsibility for the thorough ABCDE assessment and should ensure it happens in a timely manner.

A junior candidate can handover the 'lead' to a more senior member of the team once the initial assessment has been carried out and more help is available.

Assessment
We are assessing the candidates on the ABCDE assessment, team working, escalation, KTPs and their skills. Remember that we are still teaching as well as assessing their knowledge.

Embedded skills
Each block of simulations will have skills or teaching elements embedded in the different simulations. The simulations will contain all the necessary elements of the skills that need to be assessed using the continuous assessment scoring for all candidates. The simulations have been paired together to assist with timings (one with a skill and one with a discussion point). The session timing assumes that the simulation with the skill takes longer e.g., 50 min pair: skill simulation 30 min, discussion simulation 20 min.

A staged approach of teaching a skill is still being used but the silent run through and the talked through stages are now delivered ahead of the course in the online videos. Candidates will therefore have seen all the skills demonstrated online (and seen some of them demonstrated again during the simulation demos) so should be familiar with them. **All faculty** must also have watched the skills videos before the course so that they know what the candidates have been taught.

Remember that we are just 'checking' their core skills not teaching them. You should facilitate their practise and coach them if necessary, rather than teach them.

During the simulation either a team member if they are in role and have the required skillset, or the faculty helper (if more appropriate) will demonstrate the allocated skill in **real time.**

After the simulation, and learning conversation, the faculty will facilitate all candidates practising the skill so they can be assessed as part of continuous assessment until the faulty are happy that all have reached the 'course standard' and can be signed off on the progress log. Any candidate whose skill is 'not quite there yet' should have this documented on the 'Simulation skills Assessment Sheets' so that they can remediate these on another simulation. There will also be time during this part of the

session for candidates to ask questions or for faculty (and candidates) to bring examples and suggestions from clinical practice.

In summary:

- Faculty lead instructor gives the initial candidate brief and ‘manages’ the simulation by controlling the patient and their observations through the patient monitoring system.
- Faculty helper participates as a team member (and can demonstrate the allocated skill in real time if needed). They have a card with simulation information and will give small prompts to the team lead and other team members about observations and changes in condition.
- The third faculty member in the room keeps an eye on the while room and deals with any issues with IT/equipment that occur during the simulation and can be an additional team member particularly if a skill/role is required that is not within the candidate group. They may also be used for the handover at the end of the simulation.
- It is important that only the faculty helper feeds in information so that the candidate is not confused. If the FH is overwhelmed and unable to respond, then it is the responsibility of the lead instructor to bring in more help.
- Faculty lead instructor terminates the simulation and facilitates the learning conversation. The faculty helper can be asked to be part of this learning conversation if necessary/helpful. They must not dominate.
- At the end of the learning conversation all candidates practise/perform the skill so they can be assessed, and any problems can be flagged.

Learning conversation

All faculty should re-familiarise themselves with how to have an effective learning conversation by reading ‘Listening through the learning conversation: a thought-provoking intervention by Mike Davis and Kate Denning’. Remember that the key to a good learning conversation is letting the candidates jointly discuss and create their understanding of the event. **If you find you have done a lot of talking then it is likely that they will have learnt less than you’d hoped.**

We recommend running the illness session a little differently from cardiac and trauma, more detail is given below.

Illness simulation session

ICs should not be the lead instructor or FH during the illness simulations. They can be the 3rd instructor and observe/assist where needed.

Initially you start the simulation with one TL and one FH. Bring in one (or two) candidate helpers as needed and as requested. The helpers should be candidates not faculty to keep them engaged, learning and practising. It is the Team leader’s responsibility to ensure and direct an ABCDE assessment, they may be hands on. The purpose is to see that they can do the full primary survey. Too many helpers in the initial assessment get in the way of assessment.

Later on in the course the focus shifts to full team leadership and management, this session is your opportunity to see them ensure a full initial assessment. You would accept, for example, a nurse asking a doctor to listen to the chest, but it is the nurse’s responsibility to ask for it, to ensure it is done well, and to interpret the findings.

After the ABCDE further help can arrive, someone else *can* take over as with 6th edition. The TL should give a good SBAR at some point in the simulation. If handover occurs this becomes more of an extended teaching than assessed element. If however, a candidate has not yet shown that they can do a good ABCDE assessment then it may be a good idea to get them to do a further reassessment, or identify within the paperwork that they will need to re-do this either in the cardiac session, or in the final bank of simulations.

Trauma simulation session

The TL should start with a full team and have time before the child arrives to allocate roles. Their team will include the FH who 'offers' to do the primary survey when roles are being allocated. The TL should still guide the primary survey (ABCDE) and the FH can facilitate this with prompts such as "is there anything more you would like me to do in B" or "would you like me to check the abdomen?".

The TL manages the information flow and the structure of the <c>ABCDE assessment. They request re-assessments as interventions are made, they suggest treatment and put a plan into action. The TL ensures that situation awareness is shared. The FH does the primary survey (and inputs findings). The candidate team carries out the other tasks e.g., c-spine control, putting on the monitoring, calling for further help.

However, the TL is less hands on than in the illness simulations, so should be encouraged to stand at the foot of the bed. This should be demonstrated in the trauma demo.

Cardiac simulation session

Set each simulation up with a TL, a FH and two other candidates to perform BLS until the full crash team arrive. The TL must retain full situation awareness throughout but tasks a team member to take charge of defib and team safety. It must be clear throughout these transitions who the team should be listening to.

In all rooms the **initial** cardiac simulation is relatively simple (and is allocated more time) and should run in the following way:

- Confirm the defibrillator used in the centre as it may be different from the one on the video.
- The faculty helper runs the defibrillation during the simulation.
- Team members engage in BLS.
- Following the debrief all candidates practise and are assessed on their defib skills, as an exercise in which everyone has a go at all elements (round robin).
- If anyone needs further practice this must be identified on the paperwork, and they should be given opportunities during the remaining simulations to demonstrate their skills.

If there is a candidate who has been identified during the illness block as needing further practice at the ABCDE assessment, then this can be done during the cardiac session once ROSC has been achieved.

Final simulations

Not all candidates need to lead a simulation in this final set. For most candidates these simulations can be used for practising the team approach and further learning; they do not need to contain an assessment for learning.

These can be used to reassess a candidate who is 'not quite there yet' on their ABCDE assessment, team working, escalation, KTPs or their skills. Each simulation has a straightforward path to use in this circumstance. For the other simulations the more complex path can be used to further develop the candidates and how they work together as a team. If however the team/or an individual team leader struggles with this then the simulation should be stepped back to a straight forward path and any learning points from the complex path can be discussed in the learning conversation.

The more complex path should not be chosen/used for a candidate who has struggled at all on the course or needed to be reassessed on any aspect.

Reflective case discussion

This session has been taken from the online remotely enhanced courses that took place during the pandemic. The sessions were found to be really valuable and relevant to the APLS course, so it has been added into the 7th edition face-to-face course.

In advance of the course candidates are asked to prepare a short case of a patient that they have been involved with, they will be reminded of this at the end of day 1. This discussion can be about the clinical treatment, about human factors but also about the challenges of children with complex needs, advanced care plans, mental health or NAI.

It is important to emphasise that we don't want candidates to prepare anything substantive, like PowerPoint slides. This is a discussion and what we want is for them to talk about something that they were involved with that made them reflect or something they learnt from.

It is helpful to put the chairs in a circle. **The instructors are 'facilitating' this session by listening and observing, they should not bring their own cases, they should do minimal talking but let the candidates do most of the discussion.** The lead instructor can prompt the candidate group if the conversation does not flow**.** The case discussion will take place at the beginning of day 2.

For the first half of the reflective case discussion the nominated IC mentor will meet with all of the ICs for a discussion about their learning from day 1 and what they would like to practise on day 2. After this the ICs should join their mentor group to observe the remainder of the reflective case discussion.

Guidance for running simulations

We have changed the way that we run scenarios on APLS 7e

Faculty: lead
Keeps a global overview
Gives the initial brief
Runs the tech to keep the scenario moving
Facilitates a LC, not a list

Faculty: helper
Helps from within the sim
Can prompt the TL
Needs to know the parameters

Faculty: paperwork
Acts as specialist e.g. for SBAR Fills in the paperwork

Deals with technical issues

The embedded faculty helper's job will be to act as a team member and to provide information from within the scenario to enable the candidates to manage the patient's care.

Encourage the team to interact with the embedded faculty helper from the outset.

Encourage the use of names and closed loop communication.

The lead instructor should bring additional candidates in as appropriate to an emergency situation and/or if the faculty helper is inundated and not able to respond to the TL.

Prompts may be necessary from the faculty helper if the candidate is not progressing with the scenario. It is a delicate balance between giving them time and prompting when necessary.

It is crucial that the faculty team are prepared and knowledgeable about each scenario and work very closely together to ensure that learning is always the key focus of each simulation with continuous assessment being an element.

Once the TL has completed the initial ABCDE they can either continue as team leader or hand over leadership as with 6th edition.

During the post simulation discussion lots of learning keeps on happening. There are some useful strategies you can use.

Move away from the manikin and sit in a circle to encourage everyone to join in.

Avoid using too many of your own anecdotes, use the candidates' experience instead.

The nominated lead instructor should facilitate the debrief. Other instructors should try not to get involved.

When one of the candidates asks a question, deflect it to the group rather than answering it yourself.

When you make a decision about a candidate's competence, you need to include an evaluation of the prompting or assistance that each individual needed, from both the faculty and the wider candidate group.

It is essential that during the debrief you give the candidates feedback on how they managed the patient. They should know by the end of the learning conversation whether they are working at the required standard or not.

The key learning is: ensures a structured ABCDE approach, effective team leadership and followership; putting a plan into place; escalation where appropriate; a good SBAR. These are your pass/fail criteria and are marked in bold on the simulations.

If you need to discuss with your colleagues in order to come to consensus about a candidate, make sure you let the candidate know about their progress as soon as possible after the session. Also be sure to record important comments on the progress log.

Finish with questions then summarise the key learning.

Guidance for embedding skills

APLS 7e no longer uses the 4 stage approach to the teaching of skills on the face-to-face element of the course.

Candidates will have watched videos of all the skills online and may already have experience of some of the skill

Where a skill fits naturally into a simulation it will be performed by either the faculty helper or appropriate member of the team if it is well within their skill set. Defibrillation should be performed by the faculty helper in the first simulation and by candidates needing additional practice subsequently.

Once the simulation finishes, the learning conversation debrief will provide the opportunity for the group to discuss the technical and non-technical elements.

After the learning conversation the rest of the candidate group can then be given the chance to practise and be assessed on the practical procedures described in the skills documents.

Coaching is at its most effective when candidates can try the skill and receive personalised feedback to work on. They should be given several opportunities to practise if necessary. It is important that they leave the course with good competence in these skills.

Illness skills
Airway opening manoeuvres
Oropharyngeal airway
Nasopharyngeal airway
BMV ventilation
Supraglottic airway
IO access

Trauma skills
MILS
20º tilt
Splints and tourniquet application*
Finger thoracostomy*
Pelvic binder*

Cardiac skills
BLS infant and child
Safe defibrillation with manual defibrillator
Tracheostomy*

Illness discussions
Orotracheal intubation and RSI
Surgical airway
Can't intubate, can't oxygenate (CICO)
POCUS for central venous catheter insertion

Trauma discussions
Chest drain landmarks/insertion
Familiarity with chest drain equipment
Analgesia
Pelvic binder

Cardiac discussions
Choking management
Hypothermia and cardiac arrest

*not assessed

There is evidence that the 4 stage approach keeps us efficient in our time management. Remember that the purpose of our new approach is **to give the candidates more practice** opportunities.

Let the candidates know whether they have reached the required safe standard in the practical skills.

Finish with questions then summarise the key learning.

Supporting instructor candidates

ICs are **encouraged** to observe a course before their first IC. Whether they do this or not, all ICs must do 2 courses as an IC as the new facilitation approach is different from any used on other courses.

In practice, centres may find that it is helpful to offer this **'observer'** option to ICs who are **struggling** with the switch to 7e so that their first course doesn't count against them and is logged only as an observed course rather than their first (or second) IC.

Course Director allocates all instructor candidates to **one** experienced instructor to act as the **IC mentor.**

Experienced **IC mentor** arranges an online meeting approximately ten days before the course with all of the mentees together.

At this meeting make sure that the ICs can access the page, have looked at the programme, have started the e-modules, have read the learning conversation paperwork, have watched the learning conversation videos.

When allocating instructors on the programme, ICs should join one group of instructors to co-mentor a group of candidates.

During the course ICs will be assessed using the new paperwork by **any full instructors** for the following sessions.

Skills

This is coaching and assessing not teaching with the 4 stage approach

Being the **lead** instructor who opens the simulation and runs the tech

Being the **embedded faculty helper** who helps from within the simulation

Facilitating the learning conversation by encouraging candidates to verbalise

The **IC mentor** meets with the group during the reflective case study session. The ICs should be encouraged to discuss their experience so far and provide each other with support. The IC mentor facilitates this session.

Information for Instructor Candidates

Before the course	Register yourself on the course page so that you have access to all of the course materials. The course coordinator should be able to help with this.
	Review the programme you have been sent and identify the sessions that you will be facilitating.
	Re-visit the skills videos for the course. You need to be teaching the same as everyone else on the course.
	Read these two helpful articles (Learning conversation and Safe container).
	Re-visit the e-modules for the course. It is helpful to know what the candidates have studied.
	Prepare your teaching sessions by revisiting the GIC teaching materials, reading the relevant manual chapters and downloading and studying the teaching materials.
	You should be contacted by the IC mentor for a meeting prior to the course.
During the course	You will meet with the IC group + mentor during the course to reflect on your learning.
	Seek feedback on your teaching sessions and make sure that your progress log is filled in for the sessions where you are being evaluated.
	Find out who your mentees are, and maintain regular contact with them, giving them as much support and feedback as they individually require.
	Observe experienced instructors before you have a go at teaching a session; observe learning conversations and see what happens to make them most effective.
	Attend all lectures and all demos. It is really important that we are consistent in what we teach candidates.
After the course	Reflect on what you want from your second IC. Use your progress log to comment on the feedback that you have received and continue to grow as an instructor.
	Book your second IC. Consider going to a different centre to broaden your experience.
	Fill out the evaluation form and download your instructor certificate from the ALSG website.