‘An ABC for life’ Basic Life Support for Primary Schools

Primary school teaching manual

CPRiS

CONTENTS LIST

INTRODUCTION:

Project Title = An ABC for life

Welcome to this unique project, run through Queens University Medsin group (Medical Students International Network) and the Faculty of Medicine at Queens University Belfast. Thank-you for taking the time to get involved in this project and becoming trained to teach basic life support skills to primary school children. We hope that you enjoy your time as a Primary school trainer. As you already know, this project has not been set up on such a scale in any other part of the UK. Therefore, by becoming involved, you are one of the first groups of Primary schools to become involved in such a wide scale teaching of basic life support in local schools in Northern Ireland. We hope that the skills you will develop in this project will be beneficial to both you and the children you teach.

The purpose of this Primary School Teaching Manual is to provide many tips on teaching, how to construct your teaching session, what exactly has to be taught and how this should be taught, information on techniques for teaching as well as advice on any questions that you may be asked. We hope that you find it a useful teaching aid.

Michael Connolly, Philip Toner
Student Co-ordinators ABC for life 2004/2005

SECTION 1:

FACILITATING LEARNING:

Pupils you will be teaching will come from a variety of different backgrounds. Each individual will have strengths, weaknesses, anxieties, and aspirations. It is important as an instructor to recognise the uniqueness of each pupil and work with him or her to achieve their learning objectives. Factors that can form barriers to teaching include poor learner motivation, physical or situational factors and a poor relationship between teacher and pupil. Try to overcome these as soon as possible.

MOTIVATION:

Pupils need to feel a sense of belonging to the group in which they find themselves. This may be inhibited by feelings of inferiority. Anxiety and inferiority are at their greatest at the start of the course so it is important to try and deal with these as best you can. Pupils who feel insecure will show a reluctance to take part in role-plays or answer questions. They need to be confident and possess high self-esteem if they want to derive the maximum benefit from resuscitation training. Pupils should feel valued and part of the team. Therefore, it is vitally important that teachers recognise this and include everyone in the group so that each pupil obtains the same learning experience from the session.

STRATEGIES FOR FACILATATING LEARNING:

- Serve as a resource person and helper
- Explain what is not understood
- Demonstrate principles, concepts and skills
- Challenging the values held by pupils where appropriate
- Act as taskmasters and evaluators
- Encourage pupils to evaluate themselves
- Manage groups of pupils and help the pursuit of intellectual questions

Pupils are unlikely to tolerate harsh criticism, humiliation or being patronised. Therefore, teachers should adopt a less authoritarian approach by acting as friends rather than authorities. This will also help to reduce anxiety.

TEACHING METHOD:

This is a framework which is useful for teaching any practical skill e.g. CPR:

- Teach progressively from the simple to the complex
- Teach skills in the order in which they will be used
- Teach one technique at a time
- Employ continual reinforcement
- Follow learning with practice
- Encourage confident employment of the skills

The poor retention of resuscitation skills has been attributed to ineffective teaching. The goal of teaching should ultimately be a change in the behaviour of the learner: repeated practice will greatly enhance achievement and performance.

Resuscitation teaching focuses on real-life scenarios, team dynamics, individual performance feedback, and repeated practice. Simulated cardiac arrests have great educational power because skills are performed in as life-like conditions as possible. They make learning less abstract and bridge the gap between theory and practice. Therefore, use scenarios when teaching and apply humour throughout your teaching to avoid loosing the attention of the pupils.

CONTROL AND REALITY:

Instructors need to exert control over the pupil in simulated events. The degree of control and reality of the situation will necessarily vary with the type of situation. A basic rule can be applied. Allow the session to be enjoyable but don't allow humour to stray from the point in hand.

SUMMARY:

Facilitating the process of learning by increasing the motivation of pupils is a complex procedure, but is crucial to education. We can influence the motivation in many ways, by attention to the learning environment, providing material appropriate to the pupils' needs, ensuring that instruction is carried out to the highest standards, and by applying the principles of learning that are well established in educational practice.

This section provides basic guidelines that you as a member of the teaching staff are well aware of. As you personally know each individual pupil that you will teach, you are more qualified to provide the correct level of teaching that best suits both you and your pupils.

SECTION 2

TEACHING BASIC LIFE SUPPORT SKILLS:

The skills described below are essential for your session to be effective. Please make sure you are fully confident with all aspects of the An ABC for life project. It is important that each of your sessions are delivered in the same way to each pupil. Basic life support should be taught in small group session, with a recommended five pupils per teacher. For example, in a P7 class of twenty-five, this will involve five sessions of five pupils throughout the year. This can take place in a science or personal development class. We understand that each primary school is different. Therefore, it is up to you and your school to plan when you will undertake the sessions.

Teaching consists of three parts: **set, dialogue and closure.**

1: SET

- Prepare equipment
- Check equipment
- Think about yourself
- What is the desired outcome/teaching goal for the session?

Preparation of the environment in which the skills are to be taught is essential if the session is to be successful. Often, several groups are taught in the same room and therefore care must be taken to avoid distractions between groups. Separation or the use of screens can achieve this. Pupils must also have enough room to observe the skill as it is demonstrated. Make sure the temperature in the room is suitable to avoid pupils becoming too warm and falling asleep or else shivering with the cold! If it is too warm, open a window. If it is to cold, shut doors etc.

As a trainer, it is your responsibility to ensure that you have all the equipment needed to teach the skill. You should ensure it functions and know how it works. Arrange equipment in a realistic manner, removing anything that is not essential. For example, it is important to check the lungs are functioning properly by giving a couple of breaths to ensure the airway system is correct before use.

When the pupils arrive for the session, they must be given clear, realistic objectives. Motivate them by explaining the importance of the skills and put it into context. Explain why we, as medical students working with primary schools, want to train CPR to pupils. This can be achieved by quoting some simple statistics e.g.

- 70% of heart attacks happen in the home, 20% at work and 10% in the local community
- There are 6000 heart attacks per year in NI, of which 1800 could be saved
- Only 1% of the general public have basic life support skills that can save lives
- Northern Ireland has the highest incidence of heart disease in Europe
- Children as young as 7 can learn the BLS skills to sustain life until emergency help arrives.

Keep terminology simple and avoid medical terms. Give everyone a name badge so you can call him or her by their name and they can use your name. This should promote a friendlier atmosphere.

Finally, identify how the candidates are expected to participate in the session. Don't be afraid to ask them simple questions, especially to quieter people e.g. what the five S's or ABC stands for, so that the session is interactive. This is vitally important in skills teaching because the initial approach used may be very different to what they have experienced previously. However, you must avoid sounding patronising or make pupils feel uncomfortable.

MAX RATIO of teacher to P7 pupils = 1:5

2: DIALOGUE

The objectives of the training program are to ensure that after the course of instruction the pupils will be capable of:-

1. Assessing an individual who has collapsed.
2. Ensuring that the individual is in a safe environment and can come to no further harm.
3. Obtaining help and assistance.
4. Determining whether or not an individual is conscious.
5. Positioning individuals in the recovery position when appropriate to do so.
6. Clearing and maintaining an open airway.
7. Assessing the presence of respiratory effort.
8. Performing effective mouth-to-mouth respiration.
9. Checking for effective circulation of blood.
10. Performing chest compressions which will maintain a circulation.

This includes the **four stage approach**:

- Real speed demonstration of the skill (eg video clip on CDROM or you doing the task from start to finish like you would in a real situation, with no explanation of what you are doing)
- Repeat demonstration with dialogue informing pupils of the rationale for actions
- Repeat demonstration guided by one of the pupils (i.e. they tell you what to do)
- Demonstration by the pupils, and practice by all pupils.

MAINSTEM OF COURSE: 5 x S's + ABC's (see appendix for algorithm, photographs of procedures and flipcharts)

Safe ***S***urroundings (Traffic, electricity, gas)

Send for help (When help arrives, the child should inform the person to telephone 999 for an ambulance saying where they are and that someone has collapsed. If help does not arrive, the child should be encouraged to telephone for an ambulance themselves. A third party, should they arrive, should be told to wait for an ambulance and direct them to the scene)

Shake and ***S***hout

Call ambulance if no-one arrives.

Airway:

- Check for obstruction e.g. vomit, blood, loose dentures
- Remove loose dentures, leave secure dentures in place
- If obstruction and unconscious, remove by finger sweep (NEVER in children)
- Head tilt and chin lift (two fingers on chin and lift up, with other hand on forehead, not nose!)

Breathing: (10 secs out loud e.g. 1 one thousand, 2 one thousand etc)

LOOK, LISTEN and FEEL

- Put your head down beside casualty's mouth
- Expose and **Look** for the chest rising and falling
- **Listen** for sounds of breathing
- **Feel** for breath on your cheek

If not breathing:

Give 2 rescue breaths immediately by pinching nose, taking a deep breath, make a firm seal around mouth, breath steadily into mouth for 2 seconds, and make sure chest rises and falls.
Take up to 5 breaths to achieve 2 rescue breaths

Circulation: (10 seconds counting out load again)

- Colour
- Movement
- Eyelids opening/closing
- Noisy breathing

If no signs of a circulation, begin chest compressions at a rate of **2:15**

Find where lower ribs join together.
Measure 2 fingerbreadths above this point
Slide heal of other hand down breast bone until it meets this point
Interlock fingers and keep fingers of hand that is on the chest upwards to prevent rib fracture
Continue sequence of **2:15**

When to stop:

- Exhaustion
- Professional help arrives (explain to continue CPR until all equipment is out and paramedics take over)
- Casualty shows signs of life

If signs of breathing and circulation are present, put the casualty into **the recovery position** (see appendix):

- Raise your hand
- Now touch your face
- Bend leg and roll
- To keep you safe (see appendix)

Assessment:

Once everyone in your group has had enough practice, it would be appropriate to let each pupil run through the entire process to ensure they are confident with all aspects of CPR. This is a very important part of the session and you must clear up any issues or problems at this time. It is of paramount importance that the pupil can fully perform basic life support at the end of the session. A sample assessment sheet that you can use as a basis for this has been provided in the appendix. If successful, each pupil should be presented with a certificate from Queens University for completion of the An ABC for life programme.

During the pilot schemes for ABC for life at Ballydown primary school, in Banbridge (October and November 2004), the medical student trainers found the following points extremely helpful. Therefore, we encouraged you to employ these methods, or those that you find most suitable:

- Before introducing students to manikins, a flipchart should be used to allow children to become familiar with the five S's and ABC words.

- A video clip of a child performing CPR and the use of practical demonstrations proved more useful for a child to learn than using a complex video. This also increased the children's attention spans.

- The importance of the four stage approach, and that it is a well recognised method of resuscitation training

- Encourage as much practical use of the equipment as possible in the given time.

To facilitate the sessions with their pupils, you will be provided with the following:

Other teaching material

- A website will be available for all schools to access teaching material. This will contain not only printable material to inform the pupils but also video clips of a simulated cardiac arrest and resuscitation of a collapsed person being positioned in the recovery position.

- A pamphlet is available which outlines the aims and objectives of the ABC for Life program and the structure of the program and how it is administered. This is suitable for teaching staff, pupils and parents or guardians so that they can make an informed decision about whether or not they wish to participate in the program.

- Assessment forms – trainers and trainees have the opportunity to give feedback with regard to the training program and any difficulties they have experienced or issues which they would like to have addressed. These can be sent to the program co-ordinator at the Medical School, Queen's University Belfast or through the feedback facility on the website.

3. CLOSURE

Allow time at the end of the session for any questions and then summarise the session. We have provided a bank of commonly asked questions so that you can answer them correctly. If you are unsure about a question, don't be afraid to say that you are unsure. If this occurs, please feel free to contact us through the website, telephone or post and we will be happy to assist.

SECTION 3

CARE AND CLEANING OF EQUIPMENT:

- In between pupils, the manikins' face should be cleaned with an alcohol wipe
- In between sessions lungs should be changed, with the old lungs disposed of
- Manikin faces should be soaked in clean, soapy water
- These manikins are expensive and need to be handled with care

CHANGING LUNGS:

All staff teaching the course should be able to change the manikins lungs after each session. This is achieved by removing the manikins face first. Open the chest up by removing the 'skin' from the clips in the manikins' side. Remove the bottom of the lungs from the attachment. Next, pull the mouth piece off by dislodging the jaw. Remove the lung attachment and dispose of old lungs. Attach the new lungs to the jaw bone. Re-insert the jaw ensuring the lungs are facing the correct way up (i.e. with the writing showing up). Fit the lung to the attachment on the bottom. Close the chest up and fix on clips at side. Reattach the mouth piece and ensure it is inserted correctly by producing a successful breath.

FREQUNTLY ASKED QUESTIONS:

Q Who is this project supported by?

A

- Dr David Mc Cluskey (Head of dept of Medicine RVH)
- Professor R Hay (Dean of Faculty of Medicine, Queens University Belfast)
- Vice Chancellor of Queens University Belfast
- Minister for Education
- Dr Henrietta Campbell, Chief Medical Officer for Northern Ireland
- Andrew P Dougal OBE, Chief Executive Chest Heart & Stroke
- Professor Frank Kee, Dept of Public Health, Queens University Belfast
- British Red Cross
- Belfast Telegraph
- Medsin QUB and Medsin UK (Medical Students International Network)

Q Are medical students insured to conduct this course in the local community?

A Queens Medical Students are insured to enter the community and teach this project under the University insurance policy. This has been cleared by the University Vice Chancellor 2004/2005.

Q Can I become infected if I give mouth to mouth?

A There is a very low risk of infection, either bacterial or viral. However, the risk, although slight, is still present. Therefore, it is the responders own decision. If you do not want to do mouth to mouth, at least do chest compressions until help arrives.

Q Why has the rate of chest compressions to ventilation changed from 1:5 to 2:15?

A The most important reason is that more compressions can be given each minute with a ratio of 15:2 than with 5:1. Circulating blood volume in this situation is likely to be directly proportional to the number of compressions, assuming compression rate and quality stay the same.

Q Why has carotid pulse been removed for lay people?

A Looking for a carotid pulse has been "de-emphasised" and the expression "look for signs of a circulation" should be used as pulse check in lay people has found to be very inaccurate. This is a more reliable indicator of an absent pulse.

Q How much should I blow in mouth to mouth?

A Blow to make the chest rise and fall as in normal breathing. This should be achieved by taking a deep breath and blowing steadily for 2 seconds.

Q What about the 2- rescuer technique of CPR?

A This is not routinely taught as part of this course (for P7's), but can be explained in other courses you may attend.

Q How do I do CPR on a child?

A This is very rare, and is usually due to an airway and breathing problem. Once again, it is out of the scope of this course and you are more likely to be a first responder in a heart attack.

Q Can I harm someone by doing chest compressions?

A You can't do more harm than good in this situation. Although broken ribs etc have been reported, deciding not to do chest compressions on a person in cardiac arrest is far more harmful than deciding to do chest compressions on a person with a pulse. With good technique, any harm is unlikely. If in doubt, start chest compressions. If they are not in cardiac arrest and are responsive to compressions, they will let you know!

Q What if they are in a chair etc?

A Treat where you find the casualty. Move them if you have help. If they are on lying awkwardly, roll them onto their back.

THIS MANUAL WAS BASED ON GUILDLINES PRODUCED BY THE RESUSCITATION COUNCIL UK

CONCLUSION:

The ABC for Life program is designed to teach basic life support techniques to primary 7 school children in a simple, easy to remember, practical and non-threatening environment. If every primary school in Northern Ireland participates, up to 25,000 children each year would be capable of performing basic life support. Within 10 years 1 in 10 of the population would be able to give cardiopulmonary resuscitation which would be a major improvement on the present situation where less than 1 in 100 have these skills.

Pupils will gain the most from attending a course that is pitched at the right level, relevant to their needs and abilities. We understand that each group that you teach will be uniquely different, therefore it is up to you as a trainer to judge for yourself. Role-play with the use of simulation will help to teach specific skills, improve confidence, develop teamwork, and help pupils to achieve their goals. The use of simulation helps to ensure that regular practice takes place which in turn leads to better retention of knowledge and skills. The provision of feedback about performance is vital, without it goals are less likely to be achieved, and motivation will suffer.

We hope you have found this manual to be useful. We have tried, to simplify the masses of information available and condense it into an easy to use booklet. The main point we haven't really talked about, and probably one of the most important, is to make it fun! Fun for both you as a trainer and the pupils that you teach. Good luck with the pupils you teach and the project at large,

Michael Connolly, Philip Toner
Founding Student Co-ordinators of ABC for life 2004/2005

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APPENDIX

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ABC for Life

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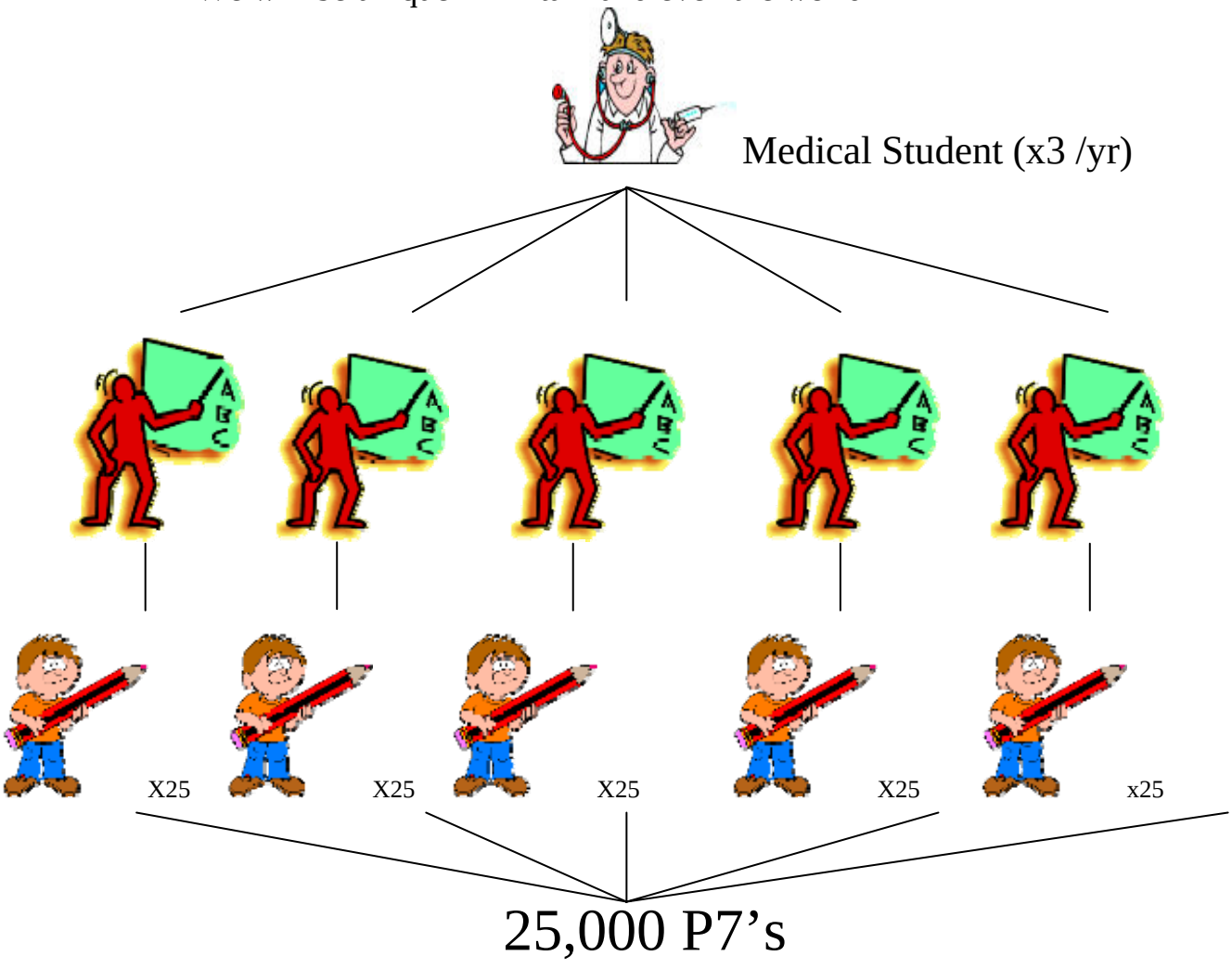
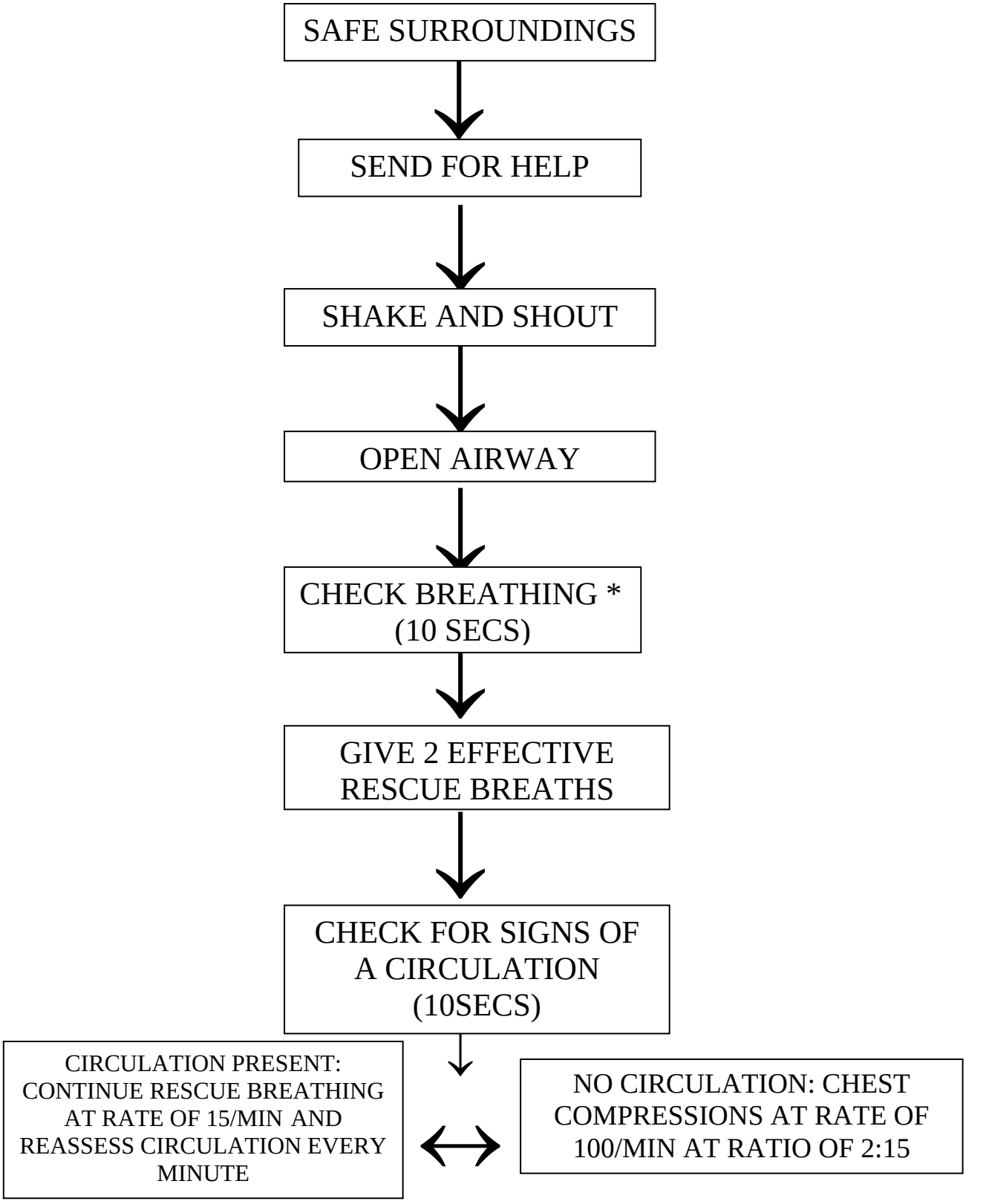
PLAN: Teach CPR to all 25,000 P7 children in 911 Primary Schools in NI!!!

WHO?: Dr. David Mc Cluskey, Medsin QUB and 60 medical students
HOW?: 60 medical students
Each student gets trained how to train teachers to teach CPR
Each student trains 5 teachers x 3 times a year = 15 each
15 each x 60 students = 900 schools!
Each of 911 teachers gets a manikin to train their 25 P7's

Effect: 25,000 P7 students taught life support in 1 year
We will be unique in Britain and even the world



Basic Life Support Algorithm



* If the casualty is breathing, put in recovery position

DIAGRAMATIC REPRESENTATION OF CPR

SAFE SURROUNDINGS

SEND FOR HELP

SHAKE AND SHOUT

LOOK FOR OBSTRUCTION

FINGERSWEEP

OPEN AIRWAY AND ASSESS BREATHING FOR 10 SECS

GIVE 2 RESCUE BREATHS IF NOT BREATHING

ASSESS CIRCULATION FOR 10 SECS

LOCATE LOWER RIBS

JUNCTION OF RIBS

2 FINGERS ABOVE THIS

BRING HEEL OF OTHER HAND DOWN BREAST BONE

INTERLOCK FINGERS
(HOLD FINGERS UP)

COMPRESS 15 TIMES
KEEPING ELBOWS STRAIGHT

RATIO 2:15

CONTINUE UNTIL
HELP ARRIVES

DIAGRAMATIC REPRESENTATION OF RECOVERY POSITION

The recovery position can be remembered by the simply rhythm:

- Raise your hand
- Now touch your face
- Bend leg and roll
- To keep you safe

RAISE YOUR HAND

NOW TOUCH YOUR FACE

BEND LEG AND ROLL…..

……..

TO KEEP YOU SAFE

RECOVERY POSITION

ALWAYS REMEMBER TO ROLL THE COLLAPSED PERSON TOWARDS YOU

ASSESSMENT FORM

- [ ] SAFE SURROUNDINGS
- [ ] SEND FOR HELP
- [ ] SHAKE AND SHOUT

- [ ] LOOK FOR OBSTRUCTION AND CLEAR AIRWAY
- [ ] OPEN AIRWAY (HEAD TILT & CHIN LIFT)
- [ ] CHECK FOR BREATHING (10SECS) *
- [ ] GIVE 2 RESCUE BREATHS
- [ ] ASSESS SIGNS OF A CIRCULATION (10SECS) **
- [ ] CORRECT HAND POSITION FOR COMPRESSION
- [ ] CORRECT RATIO 2:15
- [ ] CONTINUE AT THIS RATIO
- [ ] COMPRESSION RATE CORRECT
- [ ] AWARENESS OF WHEN TO STOP

- [ ] * IF BREATHING PRESENT: RECOVERY POSITION
- [ ] ** IF CIRCULATION, CONTINUE RESCUE BREATHING 15/MIN AND REASSESS BREATHING EVERY MINUTE

COMMENTS:

PASS: FAIL: RETEST: (TICK AS APPROPRIATE)

The ‘5’ S words

Safe Surroundings

Send for help

Shake and Shout

An ABC for life

Airway

Clear and open

Breathing

Look, listen + feel - 10secs

Circulation

If none

Give 15 chest compressions

Repeat 2:15 until help arrives

CPRiS

The Recovery Position

Raise your hand

Now touch your face

Bend leg and roll

To keep you safe

Basic Life Support

Do NOT perform

unless needed

You must NEVER

perform CPR on

a normal healthy

person

NOTES