Athlete’s heart and basic life support awareness through the eyes of an early career researcher

Barts and QMUL Science Festival

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Outline

1. The journey of an early career researcher – things I wish I knew in high school

2. Falling in love with a topic – meet the athlete’s heart

3. Case study – what we have learned from Euro 2020
The journey of an early career researcher

• MD – Semmelweis University

• PhD – Semmelweis University

• Post doctoral researcher – Queen Mary University of London
My experience with higher education

Expectations

Reality
‘Knowledge is like a sphere, the greater its volume, the larger its contact with the unknown’

- Blaise Pascal

KNOWN KNOWNS
“things that we’re aware that we know”

KNOWN UNKNOWNS
“things that we’re aware that we don’t know”

UNKNOWN KNOWNS
“things that we’re unaware that we know”

UNKNOWN UNKNOWNS
“things that we’re unaware of and don’t know”

- Donald Rumsfeld
Notes

• Taking myself less seriously
• Asking questions
• Asking for help
• Comparing ourselves
• Making mistakes and owning them
• Higher education is a marathon, but longer
• Recuperation
• Concentrating on what matters

- The Good Place

It's a rare occurrence. Like a double rainbow, or someone on the internet saying, "You know what? You convinced me I was wrong."
The athlete’s heart

Less active individual

Athlete’s heart
Screening, but how?

- Detailed history
- Laboratory assessment
- 12-lead ECG at rest and ECG monitoring
- Echocardiography
- Cardiac magnetic resonance
- Coronarography
- Spiroergometry
- Genetic testing

Medical images are the property of the Semmelweis University
Screening does not always identify all at risk.

We have to prepare for PLAN B!
Prompt action by the players and the referee:
• Recognizing an emergency
• Immediately calling for medical assistance
• Tried to clear the airways
PLAN B – Timely arrival of the medical team

20 s - Team medical personnel arrive

1 min – Emergency medical service providers arrive
PLAN B – CRP

1 min 52 s – First chest compression

2 min – Defibrillation
Safety and privacy

15 min – Transportation, already stabilized

Protect patient’s privacy
# Basic Life Support: Step-by-Step

## Safety
- Make sure that you, the victim and any bystanders are safe.

## Response
Check for a response
- Shake the victim gently by the shoulders and ask loudly: “Are you all right?”

## Airway
Open the airway
- If there is no response, position the victim on their back.
- With your hand on the forehead and your fingertips under the point of the chin, gently tilt the victim’s head backwards, lifting the chin to open the airway.

## Breathing
Look, listen and feel for breathing
- Look, listen and feel for breathing for no more than 10 seconds.
- A victim who is barely breathing, or taking infrequent, slow and noisy gasps, is not breathing normally.

## Absent or Abnormal Breathing
Alert emergency services
- If breathing is absent or abnormal, ask a helper to call the emergency services or call them yourself.
- Stay with the victim if possible.
- Activate the speaker function or hands free option on the telephone so that you can start CPR whilst talking to the dispatcher.

## Send for AED
Send someone to get an AED
- Send someone to find and bring back an AED if available.
- If you are on your own, DO NOT leave the victim, but start CPR.

## Circulation
Start chest compressions
- Kneel by the side of the victim.
- Place the heel of one hand in the centre of the victim’s chest - this is the lower half of the victim’s breastbone (sternum).
- Place the heel of your other hand on top of the first hand and interlock your fingers.
- Keep your arms straight.
- Position yourself vertically above the victim’s chest and press down on the sternum at least 5 cm (but not more than 6 cm).
- After each compression, release all the pressure on the chest without losing contact between your hands and the sternum.
- Repeat at a rate of 100-120 min-1.
Resources

Cardiac Risk in the Young

Preventing young sudden cardiac deaths through awareness, screening and research, and supporting affected families.

01737 363222
cry@c-r-y.org.uk

British Heart Foundation

FIGHT FOR EVERY HEARTBEAT
bhf.org.uk

Resuscitation Council UK

resus.org.uk
Thank you