

## **PE1711: First Aid Training for All Primary School Children in Scotland Additional Briefing**

### **INTRODUCTION**

The Public Petitions Committee has commissioned SPICe to provide a short briefing providing examples of approaches to teaching first aid in schools in other countries.

The petitioner told the Committee on 7 March 2019—

“The evidence that exists suggests that Scotland has been poor by European standards—it is close to the bottom of the league tables for bystander interventions, first aid training and the number of current first aiders—that is, people who have trained in the past three years.” [Official Report, 7 Mar 2019, Col 16](#)

At its meeting on 20 June 2019, Brian Whittle MSP said—

“It would be interesting to see whether countries that are higher up [these tables] teach such interventions in schools.” [Official Report, 20 June 2019, Col 33](#)

The approach of this paper is to briefly look at the statistics on bystander interventions before discussing the inclusions of first aid in national curricula. This paper will focus on European jurisdictions.

There appears to be an increasing focus on this issue and all local authorities have recently committed to including CPR training for pupils in all their secondary schools.

### **BYSTANDER INTERVENTION STATISTICS**

Comparisons of bystander intervention in different jurisdictions in cases of cardiac arrests statistics is not straightforward. To a degree, the statistics will depend on both what is measured as an intervention and the circumstances informing the statistics. For example, some statistics will include traumatic cases (e.g. where there has been a serious injury) and others where there has been a cardiac arrest only. Some statistics will include children’s cardiac arrests, while others do not. Another issue is obtaining up-to-date statistics.

Just before the comment quoted above, the petitioner said:

“How official statistics are collected varies from country to country, so making international comparisons is not always as easy as it might be. The general lack of research on the topic should be addressed.” [Official Report, 7 Mar 2019, Col 16](#)

### **Scotland’s statistics**

The most recent statistics in Scotland are the [Out-of-Hospital Cardiac Arrest data linkage project: 2017-2018 results](#) published in January 2019. These statistics look at non-

traumatic arrests where resuscitation was attempted<sup>1</sup> by the ambulance service – a “worked arrest”.

These statistics show that the percentage of worked arrests where bystander CPR was attempted/successful was 55.5% in 2017-18. This figure has increased from 39.4% in 2011-12. Key findings from these statistics are reproduced in Annexe A.

## England’s statistics

A study [of incidents attended by ambulance services in England](#) found that “of all the 2017 events in England, 59.8% of patients received CPR performed by bystanders”.

A previous edition of the Scottish Government’s data stated—

“Scotland’s ... bystander CPR rate is low compared with the numbers published for other centres, including some parts of England. For example, it is substantially lower than the 60% bystander CPR reported by the London Ambulance Service in their 2015/2016 annual report. The relatively low overall survival rate in Scotland during the period our data was collected, lends plausibility to the suggestion that our bystander CPR rate is substantially lower than other parts of Europe with better survival outcomes. It is also possible that because our 2011-15 dataset bystander CPR information was often missing or ambiguous, the actual percentage of bystander CPR may be higher, and [Scotland’s] findings simply reflect significant under-reporting.”<sup>2</sup>

## International data

The 2016 [EuReCa One Study](#) looked at out of hospital cardiac arrests a single month in 2014 and found that bystander CPR ranged from 6-78%, with an average of 47.4% across 27 countries. A follow up study is expected shortly, the EuReCa Two study. The EuReCa Two study protocol commented on the data of EuReCa One:

“The EuReCa ONE study showed a high degree of variation in incidence and outcome across Europe and raised questions about the cause of these variations. For example, different interpretations of the term `bystander CPR` was noted and confirmed by a subsequent European survey.”

It is hoped that the EuReCa Two study will be able to provide a more comparable data-set.

There are a number of studies of individual countries’ work on improving outcomes for out of hospital cardiac arrests. A study in Sweden (Hasselqvist-Ax et al. (2015)) used national cohort data to assess whether CPR before the arrival of emergency medical services improved survival in people with out-of-hospital cardiac arrest. It found that, adjusting for variables such as place of cardiac arrest and time until arrival of emergency medical services, the people who received bystander CPR were twice as likely to survive to 30 days than people who did not. Furthermore, CPR administered by an individual under instruction over the telephone improved survival rates albeit not to the extent of individuals able to administer CPR without instruction.<sup>3</sup>

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<sup>1</sup> Reasons for paramedics not attempting to resuscitate can include an obvious death, or confirmation that resuscitation was not the patient’s wish.

<sup>2</sup> The Scottish Government (2017) [Scottish Out-of-Hospital Cardiac Arrest data linkage project: initial results](#)

<sup>3</sup> N Engl J Med (2015); [Early Cardiopulmonary Resuscitation in Out-of-Hospital Cardiac Arrest](#)

A study which looked at survival rates of out of hospital cardiac arrests in Denmark (Wissenberg et al (2013)) between 2001 and 2011 found that there is a correlation between increased bystander CPR and survival rates, however, “because of the co-occurrence of other related initiatives, a causal relationship remains uncertain.” These related initiatives included:

- mandatory resuscitation training in schools;
- mandatory resuscitation training when acquiring a driving license;
- increased voluntary first aid training;
- distribution of approximately 150 000 CPR self-instruction training kits between 2005 and 2010;
- improvement of telephone guidance from emergency dispatch centres to bystanders witnessing a cardiac arrest;
- a large increase in the number of automated external defibrillators located outside hospitals (approximately 15 000 were in place by 2011);
- efforts to improve advanced care with updates of clinical guidelines; and
- overall strengthening of the emergency medical services.<sup>4</sup>

According to the European Resuscitation Council, Denmark is one of four European countries that have mandatory resuscitation training in schools (see Annexe B). The others are Belgium, France, Portugal and Italy. SPICe was unable to locate similar studies on these countries.

## **SCHOOL TEACHING OF CPR/FIRST AID**

### **European Resuscitation Council**

The European Resuscitation Council (ERC) a membership body comprising of 33 national resuscitation councils. It [states](#) that it “provides the standard for resuscitation guidelines and training in Europe and beyond.” Its current [guidelines](#) recommend—

“One of the most important steps in increasing the rate of bystander resuscitation and improving survival worldwide is to educate all school children... This can be easily achieved by teaching children for just 2 hours per year, beginning at the age of twelve.”

In the context of this petition, it is worth noting that in Scotland a child aged 12 would normally be in P7 or S1. The structure of school education and when children move from one education setting to another varies across Europe.

The ERC guidelines also cover a number of other issues. As well as training the ERC “strongly recommend the use of AEDs [automated external defibrillators].”<sup>5</sup>

### **Curricula models in other countries**

The approach to curriculum content differs between countries. Some jurisdictions are more prescriptive than others in terms of content. The approach in Scotland is not to have a prescriptive curriculum based on “experiences and outcomes” and guidance; in others

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<sup>4</sup> Wissenberg M, Lippert FK, Folke F, et al. [Association of National Initiatives to Improve Cardiac Arrest Management With Rates of Bystander Intervention and Patient Survival After Out-of-Hospital Cardiac Arrest](#). *JAMA*. 2013;310(13):1377–1384. doi:10.1001/jama.2013.278483

<sup>5</sup> European Resuscitation Council (2015) [Press release](#).

countries, such as in England, there is a more prescriptive approach with more of the curriculum set out in law<sup>6</sup>. Any comparison of curricula practices at country-levels should be treated with caution as the approaches will vary widely and should be considered within the context of their own political and educational systems.

The figure in Annexe B shows countries where CPR education in schools is mandatory and where it is “a suggestion”. However, as noted above, this may simply reflect the education systems of some those countries; it does not necessarily reflect the amount or quality of CPR training that takes place in schools.

The British Heart Foundation argues that “introducing CPR as a compulsory lesson for pupils works” and cites a number of international examples where more CPR lessons in schools led to better outcomes in terms of patient survival.<sup>7</sup> The BHF cited Seattle and Denmark as places where this had been a success. The BHF has also stated that “in countries like Norway where CPR is already more widely taught in schools, survival rates as high as 1 in 4 have been reported.” Norway has a statutory national curriculum, however, this focuses on learning outcomes.<sup>8</sup> The paper which the BHF cites in relation to CPR in Norway notes—

“The curriculum does not specify what first aid measures pupils should master, how often and at what levels first aid training should be given, or what courses or guidelines should be followed. This is left to the discretion of the individual teacher and school.”<sup>9</sup>

In January 2019, the Department for Education announced that health education would be made compulsory in all state-funded schools<sup>10</sup> from September 2020. The aim is to ensure that “by the end of secondary school pupils will be taught how to administer CPR, the purpose of defibrillators, and basic treatments for common injuries.” The [guidance](#) states that by the end of Primary school, children should know “how to make a clear and efficient call to emergency services if necessary” and “concepts of basic first-aid, for example, dealing with common injuries, including head injuries”. In secondary school, pupils should know “basic treatment for common injuries ... life-saving skills, including how to administer CPR [and] the purpose of defibrillators and when one might be needed.”

## Scotland

As noted in the [SPICe briefing](#) for this petition, the “the curriculum [in Scotland] is not based upon legislation and is intended to allow for autonomy at classroom, school and local authority levels.” And, “Education Scotland has worked with Save a life for Scotland and published a learning resource “to support the teaching of CPR across all ages and stages”. The statutory responsibility for providing school education falls to local authorities.

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<sup>6</sup> In England, the National Curriculum is mandatory for local authority schools; however, much of it is not mandatory for academies, which account for a significant portion of publicly funded schools.

<sup>7</sup> British Heart Foundation (2019), *Cardiopulmonary Resuscitation in Schools Policy Briefing*

<sup>8</sup> Mølstad, C. E., & Karseth, B. (2016). National curricula in Norway and Finland: The role of learning outcomes. *European Educational Research Journal*, 15(3), 329–344.

<https://doi.org/10.1177/1474904116639311>

<sup>9</sup> Bakke, Håkon Kvåle et al. “A nationwide survey of first aid training and encounters in Norway.” *BMC emergency medicine* vol. 17, 1 6. 23 Feb. 2017, doi:10.1186/s12873-017-0116-7

<sup>10</sup> I.e. including academies.

British Heart Foundation Scotland's *Nation of Lifesavers* campaign encouraged local authorities to commit to including CPR training for pupils in all of their secondary schools. By April 2019, all 32 local authorities committed to do so.

## **CONCLUSION**

It is not currently possible to accurately compare Scotland's bystander CPR rates to other countries' rates. It appears that Scotland performs less well than England in this respect, however there is an improving picture.

There is good evidence that trained bystanders administering CPR improves outcomes for out of hospital cardiac arrests. Training pupils in schools is one way to do this and ERC guidelines call for annual training in the age-range that would largely cover secondary education. ERC guidelines also recommend other initiatives to improve outcomes.

Different countries' education systems are distinct. In different jurisdictions, different levels of the system are responsible for what is taught in the classroom and how that is taught. Many countries attempt to allow as much autonomy as possible at the lowest possible level. Statutory national curricula in different countries vary in terms of how prescriptive they are.

The curriculum in Scotland is non-statutory and, in common with some other countries' statutory curricula, is outcome focused and is designed to allow for professional discretion. All local authorities have recently committed to including CPR training in their secondary schools.

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Note: Committee briefing papers are provided by SPICe for the use of Scottish Parliament committees and clerking staff. They provide focused information or respond to specific questions or areas of interest to committees and are not intended to offer comprehensive coverage of a subject area.

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<sup>11</sup> Emma Butcher worked in SPICe through the UKRI Policy Internship Scheme.

## **Key findings from *Out-of-Hospital Cardiac Arrest data linkage project: 2017-2018 results***

The following is taken from the Scottish Government's 2019 publication, [Out-of-Hospital Cardiac Arrest data linkage project: 2017-2018 results](#)

### **Summary of main findings**

- The number of patients with OHCA that had resuscitation attempted in the community was stable at 3,484 (compared to 3,455 in 2016/17) while data linkage completion continues to improve with 88.7% of OHCA cases linked in 2017/18 (compared with 73.0% in 2011/12).
- There has been little change in the mean age of OHCA patients (66 years) or the male vs female split (64% vs 36%).
- Bystander CPR rates have increased to 55.5% in 2017/18 compared with 49.9% in 2016/17, and more patients had a pulse on arrival at hospital than in previous years with 'Return of Spontaneous Circulation' (ROSC - all rhythms) up to 23.3% in 2017/18 from 20.2% in 2016/17.
- Survival at 30 days was unchanged at 8.3% of all worked arrests in 2017/18 compared to the previous year. Expressed as the number of survivors per million of the Scottish population, this was 53 survivors/million in 2017/18 which shows a sustained increase when compared to 45 survivors/million in 2014/15, the year before the official launch of the Strategy.
- People living in most deprived quintile (SIMD1) continue to have around twice as many OHCA as those in the least deprived quintile (SIMD5). Arrests in SIMD1 areas happen at a younger age (8 years younger on average) and are more likely to be fatal than those occurring in SIMD5. People in less deprived areas (SIMD5) are more likely to receive bystander CPR (60% in SIMD5 vs 56% in SIMD1). They are also more likely to have an initial cardiac rhythm treatable with defibrillation (31.7% SIMD5 vs 25.5% SIMD1).



