

Standardising the Use of "2222" for In-Hospital Cardiac Arrest Calls

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Abstract

Aims

This audit aimed to assess whether "2222" is the number used for cardiac arrest calls in Irish hospitals.

Methods

Between June and August 2019, 167 potential hospitals were contacted via telephone to assess whether they had cardiac arrest teams and to ask how such teams were activated.

Results

In total, 67 Irish hospitals with cardiac arrest teams were identified. All of these institutions completed the survey. Fifty-two hospitals (77.6%) use 2222 as a cardiac arrest number. The number 2222 is used in 82% of public hospitals (n=42), compared with 62% (n=10) of private hospitals. Overall, 14 different cardiac arrest numbers and various button systems are in use.

Discussion

As 15 Irish hospitals with cardiac arrest teams still do not use 2222 as a cardiac arrest call number, there remains a significant amount of work to be done to achieve compliance with European Resuscitation Council, Irish College of Anaesthesiologists and HSE recommendations.

Introduction

The European Resuscitation Council, European Board of Anaesthesiology & European Society of Anaesthesiology issued a joint statement in September 2016 recommending that all European hospitals use the same internal telephone number (2222) to summon help when a patient has a cardiac arrest.¹ This patient safety initiative is fully supported by the College of Anaesthesiologists of Ireland and the Health Service Executive (HSE).²

This audit aimed to assess compliance with the use of 2222 for cardiac arrest calls in Irish hospitals in 2019.

Methods

A list of Irish hospitals was compiled using sources including HSE websites, health insurance companies and an online telephone directory. Between June and August 2019, 167 potential hospitals were contacted via telephone to assess whether they had cardiac arrest teams. A cross-sectional survey was then conducted: all institutions with cardiac arrest teams were asked how such teams were activated.

Switchboard staff were the main personnel surveyed in the first instance. Nursing staff and/or resuscitation officers were then surveyed in case of uncertainty. If an answer other than "2222" was given, a follow-up question was asked to assess if 2222 was in use as an alternative.

Results

In total, 67 hospitals with cardiac arrest teams in Ireland were identified in 2019. All completed our survey.

Fifty-two hospitals (77.6%) use 2222 as a cardiac arrest number (**Figure 1**). This includes 9 hospitals (13.4%) which also use an alternative number.

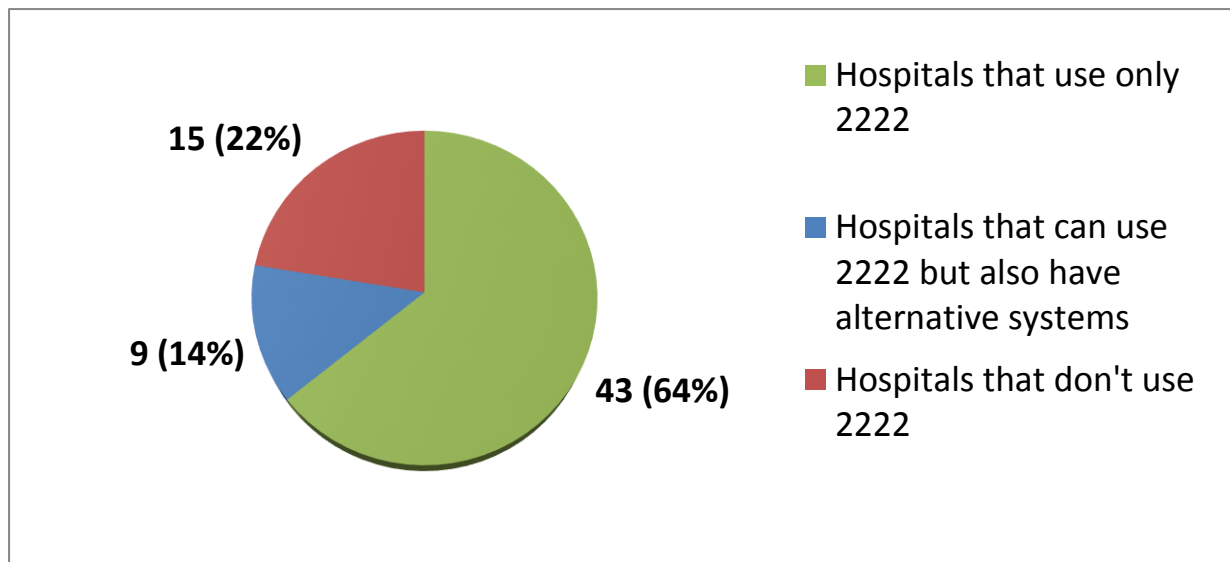


Figure 1: Overall summary of the use of 2222 in Ireland in 2019. Data label format is [number (percentage)].

Overall, 14 different cardiac arrest numbers and various button systems are in use in hospitals in Ireland (**Table 1**).

2222	5300	999
21	5221	5555
7777	555	7222
22	3333	777
410	22555	Specific button from every phone

Table 1: All cardiac arrest numbers in use in hospitals in Ireland.

A total of 51 public hospitals and 16 private hospitals had cardiac arrest teams. Of public hospitals, 82% (n=42) use 2222 as a cardiac arrest call number, compared with 62% (n=10) of private hospitals (**Figure 2**).

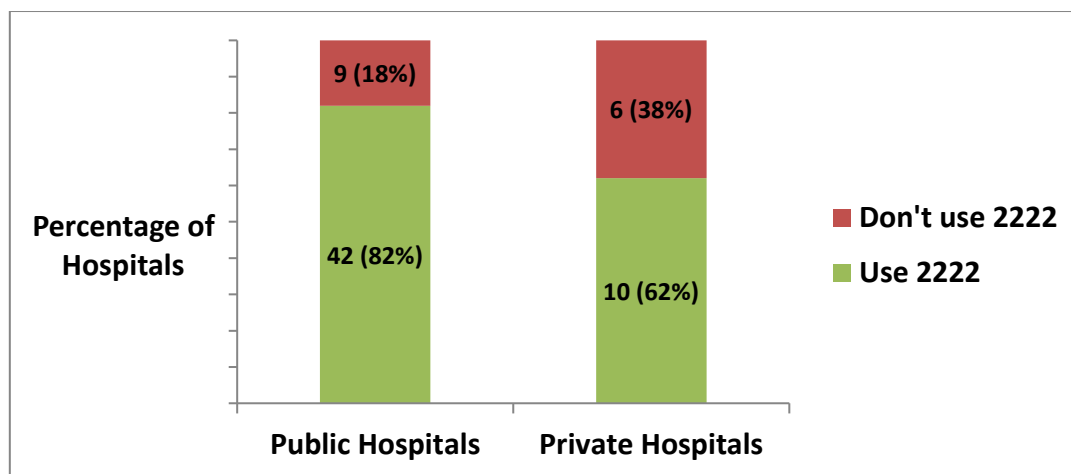


Figure 2: Percentage of Public and Private Hospitals in Ireland that use 2222. Data label format is [number (percentage)].

Discussion

Outside hospitals in Europe, there is a single standard emergency telephone number (112) that can be dialled to reach emergency services. In hospitals in Europe there is no single standard emergency telephone number for “cardiac arrest calls” to summon the resuscitation team³. Indeed, it has previously been published that at least 105 different numbers are in use across Europe.³

One study in Denmark showed that 49.5% of the staff could not remember the number to call in their own hospital.⁴ Another study of patient safety incidents which involved cardiac arrests and resulted in death showed that miscommunication involving the telephone number occurred in more than 1 in 10 incidents.⁵ If healthcare professionals do not instinctively know the emergency number, it may delay the arrival of resuscitation teams. Delayed arrival of resuscitation teams beyond as little as three minutes has been shown to reduce survival after cardiac arrest.⁶

Standardisation reduces variation and assists in error proofing processes in healthcare.⁷⁻⁸ Martin Bromiley, Chair of the Clinical Human Factors Group (CHFG) says “Standardisation has been shown to be an effective mechanism for reducing human error in complex processes or situations. The CHFG fully supports this Patient Safety initiative and encourages all European Hospitals to standardise their ‘Cardiac Arrest Call’ telephone number.”⁸⁻⁹

Our national audit shows that there are 14 different cardiac arrest numbers in use in hospitals in Ireland. Standardising the number to 2222 will avoid confusion and delays during cardiac arrests, particularly given the mobility and rotating nature of the hospital workforce and the stressful and infrequent nature of these events. Furthermore, a standardised cardiac arrest number is an extremely low-cost measure to increase patient safety. According to the European Resuscitation Council, the estimated cost of converting to 2222 for those hospitals using different numbers is €7,500.¹⁰ One Slovakian hospital provides an effective illustration of a smooth standardisation to 2222 at no cost.¹¹ The number 2222 was run in parallel with the existing cardiac arrest number for several months until the previous number was discontinued.

It is interesting to note the discrepancy between public and private hospitals in Ireland regarding the use of 2222. Ideally this number would be used by all hospitals, particularly given that many healthcare professionals work across both sectors.

Encouragingly, since 2016, three Irish hospitals have changed their cardiac arrest number to 2222 following recommendations by the HSE and College of Anaesthesiologists of Ireland. However, as 15 Irish hospitals with cardiac arrest teams still do not use 2222 as a common cardiac arrest call number, there remains a

significant amount of work to be done to achieve compliance with European Resuscitation Council, Irish College of Anaesthesiologists and HSE recommendations.

For any interested parties, a local implementation pack for establishing a standard hospital cardiac arrest call number can be found at: <http://www.esahq.org/resources/resources/cardiac-arrest-call/>

Declaration of Conflicts of Interest:

The authors have no conflicts of interest to declare.

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