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(RESEARCH ARTICLE)

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Active armed offender: A novel clinical practice guideline for pre-hospital care in Ireland

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Abstract

Incidents involving pre-hospital clinicians responding, or being caught in, active situations of those armed with knives and guns are rising in Ireland. These high-profile and high-stress situations require prior planning to minimise loss of life and maintain the safety of paramedic staff. Better situational awareness has been identified by veteran paramedics involved in active armed offender incidents as a key priority in preventing assault of staff. This novel proposed Clinical Practice Guideline (CPG) for the Pre Hospital Emergency Council (PHEC) Ireland is based on existing similar guidelines in Australia. This CPG combines pre-hospital emergency guidelines with established tactical medicine principles from the military and police services worldwide. This CPG seeks to minimise harm to clinicians as well as inform them of appropriate clinical priorities while operating in an unsafe situation

Keywords: Active Armed Offender; Paramedic; Pre-Hospital; Tactical Medicine; Military; Police; Terrorism Medicine; Preventive; Situational; Safety; Firearm; Knife

1. Introduction

"Active Armed Offender" is a proposed novel Clinical Practice Guideline aimed at Paramedic/Advanced Paramedic grades in Ireland. It provides guidance for pre-hospital practitioners at scenes involving an armed threat, in order to protect themselves and expertly treat patients.

In 2020, Europe saw terrorist stabbings in England, France and Germany as well as shooting incidents in Germany, Croatia and Austria[1]. Emergency Services in Ireland should be informed how to best protect themselves and treat patients should similar incidents occur in Ireland.

The risk to ambulance crews is more than theoretical; more than one pre-hospital practitioner is violently killed while on duty in the U.S.A. per annum[2] and two thousand ambulance staff are injured by violence each year[2]. In an online survey of ambulance service staff based in thirteen different countries, 65% reported they had been assaulted on duty[3]. 10% of those who had been assaulted reported that a weapon was used[3]. When pre-hospital staff were surveyed on what they believed would have prevented the assault, the leading response was "better situational awareness on their part"[4].

Clinically, assault with a knife and assault with a firearm represent two of the top three means[5] (the third being blunt trauma) by which those who die following assault are injured. As a result, it is important for clinicians to have adequate knowledge and skills in diagnosing, prioritising and managing potentially lethal penetrating injuries. In Ireland, approximately 400 stabbings and 40 shootings attend Emergency Departments per annum[5]. Ambulance services attend

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50% of assaults that are treated in the Emergency Department[5]; thus, this will include a significant number of penetrating injuries and brings clinicians in proximity of armed offenders.

This Clinical Practice Guideline seeks to combine a guide to minimise risk of violent injury to pre-hospital practitioners with emphasising appropriate clinical care while attending a potential "Active Armed Offender" incident.

2. Material and methods

This is a novel CPG for the Pre Hospital Emergency Council (PHEC) Ireland, based on "Active Armed Offender" (Queensland)[6] guideline. The layout is simple to minimise the cognitive load in a high-stress situation.

Emphasis is placed on Catastrophic Haemorrhage control (and link to "External Haemorrhage" CPG[7]) as exsanguination has consistently been demonstrated as a major cause of mortality in stabbing and gunshot injuries [8,9], with haemorrhage being the cause of death in the majority of survivable battlefield injuries.[10] Being placed prompt for treatment in Green Zone to "Minimise time on scene" as shorter duration on scene is associated with reduced mortality.[11,12,13]"Transport to appropriate hospital" was added to the CPG as a prompt to consider bypass of regional hospital and to attend a Major Trauma Centre, which is associated with lower mortality of patients with penetrating injuries.[14,15]Supplementary explanations of "Hot/Warm/Cold Zone" were added, along with added information on the "Threat Assessment" and "Escape-Hide-Tell" prompts. Quick references were added to the relevant "Major Incident" and "Triage Sieve" CPGs.

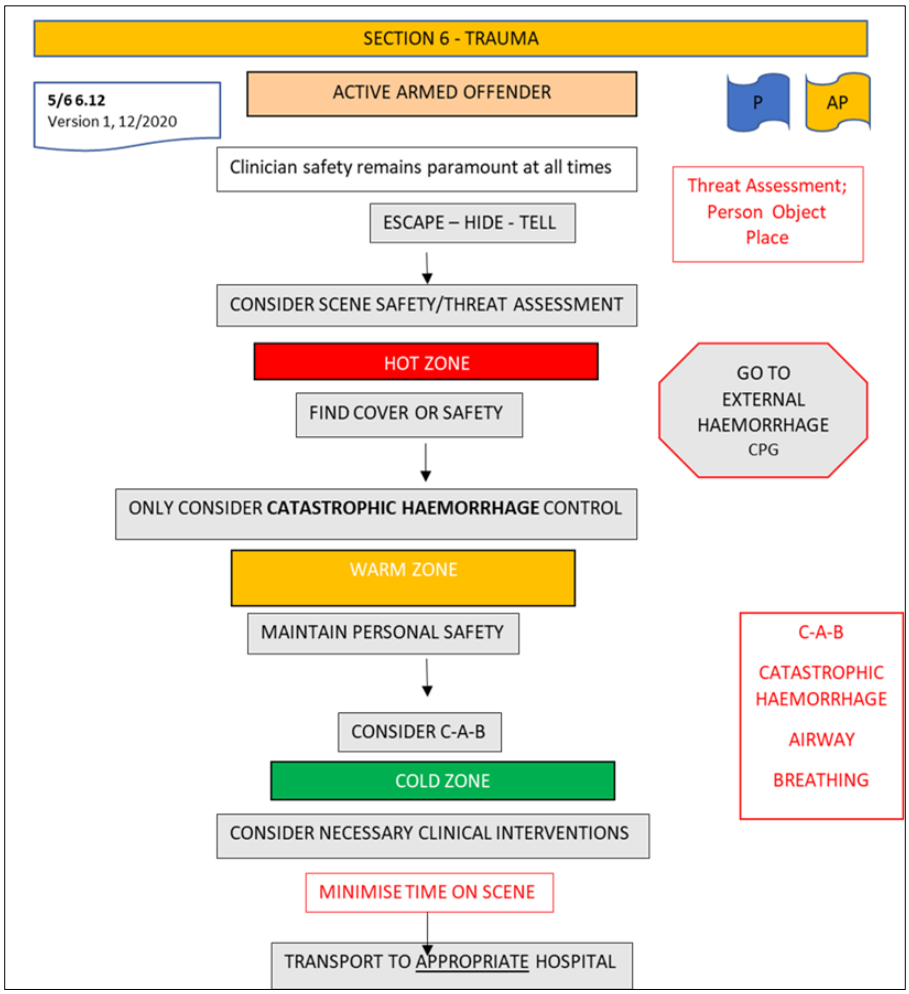

Figure 1 Proposed CPG "ACTIVE ARMED OFFENDER"

3. CPG PAGE 2

Active Armed Offender; "An armed offender who is actively killing or attempting to kill people, and who demonstrates their intention to continue to do so while having access to additional potential victims"

3.1. Escape - Hide – Tell

- **Escape;** Primary option – **do not become an additional casualty**. If safe to do so, leave the area while maintaining appropriate cover. Consider removing or covering Hi-Vis clothing.
- **Hide;** If escape is not feasible. Find a secure area, turn off lights, silence radios/phones. Barricade doors and cover windows.
- **Tell;** If safe to do so, contact Emergency Services via 999/112 or radio. Provide relevant information in relation to the offenders, nature of threat and location/layout of site.

3.2. Scene Safety/Threat Assessment;

- Person; Who is/are the people involved? Assess for aggression, intoxication, body language
- Object; What has been used to kill/injure – knives, blades, firearms? Consider other objects that could be used as weapons. Consider the risk to clinician of any casualties carrying, or remaining impaled by, weapons.
- Place; Consider your routes of egress, alone or with a patient. Consider areas that provide cover or security.

3.3. Hot/Warm/Cold Zones;

- Hot Zone; The immediate vicinity of the threat – risk to emergency personnel, patients, bystanders
- Warm Zone; Area of potential, but not immediate, threat
- Cold Zone; Area of absolute safety

Figure 2 Zones; Hot/Warm/Cold

4. Monitoring of CPG

Monitoring of the CPG will involve seeking and analysing clinical and tactical data from "Active Armed Offender" events. Key Performance Indicators (KPIs) should be developed, particularly in relation to the clinical management of patients. Examples for Catastrophic Haemorrhage KPIs include; timely recognition of catastrophic haemorrhage, appropriate application of tourniquet(s), application of haemostatic dressings, utilisation of Tranexamic Acid[16,17]. Similarly, the time from "Green Zone" to appropriate hospital could be used as a KPI. [18] To emphasise time as a KPI in either the Hot or Warm zones would be inappropriate as this may compromise the safety of clinician and patient by attempting transfer before it is safe to do so.

4.1. Audit

Baseline clinical data of outcomes from "Active Armed Offender" events prior to development of the CPG should be compared to KPIs and outcomes post development of CPG. Due to the rare event nature of Active Armed Offender events, a suitable model of study would be case-control[19,20], analysing events in which a pre-hospital practitioner trained in an Active Armed Offender CPG attended compared to those without such a practitioner. Any analysis should strongly

consider the ease at which extreme results are produced in incidents that are few in number, as a single event can strongly skew data.

4.2. Similar CPGs in other systems

This CPG has been adapted from the sole similar CPG available – Queensland Ambulance Service "Active Armed Offender".[6] A review of CPGs in Ireland[7], UK[21], British Columbia[22], Quebec[23], Saskatchewan[24], Ontario[25], New South Wales[26] and Tasmania[27] found no further similar CPGs.

5. Conclusion

There is a dearth of available data in relation to violence experienced on duty by pre-hospital practitioners in Ireland. The majority of ambulance staff in several countries were found to have been assaulted on duty[3] and this CPG gathers several methods together to reduce risk to staff. In high-stress incidents in which one or more people are seriously injured with potential of further violence, this CPG acts as a guideline to prioritise life-saving interventions and to access definitive care as rapidly as is safe to do so.

Compliance with ethical standards

Disclosure of conflict of interest

The author has no conflict of interest to declare.

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