**Background**

Recent analysis shows a higher risk of death after Out of Hospital Cardiac Arrest (OHCA) for patients who lived in rural areas of Scotland in case mix adjusted comparison with urban areas. Sandpiper Wildcat is an action research project aiming to increase survival rates through the implementation of a novel network of trained responders in rural Grampian. This work was made possible through the fundraising of The Sandpiper Trust.

**Aim**

- Improve Cardiac Arrest Survival Rates in rural Grampian (+10% by Mar19)

**Model for Improvement**

- **Measure**
  - Response time
  - Time from arrest to start of CPR and first shock
  - Return of Spontaneous Circulation (ROSC)

**Why Responders Volunteer**

100
300
400
500

WILDCAT Responders Recruited

**Methods**

- After using historic data to identify 50 locations with poor response times but significant numbers of OHCA we established teams of trained volunteer responders equipped with automatic external defibrillators (AED 3, ZOLL) and Vehicle Locator Systems (VLS). Responders were trained in OHCA management, then made available for dispatch to a predetermined range of OHCA coded calls by ambulance control. They were dispatched to incidents utilising an app on the VLS that gave incident location and navigation. The defibrillators not only provide real-time CPR quality feedback but also record ECG, compression metrics and audio of the incident for later analysis and debrief. Evaluation of the project includes training, appropriate dispatch by ambulance control, responder arrival time, quality of basic life support delivered and responder debrief.

**Recruiting Volunteers**

- **Aim**
  - Recruiting and training >400 WILDCAT volunteers

**Testing and Learning**

Feedback is crucial not only to project development but responder welfare, so post incident de-briefs are carried out with all responders and crews utilising the AED feedback software and the patient outcome data (when available) any lessons learnt are used to develop future practice and influence responder training sessions.

**Plan Do Study Act (PDSA)**

**Feedback from Ambulance Crews**

**Results from Year 1**

- **Response time improvement**
  - All calls (median) Rural Grampian 11 mins
  - All calls (median) Rural Grampian WILDCAT attended 7.5 mins

- **Improved ROSC Rates**
  - ROSC in Rural Grampian 15%
  - ROSC in Rural Grampian WILDCAT attended 20%

**Conclusions and Next Steps**

In the first year in rural Grampian, the Sandpiper Wildcat project has...
- Reduced response times
- Increased hands at scene
- Increased ROSC

The responders have delivered high quality Basic Life Support and provided assistance to SAS personnel. Further analysis will examine the spread and sustainability of this approach elsewhere in rural Scotland and the longer term impact on clinical outcomes.

**Next Steps**

- Test the use of Responder Body Cameras to understand and improve the vital few minutes until the ambulance crews arrive
- Utilise wider historic data to identify other areas that would benefit from a similar style responder program, look at the long term sustainability and possible wider use of Sandpiper Wildcard
- Provide written papers on the findings and lessons learnt during the Sandpiper Wildcat project to share wider learning