

June 2017

Abstracts from the 2017 EMS Gathering

Conference abstracts for oral and poster presentations at the EMS Gathering, Kinsale, Ireland, May 3rd to 5th 2017.



Recommended Citation

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Abstracts from the EMS Gathering, Kinsale, Ireland, May 3rd to 5th 2017

The editorial board of the Irish Journal of Paramedicine (IJP) is honoured to present these abstracts accepted for presentation at the 2017 EMS Gathering, 3rd to the 5th of May 2017 in Kinsale, Ireland. As part of our commitment to furthering the profession of paramedicine, and encouraging future development of professional standing, we publish this special supplement containing the selected abstracts.

These abstracts represent academic dedication, intellectual discovery, enthusiasm and for some, a foray into a new territory of research and academia. We are grateful for each and every one of these authors' commitment to the advancement of our profession. We are privileged to publish these brief summaries of some of the novel and exciting research our colleagues are undertaking. Abstracts were received from several countries around the world, including Ireland, Canada, Australia, the USA, Croatia and Germany.

This year, the EMS Gathering received fourteen abstracts for consideration. One abstract was withdrawn by the authors after submission. Nine were deemed appropriate for review consideration. Nine of the submissions (100%) were accepted. Each abstract was independently reviewed by reviewers who were blinded to the identities of the authors. Final determinations for scientific presentation were made by the EMS Gathering Abstract Review Committee. The decisions of the committee were based on the final review scores, with consideration to the time and space available at the meeting for oral and poster presentations.

We present these abstracts as they were received, with minimal copyediting and proofreading. Any questions related to the content of the abstracts should be directed to the authors. Please note that the abstract numbers presented here do not match the presentation numbers at the meeting. Attendees should consult the on-site programme for abstract session content, dates, times and location.

On behalf of the editorial board of the Irish Journal of Paramedicine, the Irish College of Paramedics and the organising committee of the 2017 EMS Gathering, we sincerely thank our colleagues for these valuable contributions, and their continued efforts to expand the knowledge base of paramedicine and prehospital care, ensuring we constantly strive to deliver the best care to our patients, and the best education to our prehospital care professionals.

Abstract Review Committee

Mr. Alan Batt MSc CCP*

Associate Professor Conor Deasy MB BCH BAO PhD

Mr. Kieran Henry MSc AP

Dr. John Glasheen MB BCH BAO MSc

Dr. Shane Knox PhD AP

Ms. Shannon Delport MTech ECP

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(* excluded from peer-review)

In choosing abstracts for the meeting, our goals are logic, fairness, and transparency. We do not believe one form of research is inherently better than another. In the interests of transparency and fairness, we are pleased to share our abstract scoring criteria (Figure 1). Remember, scoring is a judgment call. As an author, one is welcome to use the criteria to score one's own abstract, but this won't change how the reviewers score the abstract on review.

All abstracts were reviewed in a blinded manner. Reviewers indicated if they had any potential COI during the review process (knowledge of the submitting authors or the work of specific abstracts etc.). Conflicts were declared by two reviewers (SK and DS). Abstracts were scored on the content of the abstract, educational value, and quality of the written abstract.

Content of the abstract—scientific accuracy and relevance of the abstract, as described in the outlined headings: Introduction/Background, Objectives, Methods, Results and Conclusion/Discussion.

Education value—what interest and appeal would this abstract hold to EMS Gathering audience. Does it represent a contribution to practice, theory, research or knowledge, and how novel or innovative is this contribution? Is the topic relevant to conference?

Quality of the written abstract—is the abstract self-contained, coherent and readable?

Scores from each reviewer were tallied, and the mean score was calculated for each abstract. Abstracts were then ranked according to mean score. Abstracts were selected for oral presentation based on highest mean scores. Other abstracts were ranked in order for poster presentation. A winner was selected within oral abstracts and poster abstracts based on mean review scores.

Quality of abstract content / 25	Introduction
	Objectives
	Methods
	Results
	Conclusion
Educational value / 15	Interest and appeal to EMS Gathering audience
	Contribution to practice, theory, research or knowledge
	Novel or innovative contribution, relevant to conference
Quality of written abstract / 10	Self-contained
	Coherent and readable

Figure 1. abstract scoring criteria

Best scoring oral abstract: Byrne and Bury. Maybe Irish prehospital staff don't make mistakes? Medication errors, their reporting and ambulance service attitudes.

Runner-up: Batt et al. Translating the evidence: implementing STEMI bypass in the Middle East.

Best scoring poster abstract: Nevin and Ryan. Appropriate Referral of Minor Injuries to the Emergency Department in University Hospitals Limerick.

The following standardised abbreviations are used in the abstracts:

ACP	Advanced Care Paramedic
ALS	Advanced Life Support
AP	Advanced Paramedic
BLS	Basic Life Support
COPD	Chronic Obstructive Pulmonary Disease
CPC	Continuing Professional Competency
ECG	Electrocardiogram
ED	Emergency Department
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
MD	Medical Doctor (Physician)
PCI	Percutaneous Coronary Intervention
PCP	Primary Care Paramedic
RN	Registered Nurse
STEMI	ST-elevated Myocardial Infarction

1. Appropriate Referral of Minor Injuries to the Emergency Department in UL Hospitals

Daniel Nevin¹, Damien Ryan¹⁻³

1. Graduate Entry Medical School, University of Limerick, Ireland; 2. Centre for Prehospital Research, Graduate Entry Medical School, University of Limerick, Ireland; 3. University Hospitals Limerick, Ireland.

Introduction: Patients utilising the Emergency Medical Services (EMS) in Limerick are currently brought to University Hospital Limerick (UHL) for diagnosis and

management of their condition. Whilst many patients require services that can only be offered at a tertiary hospital, some could be managed at a Local Injuries Unit (LIU). To determine the appropriateness of patient EMS referral with minor injury to UHL, we examined the number of patients admitted to UHL ED via EMS over a one-month period to quantify if they fulfil the criteria for LIU attendance. **Methods:** In this retrospective, single-centre study, a list of all patients presenting to UHL ED over the course of 1 month (March 2015) was obtained from UHL's IT department. Patient data was examined, and relevant details including patient demographics, presenting complaint and diagnosis were analysed to determine if patients fulfilled HSE LIU attendance criteria.

Results: Analysis of all attendances to ED UHL revealed that 16.03% (n=795) of all referrals during March 2015 were through EMS. Following HSE LIU attendance guidelines, it was determined from patient medical records that 3.1% (n=25) fulfilled these stipulations but were nonetheless admitted to UHL ED. Distribution analysis of these cases revealed that Limb Problems accounted for the majority (36%), whilst Falls (24%), Head Injuries (24%) and Wounds (16%) accounted for the remainder. Importantly, the vast majority of EMS referrals would not have been suited for admission to LIU's based on current HSE criteria (96.9%, n=770)

Conclusion: Although some quarters have expressed opinions that EMS transport to LIU's would represent best health care practice, this study highlights that the vast majority of EMS referrals would not have been suited for attendance at LIUs. It is believed that these findings support the view that current practices regarding LIU attendance streams are fit for purpose, challenging the view for policy change.

2. The positive role of undergraduate prizes in the further development of the specialty of Emergency Medicine

Daragh Mathews¹, Jeff Mulcaire¹, Tony Lynch¹, Hugh Doran¹, Stephen Cusack¹, Conor Deasy¹

1. School of Medicine, University College Cork, Ireland

Introduction: Inspiring medical students to become interested in Emergency Medicine and potentially pursuing it as a career is vital to the development of the specialty. Undergraduate prizes may influence perception of a specialty, attract a certain type of student to becoming interested in a specialty, and reward those who have already shown interest. The Jim Doran prize in Emergency Medicine is awarded each year to a fourth year medical student in University College Cork (UCC) by the Emergency Department. The prize is adjudicated by the CUH Emergency Department (ED) and funded by the ED educational fund. Participating students submit a proposal indicating their interest and are invited to speak on an allocated prehospital topic. The prize provides flights and a stipend towards expenses allowing the

successful student to spend two months with London's Air Ambulance team based at the Royal London Hospital in Whitechapel, London on their summer elective.

Background: Dr. Jim Doran was born in Cork in 1925 and graduated in medicine from UCC; he developed an abiding interest in, and a lifelong commitment to prehospital Emergency Medicine. His work is continued today by his son, Dr Hugh Doran and East Cork Rapid Response. While in London students spend time with the prehospital team and some time within the emergency department of the Royal London Hospital and so get a full flavor of emergency medicine as a career.

Results: In testimonials presented in the poster the students speak of the effect of the application process on their interest in Emergency Medicine and Pre-hospital care. They describe forming lifelong friends and mentors through the application process and subsequent elective. They highlight the educational value of reflective practice and how London HEMS promoted this through education and governance meetings they were able to attend.

3. Translating the evidence: implementing STEMI bypass in the Middle East.

Alan M. Batt^{1,4}, Ahmed Al-Hajeri¹, Shannon Delport^{1,5}, Wonpyo Hong⁶, Iain Hay¹, Sue Jenkins⁷, Sharon Norman⁷, Fergal H. Cummins^{1,8,9}.

1. National Ambulance, Abu Dhabi, UAE; 2. Fanshawe College, Ont. Canada; 3. Centre for Paramedic Education and Research, Ont. Canada; 4. Institute for Health Professions, Portland Community College, OR, USA; 5. Central Queensland University, QLD, Australia; 6. Sheikh Khalifa Specialty Hospital, Ras al-Khaimah, UAE; 7. Cardiff University, Wales, UK; 8. Graduate Entry Medical School, University of Limerick, Ireland; 9. Charles Sturt University, NSW, Australia.

Background: Acute coronary syndrome (ACS) is one of the leading causes of morbidity and mortality worldwide (World Health Organization 2014) and almost half of the mortality associated with ACS in the Middle East occurs in the pre-hospital setting. Previous studies have indicated that Middle Eastern populations utilise EMS less in ACS, have higher rates of co-morbidity, and are younger.

Objectives: The aim was to evaluate the translation of the evidence supporting STEMI bypass and prehospital cardiac care to the outcomes of patients with acute coronary syndrome (ACS) in the Emirate of Ras al-Khaimah, United Arab Emirates.

Methods: A prospective cohort study was conducted, which included all patients who had a 12-lead ECG performed by crews. Subsequent analysis of those who were identified as suffering a ST-segment Elevation Myocardial Infarction (STEMI) and who underwent PCI was performed.

Results: A total of 152 patients had a 12-lead ECG performed during the pilot study period (24th February 2016 to 31st August 2016) with 118 included for analysis. Mean

patient age was 52 years. There were 87 male (74%) and 31 female (26%) patients. Twenty-nine patients suffered a STEMI and data was available for 16 who underwent PCI. The median door-to-balloon time was 73 minutes (range 48-124), and 81% of patients had a door-to-balloon time <90 minutes. Discharge data was available for six patients: all were discharged home with no impediments to rehabilitation.

Conclusion: This pilot study has demonstrated agreement with the existing literature on the prehospital management of STEMI. The establishment of an organised system of cardiac care is feasible in a novel population and a novel clinical setting. It has demonstrated a door-to-balloon time of <90 minutes in over 80% of patients, and a faster mean D2B time than self-presentations (mean 77 mins v 113 mins), with no associated mortality or major adverse cardiac events.

4. Stress and Coping: Exploring the nature of resilience in UK Paramedic Practice.

Peter Phillips¹

1. Bournemouth University, UK.

Background: Ambulance staff consistently have the highest levels of absenteeism in the National Health Service (NHS). Latest statistics show that 30% of sickness absence in the NHS is due to stress. Ambulance staff report the highest levels of stress within the NHS, some trusts as high as 40%. Evidence suggests that United Kingdom (UK) ambulance staff have higher levels of Post-Traumatic Stress Disorder (15-22%), depression, anxiety, sleep disturbance substance misuse and suicide than the general population. However, little is known about the daily stressors that UK ambulance staff face and how they try to cope with this stress.

Objective: This research presents the progress of a doctoral study exploring the nature of resilience in UK Paramedics. It defines the problem, presents a review of the literature and highlights the need for research in this area. This presentation will then discuss the design of research to rigorously explore the research question.

Methods: A literature review was carried out to identify what is currently known about resilience in Paramedic Practice. Following this a longitudinal mixed-methods research project was designed to both objectively measure resilience in Paramedics, and to subjectively gain an understanding of resilience from the Paramedic's viewpoint.

Conclusions: There is a limited amount of evidence suggesting that the role of a Paramedic is stressful, and that within the ambulance service there are high levels of poor mental health and poor coping. However, research has not explored the nature of stress in the ambulance service, nor the ways in which Paramedics try to cope. This research is designed to explore these aspects further.

5. Maybe National Ambulance Service Pre-hospital staff don't make mistakes? Medication errors, their reporting and ambulance service attitudes

Eamonn Byrne¹, Gerard Bury²

1. National Ambulance Service, Ireland.; 2.

University College Dublin, Ireland.

Background: In 2016, the National Ambulance Service, responded to over 309,000 calls, of which 128,000 were life threatening Echo and Delta calls and operated with approximately 1700 whole time equivalent staff members, providing over 3.5 million staff hours.¹ In the last 13 years, the service has reported only 22 medication errors to the national body with responsibility for risk management and insurance cover. Although some reporting is obviously occurring and structured systems are in place to facilitate and act on such reports, the levels of medication error being reported appear strikingly below what might be expected. Little data is available to explain this apparent discrepancy; one factor may be the awareness and attitudes of staff to medication error and these reporting systems.

Objective: To identify, investigate and document the attitudes to medication error reporting within the national ambulance service.

Methods: Four moderator led focus groups were held in March of 2016. A convenience sample of 18 frontline Paramedics and Advanced Paramedics from Cork city and county were recruited by invitation to discuss medication errors and the medication error reporting process. The sessions were digitally recorded, anonymised and the data was analysed using a process of thematic analysis.

Results: Practitioners demonstrated an understanding of the importance of reporting medication errors. These included patient care and safety, improvement in standards, professional requirements, practitioner integrity and treating the patient as a relative. Fear of consequences and ridicule, procedural ambiguity, lack of feedback and a perceived lack of both consistency and confidentiality were cited as barriers to reporting. Documentation was seen as confusing and complicated. Informal reporting was common place. During the recorded sessions four practitioners gave first-hand accounts of making medication errors, a further two recounted witnessing medication errors and encouraging the practitioner involved to report. There was a perception that the health service norm is to deny any wrongdoing.

Conclusion: Anecdotally errors would appear to be more common than national reports suggest. The findings on reporting are in line with international evidence. Thematic Saturation was not achieved and further study is needed.

6. **The impact of the Particulate Matter (PM10 and PM2.5) concentration on admissions to the Emergency Department (ED) of Krakow University Hospital due to cardiorespiratory disorders.**

Monika Bednarek¹, Karol Malec¹, Barbara Malec¹, Katarzyna Nocon¹

1. Emergency Department, Emergency and Disaster Medicine Trauma Center, University Hospital in Cracow.

Background: Air pollution is a serious, growing problem in Poland. European standards for PM10 and PM2.5

concentration in Kraków agglomeration in the winter period are exceeded during most days. Inhaling polluted air in adults is associated with the incidence of cardiovascular and respiratory disorders and can be a direct cause of an increase in patients' admissions to the ED. The study is the first one referring to this problem carried out in the area.

Objective: To determine the effect of particulate matters PM10 and PM2.5 concentration in the inhaled air on the ED of Kraków University Hospital admissions due to acute cardio-respiratory disorders.

Material and Methods: The retrospective study was conducted. The electronic records of patients admitted between 1st November 2013 and 28th February 2014 has been searched for International Statistical Classification of Disease and Related Health Problems codes for following disorders: acute coronary syndrome, ischemic stroke, pneumonia, COPD exacerbation, paroxysmal atrial fibrillation, heart failure exacerbation and arterial hypertension. For the statistical analysis the Mann–Whitney U test was used for samples of patients admitted during periods when average 7-days PM concentration doubled accepted European standard or remained in the range of the double norm. To determine the strength of relation Pearson correlation has been used (7-days average PM concentration, average patient's number from the last exposure day and 2 following days).

Results: The Mann–Whitney U test showed statistically significant ($p < 0.05$) differences in the number of patients admitted due to the air pollution. Pearson correlation proved statistically significant positive correlation between the PM concentration and the number of patients admitted to the hospital (PM10: $p < 0.05$, $r: 0.453$; PM2.5: $p < 0.05$, $r: 0.422$)

Conclusions: Increased PM concentration in the air causes a significant increase in the number of patients admitted to the Emergency Department due to cardiorespiratory disorders. It requires both: the implementation of system solutions to improve air quality and the ED preparedness for increased admissions of profile patients.

7. **Building research capacity in paramedicine: the McNally Group**

Alan M. Batt^{1,3}, Madison Brydges^{4,6}, Justin Mausz^{4,5,7,8}, Walter Tavares^{4,5,8-10}

1. Fanshawe College, Ont. Canada; 2. Centre for Paramedic Education and Research, Ont. Canada; 3. Institute for Health Professions, Portland Community College, OR, USA; 4. McMaster University, Ont., Canada; 5. The Wilson Centre, University of Toronto, Ont. Canada; 6. Halton Region EMS, Ont., Canada; 7. Region of Peel Paramedic Services, Ont. Canada; 8. Centennial College, Ont., Canada; 9. ORNGE, Ont., Canada; 10. York Region EMS, Ont. Canada.

Background: The need for research in the field of paramedicine has been recognised internationally. Previous studies have identified the provision of research education,

the establishment of a research culture, and the formation of research partnerships as essential to improving research capacity within paramedicine. Published literature has also highlighted the importance of social interaction and collegiality among graduate students and faculty to provide a strong foundation for subsequent research and scholarly productivity.

Aims: The McNally group was founded with the vision to address this gap – its aim is to provide a professional academic community for paramedics undertaking graduate studies and research activities.

Methods: The McNally group was formed in 2014 and adopted a flat organisational structure. An established faculty member provides academic guidance and support to the group, and attends all meetings. Membership is voluntary and is open to paramedics with an interest in research and who are pursuing graduate studies. Members self-organize and coordinate the groups meetings, which are held every two weeks. At each meeting time is dedicated to capacity building strategies and identified issues or subjects led by group members. Activities have included journal clubs, member-led topics and projects with opportunities for feedback and scholarly discussions, emerging ideas, critical appraisal skills, works-in-progress, discussions of research methodologies and traditions.

Discussion: The McNally group was formed to address an identified weakness in paramedic led research in Ontario, Canada – the provision of a group to allow for scholarly activities and discussions aimed at building capacity and contributions in Paramedicine research. This community and network has provided its members with an academic centre that while not directly related to coursework, allows for the development of broader academic skills, citizenship and contributions. Previous literature has argued for the need and positive aspects of community in academic and graduate education / work. The establishment of similarly modelled groups elsewhere is suggested to improve research and scholarly capacity in paramedicine.

8. On the path to professionalism: the Irish College of Paramedics.

Alan M. Batt¹⁻⁴, Shane Knox^{1,5}

1. Irish College of Paramedics; 2. Fanshawe College, Ont. Canada; 3. Centre for Paramedic Education and Research, Ont. Canada; 4. Institute for Health Professions, Portland Community College, OR, USA; 5. National Ambulance Service, Ireland.

Background: The world of prehospital practice in Ireland has developed significantly over the past number of years. Whilst improvements are evident among the practitioner group in education, skillset and professional standards, the public know little to nothing of the role and function of the Irish prehospital care practitioner. The need for a national and all-inclusive professional body to represent all registered prehospital practitioners in Ireland was identified through research into continuous professional competency

requirements.

Methods: The Irish College of Paramedics was proposed and formed as a result in 2012. It is not a college, not a university, but ‘collegial’ defined as: ‘Co-operative interaction among colleagues’ or a group of professionals working for our profession. ICoP represents the profession, and includes all levels of registered pre-hospital practitioner. As well as registered practitioners (EMTs, Paramedics and Advanced Paramedics) its membership includes all those with a ‘pre-hospital’ interest, and is not restricted to registrants only. It is an all-encompassing body representing practitioners and responders from professional, voluntary and private organisations.

Results: The Irish College of Paramedics is now considered the voice of prehospital care practitioners in Ireland. It represents its members to the Pre-Hospital Emergency Care Council Medical Advisory Group and Education and Standards Committee; the University of Limerick; and University College Cork. The Irish Journal of Paramedicine has been launched, which is the official academic, peer-reviewed journal of ICoP. An affiliation agreement has been signed with the Paramedic Association of Canada, and one is forthcoming with the Turkish Paramedic Association.

Discussion: The future growth of the Irish College of Paramedics is unknown, but is essential to the maturation of the paramedic profession within Ireland. Using Greenwood’s model of a profession, the establishment of a professional culture, and the development of a unique body of knowledge are two specific areas of professional practice which the Irish College of Paramedics seeks to strengthen within Ireland. Strengthening links with international organisations is aimed at constructing a unified international standard of practice, making labour mobility easier. This will also in turn provide additional education and practice opportunities for Irish prehospital care practitioners worldwide.

9. First-Year Outcomes Of Funded Community Paramedicine Demonstration Projects

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Background: Older adults account for the highest usage of emergency and ambulance services in Canada. However, only a small proportion of these older adults account for the majority of health care usage. This subset of individuals are often characterized by polymorbidity, functional impairments, and social frailty and can be better managed by improved connection to primary, home and community support services.

Methods: Each of the community paramedic programs

were requested to submit standardized data on a quarterly basis around patient characteristics such as age, presence of multi-morbidity and ambulatory sensitive conditions, and their existing connections to primary and home and community care services; numbers and types of paramedic assessments conducted and referrals made; and outcomes data related to future 911 calls and ED visits six months after enrolment into a program. Data analyses were performed using descriptive statistics.

Results: Within the first 12-months of implementation, there was a total of 19077 patients enrolled, with 1865 paramedics and 335 individual health and social care providers becoming involved. There were also a total of 381 partnerships established with community and health organizations across all 30 projects at this time.

Conclusion: Community Paramedicine Models have the potential to improve patient and system outcomes by effectively connecting mostly older and vulnerable individuals with primary, home and community support services. While an overall 13.8% reduction in future emergency calls was achieved further analysis needs to occur to determine what types of programs may be more effective at achieving improved patient and system outcomes. A more rigorous evaluation will be implemented to determine the impact of these programs on system costs.

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