



# NATIONAL AMBULANCE SERVICE

Final Report of the Investigation of Incident 50379, from receipt of the 112/ 999 call at 14:00 hrs on the  $6^{th}$  May 2013 to the patient's arrival at the Emergency Department.

# **Strictly Private and Confidential**

**Investigation Commencement and Completion Dates:** The investigation commenced on the 20<sup>th</sup> May 2013 and was completed on the 2<sup>nd</sup> October 2013

This investigation including the terms of reference was overseen by an independent External Chair

October 2013

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# Foreword

This report presents the findings of a detailed and impartial investigation into an incident relating to an emergency call that was made to the HSE National Ambulance Service on  $6^{th}$  May 2013 for a two year old child who had fallen and sustained a head injury, following which he sadly died in hospital days later. An ambulance was not dispatched to the scene. All those involved in this tragic incident and the subsequent investigation have been deeply saddened and distressed by the child's tragic and untimely death and I would extend our sincerest condolences to the family on their tragic loss.

Such was the concern regarding the circumstances surrounding the ambulance response to the incident, the Medical Director of the HSE National Ambulance Service on 10<sup>th</sup> May 2013 commissioned an external review of the emergency call received on 6<sup>th</sup> May 2013 from the receipt of the call until the arrival of the child at the Emergency Department of the nearest acute hospital.

The review team was established comprising experts from Ambulance Services, Pre-Hospital Emergency Care, the International Academies of Emergency Dispatch, General Practice and Healthcare Quality and Safety from both the United Kingdom and Ireland.

During this review we examined the service provided on this occasion, undertaking a detailed review of the call including ambulance control centre recordings, transcripts, and documentation of the sequence of events and timings as well as relevant national ambulance service policies and procedures in place at the time of the call. All of those involved in the incident from the time of the call until the child was delivered to the care of the hospital were also interviewed by the review team.

We have highlighted areas of good practice and also make recommendations for improvements to the National Ambulance Service in relation to the arrangements for the management of emergency calls for assistance including call handling and ambulance dispatch. The review has provided a valuable opportunity to share any lessons learned across the wider health and social care sector. This review focuses on improvements that will need to be made in order to maintain and, where possible, improve on the current levels of performance.

In an emergency a request for ambulance assistance begins with a call being made using the 999 system. Upon receipt of the call in the emergency ambulance control centre the caller is asked a number of key questions to establish the location and nature of the emergency. Once the location is established the Call Taker uses a validated computerised software system that is in use by many ambulance services in Western Europe and North America to determine the nature of the incident and thus to both assign the priority of the emergency ambulance response and to provide the caller with advice and instruction regarding the care of the patient until the arrival of the ambulance.

The emergency calls are prioritised in simple terms into categories such as potentially immediately life threatening, not immediately life threatening but still requiring an immediate emergency ambulance response and those that are not necessarily emergencies but that still require an ambulance response. Once the location of the incident is confirmed the process of dispatching the nearest available ambulance commences in parallel in another part of the control room while the further key questions are still being asked and advice is being provided to the caller.

The questioning of and advice to the caller should not in any way delay the dispatch and therefore the arrival of the ambulance. It is accepted that the caller may not be able to provide the ambulance Call Taker with all the relevant information that is being requested and similarly this should not delay the dispatch of the ambulance. This process and the use of the computer-aided dispatch system is contained within a number of national ambulance service policies and supporting procedures and in relevant training provided to ambulance control centre call-takers and dispatchers.

On this occasion an ambulance that was available to respond immediately to this incident was identified but was not actually dispatched. Instead, the caller was advised to take the child by car to the local GP Out of Hours Service a short distance away where he was immediately assessed by a doctor and redirected to the Emergency Department of the nearest acute hospital. The further journey to hospital was facilitated by the police and the child was admitted to the Emergency Department immediately upon their arrival.

As a result of this review a number of key factors have been identified and recommendations have been made for immediate consideration and implementation by the National Ambulance Service. It is anticipated that the recommendations from this review will be supported by the development of relevant and implementable action plans and that these actions will be monitored regularly to ensure that the recommendations made are fully implemented by assigning responsibility to designated individuals and within a specified timeframe. These recommendations will also facilitate learning by other ambulance services including in other countries where similar systems are in use.

The review team are aware of the significant changes to the HSE National Ambulance Service which include a reduction in ambulance control centres from thirteen initially to seven at present with, as part of the strategy, a further planned reduction to two ambulance control centres by the end of 2014. It was noted that the ambulance control centre involved in this particular incident ceased to be operational during the period of the incident review as part of this ongoing planned process. The review team believe that this reconfiguration will help address a number of the concerns and issues highlighted by this incident and the subsequent investigation. Indeed it is accepted that a number of the key factors identified and recommendations arising may already have been actioned and resolved as a result of this process.

We also note that immediately following this incident the Medical Director of the National Ambulance Service re-issued clear instructions as to the process to be followed regarding the dispatch of an ambulance in response to an emergency call.

It is also important to place this incident in the context of a National Ambulance Service that is responding effectively and appropriately to an increasing number of emergency calls. During May 2013 when this incident occurred the ambulance control centre that dealt with the emergency call relating to this particular incident received over one thousand six hundred emergency calls and ambulances were allocated to these emergency calls in less than ninety seconds in eighty per cent of calls, ambulances were mobile to calls in less than ninety seconds in over sixty five percent of calls and the activation process completed in less than three minutes in seventy five percent of calls. However this does not reduce the significance of the failure of the Service to dispatch an ambulance on this occasion and its devastating effect on the family and those involved in the incident.

We are acutely aware of the subsequent tragic death of this young child in hospital a couple of days after this incident. This review examined in detail the events from the time the incident occurred and the emergency call was made until the time of his arrival at the hospital when he was transferred directly into the care of the medical and nursing staff. It was not within the remit of this review to consider any subsequent events and we are therefore unable to comment on whether the sequence of events prior to his arrival at hospital contributed in any way to the very sad and tragic outcome. We are aware that there is currently an ongoing investigation by the Coroner who will consider these and other elements pertaining to this incident.

During our investigation we met with the family who tragically lost their 2 year old son. I would like to sincerely thank them for their openness, honesty and their willingness to contribute to the review in a full and meaningful way at such a difficult time.

We fully recognise the distress caused to the family of this young boy, as well as to others involved in this unfortunate incident and in particular the caller who drove him to hospital in such difficult circumstances. We would also acknowledge and commend the actions of all of those who provided assistance to him following his injury.

None of us expect or anticipate a medical emergency but knowing urgent medical care is available when and where we need it provides both comfort and reassurance. Therefore the public deserve a response that is appropriate, effective, efficient and reliable. It is our responsibility as a review team to ensure we learn from the experience of this family and continue to improve services. Many changes to improve the quality of the ambulance services have already been realised including progressing to a smaller number of centralised and consolidated emergency control centres that are underpinned by robust systems and processes to ensure the delivery of such a vital service to the community.

I am very grateful for the co-operation of HSE staff in all parts of the health service and members of the public who participated in and contributed to this review. I am also grateful to all the members of the review team for their hard work and diligence during the review.

We would hope that early consideration of this report and its findings and the timely implementation of its recommendations will further enhance the quality of ambulance service provision.

Everyone we have spoken to during this review has been deeply affected by this tragic incident involving the death of a young child and I would, once again, extend our sincerest condolences and sympathy to the family at this very difficult time.

Dr. David McManus Medical Director NI Ambulance Service External Independent Chairperson

# Acknowledgment

The Review Team greatly appreciated the willingness of the family to share their experience with us. This was invaluable in carrying out the review and in the development of the recommendations.

We would also like to take the opportunity to express our sincere condolences to the family on the loss of their son.

We also acknowledge and commend the actions of all of those who intervened in this tragic incident and provided assistance to the child and his family.

The Review Team would also like to acknowledge the co-operation of the HSE staff including ambulance and clinical personnel; and the members of the public we met with as part of the investigation.

# **Glossary of Terms and Acronyms**

Address	The location to which the emergency response is required.
112/ 999 (AS1)	Emergency call requiring immediate response.
17Bravo01	ProQa Code defined as a fall where the injury is to a possibly dangerous body area (abdomen, amputation, back, chest, genitalia, head, upper leg or neck).
Allocated	When a vehicle is attached as the response vehicle to a call.
AMPDS	Advanced Medical Priority Dispatch System
АР	Advanced Paramedic
AQUA	Advanced Quality Assurance
Bravo	Not immediately life threatening (As defined by NAS)
CAD	Computer Aided Dispatch
CDE	Continuous Dispatch Education
Call Dispatcher	Emergency Medical Controller who manages the emergency resources (vehicles).
Call Taker	The staff member who answers the call.
Caller	The individual who makes the call to the Control Centre.
Callsign	The name each emergency vehicle is given to which it will be referred to on the control system and over radio contact.
DCR	Dispatch Cross Reference
Dispatched	When a vehicle is sent out to a call
EA	Emergency Ambulance
ED	(Hospital) Emergency Department
EMD	Emergency Medical Dispatch
EMS	Emergency Medical Standards
GCS	Glasgow Coma Scale- a scale used to gage a level of consciousness.
GP	General Practitioner

HIQA	Health Information and Quality Authority
HSE	Health Service Executive
NAS	National Ambulance Service
PDC	Priority Dispatch Code
PHECC	Pre Hospital Emergency Care Council
ΡroQA	Prioritisation System, the computerised version of AMPDS. A proprietary emergency dispatch software package used by the NAS and many modern ambulance services.
Resource	An emergency vehicle or member of ambulance staff
RRV	Rapid Response Vehicle
Systems analysis investigation of an incident	A methodical investigation of a specific incident which involves collection of data from the literature, records (general records in the case of non clinical incidents and healthcare records in the case of clinical incidents), interviews with those involved in delivering the care/service where the incident occurred and analysis of this data to establish the chronology of events that lead up to the incident, identifying the key causal factors that had an effect on the eventual adverse outcome, the contributory factors, and recommended control actions to address the contributory factors to prevent future harm arising as far as is reasonably practicable.
Terminated	When the call is ended on the system.

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# **Executive Summary**

This is the report of an investigation conducted into the circumstances surrounding the decisions and actions taken in response to a 112/999 call received by an Ambulance Control Centre located in the HSE South on the 6<sup>th</sup> May 2013.

The 112/999 call received by the Ambulance Control Centre outlined that a 2 year old boy had sustained a fall and that he had sustained an obvious injury to the head.

The Ambulance Control Call Taker A assigned a 17 BRAVO 01 code to the call indicating that an emergency resource should be dispatched to the scene of the incident. An ambulance was not dispatched as a father and daughter<sup>1</sup> who had come to assistance of the child's father following the child's fall, received instructions from Call Taker A to bring the child to the local Out of Hours General Practitioner (GP) Service.

The child and his father were transported by the Caller in the Callers car to the local Out of Hours GP Service. Following a clinical review by the GP at the Out of Hours GP Service, the child was immediately referred to the Emergency Department (ED) at the nearest acute hospital. The child and his father were again transported by the Caller to the ED.

On arrival at the hospital the child was assessed by the ED Medical Team and treatment was initiated; subsequently the child was admitted following a CT Scan<sup>2</sup> of his head.

The child's condition began to deteriorate and despite all efforts the child died on the 8<sup>th</sup> May 2013.

The incident related to the failure to dispatch an ambulance to respond to the 112/99/call received by the Ambulance Control Centre. This incident was deemed by the Health Service Executive (HSE) to fall into the 'serious adverse incident' category. On this basis an investigation of the incident was commissioned by Dr. Cathal O'Donnell, Medical Director, NAS and the Health Service Executive's Serious Incident Management Team.

## Aim

The aim of this investigation as outlined in the terms of reference was to establish the circumstances of the incident, from receipt of the 112/ 999 call at 14:00 hours on the  $6^{th}$  May 2013 until the child arrived at the ED later that afternoon.

<sup>&</sup>lt;sup>1</sup> Daughter and father (members of the public) who came upon the scene of the incident will be referred to in this report as Caller 1 and Caller 2 respectively.

<sup>&</sup>lt;sup>2</sup> A CT scan stands for Computed Tomography scan. It is also known as a CAT (Computer Axial Tomography) scan. It is a medical imaging method that employs tomography. Tomography is the process of generating a two-dimensional image of a slice or section through a 3-dimensional object (a tomogram).

### Purpose

The purpose of this investigation was to:

- Establish the factual circumstances leading up to the incident<sup>3</sup>
- Identify any key causal factors that may have occurred
- Identify the contributory factors that caused the key causal factors
- Recommend actions that will address the contributory factors so that the risk of future harm arising from these factors is eliminated or if this is impossible, is reduced as far as is reasonably practicable.

## The reviewers who undertook this investigation were:

- Chairperson: Dr David McManus, Medical Director, Northern Ireland Ambulance Service.
- Dr Mel Bates, Medical Director D Doc GP Out of Hours Service
- Ms Tracey Barron, Research and Studies Officer, International Academies of Emergency Dispatch, Bristol, UK.
- Mr Pat Mooney, Control Manager, National Ambulance North Leinster Division.
- Ms Deirdre O'Keeffe, Regional General Manager, Quality and Patient Safety, HSE.

The Review Team were requested to issue the Final Report of their investigation by the end of July 2013. While every effort was made to meet this time-line; in order to ensure that a comprehensive and robust investigation was carried out additional time was required by the Review Team in order to complete their work.

The review was carried out as expeditiously as was possible whilst ensuring that a comprehensive investigation was undertaken, as the Review Team were mindful of the loss that the family had experienced while also being cognisant of the HSE's commitment to the required risk management and quality improvement processes.

<sup>&</sup>lt;sup>3</sup> An incident is defined by the HSE Guidelines for Systems Analysis Investigation of Incidents and Complaints (2012) as "An event or circumstance which could have, or did lead to unintended and/or unnecessary harm. (Adapted from WHO (2009) and DoH (2010), HSE Quality and Risk Taxonomy (2009)).

Incidents include **adverse events** which result in harm; and **near-misses** which could have resulted in harm, but did not cause harm, either by chance or timely intervention.

Incidents can be clinical or non-clinical and include incidents associated with harm to:

 $<sup>\</sup>cdot$  our patients, service users, staff and visitors

 $<sup>\</sup>cdot$  the attainment of HSE objectives

 $<sup>\</sup>cdot$  HSE ICT systems

 $<sup>\</sup>cdot$  data security e.g. data protection breaches

the environment

Incidents include complaints which are associated with harm and as such these complaints are service user reported incidents."

The Review Team considered that it was important to meet with the family at an early stage of the investigation in order to afford the family the opportunity to share information with the Review Team to inform the review findings in a full and meaningful way.

While the family were devastated by the death of their son, they emphasised from the outset that this investigation should focus on the learning from the incident so that a similar incident would not happen again.

The National Ambulance Service (NAS) from the outset indicated they were committed to investigating and learning from this incident.

The Review Team acknowledge that the NAS is currently undergoing significant change through the amalgamation of thirteen regional centres into one national centre operating across two sites with the aim of ensuring that there is one integrated National Ambulance Control Service.

These service changes will assist with the elimination of variations in practice and will ensure consistency as to how calls to Ambulance Control Centres are managed and emergency resources dispatched.

The general view, expressed by all of the individuals who participated in this investigation, was that the emergency response process i.e. call, acknowledgement of seriousness of call and dispatch of an ambulance relating to the care of children and indeed the public as a whole requires an appropriate effective and safe response to ensure the best outcome for the individual; and that any incident related to the operation of the emergency response process should be subjected to rigorous examination.

### Summary of key causal factors and contributory factors

Key causal factors are defined by the HSE Guidelines for Systems Analysis Investigation of Incidents and Complaints (HSE, November 2012)<sup>4</sup> as issues that arise during the process of delivering and managing health services that are considered by the investigation team to have had an effect on the eventual adverse outcome.

<sup>&</sup>lt;sup>4</sup> Systems analysis is a method of investigating patient safety incidents, based on the "London Protocol" (2004) which involves collection of data from the literature, relevant records, interviews with those involved in delivering care where the incident occurred, and analysis of this data to establish the chronology of events that led up to the incident, and to identify the key causal factors that are considered to have had an effect on the eventual adverse outcome, the contributory factors, and recommended control actions to address the contributory factors to prevent future harm arising as far as is reasonably practicable. The systems analysis method acts as an aid to conducting serious patient safety incident investigations. At the time of the incident with which this investigation is concerned the version of the guidelines for systems analysis investigations were the version in the *"Toolkit of Documentation to Support the Health Services Executive Incident Management"* (HSE 2009). Prior to the decision to establish this investigation team a process of administrative review of these guidelines, in consultation with external systems safety and patient safety experts, service users and staff was concluding. The updated Systems Analysis Guidelines were concluded and adopted on the 18th of November 2012 during the early stages of this investigation and prior to establishing this investigation team. HSE Guidelines of "Systems Analysis Investigation of Incidents and Complaints" (HSE, November 2012 can be downloaded at

http://www.hse.ie/eng/about/Who/qualityandpatientsafety/Quality\_and\_Patient\_Safety\_Documents/QPSDGL5\_211.pdf

This investigation identified the following 2 key causal factors:

## Key Causal Factor 1:

Deviation from the procedure outlined in the Ambulance Control Procedure for Call Taking/Address Verification/Dispatch (NASCC032) which resulted in a failure to: 1) appropriately assess the child's condition at the scene of the incident and 2) provide post dispatch advice to the caller.

## Key Casual Factor 2:

Deviation from the EMS Priority Dispatch Standard; resulting in a decision not to dispatch an emergency resource that was not based on correct and complete information.

The review identified that although there is an Ambulance Control Procedure for Call Taking/Address Verification/Dispatch (NASCC032) in place, encompassing the Advanced Medical Priority Dispatch System<sup>5</sup> protocol which outlines a clear sequence of actions for dealing with emergency calls See Flowchart in Appendix B, there was evidence that a number of steps outlined in the protocol were not adhered to in relation to this 112/ 999 call.

The review recognised that while the Call Taker A in the Ambulance Control Centre did reach a dispatch code, it was the view of the Review Team that had the procedure been followed to conclusion this would have allowed the Call Taker A to obtain further information about the incident.

The review also identified that there was a lack of role clarity regarding the Call Taker and Call Dispatcher roles and responsibilities within the Ambulance Control Centre which led to a failure to confirm and clarify information between the different ambulance control personnel resulting in actions being taken on the basis of incorrect and unvalidated information.

In summary the review found that staff at the control centre failed to comply with organisational procedures and standards and underestimated the severity of the 112/999 call.

The Call Taker and Dispatcher who participated in the investigation had an opportunity to comment on extracts from the report relevant to them and both wished to outline that they acted in good faith on the day of the incident.

<sup>&</sup>lt;sup>5</sup> The Advanced Medical Priority Dispatch System (AMPDS) which is incorporated in national and local policies and its software equivalent (ProQA) are designed to direct the control room staff through a predictable, accurate, repeatable, verifiable and validated process. The AMPDS protocol uses a system of caller interrogation and event and condition determinations that enable the call taker to establish a specific dispatch code. This allows the call to be prioritised and the caller to be provided with appropriate advice and instruction prior to the arrival of the ambulance. This also informs the ambulance dispatcher of the necessary and appropriate ambulance response in accordance with the National Standards.

The Review Team has made a number of recommendations to address the factors that have been identified during the review as contributing to the key causal factors related to this incident.

These recommendations are made to address the risks associated with each contributory factor or hazard identified by the investigation using the hierarchy of hazard control measures as per the HSE Guidance document on conducting a systems analysis investigation (2012).

As set out in the Terms of Reference for the review; the Medical Director and senior management team of the NAS are responsible for the planning and implementation of the recommendations of this review in all HSE Ambulance Control Centres.

### Summary of Recommendations

### **Recommendation 1:**

The NAS should amend the Ambulance Control Procedure for Call Taking/Address Verification/Dispatch (NASCC032) to reflect that a higher level of priority must be given to the call when there is limited information available or when the person(s) involved in the incident do not speak English.

This amendment should also include that the call taker must ensure that as much information about the incident is gathered from the individual(s) available at the scene who may have witnessed the incident.

### **Recommendation 2:**

The NAS must ensure that robust arrangements are in place for the dissemination of policies, procedures and standards within the Service and that a system is put in place to monitor ongoing compliance with HSE policies, procedures and standards.

### **Recommendation 3:**

The NAS must ensure AQUA (Advanced Quality Assurance)<sup>6</sup>, which is already available to address risk and ensure compliance with AMPDS, is implemented in all NAS Command and Control Centres.

There must be a sharing of learning from incidents between all control centres. This should be prioritised in the context of the current restructuring programme which involves a move to a more centralised model of service delivery.

Any safety concerns in relation to ProQA or policy deviation(s) must be fully considered at the time of occurrence by the appropriate governance/management team and be in line with the HSE Incident Management Policy and Guidance process to ensure that such concerns are addressed. The manager responsible for the area where the incident/deviation occurs must be responsible for making sure that the recommendations are considered and an appropriate action plan for the implementation of the recommendations is put in place.

<sup>&</sup>lt;sup>6</sup> AQUA is a unique software tool that is structured in order to allow the auditor to ensure all questions are asked and answered correctly. It gives a detailed report to the call Taker by presenting their performance and indicating if the call Taker is compliant or not.

Where action plans are not fully implemented, outstanding issues must be considered in the context of the HSE Risk Assessment and Risk Register Policy and that the appropriate control measures are applied and implemented to mitigate appropriately against the risk(s).

### **Recommendation 4:**

The NAS must ensure the continued training and education needs of staff are met, by review of CDE training documentation which is available online.

NAS must ensure that staff have access to incident review documentation which gives feedback on incidents where the responses were inappropriate (field feedback form, appropriateness of dispatch code). The NAS must take the necessary steps to establish a training and education programme to support staff in call taking and ambulance dispatch.

### Recommendation 5:

Implement a process of good communication technique through a training programme supported by regular audit of call taker practice and feedback for ongoing learning and performance improvement.

### **Recommendation 6:**

The NAS must ensure the AQUA process, which is already available to address risk and ensure compliance with AMPDS, is implemented in all NAS Command and Control Centres.

There must be a sharing of learning from incidents between all control centres. This will be further supported through the current restructuring programme giving rise to a more centralised model of service delivery. Any safety concerns in relation to policy deviation must be fully considered at the time of occurrence by the appropriate governance/ management team and in line with the HSE Risk Register process to ensure that such concerns are risk assessed; and that the appropriate control measures are applied and implemented to mitigate appropriately against the risk(s).

### Recommendation 7:

All staff within the NAS must adhere in full to all relevant NAS policies, procedures and guidelines. Monitoring of compliance with policies, procedures and guidelines must be incorporated into the governance arrangements of the Service and existing reporting systems associated with CAD systems should be used to monitor and provide assurance that the EMS Dispatch Standards are being adhered to.

## **Recommendation 8:**

The practice of combined roles for Call Takers and Call Dispatchers should cease in all Ambulance Control Centres. Arrangements must be put in place to ensure that staff are aware of their individual roles and responsibilities when assigned to either call-taking or call dispatch duties; in addition there must be clarity at any given time regarding which role the staff member is acting in to avoid any uncertainty or confusion.

### **Recommendation 9:**

The current Ambulance Control Procedure for Call Taking / Address Verification Dispatch should be updated to include clarification related to the role of the Call Dispatcher with specific reference to the assignment of an appropriate higher response if deemed necessary and the process for standing down an emergency resource.

### Recommendation 10:

All Ambulance Control Rooms should have an assigned Team Leader or Person in Charge to supervise the call taking and dispatching process on a 24/7 basis; in addition there should be clear arrangements for the supervision of all staff for each shift and all staff must be aware of these arrangements.

### **Recommendation 11:**

The layout of the control room should not hinder verbal and non-verbal communication and should facilitate team working. The layout of the control room should reflect the allocation of responsibility and the requirements for supervision and should be effective under high and low staffing levels.

### **Recommendation to address incidental finding 1:**

The NAS must consider the appropriateness of control room staff referring callers to GP services and the availability of a doctor to assess a patient. Control room staff should not routinely refer 112/999 callers to a GP out of hours service without prior consultation with the GP service.

# Methodology

The investigation was undertaken using the methodology for incident investigation as outlined in the HSE Guideline for Systems Analysis Investigation of Incidents and Complaints (Nov. 2012).

Systems analysis is an internationally recognised methodology for investigating adverse incidents in healthcare. A systems analysis investigation is a structured investigation that aims to identify the systems cause(s) of an incident or complaint and the actions necessary to eliminate the recurrence of the incident or complaint or where this is not possible to reduce the likelihood of recurrence of such an incident or complaint as far as possible. Healthcare services carry out incident investigations using systems analysis to find out what happened, how it happened, why it happened, what the organisation can learn from the incident and what changes the organisation should make to prevent it happening again.

### The purpose of this investigation was to:

- $\rightarrow$  Establish the factual circumstances leading up to the incident
- $\rightarrow$  Identify any key causal factors that may have occurred
- $\rightarrow$  Identify the contributory factors that may have caused the key causal factors
- → Recommend actions where necessary that seek to address the contributory factors so that the risk of future harm arising from these factors is eliminated or if this is not possible, is reduced as far as is reasonably practicable.

While carrying out this investigation the reviewers examined relevant documentation and information including the following:

- Pre Hospital Emergency Care Council (PHECC) National Standards<sup>7</sup> EMS Priority Dispatch Standard - Version 4 (January 2013)
- International Academies of Emergency Dispatch licence agreement<sup>8</sup>.
- Health Information Quality Authority (October, 2012) Pre-hospital Emergency Care Key Performance Indicators for Emergency Response Times Version 1.1<sup>9</sup>
- Copies of the relevant National Ambulance Service policies, procedures, protocols, standards and guidelines related to call taking and dispatch.

<sup>&</sup>lt;sup>7</sup> PHECC is the regulator for emergency medical services (EMS) in Ireland. The Pre-Hospital Emergency Care Council (PHECC) is an independent statutory agency with responsibility for standards, education and training in the field of pre-hospital emergency care. PHECC also maintain a statutory register of EMS practitioners.

<sup>&</sup>lt;sup>8</sup> The MPDS license agreement governs the use of all MPDS products, the necessary training, certification and onsite quality assurance to help ensure best practices.

<sup>&</sup>lt;sup>9</sup> There are no response times targets associated with BRAVO calls. This incident is not encompassed by the National KPI Standards for Pre Hospital Emergency Response Times.

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- NASCC022 Procedure ProQA (AMPDS) Emergency Rule Applies Document reference no. NASCC022 Revision no 2, Approval Date 15th March 2012
- 2) NASCC032 NAS Procedure Call Answering / Address Verification / Dispatch Document reference no. NASCC032 Revision no. 1 Approval Date: 1st October 2012
- NASCC033 Policy Ambulance Control Quality Assurance System Reference no. NASCC033 Revision no 3, Approval Date 15th December 2010
- NASCC021 NAS (All Divisions) Procedure Field Feedback Report Document reference no. NASCC021 Revision no. 4 Approval Date 1st November 2010
- Transcript of the 112/999 telephone conversation between the Ambulance Control Centre and the two callers on the 6<sup>th</sup> May; in addition the reviewers also examined the recording of the 112/999 call.
- The National Ambulance ProQA sequence of events relating to this 112/999 call.
- The National Ambulance Control Room Phone and Radio records for the 6<sup>th</sup> May 2013.

In addition interviews were undertaken with the ambulance service staff members involved in the events of the afternoon of the 6<sup>th</sup> May 2013; with the GP who assessed the child following his arrival at the Out of Hours GP Service and with representatives from the acute hospital services who were involved in the provision of emergency care to the child following his arrival at the ED.

Interviews were also carried out with the child's parents and with the two members of the public who had provided assistance to the child's parents in the immediate aftermath of the incident and who had contacted the Ambulance Control Centre on the 6<sup>th</sup> May 2013.

A total of 9 people were interviewed as part of the investigation. Those interviewed included:

- The parents of the 2 year old child who sustained a fall.
- The two members of the public who assisted the family following the incident involving their son on the 6<sup>th</sup> May i.e. Caller 1 and Caller 2.

# National Ambulance Service staff:

- Call Taker A.
- Call Dispatcher Y.
- Control Room Manager C.

## Medical Staff who provided care to the child:

- GP on duty at the Out of Hours Service i.e. GP X.
- Emergency Medicine Consultant 1.
- Emergency Medicine Registrar 2.

The interviews were conducted by the members of the Review Team although not all reviewers were present for all interviews.

The interviews were conducted in a manner that aimed to ensure that the optimal levels of information were obtained whilst ensuring that the individuals being interviewed were treated with dignity and respect.

The Terms of Reference for the review were provided to all interviewees prior to their attendance at interview.

In addition as the review was carried out using a systems analysis methodology, everyone interviewed received information about the interview process and systems analysis investigations.

All information and documentation gathered during the review and interview stages of the investigation process was treated confidentially. Information gathered was maintained securely, electronic documents were password protected and codes have been used to replace the names of individuals involved in the incident.

The investigation process was conducted in a manner that was respectful of the rights of all to privacy, confidentiality, due process and natural justice.

Each individual interviewed was informed in advance of the interview that a stenographer would be present to record the interviews for the purpose of ensuring accuracy.

While a stenographer was present for some interviews other interviews were tape recorded where a stenographer was not available; the recordings of the interviews were later transcribed.

The interviews were used as an opportunity to establish the facts of the incident, to clarify information for the Review Team and as an opportunity for parties involved in the incident to present information that they wished to the Review Team.

If staff had any concerns about the interview process, they were invited to communicate these concerns to the interviewers or to the investigation commissioner.

Each individual interviewed was advised that they could bring their personal written account of the incident which could be used as an Aide Memoir by the interviewee or could be submitted to the Review Team for consideration.

In advance of interview all parties were informed of their entitlement to be accompanied at interview. In order to ensure the confidentiality of the interview process for all involved, accompanying individuals not employed by the HSE were asked to sign a confidentiality agreement.

Prior to the interviews each individual was informed of the opportunity to review their interview transcript and the draft report whereby they would have an opportunity to review and comment on/check the factual accuracy of the draft report.

On completion of the interviews and documentation review process a Draft Report was prepared and the Draft Report or the relevant sections of the Draft Report was shared with all of those individuals who were interviewed as part of the investigation to ensure that the report was factually accurate; amendments were made to the Draft Report following receipt of submissions by parties.

The Draft Report identified recommendations to address those issues which were identified as contributing to the incident and feedback was sought on the recommendations identified. On this basis the Final Report of the investigation was developed.

# Section 1: Background to this Investigation

On Monday the 6<sup>th</sup> May 2013 at 14:00 hours, a 112/ 999 call was received by an Ambulance Control Centre in the HSE South. The call related to a 2 year old child who was reported as having a fall at the family home located in a town in the area of East Cork. It was also communicated by the caller that the child had sustained an obvious injury to his head as a result of the fall.

It has been established by the review team that the individuals who made the call to the Ambulance Control Centre i.e. Caller 1 & Caller 2 (Daughter & Father respectively) were members of the public who came upon the scene of the incident while driving home. Both stopped to offer assistance when they noticed the child's father who appeared very distressed standing over the child on the front lawn of the family home.

Caller 1 who made the 112/ 999 call to the Ambulance Control Centre was unable to confirm whether the child had fallen from a height.

During the course of the 112/999 call, Caller 1 handed the phone to Caller 2 to continue the 112/999 call as Caller 2 may have received move information regarding the incident as he had approached the child and child's father to establish what had happened. Caller 2 was also unable to establish how far the child had fallen.

Based on the implementation of the 'Caller Interrogation' process outlined in the AMPDS ProQA, the Call Taker A in the Ambulance Control Centre i.e. Call Taker A who took the telephone call from Caller 1 triaged the call as a 17 BRAVO 01.

A BRAVO code is used to denote a call that while serious and urgent, is not considered immediately life threatening.

A decision was initially made to allocate an ambulance to respond to the call and attend the scene of the incident; the ambulance was subsequently stood down at 14:04 hours.

Caller 2 was advised by Call Taker A that there was no ambulance available in the area and that in order to save time while waiting for an ambulance that Caller 2 should use their own transport to take the child to the local Out of Hours GP Service.

It has been established by the review team that the nearest available emergency ambulance to the incident at the time of this call had an estimated travel time to the scene of the incident of 18 minutes.

The 2 year old child and his father were subsequently transported to the Out of Hours GP Service in 6 minutes by Caller 2 in Caller 2's car and arrived at the Out of Hours GP service at approximately 14:10 hours. The location of the Out of Hours GP Service was approximately 2 miles away from the child's home.

The GP who was on duty at the time that the child and his father arrived at the Out of Hours GP Service immediately carried out an examination on the child. The GP's assessment indicated that on arrival at the centre the child was conscious, crying, moving all limbs and that his pupils were equal and reacting to light.

The GP has noted in his record of the assessment that the child had visible bruising on the left hand side of his forehead and head.

On this basis the GP believed the best option was to have the child transferred to the nearest acute hospital immediately.

The GP wrote a referral letter to be brought to the Emergency Department outlining his examination of the child and Caller 2 transported the child and his father to the nearest acute hospital Emergency Department (ED) in his car.

The child was registered as arriving at the ED at 14:36 hours. On arrival the child was fully alert, crying and moving all his limbs. He had a full GCS<sup>10</sup> and was reviewed by emergency medical staff within minutes of arriving at the ED. The child had a swelling on the left side of his forehead, which radiated to the back of the head and had a graze on the left side of his forehead. He was triaged<sup>11</sup> and brought through to Resuscitation Area<sup>12</sup>. The child was irritable, but awake. There remained a degree of confusion about how far the child had fallen. A CT Scan of the child's head was carried as the level of bruising suggested an underlying skull fracture. Following the CT scan the child was admitted.

<sup>&</sup>lt;sup>10</sup> The Glasgow Coma Scale or GCS is a neurological scale that aims to give a reliable, objective way of recording the conscious state of a person for initial as well as subsequent assessment. A patient is assessed against the criteria of the scale, and the resulting points give a patient score between 3 (indicating deep unconsciousness) and either 14 (original scale) or 15 (the more widely used modified or revised scale). GCS was initially used to assess level of consciousness after head injury, and the scale is now used by first aid, EMS, nurses and doctors as being applicable to all acute medical and trauma patients. In hospitals it is also used in monitoring chronic patients in intensive care. The scale was published in 1974 by Graham Teasdale and Bryan J. Jennett, professors of neurosurgery.

<sup>11</sup> Triage can be defined as the prioritization of patient care based on the severity of injury / illness, prognosis, and availability of resources. The purpose of triage is to determine to which pre-designated patient care area the patient should be sent. The locations in the ED to which the patients are 'triaged' helps establish priorities for care.

<sup>&</sup>lt;sup>12</sup> The Resuscitation Area is dedicated to the immediate care of patients in cardiac arrest, airway, breathing and circulation compromise, trauma. The 'Resus' area consists of two or more resuscitation beds with all resuscitative equipment (monitors, defibrillators, airway, intubation & surgical equipment) available at an arm's distance including paediatric resuscitation kits. All priority I patients are managed here. Priority I (Immediate) - Patients have life threatening injuries or conditions that are survivable with immediate treatment.

# Section 2: Chronology of Events<sup>13</sup>

## Monday 6<sup>th</sup> May 2013 from approximately 14:00 hours: Pre 112/999 Call

At approximately 14:00 hours two members of the public i.e. Caller 1 & Caller 2 (Daughter and Father respectively) came upon the scene of an incident involving a 2 year old child in a town in East Cork.

Caller 2 outlined at interview that on the day of the incident he was driving home with his daughter (Caller 1)<sup>14</sup>. As Caller 2 approached his home in the housing estate, he saw a man standing over a child lying on the lawn outside a house, and noted that the man was agitated and appeared very distressed. At interview Caller 2 indicated that it was obvious something had happened to the child.

Caller 1 and Caller 2 ran over to the front garden where the child was lying on the lawn. From the interviews conducted it appears once they got closer to the child Caller 1 asked if anyone had rung for an ambulance. Caller 1 received no response from anyone at the scene; Caller 1 then took Caller 2's mobile phone, and proceeded to dial 112/999. Caller 2 went up to the child and moved the father to the side so he could establish the condition of the child.

Caller 2 gave a quick survey to the child's condition. The child was crying loudly and had his hands continuously over his eyes and was kicking his legs. Caller 2 moved the child's hands from his eyes and noticed a very bad graze, over the child's eye; there was no evidence of bleeding. Caller 2 recalled at interview:

# "The child had a bad swelling over the rest of his forehead and it wasn't going black and blue, it was going a grey."

## 14:00 hours: 112/999 Call

Caller 1 stated that she dialled 112/999 to request an ambulance using Caller 2's mobile phone.

The transcripts of the telephone call made by Caller 1 indicate that the call was received in the Ambulance Control Centre at 14:00 hours and that the call was answered by Call Taker A.

The transcripts of this call outlined that Caller 1 stated that a child had a fall in a housing estate and he was approximately 2-3yrs old.

The call transcript states that in response Call Taker A asked from where did the child fall.

<sup>&</sup>lt;sup>13</sup> Bold Italics used throughout the chronology of events section indicate direct quotes from all interviewees.

<sup>&</sup>lt;sup>14</sup> Caller 2 was driving home in his car and his daughter Caller 1 was travelling in her own car behind her father.

In line with the standard procedure in place Call Taker A should have asked Caller 1 a series of standard questions which are taken from the ProQA script of questions and include the following:

- What's the address of the emergency?
- What's the phone number you are calling from (Telephone number of Caller 1)?
- Okay, tell me exactly what happened?
- Are you with the patient now?
- How many people were hurt?
- How old is he?
- Tell me approximately?
- Is he conscious?
- Is he breathing?
- Go and check and tell me what you find

During the 112/999 call with Call Taker A from the Ambulance Control Centre; Caller 1 was not requested to answer the following questions from the standard ProQA script:

- What's the phone number you are calling from (Telephone number of Caller 1)?
- Okay, tell me exactly what happened?
- Are you with the patient now?
- How many people are hurt?
- Tell me approximately?
- Is he conscious?
- Is he breathing?
- Go and check and tell me what you find

However Call Taker A recorded the answers to the questions in good faith based on his interpretation of the call. Call taker A then recorded this information on the ProQA system.

At the same time that Call Dispatcher Y was reviewing the Computer Aided Dispatch System; Call Taker A was continuing his conversation with Caller 1.

Caller 1 stated that during the conversation with Call Taker A that she had outlined that a child had a fall, that the child had sustained an obvious head injury but that she i.e. Caller 1 was unable to clarify where the child had fallen from.

The telephone call transcripts record that Caller 1 indicated that the child was lying on the lawn outside the family home.

Caller 1 outlined to Call Taker A that she found it hard to communicate with the family as they were '*not Irish'*.

It was established during later interviews that the parents of the child were originally from Eastern Europe and that English was not their first language.

Call Taker A asked if the background screaming was in fact the child, to which Caller 1 answered '**yes'**.

Caller 1 indicated that the child was moving his limbs but she did '*not want to move the child just in case'*.

Caller 1 stated that she then handed the phone to Caller 2 to continue the conversation with Call Taker A as Caller 2 had approached the child and his father to establish more information on the incident.

Call Taker A again asked Caller 2 how far the child had fallen, the call transcript outlined that Caller 2 indicated that he did not know how far the child had fallen as Caller 2 did not witness the fall.

Caller 2 informed Call Taker A that there was nothing around from which the child could have fallen as the child was lying in the middle of the garden.

The telephone transcripts record that Call Taker A informed Caller 2 that there was no ambulance in the area.

The telephone transcripts record that Call Taker A then asked if the family could use of their own transport i.e. to transport the child.

It is recorded that Caller 2 stated that there was no car in the driveway and he asked Call Taker A what was the best thing to do and where should the child be taken.

Call Taker A stated to Caller 2 that the child should be brought to the local Out of Hours GP Service.

Caller 2 then asked Call Taker A to notify the Out of Hours GP Service that they would be coming.

The call transcripts record that Call Taker A advised Caller 2 that he should '*just drive in'*.

The call transcript recorded that Caller 2 was instructed to ring 112/ 999 again in the event that the child's condition changed on the way to the Out of Hours GP Service. It has been established that on the basis of the information that was input into the system that a Dispatch Code of 17 BRAVO 01 was generated by ProQA.

A Dispatch Code of 17 BRAVO 01 indicated that an ambulance should be dispatched to the scene.

### 14:01 approximately

The call made by Caller 1 to the Ambulance Control Centre was automatically available for viewing by all staff logged in, on the verification of the address.

On completion of questioning the ProQA code is then generated and the CAD is updated to all users.

Call Dispatcher Y retrieved and opened the call on the CAD system.

The call dispatcher CAD system generates a list of where all available emergency ambulance resources are located; and their status at the time of opening a call on the call dispatcher CAD system.

Call Dispatcher Y was aware of all of the available ambulance resources in the southern region on the 6<sup>th</sup> May 2013 as he was responsible for the allocation of a resource to the incident on the day.

Call Dispatcher Y viewed 4 available resources on the CAD system at the time of the call; these were:

- 1) Ambulance 1 i.e. Call-sign D2, Mallow based Emergency Ambulance
- 2) Ambulance 2 i.e. Call-sign B6, Cork City Ambulance
- 3) Ambulance 3 i.e. Call-sign D8, Macroom Emergency Ambulance
- 4) Ambulance 4 i.e. Call-sign B2 Cork City Ambulance (attached to the Midleton Ambulance Station on the 6<sup>th</sup> May 13)<sup>15</sup>

Call Dispatcher Y allocated Ambulance 4 (Call-sign B2) to the call i.e. the Cork City Ambulance that was attached to Midleton Ambulance Station on that date.

The records maintained demonstrate that Ambulance 4 (Call-sign B2) was at that time located at an acute Hospital in the southern region following a patient transfer to the hospital (the hospital is located approximately 18 minutes travel time away from the incident scene).

Ambulance 4 (Call-sign B2) had a crew of a Paramedic and an Advanced Paramedic on board at the time and was about to leave a large acute hospital.

### 14:03

Call Dispatcher Y exited the ProQA system.

This was the Call Dispatcher Y's last interaction with the call on the system.

Call Dispatcher Y stated at interview that '*the vehicle was allocated to the call*' at this time.

However Call Dispatcher Y informed the Review Team during interview that although Ambulance 4 (Call-sign B2) was allocated to the call at just before 14.03 hours that he did not think the ambulance was actually dispatched, that is, he was unsure whether he had actually contacted the crew on board the ambulance by phone or radio to dispatch them to the call.

A review of the NAS phone and radio records for the 6<sup>th</sup> May 2013 indicated there was no evidence to suggest that the dispatcher communicated the call to the ambulance crew.

Call Dispatcher Y informed the Review Team that at the time of reviewing the CAD system that he had overheard the telephone call between Caller 1 and Caller 2 and Call Taker A; and that based on the conversation that he had overheard that he had formed

<sup>&</sup>lt;sup>15</sup> Due to Sick leave on the 6<sup>th</sup> May 13 in the local station, the RRV crew (solo responder) was matched with the crew member from Cork City to make up the crew of an emergency ambulance for Midleton base. Callsign B2 Cork City Ambulance worked from the Midleton Ambulance Station for the shift.

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the view that the Ambulance assigned to the call i.e. Ambulance 4 (Call-sign B2) was going to be cancelled as the Caller was taking the injured child to the local Out of Hours GP Service.

The Call Dispatcher highlighted that he acted in good faith on the day of this 112/999 call and acted on the information available to him at the time.

### 14:04 Hours:

The incident was terminated on the ProQA system by Call Taker A.

Call Taker A recorded the following entry on the ProQA system:

### "Going to out of hours GP Service"

The following information was recorded in the section of the system used to record the reason for terminating the call:

### "Own Transport"

At interview Call Taker A said his understanding was it was a simple fall.

Call Taker A outlined, that he:

"genuinely believed it didn't warrant sending an emergency ambulance and was cognisant of the fact that we didn't have any ambulance in the area at the time of the call as well. Treated it as a simple fall, I thought that the next course for the family would be to take the child to see a doctor... which I know would've been on duty."

Call Taker A said that he asked on a number of occasions if it was obvious if the child had fallen from anything and indicated that there was nothing to suggest that the child had fallen from a height.

## 14:10 Hours: GP out-of-hours Service

Caller 2 arrived at the local Out of Hours GP Service.

The child's father carried the child into the building while Caller 2 parked the car.

On arrival at the Out of Hours GP service which was located at the Local Out of Hours Surgery the child and his father were immediately escorted to a Consultation Room by the surgery receptionist.

GP X carried out a clinical examination of the child shortly after the child's arrival.

GP X recorded that he found the child to be alert, crying and moving all limbs. The child was also moving his head and eyes. GP X was unable to establish from where the child had fallen.

Based on the findings of his examination GP X decided that the best treatment option was to refer the child to the ED of the nearest acute hospital.

Caller 2 entered the Consultation Room after parking his car.

GP X decided not to call an ambulance based on the information given to him by Caller 2 who had indicated that there was no ambulance available. GP X informed the Review Team that he then asked Caller 2 if he was happy to continue the journey with the child to the ED at the Acute Hospital; GP X stated that Caller 2 confirmed that he was.

The Doctor on Call vehicle was not available as the supporting GP was on a home visit and therefore the GP was unable to facilitate a transfer to the hospital in the Doctor on Call vehicle.

GP X then wrote a brief referral note related to his examination of the child to be given to the staff at the ED. At interview the GP X indicated his referral letter outlined the following:

"?<sup>16</sup> Child fell from upstairs window. Father distraught with very poor English. Crying a lot, visible bruising on skull and forehead. Child moving head left and right. All four limbs moving, pupils are equal and reacting to light. Spoke with member of public who accompanied father to surgery who outlined there was no Ambulance available"

GP X estimated the child, his father and Caller 2 were in the Out of Hours GP Service for approximately 7-10 minutes.

### 14:36 approx: Emergency Department

Caller 2, the child's father and child arrived at the hospital.

While Caller 2 parked his car; the child's father brought him straight to the ED.

Records indicate that the child was registered on the Hospital Patient Information Management System at 14:36.

The child was then reviewed by ED medical team.

The medical team performed a full clinical examination and at interview the emergency medical team indicated that:

- The child was fully alert.
- That he had full scale GCS; his GCS score was recorded as 15.
- That he recognised his mother on her arrival i.e. he was looking specifically to his mother for attention.

The Emergency Medicine Registrar recalled at interview that during the time he was carrying out a clinical assessment of the child that there was confusion related to the nature of the fall that the child had sustained. The Registrar stated at interview:

## "The bystander (Caller 2) was quite insistent that the downstairs window was open but the upstairs windows were not open, so he was saying he didn't believe the child could have fallen out of the upstairs window."

<sup>&</sup>lt;sup>16</sup> The use of the "?" indicates the word query.

The Registrar also stated at interview that the child's father insisted that the smaller window upstairs was open and the downstairs window was open because the child's father was cleaning the house and he had the downstairs window open, he didn't see the child going out that window or any other window.

The Consultant in Emergency Medicine stated at interview that once the child was reviewed:

### "The issue was he had a big bump on the head so when a child has a bump on the head they invariably have a skull fracture; it was an indication for a CT."

On this basis a CT scan of the child's head was arranged.

# Section 3: Aftermath of Incident

Following his initial assessment in the ED the child was admitted to the hospital.

On the 7<sup>th</sup> May 2013 his condition deteriorated; despite all efforts the child died on the 8<sup>th</sup> May 2013.

Following the child's death those involved in delivering care to him offered their sympathies and condolences to the parents.

The details of the case were escalated for the attention, support and oversight of the HSE National Incident Management Team by the Minister for Health on the 10<sup>th</sup> of May, 2013.

A local investigation team was established by the Medical Director of the NAS; this investigation was taken over by the Review Team on the 16<sup>th</sup> May 2013.

An Incident Report Form related to the events of the 6<sup>th</sup> May was completed by the Ambulance Service.

# **Section 4:** Key Causal Factors, Contributory Factors, Incidental Factors and Linked Recommendations

The aim of this investigation was to establish the circumstances regarding the failure to provide an Emergency Ambulance to the scene of the incident following the 112/999 call on the  $6^{th}$  May 13, in particular the review team aimed to focus on the chronology of events from the time of the 112/999 call to establish the factors that contributed to this failure in service provision.

## **Key Causal Factors**

Key causal factors are defined by the HSE Guidelines for Systems Analysis Investigation of Incidents and Complaints (HSE, November 2012)<sup>17</sup> as issues that arise during the process of delivering and managing health services that are considered by the investigation team to have had an effect on the eventual adverse outcome.

Following an analysis of the chronology, this investigation identified the following 2 key causal factors.

**Key Causal Factor 1:** Deviation from the National Ambulance Service Procedure for Call Taking/Address Verification/Dispatch (NASCC032) which resulted in a failure to:

appropriately assess the child's condition at the scene of the incident; and
provide post dispatch advice to the caller.

**Key Causal Factor 2:** Deviation from the EMS Priority Dispatch Standard; resulting in a decision not to dispatch an emergency resource that was not based on correct and complete information.

Each Key Causal Factor was analysed by the Review Team in order to identify the Contributory Factors. Contributory Factors are considered to be hazards and potential causes of future harm, if not mitigated (through appropriate recommendations being put in place).

The list of Contributory Factors outlined within the Contributory Factors Framework used to analyse the Key Causal Factors in this investigation is included under Appendix E of this report.

The following sections of the report analyse the Key Causal Factors specified above and the Contributory Factors identified for each.

 $<sup>^{17}</sup>$  HSE Guidelines of "Systems Analysis Investigation of Incidents and Complaints" (HSE, November 2012 can be downloaded at

http://www.hse.ie/eng/about/Who/qualityandpatientsafety/Quality\_and\_Patient\_Safety\_Documents/QPSDGL5 211.pdf

It should be noted that following the commencement of this investigation that the Review Team was informed that the Ambulance Control Centre referred to in this report was closed as part of the re-organisation of a decentralised Control Room model to a more centralised model.

Nonetheless the Review Team is of the view that the recommendations contained in the report have applicability to each remaining Ambulance Control Centre and to the wider issue of the delivery of National Ambulance Services as a whole.

# Key Causal Factor 1:

## Key Causal Factor 1:

Deviation from the National Ambulance Service Procedure for Call Taking/Address Verification/Dispatch (NASCC032) which resulted in a failure to: 1) appropriately assess the child's condition at the scene of the incident; and 2) to provide post dispatch advice to the caller.

# Factors that contributed to Key Causal Factor 1:

## Figure 1: Key Causal Factor 1 (KCF 1) and associated Contributory Factors



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# $\rightarrow$ Individual affected/harmed Factors: Condition, Language and Communication

The call made to the Ambulance Control Centre on the 6<sup>th</sup> May related to a 2 year old child who had sustained a fall and was found lying on the lawn outside his home.

Although the child was conscious and crying following the fall, as a young child in distress he was unable to give details of the fall or to communicate any pain or other symptoms that he might have been experiencing to those around him.

In addition the father of the child was shocked and distressed to see his child in this condition and as he did not have English as his first language it was difficult for him to communicate any information that he had related to the circumstances of the child's fall.

Two members of the public who witnessed the child lying on the ground and his distressed father came to the aid of the father and made the call to the Emergency Services i.e. Caller 1 and Caller 2.

It was communicated to Call Taker A in the Ambulance Control Room that the child's father was not Irish and that there were difficulties communicating with him.

The review notes that Call Taker 1 sought all of the information related to the child's condition from Caller 1 and Caller 2.

The Review Team also note that the child's father did communicate that the child had fallen from an upstairs window to the clinical staff in the Emergency Department following arrival at the acute hospital.

There is no evidence that at any stage during the call to the Ambulance Control Room that Call Taker A requested to speak with either of the parents to see if it was possible to clarify information with them or to endeavour to get any additional information related to the circumstances of the fall; had the Call Taker spoken to the father it might have been established that the fall that the child had sustained was from a height.

The questioning of and advice to the caller should not in any way delay the dispatch and therefore the arrival of the ambulance. It is accepted that the caller may not be able to provide the ambulance Call Taker with all the relevant information that is being requested and similarly this should not delay the dispatch of the ambulance. This process and the use of the computer-aided dispatch system is contained within a number of national ambulance service policies and supporting procedures and in relevant training provided to ambulance control centre call-takers and dispatchers.

### **Recommendation 1**:

The NAS should amend the Ambulance Control Procedure for Call Taking/Address Verification/Dispatch (NASCC032) to reflect that a higher level of priority must be given to the call when there is limited information available or when the person(s) involved in the incident do not speak English.

This amendment should also include that the call taker must ensure that as much information abut the incident is gathered from the individual(s) available at the scene who may have witnessed the incident.

# $\rightarrow$ <u>Task & Technology Factor 1:</u> Availability and Use of Protocols, Policies, Standards

The review identified that there was a deviation from the AMPDS<sup>18</sup> procedures outlined in the Ambulance Control Procedure for Call Taking/Address Verification/Dispatch (NASCC032) in relation to the call to the Ambulance Control Centre on the 6<sup>th</sup> May.

The Review Team formed the view that Call Taker A did not have all of the information required to make a full assessment of the child's condition at the scene, there was evidence of an absence of collaboration with the Caller to establish an accurate chief complaint or to gain the key information relevant to the situation.

Although a priority level was assigned to the call, the appropriate response to the assigned level of priority was not provided.

The AMPDS protocols ensure that trained and certified Ambulance Control Room staff properly carry out the following four important activities:

- 1. Structured and rapid caller interrogation and patient evaluation (Call taker using the ProQA system)
- 2. Accurate selection of the appropriate response (Call dispatcher using the CAD system)
- 3. Relay of important patient and scene information to paramedics on scene (by the Call dispatcher)
- 4. Provision of essential post dispatch advice to the Caller (by the Call taker)

This structured approach to AMPDS is designed to remove individual Call Taker/ Call Dispatcher interpretation and variation; thus resulting in a consistent call dispatch prioritisation process regardless of which call handler deals with the call.

During the interview process the Review Team were informed of the methods currently in place in relation to the dissemination of policies, procedures and guidelines relevant to the National Ambulance Service/Ambulance Control Centres in place in this Ambulance Control Centre at the time of the incident.

The Control Manager is responsible for making sure staff have all the resources they need to do the job and that targets are met for responding to calls on time. The Control Room Manager informed the Review Team that in order to disseminate policy documents etc. that he circulates an email to each staff member through the CAD email system and through their individual HSE email address informing the staff member of all new and/or updated policies and procedures.

<sup>&</sup>lt;sup>18</sup> The Advanced Medical Priority Dispatch System (AMPDS) which is incorporated in national and local policies and its software equivalent (ProQA) are designed to direct the control room staff through a predictable, accurate, repeatable, verifiable and validated process. The AMPDS protocol uses a system of caller interrogation and event and condition determinations that enable the call taker to establish a specific dispatch code. This allows the call to be prioritised and the caller to be provided with appropriate advice and instruction prior to the arrival of the ambulance. This also informs the ambulance dispatcher of the necessary and appropriate ambulance response in accordance with the National Standards.

This communication would also confirm to the staff that an electronic copy of the policy/procedure/guideline was available in the Control Room for central access.

However the Review Team was not provided with any evidence that showed that the Control Centre had robust arrangements in place for ensuring that staff had read and understood the policy documents circulated. In addition there was no evidence that a system is in place to monitor ongoing compliance with relevant policies, procedures and standards.

The Review Team consider that this is an area that must be addressed.

### **Recommendation 2**:

The NAS must ensure that robust arrangements are in place for the dissemination of policies, procedures and standards within the Service and that a system is put in place to monitor ongoing compliance with HSE policies, procedures and standards.

### → <u>Task & Technology Factor 2</u>: Task Design and Clarity of Structure

The unique circumstances faced by Ambulance Control Room staff on a daily basis require strict compliance with ProQA (AMPDS), national and local ambulance service procedures and standards.

The use of the system requires non-discretionary compliance to protocol. This includes (but is not limited to) reading questions and instructions exactly as written, reading the questions and instructions in the order prescribed by the protocol, obtaining answers to all of the questions when possible and delivering instructions in all situations when they are possible and appropriate.

The Review Team established that the Emergency Medical Dispatch (EMD) process which encompasses the AMPDS protocol, involves the following sequential steps to ensure the correct response is sent to the patient (Refer to Flow Chart in Appendix B):

- A request for an ambulance service begins with a member of the public calling 112/ 999.
- The primary details taken by the call taker from the caller are telephone number, address and what's the problem?
- The call taker, using the scripted ProQA system, will ask a series of questions until a dispatch code is generated.
- The dispatcher will use the priority code to allocate and dispatch the nearest resource to the call.
- Where the nearest available resource does not have the appropriate clinical level of expertise i.e. advanced paramedic, an appropriate resource where there is reasonable prospect of arrival or intercept will be dispatched.

 Dynamic Deployment<sup>19</sup> processes should be followed meaning the available ambulance closest to the location of the party requesting medical assistance should be dispatched for faster service.

Provision of post dispatch advice to the caller.

AMPDS ProQA is designed to provide an integrated and consistent system used to dispatch medical assistance to emergencies.

When someone calls 112/999 the system takes the Caller through a list of questions which allows the Call Taker to provide the Caller with appropriate advice and instruction and assists the Call Taker to correctly determine the ambulance response.

The call taking process, the provision of advice and instruction to the caller and the allocation of the appropriate ambulance response is in accordance with nationally agreed standards.

The review identified that although there is an Ambulance Control Procedure for Call Taking/Address Verification/Dispatch (NASCC032) in place, encompassing the AMPDS protocol that outlines a clear sequence of actions, there was evidence that a number of steps were not adhered to in relation to this 112/999 call.

It was established during the interview process that Call Taker A underestimated the severity of the child's condition on the basis of the information that he received.

Call Taker A indicated to the Review Team that on the basis of the information that he received that he believed at the time of taking the call that the correct decision was to suggest the use of the parent's own transport to attend the local Out of Hours GP Service.

The Call Taker informed the review team:

## "it was obvious at the start of the call, the caller said the child was moving his arms and legs, he was alert, I could hear him crying, I was happy he was alert and orientated and moving about the place".

The Call Taker outlined that he believed that the child had a simple fall and was cognisant of the fact that there was '*not an ambulance in the area at the time of the call'*.

The Call Taker therefore thought that the appropriate course for the family would be to take the child to see a doctor i.e. the local Out of Hours GP Service.

Call Taker A indicated that on the basis that he was satisfied this was a 'simple fall' he therefore did not complete the AMPDS ProQA protocol. The failure to follow the AMPDS ProQA protocol to conclusion resulted in a number of ProQA key questions not being asked. Despite this he prioritised the call as a 17 BRAVO 01. The Review Team are of the opinion that Call Taker A reached the correct priority code, which should have resulted in the dispatch of an ambulance.

<sup>&</sup>lt;sup>19</sup> Dynamic Deployment- the closest resource may even be in another county depending on activity level and will be dispatched but may be stood down along the way as resources closer to the location become available.

It was also noted that the Call Taker informed the caller "*There is no ambulance in the area*" and instead directed the caller to take the child to the local Out of Hours GP Service.

Call Taker A indicated that it was his view that this would save time and get the child to medical attention more quickly. It is the view of the Review Team that this decision was well intentioned and Call Taker A acted in good faith, however the response made by Call Taker A was not in accordance with the EMS dispatch standards.

The Review Team has concluded that had the correct process been followed the nearest available ambulance would have been dispatched as an emergency.

The review also established that in line with the Call Taker procedure that an important part of the Call Taker role is to stay on the line to offer appropriate advice and support to the Caller.

Call Taker A informed the Review Team that on the basis that he believed that he had ascertained the chief complaint of the injured party referred to in the call i.e. the child who had fallen; and that he believed that he had appropriately advised the caller to take the child to the Out of Hours GP Service; Call Taker A did not remain on the line to offer post dispatch advice.

Staff informed the review team that this deviation from call taking procedure was not an uncommon occurrence in this control room.

### **Recommendation 3:**

The NAS must ensure AQUA (Advanced Quality Assurance)<sup>20</sup>, which is already available to address risk and ensure compliance with AMPDS, is implemented in all NAS Command and Control Centres.

There must be a sharing of learning from incidents between all control centres. This should be prioritised in the context of the current restructuring programme which involves a move to a more centralised model of service delivery.

Any safety concerns in relation to ProQA or policy deviation(s) must be fully considered at the time of occurrence by the appropriate governance/management team and be in line with the HSE Incident Management Policy and Guidance process to ensure that such concerns are addressed. The manager responsible for the area where the incident/deviation occurs must be responsible for making sure that the recommendations are considered and an appropriate action plan for the implementation of the recommendations is put in place.

Where action plans are not fully implemented, outstanding issues must be considered in the context of the HSE Risk Assessment and Risk Register Policy and that the appropriate control measures are applied and implemented to mitigate appropriately against the risk(s).

<sup>&</sup>lt;sup>20</sup> AQUA is a unique software tool that is structured in order to allow the auditor to ensure all questions are asked and answered correctly. It gives a detailed report to the call Taker by presenting their performance and indicating if the call Taker is compliant or not.

### → Individual (Staff) Factors: Competence

It was established that the Ambulance Control Room staff involved in this incident had been working in this service for a number of years.

They were experienced in call taking and dispatch, had received training and recertification and therefore had been deemed competent.

All Emergency Medical Dispatchers (EMDs) are required to complete a minimum of 24 hours Continuous Dispatcher Education (CDE) programme every two years.

CDE is one of the essential elements of quality management in dispatch.

The CDE programme seeks to develop a better understanding of the EMD's roles and responsibilities, to enhance skills related to the provision of post dispatch instructions, to enable the correct identification of the 'chief complaint', to improve skills in the proper application of all components of the AMPDS, to create opportunities for discussion and skill practice, and to facilitate critique of skill performance.

This training also includes sample case scenarios for the staff to work through, this helps in identifying EMD performance deficiencies through sample case scenarios (case review); in this way CDE can address issues directly to help improve skills.

The review found that there is currently no system of EMD case review in place to identify individual EMD skills that require improvement. Therefore areas of EMD performance that would benefit from additional training/support etc. in the working environment are not identified or corrected.

It was also found that only the minimum CDE was provided for staff.

## Recommendation 4:

The NAS must ensure the continued training and education needs of staff are met, by review of CDE training documentation which is available online.

NAS must ensure that staff have access to incident review documentation which gives feedback on incidents where the responses were inappropriate (field feedback form, appropriateness of dispatch code). The NAS must take the necessary steps to establish a training and education programme to support staff in call taking and ambulance dispatch.

### → <u>Team Factors</u>: Verbal Communication

Good customer service plays a key role in handling callers. One part of exemplary customer service is the control of each call so that the EMD's questions are understood and the answers given are helpful in determining the correct response and the correct delivery of instructions.

Customer service standards include (but are not limited to) ensuring that the attitude expressed in the EMD's voice and mannerisms shows concern for the patient/victim and is respectful and non-judgemental; that when appropriate, the EMD reassures the caller that help is on the way and that someone is going to tell them what to do until help arrives.

The EMD should not employ any statement or action that may create feelings of anger, confusion, anxiety, or helplessness for the caller, family, patient or victim.

There was no evidence that currently there is an established process to support ambulance service staff and improve their performance in relation to good communications technique.

Although the examination of the transcript of the call related to this incident does not show any evidence of poor customer service skills; however as highlighted previously there is no evidence that Call Taker A requested to speak to the parents of the injured child to clarify or confirm the information presented to him, or that Call Taker A was controlling the call in such a way as to ensure that he had all of the information required to inform his assessment.

### Recommendation 5:

Implement a process of good communication technique through a training programme supported by regular audit of call taker practice and feedback for ongoing learning and performance improvement.

# $\rightarrow$ <u>Organisational and Management Factors</u>: Quality and Safety Culture and priorities

While there was evidence that the Procedure for Call Taking/Address Verification/Dispatch (NASCC032) was in use at all Ambulance Control Centres since October 2012; there was evidence that implementation of the procedure had not been audited in this Control Centre in the intervening period and therefore no feedback was provided to staff on the call taking and dispatch practices being used.

These findings suggest the need for additional attention to ProQA adherence including ongoing quality assurance and improvement practices. It is an organisation's duty to provide staff with the tools they need to perform their role safely, competently, and effectively.

The Review Team identified that the Control Centre did not have appropriate governance arrangements in place for ensuring that staff complied with relevant policies, procedures, guidelines and standards; and there was a lack of adequate quality assurance or improvement programmes in place.

In addition it was noted that individual performance was not being reviewed and therefore staff were not receiving feedback on their performance or being given the opportunity to improve their performance. The purpose of an audit and feedback process is to significantly reduce and over time eliminate any and all variations in call taking irrespective of individual or shift.

The NAS has access to a tool referred to as AQUA (Advanced Quality Assurance) which facilitates audit of the activities of ambulance control staff, including Call Takers and Call Dispatchers.

The tool facilitates the capture of information through the export of ProQA data files and their input into AQUA which can then be compared to the audio- recording of a case. The Review Team was informed that the tool is currently under-utilised within the Ambulance Services.

The review considers that this is an area of quality improvement that must be prioritised for action and that once a structured audit/feedback process is commenced, this should highlight any areas of concern.

The Review Team were informed that corporate arrangements are being developed and put in place to support good governance throughout the service which is a positive step. However in order to ensure that the governance arrangements are effective; systems must be developed to provide assurances supported by ongoing monitoring of these arrangements.

The Review Team were informed of the many change processes that are occurring nationally within the NAS structure, making this an opportune time to establish a robust monitoring, audit and feedback programme, leading to sustainable change and better outcomes for patients.

Additionally the Review Team acknowledge that the NAS is currently in the process of undergoing significant change, moving from a decentralised model of service delivery to a more centralised control centre model which will provide an opportunity for less variation in relation to call taking & dispatch practice.

## Recommendation 6:

The NAS must ensure the AQUA process, which is already available to address risk and ensure compliance with AMPDS, is implemented in all NAS Command and Control Centres.

There must be a sharing of learning from incidents between all control centres. This will be further supported through the current restructuring programme giving rise to a more centralised model of service delivery. Any safety concerns in relation to policy deviation must be fully considered at the time of occurrence by the appropriate governance/ management team and in line with the HSE Risk Register process to ensure that such concerns are risk assessed; and that the appropriate control measures are applied and implemented to mitigate appropriately against the risk(s).

# Key Causal Factor 2:

## Key Casual Factor 2:

Deviation from the EMS Priority Dispatch Standards resulting in a decision not to dispatch an emergency resource that was not based on correct and complete information.

# Factors that contributed to Key Causal Factor 2:

# Figure 2: Key Causal Factor 2 (KCF 2) and associated Contributory Factors



The principles for dispatchers to follow related to the dispatch of emergency resources are clearly outlined in the EMS Priority Dispatch Standard, Version 4 (January 2013):

- 1. The nearest available ambulance shall be tasked to the highest priority incident.
- 2. The 'recommended response' other than an ambulance shall be dispatched if resources are available.
- 3. Dispatchers shall have discretion to override ProQA to assign a higher priority to an incident.
- 4. An ambulance tasked to lower priority incident may be diverted to higher priority incident when resources are limited.
- 5. The Dispatcher may preserve the availability of ambulances by queuing Alpha and Omega priority incidents until sufficient resources are available.
- 6. When response is delayed Dispatchers shall inform the caller of estimated time of arrival.

### -----

- 7. The Dispatcher shall make contact with the caller if the ambulance response is delayed (> 20 minutes) to verify patient's condition and review priority of incident.
- 8. Any recommended resource should only be deployed if it has a reasonable expectation of making patient contact.

The Review Team considered that all staff were aware of the existence of the EMS Dispatch Standards, and recognised the benefits of the processes in place.

The Review Team note that in respect of the incident that occurred on the 6<sup>th</sup> May 2013 that there was a deviation from the nationally agreed EMS Standards and a decision was made based on incomplete information leading to a failure in dispatching an emergency resource to the scene.

## → <u>Team Factors:</u> Verbal Communication

The Call Dispatcher stated to the best of his knowledge the reason that an emergency resource was not dispatched in line with the EMS Dispatch Standards to the scene was because, the Call Dispatcher made an assumption based on an overheard conversation between the Call Taker A and caller 2; and formed a view based on the conversation that he had overheard that the caller had cancelled the request for an ambulance and was now going to the Out of Hours GP service.

At interview the Call Dispatcher indicated that:

### "the space between me and call taker was very short and I could hear what was being said I could hear it being said, so you're going to "GP out of hours", you don't want the ambulance.

The Review Team identified following an analysis of the 112/ 999 call recording and review of the transcript of the call that this was not in fact the content of the discussion that had taken place between the Call Taker and the Caller.

The Call Dispatcher also stated that the crew of Ambulance 4 (Call-sign B2) may not have been verbally advised of the request for an ambulance response, even though the ambulance resource was allocated:

## "I can't say whether I verbalised the call to the crew, but I raised<sup>21</sup> the vehicle on the CAD system, but I can't say for certain whether I spoke to them or not, because of the conversation that was going on behind me I knew the call was going to be cancelled".

Following a review of the NAS phone and radio records dated the 6<sup>th</sup> May 2013, the review team established that the Call Dispatcher did not inform the ambulance crew of the 112/999 call.

<sup>&</sup>lt;sup>21</sup> The dispatcher allocated an ambulance to the call.

### Recommendation 7:

All staff within the NAS must adhere in full to all relevant NAS policies, procedures and guidelines. Monitoring of compliance with policies, procedures and guidelines must be incorporated into the governance arrangements of the Service and existing reporting systems associated with CAD systems should be used to monitor and provide assurance that the EMS Dispatch Standards are being adhered to.

## $\rightarrow$ <u>Team Factors</u>: Team Structure, leadership, congruence, consistency etc.

It was identified at interview that all staff stated that they were aware of their roles and responsibilities in the context of the AMPDS protocol, national and local procedures and the requirement to navigate through a series of ProQA questions.

The Review Team was informed that the role of the Call Taker is to prioritise the call on the basis of the response to the questions that they ask and to provide relevant post dispatch advice to the caller.

The role of the Call Dispatcher is to allocate and dispatch the appropriate emergency resource by way of existing technology based on the dispatch code; and to ensure that the ambulance resource acknowledges the call and that the appropriate emergency resource has been mobilised.

The Review Team was informed that calls received in the Ambulance Control Centre should always be treated and managed as a 'live call' until the call is completed i.e. following the arrival of an ambulance response or until the responding crew is stood down by a competent person at the scene.

During the course of the review the Review Team identified a lack of clarity and consistency relating to the assigned responsibilities for the Call Taker and the Call Dispatcher in this circumstance.

The evidence made available to the Review Team indicated that there should be strict delineations between the roles of these individual team members and that strict protocols define the separate responses and actions that each team member should take for each call received in the Ambulance Control Room.

Despite this the Review Team found that in this case there was evidence of a blurring of team roles with decisions being taken by one team member prior to the completion of the actions required by another team member resulting in decisions being taken on the basis of incomplete and inaccurate information.

In addition the Review Team was informed that it was the practice that staff members in this control centre rotated on a formal basis between the roles of Call Taker and Call Dispatcher which added to the blurring of function between the two roles. Staff would be assigned to a particular role on a daily or weekly basis. It is important to note that they would not carry out both roles simultaneously.

It was established that the staff at this Control Centre were employed as controllers and not specifically to the role of Call Taker or call Dispatcher as would be the case in other control centres. This combining of Call Taker and Call Dispatcher roles and that at the time of this incident that the structure and process for ambulance dispatch varied across the country.

The Review Team was informed after the investigation commenced that this dual working arrangement and flat structure will be eliminated through the re-organisation of the control centres.

### Recommendation 8:

The practice of combined roles for Call Takers and Call Dispatchers should cease in all Ambulance Control Centres. Arrangements must be put in place to ensure that staff are aware of their individual roles and responsibilities when assigned to either call-taking or call dispatch duties; in addition there must be clarity at any given time regarding which role the staff member is acting in to avoid any uncertainty or confusion.

### **Recommendation 9:**

The current Ambulance Control Procedure for Call Taking / Address Verification Dispatch should be updated to include clarification related to the role of the Call Dispatcher with specific reference to the assignment of an appropriate higher response if deemed necessary and the process for standing down an emergency resource.

### → <u>Team Factors</u> : Supervision and Seeking Help

The Ambulance Control Room function must be very outcome focused; i.e. the right response to the right person and at the right time.

The Review Team identified that there was a lack of ongoing supervision in place for the staff working in this Ambulance Control Room.

During the course of the investigation the review identified that all staff working in the Control Room were of equal grade and status resulting in a "flat structure".

There was no evidence that any one team member was in charge or was taking a supervisory or leadership role during shifts being worked.

# The staff indicated at interview that they, "wouldn't necessarily question a decision made because you're equal" in the Control Room.

A wide range of perspectives were heard concerning the process around call taking and call dispatch.

The Review Team were informed that the Call Dispatcher believed his colleague to be competent, capable and trained and did not wish to undermine his colleague's decision regarding the cancellation of the ambulance.

The Review Team are of the opinion that the absence of a Person in Charge or a Control Room Supervisor and the lack of clarity in regard to the role and responsibilities of the Call Taker and Call Dispatcher contributed to the failure to clarify information and challenge decisions and/or assumptions made as both staff members were of equal grade.

The Review Team formed the view that this led to a situation where decisions and actions were not challenged even when they might not be appropriate in the circumstance.

The requirement for the service to support staff in performing the role safely, competently and effectively is essential in achieving the best possible outcome for the patient.

The Review Team concluded that the lack of effective support and supervision within the Control Room facilitated a situation where certain decisions and deviations could go unchallenged.

### **Recommendation 10:**

All Ambulance Control Rooms should have an assigned Team Leader or Person in Charge to supervise the call taking and dispatching process on a 24/7 basis; in addition there should be clear arrangements for the supervision of all staff for each shift and all staff must be aware of these arrangements.

### → Work Environmental Factors: Physical layout of the Control Room

In relation to the work environment and layout of the control centre the Review Team were informed that the call taker and dispatcher worked in close proximity of each other allowing the dispatcher to overhear the advice being given to the caller by the call taker.

### **Recommendation 11:**

The layout of the control room should not hinder verbal and non-verbal communication and should facilitate team working. The layout of the control room should reflect the allocation of responsibility and the requirements for supervision and should be effective under high and low staffing levels.

# **Incidental Findings**

The report identified one area for consideration that emerged during the investigation process while not impacting on this incident it is worth highlighting.

During the interview process the call taker advised the caller to take the child to the GP out of hours service. The call taker did not alert the GP out of hours service of the child pending arrival despite being requested by the caller to do so. There was a potential that no doctor would be immediately available to review the child due to other clinical commitments.

The review team established through the interview process that it was not common practice with control centres to refer callers to GP out of hours services.

## **Recommendation to address incidental finding 1:**

The NAS must consider the appropriateness of control room staff referring callers to GP services and the availability of a doctor to assess a patient.

Control room staff should not routinely refer 112/999 callers to a GP out of hours service without prior consultation with the GP service.

# **References:**

Guideline for Systems Analysis Investigation of Incidents and Complaints - November 2012

Health Information Quality Authority (October, 2012) Pre-hospital Emergency Care Key Performance Indicators for Emergency Response Times Version 1.1

NASCC022 Procedure – ProQa (AMPDS) Emergency Rule Applies Document reference no. NASCC022 Revision no 2, Approval Date 15th March 2012

NASCC032 NAS Procedure - Call Answering / Address Verification / Dispatch Document reference no. NASCC032 Revision no. 1 Approval Date: 1st October 2012

National Ambulance Service EMS Priority Dispatch Standard - Version 4 (January 2013)

NASCC033 Policy – Ambulance Control Quality Assurance System Reference no. NASCC033 Revision no 3, Approval Date 15th December 2010

NASCC021 NAS (All Divisions) Procedure – Field Feedback Report Document reference no. NASCC021 Revision no. 4 Approval Date 1st November 2010

# **Appendix A: Terms of Reference**

## TERMS OF REFERENCE: INCIDENT REVIEW 112/ 999 CALL MAY 6<sup>TH</sup> 2013

### Introduction

These are the terms of reference for an investigation commissioned by Dr Cathal O'Donnell, Medical Director, National Ambulance Service into 112/ 999 call Incident Number 0243849 on 06/05/2013

### Purpose

The purpose of this investigation is to:

- $\rightarrow$  Establish the factual circumstances leading up to the incident
- $\rightarrow$  Identify any key causal factors that may have occurred
- $\rightarrow$  Identify the contributory factors that caused the key causal factors
- → Recommend actions that will address the contributory factors so that the risk of future harm arising from these factors is eliminated or if this is impossible, is reduced as far as is reasonably practicable.

### Scope of the Investigation/Review

The time frame of this investigation/review will be from receipt of the 112/ 999 call at 14:00 06/05/2013 until the patient arrived at the Emergency Department Cork University Hospital later that afternoon.

The investigation members

Membership of the investigation team includes:

- → Chairperson: Dr David McManus, Medical Director, Northern Ireland Ambulance Service.
- $\rightarrow$  Dr Mel Bates, Medical Director D Doc GP Out of Hours Co-operative
- → Ms Tracey Barron, Research and Studies Officer, International Academies of Emergency Dispatch, Bristol, UK.
- → Mr Pat Mooney, Control Manager, NAS North Leinster Division.
- → Ms Deirdre O'Keeffe, Regional Manager, Quality and Patient Safety Directorate, HSE.

### Through the Chairperson, the investigation team will:

Be afforded the assistance of all relevant staff (including former staff) and other Medical Directorate, National Ambulance Service, Health Service Executive, Regional Ambulance Communications Centre, Dooradoyle, Limerick. T: 061-482461 F: 061-482588 relevant personnel.

- → Have access to all relevant files and records (subject to any necessary consent/data protection requirements including court applications, where necessary).
- → Should immediate safety concerns arise, the Chair of the Investigation Team will convey the details of these safety concerns to the Commissioner as soon as possible.

### Investigation method

The investigation will follow the HSE Investigation Procedure and will be cognisant of the rights of all involved to privacy and confidentiality; dignity and respect; due process; and natural and constitutional justice.

The investigation will commence on Monday May 13th 2013 and will be expected to last for a period of approximately 6 weeks, provided unforeseen circumstance does not arise.

Following completion of the investigation, an anonymised draft report will be prepared by the investigation team outlining the chronology, findings and recommendations. All who participated in the investigation will have an opportunity to give input to the extracts from the report relevant to them to ensure that they are factually accurate and fair from their perspective. The anonymised Report may be published and may be subject to a freedom of information request.

### **Recommendations and Implementation**

The report, when finalised, will be presented to the commissioner of the report. Implementation of the recommendations will be undertaken by local managers who will oversee the implementation of the applicable recommendations.

Local managers will communicate nationally applicable recommendations to the National Director and National Directors will oversee the implementation of the nationally applicable recommendations.

### Communication Strategy for the Investigation

A communication strategy will be determined.

Mr Noel Rigney, Operational Support and Resilience Manager, NAS will be appointed for the purpose of communicating information pertaining to the investigation to the family and staff members affected by and/or involved in the incident/complaint.



# **Appendix B: Flow Chart Call Taking & Dispatch**

Appendix C: ENIS Priority Dispatch Standard - Version 4 (NAS, Januar
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Clinical Status	Code	Description	Essential Response	Response to scene	Vehicle type	Recommended Response	Additional extra response	Non EMS resources
<b>1</b> Life threatening	Echo	Life threatening – Cardiac or respiratory arrest	Ambulance with minimum Paramedic	Lights and siren	CEN B ambulance	a) Advanced Paramedic. b) Responders (minimum CFR) c) Minimum 3 to 4 practitioners or responders on scene	Ambulance Officer according to operational requirements	Fire Service, Garda, Coast Guard, Utility services as required
	Delta	Life threatening other than cardiac or respiratory arrest	Ambulance with minimum Paramedic	Lights and siren	CEN B ambulance	a) Advanced Paramedic. b) Responders (minimum EFR) if able to get to scene prior to ambulance.	Ambulance Officer according to operational requirements	Fire Service, Garda, Coast Guard, Utility services as required
2 Sociale not life	Charlie	Serious not life threatening – immediate	Ambulance with minimum Paramedic	Lights and siren	CEN B ambulance	Advanced Paramedic for appropriate conditions	Ambulance Officer according to operational requirements	Fire Service, Garda, Coast Guard, Utility services as required
threatening	Bravo	Serious not life threatening – urgent	Ambulance with minimum Paramedic	Lights and siren	CEN B ambulance		Ambulance Officer according to operational requirements	Fire Service, Garda, Coast Guard, Utility services as required
<b>3</b> Non serious or life threatening	Alpha	Non serious or life threatening	Ambulance with minimum Paramedic	Normal traffic (no lights or siren)	CEN A or B ambulance		Ambulance Officer according to operational requirements	Fire Service, Garda, Coast Guard, Utility services as required
	Omega	Minor illness or injury	Ambulance with minimum EMT	Normal traffic (no lights or siren)	CEN A or B ambulance		Ambulance Officer according to operational requirements	Fire Service, Garda, Coast Guard, Utility services as required

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# **Principles for dispatchers**

- 1. The nearest available ambulance shall be tasked to the highest priority incident
- 2. The 'recommended response' other than an ambulance shall be dispatched if resources are available
- 3. Dispatchers shall have discretion to override ProQA to assign a higher priority to an incident
- 4. An ambulance tasked to lower priority incident may be diverted to higher priority incident when resources are limited
- 5. The Dispatcher may preserve the availability of ambulances by queuing Alpha and Omega priority incidents until sufficient resources are available
- 6. When response is delayed Dispatchers shall inform the caller of estimated time of arrival
- 7. The Dispatcher shall make contact with caller if ambulance response is delayed (> 20 minutes) to verify patient's condition and review priority of incident
- 8. Any recommended resource should only be deployed if it has a reasonable expectation of making patient contact.

# **Dispatch Codes**

- 1. The Call Taker identifies an appropriate Chief Complaint code within AMPDS, following caller interrogation by the call taker
- 2. The dispatch determinant codes are fixed by AMPDS and cannot be changed as they are linked to software and field guides etc.
- 3. AMPDS has designated six response levels (Echo, Delta, Charlie, Bravo, Alpha & Omega) which are linked to the DCR codes.
- 4. The response level to each DCR code is agreed by MAG (MAG has agreed not to down grade the AMPDS responses to any DCR code but reserves the right to upgrade the response to specific DCR codes to meet Irish clinical standards, 463 {26%} such upgrades have been made to date)
- 5. The Command, Control & Communications Centre, when activating a response to an incident, shall give the DCR code for the information about the incident to the Practitioners (de-emphasising the letter in the code) and a MAG agreed response level of Echo, Delta, Charlie, Bravo, Alpha or Omega
- 6. Dispatchers and Practitioners must be made aware that DCR codes and dispatch response levels may differ due to MAG decisions

### Changes from previous version

Protocol 36 has been approved by Council and may be activated by the Medical Director of the National Ambulance Service

# **Appendix D: Sources of Information Reviewed**

Copies of policies, procedures, protocols, standards and guidelines related to call taking and dispatch.

- NASCC022 Procedure ProQa (AMPDS) Emergency Rule Applies Document reference no. NASCC022 Revision no 2, Approval Date 15th March 2012
- NASCC032 NAS Procedure Call Answering / Address Verification / Dispatch Document reference no. NASCC032 Revision no. 1 Approval Date: 1st October 2012
- National Ambulance Service EMS Priority Dispatch Standard Version 4 (January 2013)
- NASCC033 Policy Ambulance Control Quality Assurance System Reference no. NASCC033 Revision no 3, Approval Date 15th December 2010
- NASCC021 NAS (All Divisions) Procedure Field Feedback Report Document reference no. NASCC021 Revision no. 4 Approval Date 1st November 2010

Health Information Quality Authority (October, 2012) Pre-hospital Emergency Care Key Performance Indicators for Emergency Response Times Version 1.1

National Ambulance Service ProQA Sequence of Events Relating to the 112/999 Call

National Ambulance Service Telephone and Radio Records Relating to the 6<sup>th</sup> May 2013

PHECC National Standards and International Academies of Emergency Dispatch licence agreement.

# Appendix E: Framework of Contributory Factors

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Factor Types	Contributory Factor
Individual affected/harmed	Condition (complexity & seriousness) Language and communication Personality and social factors Psychological, existing mental health condition, Stress
Task and Technology Factors	Task design and clarity of structure Availability and use of protocols, policies, standards Policies etc. relevant, unambiguous, correct and realistic Availability and accuracy of test results Decision-making aids
Individual (Staff) Factors	Knowledge and skills Competence – education, training, supervision Physical, psychological and mental health illness.
Team Factors	Verbal communication Written communication Supervision and seeking help Team structure (leadership, congruence, consistency etc.)
Work Environmental Factors	Staffing levels and skills mix Workload and shift patterns Administrative and managerial support Environment - Physical and cognitive. Design, availability and maintenance of equipment
Organisational & Management Factors	Organisational structure Financial resources and constraints Policy, standards and goals Quality & Safety culture and priorities
Institutional Context Factors	Economic and regulatory context National health service executive Links with external organisations

# Table 1: Framework of Contributory Factors

# **Appendix F: Hierarchy of Hazard Controls**

# Table 2: Hierarchy of Hazard Controls to support the development ofrecommendations

Strength of	Category of	Comments/Examples
Strongest control	Elimination	The work process or task is redesigned so as to remove the hazard/contributory factor. However, the alternative method should not lead to a less acceptable or less effective process e.g. stop providing service; discontinue a particular procedure; discontinue use of a particular product or service, e.g. stop using a particular type of equipment. <i>If hazard elimination is not</i> <i>successful or practical, the next control measure</i> <i>is Substitution.</i>
	Substitution	Replacing the material or process with a less harmful one. Re-engineer a process to reduce potential for 'human error'. If no suitable practical replacement is available the next control measure is engineering controls.
	Engineering controls	Installing or using additional equipment. Introduce 'hard' engineering controls, e.g. installation of handling devices for moving and handling people and objects, e.g. Re-engineer equipment so that it is impossible to make errors. <i>If no suitable engineering control is</i> <i>available the next control measure is</i> <i>administrative procedures.</i>
	Administrative procedures	Ensure that administrative policies, procedures and guidelines are in place. Ensure staff are appropriately trained in these. Monitor compliance with policies, procedures and guidance through audit. <i>If no administrative</i> <i>procedure is available the next control measure</i> <i>is work practice controls.</i>
Weakest control	Work Practice Controls	This is the last control measure to be considered. Change the behaviour of staff, e.g. make staff wear personal protective equipment, etc. <i>Work</i> <i>Practice Controls should only be considered after</i> <i>all the previous measures have been considered</i> <i>and found to be impractical or unsuccessful.</i>