Health Information and Quality Authority

An tÚdarás Um Fhaisnéis agus Cáilíocht Sláinte

Pre-hospital Emergency Care Key Performance Indicators for Emergency Response Times

November 2010

Patient Safety First

Working together for quality services

About the Health Information and Quality Authority

The Health Information and Quality Authority is the independent Authority which has been established to drive continuous improvement in Ireland's health and social care services. The Authority was established as part of the Government's overall Health Service Reform Programme.

The Authority's mandate extends across the quality and safety of the public, private (within its social care function) and voluntary sectors. Reporting directly to the Minister for Health and Children, the Health Information and Quality Authority has statutory responsibility for:

Setting Standards for Health and Social Services — Developing person centred standards, based on evidence and best international practice, for health and social care services in Ireland (except mental health services)

Social Services Inspectorate — Registration and inspection of residential homes for children, older people and people with disabilities. Inspecting children detention schools and foster care services. Monitoring day and pre-school facilities[1]

Monitoring Healthcare Quality — Monitoring standards of quality and safety in our health services and investigating as necessary serious concerns about the health and welfare of service users

Health Technology Assessment — Ensuring the best outcome for the service user by evaluating the clinical and economic effectiveness of drugs, equipment, diagnostic techniques and health promotion activities

Health Information — Advising on the collection and sharing of information across the services, evaluating information and publishing information about the delivery and performance of Ireland's health and social care services

Patient Safety First
Working together for quality services

The Health Information and Quality Authority is a signatory of Patient Safety First - an awareness raising initiative through which healthcare organisations declare their commitment to patient safety. Through participation in this initiative, those involved aspire to play their part in improving the safety and quality of healthcare services. This commitment is intended to create momentum for positive change towards increased patient safety.

[1] Not all parts of the relevant legislation, the Health Act 2007, have yet been commenced.

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Executive Summary

1. Introduction

The purpose of this report by the Health Information and Quality Authority (the Authority) is to advise and make recommendations to the Minister for Health and Children, and the Health Service Executive (HSE), under section 8(1)j of the Health Act 2007[(1)], on the introduction of key performance indicators for national pre-hospital emergency care response times. The current absence of such indicators has been identified by the Authority as a gap in the information available in respect of the safety and quality of services.

Pre-hospital emergency care is the emergency care provided to a patient before transfer to a hospital or appropriate healthcare facility. Safe, high quality outcomes for patients in this care setting depends upon the most appropriately trained person with the necessary equipment attending the emergency incident within an acceptable timeframe. Many jurisdictions internationally have introduced response-time indicators with associated targets as a way of monitoring performance and driving improvements in this area.

This report makes a number of recommendations, including six key performance indicators for response times, and two response-time data collection points, in order to address the gaps in information in the current system. The Authority recommends to the Minister for Health and Children that these key performance indicators are introduced from January 2011 in a phased approach, with public reporting on a number of them from the middle of 2011.

The Authority has undertaken a consultation on *Draft National Standards for Safer Better Healthcare*[(2)]. These standards set out the principles of high quality safe healthcare. They enable service providers to develop and implement quality and safety objectives and improvement programmes to achieve these objectives for the benefit of patients. One of the key principles in the national standards is that service providers should continuously monitor the quality and safety of their services. This requires service providers to implement performance monitoring using appropriate and relevant measures including key performance indicators.

2. Pre-hospital emergency care services in Ireland

Ambulance services, including pre-hospital emergency care, in Ireland are provided by the National Ambulance Service (NAS) of the HSE with the exception of Dublin City where emergency ambulance services are currently provided by Dublin Fire Brigade (DFB).

In the health boards that existed prior to the establishment of the HSE there was, and has continued to be, a multiplicity of systems and processes for ambulance services.

Currently, the National Ambulance Service of the HSE is undergoing a process of modernization and development which includes: reducing the number of control centres (which process calls and deploy ambulance resources), introducing a medical priority dispatch system and investment in information technology.

The roll-out of an Advanced Medical Priority Dispatch System (AMPDS) nationally is a key development for the service and it will allow for the systematic categorisation and prioritisation of calls to the Ambulance Service control centre according to the clinical urgency of patients' conditions.

3. Key performance indicators

The Authority has previously published guidance on the development of key performance indicators (KPIs) which are available on the Authority's website, www.hiqa.ie[3]. The Authority took cognisance of this guidance when developing response-time indicators for pre-hospital emergency care.

4. Pre-hospital emergency care response-time indicators

Response-time indicators are used in many countries as one means of evaluating the quality of the services delivered by pre-hospital emergency care providers. Such indicators provide a valuable source of information when used in conjunction with clinical indicators that focus on patient outcomes[4].

5. Methodology

In developing these recommendations the Authority conducted a comprehensive review of international practices in relation to pre-hospital emergency care services and associated KPIs. The Authority also actively engaged with key stakeholders, including an expert advisory group on pre-hospital emergency care, to ensure that the initiative was informed by current work, expertise and views from both a national and international perspective.

6. Summary of international review

The findings of this review found that international practice indicates that many jurisdictions use similar KPIs of an 8-minute (or 7 minutes and 59 seconds) response time for first responders to attend to a life-threatening incident. The response-time indicators used for patient-carrying vehicles (for example an ambulance) to attend the patient varied depending on the country or regions within countries. Some countries used a standardised time of 19 minutes and other countries graded that time depending on the population of the area (urban or rural). However, some jurisdictions are moving away from using response-time indicators for these latter categories in favour of clinical outcome indicators.

7. Conclusions

Based on the evidence and experience from other jurisdictions, the Authority concludes that the development and implementation of response-time indicators and associated targets for Clinical Status 1 calls (life threatening) will drive changes in the quality and safety of pre-hospital emergency care in Ireland. Implementing these KPIs is likely to require significant changes in the organisation and deployment of ambulance services in order to ensure that patients with the most serious emergencies receive the fastest on-the-scene response. However, this may mean that patients with less urgent needs (for example, non-life threatening injuries) will wait longer for an on-the-scene response.

Experience in other jurisdictions indicates that introducing response-time indicators and targets drives quality and improvement in the service but it takes time for the service to work towards meeting the targets that have been set. It is anticipated that this will also be the case in Ireland. To ensure that the service is moving towards meeting the targets set, service providers should put in place progressive and ambitious objectives, with associated monitoring, to meet the recommended targets.

The introduction of response-time indicators is also dependent on the successful roll-out of AMPDS across the National Ambulance Service, as well as appropriate data collection and information management systems. While the information provided should be standardised across the service, it is recognised that for historical reasons there is variation in the capabilities of the different data collection and information management systems currently in place across the country. This will mean that some parts of the service will require more time than others to develop the necessary systems. However, to drive change in the quality and safety of the service it is important that data is collected and utilised to continue to improve services as soon as is practically possible.

Response-time indicators can drive change in a system that is in the early stages of developing performance indicators. However, they should not be used in isolation and there should be a focus from the outset on identifying clinical outcome indicators for patients. The HSE's clinical care programme for emergency medicine is focusing on the development of a range of indicators including clinical outcomes for patients. The Authority will keep this under review and will continue to liaise with the relevant clinical programme lead as this work develops.

The *Draft National Standards for Safer Better Healthcare*[2] set out the principles of a competent workforce providing a high quality safe service, including a timely and clinically appropriate response. This can be achieved, amongst other measures, through the deployment of an appropriately trained and competent workforce to an incident, such as advanced paramedics being deployed to calls where an advanced paramedic is the recommended response. The Authority recognises that an appropriate and timely response time is impacted on by a number of factors, including a timely handover of patient care from an ambulance crew to emergency department staff in an acute

hospital. The HSE clinical care programme for emergency medicine is developing measures in relation to ambulance turn-around times (that is, from the time a patient is safely handed over to emergency department staff until the ambulance is ready to respond to the next emergency call), and the Authority will continue to work with the HSE on these developments.

This report includes a number of recommendations which, when implemented, will assist in the delivery of high quality, safe pre-hospital emergency care. This report should be read in conjunction with the finalised *National Standards for Safer Better Healthcare*[(2)].

8. Recommendations

The recommendations to the Minister for Health and Children and the Health Service Executive are as follows. Detailed data-sets incorporating the necessary definitions (see Appendix 2 of this report) are provided to the National Ambulance Service to support each of the KPIs.

Recommendation 1

The following response-time key performance indicators, and their associated targets, should be implemented by the emergency ambulance service from January 2011. Data collection to support this implementation should also start from January 2011.

A. Clinical Status 1 – ECHO: Patients with life-threatening cardiac or respiratory arrest incidents are responded to by a **first responder**, which includes advanced paramedics, paramedics or cardiac first responders in 7 minutes and 59 seconds or less in 75% of all cases.

B. Clinical Status 1 – DELTA : Patients with life-threatening conditions other than cardiac or respiratory arrest incidents are responded to by a **first responder** which includes advanced paramedics, paramedics or emergency first responders in 7 minutes and 59 seconds or less in 75% of all cases.

Reporting
Service providers should commence public reporting of these indicators from the middle of 2011.

Recommendation 2

Where data collection and information systems are already in place, emergency ambulance services should collect data from January 2011 on the following key performance indicators. In parallel, data collection and information systems should be developed by the National Ambulance Service to allow collection and processing of this data across the country as soon as possible.

C. Clinical Status 1 – ECHO calls should have a patient-carrying vehicle at the scene of the incident within 18 minutes 59 seconds.

D. Clinical Status 1 – DELTA calls should have a patient-carrying vehicle at the scene of the incident within 18 minutes 59 seconds.

A patient-carrying vehicle is any vehicle able to transport the patient in a clinically safe manner and dispatched from an ambulance service control room. An example includes a CEN* B compliant double-crewed fully equipped ambulance.

** CEN: Comité Européen de Normalisation (Committee for European Standardization)*

Reporting

Service providers should collect data in relation to these indicators and the Authority will coordinate a review of this data after six months with a view to providing the Minister for Health and Children with further advice, if required, on the definition of the indicators and the associated targets.

Recommendation 3

Where data collection and information systems are already in place, emergency ambulance services should collect data from January 2011 on the following key performance indicators. In parallel, data collection and information systems should be developed by the National Ambulance Service to allow collection and processing of this data across the country as soon as possible.

E. Clinical Status 2 – CHARLIE calls should have a patient-carrying vehicle at the scene of the incident within 18 minutes 59 seconds.

F. Clinical Status 2 – BRAVO calls should have a patient-carrying vehicle at the scene of the incident within 18 minutes 59 seconds.

Reporting

Service providers should collect data in relation to these indicators and the Authority will coordinate a review of this data after 12 months with a view to providing the Minister for Health and Children with further advice, if required, on the definition of the indicators and the associated targets.

Recommendation 4

Service providers should collect quality service indicators to monitor performance against the *National Standards for Safer Better Healthcare*[2].

The following key pre-hospital emergency care quality performance indicator data should be collected and reviewed by the service providers:

G. The percentage of Clinical Status 1 calls for which the recommended response is an advanced paramedic to which an advanced paramedic is deployed.

The following response-time data should be collected and reviewed by the service providers:

H. The number of OMEGA calls received and the type of response deployed to the call.

Recommendation 5

Service providers put in place progressive and ambitious objectives to meet the recommended targets including clear timeframes for achieving this.

Recommendation 6

Future development of key performance indicators for emergency care should include clinical outcomes for patients.

9. Next steps

A number of these recommended KPIs have already been incorporated into the 2011 HSE Service Plan. This will help to ensure that these KPIs are embedded into the planning and delivery of ambulance services and that the KPIs are collected and reported on a routine basis in 2011.

The Authority will work with the Department of Health and Children and the HSE to review the data collected after a period of 6 and 12 months to determine the definition of the indicators recommended and the application of targets where appropriate. This will be subject to review and the Authority may vary the timelines for reporting at any point.

The Authority will liaise with relevant clinical professionals through the HSE's Clinical Care Programmes to further develop key emergency care performance indicators.

Subject to Ministerial approval of the *National Standards for Safer Better Healthcare*[2], the Authority will commence monitoring compliance with the Standards during 2011 and will incorporate pre-hospital emergency care services in this process.

1 Introduction

Pre-hospital emergency care is the emergency care provided to a patient before transfer to a hospital or appropriate healthcare facility. Safe, high quality outcomes for patients in this care setting depends upon the most appropriately trained person with the necessary equipment attending the emergency incident within an acceptable timeframe. Many jurisdictions internationally have introduced response-time indicators with associated targets as a way of monitoring performance and driving improvements in this area.

Internationally, emergency medical services moved towards standardised time-based pre-hospital emergency care responses which drove changes in the quality and safety of pre-hospital emergency care for patients. International evidence would also indicate that, although time-based indicators were an initial driver of change, they should not be looked at in isolation but as part of a wider focus on the clinical outcomes for patients.

Setting indicators and targets provides service users, service providers and the public with information on what a timely and appropriate response is. Monitoring and publicly reporting on performance provides information on how well the service is performing and it also promotes public accountability as to the level of performance of pre-hospital emergency care services.

Under sections 8(1)i and j of the Health Act 2007 (the Act)[(1)] the Health Information and Quality Authority (the Authority) has the function of evaluating information available in relation to health and social care services and providing advice and recommendations to the Minister for Health and Children and the Health Service Executive (HSE) about deficiencies in that information. The purpose of this report is to advise and make recommendations to the Minister and the HSE, under section 8(1)j of the Act[(1)], on the introduction of national pre-hospital emergency care response-time key performance indicators, having identified the current absence of such indicators as a gap in the information available in respect of the safety and quality of services.

The need for performance measures in emergency care has been recognised in numerous national reports including the report of the Health Boards Executive (2004)[(5)] and more recently the report of the Comptroller and Auditor General (2009)[(6)]. The *National Cardiovascular Health Policy 2010-2019* [(7)] highlights the importance of the strategic deployment of advanced paramedics and a rapid response to deliver timely acute cardiovascular care.

To progress these performance measures further, ongoing discussions have taken place between the Authority, Department of Health and Children (DoHC), HSE and other key stakeholders.

This report makes a number of recommendations, including six key performance indicators for response times, and two response-time data collection points, in order to address the gaps in information in the current system. The Authority recommends to the Minister for Health and Children that these key performance indicators are introduced from January 2011 in a phased approach, with public reporting on a number of them from mid 2011.

Under sections 8(1)b and c of the Act[1], the Authority also has the function of setting and monitoring standards for safety and quality. The Authority has undertaken a consultation on *Draft National Standards for Safer Better Healthcare*[2]. These standards set out the principles of high quality safe healthcare. They enable service providers to develop and implement quality and safety objectives and improvement programmes to achieve these objectives for the benefit of patients.

One of the key principles in the national standards is that service providers should continuously monitor the quality and safety of their services. This requires service providers to implement performance monitoring using appropriate and relevant measures including key performance indicators. This is a fundamental component of a reliable health service without which, the ability to effectively manage resources to meet the needs and priorities of service users cannot be realised.

Following discussions with the Department of Health and Children and the HSE, the Authority initiated a project to develop time-based indicators for pre-hospital emergency care. An expert advisory group for pre-hospital emergency care was convened to advise at key stages during the project. **The Authority would like to thank the members of the advisory group, and all other stakeholders, who advised and supported it in the development of these indicators.**

This report goes on to describe the process followed by the Authority in developing these proposed indicators.

2 Pre-hospital emergency care services in Ireland

Ambulance services in Ireland, including pre-hospital emergency care, are provided by the National Ambulance Service (NAS) of the HSE with the exception of Dublin City where emergency ambulance services are currently provided by Dublin Fire Brigade (DFB). DFB receive funding from the HSE for the provision of this service. In Ireland, pre-hospital emergency care services can potentially involve any of the following: ambulance services, fire service, primary care, emergency departments, Irish Coastguard, community responders, An Garda Síochána, Red Cross, Irish Defence Forces, Navy and search and rescue (SAR) services.

The Pre-hospital Emergency Care Council (PHECC) is the national body with responsibility for the professional regulation of ambulance personnel and education and training in the area of pre-hospital emergency care in Ireland. It sets the education standards and conducts the examinations leading to the National Qualification in Emergency Medical Technology (NQEMT). PHECC also maintain a statutory register of pre-hospital emergency care practitioners.

In the health boards that existed prior to the establishment of the HSE there was, and has continued to be, a multiplicity of systems and processes for ambulance services. Currently, the National Ambulance Service of the HSE is undergoing a process of modernization and development which includes:

- reducing the number of control centres (these centres process calls and deploy ambulance resources) from 10 to an eventual target of two centres nationally
- the introduction and roll-out across the HSE of a medical priority dispatch system – version 12.1 Advanced Medical Priority Dispatch System (AMPDS). This system facilitates the prioritisation of emergency calls to match the appropriate response by the ambulance service to the clinical need of the patient(s), based on the information provided by the caller
- other investment in the information technology and other infrastructure of the National Ambulance Service.

2.1 Advanced Medical Priority Dispatch System

The rollout of AMPDS nationally is a key development for the Service and will allow for systematic categorisation and prioritisation of calls according to the clinical urgency of patients' condition. Other jurisdictions have used time-based response indicators to drive improved performance for certain categories of call, and the absence of such indicators would be regarded by the Authority as a fundamental gap in the information available for monitoring safety and quality. The introduction of response-time indicators is dependent on the successful implementation of AMPDS across the National Ambulance Service.

The AMPDS call prioritisation categories being introduced in Ireland are set out in Table 1 on the next page. This project focused on developing time-based indicators and where appropriate, associated targets, for these call categories.

Table 1: AMPDS call categories

Category	Description
Clinical Status 1 – ECHO	Patients who are in cardiac or respiratory arrest.
Clinical Status 1 – DELTA	Patients with life-threatening conditions other than cardiac or respiratory arrest.
Clinical Status 2 – CHARLIE	Patients with serious but not life-threatening conditions which require an immediate response.
Clinical Status 2 – BRAVO	Patients with serious but not life-threatening conditions which require an urgent response.
Clinical Status 3 – ALPHA	Patients with non-serious or life threatening conditions.
Clinical Status 3 – OMEGA	Patients with a minor illness or injury.

2.2 First responder services in Ireland

A first responder is a person, trained as a minimum in basic life support and the use of a defibrillator, who attends a potentially life-threatening emergency. This response may be by the National Ambulance Service or complementary to it. A community first responder is a first responder, usually (but not exclusively) a lay person, who makes himself or herself available to be dispatched to attend an incident. Historically, a number of community first responder schemes have been established in Ireland. Further definitions of the types of first responders can be found in Appendix 2.

3 Key performance indicators

The Authority has previously published guidance on the development of key performance indicators which are available on the Authority's website, www.hiqa.ie.[3] The Authority took cognisance of this guidance when developing response-time indicators for pre-hospital emergency care. Table 2 highlights the key points to be taken into consideration when developing KPIs:

Table 2: Key elements of key performance indicators

Key elements of key performance indicators		
▪ Key performance indicators are specific and measurable elements of practice that can be used to assess quality of care[3]. ▪ Indicators are intended to draw attention to areas that require further investigation and are not direct measures of the quality of care. ▪ Key performance indicators can be related to structure (healthcare environment), process (the way in which care is delivered) or outcome (the effects of care delivered)[8]. All three elements are linked to each other and thus measuring one element in isolation is not sufficient to evaluate fundamental quality[9]. ▪ Composite indicators comprise of a number of indicators, sometimes including different types such as structure, process and outcome indicators, which together present an impression of the quality of a certain service.		
Examples of key performance indicators for pre-hospital emergency care		
Structure	**Process**	**Outcome**
Example: deployment of the most appropriate personnel and resource to an emergency call.	Example: response-time indicators for specific categories of emergency calls.	Example: survival for a patient after an acute myocardial infarction (heart attack).

4 Pre-hospital emergency care response-time indicators

Pre-hospital emergency care is an integral part of any healthcare system that exists to meet patients' emergency healthcare needs. An effective pre-hospital emergency response involves ensuring that the most appropriately trained person attends the emergency incident to establish what the patient's requirements are, initiate treatment in a timely way, and if required, manage the scene of an emergency and provide or organise the transportation of a patient(s) to a hospital.

Response-time indicators are used in many countries as one means of evaluating the quality of the services delivered by pre-hospital emergency care providers. Such

indicators provide a valuable source of information but need to be developed in conjunction with clinical indicators that focus on patient outcomes[(4)].

Prioritising emergency calls facilitates the most appropriate and timely response to meet the patients' needs and allows the prioritised deployment of ambulances to potentially life-threatening calls more urgently than less serious calls. By using a medical priority dispatch system, calls can be prioritised, the appropriate response sent and telephone advice may be given to the caller while an ambulance is on its way to the scene of the emergency. The evidence of clinical benefits for patients associated with shorter response times is strongest for patients who are in cardiac arrest but evidence also suggests that a timely pre-hospital emergency team response and transfer to an acute centre for acute medical events, such as a stroke, will improve patient outcomes[±].

It is critical that national indicators are supported by local operational indicators to provide information at a local level to inform practice. The successful implementation of response-time indicators will require the measurement of all of the time-based steps that make up a pre-hospital emergency response by including vital processes such as call connection time, time to ascertain the location of an emergency and the chief complaint of the patient, mobilisation time and time from the scene to hospital. This will also require a move towards organising the ambulance resources based on the most probable predicted locations for emergency calls, where feasible, and therefore a more dynamic approach to providing such a service.

5 Methodology

A comprehensive review of international practices in relation to pre-hospital emergency care services and KPIs was undertaken. The Authority also actively engaged with key stakeholders, to ensure that the indicators were informed by current work, expertise and views from both a national and international perspective. Stakeholder engagement involved the advice of a pre-hospital emergency care advisory group which included representation from:

- National Ambulance Service
- Dublin Fire Brigade
- Pre-Hospital Emergency Care Council
- primary and secondary care clinicians
- Health Service Executive
- Department of Health and Children
- patient advocacy group.

In addition, the Authority consulted and met with experts from other jurisdictions in the United Kingdom. A detailed review of available evidence and international experience

[±] *Guidelines for Management of Ischaemic Stroke and Transient Ischaemic Attack 2008*. The European Stroke Organization (ESO) Executive Committee and the ESO Writing Committee (2008).

was conducted to inform the development process. This methodology identified key areas for measurement in pre-hospital emergency care services. Based on the learning from other jurisdictions, and the capabilities of current data collection processes within the ambulance service, an incremental introduction of KPIs in pre-hospital emergency services was proposed.

6 Summary of international review

This section summarises the key points identified following the review process. Through engaging with stakeholders, and based on international evidence, the importance of appropriately qualified personnel responding in a timely manner to a life-threatening event was highlighted as the primary area for the development of KPIs. The driving rationale for this initial focus is that a timely pre-hospital emergency team response for acute medical events such as respiratory, cardiovascular, cerebrovascular emergencies and trauma will improve the outcomes for patients [(10)].

The use of time-based indicators is widespread as a means of driving and measuring improvement. However, the evidence for clinical benefits for patients associated with shorter response times is strongest for patients who are in a cardiac arrest.

This review found that international practice indicates that many jurisdictions use similar KPIs of an 8-minute (or 7 minutes and 59 seconds) response time for first responders to attend to a life-threatening incident. The response-time indicators used for patient-carrying vehicles (such as an ambulance) to attend the patient varied depending on the country or regions within countries. Some jurisdictions used a standardised time of 19 minutes while other countries graded that time depending on the population of the area (whether urban or rural). The findings are summarised in Table 3 for Northern Ireland, Wales, Scotland and England as emergency services are paramedic led (similar to Ireland) and not physician led as is the case in some other jurisdictions. A more comprehensive summary of the international evidence is detailed in Appendix 1.

Dispatch prioritisation is considered internationally as a prerequisite and essential element to providing an optimum emergency care service for patients and implementing any response-time indicator as it establishes the appropriate level of care including the urgency and type of response[(11)]. The relationship between time and patient outcome is well documented though predominantly in relation to cardiac arrest[(12)]. While response-time indicators provide a valuable source of information, they need to be developed in conjunction with clinical performance indicators that focus on patient outcomes and therefore implementation of time-based indicators should be seen as a first step towards developing a more comprehensive range of indicators that will drive high quality and safe pre-hospital emergency care. Some countries are moving away from using response-time indicators for patient-carrying vehicles in favour of clinical outcome indicators.

Table 3: Response times for Northern Ireland, Wales, Scotland and England

Priority Dispatch Systems	England*	Wales	Scotland	Northern Ireland
Category A (may be immediately life threatening)	**First responder**: 8 minutes all areas **Patient transport:** 19 minutes to all areas from request for transport. Transport to be a fully equipped ambulance vehicle.	**First responder:** 8 minutes all areas **Patient transport:** 14 (Cardiff), 18 (Powys, Ceredigion, Gwynedd and Anglesey), 21 minutes rest of Wales.	**First responder.** *Primary KPI:* 8 minutes all areas **Patient transport.** *Secondary KPI:* for transport of 19 minutes.	**First responder:** 8 minutes all areas **Patient transport:** 18 minutes (rural) and 21 minutes (sparsely populated).
Category B (serious but not immediately life threatening)	Calls should receive an emergency response of a fully equipped ambulance vehicle at scene within 19 minutes. **England plans to replace Category B response times with clinical outcome indicators in April 2011.*	Fully equipped ambulance must attend within 14/18/21 minutes depending on population density.	Calls are responded to within 14/19/21 minutes depending on population density.	Calls responded to within 18 minutes (rural) and 21 minutes (sparsely populated).
Category C – England and Northern Ireland only (not immediately serious or life threatening)	Determined locally e.g. aim to respond to call within one hour. May be able to offer assistance other than an ambulance			Calls responded to within 18 minutes (rural) and 21 minutes (sparsely populated).

Given the less strong evidence for the clinical benefits of shorter response times for patient carrying vehicles (as opposed to the first response) where it is not the first response, some jurisdictions are considering moving towards introducing more clinical outcome oriented indicators.

7 Conclusions

7.1 Response-time indicators

To drive continuous improvement in the quality and safety of healthcare, service providers should measure their performance against quality and safety standards using a range of metrics including structure, process and outcome indicators. Pre-hospital emergency care response-time indicators are widely used in the international arena as process indicators given that they are a fundamental requirement for a reliable emergency care system, and aim to provide the right service at the right time for patients. The implementation of a systematic call prioritisation system in Ireland is an opportune time to introduce these indicators.

The evidence from the international literature, and engagement with experts in other jurisdictions, indicates that the introduction of response-time indicators and targets has driven quality and improvement in pre-hospital emergency care services. However, the evidence and experience also indicates that it takes time for services to work towards meeting the targets that have been set. Therefore, it is anticipated that this will also be the case in Ireland. To ensure that the service in Ireland is moving towards meeting the targets set, service providers should put in place progressive and ambitious objectives, with associated monitoring, to meet the recommended targets.

In Ireland, monitoring and reporting against response-time indicators will also help service providers to demonstrate compliance with the *National Standards for Safer Better Healthcare*, once mandated.

Although the international literature offers evidence that a timely first-responder response has an impact on the clinical outcomes for Clinical Status 1 patients, in particular in the case of cardiac arrest, the evidence for the impact on patient outcomes of other response-time indicators, for example response times for patient-carrying vehicles, is not as strong. This means that, while it is important to drive improved performance in this area, the question of whether to set response-time indicators for patient-carrying vehicles and Clinical Status 2 and 3 calls is more open to debate.

Based on the international evidence and experience, the Authority concludes that the development and implementation of response-time indicators and associated targets for Clinical Status 1 calls (life-threatening calls) will drive changes in the quality and safety of pre-hospital emergency care in Ireland. Implementing these KPIs is likely to require significant changes in the organisation and deployment of ambulance services in order

to ensure that the most serious emergency cases receive the fastest on-the-scene response. However, this may mean less urgent cases (for example, non-life threatening injuries) may need to wait longer for an on-the-scene ambulance response.

Given that response times for patient-carrying vehicles are more complex and the evidence for their clinical effectiveness is not as robust, the Authority concludes that to ensure that an appropriate time-based indicator and target is set, data on these particular response-time indicators should be collected and reviewed for a set period of time.

Rapid-response vehicles and, in some areas community first responders, can often get to the scene faster than traditional ambulances. However, as community first responders are not trained to provide the full range of immediate life-saving care, and are not a substitute for ambulance response, dispatch of the two responses should be concurrent. As part of an emergency response network, all community first responders should be supported by the National Ambulance Service, suitably trained and hold a recognised qualification, as a minimum, in basic life support and the use of a defibrillator and attend regular refresher courses. They should be formally connected to a national ambulance control centre to enable prompt dispatch to emergency incidents, where applicable, and ongoing support and communications with the Ambulance Service.

In developing performance indicators for emergency response times the Authority took into account the risks associated in their use. These included difficulties which arose in other jurisdictions regarding ambiguity over the definition in timing ambulance responses, a variation in recording the response times and poor data collection processes [(13)]. Therefore, emergency response-time indicators developed by the Authority must be interpreted on the basis of the quality of the data and the definitions that constitute the indicator.

The introduction of response-time indicators is also dependent on the successful implementation of AMPDS across the National Ambulance Service, as well as appropriate data collection systems for the key data points in the call-handling cycle. This will require the introduction of operational indicators to support national KPIs. These operational indicators include, but are not limited to, call-connection time, mobilisation time and time from the scene of the emergency to the hospital. While the information collected should be standardised across the service, it is recognised that due to the variation in the capabilities of the different systems currently in place, some parts of the service will require more time than others to develop the necessary data collection and information management systems. However, to drive change in the quality and safety of the service it is important that data is collected as soon as possible.

Experience in Ireland and other jurisdictions is that following introduction of AMPDS or similar systems, there is a period of review and learning required in order to stabilise the

reliability of the data being collected. To facilitate service providers in validating the quality of their data the Authority recommends that there should be a period of six months before performance against any KPIs should be considered for publication.

7.2 Key performance indicators and clinical outcomes

International experience and evidence supports the development of key performance indicators that are focused on outcomes for service users. Many countries, for example Scotland, although continuing to gather data on response-time indicators are moving towards indicators focused on clinical outcomes along a patient care pathway. Therefore, it can be concluded that although response-time indicators have a place in a system that is in the early stages of developing performance indicators there should be a focus, from the beginning, on clinical outcome indicators.

The HSE's clinical care programme for emergency medicine is focusing on the development of a range of indicators including clinical outcomes and therefore it is proposed that the clinical programme is to be welcomed and that the Authority will liaise with the clinical programme lead to ensure this work is in keeping with the Authority's views about KPIs in this area. The Authority will review its own Emergency Care KPIs project in the light of this national initiative.

7.3 Other quality indicators

There are quality indicators, other than response-time indicators, that should be used by service providers to monitor their performance and to provide evidence of compliance with the *National Standards for Safer Better Healthcare* [(2)]. It is important that response-time indicators are not collected and monitored in isolation. Experience from other jurisdictions is that if this is the case, there may be unintended adverse consequences – for example if providers focus on meeting the response-time KPIs at the cost of ensuring the staff deployed have the right skills and competence to treat patients appropriately when they arrive.

The *Draft National Standards for Safer Better Healthcare*[(2)] set out the principles of a competent workforce providing a high quality safe service, including a timely and clinically appropriate response. This can be achieved, amongst other measures, through the deployment of an appropriately trained and competent workforce to an incident, such as advanced paramedics being deployed to calls where an advanced paramedic is the recommended response.

The Authority recognises the importance of the need to collect, monitor and report on this quality indicator and anticipates that it will use such data as part of its compliance monitoring in relation to the Standards. Therefore the data for this quality indicator should be collected and reviewed by the service provider.

The Authority recognises that an appropriate and timely response time is impacted on by a number of factors, including a timely handover of patient care from an ambulance crew to emergency department staff in an acute hospital. This has been highlighted by our advisory group as a particular issue for the Ambulance Service in Ireland. The current challenges around this transfer process are recognised but it is a multi-factorial issue and requires the involvement of a number of different services and stakeholders. The HSE's clinical care programme for emergency medicine, which is multidisciplinary and multi-sectoral, is developing measures in relation to turnaround times and the Authority will liaise accordingly with that group to explore how best to address this issue.

8 Recommendations

This report includes a number of recommendations which, when implemented, will assist in the delivery of high quality, safe pre-hospital emergency care services. This report should be read in conjunction with the finalised *National Standards for Safer Better Healthcare* [(2)].

For the purpose of the attainment by the National Ambulance Service of these KPIs, a ***first responder*** (see Appendix 2 of this report) is defined as a person who attends a potentially life-threatening emergency who:

- is suitably trained and holds a recognised qualification, as a minimum, in basic life support and the use of a defibrillator
- attends regular refresher courses
- is formally networked with a national ambulance control centre.

Detailed data-sets incorporating the necessary definitions (see Appendix 2 of this report) are provided to the National Ambulance Service to support each of the KPIs.

Recommendation 1

The following response-time key performance indicators, and their associated targets, should be implemented by the emergency ambulance service from January 2011. Data collection to support this implementation should also start from January 2011.

A. Clinical Status 1 – ECHO: Patients with life-threatening cardiac or respiratory arrest incidents are responded to by a **first responder**, which includes advanced paramedics, paramedics or cardiac first responders in 7 minutes and 59 seconds or less in 75% of all cases.

B. Clinical Status 1 – DELTA : Patients with life-threatening conditions other than cardiac or respiratory arrest incidents are responded to by a **first responder** which includes advanced paramedics, paramedics or emergency first responders in 7 minutes and 59 seconds or less in 75% of all cases.

Reporting
Service providers should commence public reporting of these indicators from the middle of 2011.

Recommendation 2

Where data collection and information systems are already in place, emergency ambulance services should collect data from January 2011 on the following key performance indicators. In parallel, data collection and information systems should be developed by the National Ambulance Service to allow collection and processing of this data across the country as soon as possible.

C. Clinical Status 1 – ECHO calls should have a patient-carrying vehicle at the scene of the incident within 18 minutes 59 seconds.

D. Clinical Status 1 – DELTA calls should have a patient-carrying vehicle at the scene of the incident within 18 minutes 59 seconds.

A patient-carrying vehicle is any vehicle able to transport the patient in a clinically safe manner and dispatched from an ambulance service control room. An example includes a CEN* B compliant double crewed fully equipped ambulance.

**CEN – Comité Européen de Normalisation (Committee for European Standardization)*

Reporting
Service providers should collect data in relation to these indicators and the Authority will coordinate a review of this data after six months with a view to providing the Minister for Health and Children with further advice, if required, on the definition of the indicators and the associated targets.

Recommendation 3

Where data collection and information systems are already in place, emergency ambulance services should collect data from January 2011 on the following key performance indicators. In parallel, data collection and information systems should be developed by the National Ambulance Service to allow collection and processing of this data across the country as soon as possible.

E. Clinical Status 2 - CHARLIE calls should have a patient-carrying vehicle at the scene of the incident within 18 minutes 59 seconds.

F. Clinical Status 2 – BRAVO calls should have a patient-carrying vehicle at the scene of the incident within 18 minutes 59 seconds.

Reporting
Service providers should collect data in relation to these indicators and the Authority will coordinate a review of this data after 12 months with a view to providing the Minister for Health and Children with further advice on the definition of the indicators and the associated targets.

Recommendation 4

Service providers should collect quality service indicators to monitor performance against the draft *National Standards for Safer Better Healthcare*[(2)].

The following key pre-hospital emergency care quality performance indicator data should be collected and reviewed by the service providers:

G. The percentage of Clinical Status 1 calls for which the recommended response is an advanced paramedic to which an advanced paramedic is deployed.

The following response-time data should be collected and reviewed by the service providers:

H. The number of OMEGA calls received and the type of response deployed to the call.

Recommendation 5

Service providers put in place progressive and ambitious objectives to meet the recommended targets including clear timeframes for achieving this.

Recommendation 6

Future development of key performance indicators for emergency care should include clinical outcomes for patients.

9 Next steps

A number of these recommended KPIs have already been incorporated into the 2011 HSE Service Plan. This will help to ensure that these KPIs are embedded into the planning and delivery of ambulance services and that the KPIS are collected and reported on a routine basis in 2011.

The Authority will work with the Department of Health and Children and the HSE to review the data collected after a period of 6 and 12 months to determine the definition of the indicators recommended and the application of targets where appropriate. This will be subject to review and the Authority may vary the timelines for reporting at any point.

The Authority will liaise with relevant clinical professionals through the HSE's Clinical Care Programmes to further develop key emergency care performance indicators.

Subject to Ministerial approval of the *National Standards for Safer Better Healthcare*[(2)], the Authority will commence monitoring compliance with the Standards during 2011 and will incorporate pre-hospital emergency care services in this process.

10 References

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12. Turner, J, et al. *The Costs and Benefits of Changing Ambulance Service Response Time Performance Standards.* Sheffield: University of Sheffield; 2006.
13. Bevan, B and Hambin, R. Hitting and missing targets by ambulance services for emergency calls: Effects of different systems of performance measurement within the United Kingdom. *Journal of the Royal Statistical Society*. 2009;172(1): pp1-30.

Appendices

Appendix 1
Overview of the findings in relation to response and response times in other jurisdictions

England			
Category	**Category descriptor**	**Response-time indicator**	**Other measures**
Category A	Presenting conditions, which may be immediately life threatening.	Responded to within 8 minutes irrespective of location in 75% of cases.	
		A fully equipped ambulance should attend incidents within 19 minutes of the request for transport, 95% of the time, unless the control room decides that an ambulance is not required.	
Category B	Presenting conditions, which though serious are not immediately life threatening.	Responding to 95% of calls within 19 minutes or less.	England plans to replace Category B response times with clinical outcome indicators in April 2011.
Category C	Presenting conditions which are not immediately serious nor life threatening.	For these calls the response-time standards are not set nationally but are locally determined. Some of these are dealt with by a clinical advisor within the accident and emergency control over the telephone.	
Scotland			
Category	**Category descriptor**	**Response-time indicator**	**Other measures**
Category A	Life-threatening calls.	Target time of 8 minutes 75% of the time.	A secondary target of 14, 19 or 21 minutes is set for patient transport to a healthcare facility.
Category B	Serious but not life threatening calls.	Target time of 14, 19 or 21 minutes 95% of the time.	Scottish Ambulance Service working with Scottish Government towards 19-minute target for all areas
All emergency incidents at island boards.	All emergency incidents.	Response time to all emergency incidents (Island NHS Board areas) target time is 8 minutes 50% of the time.	

Wales			
Category	**Category descriptor**	**Response-time indicator**	**Other measures**
Category A	Immediately life-threatening condition/injury.	65% of all Category A incidents across Wales must be responded to by a suitable responder within 8 minutes of the chief complaint being verified by the call-taker and a minimum level of 60% must be achieved in every Local Health Board area.	To be met on a month-by-month basis as well as on a year-to-date basis. The type of response can be a fully equipped ambulance, a rapid response vehicle (RRV), an emergency services co-responder, for instance fire and rescue service and the police, or a community first responder scheme.
Category A		95% of all Category A incidents must also be attended by a fully equipped emergency ambulance within a specified time of the start of the incident which is set at 14 minutes in Cardiff, 21 minutes in Powys, Ceredigion, Gwynned and Anglesey and 18 minutes elsewhere in Wales.	
Category B	Serious but not life-threatening condition/injury.	95% of all Category B incidents must be attended by a fully equipped emergency ambulance within the 14/18/21 minute time period from the start of the incident.	
Category C	Neither life threatening nor serious condition/injury.		
Urgent calls		95% of all urgent calls must be in hospital within 15 minutes of the time when the doctor specified that the patient should arrive.	

Northern Ireland			
Category	**Category descriptor**	**Response-time indicator**	**Other measures**
Category A:	Life threatening.	Respond to 75% of calls within 8 minutes.	
Category B:	Serious but not life threatening.	Respond to 95% of calls within 18 minutes (rural) and 21 minutes (sparsely populated).	
Category C:	Neither life threatening nor serious.	Respond to 95% of calls within 18 minutes (rural) and 21 minutes (sparsely populated).	
Australia – Victoria State			
Category	**Category descriptor**	**Response-time indicator**	**Other measures**
Code 1	A time critical case with a flashing-warning-lights and sirens ambulance response. An example is a cardiac arrest or serious traffic accident.	▪ Percentage of emergency incidents responded to in 15 minutes. ▪ Percentage emergency incidents responded to in 15 minutes in centres with more than 7,500 population.	
Code 2	An acute but non-time critical response. The ambulance does not use lights and sirens to respond. An example of this response code is a broken leg.		
Code 3	A non-urgent routine case. These include cases such as a person with ongoing back pain but no recent injury.		
Australia – Western Australia			
Category	**Category descriptor**	**Response-time indicator**	**Other measures**
Priority 1	Represents an emergency call.	Response time target is to attend to 90% of emergency calls within 15 minutes.	
Priority 2	Represents an urgent call.	Response time target is to attend to 90% of urgent calls within 25 minutes.	
Priority 3	Represents a non-urgent call.	Response time target is to attend to 90% of non-urgent calls within 60 minutes.	

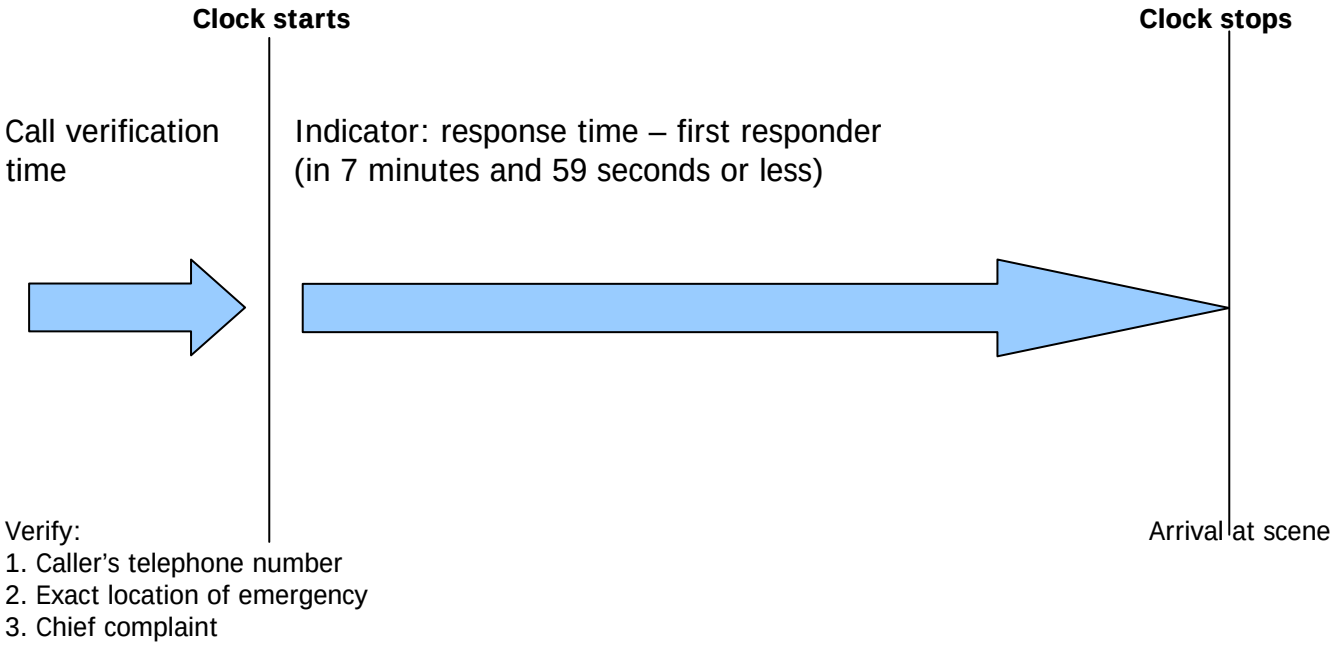
Australia – New South Wales			
Category	**Category descriptor**	**Response-time indicator**	**Other measures**
Potentially life-threatened patients		Trained ambulance team has reached 50% of potentially life-threatened patients within 10 minutes and 90% within 20 minutes.	
Canada – Ontario			
Category	**Category descriptor**	**Response-time indicator**	**Other measures**
Sudden cardiac arrest		2 minute dispatch time + 6 minute sudden cardiac arrest first responder = 8 minutes.	
CTAS* 1 *Canadian Triage Acuity Scale	Patients need to be seen by a physician immediately 98% of the time.	2 minute dispatch time + 8 minute CTAS 1 ambulance response = 10 minutes.	
France			
Category	**Category descriptor**	**Response-time indicator**	**Other measures**
Emergency calls		Current performance on is arrival at scene within 10 minutes, for 80% of responses, and within 15 minutes for 95% of responses.	
Norway			
Category	**Category descriptor**	**Response-time indicator**	**Other measures**
Emergency calls		12 minutes (in urban areas) or 20 minutes (in sparsely populated areas).	
Italy			
Category	**Category descriptor**	**Response-time indicator**	**Other measures**
Emergency calls		8 minutes or less.	
Hong Kong			
Category	**Category descriptor**	**Response-time indicator**	**Other measures**
Response 1	Critical or life-threatening cases.	9 minutes – 92.5% of the time.	
Response 2	Serious but not life threatening.	12 minutes – 92.5% of the time.	
Response 3	Non-acute cases.	20 minutes – 92.5% of the time.	

Appendix 2
Key performance indicators for response times

A. Key performance indicator for Clinical Status 1 – first responder to an ECHO call

Indicator ID	**Clinical Status 1 – first responder**
Indicator title	Response to Clinical Status 1 **ECHO** incidents by a first responder.
Target	75% of Clinical Status 1 **ECHO** incidents which are responded to by a first responder in 7 minutes and 59 seconds or less.

Flow Chart



Data definition	**Clinical Status 1 ECHO calls:** calls reporting an immediately life-threatening cardiac or respiratory arrest. **First responder:** an appropriately trained responder to Clinical Status 1 calls dispatched through the ambulance service control room. A ***first responder*** is defined by the Authority as a person who attends a potentially life-threatening emergency who:

	▪ is suitably trained and holds a recognised qualification, as a minimum, in basic life support and the use of a defibrillator ▪ attends regular refresher courses ▪ is formally networked with a national ambulance control centre. **Cardiac first response (CFR):** a cardiac first responder has completed Pre-Hospital Emergency Care Council's (PHECC) standard of education and training in cardiac first response (CFR) at the levels of CFR responder or CFR practitioner. The standard outlines the care management of major life-threatening emergencies, including heart attack, cardiac arrest, foreign body airway obstruction and stroke and includes Aspirin administration. The CFR+ standard is designed, as an extra module to the CFR responder level course, for specific groups with a paediatric automated external defibrillation (AED) requirement. Its aim is to enable course participants to develop competency in AED use, including paediatric pads where available, on a child. The practitioner level CFR course is aimed at healthcare professionals/practitioners and includes additional skills such as oxygen use, pulse checks and two-rescuer cardiopulmonary resuscitation (CPR). **Emergency first response (EFR):** an emergency first responder (EFR) is a cardiac first responder who has in addition completed a five-day course designed for persons working as a non-transporting pre-hospital responder. The EFR is trained to recognise and assess common life-threatening and common serious medical conditions. The PHECC Clinical Practice Guidelines authorise the EFR to administer oxygen and assist patients with the self-administration of prescribed Salbutamol, GTN and glucose gel medications. For the trauma patient the EFR's scope of practice extends to manual stabilisation of the cervical spine and collar application. **Occupational first aid (OFA):** the occupational first aider is trained according the Health and Safety Authority and FETAC (Level 5) standard and is specific to the provision of first aid in a place of work in compliance with the Health and Welfare at Work (General Application) Regulations (S.I. No. 299 of 2007). The OFA is trained to provide treatment for a

	minor injury and preserving life or minimising the consequences of injury or illness until handover to an appropriate healthcare professional/practitioner. **Emergency medical technician (EMT):** an emergency medical technician is a registered practitioner who has completed PHECC's standard of education and training at EMT level. Practitioners at this level are authorised to provide a range of medications by clinical practice guidelines (CPG) and registered medical practitioner instructions. The duration of education and training is five weeks and is designed to provide the EMT with the knowledge and skills for working primarily in patient transport services and in supporting the pre-hospital response to patients accessing the 999/112 emergency medical services. **Paramedic (P)**: a paramedic is a registered practitioner who has completed PHECC's standard of education and training at paramedic level. This is the minimum clinical level that is recommended to provide care and transport of an ill or injured patient following a 999/112 call. The paramedic is principally engaged in assessing patient's needs, making informed clinical decisions, planning and administering procedures and medications and monitoring patients' responses both on the scene and during transport. **Advanced paramedic (AP):** an advanced paramedic (AP) is an experienced paramedic who has completed the PHECC's standard of education and training at advanced paramedic level. The APs will have obtained a higher diploma from a recognised third level institution and have undergone further training which enables them to perform additional procedures at the scene of an emergency including: ▪ intubation – during advanced cardiac life support procedures, an advanced paramedic can place a sterile tube into the trachea or throat to help the casualty breathe ▪ cardiac resuscitation including CPR, defibrillation and drug administration ▪ intravenous fluid resuscitation – administration of fluids to support critically ill patients ▪ pain management – administration of drugs to relieve

	pain ▪ chest decompression – placement of a needle/tube in the chest to relieve pressure due to a collapsed lung ▪ administration of intravenous (IV) and intramuscular (IM) medications (drugs or fluids introduced directly into a vein or a muscle) to treat various medical conditions ▪ stabilisation of cardiac conditions – drugs may be administered to regulate the patient's heart rate. **Verification time:** the time required to determine the caller's telephone number, the exact location of the incident and the nature of the chief complaint, by the call-taker in the ambulance service control room. **Response time:** in order to calculate the response time the **clock starts** when the call verification period is complete and the following details have been ascertained: ▪ caller's telephone number ▪ exact location of the incident ▪ nature of the chief complaint. The **clock stops** when the first responder arrives at the scene of the incident. Response time has three distinct phases, activation time, mobilisation time and running time. ***Activation time**:* the time taken from call verification completion to assigning a suitable first response to the incident. ***Mobilisation time**:* the time taken from activation time completion to the mobilisation of that first response. ***Running time:*** the time taken from completion of mobilisation time to arriving at the scene.
Numerator	The total number of Clinical Status 1 ECHO emergency calls responded to in 7 minutes and 59 seconds or less from the time a call is verified to the arrival of first responder at the scene of the incident.

Denominator	The total number of Clinical Status 1 ECHO calls received at the ambulance control room.
Exclusion criteria	▪ Duplicate or multiple calls to an incident where a response has already been activated. All of these calls should be categorised in the same way as the original call that activated the response ▪ Caller disconnects before call verification is complete ▪ Caller refuses to give details ▪ Response cancelled before call verification is complete (e.g. patient recovers).
Data source	AMPDS (Advanced Medical Priority Dispatch System).
Indicator reporting frequency	Monthly.

Minimum dataset			
ID	**Data Element Name**	**Definition**	**Data Element Options/Format**
1.1	**Patient identifier**	Unique identifier for the patient.	
1.2	**Incident number**	Unique number for this incident.	
1.3	**Date and time of call to ambulance service**	The precise moment (date and time) the call was answered by a call-taker in the ambulance control room.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
1.4	**Verification of call date and time**	Indicate the time (date and time) the call was verified by a call-taker in the ambulance control room. This is the time when the caller's telephone number, exact location of the incident and nature of the complaint are known by the call-taker in the ambulance control room.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
1.5	**Clinical status code**	Indicate the patient's clinical status code.	**01 Clinical Status 1: Echo** – Life threatening – cardiac or respiratory arrest **02 Clinical Status 1: Delta** – Life threatening – other than cardiac or respiratory arrest **03 Clinical Status 2: Charlie –** Serious not life threatening – immediate **04 Clinical Status 2: Bravo** – Serious not life threatening – urgent **05 Clinical Status 3: Alpha** – Non-serious or life threatening **06 Clinical Status 3: Omega** – Minor illness or injury **07 Unknown**

A. Key performance indicator for Clinical Status 1 – first responder to an ECHO call

First responder (for Clinical Status 1 calls)			
1.6	**First responder attending this incident**	Indicate if a first responder was dispatched to attend this incident. A first responder is an appropriately trained responder to Clinical Status 1 calls dispatched through the Ambulance Service control room.	**01** No **02** Yes
1.7	**First responder type**	Indicate the type of first responder.	**01** Advance Paramedic **02** Paramedic **03** Emergency medical technician (EMT) **04** Emergency first responders (EFR) **05** Cardiac first response (CFR) **08** Other
1.8	**Time call was assigned to first responder**	Indicate the time (date and time) the call was assigned to a first responder	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
1.9	**Arrival at scene time for first responder**	The time (date and time) of the arrival of a first responder to the scene of the incident. The **clock stops** when the first responder arrives at the scene of the incident.	
Patient-carrying vehicle			
2.0	**Patient-carrying vehicle type**	Indicate the patient-carrying vehicle type. A patient-carrying vehicle is any vehicle able to transport the patient in a clinically safe manner and dispatched from an Ambulance Service control room. Examples include helicopter, lifeboat, aircraft, a CEN* B compliant double-crewed	**01** CEN B double-crewed fully equipped ambulance **02** Helicopter **03** Lifeboat **04** Aircraft **08** Other

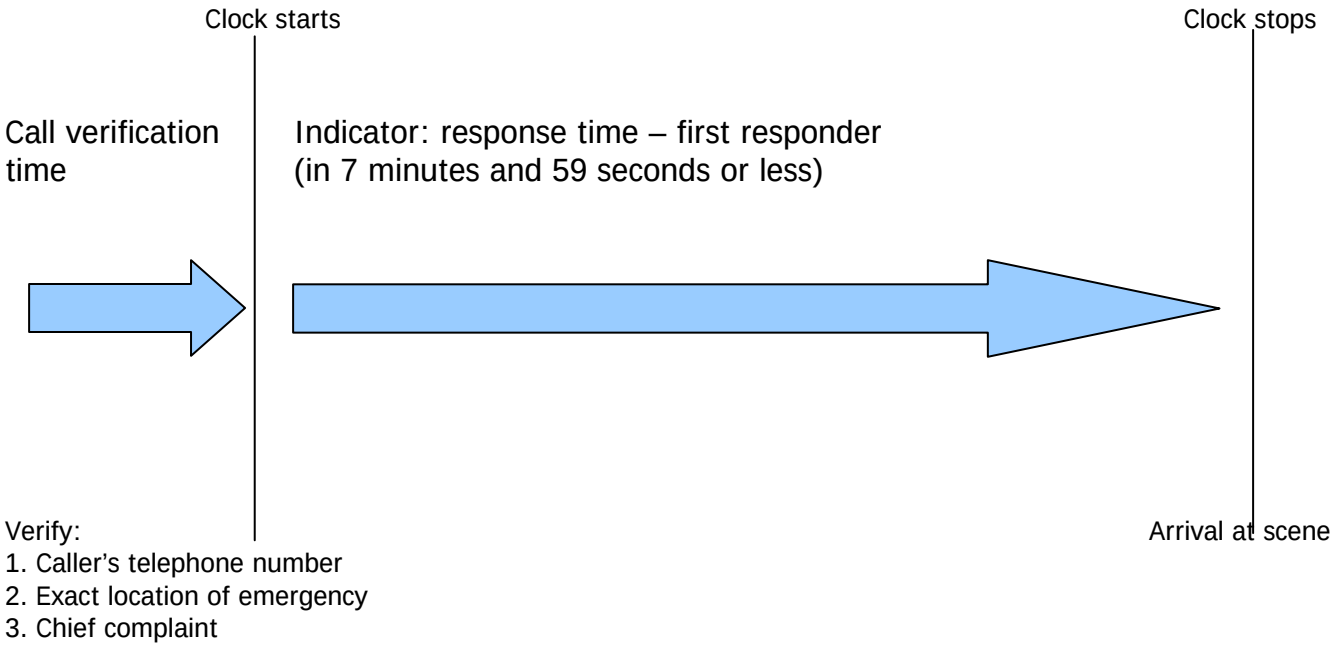
A. Key performance indicator for Clinical Status 1 – first responder to an ECHO call

		fully equipped ambulance. ** CEN: Comité Européen de Normalisation (Committee for European Standardization)*	
2.1	**Assignment of call time for patient-carrying vehicle**	Indicate the time (date and time) the patient-carrying vehicle was assigned to attend this incident.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
2.2	**Mobilisation time for patient-carrying vehicle**	Indicate the time (date and time) the patient-carrying vehicle was mobilised to attend this incident.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
2.3	**Arrival at scene time for patient-carrying vehicle**	The date and time of the arrival of a patient-carrying vehicle at the scene of the incident.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS** *Activation time:* the time allocated from assignment of call to mobilisation of patient-carrying vehicle. *Dispatch time:* the time allocated from mobilisation of the patient-carrying vehicle to arrival on scene.

B. Key performance indicator for Clinical Status 1 – first responder to a DELTA call

Indicator ID	**Clinical Status 1 – first responder**
Indicator title	Response to Clinical Status 1 **DELTA** incidents by a first responder
Target	75% of Clinical Status 1 **DELTA** incidents which are responded to by a first responder in 7 minutes and 59 seconds or less.

Flow Chart



Data definition	**Clinical Status 1 DELTA calls:** calls reporting an immediately life-threatening cardiac or respiratory arrest. **First responder:** an appropriately trained responder to Clinical Status 1 calls dispatched through the ambulance service control room. A ***first responder*** is defined by the Authority as a person who attends a potentially life-threatening emergency who: ▪ is trained and has a recognised qualification, as a minimum, in basic life support and the use of a

	defibrillator ▪ attends regular refresher courses ▪ and is formally networked with national ambulance dispatch service. **Cardiac first response (CFR):** a cardiac first responder has completed the Pre-Hospital Emergency Care Council's (PHECC) standard of education and training in cardiac first response (CFR) at the levels of CFR responder or CFR practitioner. The standard outlines the care management of major life-threatening emergencies, including heart attack, cardiac arrest, foreign body airway obstruction and stroke and includes Aspirin administration. The CFR+ standard is designed, as an extra module to the CFR responder level course, for specific groups with a paediatric automated external defibrillation (AED) requirement. Its aim is to enable course participants to develop competency in AED use, including paediatric pads where available, on a child. The practitioner level CFR course is aimed at healthcare professionals/practitioners and includes additional skills such as oxygen use, pulse checks and two-rescuer cardiopulmonary resuscitation (CPR). **Emergency first response (EFR):** an emergency first responder (EFR) is a cardiac first responder who has in addition completed a five-day course designed for persons working as a non-transporting pre-hospital responder. The EFR is trained to recognise and assess common life-threatening and common serious medical conditions. The PHECC Clinical Practice Guidelines authorise the EFR to administer oxygen and assist patients with the self administration of prescribed Salbutamol, GTN and glucose gel medications. For the trauma patient the EFR's scope of practice extends to manual stabilisation of the cervical spine and collar application. **Occupational first aid (OFA):** the occupational first aider is trained according the Health and Safety Authority and FETAC (Level 5) standard and is specific to the provision of first aid in a place of work in compliance with the Health and Welfare at Work (General Application) Regulations (S.I. No. 299 of 2007). The OFA is trained to provide treatment for a minor injury and preserving life or minimising the consequences of injury or illness until handover to an

	appropriate healthcare professional/practitioner. **Emergency medical technician (EMT):** an emergency medical technician is a registered practitioner who has completed PHECC's standard of education and training at EMT level. Practitioners at this level are authorised to provide a range of medications by clinical practice guidelines (CPG) and registered medical practitioner instructions. The duration of education an training is five weeks and is designed to provide the EMT with the knowledge and skills for working primarily in patient transport services and in supporting the pre-hospital response to patients accessing the 999/112 emergency medical services. **Paramedic (P)**: a paramedic is a registered practitioner who has completed PHECC's standard of education and training at paramedic level. This is the minimum clinical level that is recommended to provide care and transport of an ill or injured patient following a 999/112 call. The paramedic is principally engaged in assessing patient's needs, making informed clinical decisions, planning and administering procedures and medications and monitoring patients' responses both on the scene and during transport. **Advanced paramedic (AP):** an advanced paramedic (AP) is an experienced paramedic who has completed the PHECC's standard of education and training at advanced paramedic level. The APs will have obtained a higher diploma from a recognised third level institution and have undergone further training which enables them to perform additional procedures at the scene of an emergency including: ▪ intubation – during advanced cardiac life support procedures, an advanced paramedic can place a sterile tube into the trachea or throat to help the casualty breathe ▪ cardiac resuscitation including CPR, defibrillation and drug administration ▪ intravenous fluid resuscitation – administration of fluids to support critically ill patients ▪ pain management – administration of drugs to relieve pain ▪ chest decompression – placement of a needle/tube in

	the chest to relieve pressure due to a collapsed lung ▪ administration of intravenous (IV) and intramuscular (IM) medications (drugs or fluids introduced directly into a vein or a muscle) to treat various medical conditions ▪ stabilisation of cardiac conditions – drugs may be administered to regulate the patient's heart rate. **Verification time:** the time required to determine the caller's telephone number, the exact location of the incident and the nature of the chief complaint, by the call-taker in the Ambulance Service control room. **Response time:** in order to calculate the response time the **clock starts** when the call verification period is complete and the following details have been ascertained: ▪ caller's telephone number ▪ exact location of the incident ▪ nature of the chief complaint. The **clock stops** when the first responder arrives at the scene of the incident. Response time has three distinct phases: activation time, mobilisation time, and running time. ***Activation time**:* the time taken from call verification completion to assigning a suitable first response to the incident. ***Mobilisation time**:* the time taken from activation time completion to the mobilisation of that first response. ***Running time:*** the time taken from completion of mobilisation time to arriving at the scene.
Numerator	The total number of Clinical Status 1 DELTA emergency calls responded to in 7 minutes and 59 seconds or less from the time a call is verified to the arrival of first responder at the scene of the incident.
Denominator	The total number of Clinical Status 1 DELTA calls received at the ambulance control room.

B. Key performance indicator for Clinical Status 1 – first responder to DELTA call

Exclusion criteria	▪ Duplicate or multiple calls to an incident where a response has already been activated. All of these calls should be categorised in the same way as the original call that activated the response ▪ Caller disconnects before call verification is complete ▪ Caller refuses to give details ▪ Response cancelled before call verification is complete (e.g. patient recovers).
Data source	AMPDS (Advanced Medical Priority Dispatch System).
Indicator reporting frequency	Monthly.

B. Key performance indicator for Clinical Status 1 – first responder to DELTA call

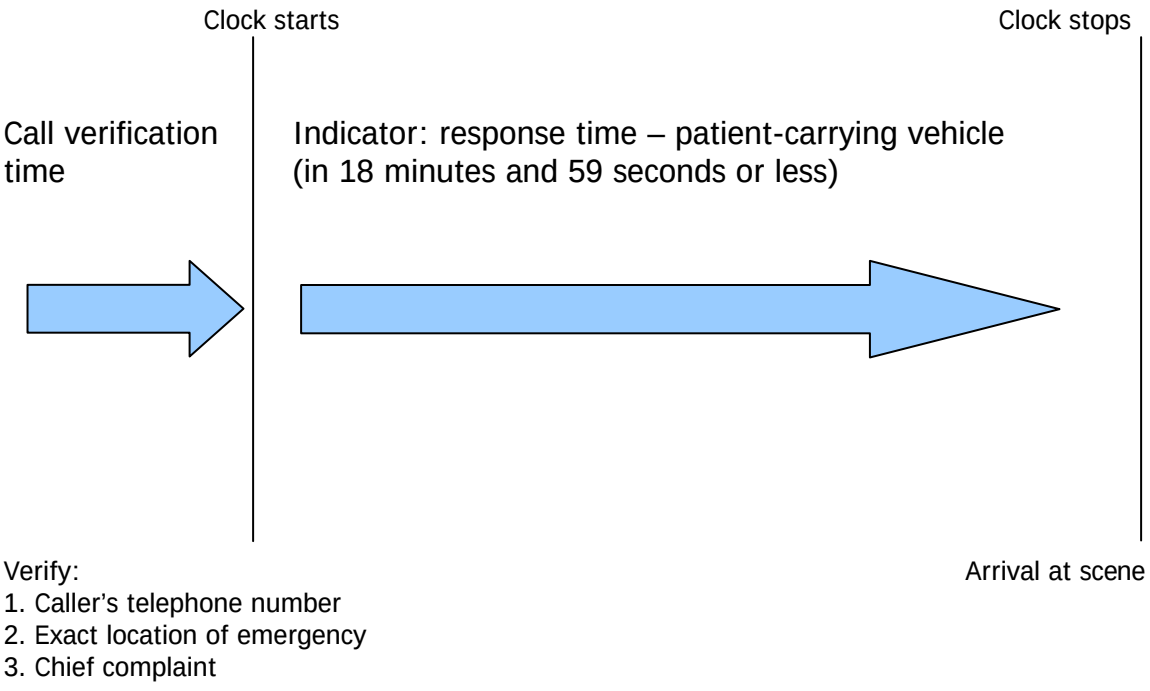
Minimum dataset			
ID	**Data Element Name**	**Definition**	**Data Element Options/Format**
1.1	**Patient identifier**	Unique identifier for the patient.	
1.2	**Incident number**	Unique number for this incident.	
1.3	**Date and time of call to ambulance service**	The precise moment (date and time) the call was answered by a call-taker in the ambulance control room.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
1.4	**Verification of call date and time**	Indicate the time (date and time) the call was verified by a call-taker in the ambulance control room. This is the time when the caller's telephone number, exact location of the incident and nature of the complaint are known by the call-taker in the ambulance control room.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
1.5	**Clinical status code**	Indicate the patient's clinical status code.	**01 Clinical Status 1: Echo** – Life threatening – cardiac or respiratory arrest **02 Clinical Status 1: Delta** – Life threatening – other than cardiac or respiratory arrest **03 Clinical Status 2: Charlie** – Serious not life threatening – immediate **04 Clinical Status 2: Bravo** – Serious not life threatening – urgent **05 Clinical Status 3: Alpha** – Non-serious or life threatening **06 Clinical Status 3: Omega** – Minor illness or injury **07 Unknown**

B. Key performance indicator for Clinical Status 1 – first responder to DELTA call

First responder (for Clinical Status 1 calls)			
1.6	**First responder attending this incident**	Indicate if a first responder was dispatched to attend this incident. A first responder is an appropriately trained responder to Clinical Status 1 calls dispatched through the Ambulance Service control room.	**01** No **02** Yes
1.7	**First responder type**	Indicate the type of first responder.	**01** Advance paramedic **02** Paramedic **03** Emergency medical technician (EMT) **04** Emergency first responders (EFR) **05** Cardiac first response (CFR) **08** Other
1.8	**Time call was assigned to first responder**	Indicate the time (date and time) the call was assigned to a first responder	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
1.9	**Arrival at scene time for first responder**	The time (date and time) of the arrival of a first responder to the scene of the incident. The **clock stops** when the first responder arrives at the scene of the incident.	
Patient-carrying vehicle			
2.0	**Patient-carrying vehicle type**	Indicate the patient-carrying vehicle type. A patient-carrying vehicle is any vehicle able to transport the patient in a clinically safe manner and dispatched from an Ambulance Service control room. Examples include helicopter, lifeboat, aircraft, a CEN* B compliant double-crewed fully	**01** CEN B double-crewed fully equipped ambulance **02** Helicopter **03** Lifeboat **04** Aircraft **08** Other

		equipped ambulance. ** CEN: Comité Européen de Normalisation (Committee for European Standardization)*	
2.1	**Assignment of call time for patient-carrying vehicle**	Indicate the time (date and time) the patient-carrying vehicle was assigned to attend this incident.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
2.2	**Mobilisation time for patient-carrying vehicle**	Indicate the time (date and time) the patient-carrying vehicle was mobilised to attend this incident.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
2.3	**Arrival at scene time for patient-carrying vehicle**	The date and time of the arrival of a patient-carrying vehicle at the scene of the incident.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS** *Activation time:* the time allocated from assignment of call to mobilisation of patient-carrying vehicle. *Dispatch time:* the time allocated from mobilisation of the patient-carrying vehicle to arrival on scene.

C. Key performance indicator for Clinical Status 1 – patient-carrying vehicle to an ECHO call

Indicator ID	**Clinical Status 1 – patient-carrying vehicle**
Indicator title	Response to Clinical Status 1 **ECHO** incidents by a patient-carrying vehicle in 18 minutes and 59 seconds or less.
Target	Percentage of Clinical Status 1 **ECHO** incidents which are responded to by a patient-carrying vehicle in 18 minutes and 59 seconds or less.
Flow Chart	
	
Data definitions	**Clinical Status 1 ECHO calls:** calls reporting an immediately life-threatening cardiac or respiratory arrest. **First responder:** an appropriately trained responder to Clinical Status 1 calls dispatched through the ambulance service control room.

	A ***first responder*** is defined by the Authority as a person who attends a potentially life-threatening emergency who: ▪ is trained and has a recognised qualification, as a minimum, in basic life support and the use of a defibrillator ▪ attends regular refresher courses ▪ and is formally networked with national ambulance dispatch service. **Cardiac first response (CFR): a** cardiac first responder has completed the Pre-Hospital Emergency Care Council's (PHECC) standard of education and training in cardiac first response (CFR) at the levels of CFR responder or CFR practitioner. The standard outlines the care management of major life-threatening emergencies, including heart attack, cardiac arrest, foreign body airway obstruction and stroke and includes Aspirin administration. The CFR+ standard is designed, as an extra module to the CFR responder level course, for specific groups with a paediatric automated external defibrillation (AED) requirement. Its aim is to enable course participants to develop competency in AED use, including paediatric pads where available, on a child. The practitioner level CFR course is aimed at healthcare professionals/practitioners and includes additional skills such as oxygen use, pulse checks and two-rescuer cardiopulmonary resuscitation (CPR). **Emergency first response (EFR):** an emergency first responder (EFR) is a cardiac first responder who has in addition completed a five-day course designed for persons working as a non-transporting pre-hospital responder. The EFR is trained to recognise and assess common life-threatening and common serious medical conditions. The PHECC Clinical Practice Guidelines authorise the EFR to administer oxygen and assist patients with the self-administration of prescribed Salbutamol, GTN and glucose gel medications. For the trauma patient the

	EFR's scope of practice extends to manual stabilisation of the cervical spine and collar application. **Occupational first aid (OFA):** the occupational first aider is trained according the Health and Safety Authority and FETAC (Level 5) standard and is specific to the provision of first aid in a place of work in compliance with the Health and Welfare at Work (General Application) Regulations (S.I. No. 299 of 2007). The OFA is trained to provide treatment for a minor injury and preserving life or minimising the consequences of injury or illness until handover to an appropriate healthcare professional/practitioner. **Emergency medical technician (EMT):** an emergency medical technician is a registered practitioner who has completed PHECC's standard of education and training at EMT level. Practitioners at this level are authorised to provide a range of medications by clinical practice guidelines (CPG) and registered medical practitioner instructions. The duration of education and training is five weeks and is designed to provide the EMT with the knowledge and skills for working primarily in patient transport services and in supporting the pre-hospital response to patients accessing the 999/112 emergency medical services. **Paramedic (P):** a paramedic is a registered practitioner who has completed PHECC's standard of education and training at paramedic level. This is the minimum clinical level that is recommended to provide care and transport of an ill or injured patient following a 999/112 call. The paramedic is principally engaged in assessing patient's needs, making informed clinical decisions, planning and administering procedures and medications and monitoring patients' responses both on the scene and during transport. **Advanced paramedic (AP):** an advanced paramedic (AP) is an experienced paramedic who has completed the PHECC's standard of education

	and training at advanced paramedic level. The APs will have obtained a higher diploma from a recognised third level institution and undergone further training which enables them to perform additional procedures at the scene of an emergency including: ▪ intubation – during advanced cardiac life support procedures, an advanced paramedic can place a sterile tube into the trachea or throat to help the casualty breathe ▪ cardiac resuscitation including CPR, defibrillation and drug administration ▪ intravenous fluid resuscitation – administration of fluids to support critically ill patients ▪ pain management – administration of drugs to relieve pain ▪ chest decompression – placement of a needle/tube in the chest to relieve pressure due to a collapsed lung ▪ administration of intravenous (IV) and intramuscular (IM) medications (drugs or fluids introduced directly into a vein or a muscle) to treat various medical conditions ▪ stabilisation of cardiac conditions – drugs may be administered to regulate the patient's heart rate when required. **Verification time:** the time required to determine the caller's telephone number, exact location of the incident and the nature of the complaint, by the call-taker in the Ambulance Service control room. **Response time:** In order to calculate the response time the **clock starts** when the following details of the call have been ascertained: ▪ caller's telephone number ▪ exact location of the incident ▪ nature of the chief complaint. The **clock stops** when the first responder arrives at the scene of the incident.

	Response time has three distinct phases: activation time, mobilisation time and running time. ***Activation time**:* the time taken from call verification completion to assigning a suitable first response to the incident. ***Mobilisation time**:* the time taken from activation time completion to the mobilisation of that first response. ***Running time:*** the time taken from completion of mobilisation time to arriving at the scene.
Numerator	The total number of Clinical Status 1 ECHO emergency calls responded to in 18 minutes and 59 seconds or less from the time a call is verified to the arrival of a patient-carrying vehicle at the scene of the incident.
Denominator	The total number of Clinical Status 1 ECHO calls received at the ambulance control room.
Exclusion Criteria	▪ Duplicate or multiple calls to an incident where a response has already been activated. All of these calls should be categorised in the same way as the original call that activated the response. ▪ Caller disconnects before call verification is complete. ▪ Caller refuses to give details. ▪ Response cancelled before call verification is complete (e.g. patient recovers).
Data source	AMPDS (Advanced Medical Priority Dispatch System).
Indicator reporting frequency	Monthly.

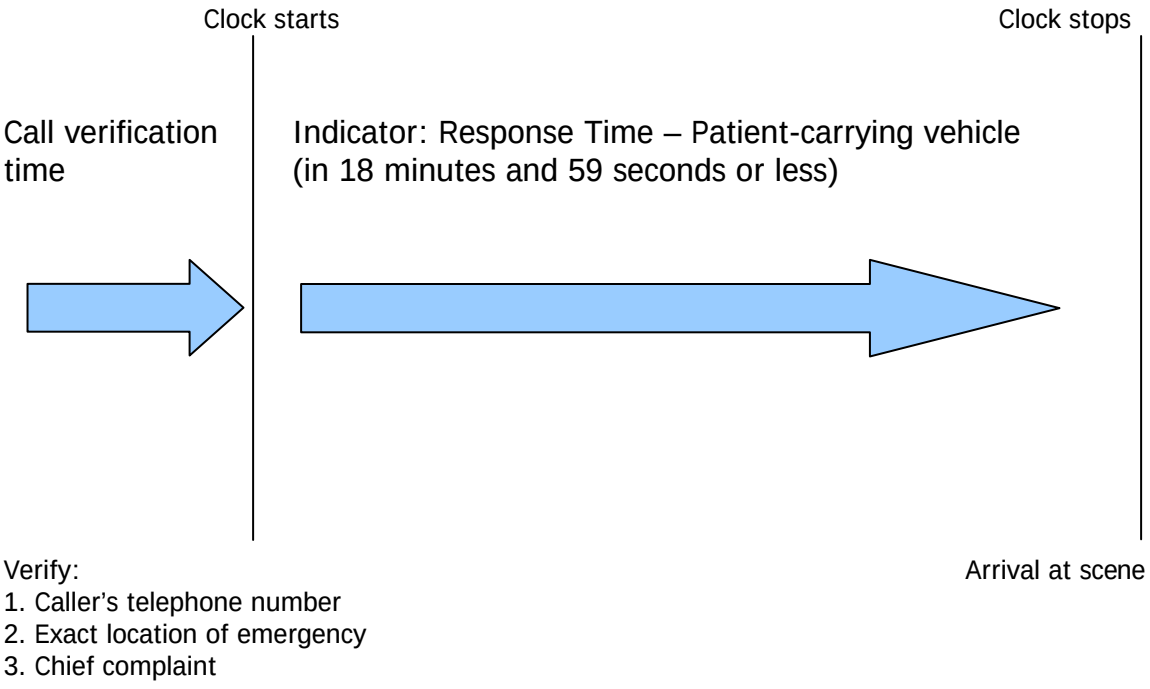
Minimum dataset			
ID	**Data Element Name**	**Definition**	**Data Element Options/Format**
1.1	**Patient identifier**	Unique identifier for the patient.	
1.2	**Incident number**	Unique number for this incident.	
1.3	**Date and time of call to ambulance service**	The precise moment (date and time) the call was answered by a call-taker in the ambulance control room.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
1.4	**Verification of call date and time**	Indicate the time (date and time) the call was verified by a call-taker in the ambulance control room. This is the time when the caller's telephone number, exact location of the incident and nature of the complaint are known by the call-taker in the ambulance control room.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
1.5	**Clinical status code**	Indicate the patients clinical status code.	**01 Clinical Status 1: Echo** – Life threatening – cardiac or respiratory arrest **02 Clinical Status 1: Delta** – Life threatening – other than cardiac or respiratory arrest **03 Clinical Status 2: Charlie** – Serious not life threatening – immediate **04 Clinical Status 2: Bravo** – Serious not life threatening – urgent **05 Clinical Status 3: Alpha** – Non-serious or life threatening **06 Clinical Status 3: Omega** – Minor illness or injury **07 Unknown**

C. Key performance indicator for Clinical Status 1 – patient-carrying vehicle to an ECHO call

First responder (for Clinical Status 1 calls)			
1.6	**First responder attending this incident**	Indicate if a first responder was dispatched to attend this incident. A first responder is an appropriately trained responder to Clinical Status 1 calls dispatched through the Ambulance Service control room.	**01** No **02** Yes
1.7	**First responder type**	Indicate the type of first responder.	**01** Advance paramedic **02** Paramedic **03** Emergency medical technician (EMT) **04** Emergency first responders (EFR) **05** Cardiac first response (CFR) **08** Other
1.8	**Time call was assigned to first responder**	Indicate the time (date and time) the call was assigned to a first responder.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
1.9	**Arrival at scene time for first responder**	The time (date and time) of the arrival of a first responder to the scene of the incident. The **clock stops** when the first responder arrives at the scene of the incident.	
Patient-carrying vehicle			
2.0	**Patient-carrying vehicle type**	Indicate the patient-carrying vehicle type. A patient-carrying vehicle is any vehicle able to transport the patient in a clinically safe manner and dispatched from an ambulance service control room. Examples include helicopter,	**01** CEN B double-crewed fully equipped ambulance **02** Helicopter **03** Lifeboat **04** Aircraft **08** Other

		lifeboat, aircraft, a CEN* B compliant double-crewed fully equipped ambulance. ** CEN: Comité Européen de Normalisation (Committee for European Standardization)*	
2.1	**Assignment of call time for patient-carrying vehicle**	Indicate the time (date and time) the patient-carrying vehicle was assigned to attend this incident.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
2.2	**Mobilisation time for patient-carrying vehicle**	Indicate the time (date and time) the patient-carrying vehicle was mobilised to attend this incident.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
2.3	**Arrival at scene time for patient-carrying vehicle**	The date and time of the arrival of a patient-carrying vehicle at the scene of the incident.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS** *Activation time:* the time allocated from assignment of call to mobilisation of patient-carrying vehicle. *Dispatch time:* the time allocated from mobilisation of the patient-carrying vehicle to arrival on scene.

D. Key performance indicator for Clinical Status 1 – patient-carrying vehicle to a DELTA call

Indicator ID	**Clinical Status 1 – patient-carrying vehicle**
Indicator title	Response to Clinical Status 1 **DELTA** incidents by a patient-carrying vehicle in 18 minutes and 59 seconds or less.
Target	Percentage of Clinical Status 1 **DELTA** incidents which are responded to by a patient-carrying vehicle in 18 minutes and 59 seconds or less.
Flow Chart	
	
Data definitions	**Clinical Status 1 DELTA calls:** calls reporting an immediately life-threatening condition other than cardiac or respiratory arrest. **First responder:** an appropriately trained responder to Clinical Status 1 calls dispatched through the ambulance service control room.

	A ***first responder*** is defined by the Authority as a person who attends a potentially life-threatening emergency who: ▪ is trained and has a recognised qualification, as a minimum, in basic life support and the use of a defibrillator ▪ attends regular refresher courses ▪ and is formally networked with national ambulance dispatch service. **Cardiac first response (CFR):** a cardiac first responder has completed the Pre-Hospital Emergency Care Council's (PHECC) standard of education and training in cardiac first response (CFR) at the levels of CFR responder or CFR practitioner. The standard outlines the care management of major life-threatening emergencies, including heart attack, cardiac arrest, foreign body airway obstruction and stroke and includes Aspirin administration. The CFR+ standard is designed, as an extra module to the CFR responder level course, for specific groups with a paediatric automated external defibrillation (AED) requirement. Its aim is to enable course participants to develop competency in AED use, including paediatric pads where available, on a child. The practitioner level CFR course is aimed at healthcare professionals/practitioners and includes additional skills such as oxygen use, pulse checks and two-rescuer cardiopulmonary resuscitation (CPR). **Emergency first response (EFR):** an emergency first responder (EFR) is a cardiac first responder who has in addition completed a five-day course designed for persons working as a non-transporting pre-hospital responder. The EFR is trained to recognise and assess common life-threatening and common serious medical conditions. The PHECC Clinical Practice Guidelines authorise the EFR to administer oxygen and assist patients with the self-administration of prescribed Salbutamol, GTN and glucose gel medications. For the trauma patient the EFR's scope of practice extends to manual

D. Key performance indicator for Clinical Status 1 – patient-carrying vehicle to a DELTA call

	stabilisation of the cervical spine and collar application. **Occupational first aid (OFA):** the occupational first aider is trained according the Health and Safety Authority and FETAC (Level 5) standard and is specific to the provision of first aid in a place of work in compliance with the Health and Welfare at Work (General Application) Regulations (S.I. No. 299 of 2007). The OFA is trained to provide treatment for a minor injury and preserving life or minimising the consequences of injury or illness until handover to an appropriate healthcare professional/practitioner. **Emergency medical technician (EMT):** an emergency medical technician is a registered practitioner who has completed PHECC's standard of education and training at EMT level. Practitioners at this level are authorised to provide a range of medications by CPG and registered medical practitioner instructions. The duration of education and training is five weeks and is designed to provide the EMT with the knowledge and skills for working primarily in patient transport services and in supporting the pre-hospital response to patients accessing the 999/112 emergency medical services. **Paramedic (P)**: a paramedic is a registered practitioner who has completed PHECC's standard of education and training at paramedic level. This is the minimum clinical level that is recommended to provide care and transport of an ill or injured patient following a 999/112 call. The paramedic is principally engaged in assessing patient's needs, making informed clinical decisions, planning and administering procedures and medications and monitoring patients' responses both on the scene and during transport. **Advanced paramedic (AP):** an advanced paramedic (AP) is an experienced paramedic who has completed the PHECC's standard of education and training at advanced paramedic level. The APs will have obtained a higher diploma from a

	recognised third level institution and have undergone further training which enables them to perform additional procedures at the scene of an emergency including: ▪ intubation – during advanced cardiac life support procedures, an advanced paramedic can place a sterile tube into the trachea or throat to help the casualty breathe ▪ cardiac resuscitation including CPR, defibrillation and drug administration ▪ intravenous fluid resuscitation – administration of fluids to support critically ill patients ▪ pain management – administration of drugs to relieve pain ▪ chest decompression – placement of a needle/tube in the chest to relieve pressure due to a collapsed lung ▪ administration of intravenous (IV) and intramuscular (IM) medications (drugs or fluids introduced directly into a vein or a muscle) to treat various medical conditions ▪ stabilisation of cardiac conditions – drugs may be administered to regulate the patient's heart rate when required. **Verification time:** the time required to determine the caller's telephone number, exact location of the incident and the nature of the complaint, by the call-taker in the Ambulance Service control room. **Response time:** In order to calculate the response time the **clock starts** when the following details of the call have been ascertained: ▪ caller's telephone number ▪ exact location of the incident ▪ nature of the chief complaint. The **clock stops** when the first responder arrives at the scene of the incident. Response time has three distinct phases: activation time, mobilisation time and running time.

D. Key performance indicator for Clinical Status 1 – patient-carrying vehicle to a DELTA call

	Activation time**:* the time taken from call verification completion to assigning a suitable first response to the incident. ***Mobilisation time**:* the time taken from activation time completion to the mobilisation of that first response. ***Running time: the time taken from completion of mobilisation time to arriving at the scene.
Numerator	The total number of Clinical Status 1 DELTA emergency calls responded to in 18 minutes and 59 seconds or less from the time a call is verified to the arrival of a patient-carrying vehicle at the scene of the incident.
Denominator	The total number of Clinical Status 1 DELTA calls received at the ambulance control room.
Exclusion criteria	▪ Duplicate or multiple calls to an incident where a response has already been activated. All of these calls should be categorised in the same way as the original call that activated the response. ▪ Caller disconnects before call verification is complete. ▪ Caller refuses to give details. ▪ Response cancelled before call verification is complete (e.g. patient recovers).
Data source	AMPDS (Advanced Medical Priority Dispatch System).
Indicator reporting frequency	Monthly.

D. Key performance indicator for Clinical Status 1 – patient-carrying vehicle to a DELTA call

Minimum dataset			
ID	**Data Element Name**	**Definition**	**Data Element Options/Format**
1.1	**Patient identifier**	Unique identifier for the patient.	
1.2	**Incident number**	Unique number for this incident.	
1.3	**Date and time of call to ambulance service**	The precise moment (date and time) the call was answered by a call-taker in the ambulance control room.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
1.4	**Verification of call date and time**	Indicate the time (date and time) the call was verified by a call-taker in the ambulance control room. This is the time when the caller's telephone number, exact location of the incident and nature of the complaint are known by the call-taker in the ambulance control room.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
1.5	**Clinical status code**	Indicate the patient's clinical status code.	**01 Clinical Status 1: Echo** – Life threatening – cardiac or respiratory arrest **02 Clinical Status 1: Delta** – Life threatening – other than cardiac or respiratory arrest **03 Clinical Status 2: Charlie** – Serious not life threatening – immediate **04 Clinical Status 2: Bravo** – Serious not life threatening – urgent **05 Clinical Status 3: Alpha** – Non-serious or life threatening **06 Clinical Status 3: Omega** – Minor illness or injury **07 Unknown**

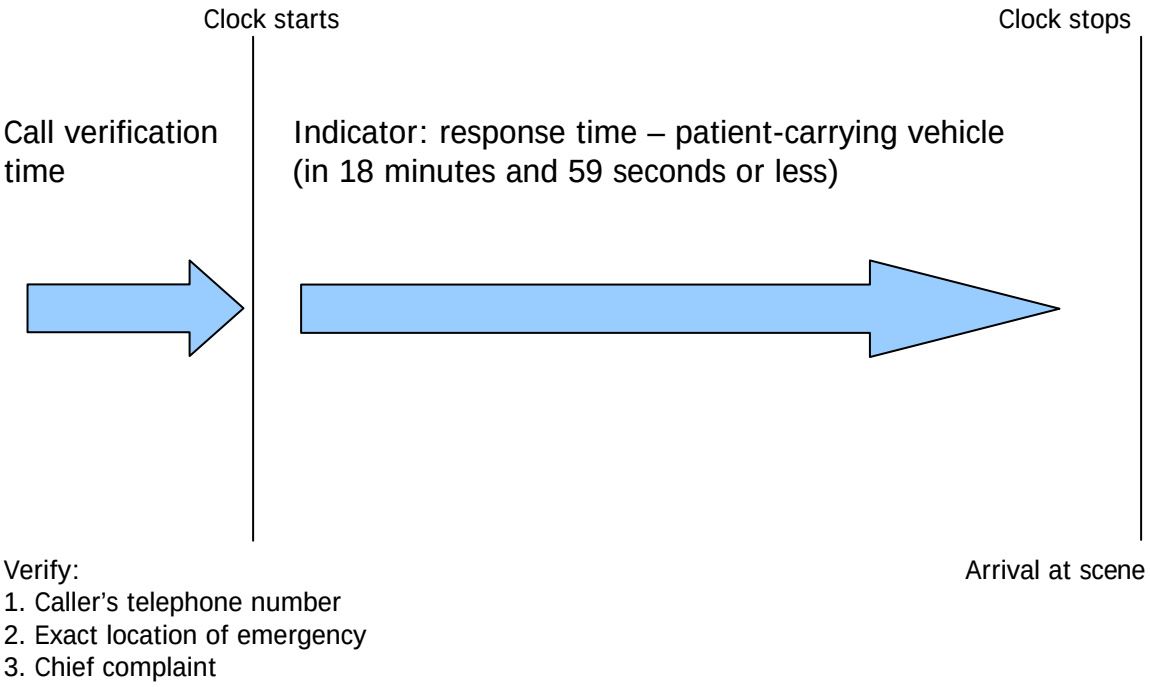
D. Key performance indicator for Clinical Status 1 – patient-carrying vehicle to a DELTA call

First responder (for Clinical Status 1 calls)			
1.6	**First responder attending this incident**	Indicate if a first responder was dispatched to attend this incident. A first responder is an appropriately trained responder to Clinical Status 1 calls dispatched through the Ambulance Service control room.	**01** No **02** Yes
1.7	**First responder type**	Indicate the type of first responder.	**01** Advance paramedic **02** Paramedic **03** Emergency medical technician (EMT) **04** Emergency first responders (EFR) **05** Cardiac first response (CFR) **08** Other
1.8	**Time call was assigned to first responder**	Indicate the time (date and time) the call was assigned to a first responder.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
1.9	**Arrival at scene time for first responder**	The time (date and time) of the arrival of a first responder to the scene of the incident. The **clock stops** when the first responder arrives at the scene of the incident.	
Patient-carrying vehicle			
2.0	**Patient-carrying vehicle type**	Indicate the patient-carrying vehicle type. A patient-carrying vehicle is any vehicle able to transport the patient in a clinically safe manner and dispatched from an Ambulance Service control room. Examples include helicopter, lifeboat, aircraft, a CEN* B	**01** CEN B double-crewed fully equipped ambulance **02** Helicopter **03** Lifeboat **04** Aircraft **08** Other

D. Key performance indicator for Clinical Status 1 – patient-carrying vehicle to a DELTA call

		compliant double-crewed fully equipped ambulance. ** CEN: Comité Européen de Normalisation (Committee for European Standardization)*	
2.1	**Assignment of call time for patient-carrying vehicle**	Indicate the time (date and time) the patient-carrying vehicle was assigned to attend this incident.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
2.2	**Mobilisation time for patient-carrying vehicle**	Indicate the time (date and time) the patient-carrying vehicle was mobilised to attend this incident.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
2.3	**Arrival at scene time for patient-carrying vehicle**	The date and time of the arrival of a patient-carrying vehicle at the scene of the incident.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS** *Activation time:* the time allocated from assignment of call to mobilisation of patient-carrying vehicle. *Dispatch time:* the time allocated from mobilisation of the patient-carrying vehicle to arrival on scene.

E. Key performance indicator for Clinical Status 2 – patient-carrying vehicle to a CHARLIE call

Indicator ID	**Clinical Status 2 – patient-carrying vehicle**
Indicator title	Response to Clinical Status 2 **CHARLIE** incidents by a patient-carrying vehicle in 18 minutes and 59 seconds or less.
Target	Percentage of Clinical Status 2 **CHARLIE** incidents which are responded to by a patient-carrying vehicle in 18 minutes and 59 seconds or less.
Flow Chart	
	
Data definitions	**Clinical Status 2 CHARLIE calls:** calls reporting a serious not life-threatening immediate condition. **First responder:** an appropriately trained responder to Clinical Status 1 calls dispatched through the ambulance service control room.

	A ***first responder*** is defined by the Authority as a person who attends a potentially life-threatening emergency who: ▪ is trained and has a recognised qualification, as a minimum, in basic life support and the use of a defibrillator ▪ attends regular refresher courses ▪ and is formally networked with national ambulance dispatch service. **Cardiac first response (CFR):** a cardiac first responder has completed Pre-Hospital Emergency Care Council's (PHECC) standard of education and training in cardiac first response (CFR) at the levels of CFR responder or CFR practitioner. The standard outlines the care management of major life-threatening emergencies, including heart attack, cardiac arrest, foreign body airway obstruction and stroke and includes Aspirin administration. The CFR+ standard is designed, as an extra module to the CFR responder level course, for specific groups with a paediatric automated external defibrillation (AED) requirement. Its aim is to enable course participants to develop competency in AED use, including paediatric pads where available, on a child. The practitioner level CFR course is aimed at healthcare professionals/practitioners and includes additional skills such as oxygen use, pulse checks and two-rescuer cardiopulmonary resuscitation (CPR). **Emergency first response (EFR):** an emergency first responder (EFR) is a cardiac first responder who has in addition completed a five-day course designed for persons working as a non-transporting pre-hospital responder. The EFR is trained to recognise and assess common life-threatening and common serious medical conditions. The PHECC Clinical Practice Guidelines authorise the EFR to administer oxygen and assist patients with the self administration of prescribed Salbutamol, GTN and glucose gel medications. For

	the trauma patient the EFR's scope of practice extends to manual stabilisation of the cervical spine and collar application. **Occupational first aid (OFA):** the occupational first aider is trained according the Health and Safety Authority and FETAC (Level 5) standard and is specific to the provision of first aid in a place of work in compliance with the Health and Welfare at Work (General Application) Regulations (S.I. No. 299 of 2007). The OFA is trained to provide treatment for a minor injury and preserving life or minimising the consequences of injury or illness until handover to an appropriate healthcare professional/practitioner. **Emergency medical technician (EMT):** an emergency medical technician is a registered practitioner who has completed PHECC's standard of education and training at EMT level. Practitioners at this level are authorised to provide a range of medications by CPG and registered medical practitioner instructions. The duration of education an training is five weeks and is designed to provide the EMT with the knowledge and skills for working primarily in patient transport services and in supporting the pre-hospital response to patients accessing the 999/112 emergency medical services. **Paramedic (P)**: a paramedic is a registered practitioner who has completed PHECC's standard of education and training at paramedic level. This is the minimum clinical level that is recommended to provide care and transport of an ill or injured patient following a 999/112 call. The paramedic is principally engaged in assessing patient's needs, making informed clinical decisions, planning and administering procedures and medications and monitoring patients' responses both on the scene and during transport. **Advanced paramedic (AP):** an advanced paramedic (AP) is an experienced paramedic who

	has completed the PHECC's standard of education and training at advanced paramedic level. The APs will APs have obtained a higher diploma from a recognised third level institution and have undergone further training which enables them to perform additional procedures at the scene of an emergency including: ▪ intubation – during advanced cardiac life support procedures, an advanced paramedic can place a sterile tube into the trachea or throat to help the casualty breathe ▪ cardiac resuscitation including CPR, defibrillation and drug administration ▪ intravenous fluid resuscitation – administration of fluids to support critically ill patients ▪ pain management – administration of drugs to relieve pain ▪ chest decompression – placement of a needle/tube in the chest to relieve pressure due to a collapsed lung ▪ administration of intravenous (IV) and intramuscular (IM) medications (drugs or fluids introduced directly into a vein or a muscle) to treat various medical conditions ▪ stabilisation of cardiac conditions – drugs may be administered to regulate the patient's heart rate when required. **Verification time:** the time required to determine the caller's telephone number, exact location of the incident and the nature of the complaint, by the call-taker in the Ambulance Service control room. **Response time:** In order to calculate the response time the **clock starts** when the following details of the call have been ascertained: ▪ caller's telephone number ▪ exact location of the incident ▪ nature of the chief complaint.

E. Key performance indicator for Clinical Status 2 – patient-carrying vehicle to a CHARLIE call

	The **clock stops** when the first responder arrives at the scene of the incident. Response time has three distinct phases: activation time, mobilisation time and running time. ***Activation time**:* the time taken from call verification completion to assigning a suitable first response to the incident. ***Mobilisation time**:* the time taken from activation time completion to the mobilisation of that first response. ***Running Time:*** the time taken from completion of mobilisation time to arriving at the scene.
Numerator	The total number of Clinical Status 2 CHARLIE emergency calls responded to in 18 minutes and 59 seconds or less from the time a call is verified to the arrival of a patient-carrying vehicle at the scene of the incident.
Denominator	The total number of Clinical Status 2 CHARLIE calls received at the ambulance control room.
Exclusion Criteria	▪ Duplicate or multiple calls to an incident where a response has already been activated. All of these calls should be categorised in the same way as the original call that activated the response. ▪ Caller disconnects before call verification is complete. ▪ Caller refuses to give details. ▪ Response cancelled before call verification is complete (e.g. patient recovers).
Data source	AMPDS (Advanced Medical Priority Dispatch System).
Indicator reporting frequency	Monthly.

E. Key performance indicator for Clinical Status 2 – patient-carrying vehicle to a CHARLIE call

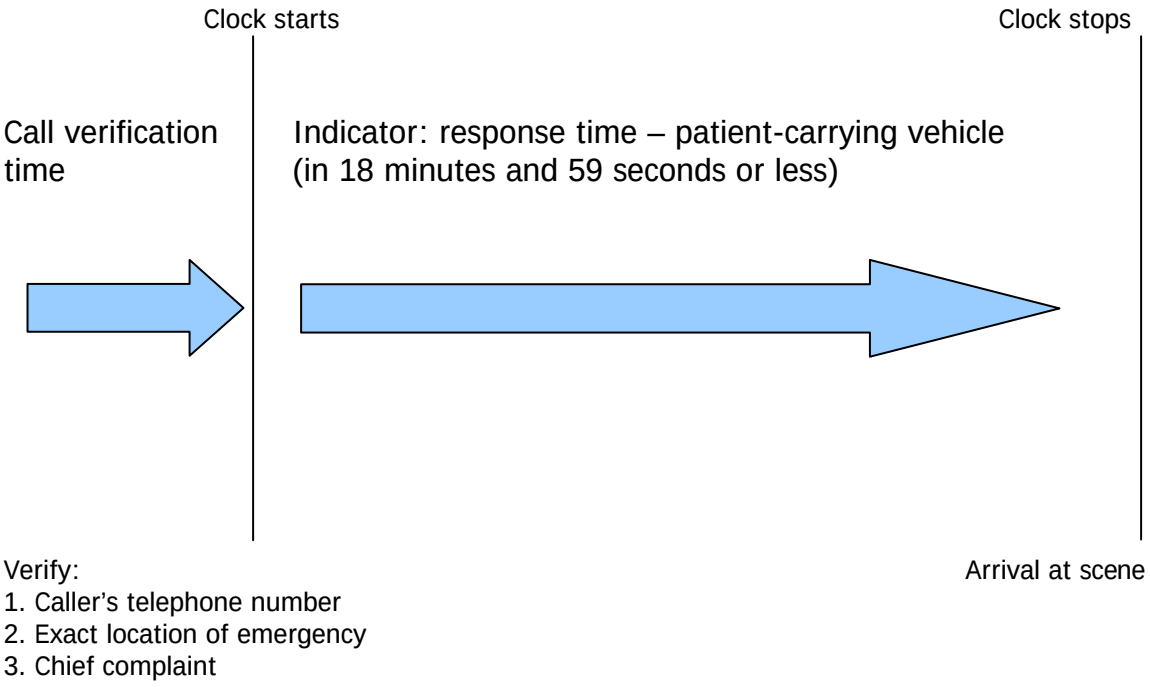
Minimum dataset			
ID	**Data Element Name**	**Definition**	**Data Element Options/Format**
1.1	**Patient identifier**	Unique identifier for the patient.	
1.2	**Incident number**	Unique number for this incident.	
1.3	**Date and time of call to ambulance service**	The precise moment (date and time) the call was answered by a call-taker in the ambulance control room.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
1.4	**Verification of call date and time**	Indicate the time (date and time) the call was verified by a call-taker in the ambulance control room. This is the time when the caller's telephone number, exact location of the incident and nature of the complaint are known by the call-taker in the ambulance control room.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
1.5	**Clinical Status Code**	Indicate the patients clinical status code.	**01 Clinical Status 1: Echo** – Life threatening – cardiac or respiratory arrest **02 Clinical Status 1: Delta** – Life threatening – other than cardiac or respiratory arrest **03 Clinical Status 2: Charlie** – Serious not life threatening – immediate **04 Clinical Status 2: Bravo** – Serious not life threatening – urgent **05 Clinical Status 3: Alpha** – Non-serious or life threatening **06 Clinical Status 3: Omega** – Minor illness or injury **07 Unknown**

E. Key performance indicator for Clinical Status 2 – patient-carrying vehicle to a CHARLIE call

First responder (for Clinical Status 2 calls)			
1.6	**First Responder attending this incident**	Indicate if a first responder was dispatched to attend this incident. A first responder is an appropriately trained responder to Clinical Status 1 calls dispatched through the ambulance service control room.	**01** No **02** Yes
1.7	**First responder type**	Indicate the type of first responder.	**01** Advance paramedic **02** Paramedic **03** Emergency medical technician (EMT) **04** Emergency first responders (EFR) **05** Cardiac first response (CFR) **08** Other
1.8	**Time call was assigned to first responder**	Indicate the time (date and time) the call was assigned to a first responder.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
1.9	**Arrival at scene time for first responder**	The time (date and time) of the arrival of a first responder to the scene of the incident. The **clock stops** when the first responder arrives at the scene of the incident.	
Patient-carrying vehicle			
2.0	**Patient-carrying vehicle type**	Indicate the patient-carrying vehicle type. A patient-carrying vehicle is any vehicle able to transport the patient in a clinically safe manner and dispatched from an ambulance service control room. Examples include helicopter,	**01** CEN B double-crewed fully equipped ambulance **02** Helicopter **03** Lifeboat **04** Aircraft **08** Other

		lifeboat, aircraft, a CEN* B compliant double-crewed fully equipped ambulance. ** CEN: Comité Européen de Normalisation (Committee for European Standardization)*	
2.1	**Assignment of call time for patient-carrying vehicle**	Indicate the time (date and time) the patient-carrying vehicle was assigned to attend this incident.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
2.2	**Mobilisation time for patient-carrying vehicle**	Indicate the time (date and time) the patient-carrying vehicle was mobilised to attend this incident.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
2.3	**Arrival at scene time for patient-carrying vehicle**	The date and time of the arrival of a patient-carrying vehicle at the scene of the incident.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS** *Activation time:* the time allocated from assignment of call to mobilisation of patient-carrying vehicle. *Dispatch time:* the time allocated from mobilisation of the patient-carrying vehicle to arrival on scene.

F. Key performance indicator for Clinical Status 2 – patient-carrying vehicle to a BRAVO call

Indicator ID	**Clinical Status 2 – patient-carrying vehicle**
Indicator title	Response to Clinical Status 2 **BRAVO** incidents by a patient-carrying vehicle in 18 minutes 59 seconds or less.
Target	Percentage of Clinical Status 2 **BRAVO** incidents which are responded to by a patient-carrying vehicle in 18 minutes and 59 seconds or less.
Flow Chart	
	
Data definitions	**Clinical Status 2 BRAVO calls:** calls reporting a serious not life-threatening urgent condition. **First responder:** an appropriately trained responder to Clinical Status 1 calls dispatched through the ambulance service control room. A ***first responder*** is defined by the Authority as a

	person who attends a potentially life-threatening emergency who: ▪ is trained and has a recognised qualification, as a minimum, in basic life support and the use of a defibrillator ▪ attends regular refresher courses ▪ and is formally networked with national ambulance dispatch service. **Cardiac first response (CFR):** a cardiac first responder has completed the Pre-Hospital Emergency Care Council's (PHECC) standard of education and training in cardiac first response (CFR) at the levels of CFR responder or CFR practitioner. The standard outlines the care management of major life-threatening emergencies, including heart attack, cardiac arrest, foreign body airway obstruction and stroke and includes Aspirin administration. The CFR+ standard is designed, as an extra module to the CFR responder level course, for specific groups with a paediatric automated external defibrillation (AED) requirement. Its aim is to enable course participants to develop competency in AED use, including paediatric pads where available, on a child. The practitioner level CFR course is aimed at healthcare professionals/practitioners and includes additional skills such as oxygen use, pulse checks and two-rescuer cardiopulmonary resuscitation (CPR). **Emergency first response (EFR):** an emergency first responder (EFR) is a cardiac first responder who has in addition completed a five-day course designed for persons working as a non-transporting pre-hospital responder. The EFR is trained to recognise and assess common life-threatening and common serious medical conditions. The PHECC Clinical Practice Guidelines authorise the EFR to administer oxygen and assist patients with the self-administration of prescribed Salbutamol, GTN and glucose gel medications. For the trauma patient the EFR's scope of practice

F. Key performance indicator for Clinical Status 2 – patient-carrying vehicle to a BRAVO call

	extends to manual stabilisation of the cervical spine and collar application. **Occupational first aid (OFA):** the occupational first aider is trained according the Health and Safety Authority and FETAC (Level 5) standard and is specific to the provision of first aid in a place of work in compliance with the Health and Welfare at Work (General Application) Regulations (S.I. No. 299 of 2007). The OFA is trained to provide treatment for a minor injury and preserving life or minimising the consequences of injury or illness until handover to an appropriate healthcare professional/practitioner. **Emergency medical technician (EMT):** an emergency medical technician is a registered practitioner who has completed PHECC's standard of education and training at EMT level. Practitioners at this level are authorised to provide a range of medications by clinical practice guidelines CPG and registered medical practitioner instructions. The duration of education and training is five weeks and is designed to provide the EMT with the knowledge and skills for working primarily in patient transport services and in supporting the pre-hospital response to patients accessing the 999/112 emergency medical services. **Paramedic (P)**: a paramedic is a registered practitioner who has completed PHECC's standard of education and training at paramedic level. This is the minimum clinical level that is recommended to provide care and transport of an ill or injured patient following a 999/112 call. The paramedic is principally engaged in assessing patient's needs, making informed clinical decisions, planning and administering procedures and medications and monitoring patients' responses both on the scene and during transport. **Advanced paramedic (AP):** an advanced

F. Key performance indicator for Clinical Status 2 – patient-carrying vehicle to a BRAVO call

	paramedic (AP) is an experienced paramedic who has completed the PHECC's standard of education and training at advanced paramedic level. The APs will have obtained a higher diploma from a recognised third level institution and have undergone further training which enables them to perform additional procedures at the scene of an emergency including: ▪ intubation – during advanced cardiac life support procedures, an advanced paramedic can place a sterile tube into the trachea or throat to help the casualty breathe ▪ cardiac resuscitation including CPR, defibrillation and drug administration ▪ intravenous fluid resuscitation – administration of fluids to support critically ill patients ▪ pain management – administration of drugs to relieve pain ▪ chest decompression – placement of a needle/tube in the chest to relieve pressure due to a collapsed lung ▪ administration of intravenous (IV) and intramuscular (IM) medications (drugs or fluids introduced directly into a vein or a muscle) to treat various medical conditions ▪ stabilisation of cardiac conditions – drugs may be administered to regulate the patient's heart rate when required. **Verification time:** the time required to determine the caller's telephone number, exact location of the incident and the nature of the complaint, by the call-taker in the ambulance service control room. **Response time:** In order to calculate the response time the **clock starts** when the following details of the call have been ascertained: ▪ caller's telephone number ▪ exact location of the incident ▪ nature of the chief complaint.

F. Key performance indicator for Clinical Status 2 – patient-carrying vehicle to a BRAVO call

	The **clock stops** when the first responder arrives at the scene of the incident. Response time has three distinct phases: activation time, mobilisation time and running time. ***Activation time**:* the time taken from call verification completion to assigning a suitable first response to the incident. ***Mobilisation time**:* the time taken from activation time completion to the mobilisation of that first response. ***Running Time:*** the time taken from completion of mobilisation time to arriving at the scene.
Numerator	The total number of Clinical Status 2 BRAVO emergency calls responded to in 18 minutes and 59 seconds or less from the time a call is verified to the arrival of a patient-carrying vehicle at the scene of the incident.
Denominator	The total number of Clinical Status 2 BRAVO calls received at the ambulance control room.
Exclusion Criteria	▪ Duplicate or multiple calls to an incident where a response has already been activated. All of these calls should be categorised in the same way as the original call that activated the response. ▪ Caller disconnects before call verification is complete. ▪ Caller refuses to give details. Response cancelled before call verification is complete (e.g. patient recovers).
Data source	AMPDS (Advanced Medical Priority Dispatch System).
Indicator reporting frequency	Monthly.

F. Key performance indicator for Clinical Status 2 – patient-carrying vehicle to a BRAVO call

Minimum dataset			
ID	**Data Element Name**	**Definition**	**Data Element Options/Format**
1.1	**Patient identifier**	Unique identifier for the patient.	
1.2	**Incident number**	Unique number for this incident.	
1.3	**Date and time of call to ambulance service**	The precise moment (date and time) the call was answered by a call-taker in the ambulance control room.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
1.4	**Verification of call date and time**	Indicate the time (date and time) the call was verified by a call-taker in the ambulance control room. This is the time when the caller's telephone number, exact location of the incident and nature of the complaint are known by the call-taker in the ambulance control room.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
1.5	**Clinical status code**	Indicate the patient's clinical status code.	**01 Clinical Status 1: Echo** – Life threatening – cardiac or respiratory arrest **02 Clinical Status 1: Delta** – Life threatening – other than cardiac or respiratory arrest **03 Clinical Status 2: Charlie –** Serious not life threatening – immediate **04 Clinical Status 2: Bravo** – Serious not life threatening – urgent **05 Clinical Status 3: Alpha** – Non-serious or life threatening **06 Clinical Status 3: Omega** – Minor illness or injury **07 Unknown**

F. Key performance indicator for Clinical Status 2 – patient-carrying vehicle to a BRAVO call

First responder (for Clinical Status 2 calls)			
1.6	**First responder attending this incident**	Indicate if a first responder was dispatched to attend this incident. A first responder is an appropriately trained responder to Clinical Status 1 Calls dispatched through the ambulance service control room.	**01** No **02** Yes
1.7	**First responder type**	Indicate the type of first responder.	**01** Advance paramedic **02** Paramedic **03** Emergency medical technician (EMT) **04** Emergency first responders (EFR) **05** Cardiac first response (CFR) **08** Other
1.8	**Time call was assigned to first responder**	Indicate the time (date and time) the call was assigned to a first responder	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
1.9	**Arrival at scene time for first responder**	The time (date and time) of the arrival of a first responder to the scene of the incident. The **clock stops** when the first responder arrives at the scene of the incident.	
Patient-carrying vehicle			
2.0	**Patient-carrying vehicle type**	Indicate the patient-carrying vehicle type. A patient-carrying vehicle is any vehicle able to transport the patient in a clinically safe manner and dispatched from an ambulance service control room. Examples include helicopter,	**01** CEN B double-crewed fully equipped ambulance **02** Helicopter **03** Lifeboat **04** Aircraft **08** Other

F. Key performance indicator for Clinical Status 2 – patient-carrying vehicle to a BRAVO call

		lifeboat, aircraft, a CEN* B compliant double-crewed fully equipped ambulance. ** CEN: Comité Européen de Normalisation (Committee for European Standardization)*	
2.1	**Assignment of call time for patient-carrying vehicle**	Indicate the time (date and time) the patient-carrying vehicle was assigned to attend this incident.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
2.2	**Mobilisation time for patient-carrying vehicle**	Indicate the time (date and time) the patient-carrying vehicle was mobilised to attend this incident.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS**
2.3	**Arrival at scene time for patient-carrying vehicle**	The date and time of the arrival of a patient-carrying vehicle at the scene of the incident.	**DD/MM/YYYY** **24 hour clock** **HH:MM:SS** *Activation time:* the time allocated from assignment of call to mobilisation of patient-carrying vehicle. *Dispatch time:* the time allocated from mobilisation of the patient-carrying vehicle to arrival on scene.

F. Key performance indicator for Clinical Status 2 – patient-carrying vehicle to a BRAVO call

G. Quality indicator for the deployment of advanced paramedics

Indicator title	**Deployment of advanced paramedics**
Data Definitions	**Advanced paramedic (AP):** an advanced paramedic (AP) is an experienced paramedic who has completed the PHECC's standard of education and training at advanced paramedic level. The APs will have obtained a higher diploma from a recognised third level institution and have undergone further training which enables them to perform additional procedures at the scene of an emergency including: ▪ intubation – during advanced cardiac life support procedures, an advanced paramedic can place a sterile tube into the trachea or throat to help the casualty breathe ▪ cardiac resuscitation including CPR, defibrillation and drug administration ▪ intravenous fluid resuscitation – administration of fluids to support critically ill patients ▪ pain management – administration of drugs to relieve pain ▪ chest decompression – placement of a needle/tube in the chest to relieve pressure due to a collapsed lung ▪ administration of intravenous (IV) and intramuscular (IM) medications (drugs or fluids introduced directly into a vein or a muscle) to treat various medical conditions ▪ stabilisation of cardiac conditions – drugs may be administered to regulate the patient's heart rate when required. **ECHO calls:** Clinical Status 1 life-threatening calls for cardiac or respiratory arrest. The recommended response is an advanced paramedic. **DELTA calls:** Clinical Status 1 life-threatening calls other than cardiac or respiratory arrest. The recommended response is an advanced

	paramedic. **CHARLIE calls:** Clinical Status 2 calls that are serious, not life threatening – immediate calls for the following calls where an advanced Paramedic is the recommended response: 1. 10C 00 – chest pain (non-traumatic) Charlie override. 2. 19C 02 – heart problem with abnormal breathing. 3. 21C 01 – haemorrhage through tubes (excluding catheter). 4. 21C 02 – haemorrhage of dialysis fistula.
Numerator	The total number of calls where an advanced paramedic is deployed to ECHO, DELTA and relevant CHARLIE calls where an advanced paramedic is the recommended response.
Denominator	The total number of ECHO, DELTA and relevant CHARLIE calls where an advanced paramedic is the recommended response.
Exclusion criteria	▪ Calls that are not categorised initially as ECHO or DELTA or relevant CHARLIE calls but are subsequently re-categorised as same. ▪ Duplicate or multiple calls to an incident where a response has already been activated. All of these calls should be categorised in the same way as the original call that activated the response. ▪ Caller disconnects before call verification is complete. ▪ Caller refuses to give details. Response cancelled before call verification is completed.
Data source	AMPDS (Advanced Medical Priority Dispatch System).
Indicator reporting frequency	Monthly.

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