Northern Ireland Ambulance Service Health and Social Care Trust

# Consultation and EQIA on Introduction of Proposed Clinical Response Model

September 2018


Northern Ireland Ambulance Service Health and Social Care Trust

# Contents

## 1. INTRODUCTION

1.1 The Northern Ireland Ambulance Service HSC Trust (NIAS) was established by the Northern Ireland Ambulance Service Health and Social Services Trust (Establishment) Order (Northern Ireland) 1995 as amended by the Health and Social Services Trusts (Establishment) (Amendment) Order (Northern Ireland) 2008 and Section 1 of the Health and Social Care (Reform) Act (Northern Ireland) 2009.

1.2 NIAS responds to the needs of a population in Northern Ireland in excess of 1.8 million people in the pre-hospital environment. We provide ambulance care, treatment and transportation services to the people of Northern Ireland twenty four hours per day, seven days per week, and three hundred and sixty five days per year. The Trust has an annual budget of around £70 million and approximately 1,270 staff. The Trust handles over 220,000 emergency calls from 36 stations, using 116 emergency ambulances, 43 paramedic-led Rapid Response Vehicles (RRV), on a continuous 24/7 basis throughout the year.

1.3 The principal ambulance services we provide are:

- Emergency response to patients with sudden illness and injury;
- Non-emergency patient care and transportation;
- Specialised health transport services; and,
- Co-ordination of planning for major events and response to mass casualty incidents and disasters.

1.4 NIAS Vision, Values, Key Themes

**Our Vision is:**

To provide excellent quality of care, experience and outcomes for the patients we serve.

This vision is underpinned by our core values that will help us to deliver the highest levels of care and services.

**Our Core Values are:**

- Compassion
- Respect
- Integrity
- Learning & Improvement

1.5 Key Themes

NIAS has identified six key themes from which our Corporate Objectives and annual priorities are developed, to ensure consistency between strategy and delivery.

i. **Motivated & Engaged Workforce:** the Trust will explore how we can fully achieve this for staff, at all levels. We will find opportunities for staff involvement and engagement in developing and modernising how we deliver our services. We will collaboratively develop and deliver modernisation and improvement, and encourage staff to have a greater understanding of their impact on service delivery and outcomes for patients. We will enable staff to be part of learning activities that are adapted and appropriate for them.

ii. **Right Resources to Patients Quickly:** the Trust will develop sustainable, innovative workforce and systems solutions building on the recommendations of the NIAS Demand & Capacity Review, 2017. We will aim to have the right number of staff with the right skills to ensure our quality of service meets agreed standards in terms of time and clinical quality. We will develop highly skilled staff equipped to deliver safe patient care with a focus on the delivery of clinical excellence and appropriate pathways. Through this we will

ensure we deploy the right resources, skills and response that is appropriate to clinical need.

iii. **Improving Experience & Outcomes for Patients:** The Trust will ensure that we listen to, and learn from, patients and others in the planning and delivery of services. We will promote meaningful engagement and involvement in service developments. We will use a range of standards, measures and indicators to offer assurance that our service is operating effectively, safely and in the best interest of patients.

iv. **Clinical Excellence at Our Heart:** we will ensure the best outcomes for our patients through working to the highest standards of care and developing, leading and sharing best clinical practice. We will ensure clinicians receive the highest standards of education, learning and development to perform effectively and safely. Clinical staff will be equipped to carry out their role supported by advancements in technology, medical equipment, clinical practice and clinical audit. NIAS will develop and implement clinical supervision for regulated professionals. We will involve our staff and others to identify and develop best models of clinical practice and appropriate systems and processes for measuring outcomes.

v. **Recognised for Innovation:** the Trust will continue to work collaboratively on innovations and transformations that deliver on our priorities. We will position NIAS as an integral part of the whole HSC system and influence and shape services to ensure improvements to the patient experience and outcome. We will develop and embed a quality improvement methodology within the Trust and celebrate related successes. NIAS has a vital role to play in the delivery of urgent and emergency care, providing a range of clinical responses to patients in their homes and community settings and can potentially integrate seamlessly across the spectrum of providers in health and social care. We can increasingly shift the balance of care

away from hospitals, reduce demand on emergency departments and take the pressure off general practice. There are real benefits to be gained for patients by investing in NIAS services to improve the future sustainability and performance of the health system overall. NIAS will identify the impact of those changes in an open and evidenced manner using clear, validated and timely data is essential.

vi. **Effective, Ethical, Collective Leadership:** the Trust will develop an Organisational Development Framework and annual delivery plan that will provide a focus on promoting the right culture and supporting behaviours to drive improvements and transformations. We will ensure there are leadership development opportunities to develop the skills and confidence of our leaders to support the Trust priorities, as outlined in the Corporate Plan.

## 2. PURPOSE OF THIS CONSULTATION

2.1 NIAS has experienced significant growth in demand for emergency 999 response calls over recent years. The service is undergoing significant reform and improvement. It has developed from being entirely transport-focused to having a greater emphasis on provision of clinical care in an out-of-hospital context. Many of these reforms are designed to implement best practice NHS changes, while taking account of specific aspects of implementation in Northern Ireland.

2.2 As part of this wider transformation agenda, we are proposing to introduce a revised Clinical Response Model (CRM), similar to those introduced in recent years elsewhere in the UK. This would be designed to provide a more clinically appropriate ambulance response than the current model, which was introduced over forty years ago, by better targeting the right resources (clinical skills and vehicle type) to the right patients. This proposal would represent a significant change in the way that NIAS provides its services.

2.3 The purpose of this consultation is to engage in a conversation with key stakeholders that will fully consider all of the perspectives and potential impacts of this proposal to introduce a new Clinical Response Model for NIAS. NIAS has already completed a pre-consultation engagement. This included discussions with political representatives, Trade Unions and our workforce. The pre-consultees were positive in relation to the proposals. There were some areas requiring clarification and these were addressed.

2.4 This document also seeks to look at the potential impact of the proposed changes in line with the Trust's responsibilities under Section 75 of the Northern Ireland Act 1998.

2.5 Section 75 requires NIAS, as a public authority, in carrying out its work, to have due regard to the need to promote equality of opportunity:

- Between persons of different religious belief, political opinion, racial group, age, marital status or sexual orientation;
- Between men and women generally;
- Between persons with a disability and persons without;
- Between persons with dependants and persons without.

In addition Section 75 (2) requires NIAS to have regard to the desirability of promoting good relations between persons of different religious belief, political opinion or racial group.

2.6 An Equality Impact Assessment (EQIA) is an in-depth study of a policy or decision to assess the extent of the impact of the policy on equality of opportunity for the nine equality categories identified by Section 75, listed above.

2.7 An EQIA has been prepared by NIAS to assess the impact of proposed changes in line with 'Practical Guidance on Equality Impact Assessment' produced by the Equality Commission for Northern Ireland, this document will:

- Define the aims of the policy to release efficiency savings and target CSR investment through the reconfiguration of frontline services.
- Consider available data and research.
- Assess the impacts of the proposals on Section 75 groups.
- Consider measures which might mitigate any adverse impacts and alternative policies which might better achieve the promotion of equality of opportunity.

We will also explain how we intend to consult on the proposals and how we will publish the results and monitor for adverse impact in the future.

2.8 No adverse impact has been identified on any Section 75 grouping. Relevant available data and detailed impact assessment is included in Section 8. The consideration of this information in terms of equality and rural impacts is set out in the summary table below.

## 3. BACKGROUND TO PROPOSED CHANGES

### *Why are changes needed?*

3.1 Consistent with the position across the rest of the UK and elsewhere, demand for ambulance services in Northern Ireland continues to grow and change. This has increased significantly in recent years, taking into account factors like an older population, more comprehensive and effective evidence-bases, and improved medical technology.

3.2 NIAS has recently completed a demand forecast exercise by combining historic demand rates per head of population with projections taken from the Northern Ireland Statistics and Research Agency. Over the next 5 years emergency demand is predicted to increase by 3.1% per year, although this varies by Local Government District.

3.3 Given the changing nature of clinical demand and the health service over the past 40 years, NIAS believes it is now timely, necessary and appropriate to consult on introducing changes to how we direct our capacity in the most clinically appropriate way to best meet the needs of the patients we serve.

3.4 At present NIAS aims to reach Category A emergency calls – i.e. those designated as absolute emergencies – within a target time of 8 minutes. Time based targets, introduced in 1974, were identified as being key for people in cardiac arrest, or likely to go into cardiac arrest, when ambulance services and public health were very different. Time based standards have been used as a key performance measure for ambulance services both nationally and internationally, despite lack of evidence that they actually lead to good clinical care. Time based ambulance response standards have been effective in driving improvements and maintaining response times to the most critical and injured patients.

3.5 However efforts to meet these standards in the face of rising demand have led to a range of operational behaviours that may be inefficient, with the potential to distort the system away from a central focus on patient care and clinical outcomes.

3.6 Studies have shown that there is no significant supporting clinical evidence that response times lead to improved outcomes for other patient groups. The current NIAS operating model results in the rapid dispatch of multiple resources to a large number of patients whose clinical condition may not warrant that level of response. Currently NIAS categorises circa 30% of patients as requiring an 8-minute response when emergent evidence demonstrates that fewer than 7% of patients require a response this quickly. In the context of ever rising demand this operating model is not sustainable.

3.7 In addition, the current model puts disproportionate focus on reaching patients quickly rather than sending the most appropriate resource for the patient's needs or measuring the quality of care given by ambulance personnel. In practical terms this means that when a 999 call is answered the nearest available resource, either a conveying A&E vehicle or single responding Paramedic in a car, is often dispatched regardless of the patient's actual clinical need.

3.8 As demand for Ambulance services continues to grow, NIAS proposes to direct ambulance resources more accurately and appropriately to the smaller number of very acute emergency calls to ensure these are responded to more quickly and effectively, with a larger number of less acute calls waiting a bit longer for a more appropriate response.

3.9 It is worth reiterating that cardiac arrest is the only primary emergency medical condition for which immediate response times are the key

indicator of successful clinical outcomes. In short, evidence shows that every second is critical to the survival of a cardiac arrest patient, in a way that no other condition routinely experiences. Cardiac arrest is by far the most time-critical emergency condition when it comes to the clinical rates of survival. The quicker that cardiac arrests get clinical assistance, the more likely a person is to survive. None of the available evidence has demonstrated any positive relationship between shorter response times and decrease in mortality across all emergency patients or those with life threatening conditions other than out of hospital cardiac arrest ([1]).

3.10 People who contact NIAS need help for increasingly complex and diverse health problems. As a service we have been developing a range of responses – for example, enhanced telephone assessment, appropriate care pathways, as well as providing emergency and non-emergency transport. This means that there is a pressing need to improve the process of matching the right response to clinical need at the time someone calls for help but this process is constrained by the need to meet very challenging response time targets for a larger proportion of patients than actually require it.

3.11 NIAS is proposing that the new Clinical Response Model will be part of a wider framework of ongoing efficiency led reforms, including; review of systems process and structure within our Emergency Ambulance Control; the ongoing implementation of appropriate care pathways where patients are assisted to get more appropriate health services for non-emergency conditions and a community resuscitation and defibrillator strategy across Northern Ireland (including local community first responders).

3.12 NIAS wishes to consider this proposal for a new Clinical Response Model in the context of a recognised requirement for a significant uplift in the size of our frontline staff, increase in fleet and a new estates strategy. While

[1] Turner J etal. Ambulance Response Programme, Evaluation of Dispatch on Disposition, June 2016 v4

substantial investment in staff recruitment and an estates strategy are separate policy proposals in their own right, NIAS believes they are linked and integral to the modernisation of the service and the successful implementation of the new Clinical Response Model.

3.13 Given the development of the role of Paramedics and other ambulance personnel in the pre-hospital environment, the current operating model is limiting the delivery of best care to patients and is not making best use of resources or clinical skills.

3.14 The NIAS proposal for a new Clinical Response Model on the way that we will respond to calls from Northern Ireland's entire population will revolve around:

- Identify the Sickest, Quickest
- Get to the Sickest, Quickest
- Send the Right Resource, First Time
- Provide the Best Patient Care

## 4. CHANGE IN HOW WE CATEGORISE OUR CALLS

### *How will the new clinical response model work?*

4.1 In order to make our proposed changes work, it is imperative that we review how calls made to our Emergency Control Centre are categorised.

4.2 Ambulances are dispatched in response to 999 emergency calls based on the clinical need of the patient. The calls are prioritised according to the seriousness of the patient's condition: Category A - Potentially Immediately life-threatening; Category B - Serious but not immediately life-threatening; Category C - Non-life threatening/serious.

4.3 NIAS, like many ambulance services in the UK and internationally, uses the prioritisation system AMPDS (Advanced Medical Priority Dispatch System). This is a clinical model that accounts for a variety of risk factors in presentation of illness, pain and injury.

4.4 The protocols and the risk factors relating to gender and other personal characteristics are based on research and are updated based on new evidence via the International Academies of Emergency Dispatch. These protocols determine the priority of the 999 calls and the category/code to which they will be allocated.

Table 1 presents an overview of the call category and the types of call that fall into each category.

**Current Call Categories**

| Call Type | Category / Code |
|---|---|
| 999 Potentially immediately life threatening | Category A ( Purple/ Red) |
| 999 Serious but not life threatening | Category B ( Amber) |
| 999 Neither life threatening or serious | Category C ( Green) |
| Healthcare Professional Calls (HCP)(GPs who 'book' an ambulance after seeing a patient and deciding they need to be admitted to hospital within a set time frame) | HCP Calls |
| Routine | Routine |

Table 1: Current call categorisation

4.5 Under the proposed new clinical response model we plan to reconfigure the categories by reducing the number from five to four, and by adopting the code sets which determine the composition of these four categories from the NHS England Ambulance Response Programme (ARP).

4.6 The NHS England Ambulance Response Programme (commenced 2015) is the most comprehensive study about ambulance services completed anywhere in the world. There has been some 14 million 999 calls processed through the programme with no reported adverse incidents, and it has been independently evaluated on a continual basis by Sheffield University School of Health and Related Research (ScHARR). NIAS propose adopting the call categories that were used in this programme and that have now been implemented in all NHS England Services. (Table 2)

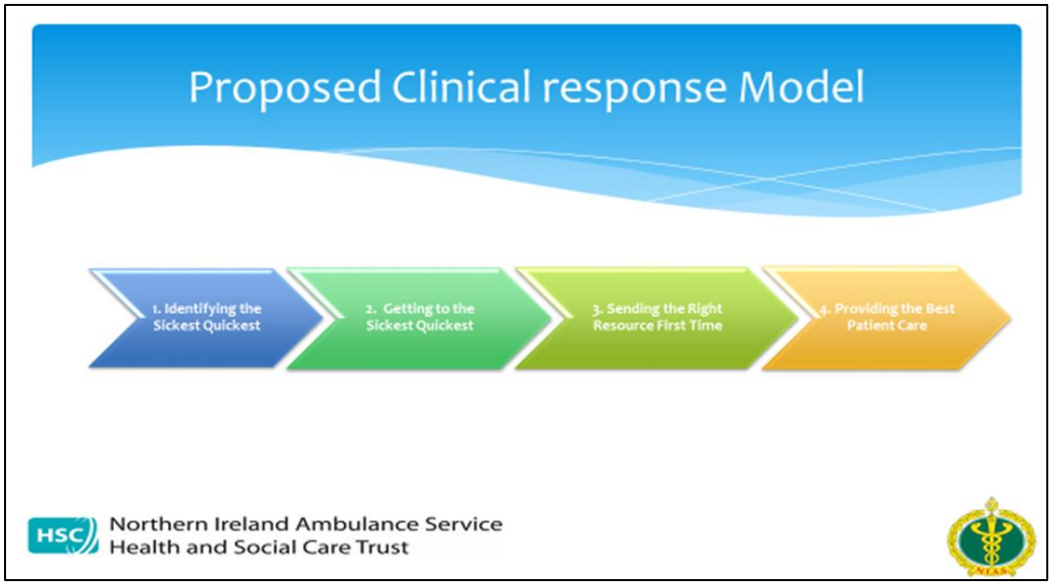
**Proposed New Categories**

| Call type | Category / code |
|---|---|
| 999 Immediately life threatening | Category 1 |
| 999 Emergency – potentially serious incidents | Category 2 |
| Urgent Problem | Category 3 |
| Less urgent problem | Category 4 |

Table 2: Proposed new Categories

4.7 The new categorisation of calls results in closer to 7% of our 999 patients being in potential or actual Immediately Life Threatening conditions rather than the 30% of our 999 patients we currently identify as such. This results in a reduction in the proportion of incidents requiring an 8-minute response from around 30% to around 7%, which will in turn release resources to improve our overall response to ALL our patients. The new model has four elements to it as presented in the schematic below. This section will explore what we propose in each element, how we will do it, and what the impact of the change will be.

## 5. PROPOSED CLINICAL RESPONSE MODEL




### 1. IDENTIFYING THE SICKEST QUICKEST

5.1 We propose to introduce an ***enhanced call taking process*** based on the Pre-Triage Sieve (PTS) and Nature of Call (NOC). When receiving 999 calls Ambulance Control staff will utilise these processes prior to opening the full triage software (AMPDS) to identify at the earliest opportunity those patients with an Immediately Life Threatening (ILT) condition i.e. Category 1 Patients.

***How will we do that?***

5.2 On receipt of a 999 call, we will first ask the caller "is the patient breathing and conscious?" If the answer is 'not breathing' or 'not conscious but with noisy breathing', we will immediately dispatch the nearest ambulance resource. This is known as the Pre-Triage Sieve (PTS). The ARP study has proven that by asking this question the Ambulance Call Taker can quickly identify most Category 1 patients.

5.3 After the PTS, process ambulance control will further establish other conditions known to be linked closely with Immediately Life Threatening conditions. Examples of these conditions include patients who are fitting, patients with serious maternity complications, patients involved in drowning or water incidents and patients involved in very serious road traffic collisions. This process is known as the Nature of Call. It further identifies serious conditions also grouped into Category 1 and we will immediately dispatch the nearest ambulance resource.

5.4 Ambulance control will then continue to establish further details about the patient utilising the full triage software (AMPDS). This will identify any remaining conditions that must be responded to as a Category 1 and triage the rest of the calls as Category 2, 3 and 4.

5.5 This enhanced call taking process will triage approximately 7% of our 999 patients as Category 1 compared to the 30% of our 999 patients currently put into that group.

***What does this mean?***

5.6 Evidence from England and Wales shows that PTS and NOC successfully identifies 75% of Category 1 patients facilitating the dispatch of a resource earlier than would previously have been the case. Modelling indicates that if NIAS operate PTS and NOC processes then the average time to activate an ambulance resource to Category 1 ILT patients will reduce by up to 41 seconds.

## 2. GETTING TO THE SICKEST QUICKEST

5.7 We propose to target our resources to Category 1 patients and provide the ***fastest possible response*** to these Category 1 patients with Immediately Life Threatening conditions.

### *How Will We Do That?*

5.8 Category 1 calls, which include Cardiac Arrest, are patients in the most need of rapid response and clinical interventions in order to improve their chance of survival. These incidents will receive a Paramedic-led response using a variety of resources where appropriate. It is often the case that these patients require to be managed by a team of responders. Ambulance resources will be drawn from, and may include, Paramedic Rapid Response or Paramedic led A&E Ambulance response. Support may be drawn from Co-Responders, Community First Responders, Intermediate Care Vehicles and Patient Care Service. NIAS will use the closest appropriate resource and back it up as required for this group of critical patients.

### *What Does This Mean?*

5.9 Earlier activation of ambulance resources to Category 1 incidents has the potential to realise significant benefits for patients. Research evidence shows that for each one minute reduction in response time, cardiac arrest survival increases by 24%. So, a 33 second reduction could potentially increase survival by 13% and a 41 second reduction could increase survival by 16%.[2]

5.10 Trials in England using this approach have resulted in a reduction in the rates of Multiple Ambulance Responses (MAR). In England this is measured as Resources per Incident (RPI). The aim in Category 1 calls is to send enough resources to provide best clinical care / outcome. The aim in all other calls is to send the one right response to the incident i.e. achieve an RPI of 1. This maintains the response to the most seriously ill patients, improves the response to other patients, and reduces long conveyance delays.

[2] O'Keefe C, Nicholl J, Turner J, Goodacre S. Role of ambulance response times in the survival of patients with out-of-hospital cardiac arrest. http://dx.doi.org/10.1136/emj.2009.086363

## 3. SENDING THE RIGHT RESOURCE, FIRST TIME

5.11 We propose to match appropriate ambulance resources to the needs of the patient. Category 1 calls are the most critical and demand a response based on the level of clinical intervention required. Calls in Categories 2, 3 and 4, whilst still urgent in nature do not require a similar response as Category 1.

5.12 NIAS currently sends higher levels of response to approximately 30% of emergency calls received. By utilising the enhanced Call Taking Process the critical calls will be more accurately identified as 7% of emergency calls. They will receive the highest level of response.

***How will we do that?***

5.13 The enhanced Call Taking Process identifies the sickest category of patients and it also triages all patients into the appropriate clinical category. NIAS can then match the resource to the patient based on their clinical triage.

5.14 The reduction in the percentage of calls classified in the highest category (30% to 7%) means that we would not be over-responding to the 23% who would now be clinically triaged into the other call categories. This frees up resources to respond effectively to Category 1 calls and to respond more appropriately to the other categories.

5.15 Not every patient needs to be taken to hospital. Not every patient needs immediate paramedic intervention. Ensuring that an ambulance is appropriately dispatched for a patient who needs to be taken to hospital – and not a paramedic in a car – will mean many of the patients whose condition is KNOWN to require specific clinical destinations will reach that definitive place of care quicker than they do at present.

***What does this mean?***

5.16 For example, for a patient with a suspected stroke the aim of our response will be to get the patient to a specifically identified centre of care i.e. a hospital with acute stroke services, within a specific time from onset of the symptoms. This 'pathway' is defined and agreed by the regional stroke services providers and NIAS collaborates to play its part.

5.17 In England during the ARP trials it was found that stroke patients were arriving in specialist centres sooner than under previous arrangements despite the initial ambulance response taking longer to arrive. This was a direct impact of sending the right conveying resource first time rather than a faster solo response (such as RRV paramedic) that was not appropriate to the patient's needs and would still require ambulance transport to hospital.

5.18 For a diabetic patient, unconscious due to low blood sugar, we may send a Paramedic Rapid Response Vehicle as these patients are often assessed and treated at scene without the need of being transported to the Emergency Department. In this way we will preserve conveying resources for those patients who need transportation.

5.19 Currently we send the nearest available ambulance resource when an emergency call is received and we have a resource to send. In the new model we will take a little additional time to ensure we know more about the patient's complaint / condition before sending the most appropriate resource. To take account of this it is proposed that future Ambulance Response Performance measures will be changed to take account of this new approach in line with the other Ambulance Services in the UK.

We propose that for those patients who require an ambulance response we will continue to aim to provide the best, most appropriate patient care.

***How will we do this?***

5.20 The change programmes in the rest of the UK have not found any new evidence to offer a definitive position about appropriate time based standards. In fact, it remains the case that the only condition that has ever been shown to benefit from an 8-minute response is cardiac arrest, which occurs in less than 1 in 100 ambulance calls. We are therefore continuing to make cardiac arrest and threatened cardiac arrest an absolute clinical priority in terms of speed of response and patient outcome. For other problems, we will take an approach that matches the patient's needs and distributes resources more appropriately across all patients who contact the ambulance service.

5.21 We propose to introduce a set of Ambulance Quality Indicators (AQIs) which will evidence the quality of our patient care across a range of clinical indicators. While speed of response is still an important consideration, and especially so for those patients in Category 1, it is vital that the clinical quality of the care we give is appropriate and effective for the patient. We have already begun some work to introduce Clinical Performance Indicators and Care Bundles in our service in preparation for this.

5.22 The quality of our care will be monitored for all categories of call. The best care for the patient is not always to attend the Emergency Department. Our Paramedics will determine whether the patient needs to attend hospital or can be referred to community-based services which can best meet their needs through use of Appropriate Care Pathways and/or transport to alternative destinations.

5.23 Care Bundles are sequences of caring activities that are recognised and prioritised for specific medical conditions e.g. stroke and diabetes. Appropriate care Pathways and/or alternative destinations are programmes that allow NIAS to direct patients to specialised services more suited to their condition. This provides a better more focused service to the patient and saves unnecessary and inappropriate attendance at Emergency Departments.

5.24 Other patients, who call the ambulance service, may not require an ambulance attendance at all. In those cases we will provide effective clinical telephone advice, where their condition or complaint can be managed through telephone advice or referral to an appropriate service without the need for the attendance of an ambulance. Provision of clinical telephone advice is a benefit of our newly established Paramedic-led Clinical Response Desk within the control environment

***What does this mean?***

5.25 NIAS will use a range of standards, measures and indicators to offer assurance that the new Clinical Response Model is operating effectively, safely and in the best interests of patients.

5.26 Clinical quality indicators will be developed to measure our performance across the range of services provided and this will be done in conjunction with medical professionals across the HSC.

## 6. HOW ARE WE PLANNING TO MAKE THE CHANGE?

Increase in hours of cover, matching supply with demand, and increase in frontline staffing levels.

*6.1* We plan to increase the total hours of Ambulance cover. We have modelled the impact of adopting the new clinical response model and taking account of predicted demand trends up to 2021/22. This modelling identifies the need to increase the number of ambulances by the order of 50%, which will require an uplift of approximately 300 frontline staff. With this emphasis of increasing patient transport capacity there will be less reliance on single paramedic rapid response cars which will be reduced by approximately 45.6%.

*6.2* It is important to be clear that this does not represent a cut in service provision. Where we reduce hours of cover provided by RRV, under this model, we will supplement those with additional A&E ambulance hours of cover and ensure that the nett result will be an overall increase in provision of ambulance cover.

## 7. WHAT WILL THIS MEAN FOR STAFF?

7.1 The previous sections have explained what the proposed changes mean for those who access our services. It is important that we also consider what they would mean for our staff.

7.2 As indicated, delivery of the model would require significant investment in the service and a related substantial increase in our frontline staffing figures. We consider this to be a very positive development for our workforce, who work very hard in a very challenging climate given current pressures.

7.3 The reduction of RRV hours would mean a re-profiling of RRV Paramedic shift patterns and would be managed largely through vacancy controls. It is possible that there could be an element of redeployment of Paramedic posts. If this were to be the case it would be managed through established processes in consultation with Trade Union colleagues. There is no potential for job losses associated with this proposal.

7.4 The Trust will give full consideration to any staff training needs associated with the proposed changes, should they be implemented and reflect this in Education, Learning and Development Plans.

## 8. WHAT WILL THIS MEAN FOR SERVICE USERS?

## SUMMARY – SECTION 75 AND RURALITY IMPACT ASSESSMENT

| **SUMMARY - Section 75 and Rurality Impact Assessment** | | |
|---|---|---|
| Data Summary | Impact Identified | Mitigation if required |
| ***GENDER***<br>Women are in a slight majority of the population and live longer than men. Ambulance use increases with age-related medical conditions. Men are less likely to attend a GP, or more likely to leave it too late, leading to greater likelihood of attending ED. Indicative figures for 2017/18 suggest that men account for a greater number of cardiac arrests.<br>***POLITICAL OPINION***<br>The geo-political spread of Northern Ireland's population based on political opinion is evidenced through Council, Assembly and Parliamentary electoral results. While NIAS services are changing, political opinion and its dispersal in Northern Ireland is not a factor in determining either the clinical need of patients or ambulance provision to them. Political opinion has no bearing on the introduction and implementation of CRM.<br>***COMMUNITY BACKGROUND/RELIGION***<br>According to the 2011 Census, the Protestant proportion of Northern Ireland's population is currently greater at older age groups. Demographic trends suggest the Catholic proportion of older age groups will be greater in time. Since age is a likely predictor of increased ambulance use and medical conditions, the introduction of CRM is likely to benefit all communities in Northern Ireland because it is based on clinical need.<br>***AGE***<br>Older age groups are increasing and people are living longer. Older age groups (55 and above) have a higher proportional use of ambulance | No adverse impact has been identified on any Section 75 grouping. The only personal criterion affecting the introduction of CRM is an individual's clinical need. CRM is designed to improve emergency ambulance provision, based on more effective response to clinical need – specifically cardiac arrests. The CRM proposals are being introduced alongside wider organisational improvements, to increase options such as appropriate care pathways for chronic conditions which do not require an immediate emergency ambulance response. | The CRM proposals are being introduced alongside wider organisational improvements. Since there is no adverse impact on any grouping based on Section 75 grouping, any wider organisational improvements will seek to further positively impact on the service provision to all citizens in Northern Ireland, for example, through a new NIAS estates strategy. |

| | | |
|---|---|---|
| services, a higher level of cardiac arrests, and higher levels of chronic ailments and disabilities. The CRM proposals will positively impact on this grouping because clinical need will be addressed more appropriately and effectively.<br>***ETHNICITY***<br>Northern Ireland is becoming more diverse. According to the 2011 Census, around 11% of the population was not born here. Key issues for ethnic minorities in engaging with the health service relate to communications and understanding. CRM will ensure that the clinical needs of patients are addressed more appropriately and effectively. Issues such as telephone translation services within health are provided through regional arrangements, and CRM will have no bearing on these.<br>***SEXUAL ORIENTATION***<br>Research shows that LGBT people can be more vulnerable to certain conditions, such as vulnerability to suicide or self-harm. CRM is designed to appropriately and effectively address clinical need, and the sexual orientation of any person is not a factor in the provision of ambulance services.<br>***MARITAL STATUS***<br>There is limited data to suggest any impacts would arise in relation the martial status of citizens. While older people living alone in rural areas may arguably require ambulance assistance more than those living with partners or family (for example, in terms of transport), CRM will ensure that clinical need is the basis for more appropriate and effective ambulance service provision.<br>***DEPENDENT STATUS***<br>The role of carers and/or parents/guardians is one that should be improved by CRM based on clinical need, particularly when carers themselves may also have a condition or disability. | | |

| | | |
|---|---|---|
| ***DISABILITY***<br>Disability, chronic conditions or long-term illness are increasingly more likely to affect older age groups. CRM should create positive improvements and impacts for those with disabilities, particularly when implemented with new Appropriate Care Pathways across the health sector in Northern Ireland.<br>***RURALITY***<br>67% of the population resides in urban or mixed urban/rural locations, with 33% residing in rural locations. Indicative figures for 2017/18 suggest that slightly higher disproportion of cardiac arrests may take place in urban areas than happen in rural areas. While the proposed new CRM may see urban residents in deprived areas with more chronic conditions waiting a bit longer for more appropriate clinical responses, CRM should see service-deprived rural areas getting a positive impact through better responses to life-critical emergency calls. | | |

## 9. HOW WE WILL MONITOR PERFORMANCE.

9.1 NIAS is committed to monitoring the impact of these proposals as they are implemented. We plan to introduce new standards and indicators to ensure efficiency, safety, equity and quality in how we provide our service.

9.2 We will use a range of standards, measures and indicators against this code set to offer assurance that the new CRM is operating effectively, safely and in the best interests of patients. The current and only standard / performance target for NIAS is; “72.5% of Cat A calls (potentially immediately life threatening) to be responded to within 8 minutes; 67.5% in each Local Commissioning Group area; with 95% of Cat A calls receiving a conveying resource within 21 minutes”.

9.3 Table 3 presents the proposed new standards NIAS will be expected to achieve. NIAS will achieve an average 8 minute response to Immediately Life Threatening calls, regionally.

9.4 A key change will be reporting on a mean response time of 8 minutes. Mean is representative of all ambulance responses, and provides an incentive to reduce long waits. We plan to introduce a 90$^{th}$ centile (9 out of 10) in 15 minutes, we feel is more readily understood by the public, and drives an improved response to more patients.

9.5 Overall we feel that these new indicators will be more easily understood and will provide a much improved and more equitable service for the population of NI.

## PROPOSED NEW STANDARDS

Change in how we will measure our service performance .

| Category | Statistic | Clock Stop | Target Time (minutes : seconds) |
|---|---|---|---|
| **1 Life threatening** | Mean | Response | 08:00 |
| | | Transport | 19:00 |
| | 90th centile | Response | 15:00 |
| | | Transport | 30:00 |
| **2 Emergency – potentially serious** | Mean | Response | 18:00 |
| | 90th centile | Transport | 40:00 |
| **3 Urgent problem** | 90th centile | Conveying Response | 120:00 |
| **4 (999 calls) Less urgent problem** | 90th centile | Conveying Response | 180:00 |

Table 3: Proposed new standards

9.6 In undertaking monitoring following implementation of the proposals, NIAS will give full consideration to the Equality Commission for Northern Ireland Section 75 Monitoring Guidance and devise related measures to ensure that ongoing impacts are regularly assessed against specific categories.

## 10. FULL EQUALITY IMPACT ASSESSMENT

| **SUMMARY OF IMPACTS - Section 75 Equality Impact Assessment, including Rurality** | | |
|---|---|---|
| Data Summary | Impact Identified | Mitigation if required |
| ***GENDER***<br>Women are in a slight majority of the population and live longer than men. Ambulance use increases with age-related medical conditions. Men are less likely to attend a GP, or more likely to leave it too late, leading to greater likelihood of attending ED. Indicative figures for 2017/18 suggest that men account for a greater number of cardiac arrests.<br>***POLITICAL OPINION***<br>The geo-political spread of Northern Ireland's population based on political opinion is evidenced through Council, Assembly and Parliamentary electoral results. While NIAS services are changing, political opinion and its dispersal in Northern Ireland is not a factor in determining either the clinical need of patients or ambulance provision to them. Political opinion has no bearing on the introduction and implementation of CRM.<br>***COMMUNITY BACKGROUND/RELIGION***<br>According to the 2011 Census, the Protestant proportion of Northern Ireland's population is currently greater at older age groups. Demographic trends suggest the Catholic proportion of older age groups will be greater in time. Since age is a likely predictor of increased ambulance use and medical conditions, the introduction of CRM is likely to benefit all communities in Northern Ireland because it is based on clinical need. | No adverse impact has been identified on any Section 75 grouping. The only personal criterion affecting the introduction of CRM is an individual's clinical need. CRM is designed to improve emergency ambulance provision, based on more effective response to clinical need – specifically cardiac arrests. The CRM proposals are being introduced alongside wider organisational improvements, to increase options such as appropriate care pathways for chronic conditions which do not require an immediate emergency ambulance response. | The CRM proposals are being introduced alongside wider organisational improvements. Since there is no adverse impact on any grouping based on Section 75 grouping, any wider organisational improvements will seek to further positively impact on the service provision to all citizens in Northern Ireland, for example, through a new NIAS estates strategy. |

| | | |
|---|---|---|
| ***AGE***<br>Older age groups are increasing and people are living longer. Older age groups (55 and above) have a higher proportional use of ambulance services, a higher level of cardiac arrests, and higher levels of chronic ailments and disabilities. The CRM proposals will positively impact on this grouping because clinical need will be addressed more appropriately and effectively.<br>***ETHNICITY***<br>Northern Ireland is becoming more diverse. According to the 2011 Census, around 11% of the population was not born here. Key issues for ethnic minorities in engaging with the health service relate to communications and understanding. CRM will ensure that the clinical needs of patients are addressed more appropriately and effectively. Issues such as telephone translation services within health are provided through regional arrangements, and CRM will have no bearing on these.<br>***SEXUAL ORIENTATION***<br>Research shows that LGBT people can be more vulnerable to certain conditions, such as vulnerability to suicide or self-harm. CRM is designed to appropriately and effectively address clinical need, and the sexual orientation of any person is not a factor in the provision of ambulance services.<br>***MARITAL STATUS***<br>There is limited data to suggest any impacts would arise in relation the martial status of citizens. While older people living alone in rural areas may arguably require ambulance assistance more than those living with partners or family (for example, in terms of transport), CRM will ensure that clinical need is the basis for more appropriate and effective ambulance service provision. | | |

| | | |
|---|---|---|
| ***DEPENDENT STATUS***<br>The role of carers and/or parents/guardians is one that should be improved by CRM based on clinical need, particularly when carers themselves may also have a condition or disability.<br>***DISABILITY***<br>Disability, chronic conditions or long-term illness are increasingly more likely to affect older age groups. CRM should create positive improvements and impacts for those with disabilities, particularly when implemented with new Appropriate Care Pathways across the health sector in Northern Ireland.<br>***RURALITY***<br>67% of the population resides in urban or mixed urban/rural locations, with 33% residing in rural locations. Indicative figures for 2017/18 suggest that slightly higher disproportion of cardiac arrests may take place in urban areas than happen in rural areas. While the proposed new CRM may see urban residents in deprived areas with more chronic conditions waiting a bit longer for more appropriate clinical responses, CRM should see service-deprived rural areas getting a positive impact through better responses to life-critical emergency calls. | | |

## WHAT INFORMATION DID WE CONSIDER TO CONDUCT OUR EQIA?

10.1 Anonymised data about service users and incidents for the period 2017/2018 has been analysed to show trends in the characteristics of those who have used the service[3]. However, as the pool of potential service users is comprised of the entire population it is necessary to consider their needs and how this proposal could impact different groups.

[3] A Data Protection Impact Assessment was undertaken prior to preparing this report in line with GDPR and NIAS policy.

10.2 Equitable healthcare has been defined as: "*care that does not vary in quality because of personal characteristics, such as gender, ethnicity, geographical location and socio-economic status".* (Szczepura, 2005)

**Geographic Analysis**

10.3 In the period FY17/18, 220,090 emergency calls were made to NIAS, of which 201,508 received a response to the scene of the incident. The equivalent of just over 10% of the population required a response to the scene of an incident in the period.

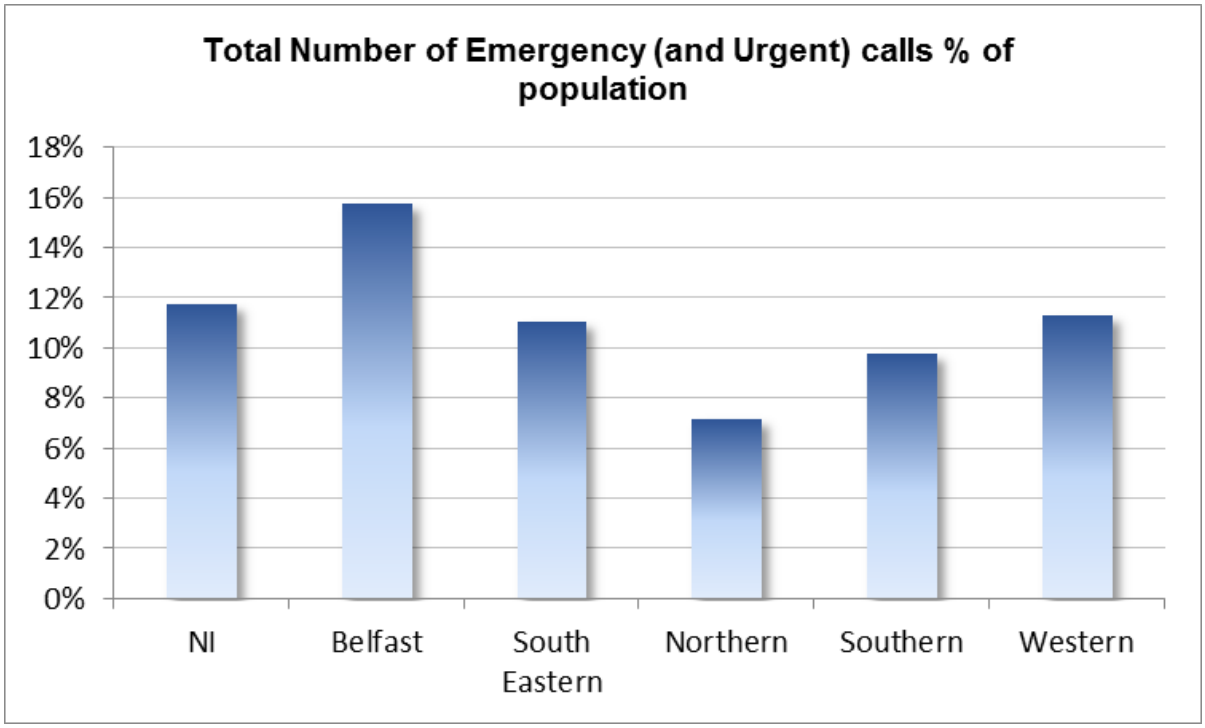



Figure 1 - Emergency and Urgent calls as % of resident population by NI HSC Trust

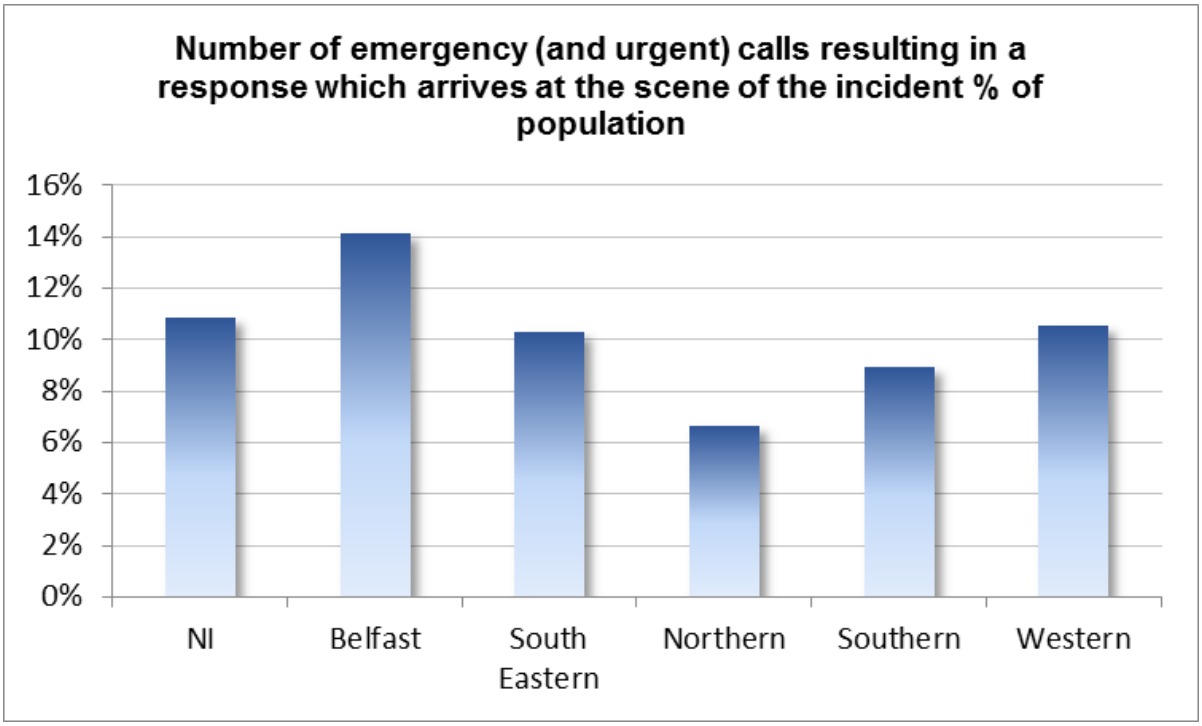



Figure 2 - Emergency and urgent calls resulting in a response to the scene of the incident as a percentage of the resident population by NI HSC Trust

10.4 Demand as a proportion of the population is highest in Belfast Local Commissioning Group (LCG) at 15.8% and lowest in Northern LCG (7.2%) with the regional average being 11.8%. It is unclear why there is such variation in demand, but the higher rate in Belfast is likely due to the transient population of those who work, study and/or socialise in Belfast LCG but do not reside there. In addition, the population of the Greater Belfast area, as designated in the Belfast Metropolitan Area Plan (encompassing the areas of Belfast, Lisburn, Carrick, Castlereagh, Newtownabbey and North Down) is approximately 670,000, around 37% of Northern Ireland's population. Census figures from 2011 put the commuting population into Belfast Local Government District (LGD), who normally reside in other LGD areas, at just over 92,000. LGDs do not align directly to Health and Social Care Trusts (HSCT), so these figures are simply an indication of increased population that may account for the higher demand. Tables 3 and 4 below show how factoring this population increase brings each trust closer to the regional figures.

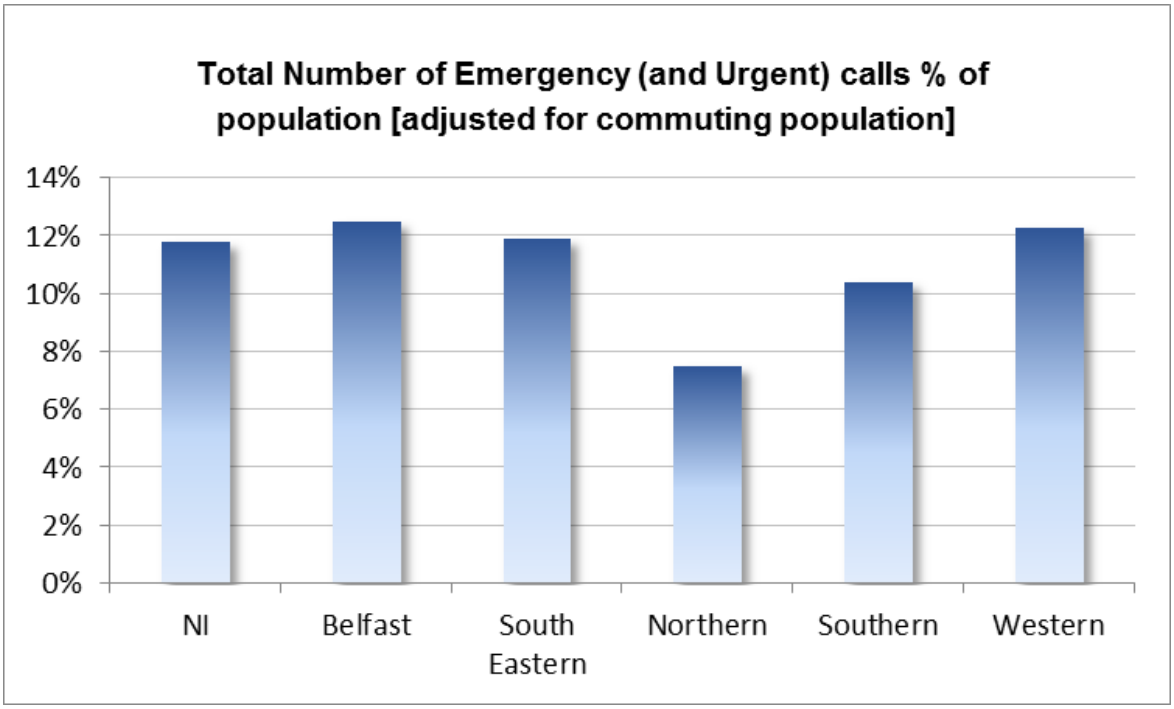



Figure 3 - Emergency and urgent calls as percentage of population adjusted for commuting figures

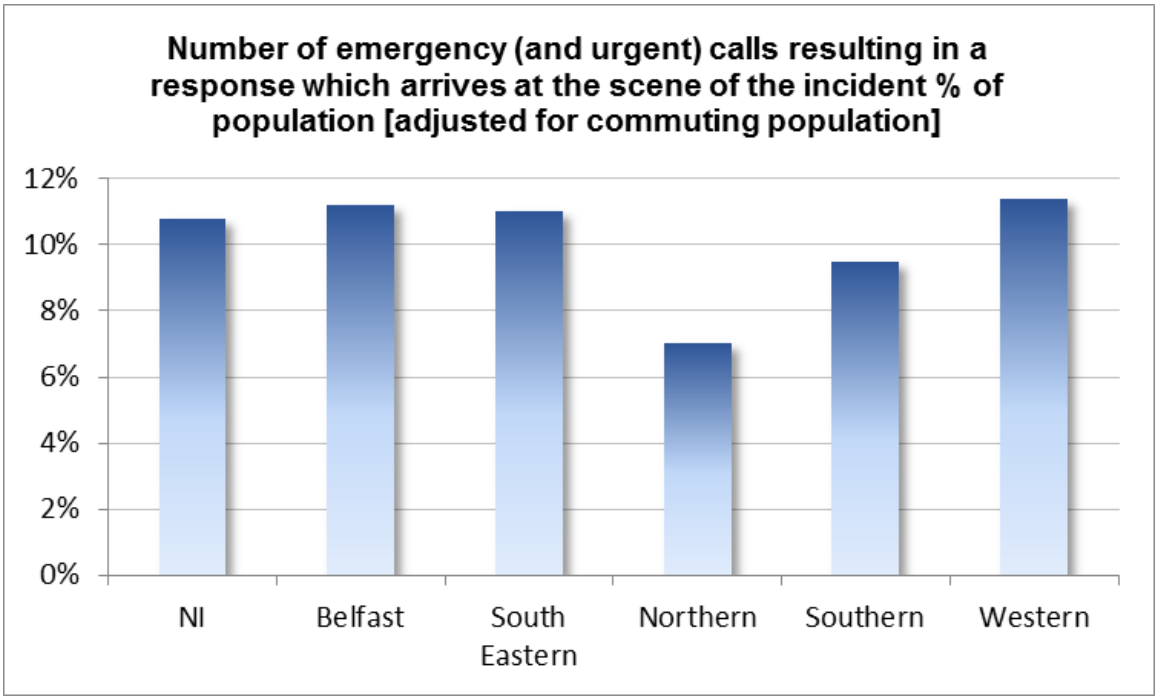



Figure 4 - Emergency and urgent calls resulting in a response to the scene of the incident as a percentage of the population adjusted for commuting figures

10.5 Of the 220,090 emergency calls, c. 29% are categorised as Category A, potentially Immediately Life Threatening (ILT) calls in Northern Ireland. This proportion remains fairly constant across all regions despite the differences in demand. This indicates that the current triage method for

identifying patients whose Chief Complaint/Symptom group falls within the highest priority category is consistent.

10.6 The table below shows the classifications all of Emergency and Urgent calls for 2017/2018.

| | A | B | C | Cat C HCP |
|---|---|---|---|---|
| Apr, 2017 | 28.6% | 44.7% | 8.0% | 18.7% |
| May, 2017 | 27.7% | 44.9% | 8.0% | 19.3% |
| Jun, 2017 | 28.4% | 44.0% | 8.4% | 19.3% |
| Jul, 2017 | 27.5% | 45.9% | 8.7% | 18.0% |
| Aug, 2017 | 27.9% | 45.9% | 8.3% | 17.8% |
| Sep, 2017 | 27.9% | 45.4% | 8.5% | 18.2% |
| Oct, 2017 | 29.4% | 44.4% | 7.4% | 18.7% |
| Nov, 2017 | 28.0% | 45.2% | 7.6% | 19.1% |
| Dec, 2017 | 30.0% | 45.3% | 6.9% | 17.8% |
| Jan, 2018 | 30.4% | 44.1% | 6.1% | 19.3% |
| Feb, 2018 | 29.2% | 45.7% | 6.4% | 18.7% |
| Mar, 2018 | 29.7% | 45.3% | 7.0% | 18.0% |
| **Total for year 17/18** | **28.8%** | **45.1%** | **7.6%** | **18.6%** |

Table 1: Categories of all Emergency and Urgent

10.7 The number of calls NIAS categorises as the highest priority (A) is very high. Under the current model we are not effectively identifying the sickest patients who most require a speedy response.

10.8 There is a slight increase in winter months in Cat A calls, but the percentage of calls being allocated into the 4 categories remains quite consistent.

10.9 There is little variation between coding of calls as Cat A between different HSCTs. It is noted that Belfast and Northern HSCT have a higher percentage of Healthcare Professional Cat. C calls compared to the other 3 Trusts. Healthcare Professional calls can originate from hospitals, nursing and residential homes and GPs, including Out of Hours GPs.

| | A | B | C | Cat C HCP |
|---|---|---|---|---|
| Belfast HSCT | 28.9% | 43.3% | 7.2% | 20.6% |
| Northern HSCT | 27.4% | 44.4% | 6.9% | 21.2% |
| South Eastern HSCT | 28.9% | 45.0% | 8.3% | 17.9% |
| Southern HSCT | 29.4% | 46.7% | 8.0% | 15.9% |
| Western HSCT | 29.8% | 47.5% | 7.9% | 14.7% |

Table 2: Proportion of Emergency and Urgent calls in each category by HSCT, 2017/2018

10.10 It is unclear why this disparity exists. Further research would be required to understand this. There are a number of possible factors influencing the data that would need to be considered:

- high volume of hospital transfers in Belfast;
- Northern HSCT has the largest population of people in nursing places in nursing and residential homes;
- GPs in Northern have the highest number of registered patients;
- Downgrading and escalation of calls from HCP;
- GP out-of-hours usage associated with Northern Trust.

10.11 Cat C HCP calls comprise c.19% of all emergency and urgent calls.

| | 0-15 yrs | 16-29 yrs | 30-44 yrs | 45-59 yrs | 60-74 yrs | 75 and older | Age Not Specified | Total |
|---|---|---|---|---|---|---|---|---|
| **Cat C HCP Calls** | 453 | 1382 | 2137 | 4586 | 8646 | 23383 | 290 | **40877** |
| **% of Cat C HCP calls by age group** | 1.10% | 3.40% | 5.20% | 11.20% | 21.20% | 57.20% | 0.70% | |
| **Cat C HCP Calls per 1000 population in each age group** | 1 | 4 | 6 | 13 | 36 | 198 | N/A | |

Table 3: Cat C HCP calls 2017/2018 by age

10.12 One of the key considerations about measuring potential impacts is that the relevant data can only be indicative. Substantive real-time data of the actual impact of the proposed new Clinical Response Model will only be available after it becomes activated. At that point, Advanced Medical Priority Dispatch System (AMPDS) codes will be allocated to the new

categories and dispatch protocols under the design of new proposed model. The number and proportion of calls within each category could then be analysed, and that data could be modelled for response times and clinical outcomes. This recognition of data gaps helps explain why NIAS intends to do a further focused consultation on the results of this document and ensure a continuous monitoring process.

| | A | B | C | Cat C HCP |
|---|---|---|---|---|
| URBAN | 28.6% | 44.9% | 7.6% | 18.9% |
| RURAL | 29.0% | 45.0% | 7.7% | 18.3% |

Table 4: Emergency and Urgent call categories by rural:urban 2017/2018

10.13 There are generally no differences in call allocation between urban and rural locations in general[4].

10.14 67% of the population resides in urban or mixed urban/rural locations, with 33% residing in rural locations. The charts below show the population distribution by gender and 15 year age groups in urban and rural areas.

[4] It should be noted that a small number of calls, 1960, were not included in this table as the geographical origin of the call could not be ascertained.

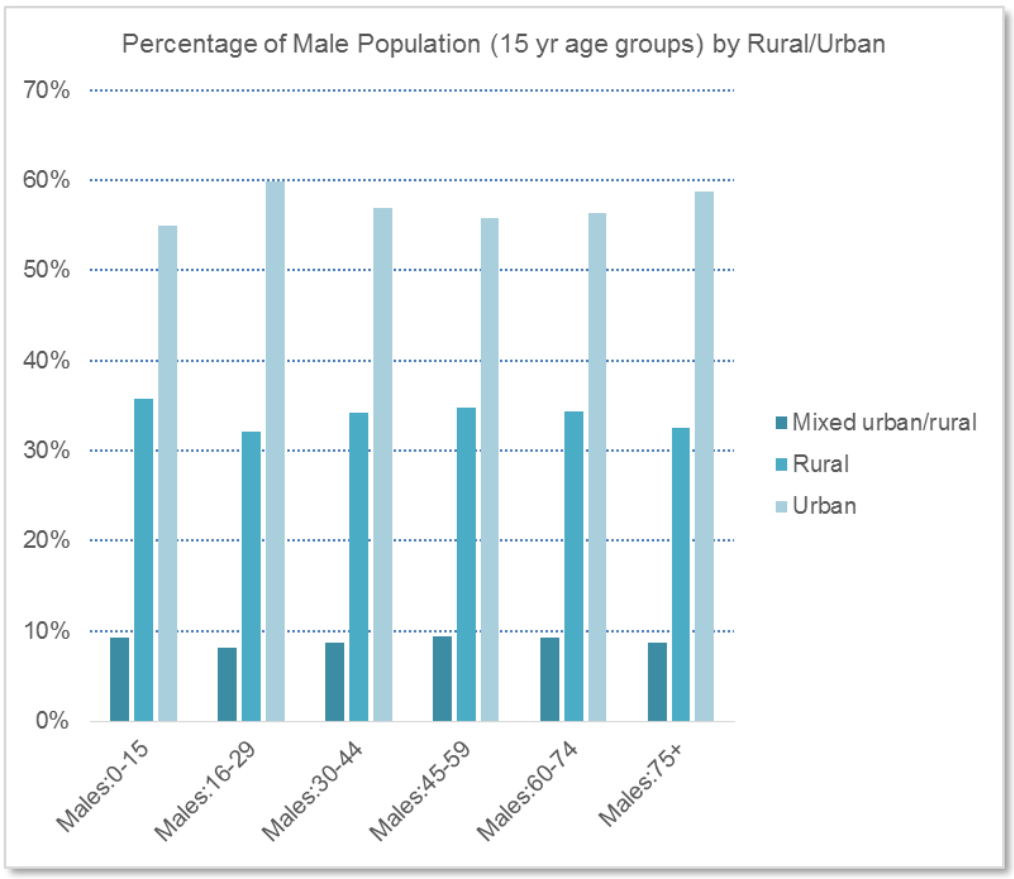



Figure 5: Distribution of male population by age groups and rural:urban (Census 2011)

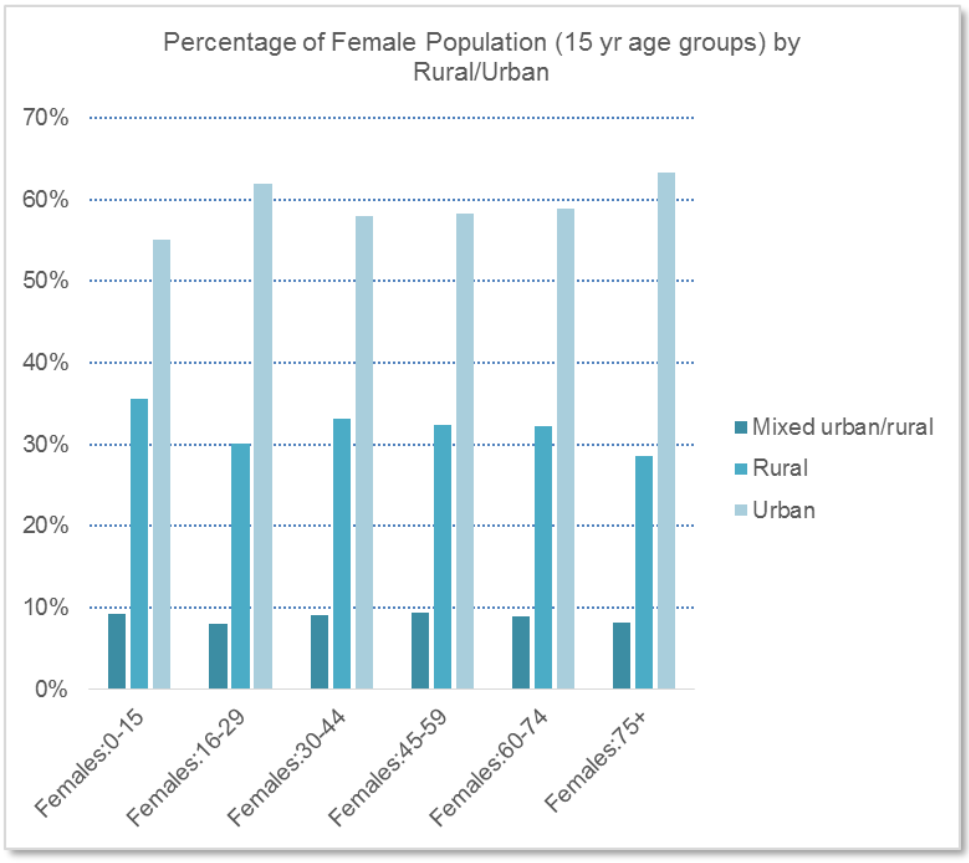



Figure 6: Distribution of female population by age groups and rural:urban (Census 2011)

10.15 All emergency and urgent calls and calls with a response to the scene of the incident are shown below by location in terms or urban or rural.

| | Emergency and Urgent Calls | | Calls with a Response to Scene | | Usually resident Population | |
|---|---|---|---|---|---|---|
| RURAL | 53885 | 24.7% | 50674 | 25.1% | 602918 | 33.3% |
| URBAN | 164245 | 75.3% | 150834 | 74.9% | 1207945 | 66.7% |

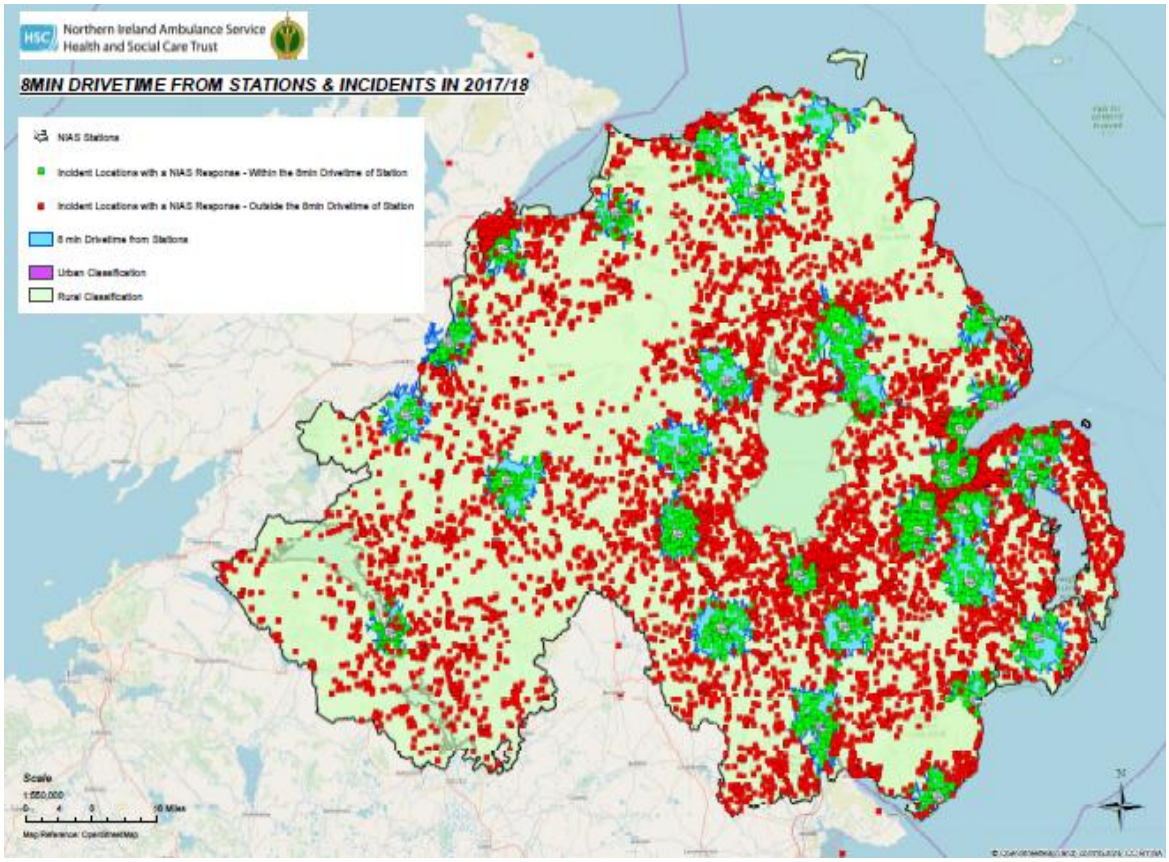
Table 5: all emergency and urgent calls by rural:urban (NIAS 2017/2018)

10.16 The overall demand in relation to the usually resident population is lower in rural areas. This is likely due to a number of factors including: increased 'commuting' populations into urban locations for work, studying and socialising; location of GP practices and hospitals; higher traffic volumes in and around urban centres.

| | Cat A Calls | | Cat A Calls with a Response to Scene | | Usually resident Population | |
|---|---|---|---|---|---|---|
| RURAL | 15612 | 25.0% | 14835 | 25.3% | 602918 | 33.3% |
| URBAN | 46914 | 75.0% | 43820 | 74.7% | 1207945 | 66.7% |

Table 6: Category A calls by rural:urban

10.17 Exact locations of each call with a response to the scene of the incident are shown on the map below in relation to a standard 8 minute drive time from ambulance stations. Approximately 68% of category A calls that had a response to the scene of the incident occurred within these drivetime areas. Actual response times to these incidents have not been included in this analysis and it should be remembered that resources are not always deployed from ambulance stations.




Map 1: Location of all Emergency and Urgent calls that received a response 2017/2018 overlaid on rural:urban and showing 8minute drivetime from stations.

10.18 As can be seen, there are remote rural areas outside the drivetime areas; there are also locations in urban areas outside of the drivetime radius.

10.19 Discussion of the potential impact of CRM on the geographical location of incidents could also be informed by reviewing the location of those incidents that would meet the criteria for new Category 1 calls; the response time achieved, and related clinical outcomes. Once again, however, this additional data could potentially be modelled and considered in the context of a further consultation process to inform a final proposal on the practical design for the new model.

10.20 The Multiple Deprivation Measure Indices 2017 statistics issued by the Northern Ireland Statistical Research Agency (NISRA) demonstrate a persistently high correlation between levels of ill-health within localities of high socio-economic deprivation. These localities are predominantly worst off within more densely populated urban areas that fall within the existing

drive-time radius. Levels of equitable access to public services are lower in more rural areas. While the proposed new Clinical Response Model may have an impact on urban residents in deprived areas waiting a bit longer for a more appropriate response to emergency calls associated with chronic long-term conditions, the more appropriate deployment of ambulance resources should have a beneficial impact in responding better to life-critical emergency calls within service-deprived rural areas.

10.21 The NI Health Inequalities Annual Report 2018 found that fire and ambulance response times continued to remain higher in rural areas. The notable change in Rural-NI gaps was the decrease of the gap in ambulance response from 84% in 2013 to 52% in 2017.

**Population and Service User Analysis**

10.22 Data has been gleaned from Census 2011 and other open sources about the characteristics of the usually resident population of the area served by NIAS. Analysis of the resident population has been conducted considering the Section 75 characteristics in isolation. However, making generalisations on health status (that could be associated with increased use of NIAS HSCT services) based on a single characteristic and that does not account for other factors incorrectly assumes homogeneity among people who share a particular characteristic. While each of the nine categories is given regard, multiple identities and other factors influencing health inequalities are also considered.

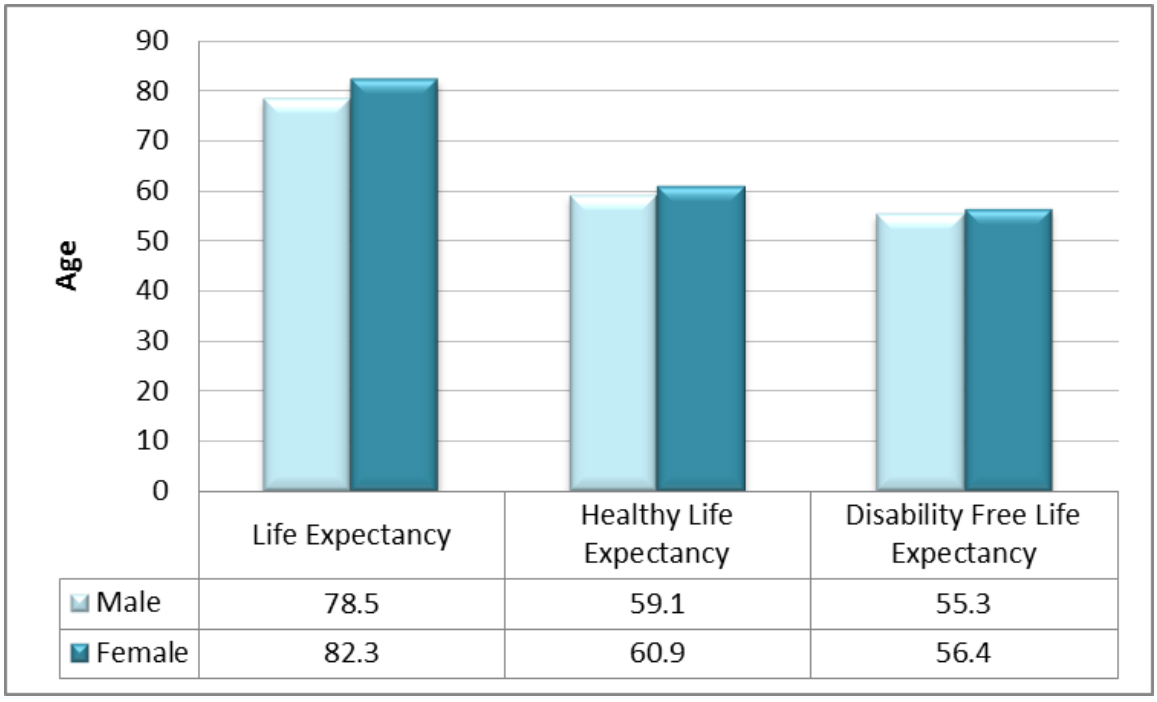
10.23 High use of emergency ambulance services by a particular group does not equate to their being a potential adverse impact from the clinical response model, but does provide an awareness of vulnerable groups that use NIAS and consideration can be given to ensure equitable access and treatment.

10.24 Healthcare services, including ambulance services are shared cross-border, so the potential population of service users does extend beyond the population of Northern Ireland. However, the number of emergency responses NIAS provides to assist the National Ambulance Service is low in comparison to overall demand. (101 calls in 2016; 67 in 2017).

10.25 In addition, NIAS has a memorandum of understanding with the Scottish Ambulance Service providing mutual assistance between emergency control rooms. Coding for calls from Scotland is conducted in exactly the same manner as with local calls.

**Gender Identity**

10.26 Historically there have been gender gaps between life expectancy, healthy life expectancy and disability-free life expectancy. However, the most recent Department of Health, Health Inequalities Annual Report (Bell et al. 2018) shows the gender gap has declined in recent years in all three categories with both males and females in Northern Ireland having similar expectation of healthy and disability-free life. The report shows that the differential factor in these categories is deprivation, where persons in the most deprived areas are more likely to have lower life expectancy, lower healthy life expectancy and lower disability-free life expectancy.




| | Life Expectancy | Healthy Life Expectancy | Disability Free Life Expectancy |
|---|---|---|---|
| Male | 78.5 | 59.1 | 55.3 |
| Female | 82.3 | 60.9 | 56.4 |

Figure 7 Average age by gender for life expectancy, healthy life expectancy and disability-free life expectancy in NI in 2014-2016 (source HSCIMS report).

10.27 It should be noted that while the gender gap has diminished in all three categories, only life expectancy has improved for both genders. Since 2010-2012, healthy life expectancy for women has decreased by 1.1% while for men it has increased by 1%, so outcomes for women have

slightly worsened, while for men there has been a slight improvement. Disability-free life expectancy has reduced for both genders since 2010-2012, from 60.4 years for men and 61.2 years for women, an 8.6% and 7.8% decrease respectively.

10.28 An analysis of the census 2011 data on those who report having a long-term illness or disability that has a limiting effect on their daily activities shows some significant gender differences in the older population.

| | Male | | | Female | | |
|---|---|---|---|---|---|---|
| Age group | Total | Limiting long-term illness or disability | No limiting long term illness or disability | Total | Limiting long-term illness or disability | No limiting long term illness or disability |
| Under 16 | 194,392 | 12,694 | 181,698 | 184,931 | 7,330 | 177,601 |
| 16-29 | 176,584 | 13,274 | 163,310 | 175,149 | 11,663 | 163,486 |
| 30-44 | 182,900 | 22,795 | 160,105 | 191,047 | 25,571 | 165,476 |
| 45-59 | 172,629 | 41,613 | 131,016 | 175,221 | 46,172 | 129,049 |
| 60-74 | 115,256 | 50,797 | 64,459 | 124,634 | 56,261 | 68,373 |
| 75 and older | 45,562 | 31,390 | 14,172 | 72,558 | 55,086 | 17,472 |
| All Age groups | 887,323 | 172,563 | 714,760 | 923,450 | 202,083 | 721,457 |

Table 7 People reporting having a limiting long-term illness or disability by age and gender

10.29 Long-term ill health and/or disability can be a predictor of a person's need for emergency or unplanned care. This may involve a higher incidence of usage of ambulance services. This is borne out in many studies examining characteristics of those who use emergency services, both pre-hospital and A&E attendances.

10.30 Across all age groups and genders, 20% of the population reported a long-term health problem or disability that limits their daily activities to some degree. This varies dramatically with age, rising to 73% of the population aged over 75. For the population under the age of 60 there is no significant gender difference in the proportion of people reporting.

However, in the over 60 population, women are 20% more likely than men to have long-term ill-health or disability that limits daily activities to some degree.

10.31 It is difficult to assess risk by gender in relation to trauma or injury, as the mechanisms by which trauma or injury are sustained are wide-ranging. Injury as a result of road traffic collisions is one of the few mechanisms that have reliable figures available.

10.32 PSNI figures on fatalities and injuries in RTCs in 2017-2018 show that men accounted for 80% of fatalities and 65% of serious injuries. Records of slight injuries as a result of RTC are roughly 50:50 between male and female. Looking at previous years this has been a consistent trend. Other mechanisms of trauma are difficult to quantify in relation to risk differentials based on gender. Some studies (Grazier 2008) conclude that men are more likely than women to be in occupations that carry a higher risk of injury. Not all injuries will result in a call for an ambulance or even attendance at A&E.

10.33 Some medical conditions are particular to one or other gender, or may present symptomatically different between men and women. As outlined earlier NIAS, like many ambulance services in the UK and internationally, uses the prioritisation system AMPDS. This is a clinical model that accounts for a variety of risk factors in presentation of illness, pain and injury. The protocols and the risk factors relating to gender and other personal characteristics are based on research and are updated based on new evidence via the International Academies of Emergency Dispatch.

10.34 A number of studies examining individual characteristics that may predict use of emergency care, whether by attendance at A&E or by use of ambulances, did not find gender to be a significant factor. (Lowthian, Cameron et al, 2011; Victor et al, 1999; Lowthian, Jolley et al, 2011; Rucke et al 1997). One study by Squire (2010) did not even examine gender differences, while Clarke's 1999 study found that males were higher users of ambulance and emergency services than females. McConnel and Wilson's 1998 study found the opposite, with women

slightly more likely to use emergency services and transport but less likely to need them for life-threatening conditions.

10.35 Data on the use of prehospital emergency care by trans and gender non-conforming people is lacking. The number of trans and gender non-conforming people in the population is unknown. Researchers often rely on prevalence of people presenting to GPs with a gender identity issue, e.g. to explore transition or to seek treatment for mental health issues such as depression that gender dysphoria can contribute to, as a way of estimating the number of trans people in a population. In a study undertaken on behalf of GIRES, it is estimated that up to 20 in 100,000 people (c. 36,000 people in NI) have a degree of gender variance (Reed 2009). There is significant stress associated with being gender variant that can result in mental ill-health, with 34% of transgender adults reporting at least one suicide attempt in a survey for the Cabinet Office. A report by the Institute of Conflict Research also found that some trans people have faced inappropriate and discriminatory behaviour from healthcare professionals in Northern Ireland. Issues of particular note were use of inappropriate pronouns and using old names in front of others.

**Service Users**

10.36 The tables below show the male/female gender of service users by category of call and category of call with a response to the scene of the incident.

10.37 A small number of calls (3.9% of all emergency and urgent calls to EAC) were excluded from the analysis where gender had not been recorded.

| All Ages | | | | | |
|---|---|---|---|---|---|
| Calls to NIAS EAC | Female | Female (% of calls) | Male | Male (% of calls) | Total |
| All Emergency & Urgent Calls | 106655 | 50.4% | 104947 | 49.6% | 211602.00 |
| Cat A | 28866 | 48.1% | 31168 | 51.9% | 60034.00 |
| Cat B | 47138 | 50.1% | 46997 | 49.9% | 94135.00 |
| Cat C | 8243 | 49.7% | 8349 | 50.3% | 16592.00 |
| Cat C HCP | 22408 | 54.9% | 18433 | 45.1% | 40841.00 |
| **Under 60** | | | | | |
| Calls to NIAS EAC | Female | Female (% of calls) | Male | Male (% of calls) | Total |
| All Emergency & Urgent Calls | 42722 | 46.9% | 48448 | 53.1% | 91170.00 |
| Cat A | 13186 | 46.2% | 15352 | 53.8% | 28538.00 |
| Cat B | 21662 | 47.0% | 24472 | 53.0% | 46134.00 |
| Cat C | 3659 | 46.1% | 4285 | 53.9% | 7944.00 |
| Cat C HCP | 4215 | 49.3% | 4339 | 50.7% | 8554.00 |
| **Over 60** | | | | | |
| Calls to NIAS EAC | Female | Female (% of calls) | Male | Male (% of calls) | Total |
| All Emergency & Urgent Calls | 61419 | 53.9% | 52439 | 46.1% | 113858 |
| Cat A | 15214 | 50.7% | 14775 | 49.3% | 29989 |
| Cat B | 23735 | 54.4% | 19925 | 45.6% | 43660 |
| Cat C | 4394 | 53.6% | 3798 | 46.4% | 8192 |
| Cat C HCP | 18076 | 56.5% | 13941 | 43.5% | 32017 |

Table 8: Volume of emergency and Urgent calls by code allocated and gender (where gender was recorded) 2017/2018

| All Ages | | | | | |
|---|---|---|---|---|---|
| Calls with Response to the incident | Female | Female (% of incidents) | Male | Male (% of incidents) | Total |
| All Emergency & Urgent Calls | 100616 | 50.8% | 97638 | 49.2% | 198254.00 |
| Cat A | 28053 | 48.3% | 29984 | 51.7% | 58037.00 |
| Cat B | 44870 | 50.5% | 43988 | 49.5% | 88858.00 |
| Cat C | 6696 | 50.6% | 6529 | 49.4% | 13225.00 |
| Cat C HCP | 20997 | 55.1% | 17137 | 44.9% | 38134.00 |
| **Under 60** | | | | | |
| Calls with Response to the incident | Female | Female (% of incidents) | Male | Male (% of incidents) | Total |
| All Emergency & Urgent Calls | 39234 | 47.2% | 43803 | 52.8% | 83037.00 |
| Cat A | 12633 | 46.5% | 14523 | 53.5% | 27156.00 |
| Cat B | 20068 | 47.4% | 22309 | 52.6% | 42377.00 |
| Cat C | 2750 | 47.0% | 3098 | 53.0% | 5848.00 |
| Cat C HCP | 3783 | 49.4% | 3873 | 50.6% | 7656.00 |
| **Over 60** | | | | | |
| Calls with Response to the incident | Female | Female (% of incidents) | Male | Male (% of incidents) | Total |
| All Emergency & Urgent Calls | 59161 | 54.1% | 50292 | 45.9% | 109453 |
| Cat A | 14995 | 50.8% | 14516 | 49.2% | 29511 |
| Cat B | 23256 | 54.5% | 19439 | 45.5% | 42695 |
| Cat C | 3798 | 54.2% | 3210 | 45.8% | 7008 |
| Cat C HCP | 17112 | 56.6% | 13127 | 43.4% | 30239 |

Table 9: Emergency and Urgent calls with a response to the scene of an incident by code allocated and gender (where gender was recorded) 2017/18

10.38 All calls, across all ages show an even distribution between the genders in line with the NI population. Males have a slightly higher use of NIAS emergency services than females under 60, women use the services slightly more in the over 60 group, but both are in a proportion consistent with the population in these age groups. (Men make up 45% of the over 60 population). The exception to this is that calls from males over 60 show a disproportionately higher rate of Cat A codes but not to a statistically significant level.

**Sexual Orientation**

10.39 The sexual orientation of service users is not routinely gathered and the 2011 Census did not gather data on sexual orientation. A report commissioned by the Office of the First Minister and Deputy First Minister

suggested that: “it is feasible to operate on the assumption that a certain proportion of the population (up to 10%) is LGBT (lesbian, gay, bisexual, and transgender), and to formulate policies accordingly.” An estimated 10% of the NI population is 181,086.

10.40 Research shows that LGB&/T people are particularly vulnerable to developing mental health problems due to societal and familial stressors. This community can be more likely to self-harm, feel suicidal, experience depression, misuse alcohol/drugs, suffer from anxiety or develop problems with food.

10.41 The Rainbow Project’s 2013 report, “Through our Minds”, found that 12.6% of their respondents had attended hospital after deliberately self-harming. This is disproportionately high compared with the 0.5% of the population as a whole. The report also demonstrated that the LGBT community are much more vulnerable to suicide attempts, with almost a quarter of respondents having attempted suicide compared to the general population of 5%.

## Marital Status

| HSCT | All usual residents: Aged 16+ years | Single (never married or never registered a same-sex civil partnership): Aged 16+ years | Single (never married or never registered a same-sex civil partnership): Aged 16+ years % | Married or in a registered same-sex civil partnership: Aged 16+ years | Married or in a registered same-sex civil partnership: Aged 16+ years % | Separated (but still legally married or still legally in a same-sex civil partnership): Aged 16+ years | Separated (but still legally married or still legally in a same-sex civil partnership): Aged 16+ years % | Divorced or formerly in a same-sex civil partnership which is now legally dissolved: Aged 16+ years | Divorced or formerly in a same-sex civil partnership which is now legally dissolved: Aged 16+ years % | Widowed or surviving partner from a same-sex civil partnership: Aged 16+ years | Widowed or surviving partner from a same-sex civil partnership: Aged 16+ years % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Belfast** | 283079 | 123572 | 43.7% | 106796 | 37.7% | 14029 | 5.0% | 17296 | 6.1% | 21386 | 7.6% |
| **Northern** | 366872 | 122083 | 33.3% | 187157 | 51.0% | 13220 | 3.6% | 19742 | 5.4% | 24670 | 6.7% |
| **South Eastern** | 275606 | 87369 | 31.7% | 142590 | 51.7% | 10185 | 3.7% | 16577 | 6.0% | 18885 | 6.9% |
| **Southern** | 276654 | 96812 | 35.0% | 138987 | 50.2% | 9799 | 3.5% | 13396 | 4.8% | 17660 | 6.4% |
| **Western** | 229329 | 87557 | 38.2% | 106544 | 46.5% | 9678 | 4.2% | 11063 | 4.8% | 14487 | 6.3% |
| **Northern Ireland** | 1431540 | 517393 | 36.1% | 682074 | 47.6% | 56911 | 4.0% | 78074 | 5.5% | 97088 | 6.8% |

Table 10: Marital Status of population (over 16 yrs) by Health & Social Care Trust (NISRA Census 2011)

| Age group | Total | Single (never married or never registered a same-sex civil partnership) | Married or In a registered same-sex civil partnership | Separated (but still legally married or still legally in a same-sex civil partnership) | Divorced or formerly in a same-sex civil partnership which is now legally dissolved | Widowed or surviving partner from a same-sex civil partnership |
|---|---|---|---|---|---|---|
| | | | **Population** | | | |
| **16-29 yrs** | 351733 | 315985 | 32149 | 2425 | 840 | 334 |
| **30-44 yrs** | 373947 | 123624 | 209086 | 21524 | 17990 | 1723 |
| **45-59 yrs** | 347850 | 45456 | 230943 | 23138 | 39570 | 8743 |
| **60-74 yrs** | 239890 | 19778 | 162753 | 8496 | 17257 | 31606 |
| **75 and older** | 118120 | 12550 | 47143 | 1328 | 2417 | 54682 |
| | | | **Males** | | | |
| **16-29 yrs** | 176584 | 163276 | 12241 | 623 | 322 | 122 |
| **30-44 yrs** | 182900 | 67529 | 100747 | 7345 | 6830 | 449 |
| **45-59 yrs** | 172629 | 26676 | 116804 | 9906 | 16869 | 2374 |
| **60-74 yrs** | 115256 | 10938 | 84426 | 4214 | 7858 | 7820 |
| **75 and older** | 45562 | 4657 | 27893 | 730 | 960 | 11322 |
| | | | **Females** | | | |
| **16-29 yrs** | 175149 | 152709 | 19908 | 1802 | 518 | 212 |
| **30-44 yrs** | 191047 | 56095 | 108339 | 14179 | 11160 | 1274 |
| **45-59 yrs** | 175221 | 18780 | 114139 | 13232 | 22701 | 6369 |
| **60-74 yrs** | 124634 | 8840 | 78327 | 4282 | 9399 | 23786 |
| **75 and older** | 72558 | 7893 | 19250 | 598 | 1457 | 43360 |

Table 11: Marital status of population by 15yr age group (NISRA Census 2011)

| HSCT | Number of Adults living alone (vs living with other adults) | One person household: Person aged 65+ years |
|---|---|---|
| Belfast | 80221 | 18213 |
| Northern | 73959 | 19904 |
| South Eastern | 58064 | 15394 |
| Southern | 54109 | 13634 |
| Western | 50325 | 10956 |
| Northern Ireland | 316678 | 78101 |

Table 12: Number of adults living alone by HCST (NISRA Census 2011)

10.42 Marital or domestic status as a factor to predict use of emergency ambulance services and emergency care is not fully explored in the academic literature. Rucker found that adult patients who lived alone or were lone parents were no more likely than adults who lived with other adults to use emergency ambulance services. (Rucker et al.1997).

10.43 Sun (2003) found that single and divorced people and single parents were more likely to be high users of emergency departments (>4 attendances/annum). However this study had very narrow criteria for

inclusion of participants and did not consider mode of transport to the ED. Clark (1999) also states that single people are more likely to place demand on emergency ambulance services.

10.44 Several studies that correlated increased patient age with increased use of ambulance services and emergency care postulate that living alone may contribute to this increased use. (Lowthian,2011; Downing, 2005)

10.45 There are no obvious health inequalities between being married or not. For older people being alone is a likely indicator that they will use emergency and non-emergency ambulance services more than adults who live with other adults. Marital status alone does not provide a direct correlation of one person households, e.g. 1672 married people over the age of 60 live in communal establishments and their partner may continue to reside in the family home in a one person household.

**Care of Dependants**

10.46 People with responsibility for care of dependants includes parents/guardians and people who, without payment, provide help and support to someone who may not be able to manage without this help because of long-term physical or mental ill-health/disability, or problems related to old age. This also includes young carers. The wide ranging of definition for people who have care of dependant responsibility makes it difficult to accurately quantify. Individuals may have multiple caring responsibilities. It would be inaccurate to combine the figures for care of a child or children with unpaid care as people could be in both datasets.

| HSCT | All usual residents | Persons providing unpaid care | % of Population |
|---|---|---|---|
| **Belfast** | 348204 | 42913 | 12.3% |
| **Northern** | 463297 | 53507 | 11.5% |
| **South Eastern** | 346911 | 44460 | 12.8% |
| **Southern** | 358034 | 40607 | 11.3% |
| **Western** | 294417 | 32493 | 11.0% |
| **Northern Ireland** | 1810863 | 213980 | 11.8% |

Table 13: Persons reporting providing unpaid care (NISRA Census 2011)

10.47 The table below shows the number of parents by gender in the population as a whole and by HSC Trusts.

| HSCT | Population | All parents of dependent children | All parents as a percentage of the population | Males | % of male parents | Females | % of female parents |
|---|---|---|---|---|---|---|---|
| Belfast | 348204 | 67,093 | 19.3% | 25614 | 38.2% | 41479 | 61.8% |
| Northern | 463297 | 104,133 | 22.5% | 45,260 | 43.5% | 58873 | 56.5% |
| South Eastern | 346911 | 78,008 | 22.5% | 33639 | 43.1% | 44369 | 56.9% |
| Southern | 358034 | 84,844 | 23.7% | 37,298 | 44.0% | 47546 | 56.0% |
| Western | 294417 | 66,773 | 22.7% | 27903 | 41.8% | 38870 | 58.2% |
| Northern Ireland | 1810863 | 400,851 | 22.1% | 169,714 | 42.3% | 231,137 | 57.7% |

Table 14: Parents[5] of dependent children in Census 2011

10.48 Over 63% of unpaid carers are in the 35-64 age groups. Census 2011 data shows that a high proportion of carers have a long term illness or disability: c. 9.6% of people who provide some unpaid care also reported having a long term health problem or disability that impacts day to day activity a lot. It would be expected that older carers would be more likely to require emergency and unplanned care. NIAS do not collect information on patient's carer status so this cannot be confirmed based on service user data.

10.49 There is limited evidence (Sun et al. 2003) that single parents are more likely to be frequent users of emergency and unplanned care, including ambulance services.

**Age**

10.50 Age is one of the most reliable predictors of use of emergency or unscheduled healthcare. In his 1999 study in Queensland, Clarke found that one-third of emergency ambulance resources were used by older people (age over 65 years), while they accounted for use of two-thirds of non-emergency ambulance resources. This is reflected in recent figures for non-emergency ambulance journeys with NIAS. Based on NISRA's population projections, persons over the age of 55 in 2017 made up

[5] includes lone parents; both parents in a marriage/civil partnership/ co-habiting; and, grandparents with care of grandchildren where no intervening generation is resident

27.4% of the population, therefore 27.4% of people used almost 79% of non-emergency ambulance resources.

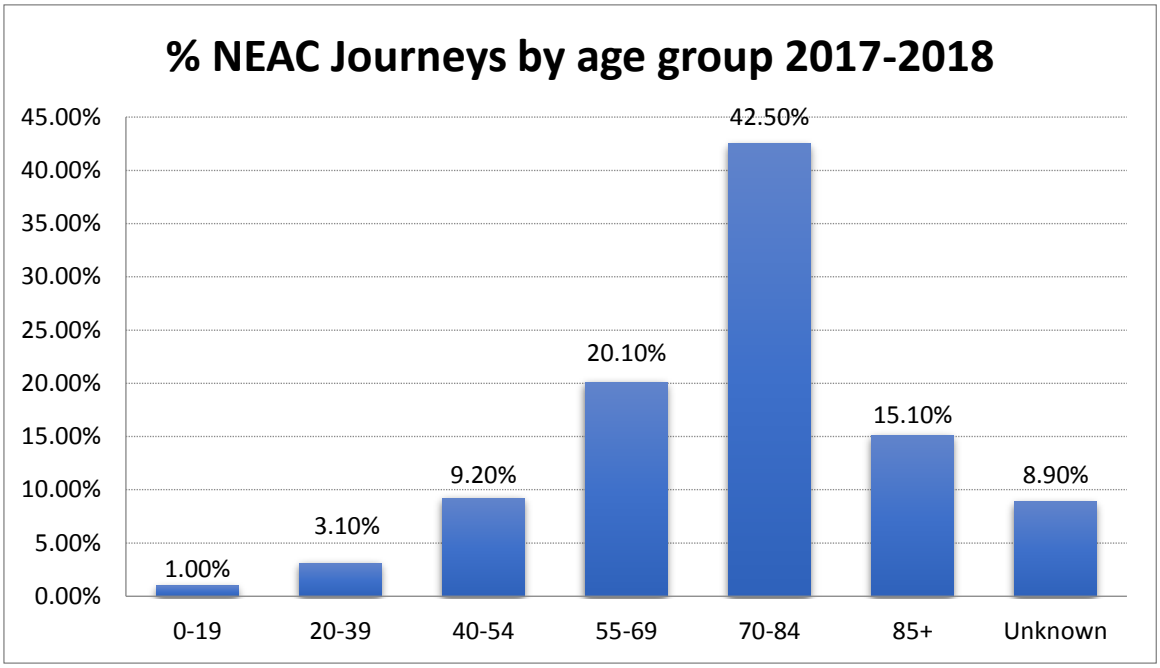



Figure 8: Percentage of Non-emergency Ambulance Journeys by age group, 2017-2018

10.51 Other studies in the UK, Australia and USA also found that older age is a predictor of emergency healthcare, both ambulance use and attendance at A&E. (Rucker 1997, McConnell 1998, Squire, 2010, Lowthian 2011). With these studies in mind it could be expected that as the population ages, demand on NIAS will also increase.

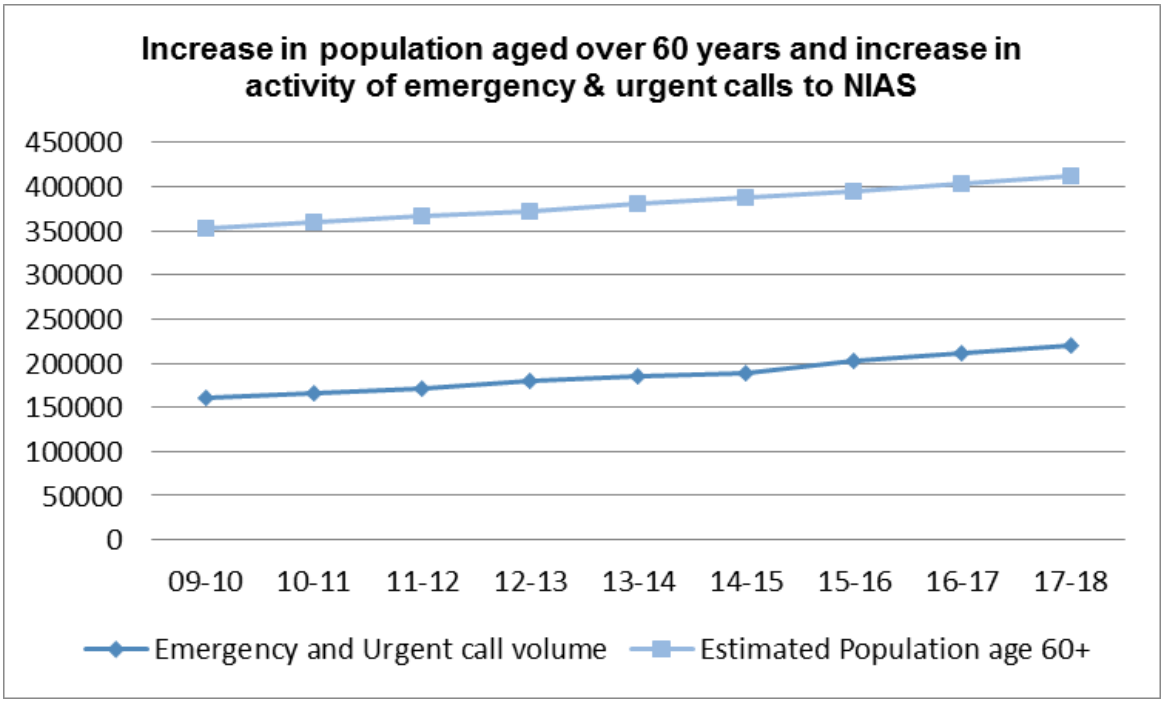



Figure 9: Increase in population aged over 60 years and increase in activity of emergency and urgent calls to NIAS.

10.52 In 5 years it is predicted that the older population (over 60 years) will have increased by 12.5% in comparison to an overall population increase of just 2.12%. Figure 7 shows the estimated population demographics by age bracket between 2011 and 2028. With the increase in this section of the population it is likely that demand for emergency and unplanned care will continue to increase. In this context, it is also likely that a failure by NIAS to develop the proposal for a new Clinical Response Model more appropriately to the emergency needs of Northern Ireland's projected population will lead to lower performance and clinical outcomes.

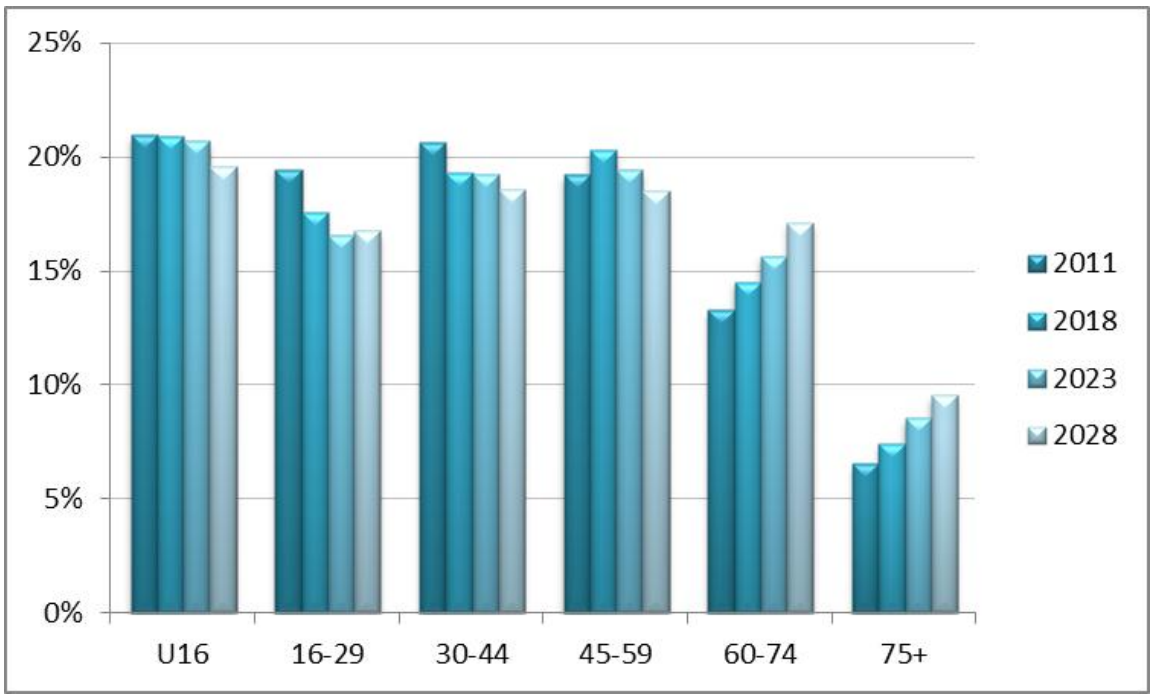



Figure 10: Estimated proportion of population by age bracket over time (NIRSA population projections)

10.53 Downing's 2005 study of 14 A&E departments in the West Midlands over a period of three years specifically looked at differences between patients aged between 0-64 and patients over 65 years. It supports the increased use of ambulances for older patients as 64.7% of the older group arrived by ambulance compared to just 19.9% of the younger group. The study also compared the nature of diagnoses in the two groups. The largest category in both age groups was injury (33.1% of over 65s; 59.9% of 0-64); Cardiac, cerebrovascular, respiratory conditions and infectious disease were all much more common in the older patient group than the younger group. As with gender, AMPDS factors in the patient's age in relation to symptoms to assist in establishing the chief complaint and to reach the coding for the incident. Age will also be taken into account for infants and children who may require specific paediatric procedures.

10.54 While emergency admissions do not directly correlate with pre-hospital care and ambulance use, a 2010 Kings Fund study found that children under 5 and older people are at higher risk of emergency admissions than others. Care should be taken with this data set as the admissions

described are for one Primary Care Trust and are not presented as a proportion of the population in each age range.

### Service Users

10.55 56% of emergency and urgent calls to NIAS are currently for patients aged 60 or over.[6] This is slightly lower than the academic research would suggest but correlates to only 20% of the population.

| HCST | 0-15 yrs | 16-29 yrs | 30-44 yrs | 45-59 yrs | 60-74 yrs | 75 and older | Total |
|---|---|---|---|---|---|---|---|
| Belfast HSCT | 2082 | 7660 | 7258 | 8612 | 9535 | 16864 | 52011 |
| Northern HSCT | 2397 | 5139 | 5099 | 7622 | 9844 | 19294 | 49395 |
| South Eastern HSCT | 1769 | 3940 | 3904 | 5355 | 7792 | 15097 | 37857 |
| Southern HSCT | 1901 | 3691 | 4027 | 5715 | 6844 | 12311 | 34489 |
| Western HSCT | 1674 | 3749 | 4245 | 5453 | 6550 | 9808 | 31479 |
| **Total** | **9823** | **24179** | **24533** | **32757** | **40565** | **73374** | **205231** |

Table 15: Number of emergency and urgent calls by age group and HSCT (2017/21018)

| HSCT | 0-15 yrs | 16-29 yrs | 30-44 yrs | 45-59 yrs | 60-74 yrs | 75 and older |
|---|---|---|---|---|---|---|
| Belfast HSCT | 4.00% | 14.73% | 13.95% | 16.56% | 18.33% | 32.42% |
| Northern HSCT | 4.85% | 10.40% | 10.32% | 15.43% | 19.93% | 39.06% |
| South Eastern HSCT | 4.67% | 10.41% | 10.31% | 14.15% | 20.58% | 39.88% |
| Southern HSCT | 5.51% | 10.70% | 11.68% | 16.57% | 19.84% | 35.70% |
| Western HSCT | 5.32% | 11.91% | 13.49% | 17.32% | 20.81% | 31.16% |
| **Northern Ireland** | **4.79%** | **11.78%** | **11.95%** | **15.96%** | **19.77%** | **35.75%** |

Table 16: percentage of emergency and urgent calls by age group and HSCT (2017/2018)

10.56 The age of people who received a Cat A response in 2017/2018 shows a slightly different profile to the overall volume of emergency and urgent calls. There is a slightly higher incidence in the age group 30-59 years, but people aged over 60 still account for 52% of these calls.

| HSCT | 0-15 yrs | 16-29 yrs | 30-44 yrs | 45-59 yrs | 60-74 yrs | 75 and older | Grand Total |
|---|---|---|---|---|---|---|---|
| Belfast HSCT | 627 | 2232 | 2219 | 2728 | 2740 | 3643 | 14189 |
| Northern HSCT | 756 | 1219 | 1408 | 2355 | 3067 | 4218 | 13023 |
| South Eastern HSCT | 626 | 1031 | 1209 | 1800 | 2404 | 3616 | 10686 |
| Southern HSCT | 561 | 915 | 1165 | 1917 | 2182 | 3042 | 9782 |
| Western HSCT | 551 | 951 | 1135 | 1764 | 2141 | 2478 | 9020 |
| **Northern Ireland** | **3121** | **6348** | **7136** | **10564** | **12534** | **16997** | **56700** |

Table 17: Category A calls with a response to the scene of an incident by age (2017/2018)

[6] This is based on 205231 calls where age is recorded. Some calls where age is recorded are based on estimates of the patient's age and may not be accurate.

| HSCT | 0-15 yrs | 16-29 yrs | 30-44 yrs | 45-59 yrs | 60-74 yrs | 75 and older |
|---|---|---|---|---|---|---|
| Belfast HSCT | 4.42% | 15.73% | 15.64% | 19.23% | 19.31% | 25.67% |
| Northern HSCT | 5.81% | 9.36% | 10.81% | 18.08% | 23.55% | 32.39% |
| South Eastern HSCT | 5.86% | 9.65% | 11.31% | 16.84% | 22.50% | 33.84% |
| Southern HSCT | 5.74% | 9.35% | 11.91% | 19.60% | 22.31% | 31.10% |
| Western HSCT | 6.11% | 10.54% | 12.58% | 19.56% | 23.74% | 27.47% |
| **Northern Ireland** | **5.50%** | **11.20%** | **12.59%** | **18.63%** | **22.11%** | **29.98%** |

Table 18: percentage of Category A calls with a response to the scene of an incident by age (2017/2018)

## Disability

10.57 In the 2011 Census, just over one in five (21%) of the population said that they had a long-term health problem or disability that limited their day-to-day activities, 3% of whom were born with a disability, affecting almost 37% of households. This was a slight increase in the proportion of people who said they had a disability in the 2001 Census (20%). Strabane and Belfast (both 24%) had the highest proportions of residents with a long-term health problem or disability.

10.58 Not everyone who has a disability or long term health problem will have reported that they have any limitations in daily activity and will not be included in the 21%. They still may have specific needs that could be impacted by the service NIAS provides.

| Trust | All usual residents | Long-term health problem or disability: Day-to-day activities limited a lot | % of population | Long-term health problem or disability: Day-to-day activities limited a little | % | Long-term health problem or disability that limits daily activities a lot or a little | % |
|---|---|---|---|---|---|---|---|
| Belfast HSCT | 348204 | 48585 | 14.0% | 31637 | 9.1% | 80222 | 23.0% |
| Northern HSCT | 463297 | 50066 | 10.8% | 40961 | 8.8% | 91027 | 19.6% |
| South Eastern HSCT | 346911 | 37602 | 10.8% | 31142 | 9.0% | 68744 | 19.8% |
| Southern HSCT | 358034 | 40991 | 11.4% | 29323 | 8.2% | 70314 | 19.6% |
| Western HSCT | 294417 | 37988 | 12.9% | 26351 | 9.0% | 64339 | 21.9% |
| Northern Ireland | 1810863 | 215232 | 11.9% | 159414 | 8.8% | 374646 | 20.7% |

Table 19: Persons reporting a long-term health problem or disability that limits daily activity (NISRA Census 2011)

10.59 As mentioned in the section on age above, age is one of the most reliable predictors of use of emergency or unscheduled healthcare, including ambulance services.

10.60 Disability or long-term illness may also be a predictor of a person's need for emergency or unplanned care but there is currently limited evidence to interrogate this hypothesis. While data on every patient's level disability is not routinely held in relation for the purposes of impact assessment, NIAS will consider whether this data should be routinely gathered to improve services, in the context of the new Electronic Patient Report Form.

10.61 Whilst the incidence of disability among service users is not recorded, there is a link between people in older age groups and increased likelihood of limiting disability or long-term illness. It therefore follows that people with disabilities are more likely to use services provided by NIAS than the wider population.

10.62 Among both men and women, the rate of disability increases with age. Women on average live longer than men, therefore disability tends to be more common among women. The rate of prevalence of disability is particularly high for women aged 75 and above (62%). The prevalence of disability amongst adults varies significantly with age, ranging from a low of 5% amongst young adults aged 16-25 to 60% amongst those aged 75 and above. In those aged 85 and above, the prevalence of disability increases to almost 67%.

| Age group | Population | Limiting long-term illness or disability | No limiting long term illness or disability |
|---|---|---|---|
| Under 16 | 379,323 | 20,024 | 359,299 |
| 16-29 | 351,733 | 24,937 | 326,796 |
| 30-44 | 373,947 | 48,366 | 325,581 |
| 45-59 | 347,850 | 87,785 | 260,065 |
| 60-74 | 239,890 | 107,058 | 132,832 |
| 75 and older | 118,120 | 86,476 | 31,644 |
| All Age Groups | 1,81,0863 | 374,646 | 1436,221 |

Table 20: People reporting having a limiting long-term illness or disability by age

**Ethnicity**

10.63 Northern Ireland is becoming an increasingly diverse population. The number of the resident population born outside of the region increased by 2%, from 9% to 11% between the 2001 Census and the 2011 Census.

10.64 The number of people identifying as belonging to a minority ethnic group has more than doubled since 2001 and at Census 2011 made up just under 2% of the population.

10.65 As with other Section 75 characteristics, it must be remembered that ethnicity does not provide a homogenous description of an individual's identity and needs. Consideration of some of the common barriers to access healthcare and parity of care can assist in identifying potential impacts of the proposal.

10.66 The Race Equality Foundation's 2015 report on ethnicity and prehospital healthcare concluded that 3 related barriers exist at patient, provider and service level: cultural competency; language and communication; and, limited understanding of the healthcare system. Furthermore some ethnic minority groups experience higher risk and incidence of a number of illnesses that could be reflected in the use of pre-hospital emergency care.

**Language**

10.67 In terms of the Clinical Response Model and coding for prioritisation of dispatch and nature of dispatch, language is likely to be the most impactful of these 3 barriers. NIAS have a contract for telephone interpretation. Connecting the caller to an appropriate interpreter can introduce delay in the EMD understanding the circumstances of the call and assessing the clinical need and providing an appropriate response.

| Year | Median by month |
|---|---|
| 14/15 | 16 |
| 15/16 | 19 |
| 16/17 | 25 |
| 17/18 | 29 |
| 18/19 (to date) | 31 |

Table 21 – average use of telephone interpretation service by month (NIAS data)

10.68 The number of languages requiring interpretation has increased each year, further reflecting the changing population. Polish, Lithuanian and Romanian have consistently been among the most frequent languages interpreted, with a need for Arabic interpreters becoming more frequent in the past two years. The telephone interpreter contract is a regional contract through the Department of Finance that covers the various government departments and bodies and includes a requirement for interpreters to be aware that they may be required to interpret emergency calls and to have some familiarity with medical terminology. This is to minimise the risk of misunderstanding of symptoms that could result in an inappropriate code/response.

10.69 As it may take time to connect an appropriate interpreter into an ongoing call, AMPDS incorporates codes for the EMD not understanding the caller's language and other communication difficulties. These codes indicate that the EMD does not have the full picture of the patient(s)' needs. Where a call cannot accurately be coded due to difficulty understanding the caller's language and connecting with an appropriate interpreter, there is a "Caller's language not understood" code that will trigger an immediate Category B response under the current model. The response can be adjusted as the call continues and the EMD elicits additional information, either through connection of an interpreter or bystander intervention. If no additional information can be obtained there is risk of an inappropriate response to the patient. This has potential to lead to preventable morbidity and mortality as described by Richardson et al.

**Limited Understanding of the Healthcare System**

10.70 The Health and Personal Social Services Provision of Health Services to Persons Not Ordinarily Resident Regulations (Northern Ireland) 2015 ensures that emergency care, including ambulance pre-hospital care is not chargeable under any circumstances. However, registering for primary care with a GP is subject to conditions of normal residency and impacts on non-emergency health care entitlement. Data held by NISRA shows 9245 non-UK nationals registered with GPs in NI.

10.71 This can lead to a small group of vulnerable people relying on emergency services. Either those who do not meet the requirements for free healthcare provision under the regulations and cannot afford the associated costs of urgent and elective care; or, those who are unaware of the regulations and that they have entitlement. Studies that demonstrate socio-economic factors impacting access to healthcare, particularly for ethnic minority and immigrant populations, indicate an associated delay in seeking treatment. This could lead to patients from ethnic minorities presenting with higher acuity symptoms when calling 999. However, Szczepura (2005) makes it clear that ethnic differences in accessing healthcare cannot be reduced to purely socio-economic factors.

**Health Outcomes**

10.72 There are ethnic variations in a prevalence of a number of diseases, including higher rates of type 2 diabetes and coronary heart disease in people of South Asian heritage, for example. Race could potentially provide clinical indicators in the AMPDS process in a similar manner to age and gender. As the triage process is conducted by phone with no accurate knowledge of a patient's race this would be difficult to take into account and it would not be recommended that EMD's make assumptions based on language or name. In the emergency environment it would not be appropriate to question callers on the patient's ethnic identity, particularly 2nd or 3rd party callers. A caller may provide information about a pre-existing health condition. The impact of the pre-existing condition on emergent symptoms would either be taken into account through the

AMPDS protocols or notified on dispatch to ensure the responding crew are aware of the wider medical picture and could account for it in clinical decision-making on scene. Some of these pre-existing conditions may be race specific, e.g. sickle cell anaemia.

### Religious Belief/Community Background

| HSCT | Catholic | Catholic % | Protestant and Other Christian | Protestant and Other Christian % | Other religions | Other religions % | None | None % |
|---|---|---|---|---|---|---|---|---|
| Belfast | 151452 | 43.5% | 164525 | 47.2% | 5667 | 1.6% | 26560 | 7.6% |
| Northern | 155691 | 33.6% | 276015 | 59.6% | 3790 | 0.8% | 27801 | 6.0% |
| South Eastern | 107991 | 31.1% | 207432 | 59.8% | 3151 | 0.9% | 28337 | 8.2% |
| Southern | 202952 | 56.7% | 140163 | 39.1% | 2344 | 0.7% | 12575 | 3.5% |
| Western | 199299 | 67.7% | 87582 | 29.7% | 1640 | 0.6% | 5896 | 2.0% |
| **Northern Ireland** | **817385** | **45.1%** | **875717** | **48.4%** | **16592** | **0.9%** | **101169** | **5.6%** |

Table 22: Religion or Religion Brought up in by HSCT (NISRA Census 2011)

10.73 There is some regional variation in the composition of the population. The highest proportion of people from a Protestant background, are in the Northern and South Eastern HSC Trusts at 60%. In the Western HSC Trust, 68% of the population are from a Catholic background. Belfast and South Eastern HSC Trusts have the highest proportion of people from other religions or none at 9%. Some 149 religions are practised in Northern Ireland.

10.74 There is no evidence to indicate that there are health inequalities between people of the 2 predominant community backgrounds simply because of their religion or religious upbringing.

10.75 Analysis of the 20% Most Deprived Super Output Areas (NISRA, Multiple measures of deprivation) shows that 57% of these are predominantly populated by people from a Catholic background, 23% have a mixed population and 20% have a population predominantly from a Protestant background. Deprivation has been shown to produce health inequalities that could correlate to greater demand for ambulance services.

## Political Opinion

| | Nationalist | Unionist | Alliance | Others |
|---|---|---|---|---|
| Source ARK NI (2017 Westminster Election Results) | 41.2% | 46.6% | 7.9% | 4.2% |
| Source Lucid Talk (March 2018 telephone poll) | 41% | 46.2% | 8% | 4.8% |

Table 23: Political Opinion held in Northern Ireland based on two sources.

10.76 Analysing the political opinion of the population as a whole is difficult due to lack of complete data sources. The question is not asked as part of the census questionnaire. The data available only allows analysis at Northern Ireland level and cannot be broken down by HSC Trusts or smaller statistical geographies.

10.77 Furthermore, both data sources have flaws. The results of the 2017 Westminster election is based on 65.4% voter turnout, it cannot be assumed that the political opinion of the remainder of the electorate would hold to similar proportions.

10.78 The Lucid Talk polling data is based on a small yet representative NI population sample (N=2079) responding to the question of party for first preference vote if an election were to be held tomorrow. It is reasonably consistent with the analysis of the most recent Westminster elections.

10.79 Both data sets exclude the views of younger people (no one under 18 at the time of the data collection was considered).

10.80 There is no evidence to indicate that political opinion impacts on health inequalities.

## NIAS Staff Profile

| Gender | Emergency Ambulance Control | Ambulance Operational |
|---|---|---|
| Male | 48.9% | 76.0% |
| Female | 51.1% | 24.0% |

| Community Background | Emergency Ambulance Control | Ambulance Operational |
|---|---|---|
| Protestant / Perceived Protestant | 46.6% | 52.6% |
| Roman Catholic / Perceived Roman Catholic | 40.9% | 40.9% |
| Neither / Perceived Neither | 4.5% | 4.0% |
| (blank) | 8.0% | 2.5% |

| Political Opinion | Emergency Ambulance Control | Ambulance Operational |
|---|---|---|
| Broadly Nationalist | 12.5% | 10.2% |
| Broadly Unionist | 9.1% | 11.9% |
| I do not wish to answer | 35.2% | 28.3% |
| Other | 18.2% | 16.2% |
| (blank) | 25.0% | 33.4% |

| Age Range | Emergency Ambulance Control | Ambulance Operational |
|---|---|---|
| 20-29 | 13.6% | 6.2% |
| 30-39 | 27.3% | 17.7% |
| 40-49 | 30.7% | 44.3% |
| 50-59 | 25.0% | 27.2% |
| 60-69 | 3.4% | 4.6% |

| Marital Status Key | Emergency Ambulance Control | Ambulance Operational |
|---|---|---|
| Mar/CP | 43.2% | 55.9% |
| Single | 46.6% | 40.7% |
| Other | 10.2% | 3.3% |

| Disability Status | Emergency Ambulance Control | Ambulance Operational |
|---|---|---|
| Yes | 4.5% | 2.3% |
| No | 85.2% | 80.2% |
| (blank) | 10.2% | 17.4% |

| Ethnicity | Emergency Ambulance Control | Ambulance Operational |
|---|---|---|
| Filipino | | 0.1% |
| Mixed Ethnic Group | 1.1% | 0.4% |
| Other | | 0.1% |
| White | 88.6% | 83.7% |
| (blank) | 10.2% | 15.6% |

| Sexual Orientation - Towards | Emergency Ambulance Control | Ambulance Operational |
|---|---|---|
| I do not wish to answer | 3.4% | 4.0% |
| Opposite sex | 67.0% | 60.6% |
| Same sex | 4.5% | 1.9% |
| (blank) | 25.0% | 33.4% |

| Caring Responsibilities | Emergency Ambulance Control | Ambulance Operational |
|---|---|---|
| Yes* | 31.8% | 37.3% |
| No | 31.8% | 24.7% |
| (blank) | 36.4% | 38.0% |

* Caring for a Child/Children / Dependant / Older Person / Person with a Disability

Table 24: NIAS staff composition by S75 categories (June 2018)

**Chief Complaints/Symptoms analysis**

Datasets used:

- Cat A Emergency and Urgent calls 2017/2018
- Cat A with response to scene of incident 2017/2018
- The Data Protection Impact Assessment for the EQIA covers this appendix.

10.81 The purpose of this analysis is not to suggest that codes be retained in the highest priority category based on frequency of allocation. Rather it is intended to ensure that clinical decision-makers have an awareness of the characteristics of patients in these coding groups. If required the analysis can be extended to the individual dispatch codes rather than the Chief Complaint/Symptom group.

**Most Frequent Chief Complaints/Symptoms**

10.82 In 2017/2018 63,319 emergency and urgent calls were given a Cat A coding, 28.8% of all emergency and urgent calls. A response was provided to 58,655 Category A incidents, 29.1% of responses, in the same period.

10.83 Six chief complaints accounted for c. three quarters of all incidents given a coding in Category A under the current system. Non-traumatic chest pain is the most frequent, closely followed by breathing problems. Healthcare Professional (HCP) Admissions account for the 3rd most frequent, likely due to emergency transfers between hospitals to access specialists services.

10.84 Combined, these most frequent symptoms comprise 21% of all emergency and urgent call volume and 22.5% of emergency and urgent calls with a response to the scene.

| Chief Complaint/Symptoms | Cat A Calls | % of Cat A Calls | Cat A Calls with response | % of Cat A calls with response |
|---|---|---|---|---|
| CHEST PAIN (Non-Traumatic) | 12248 | 19.34% | 12084 | 20.60% |
| BREATHING PROBLEMS | 10383 | 16.40% | 10247 | 17.47% |
| HCP ADMISSION | 8579 | 13.55% | 8458 | 14.42% |
| UNCONSCIOUS / FAINTING (Near) | 7425 | 11.73% | 7041 | 12.00% |
| CONVULSIONS / FITTING | 4455 | 7.04% | 4295 | 7.32% |
| FALLS | 3484 | 5.50% | 3279 | 5.59% |
| Total | 46574 | 73.55% | 45404 | 77.41% |

Table 25: Most frequent chief complaints/symptoms 2017/2018

## Most Frequent Chief Complaints/Symptoms – Gender

10.85 Gender is not always recorded on the patient record. The data considered in this section excludes incidents that do not have the gender of the patient recorded. The same Chief Complaint/Symptoms groups have the same highest incidence as with the patient population as a whole.

11 The chart below shows all the chief complaint/symptom groups allocated by gender. Complaints that had an incidence of less than 0.1% of the total calls

for each gender were grouped together[7].

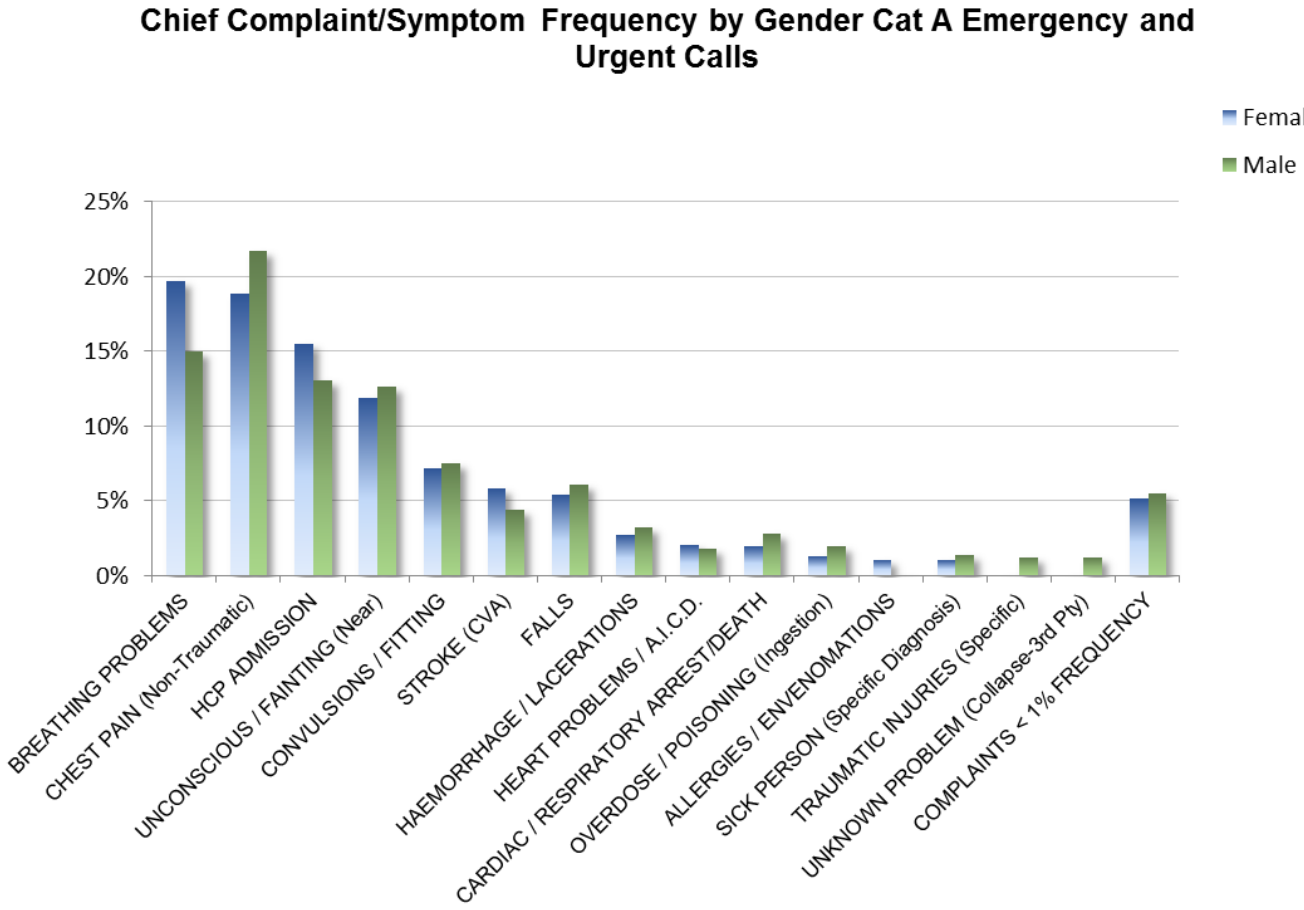



Figure 11: Frequency of Chief Complaint Group by gender. Emergency and Urgent Calls 2017/2018

11.19 As with all Cat A calls, the same 6 groups show the highest frequency for each gender. 79% of all Cat A calls for female patients and 76% of all Cat A calls for male patients. The most frequent complaint group for male patients is non-traumatic chest pain, followed by breathing problems. The order is slightly different for female patients with Breathing Problems being highest frequency and non-traumatic chest pain second. The order of frequency remains the same for both genders in the other 4 groups. Men are almost 20% more likely than women to present with non-

[7] A chief complaint/symptom not listed specifically for one gender does not mean that there was no incidence, it only indicates that the incidence was less than 1% of all incidents for the gender. The only chief complaints that were gender specific were a small number relating to Pregnancy, childbirth and miscarriage and one incident relating to an eye injury.

traumatic chest pain (OR 1.19). Women are c. 40% more likely to present with Breathing Problems than men (OR 1.39).

| | Cat A Calls where gender is recorded (n=60034) | | | | | | Cat A calls with response where gender is recorded (n=58037) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Complaint/Symptoms | Female | % Female | Male | % Male | Total | % Total | Female | % Female | Male | % Male | Total | % Total |
| CHEST PAIN (Non-Traumatic) | 5454 | 18.9% | 6780 | 21.8% | 12234 | 20.4% | 5379 | 19.2% | 6692 | 22.3% | 12071 | 20.8% |
| BREATHING PROBLEMS | 5695 | 19.7% | 4678 | 15.0% | 10373 | 17.3% | 5631 | 20.1% | 4607 | 15.4% | 10238 | 17.6% |
| HCP ADMISSION | 4480 | 15.5% | 4084 | 13.1% | 8564 | 14.3% | 4426 | 15.8% | 4019 | 13.4% | 8445 | 14.6% |
| UNCONSCIOUS / FAINTING (Near) | 3429 | 11.9% | 3944 | 12.7% | 7373 | 12.3% | 3285 | 11.7% | 3706 | 12.4% | 6991 | 12.0% |
| CONVULSIONS / FITTING | 2084 | 7.2% | 2360 | 7.6% | 4444 | 7.4% | 2010 | 7.2% | 2274 | 7.6% | 4284 | 7.4% |
| FALLS | 1561 | 5.4% | 1913 | 6.1% | 3474 | 5.8% | 1487 | 5.3% | 1783 | 5.9% | 3270 | 5.6% |
| **TOTAL** | **22703** | **78.6%** | **23759** | **76.2%** | **46462** | **77.4%** | **22218** | **79.2%** | **23081** | **77.0%** | **45299** | **78.1%** |

Table 26: Most frequent chief complaints/symptoms by gender 2017/2018

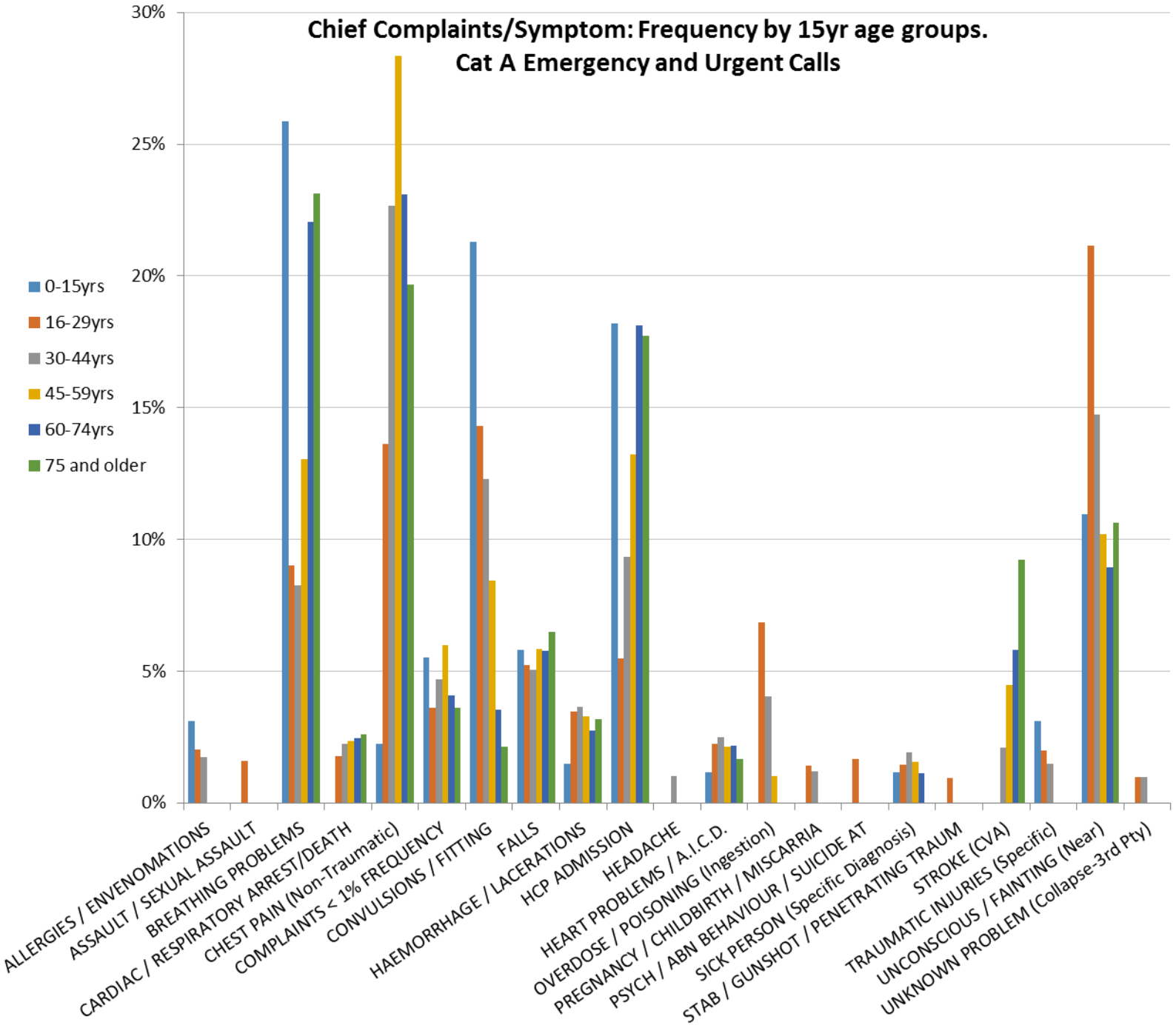
## Most Frequent Chief Complaints/Symptoms – Age Group

11.20 Age is not always recorded on the patient record. The data considered in this section excludes incidents that do not have the age of the patient recorded. It should also be noted that 2nd and 3rd party callers may provide an estimate of age to EMDs if the exact age of the patient isn't known, although this may be corrected on the Patient Record Form (PRF) on attendance at the scene of the incident.

11.21 The chart on page 4 shows all the chief complaint/symptom groups allocated by 15 year age groups. Complaints that had an incidence of less than 0.1% of the total calls for each gender were grouped together.[8]

11.22 Chest pain, breathing problems, HCP Admission and Unconsciousness/Fainting are the most frequent chief complaint groups in calls and incidents where age is known. Frequency of each of these varies greatly across different age groups. Chart 3 shows the most frequent of chief complaints in each age group.

[8] A chief complaint/symptom not listed specifically for one age group does not mean that there was no incidence, it only indicates that the incidence was less than 1% of all incidents for that age group.


Chief Complaints/Symptom: Frequency by 15yr age groups.
Cat A Emergency and Urgent Calls
30%
25%
20%
15%
10%
5%
0%
0-15yrs
16-29yrs
30-44yrs
45-59yrs
60-74yrs
75 and older
ALLERGIES / ENVENOMATIONS
ASSAULT / SEXUAL ASSAULT
BREATHING PROBLEMS
CARDIAC / RESPIRATORY ARREST/DEATH
CHEST PAIN (Non-Traumatic)
COMPLAINTS < 1% FREQUENCY
CONVULSIONS / FITTING
FALLS
HAEMORRHAGE / LACERATIONS
HCP ADMISSION
HEADACHE
HEART PROBLEMS / A.I.C.D.
OVERDOSE / POISONING (Ingestion)
PREGNANCY / CHILDBIRTH / MISCARRIA
PSYCH / ABN BEHAVIOUR / SUICIDE AT
SICK PERSON (Specific Diagnosis)
STAB / GUNSHOT / PENETRATING TRAUM
STROKE (CVA)
TRAUMATIC INJURIES (Specific)
UNCONSCIOUS / FAINTING (Near)
UNKNOWN PROBLEM (Collapse-3rd Pty)

| Chief Complaint/Symptom | Cat A Calls: age recorded (n=58574) | | Cat A Calls with response: age recorded (n=56700) | |
|---|---|---|---|---|
| **0-15 years** | | | | |
| BREATHING PROBLEMS | 25.8% | 838 | 26.1% | 815 |
| CONVULSIONS / FITTING | 21.3% | 690 | 21.7% | 677 |
| HCP ADMISSION | 18.2% | 590 | 18.6% | 580 |
| UNCONSCIOUS / FAINTING (Near) | 11.0% | 355 | 10.9% | 341 |
| TOTAL 0-15 YEARS | 100.0% | 3242 | 100.0% | 3121 |
| **16-29 years** | | | | |
| UNCONSCIOUS / FAINTING (Near) | 21.1% | 1456 | 21.1% | 905 |
| CONVULSIONS / FITTING | 14.3% | 985 | 14.7% | 935 |
| CHEST PAIN (Non-Traumatic) | 13.6% | 938 | 14.3% | 1340 |
| TOTAL 16-29 YEARS | 100.0% | 6890 | 100.0% | 6348 |
| **30-44 years** | | | | |
| CHEST PAIN (Non-Traumatic) | 22.7% | 1695 | 23.3% | 1663 |
| UNCONSCIOUS / FAINTING (Near) | 14.7% | 1101 | 14.2% | 1016 |
| CONVULSIONS / FITTING | 12.3% | 918 | 12.4% | 882 |
| TOTAL 30-44 YEARS | 100.0% | 7476 | 100.0% | 7136 |
| **45-59 years** | | | | |
| CHEST PAIN (Non-Traumatic) | 28.3% | 3104 | 28.9% | 3050 |
| HCP ADMISSION | 13.2% | 1448 | 13.5% | 1423 |
| BREATHING PROBLEMS | 13.1% | 1431 | 13.3% | 1409 |
| UNCONSCIOUS / FAINTING (Near) | 10.2% | 1119 | 10.0% | 1060 |
| TOTAL 45-59 YEARS | 100.0% | 10953 | 100.0% | 10564 |
| **60-74 years** | | | | |
| CHEST PAIN (Non-Traumatic) | 23.1% | 2952 | 23.3% | 2924 |
| BREATHING PROBLEMS | 22.1% | 2820 | 22.3% | 2790 |
| HCP ADMISSION | 18.1% | 2316 | 18.3% | 2292 |
| TOTAL 60-74 YEARS | 100.0% | 12783 | 100.0% | 12534 |
| **75 and older** | | | | |
| BREATHING PROBLEMS | 23.1% | 3982 | 23.3% | 3961 |
| CHEST PAIN (Non-Traumatic) | 19.7% | 3387 | 19.9% | 3375 |
| HCP ADMISSION | 17.7% | 3052 | 17.8% | 3021 |
| UNCONSCIOUS / FAINTING (Near) | 10.6% | 1831 | 10.6% | 1797 |
| TOTAL 75 AND OLDER | 100.0% | 17230 | 100.0% | 16997 |
| **ALL AGES** | | | | |
| CHEST PAIN (Non-Traumatic) | 20.7% | 12149 | 21.1% | 11988 |
| BREATHING PROBLEMS | 17.6% | 10310 | 17.9% | 10174 |
| HCP ADMISSION | 14.5% | 8483 | 14.8% | 8369 |
| UNCONSCIOUS / FAINTING (Near) | 12.0% | 7004 | 11.8% | 6661 |
| TOTAL ALL AGES | 100% | 58754 | 100.0% | 56700 |

Table 27: Most frequent (incidence >10%) chief complaints/symptoms by age group 2017/2018

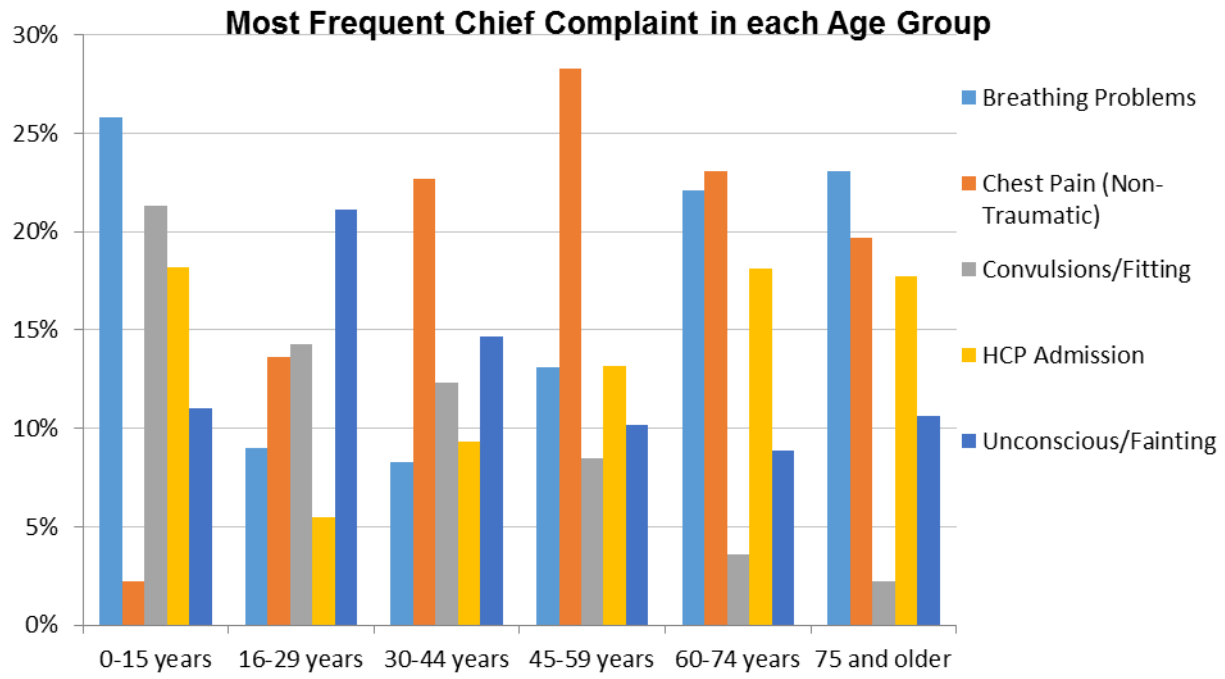



Figure 12: Most frequent Chief Complaints in each age group (Cat A Emergency and Urgent Calls 2017/2018)

11.23 The very young and the very old show the highest incidences of breathing problems and HCP admissions.

11.24 Chest pain shows highest incidence in 30-59 year olds and has very low incidence in under-16s.

11.25 Convulsions/Fitting has high incidence in under-30s, gradually reducing in the older age groups.

11.26 Unconsciousness/Fainting shows a spike in incidence in the 16-29 age group but remains consistently between 8% and 14% in the other age groups.

## WHAT WILL THE IMPACT BE ON SERVICE USERS BASED ON SECTION 75 GROUPINGS AND RURALITY?

The introduction of CRM across Northern Ireland will have a region-wide impact on the population, and on the delivery of NIAS services. However, Section 75 of the NI Act 1998 requires NIAS to consider the impact on specified sectors, and between those sectors. Two factors are important in considering the S.75 impacts of the CRM proposals.

First, NIAS patients and service users throughout Northern Ireland have multiple identities in terms of the nine Section 75 categories. This means that the impact assessment needs to consider the impacts ***within*** categories, as well as the overlap ***between*** categories, such as a combination of age and gender in relation to patient demographics. The impact assessment below should therefore be read in its totality, since each section is interrelated.

Second, the regional nature of the new CRM proposals means that the urban/rural placement of NIAS resources, and population spread, also has to be considered in relation to the Section 75 impacts. This is particularly important given that rural areas are consistently more likely to have less access to public services, including transport. Again, the assessment of rural/urban impacts should be read in the context of the wider considerations.

Detailed datasets and information have been gathered and analysed to inform the specific assessment of impacts, in accordance with statutory and policy obligations.

### Section 75 categories

### Gender

According to the Census 2011 in Northern Ireland, women are a larger proportion of the population than men, at 51% versus 49% respectively. Figures for 2014-16 in Northern Ireland show that women have a higher level of life expectancy at 82.3 years to 78.5 years for men. At a general level, one might assume that women are therefore quantitatively more likely to experience the types of ill-health that arrive in older populations.

However, men and women are prone to different illness at different ages, and there is different prevalence of health behaviours. Evidence suggests that men are less likely to attend a GP or leave it too late, the impact being that men are more likely to attend A&E.

All emergency and urgent calls show an even distribution between genders in line with the NI population, across all ages. Men under-60 have a slightly higher use of NIAS emergency vehicles that women under-60, but both findings are largely in line with population proportions. Given the limited data on trans- and gender non-conforming people it is not possible to extrapolate any significant impact.

A core element of CRM is the focus upon 'sickest/quickest', with cardiac failure having been identified as the condition most likely to be effectively treated within eight minutes.

Given that in 2017/18, indicative figures suggest that men in Northern Ireland may account for proportionately more cardiac arrests, the focused application of NIAS resources towards this particular condition will be more likely to positively impact upon men.

However, the likely positive impact upon men's emergency survival rates does not necessarily denote a negative impact for women's health conditions. This is because the types of conditions that will fall within non-life threatening emergency responses are more likely to have underlying chronic factors which will be more effectively addressed through better use of Alternative Care Pathways.

**Political Opinion**

Political opinion is not a factor in determining the social or geographical spread of health conditions or emergency ambulance use.

However, some political opinions may be more likely to correlate with areas that are affected by specific, ingrained patterns of ill-health or medical emergency.

For example, in urban areas of high deprivation which largely have confined political opinions, the risk of death by suicide is over three times greater than that experienced in

the least deprived areas of Northern Ireland which are more likely to be politically diverse areas.

Given CRM's enhanced focus on improving responses to life-threatening emergency calls, it is likely that the impact of CRM would be positive in all such circumstances. There is no differential impact arising from CRM proposals due to the political opinion of citizens living in more deprived areas.

At a macro level, across the whole of Northern Ireland, the spread of political opinion is broadly identifiable by elected political representativeness at Council, Assembly and Parliamentary level.

The highest level of connected urban conurbations in Northern Ireland, is the Belfast Metropolitan Area (BMA) with around 670,000 citizens, over one third of Northern Ireland's population.

The city of Belfast has a population of around 280,000 people, in which political parties with unionist/loyalist political opinions have a marginal minority of the elected councillors versus others. However the surrounding council areas that contribute to the rest of BMA, namely Antrim and Newtownabbey, Ards and North Down, and Lisburn and Castlereagh Council, have a majority of elected councillors affiliated with unionist political opinions.

Parliamentary constituencies west of the Bann, which are more rural with lesser connectivity, are more likely to be represented by nationalist elected representatives, while those constituencies east of the Bann, which are relatively more urban with better connectivity, are more likely to be represented by unionist elected representatives.

In the circumstances, while there may be an impact on the ***types*** of emergency ambulance response provisions – for example in rural areas – none of these differentials under CRM would be determined directly or indirectly by the factor of political opinion; and all changes are intended to have an overall beneficial impact for all sections of society based on more effectively addressing clinical need. Emergency ambulance provision and resources will be improved across all of Northern Ireland, as will the provision of additional benefits through Appropriate Care Pathways and community first responder teams.

**Community Background/Religion**

Similar considerations apply to assessing impacts based on the community background or religion of NIAS service users. The community background/religion of those who access emergency ambulance services is not a determinant factor for medical condition or service provision. Likewise there is no evidence that any major differentials of medical conditions arise due to community background or religion. Once again, factors such as residence in rural versus urban localities, or high deprivation versus low deprivation areas, are likely to be more reliable indicators of patterns of ill-health and ambulance use.

Notwithstanding that, according to Census 2011 the Protestant proportion of Northern Ireland's population in older age groups outweighs the Catholic proportion (which is larger in younger age groups).

Since the older population has significantly greater use of emergency ambulance services, it is possible to predict that there will be a short to mid-term positive impact for the existing older predominantly Protestant population, while there will be a mid to long-term positive impact for the future older predominantly Catholic population. Over time, CRM will therefore have a positive impact on both main communities.

These positive impacts are indirect, and there are no adverse impacts for either of Northern Ireland's main communities since the CRM model is based on clinical need and community background/religion is not a factor in medical conditions or emergency ambulance provisions.

**Age**

Age is one of the most reliable predictors of whether a person will use emergency and unscheduled healthcare. Based on NISRA's population data, persons over the age of 55 in 2017 made up 27.4% of the population. According to NIAS figures for 2017-18, the over-55 age group used over 80% of all non-emergency ambulance journeys. It is estimated that 56% of emergency and urgent calls to NIAS are for patients aged over 60, and that 52% of

CAT A responses for people over 60. These figures again indicate the correlation between greater use of ambulance services and membership of older age groups.

It is predicted that the older population over-60 will have increased by 12.5% in the next five years. It is therefore likely that the clinical demands will increase on emergency and non-emergency ambulance provision. It is also likely that the failure by NIAS to develop the proposal for a new CRM more appropriately to the clinical needs of Northern Ireland's projected population will, in turn, lead to lower performance and worse clinical outcomes. In this circumstance, it is assessed that the greatest adverse impact for patients based on their age group *would come from a failure to reform the existing response model* and a failure to progress the CRM proposals. The new CRM proposals are therefore assessed as having a positive impact based on age.

**Ethnicity**

Northern Ireland is becoming an increasingly diverse population. According to the Census 2011, the proportion of the population born outside of the region was 11%. There are parts of Northern Ireland where relatively large ethnic minority communities locate based on employment and social factors, for example in the Mid-Ulster area and in districts of Belfast. It is assessed that there will be no adverse impact from CRM based on the locality of ethnic minorities in Northern Ireland.

However the Race Equality Foundation (2015) has reported that three related barriers exist in relation to healthcare at the levels of patient, provider and service. These barriers are cultural competency, language and communications, and limited understanding of the healthcare system. In addition, some ethnic minority groups may be affected by a higher risk and incidence of illnesses reflected in their use of pre-hospital care. Once again, however, given that CRM is designed to improve NIAS services to the entire population based on clinical need, there is no adverse impact assessed on the specific factor on ethnicity. Cross-sectional factors, such as locality, are taken into account throughout this assessment.

It is likely that communication and language, and understanding of the NIAS role, will remain factors for ethnic minorities to engage with emergency ambulance services. In this

regard, NIAS currently provides interpreting services for patients under a regional HSC contract. While the connection with an appropriate interpreters may introduce a short delay in assessing the clinical needs of the caller, these circumstances cannot be altered by the introduction of CRM, and it is assessed that there is therefore no adverse impact based on ethnicity.

**Sexual Orientation**

The sexual orientation of NIAS service users is not routinely gathered, nor was such data compiled under the 2011 Census. However, a report commissioned by the Northern Ireland Executive has previously suggested that it is feasible to assess that "a certain proportion of the population (up to 10%) is LGBT (lesbian, gay, bisexual and transgender), and to formulate policies accordingly". Research shows that LGBT people are more vulnerable to developing mental health issues, particularly due to external stressors; they can therefore be more proportionately likely to self-harm, suicidal ideation, experiencing depression, and other anxiety-related conditions. The rainbow Project's 2013 report 'Through our minds', reported that 12.6% of respondents had attended hospital after deliberately self-harming.

In these circumstances, it is likely that the introduction of CRM will have a neutral or positive impact, since the premise of the new model is based on clinical need. The additional consideration is when this section 75 category is considered with others, such as age, disability or gender. However, once again, improved models for attending clinical need is the basis of CRM, and the impact should therefore be positive.

**Marital Status**

There is limited data to consider any impact from the CRM based solely on marital status, and it is more appropriately considered as a composite factor in relation other section 75 categories. For example, it could be surmised that older people living alone may be more likely to access emergency ambulance services than those living with other adults, since the latter would likely have greater support networks. But these are individual cases, rather than an indicative social grouping. On the basis that CRM is intended to address all citizens based on clinical need, there is no obvious adverse impact arising from the marital status of any person.

**Dependent Status**

The likely impact upon those with dependents – ie. carers and/or parents/guardians – can best be assessed through the consideration of other section 75 factors, such as the caring context of age and disability. For example, data from the 2011 Census also shows that almost 10% of people who provide some unpaid care reported having a long-term health problem or disability that can impact on day-to-day activity. The role of carers and/or parents/guardians in looking after dependents is one that should be enhanced by the more appropriately resourced and targeted provision of ambulance services under CRM. There is therefore no adverse impact.

**Disability**

In the 2011 Census, 21% of the population said that they had a long-term health problem or disability that limited their day-to-day activities (3% of whom were born with a disability), affecting 37% of households. Belfast and Strabane showed the highest proportions of people with long-term health problems or disabilities. It should be noted that not everyone who has a disability or long-term health problem will have reported limitations in their daily activity and may therefore be underreported.

Disability or long-term illness is more likely to affect older age groups for both gender. For example, over 60% of women aged 75 and over are affected. When additional factors such as access to services and rurality are taken into account, there is a strong argument in favour of reforming the NIAS emergency response model to ensure that it is driven by clinical need. In these circumstances, there should be no adverse impact for service users based on age; and those older patients with chronic health problems. Rather CRM should create positive improvements and impacts, particularly when implemented in conjunction with new Appropriate Care Pathways across the health sector.

**Rural Impact**

Once again, considerations about the rural impact of the new CRM proposals need to take into account the context of other impacts. For example, rural impacts may be perceived as

greater for some large ethnic minority communities, such as those which are based in the Mid-Ulster region.

A critical consideration in assessing the rural/urban impact is the ratio of cardiac arrests. Indicative NIAS figures for 2017/18 suggest that around two-thirds of cardiac arrests took place in urban areas of Northern Ireland, as opposed to rural areas.

The new Clinical Response Model is intended to substantially increase the proportion of such emergency calls being answered quicker. While precise modelling will only be able to take place in practice, and while guarantees cannot be given in relation to every single incident, there is likely to be a substantial improvement in appropriate and effective ambulance response in rural areas.

For example, while Rapid Response Vehicles will decrease in terms of hours of service, there will be a net gain under the new CRM model in relation to emergency ambulance cover in rural areas. In addition, the rural/urban impacts will be taken into account in designing the new NIAS Estates Strategy, and in rolling out the Community First Responder programme and community defibrillators.

A persistently high correlation exists between patterned levels of chronic ill-health and urban areas of high deprivation. These localities are predominantly within more densely populated areas that fall under the current drive-time radius. Patients with chronic conditions may have need for more frequent ambulance use, but – due to better planning and resourcing - it is assessed that the ambulance service provided for these patients will not be adversely impacted by the new CRM.

While the proposed new CRM may have an impact on urban residents in deprived areas waiting a bit longer for a more appropriate response to less critical emergency calls associated with chronic long-term conditions, the more appropriate deployment of ambulance resources should have a beneficial impact in responding better to life-critical emergency calls within service-deprived rural areas.

## WHAT MITIGATING MESURES ARE HAVE BEEN CONSIDERED TO ADDRESS ANY ADVERSE IMPACTS?

This EQIA has identified that there are no adverse impacts based on Section 75 grouping or rurality, and since the CRM proposals are part of a wider package of organisational transformation they are intended to have positive impacts for all of Northern Ireland's population based on the primary criterion of clinical need. This EQIA concludes that the only obvious adverse impact would arise from failing to introduce the CRM proposals and continuing with the status quo emergency response model in circumstances that are rapidly and evidently changing.

## MONITORING AND REVIEW

In undertaking monitoring following implementation of the proposals, NIAS will give full consideration to the Equality Commission for Northern Ireland Section 75 Monitoring Guidance and devise related measures to ensure that ongoing impacts are regularly assessed against specific categories.

## 12 CONCLUSION

11.1 The adoption of this new clinical operating model is expected to realise a range of benefits for patients including:

- Reducing the proportion of patients receiving the highest level of response from circa 30% to a more appropriate 7%. This will allow resources to be focussed on improving the response to those patients identified as genuinely having an Immediately Life Threatening condition.

- Identifying Category 1 patients earlier than is currently the case and allocating a resource between 33-41 seconds more quickly than at present using PTS and NOC. This should lead to improved response times for the only group of patients for whom there is evidence that response times make a difference to outcome and creates the potential to improve cardiac survival by 13%-16%.

- Improving efficiency by reducing the deployment of multiple resources to incidents where the patient's condition does not warrant that level of response. Further improvements to efficiency are gained through the reduction of incidents where resources are repeatedly mobilised then stood down. This will release resources to improve the response to the most seriously ill patients and the response to lower acuity patients (although in Northern Ireland delays on lower acuity incidents is less of problem than elsewhere in the UK).

- More effective targeting of the right resource, first time to meet the patient's needs which should, for example, lead to improvements in the time patients with conditions such as Stroke and Heart Attack reach definitive care in specialist units.

- Creating the opportunity to manage more patients appropriately through telephone advice or treatment at the scene without the need for transportation to hospital. This improves efficiency both for the ambulance service and

hospital emergency departments and delivers the right outcome for patients in the right setting.

- Producing greater system resilience and stability through the introduction of a clinical operating model that works under less stress and hence is better able to absorb peaks in demand.

- Including a more comprehensive range of standards, measures and indicators to provide greater transparency about whole-system ambulance performance in language that is understandable to the public.

## 13 CONSULTATION QUESTIONS

### A Information about you/your organisation

The questions in this section will enable us to have a better understanding of who has responded to this consultation.

The rules about disclosure of consultation responses are outlined on Page 89.

1. Your Name

_____

2. In which of the following capacities are you responding to this consultation?

On behalf of a Public Authority ☐

Name of Public Authority

_____

3. On behalf of a Community/Voluntary Sector organisation ☐

Name of organisation

_____

4. On behalf of a trade union organisation ☐

Name of organisation

_____

5. As a member of the public ☐

6. Other ☐

**B** Your response to the consultation document

In this section we would like you to comment on the content of the consultation document

The Proposal

1. Do you agree that NIAS should change from the current response model, introduced in 1974?

   Yes ☐ No ☐

Please explain your answer

2. Do you agree that the service should introduce the proposed new Clinical Response Model as outlined in the document?

   Yes ☐ No ☐

Please explain your answer

3. Do you think that NIAS has considered sufficient relevant information and appropriately assessed the impacts of the proposed changes?

Yes ☐ No ☐

If no please explain your answer

4. Can you identify any other potential adverse impacts with supporting evidence that might occur as a result of these proposals being implemented?

5. Please suggest any other mitigating measures to eliminate or minimise any potential adverse impacts in relation to the proposals.

6. Please provide any suggestions as to how NIAS can better promote equality of opportunity in respect of these proposals.

7. Please provide any further comments you wish in respect of the proposals outlined.

**Freedom of Information Act (2000) – Confidentiality of Consultations**

Northern Ireland Ambulance Service (NIAS) will publish an anonymised summary of responses following completion of the consultation process; however your response, and all other responses to the consultation, may be disclosed on request. We can only refuse to disclose information in limited circumstances. Before you submit your response, please read the paragraphs below on the confidentiality of consultations and they will give you guidance on the legal position about any information given by you in response to this consultation.

The Freedom of Information Act gives the public a general right of access to any information held by a public authority, namely, NIAS in this case. This right of access to information includes information provided in response to a consultation.

We cannot automatically consider information supplied to us in response to a consultation, as information that can be withheld from disclosure. However, we do have the responsibility to decide whether any information provided by you in response to this consultation, including information about your identity, should be made public or withheld.

Any information provided by you in response to this consultation is, if requested, likely to be released. Only in certain circumstances would information of this type be withheld.

## 13 OUR CONSULTATION PROCESS

13.1 This document has been developed to provide a platform for consultation with interested parties and we will meet with key stakeholders in this regard. In addition, the document will be placed on our website ww.niamb.co.uk (under Latest News).

13.2 We would welcome views in relation to the proposals outlined by email or post. A questionnaire is provided at Appendix C to aid response to the consultation.

13.3 In addition we are keen to engage with and hear directly from stakeholders who may wish to attend a meeting to hear more or express a view. Please also contact us using the details below if you would like to attend a meeting.

13.4 Details of any planned public/stakeholder meetings will be advertised on our website and sent directly to those who express an interest.

13.5 We are committed to ensuring our consultation is fully accessible. Alternative formats of this document including an Easy Read Version will be made available on request.

All consultation responses should be directed to:

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NIAS Headquarters
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Belfast
BT8 8SG
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This consultation will last for 12 weeks and will close on Thursday 20 December 2018.

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