HEALTH AND WELLBEING 2026

DELIVERING TOGETHER

Urgent and Emergency Care in Northern Ireland -

Population Health Needs Assessment

Department of Health
An Roinn Sláinte
Männystrie O Poustie
www.health-ni.gov.uk

Contents

1. Introduction

On 29 November 2017, the Transformation Implementation Group[1] approved a Project Initiation Document to establish a project to carry out a Northern Ireland Needs Assessment for Urgent and Emergency Care. The project has four objectives:

1. *To complete a Northern Ireland regional population health needs assessment for urgent and emergency care, taking into account access and travel times as appropriate, and providing options for service reconfiguration.*

2. *To identify hospital sites where Emergency Department (ED) services are potentially vulnerable due to workforce instability and implement pathfinder models tailored to the needs of individual sites, designed to assess the continuum of community, primary and secondary care that might effectively meet some of the emergency care health needs.*

3. *Taking account of the evidence base from the assessment completed for Objective 1, to develop a regional model for urgent and emergency care including a workforce proposal for the model.*

4. *To develop a high-level Implementation and Investment Plan for the recommended regional model, giving consideration to opportunities for the recycling of existing and additional resources.*

This report sets out the findings and conclusions of a population health needs assessment carried out to take forward the first objective. The Terms of Reference for the needs assessment are set out in Appendix A.

1.1 What is a Healthcare Needs Assessment?

The three traditional approaches to healthcare needs assessment are: [2]

- **Epidemiological** approaches which use mainly quantitative data to estimate the size and composition of the population of interest, including information on place, over time, and by key population subgroups.

[1] In October 2016, a 10-year approach to transforming health and social care was launched: "Health and Wellbeing 2026: Delivering Together". The plan is the response to the report produced by an Expert Panel, led by Professor Bengoa, tasked with considering the best configuration of Health and Social Care Services in Northern Ireland. The Transformation Implementation Group leads the design, development and implementation of the Transformation Programme.

[2] Population Needs Assessment for Health and Social Care Partnerships: guidance on the use of data sources: *Information Services Division*, 2014

- **Comparative** approaches: which use comparisons across time, or between different geographies or population groups, to establish potential needs by identifying areas or groups where there is relative under-provision;

- **Corporate** approaches: which gather mainly qualitative information to help understand the views of stakeholders, including patients, the public, professionals and policymakers, about current needs and priorities for future provision.

The Northern Ireland Health Needs Assessment for Urgent and Emergency Care will employ all three approaches to healthcare needs assessment in its programme of work. Epidemiological and comparative approaches have been used to prepare this report in relation to Objective 1 of the overall project.

Objectives 2, 3 and 4 will be taken forward through corporate approaches to involve all relevant stakeholders.

1.2 Approaches to Needs Assessment for Urgent and Emergency Care

Healthcare services for Urgent and Emergency Care are generally designed to provide a timely response to undifferentiated illness or injury. Services may be provided on a 24 hour or a limited opening time basis. They may only accept patients fulfilling particular criteria, such as a Paediatric Emergency Department; a Frail Elderly Assessment Unit; or a Minor Injury Unit.

Some services provide for specific types of illness or injury, such as: an Eye Casualty; a Mental Health Assessment Service or a Cardiology Service providing primary Percutaneous Coronary Intervention (PPCI).

Given the wide range in nature and complexity of illness and injury which can present to urgent and emergency care services, comparing services and assessing time trends can be challenging. There are also differences in the naming and classification of services both within Northern Ireland and across the United Kingdom.

A simple classification of the clinical case-mix of Accident and Emergency departments was used in an epidemiologically based needs assessment in 1996.[3] The case-mix was divided into:

- Major injury
- Major illness
- Minor trauma
- Minor illness

[3] Williams B, Nicholl J, Brazier J: Chapter 1 Accident and Emergency Departments; *in Heath Care Needs Assessment: The Epidemiologically Based Needs Assessment Reviews,* edited by A Stevens and J Raftery, 1996

While there were no precise definitions for each group, the categories facilitated the needs assessment process.

In a study of trends in the case-mix of patients attending a large emergency department in Hong Kong, significant changes were identified through analyses of a range of factors including: breakdown into trauma and non-trauma patients; triage categories; and the specialties to which patients were admitted from the Emergency Department.[4]

For this needs assessment, a range of approaches are used to explore patterns and trends in the use of urgent and emergency care services in Northern Ireland. The assessment considers patterns in relation to the three parameters of **Time, Place and Person.**

The **Time** horizon for the assessment is the period up to 2026 in keeping with the 10-year vision set out in "Health and Wellbeing 2026: Delivering Together"[5]. The use of services is considered for time periods such as hour of the day and day of the week.

For **Place**, information is considered for Northern Ireland, with some comparison information for other constituent parts of the United Kingdom. Within Northern Ireland, information is considered at Local Government District (LGD) level and also for individual locations where services are delivered.

Person characteristics which are considered include age and gender, socioeconomic status, and mode of arrival at services.

1.3 Sources of data

Data has been very helpfully provided to inform this needs assessment by the Information Analysis Directorate, Department of Health; the Health and Social Care Board; the Public Health Agency and the Northern Ireland Ambulance Service. Very useful information has also been provided by colleagues in the Department of Health and HSC organisations.

The assessment has also considered published information relating to the population of Northern Ireland; the use of urgent and emergency care services; and evidence in relation to models of care.

[4] Wai A K C et al. Analysis of trends in emergency department attendances, hospital admissions and medical staffing in a Hong Kong university hospital: 5-year study. Int J Emerg Med (2009) 2:141-148

[5] Health and Wellbeing 2026: Delivering Together, *Department of Health,* October 2016

2. Urgent and Emergency Care

There are not universally agreed definitions of the terms urgent and emergency care. The nature and range of names of services such as minor injury units and urgent care centres has been recognised to cause confusion for the public as to which services to access in particular situations.[6]

The concept of **Urgent Care** is generally taken to mean the provision of advice or treatment for people in situations which are not life threatening or life changing.

Emergency Care is care provided in a medical emergency, when life or long-term health is at risk.

For a recent review in Scotland[7], the following definitions were used:

Urgent Care: *Urgent care in the community that requires a response before the next routine care service is available.*

Emergency Care: *Care that requires an immediate response to a time-critical health care need.*

There is a growing body of evidence to inform the design of services providing urgent and emergency care.

2.1 NICE Guidance

In March 2018, the National Institute for Health and Care Excellence (NICE) published a NICE guideline: Emergency and acute medical care in over 16s: service delivery and organisation.[8] To prepare the guideline, a comprehensive review of the evidence was conducted. The guideline committee considered:

- Emergency and acute medical care in the community
- Emergency and acute medical care in hospital
- Planning emergency and acute care services.

The guideline makes 23 evidence-based recommendations for implementation and 17 recommendations for further research, of which 5 are prioritised. The recommendations for implementation are summarised in the box below. The 5 priority research recommendations seek to address questions for which NICE considers there is a need to have additional evidence as soon as possible:

- Is extended access to GP services, for example during early mornings, evenings and weekends, more clinically and cost effective than standard access?
- What is the clinical and cost effectiveness of providing extended access to social care services, for example during early mornings and evenings and 7 days a week?

[6] NHS England: Urgent Treatment Centres – Principles and Standards, July 2017

[7] Scottish Government: Pulling together: transforming urgent care for the people of Scotland. The report of the Independent Review of Primary Care Out of Hours Services. November 2015.

[8] NICE: Emergency and acute medical care in over 16s: service delivery and organisation.

- What is the clinical and cost effectiveness of having GPs within or adjoining emergency departments?
- What is the most clinically and cost-effective way to configure services to assess frail older people who present to hospital with a medical emergency?
- What is the clinical and cost effectiveness of different methods for integrating patient information throughout the emergency care pathway?

2.2 Transforming Urgent and Emergency Care Services in England

NHS England is taking forward a five-year plan to redesign urgent and emergency care. The vision of the NHS Five Year Forward View is:

- For adults and children with urgent care needs, to provide a highly responsive service that delivers care as close to home as possible, minimising disruption and inconvenience for patients, carers and families.
- For those people with more serious or life-threatening emergency care needs, to ensure that they are treated in centres with the right expertise, processes and facilities to maximise the prospects of survival and a good recovery.

NHS England is collaborating with patients and partners from across the system to develop a suite of guidance documents and tools to promote best practice. The suite is entitled 'Transforming Urgent and Emergency Care Services in England'. An overall guide has been developed which is kept updated as new guidance is developed, with hyperlinks to the relevant publications. [9]

Specific guidance has been published to standardise, as far as possible, the development of Urgent Treatment Centres to replace services such as minor injury units.[10] During the review, which led to the NHS Five Year Forward View, patients and the public told the review team of: "the confusing mixture of walk-in centres, minor injuries units and urgent care centres, in addition to numerous GP health centres and surgeries offering varied levels of core and extended service."

Urgent Treatment Centres will be primary care led facilities providing access to urgent care for a local population. They may be located in community settings or co-located alongside hospital Emergency Departments. They should be open for a minimum of 12 hours a day, seven days a week and provide pre-booked same day and "walk-in" appointments. The scope of practice should include minor illness and injury in adults and children of any age. They should provide access to a specified range of diagnostic services and be able to issue prescriptions. They should have protocols to manage critically ill and injured patients who arrive unexpectedly, usually in collaboration with ambulance services.

[9] NHS England: Transforming urgent and emergency care in England: Version 29, Updated April 2016
[10] NHS England: Urgent Treatment Centres - Principles and Standards. July 2017

NICE Guideline

Emergency and acute medical care in over 16s: service delivery and organisation

Summary of Recommendations

Emergency and acute medical care in the community

1. Provide specialist and advanced paramedic practitioners who have extended training in assessing and treating people with medical emergencies.
2. Provide point-of-care C-reactive protein testing for people with suspected lower respiratory tract infections
3. For people who are at increased risk of developing a medical emergency:
    - provide advanced community pharmacy-based services
    - consider providing advanced pharmacist services in general practices.
4. For people at risk of an acute medical emergency, do not commission pharmacists to conduct medication reviews unless needed for logistical or clinical reasons.
5. Provide nurse-led support in the community for people at increased risk of hospital admission or readmission. The nursing team should work with the team providing specialist care.
6. Provide multidisciplinary intermediate care as an alternative to hospital care to prevent admission and promote earlier discharge. Ensure that the benefits and risks of the various types of intermediate care are discussed with the person and their family or carer.
7. Provide a multidisciplinary community-based rehabilitation service for people who have had a medical emergency.
8. Provide specialist multidisciplinary community-based palliative care as an option for people in the terminal phase of an illness.
9. Offer advance care planning to people in the community and in hospital who are approaching the end of life and are at risk of a medical emergency. Ensure that there is close collaboration between the person, their families and carers, and the professionals involved in their care.

Emergency and acute medical care in hospital

10. Use validated risk stratification tools to inform clinical decisions about hospital admission for people in medical emergencies.

11. Assess and treat people needing hospital admission with undifferentiated medical emergencies in an acute medical unit.

12. Provide access to liaison psychiatry services for people with medical emergencies who have mental health problems.

13. Start discharge planning at the time of admission for a medical emergency.

14. For people admitted to hospital with a medical emergency, consider providing the following, accompanied by local evaluation that takes into account current staffing models, case mix and severity of illness:
    - consultant assessment within 14 hours of admission to determine the person's care pathway
    - daily consultant review, including weekends and bank holidays
    - more frequent (for example, twice daily) consultant review based on clinical need.

15. Provide coordinated multidisciplinary care for people admitted to hospital with a medical emergency.

16. Include ward-based pharmacists in the multidisciplinary care of people admitted to hospital with a medical emergency.

17. Provide access to physiotherapy and occupational therapy 7 days a week for people admitted to hospital with a medical emergency.

18. Consider providing access to critical care outreach teams (CCOTS) for people in hospital who have, or are at risk of, acute deterioration, accompanied by local evaluation of the CCOT service.

19. Use standardised and structured approaches to ward rounds, for example with checklists or other clinical decision support tools.

20. Use structured handovers during transitions of care and follow the recommendations on transferring patients in the NICE guideline on acutely ill patients in hospital.

21. Use standardised systems of care (including checklists, staffing and equipment) when transferring critically ill patients within or between hospitals.

Planning emergency and acute care services

22. Healthcare providers should:

- monitor total acute hospital bed occupancy, capacity, flow and outcomes in real time, taking account of changes in a 24-hour period and the occupancy levels and needs of specific wards and units
- plan capacity to minimise the risks associated with occupancy rates exceeding 90%.

23. Health and social care systems should develop and evaluate integrated care.

2.3 Urgent Care Review in Scotland

In November 2015, the Scottish Government published the report of an independent review of primary care out of hours (OOH) services.[11] The Review Group made 28 wide-ranging recommendations for improvement.

The Review Group proposed a new model of care: "where a multidisciplinary, multi-sectoral urgent care coordination and communication function will be provided at Urgent Care Resource Hubs which would be configured for both service delivery and training functions. They would be established primarily to coordinate urgent care for OOH services - but should be considered on a 24/7 basis." "Urgent Care Resource Hubs would be networked to local Urgent Care Centres, presently referred to as Primary Care Emergency Centres which should be fit for purpose and be located to maximise accessibility and service resilience."

2.4 Guidance from professional bodies

Professional bodies have published an extensive range of documents setting out guidance and standards relating to urgent and emergency care. Examples include:

- The Royal College of Emergency Medicine issued revised guidance on Mental Health in the ED in March 2018[12]
- The Royal College of General Practitioners has developed an Urgent and Emergency Care Clinical Audit Toolkit[13]
- The Royal College of Nursing has developed a National Curriculum and Competency Framework for Emergency Nursing (Level 1) [14]
- The College of Paramedics has published Postgraduate Curriculum Guidance for paramedic practice in the United Kingdom[15]
- The Royal College of Physicians has published Acute Care Toolkits including: Ambulatory emergency care[16]; Using data to improve care[17]; and Acute care for adolescents and young adults[18]
- The Royal College of Surgeons has developed standards for the delivery of emergency surgery[19]

[11] Scottish Government: Pulling together: transforming urgent care for the people of Scotland. The report of the Independent Review of Primary Care Out of Hours Services. November 2015
[12] Royal College of Emergency Medicine: Mental Health in Emergency Departments, A Toolkit for improving care. Revised: March 2018.
[13] Royal College of General Practitioners: Urgent and Emergency Care Clinical Audit Toolkit: 2010
[14] Royal College of Nursing: National Curriculum and Competency Framework, Emergency Nursing (Level 1) 2017.
[15] College of Paramedics: Paramedic Post-Graduate Curriculum Guidance: January 2017
[16] Royal College of Physicians: Acute care toolkit 10: Ambulatory emergency care: October 2014.
[17] Royal College of Physicians: Acute care toolkit 11: Using data to improve care: January 2015.
[18] Royal College of Physicians: Acute care toolkit 13: Acute care for adolescents and young adults: October 2015.
[19] Royal College of Surgeons of England: Emergency Surgery: Standards for unscheduled surgery care: February 2011

2.5 Emerging themes in urgent and emergency care

A number of themes are emerging which will influence the future provision of urgent and emergency care.

Redesign of Time Critical Care

The need to ensure that critically ill patients access appropriate services as rapidly as possible is driving changes in emergency care. The redesign of time critical care must be taken forward on a system wide basis with a strong focus on the transfer arrangements to appropriate specialist centres.

NICE has published guidelines for: "the rapid identification and early management of major trauma in pre-hospital settings, including ambulance services, emergency departments, major trauma centres and trauma units. It aims to reduce deaths and disabilities in people with serious injuries by improving the quality of their immediate care." [20]

Northern Ireland has established a Major Trauma Network to plan for the redesign of services so that patients can rapidly access specialist regional services. Rapid transfer of patients will be facilitated by the new Helicopter Emergency Medical Service (HEMS).

Patients who have had a ST- Elevation Myocardial Infarction (STEMI) are now brought directly to Altnagelvin Hospital, or the Royal Victoria Hospital, to ensure immediate access to Primary Percutaneous Coronary Intervention (PPCI). STEMIs comprise approximately 40% of all myocardial infarctions.

Proposals for the reshaping of stroke services are being developed. In relation to the critical care of patients in the immediate period after they suffer a stroke, there is a need to ensure that suitable patients have rapid access to a clot removal service (mechanical thrombectomy), which is provided on a regional basis.

Accessing the right services

Initiatives are being taken across urgent and emergency care to seek to ensure that patients access the most appropriate service for their needs.

The Choose Well campaign was launched in Northern Ireland in 2013.[21] Its aim is to raise awareness to help people gain a better understanding of the range of health services available to treat everything from a common cold to a major emergency. Trust-specific leaflets have been prepared which set out the range of local services which are available. An example is shown below.

NHS Scotland has developed a website, 'Know Who To Turn To', with links to a National Services Directory, 'NHS Inform', which gives details of local services.[22]

[20] NICE Guideline NG39: Major Trauma: assessment and initial management: February 2016

[21] http://www.hscboard.hscni.net/choose-well-campaign-information-and-resources/

[22] NHS Scotland: http://knowwhototurnto.org/ and https://www.nhsinform.scot/

Emergency Department

Emergency Departments provide the highest level of emergency care for patients, especially those with sudden and acute illness or severe trauma. Use the service appropriate to your need.

More Information
Emergency Departments: open every day.

Emergency Department

Ulster Hospital
Newtownards Road, Dundonald, Belfast, BT16 1RH.
Telephone: 028 9048 4511.
Opening hours: 24 hours.

Lagan Valley Hospital
39 Hillsborough Road, Lisburn, Antrim, BT28 1JP.
Telephone: 028 9266 5141.
Opening hours: 8am-8pm.

Downe Hospital
2 Struell Wells Road, Downpatrick, BT30 6RL.
Telephone: 028 4461 3311.
Opening hours: 8am-10pm.

999

You should always call 999 if someone is seriously ill or injured and their life is at risk.

Choose well and be prepared

The information in this leaflet will help you find the right expert care to meet your needs. Picking the service most appropriate to your symptoms means you get the right treatment in the right place.

www.nidirect.gov.uk/choosewell

For the very young, the over 65s and all people with long term health issues, the cold weather can contribute to serious health problems. The good news is that by following a few tips, you can give yourself the best possible chance of staying well.

Get your free flu jab

Remember, if you're over 65, pregnant or with a long term health problem, you can get a free seasonal flu vaccination from your GP. In addition this year the vaccine will be offered to children aged two and three years and to those in school year primary six. For more information about the flu vaccine visit www.fluawareni.info

Recover properly

If you do catch a cold or flu, make sure you:

- Stay at home, drink plenty of fluids and rest
- Eat if you feel able to
- Let a friend or neighbour know you are ill.

Stop things spreading

To prevent the spread of germs to others:

- Catch coughs and sneezes in a tissue
- Regularly wash your hands with soap and warm water.

Stay warm

- Keep room temperature warm and comfortable
- Have regular hot drinks and hot meals that include fruit and vegetables.

Health and Social Care is committed to making information as accessible as possible and to promoting meaningful engagement. Requests for this leaflet in another format or language will be considered.

This leaflet is available in other Health Trust areas across Northern Ireland.

This leaflet covers the South Eastern Health and Social Care Trust area

HSC Health and Social Care

Choose Well

Did you know there are a range of healthcare services available to help you find the right care?

- Self-care
- Pharmacy
- GP
- Minor Injuries Unit
- Emergency Department
- 999

www.nidirect.gov.uk/choosewell

Choose well

Make sure you Choose Well
Get the right treatment for you and help manage your health service resources

50985 HSC CHOOSEWELL S_EASTERN AW.indd 1 29/10/2013 17:12

The Northern Ireland Ambulance Service (NIAS), has developed a suite of alternative care pathways for appropriate patients, rather than bringing them to Emergency Departments. These pathways enable patients to access more personalised definitive treatments in a shorter timescale. NIAS has also agreed destination protocols with Health and Social Care Trusts (HSC Trusts) to ensure that patients are brought directly to the most appropriate hospital for their condition, such as for STEMIs as referred to above.

In 2017, the Royal College of Emergency Medicine issued guidance on the initial assessment of emergency department (ED) patients.[23] The document aims to offer general principles to underpin local processes and to standardise the terminology used. The document defines and differentiates between the processes of navigation, streaming and triage and recommends when they should be used.

- Navigation refers to the process of directing patients to appropriate services, prior to a formal process of clinical assessment.
- Streaming is the process of allocating patients to different physical areas/services, pathways or processes, in order to improve efficiency and effectiveness. It is carried out based on clinical assessment.
- Triage prioritises patients where demand exceeds capacity to fully assess them within an appropriate time frame.

Tailored services

The provision of specifically designed urgent and emergency care services to meet the needs of particular groups is not new. Separate emergency departments for children are provided in a number of hospitals across the United Kingdom, including Belfast.

In 2015, the first purpose-built specialist emergency care hospital in the United Kingdom opened at Cramlington in Northumberland. It is staffed by Emergency Medicine Consultants 24 hours a day and Specialty Consultants, from 8:00 to 20:00, 7 days a week. After the hospital opened, three existing emergency departments were gradually refocused on providing care for minor injuries and illnesses although had not fully converted to urgent care centres at the time of an early evaluation of the impact of the changes. [24]

Norfolk and Norwich University Hospital opened the first Older People's Emergency Department in December 2017, designed for patients aged over 80. The department is staffed by a multi-disciplinary team consisting of Emergency Department Consultants, Consultant Geriatricians, and Emergency and Older People's Medicine Nurses.[25]

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[23] Royal College of Emergency Medicine: Initial Assessment of Emergency Department Patients, February 2017.
[24] The Health Foundation: Briefing: The impact of redesigning urgent and emergency care in Northumberland, 2017.
[25] http://www.nnuh.nhs.uk/news/2017/11/uks-first-older-peoples-emergency-department-to-be-introduced-at-nnuh/

In 2013, 36 hospitals were identified in the United States of America (USA) which had geriatric emergency departments. In 30 hospitals responding to a survey, 70% of the departments were attached to the main ED at the hospital.[26] Guidelines for the provision of geriatric emergency departments have been developed by professional bodies for use by hospitals in the USA. [27]

2.6 Summary

Urgent Care is generally taken to mean the provision of advice or treatment for people in situations which are not life threatening or life changing. Emergency Care is care provided in a medical emergency, when life or long-term health is at risk.

The nature and range of names of services such as minor injury units and urgent care centres has been recognised to cause confusion for the public, as to which services to access in particular situations.

There is a growing body of evidence to inform the design of services providing urgent and emergency care. A wide range of guidelines and toolkits have been produced by professional bodies to improve and standardise the delivery of urgent and emergency care.

Following an extensive review of available evidence, NICE published guidance in March 2018 for the service delivery and organisation of emergency and acute care in over 16s. The guideline makes 23 recommendations and sets out areas where additional research is required.

A suite of guidance documents has been developed by NHS England. These include a set of principles and standards for Urgent Treatment Centres to deliver a standardised model of care in all areas.

A review of Primary Care Out of Hours services in Scotland sets out proposals to introduce a new model of care delivery, with the introduction of Urgent Care Resource Hubs, networked to local Urgent Care Centres.

Emerging themes which will impact on models for the future development of urgent and emergency care services include: the redesign of emergency care to ensure that patients in time critical emergency situations can access specialist services as rapidly as possible; a focus on approaches to ensure that people access the most appropriate service to meet their needs; and the possible introduction of services which are tailored to meet the needs of particular groups of patients.

[26] Hogan TM, Olade TO, Carpenter RC: A profile of acute care in an aging America: Snowball sample identification and characterization of United States Geriatric Emergency Departments in 2013: Academic Emergency Medicine, 2014, 337-341.

[27] American College of Emergency Physicians; The American Geriatrics Society; Emergency Nurses Association; Society for Academic Emergency Medicine: Geriatric Emergency Department Guidelines, 2013.

3. Population Trends

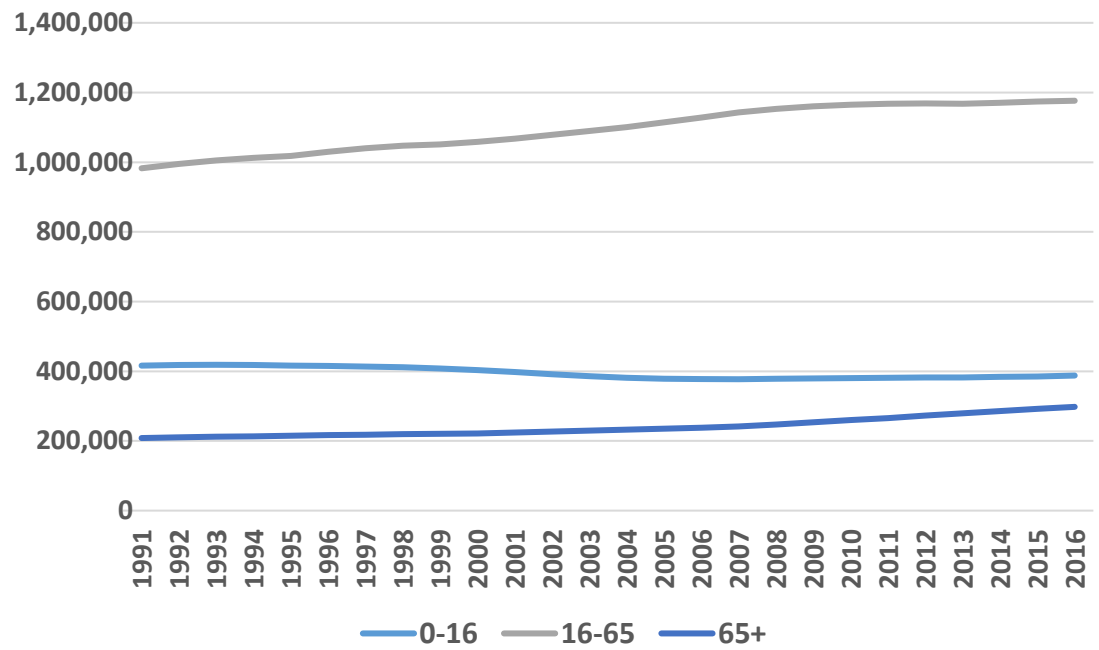
The Northern Ireland population on 30 June 2016 was estimated to be 1.862 million,[28] having grown by over 250,000 since 1991. During this 25-year period it is estimated that the numbers of:

- Children aged 0 to 15 years fell by 6.9%, from 416,539 to 388,001
- People aged 16 to 64 years rose by 19.7%, from 982,482 to 1,176,381
- People aged 65+ years rose by 43.0%, from 208,274 to 297,755.

These changes, in particular the growing number of older people, will have had a significant impact on the level of population need for urgent and emergency care.

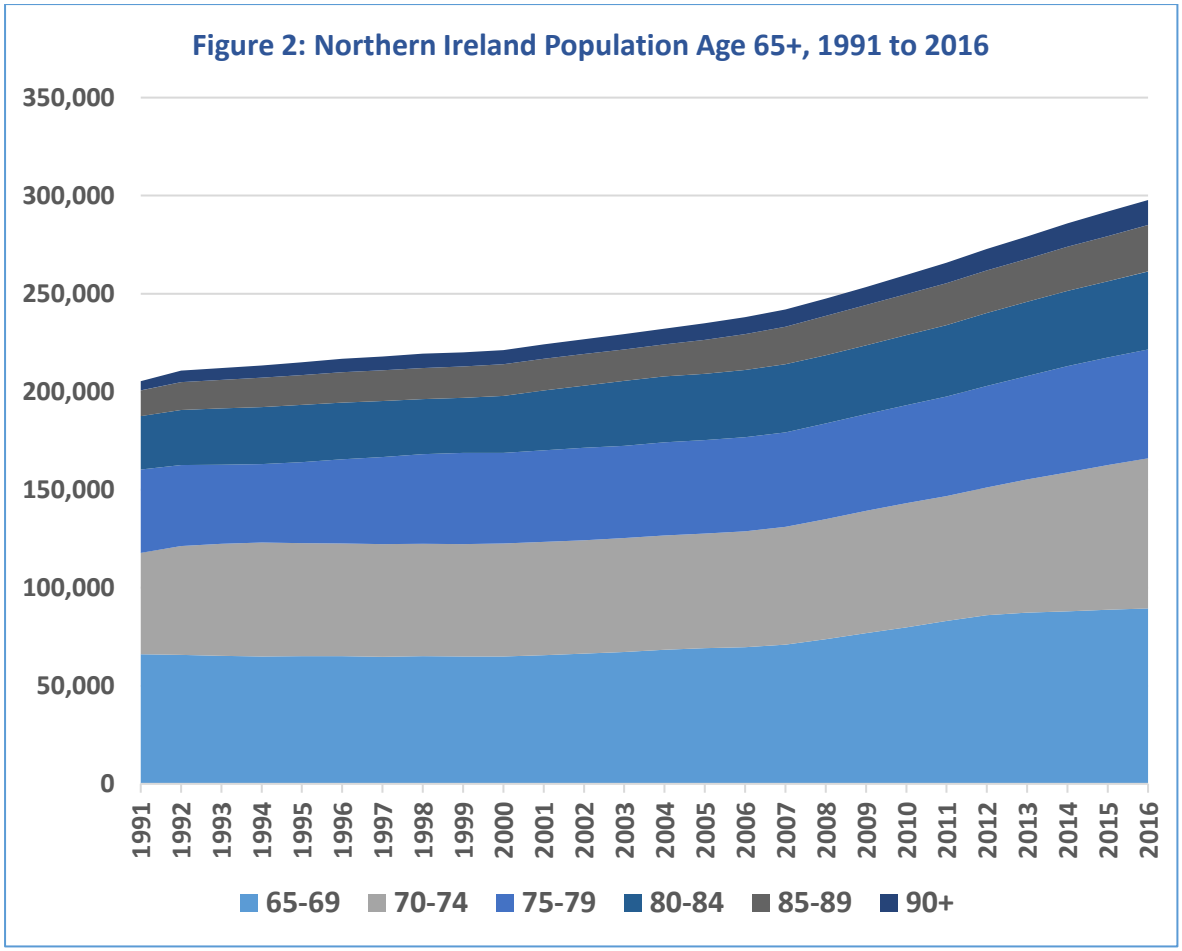
Figure 1 illustrates the trends. Figure 2 shows the trends in the over 65 population by age band, with a steeper upward trend in the past decade.

Figure 1: Northern Ireland Population by Age Group, 1991 to 2016



Source: Northern Ireland Statistics and Research Agency

[28] NISRA: 2016 Mid-year Population Estimates for Northern Ireland, Statistical Bulletin: *NISRA*, 22 June 2017



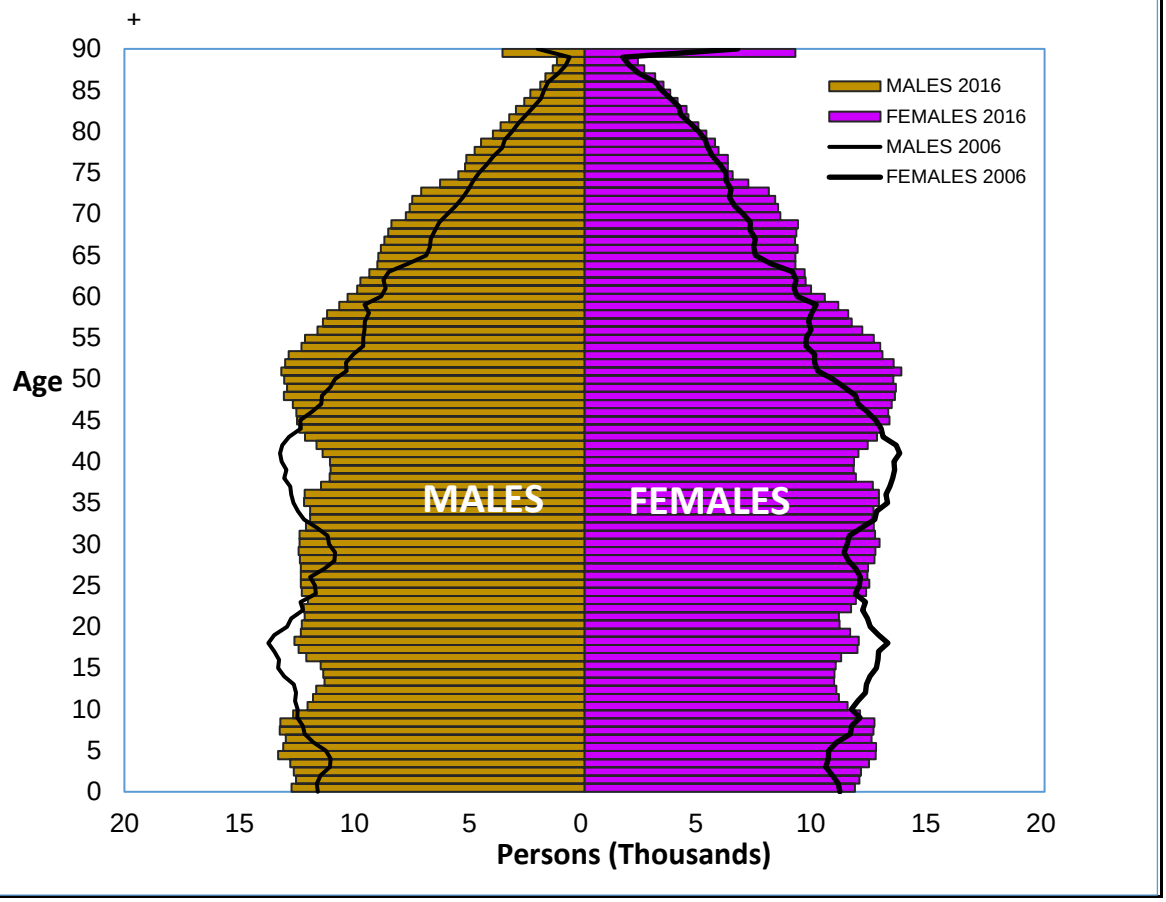
Source: Northern Ireland Statistics and Research Agency

3.1 Population Structure

Changes in the structure of a population over time reflect previous birth, death and migration trends. Figure 3 shows the estimated population structure in Northern Ireland in 2006 and 2016, by single year age bands. Growth in every age band from age 45 can be identified together with falls among 10 to 20 and 35 to 45-year olds.

The impact of the 1960s baby boom can be seen with the increased numbers aged 35 to 45, in 2006, and subsequently 45 to 55, in 2016.

Figure 3: NI Population by age and sex (mid 2006 and mid-2016)



Source: Northern Ireland Statistics and Research Agency

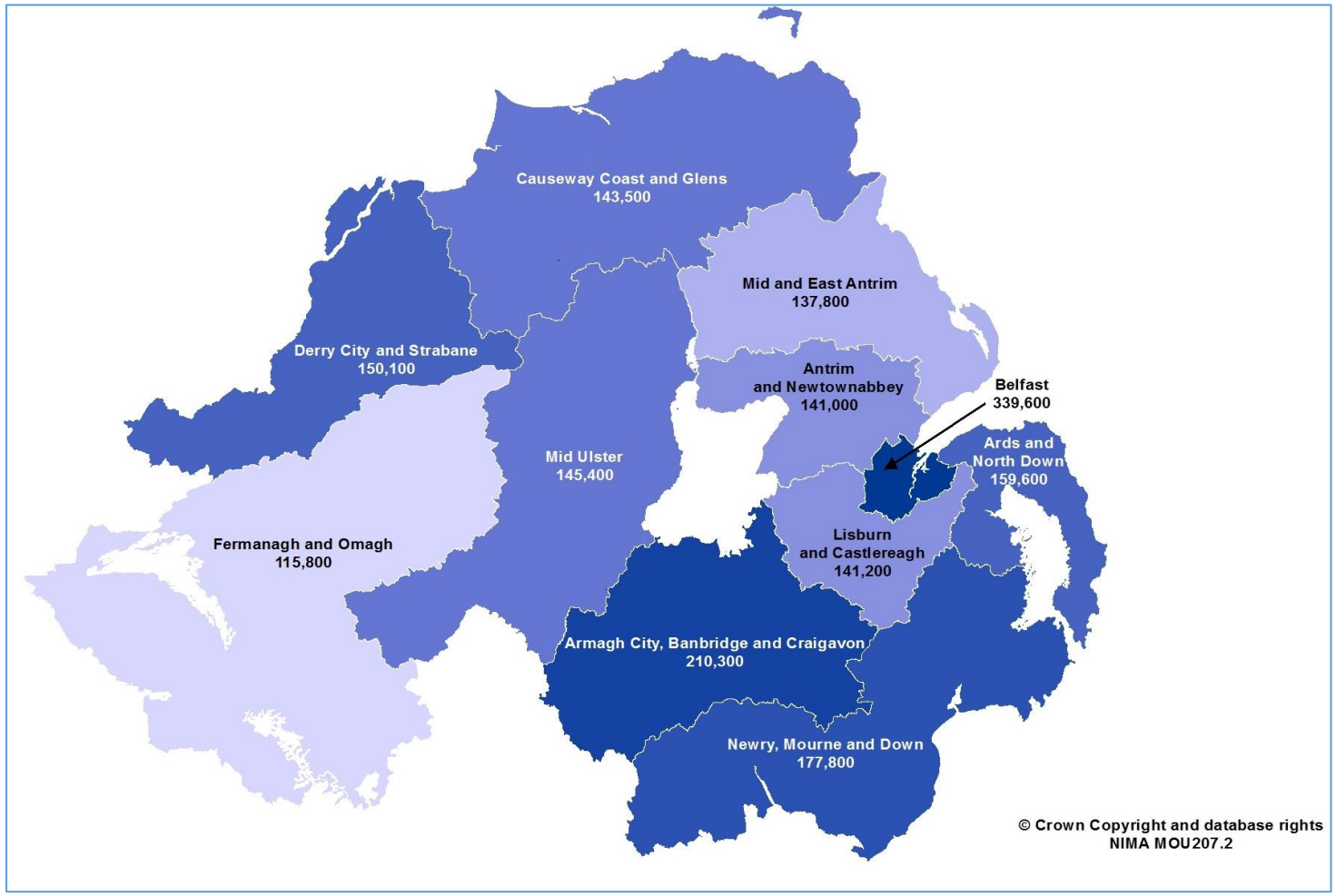
3.2 Local Government District Populations

The 11 Local Government Districts (LGDs) in Northern Ireland vary in population size from 115,800 in Fermanagh and Omagh to 339,600 in Belfast (Mid-Year estimates 2016). Figure 4 illustrates the LGD boundaries and population sizes.

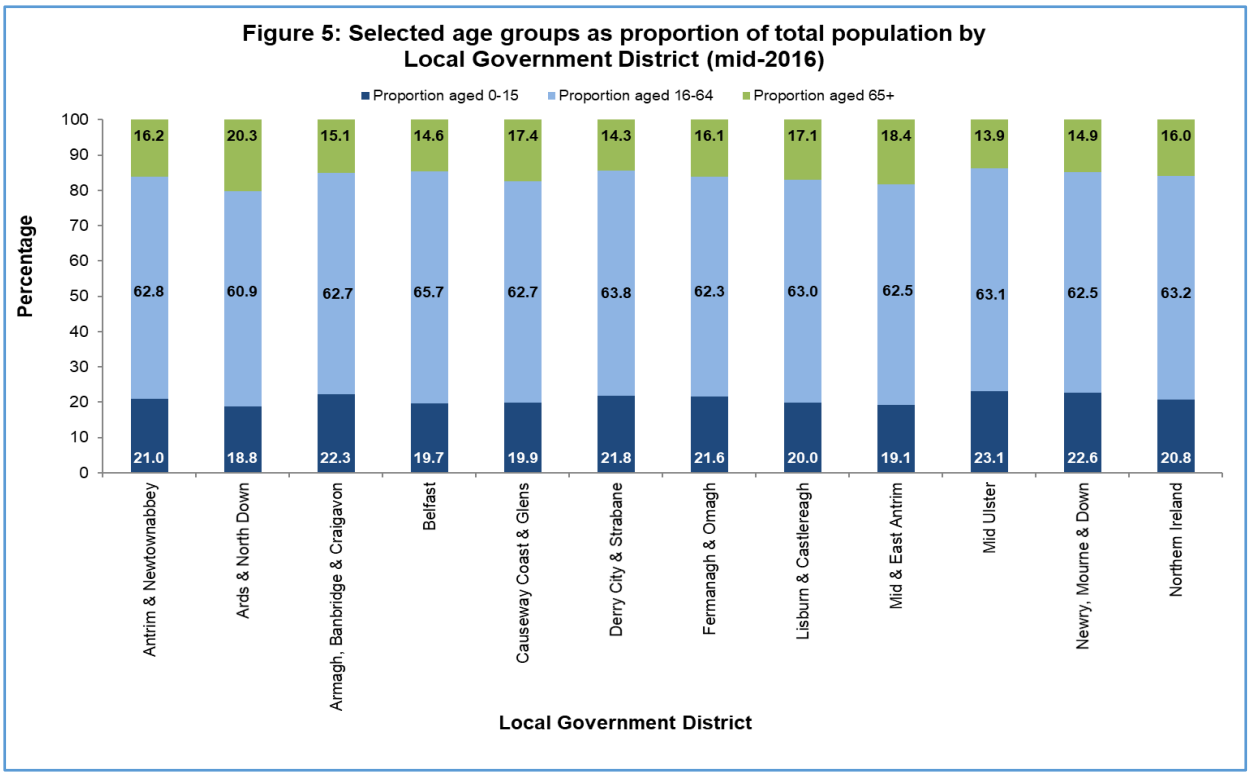
Figure 5 sets out the LGD populations broken down by the proportions in three age bands. There are differences in the age structure of the populations.

- The proportion of children aged 0-15 varies from 18.8% in Ards and North Down to 23.1% in Mid-Ulster.
- The proportion of the population aged 65 and over varies from 13.9% in Mid-Ulster to 20.3% in Ards and North Down.

Figure 4: 2016 Mid-Year Population Estimates for Local Government Districts

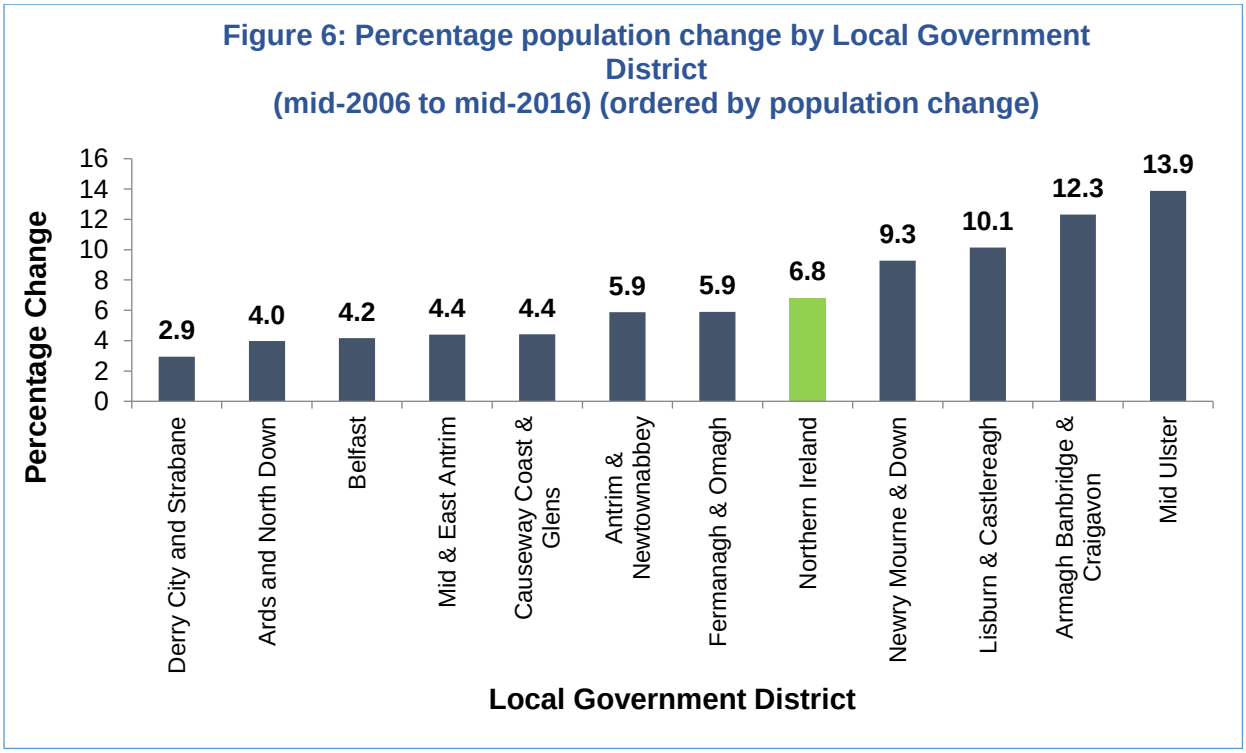


Source: Northern Ireland Statistics and Research Agency



Source: Northern Ireland Statistics and Research Agency

The rate of growth of LGD populations has varied in recent years (Figure 6). Between 2006 and 2016 the overall growth in population was 6.8% for Northern Ireland but this varied from 2.9% in Derry City and Strabane to 13.9% in Mid-Ulster.

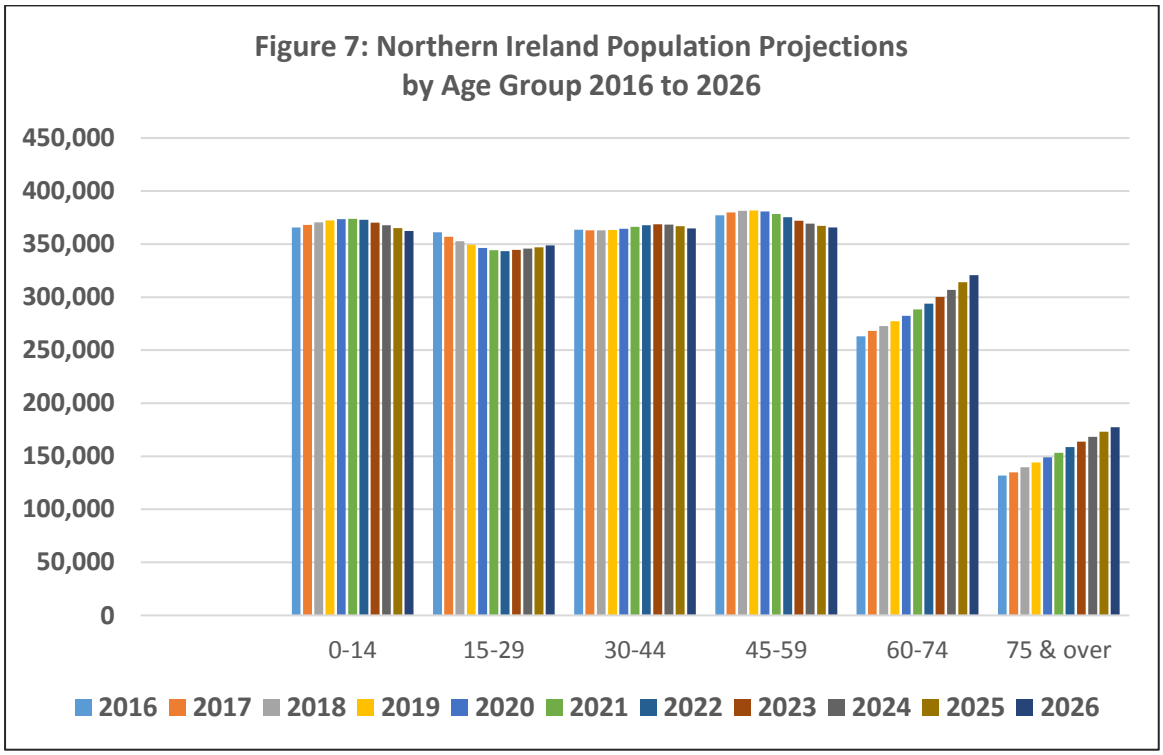


Source: Northern Ireland Statistics and Research Agency

3.3 Population Projections

Population projections at the Northern Ireland level are prepared by the Office for National Statistics (ONS) every two years.[29] The Northern Ireland Statistics and Research Agency (NISRA) subsequently prepare and publish projections for areas within Northern Ireland.[30]

Based on the mid-2016 population estimate, the population of Northern Ireland is projected to rise by 4.2% to reach 1.940 million in mid-2026. Figure 7 illustrates the projected trend until 2026 by age group. The age groups with the greatest projected growth are the 60 to 74 and 75 and over age groups.

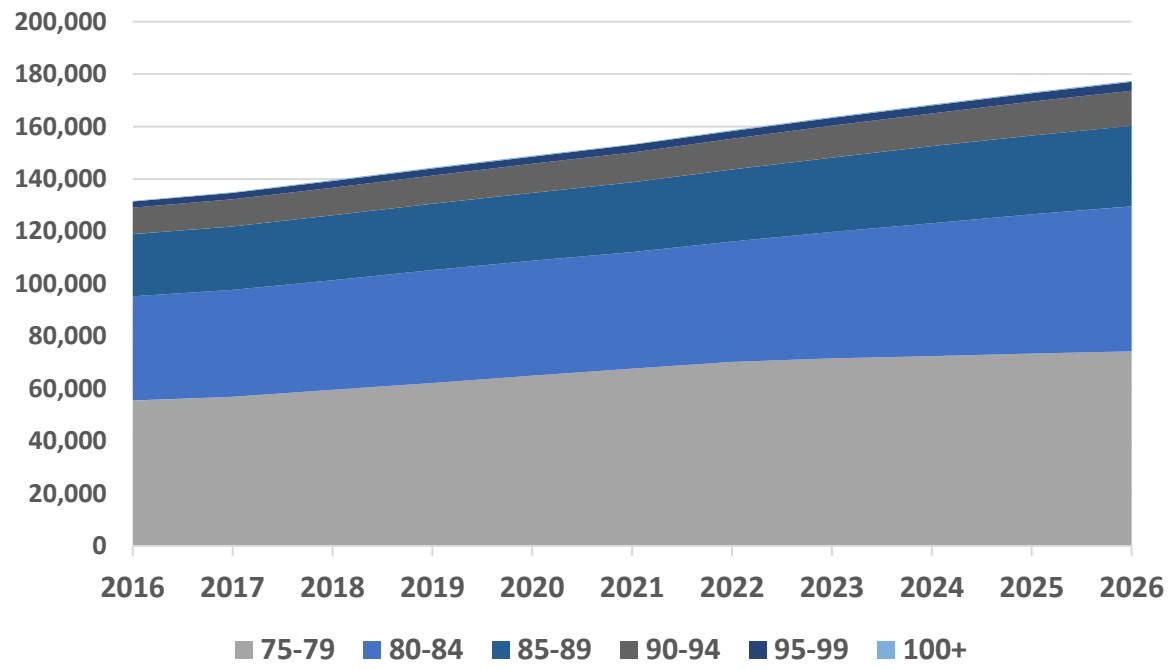


Source: Northern Ireland Statistics and Research Agency

Figure 8 shows the rising population, aged over 75 years, by 5-year age band. The total population over 75 is projected to rise by 34.7% from 131,696 in 2016 to 177,438 in 2026.

[29] 2016 Population Projections for Northern Ireland: *NISRA Statistical Bulletin*: 26 October 2017
[30] Population Projections for areas within Northern Ireland: *NISRA Statistical Bulletin*: 26 April 2018

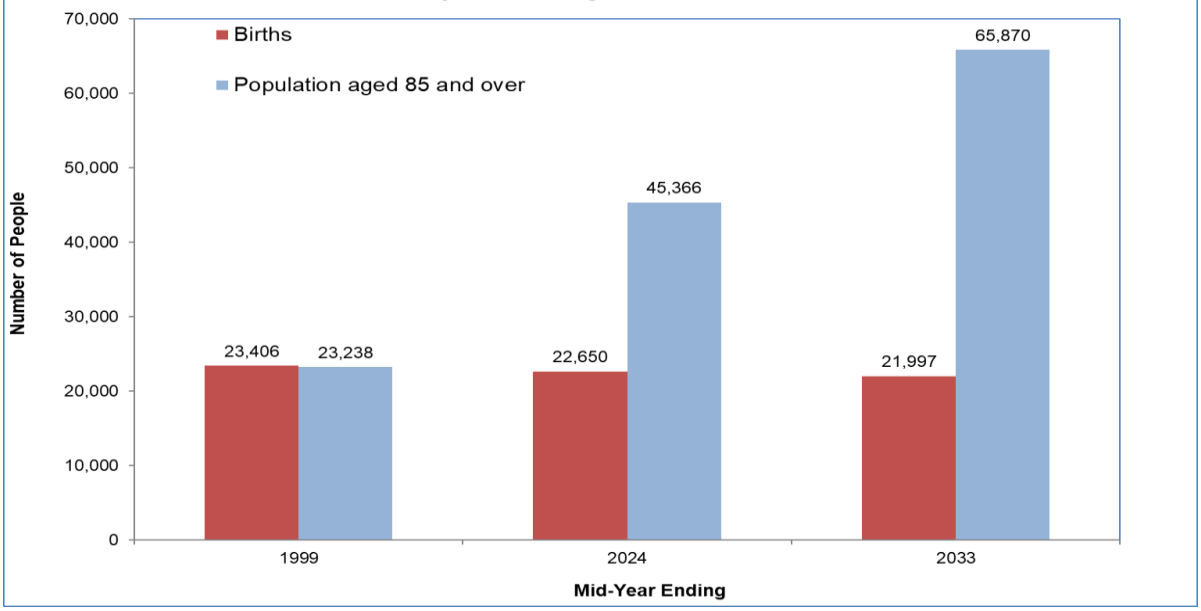
Figure 8: Northern Ireland Population Projections Age 75+ 2016 to 2026



Source: Northern Ireland Statistics and Research Agency

Figure 9 shows how the relative number of births to the population aged over 85 is projected to change during the period from 1996 to 2033. While these populations were of similar size in 1999, the ratio is projected to be nearly three people over the age of 85 to each birth in Northern Ireland in 2033.

Figure 9: Estimated and projected population aged 85 and over alongside the number of births, years ending mid-1999, mid-2024, and mid-2033



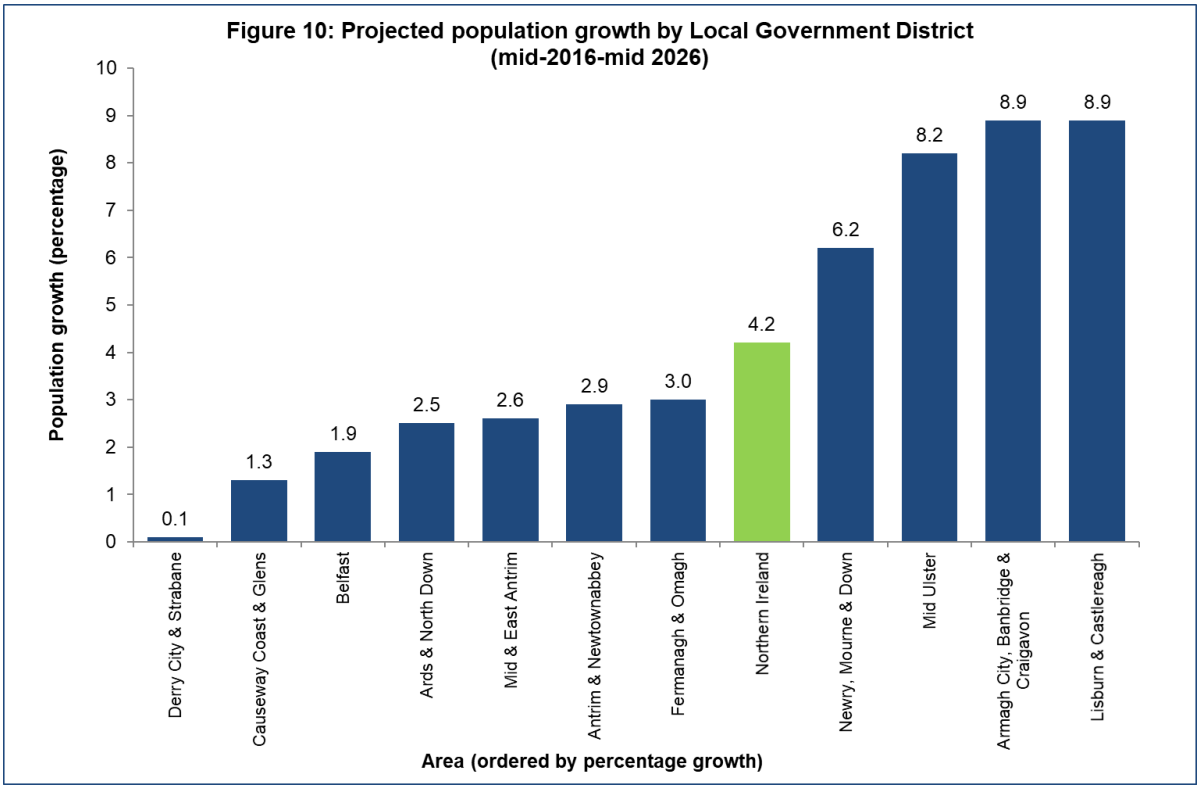
Source: NISRA 2016 Population Projections

A new set of population projections was published by NISRA, in April 2018, for areas within Northern Ireland, based on the 2016 estimates.[31]

Population growth is expected in each Local Government District (LGD) during the 10 year period from mid-2016 to mid-2026. The rate of growth will differ between LGDs during this period. Projected growth ranges from 0.1% (200 people) in Derry City and Strabane LGD to 8.9% in both Armagh City, Banbridge and Craigavon LGD (18,600 people) and Lisburn and Castlereagh LGD (12,500 people).

Figure 10 sets out the total percentage projected growth for each LGD in Northern Ireland to 2026.

Figure 10: Projected population growth by Local Government District (mid-2016-mid 2026)



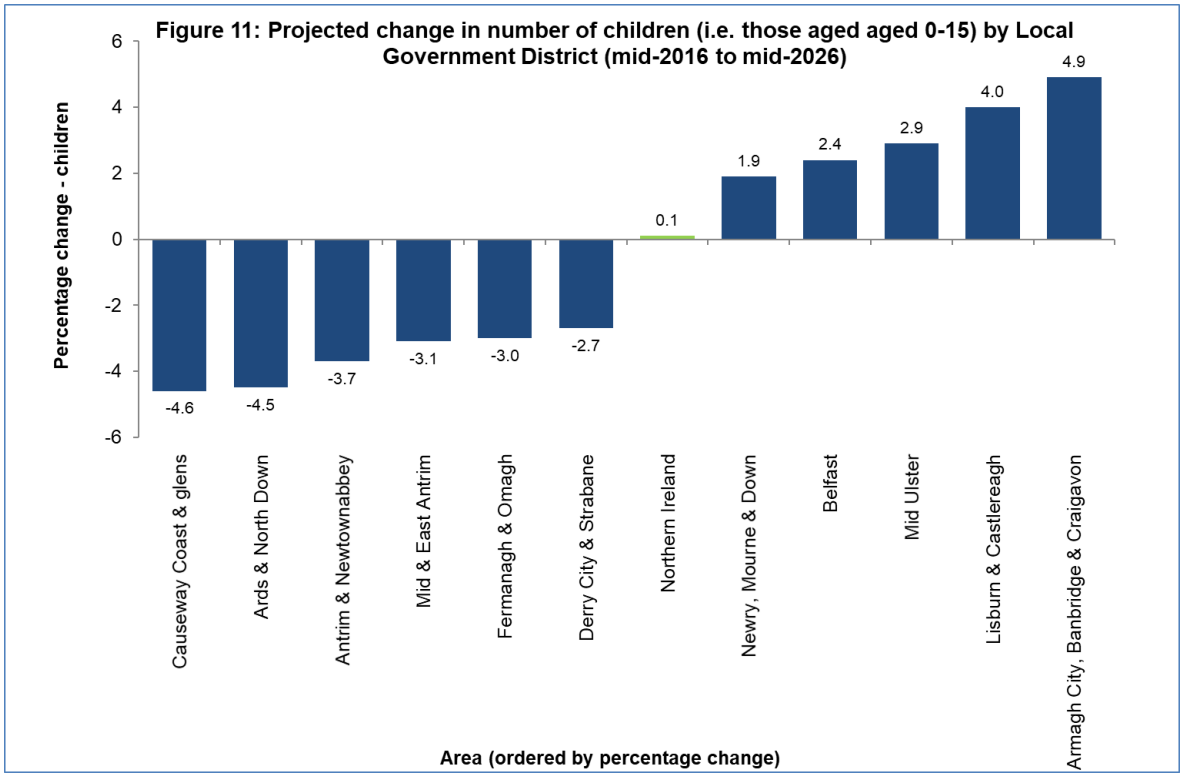
Source: NISRA Population Projections for areas within Northern Ireland: 2016-based

While the total number of children in Northern Ireland aged 0 to 15 years is projected to rise by only 0.1 per cent (600 children) between 2016 and 2026, there will be significant differences in different LGDs, as shown in Figure 11. The largest percentage increase of 4.9% is projected in Armagh City, Banbridge and Craigavon LGD, equivalent to 2,300 children. The greatest fall of 4.6% is projected in Causeway Coast and Glens LGD, equivalent to 1,300 children.

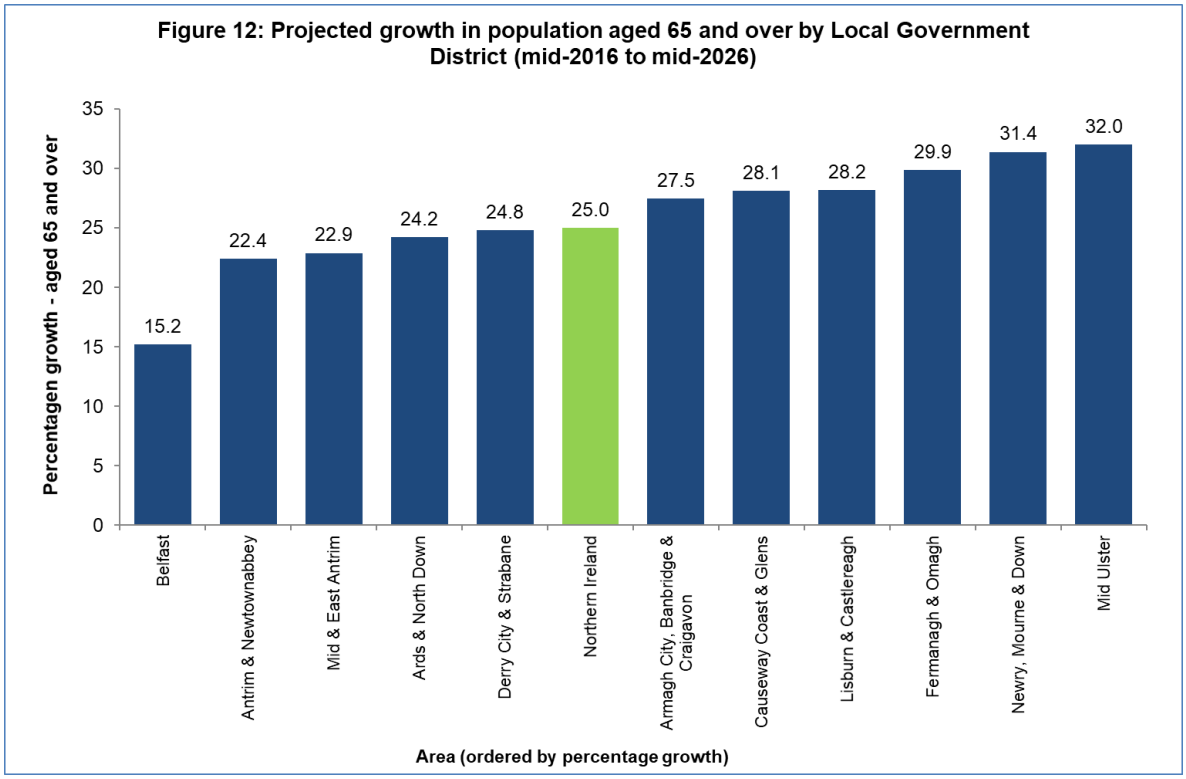
Increases are projected in each LGD in the number of people over the age of 65 years, as shown in Figure 12. The greatest percentage increase of 32.0% is projected in Newry Mourne and Down LGD (8,300 people). Belfast LGD is

[31] Population Projections for areas within Northern Ireland: *NISRA Statistical Bulletin*: 26 April 2018

projected to have the smallest percentage increase in this age category of 15.2% (7,500 people).



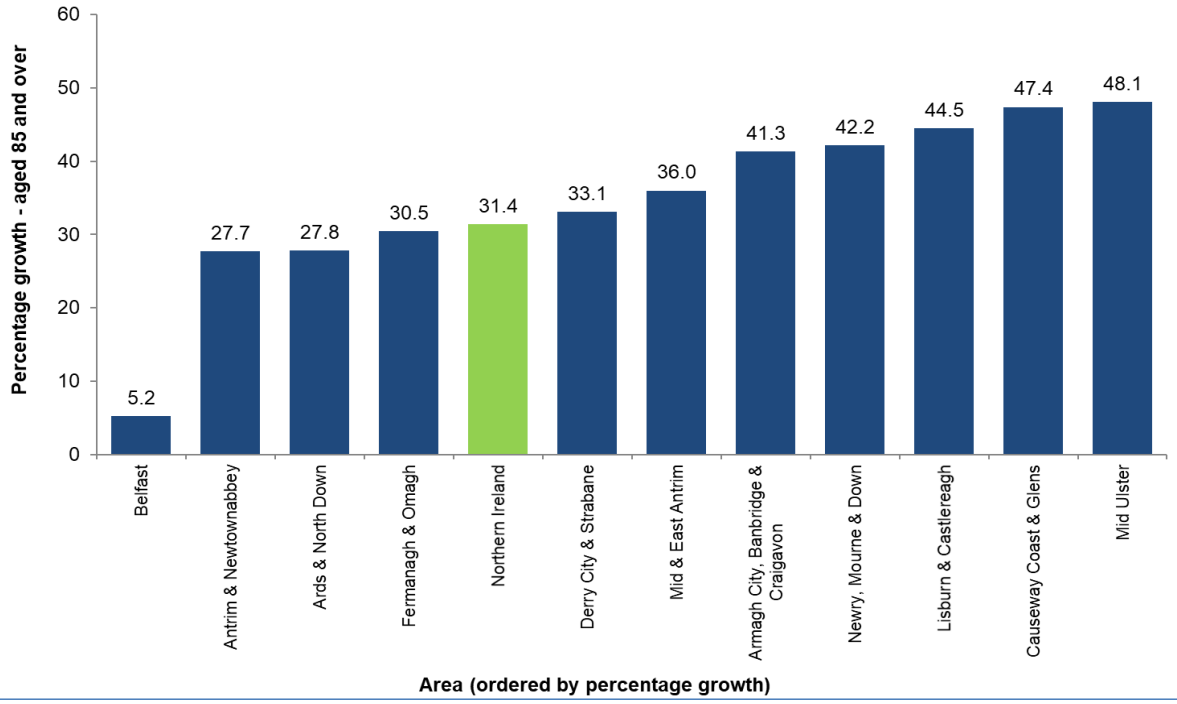
Source: NISRA Population Projections for areas within Northern Ireland: 2016-based



Source: NISRA Population Projections for areas within Northern Ireland: 2016-based

Figure 13 shows the projected increases in population in LGD Populations aged over 85 years. Five LGDs are projected to have growth of over 40% in this age category between 2016 and 2026. Belfast LGD is projected to have the lowest rate of growth at 5.2%, equivalent to 400 people. Mid-Ulster LGD is projected to have the highest rate of increase at 48.1% (1,200 people).

Figure 13: Projected growth in population aged 85 and over by Local Government District (mid-2016 to mid-2026)



Source: NISRA Population Projections for areas within Northern Ireland: 2016-based

3.4 Deprivation patterns

Measures of spatial distribution of deprivation have been developed and used in Northern Ireland since the 1970s to target resources to the most deprived areas. A revised set of measures was released in November 2017, following a period of consultation. The Northern Ireland Multiple Deprivation Measures 2017 (NIMDM 2017)[32] provide a method for ranking areas within Northern Ireland in order of the most deprived to the least deprived.

The NIMDM 2017 provide information for seven distinct types of deprivation, known as domains, together with an overall multiple deprivation measure. The indicators in each domain are analysed to produce a domain specific deprivation ranking of each of 890 Super Output Areas (SOAs), which have an average population of around 2,100 people.

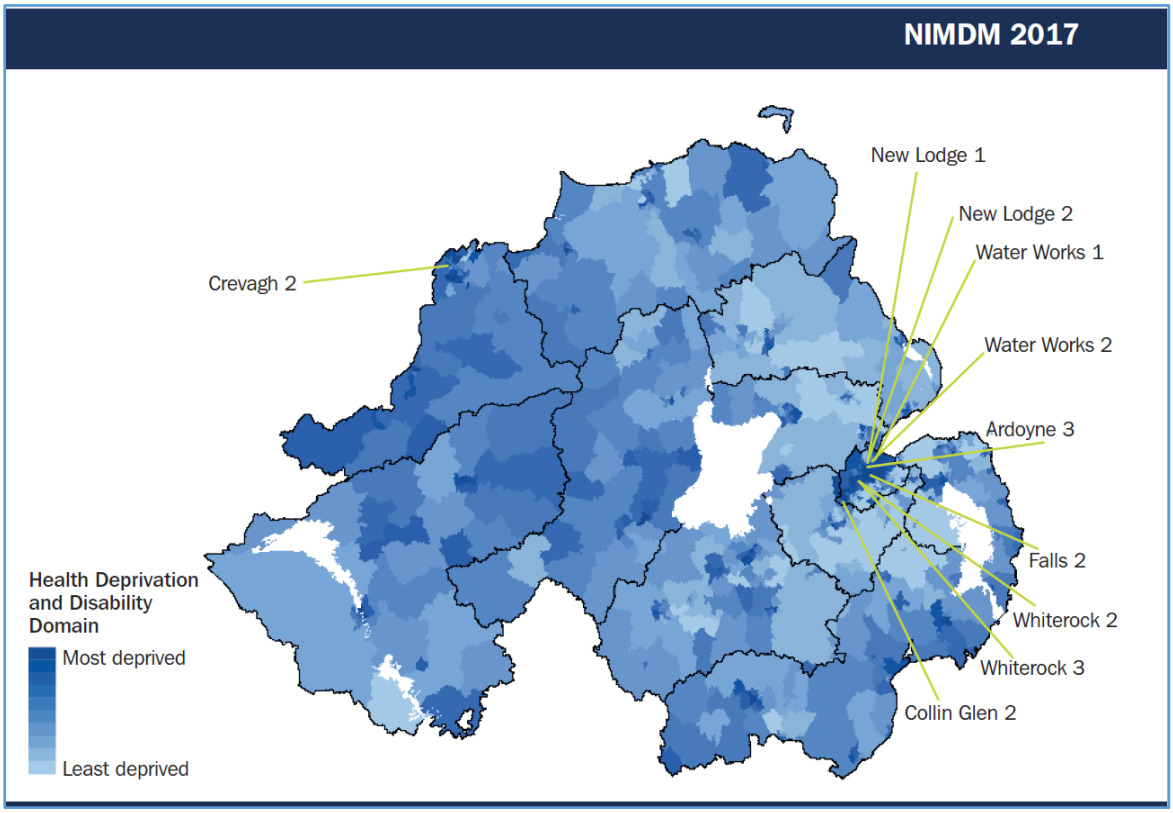
[32] Northern Ireland Statistics and Research Agency: Northern Ireland Multiple Deprivation Measures 2017.

One of the seven domains is the Health Deprivation and Disability Domain[33]. This is based on nine indicators. The purpose of the domain is to identify rates of premature deaths, and proportions of the population's quality of life impaired by poor health or disability, at the small area level.

Figure 14 illustrates the pattern of spatial distribution of this domain across Northern Ireland. The 10 most deprived SOAs are shown, of which 9 are in Belfast LGD.

59 of the 174 SOAs in Belfast LGD (34%) and 18 of the 75 SOAs in Derry City and Strabane LGD (24%) are in the 100 most deprived SOAs for the Health Deprivation and Disability Domain. Every LGD has at least one SOA in the 100 most deprived SOAs for this domain.

Figure 14: Health Deprivation and Disability Domain, NIMDM 2017

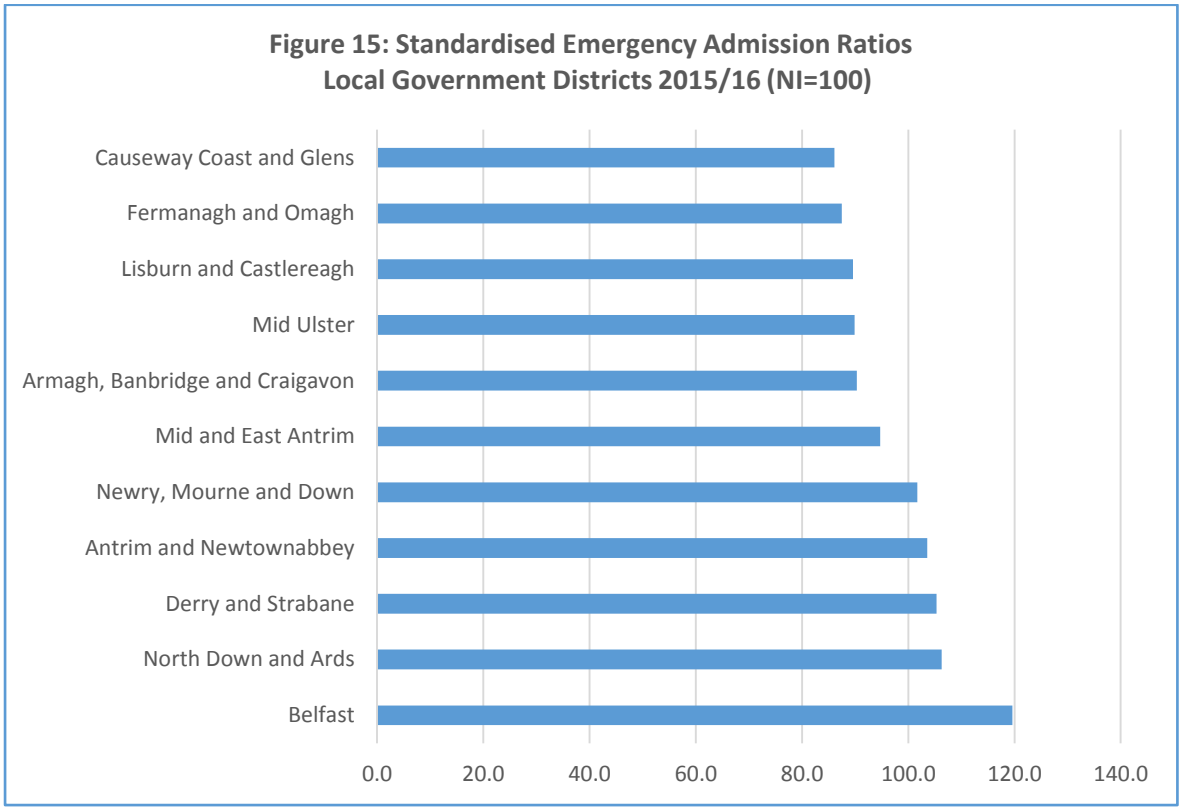


Source: Northern Ireland Statistics and Research Agency: Northern Ireland Multiple Deprivation Measures, 2017.

[33] The Health Deprivation and Disability Domain consists of nine indicators, including one combined mental health indicator. The indicators are: Standardised preventable death ratio (excluding Suicides); Standardised physical health-related benefit ratio; Standardised ratio of cancer registrations (excluding non-melanoma skin cancers); Standardised emergency admission ratio; Proportion of Singleton Births with Low Birth Weight; Standardised ration of Children's Dental Extractions; Standardised ratio of people on multiple prescriptions on a regular basis; Standardised ratio of people with a long-term health problem or disability (Excluding Mental Health problems); and a Combined Mental Health Indicator.

Figure 15 shows the distribution of the Standardised Emergency Admission Ratio (2015/16) by LGD, which is one of the indicators used in the Health Deprivation and Disability Domain. These ratios have taken the different age structures of the LGD populations into account. Belfast LGD has the highest ratio (119.6). Causeway Coast and Glens LGD has the lowest ratio (86.1).

When calculating the ratios, only emergency admissions resulting in a stay of four nights or more were included as a measure of severity.

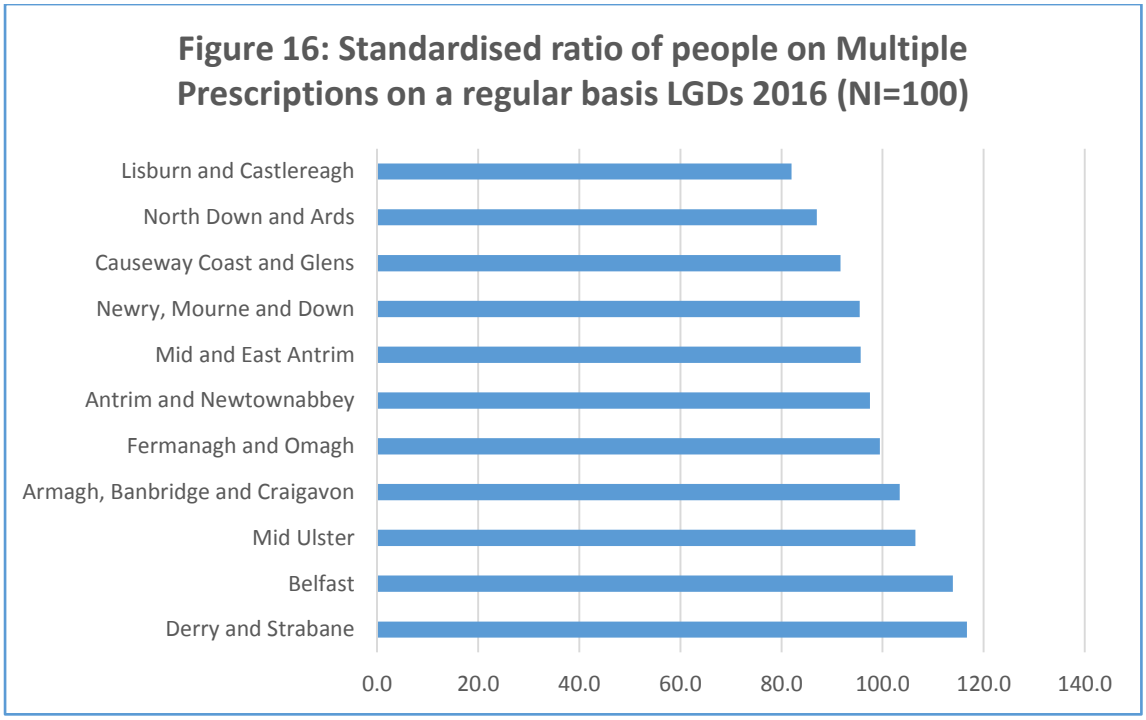


Source: Northern Ireland Statistics and Research Agency: Northern Ireland Multiple Deprivation Measures, 2017.

Figure 16 below shows the distribution by LGD of the Standardised Ratio of People on Multiple Prescriptions, which is another indicator used in the Health Deprivation and Disability Domain. This is likely to relate to the prevalence of chronic diseases.

For the purpose of calculating this ratio, People on Multiple Prescriptions are defined as people receiving 5 or more prescriptions, 3 out of 4 quarters, including the first and last quarters of the year.

For this measure the highest ratio is in Derry and Strabane LGD (116.7) and Lisburn and Castlereagh LGD has the lowest (82.0).



Source: Northern Ireland Statistics and Research Agency: Northern Ireland Multiple Deprivation Measures, 2017.

The relationships between deprivation and age group, and the number of attendances at Emergency Departments (EDs) in Northern Ireland, are shown in Figure 17.

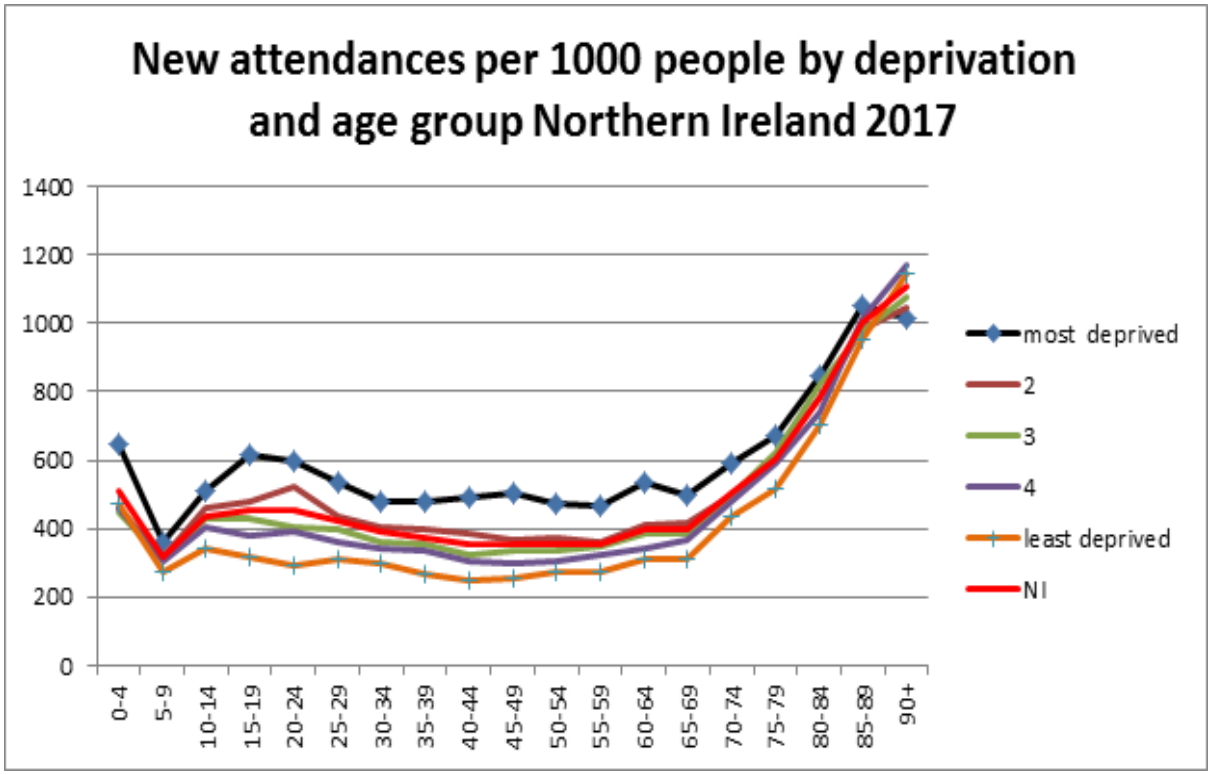
In all age groups there is a positive relationship between increasing levels of deprivation and the number of attendances at EDs.

The strength of the relationship is different in different age groups. From the 70-74 age group upwards, the attendance rates by age group rise steeply and the ratios between deprivation groups reduce.

The pattern in Northern Ireland is very similar to a recently published study from London which found that that population levels of socioeconomic deprivation and long-term conditions are the major influence on ED attendance. Using linked primary and secondary care data, the authors showed that the population burden of multimorbidity is the strongest predictor of ED attendance, explaining much of the association with social deprivation. In that study, higher use of the GP surgery was associated with higher rates of ED attendance.[34]

[34] Hull SA et al: Population and patient factors affecting emergency department attendances in London: retrospective cohort analysis of linked primary and secondary records. *BJGP* 2018; 68(668) 123.

Figure 17: New attendances at Emergency Departments in Northern Ireland by deprivation and age group, 2017.



Source: Public Health Agency

3.5 Summary

During the 25 years from 1991 to 2016, the estimated population of Northern Ireland increased by over 250,000. While the number of children aged 0-15 years fell by some 28,500, the number of people aged over 65 years rose by nearly 70,000.

During the implementation period for 'Health and Wellbeing 2026: Delivering Together', the total population is projected to increase by a further 77,600. The number of children aged 0-15 years is projected to rise by 600 and the number of people aged 16 to 64, by 2,500. The number of people aged 65 and over is projected to rise by 74,500.

Projections for Local Government Districts show that their relative size and population structures will change between 2016 and 2026.

The Northern Ireland Multiple Deprivation Measures 2017 report that 77 of the 100 most deprived Super Output Areas for the Heath Deprivation and Disability Domain are in the Belfast LGD and Derry City and Strabane LGD. Each LGD has at least one SOA in the 100 most deprived for this measure.

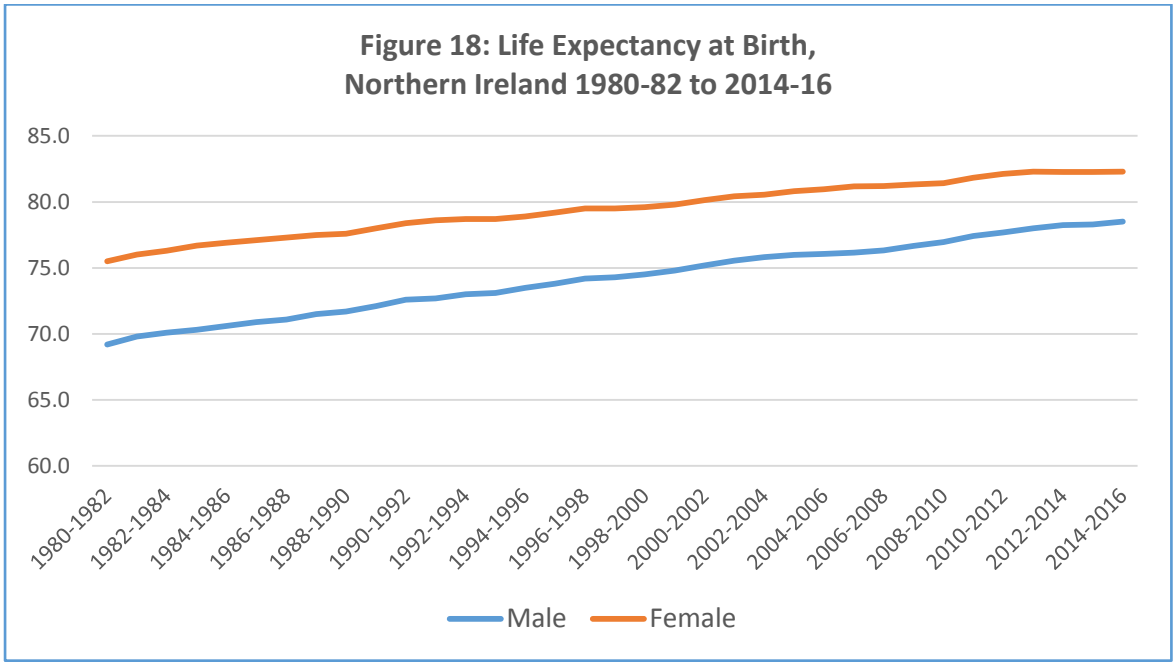
The relationships between social deprivation and age, and the rate of attendance at Emergency Departments in Northern Ireland show that, while attendance rates rise with increased levels of deprivation at all ages, the level of this increase reduces at older age groups. These findings are in keeping with evidence that levels of multimorbidity have the strongest influence on rates of ED attendance.

These patterns and changes will have significant impacts on the need for urgent and emergency care in the period until 2026, both at the Northern Ireland and Local Government District levels.

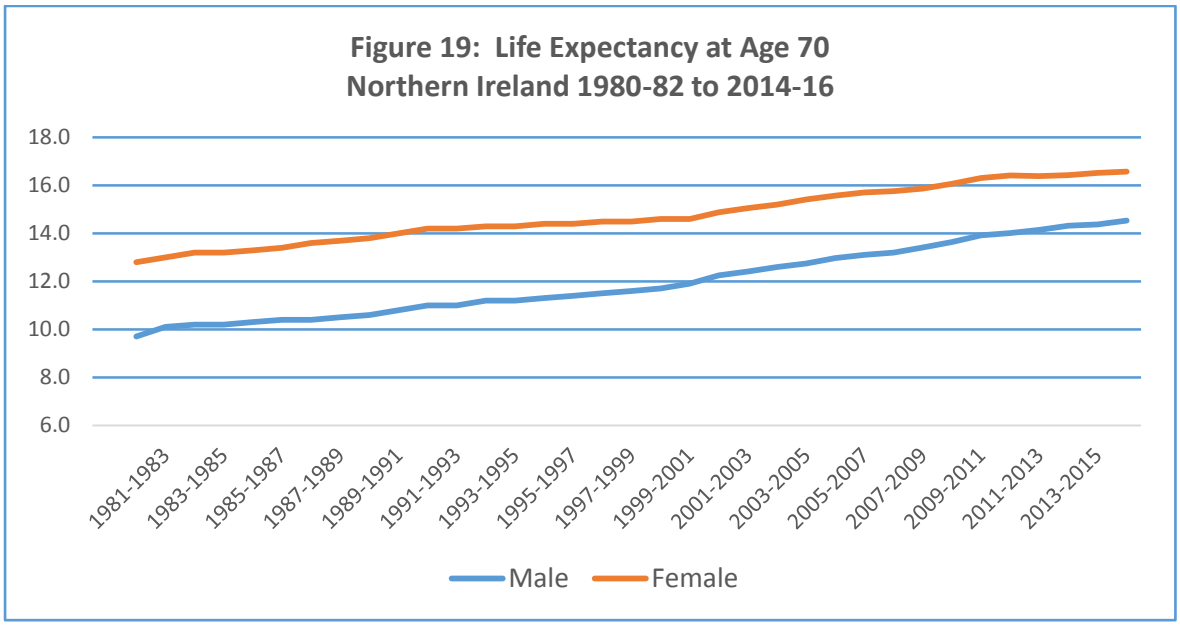
4. Health Trends

4.1 Life Expectancy

During the past 35 years, Life Expectancy at Birth in Northern Ireland has increased for men, from 69.2 to 78.5 years, and for women, from 75.5 to 82.2 years. (Figure 18). Life Expectancy at age 70 has increased for men, from 9.7 to 14.5 years, and for women from 12.8 to 16.6 years. (Figure 19). These changes demonstrate very significant improvement in the overall health of the population.



Source: Registrar General Annual Report for Northern Ireland 2016

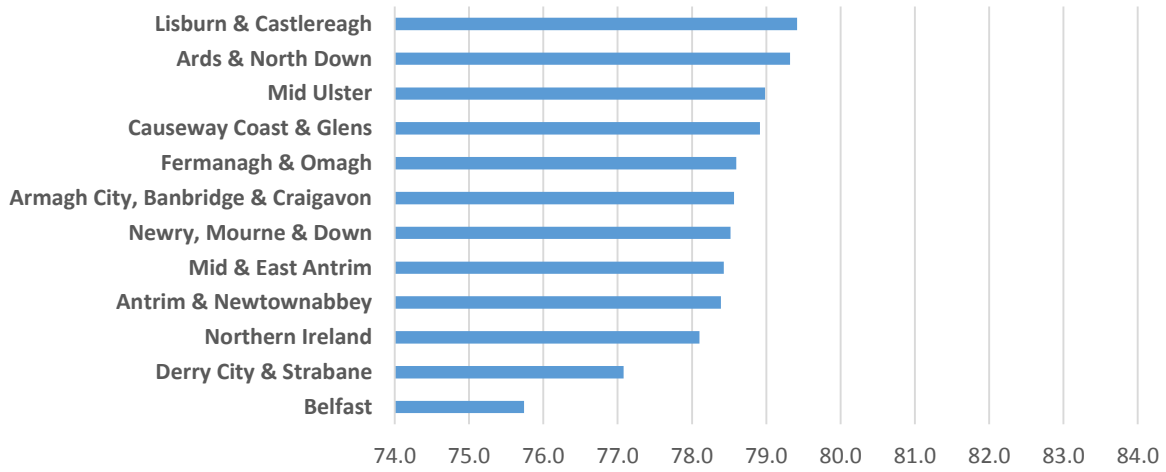


Source: Registrar General Annual Report for Northern Ireland 2016

Life Expectancy is different for both men and women at LGD Level in Northern Ireland. (Figures 20 and 21):

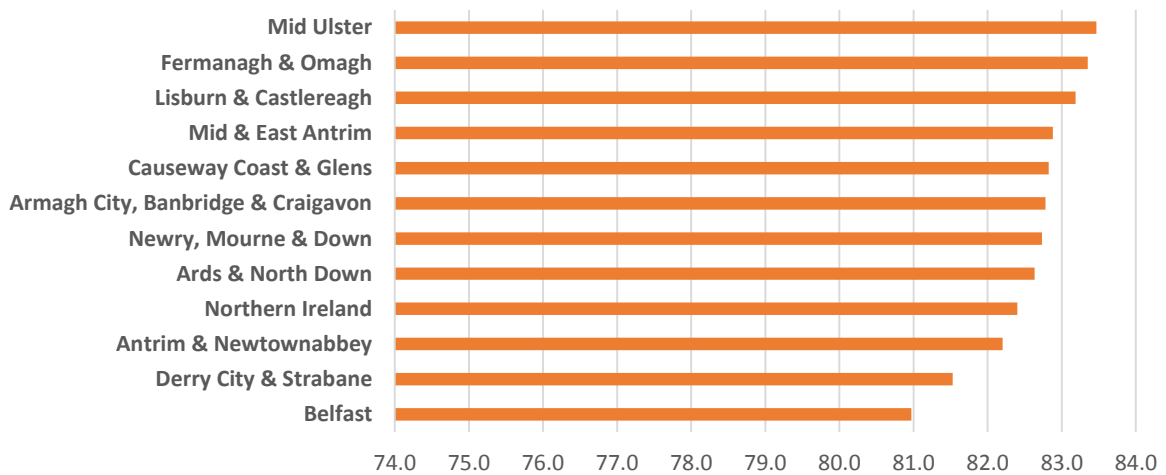
- In 2011 to 2013, Belfast LGD had the shortest Life Expectancy for both men (75.7 years) and women (81.0 years) in 2011 to 2013.
- Lisburn and Castlereagh LGD had the longest Life Expectancy for men (79.4 years) and Mid-Ulster LGD (83.5 years) for women.

Figure 20: Male Life Expectancy at Birth by LGD 2011 to 2013



Source: Registrar General Annual Report for Northern Ireland 2016

Figure 21: Female Life Expectancy at Birth by LGD 2011 to 2013



Source: Registrar General Annual Report for Northern Ireland 2016

4.2 Trauma

The term 'trauma' may describe any form of injury, for example, a fractured ankle or a lacerated arm. Major trauma describes those with injuries which may cause death or severe disability.

For the purposes of research and governance, an Injury Severity Score (ISS) is calculated for a trauma patient.[35] The ISS is calculated by scoring and summating a patient's individual injuries. This score ranges from 1, indicating minor injuries, to 75, indicating very severe injuries that are very likely to result in death. An ISS between 9 and 15 is considered moderate. An ISS of 16 or more is considered severe or as 'major trauma'.

Profound changes have been observed in the age patterns of major trauma patients, as reported to the Trauma Audit and Research Network (TARN) for the United Kingdom.[36]

In 1990, the average age of major trauma patients was 36.1 years with the largest age group aged 0-24 years. The most common mechanism of injury was road traffic collisions. By 2013, the average age had increased to 53.8 years. The single largest age group was 25 to 50, closely followed by those over 75 years. The most common mechanism was low falls.

A recent assessment from the State of Victoria in Australia has reported that the number and proportion of older adults there with major trauma are increasing rapidly and that this will impact on trauma system design. The authors emphasise the need to ensure that appropriate interventions are targeted to the right patients and that there needs to be enhanced efforts in primary prevention.[37]

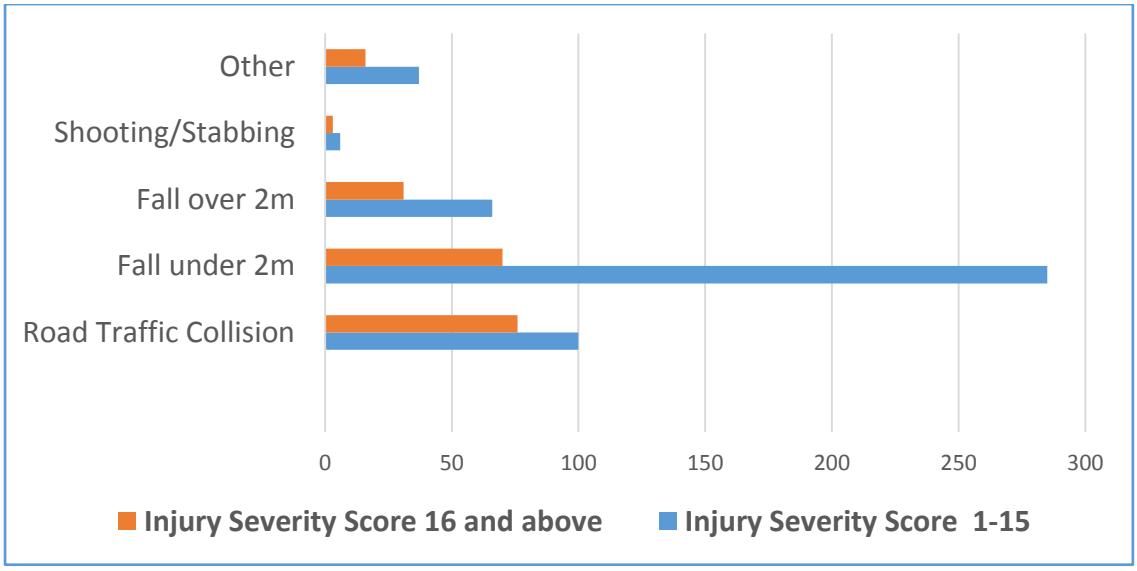
Northern Ireland established a Regional Trauma Network in 2016. Hospitals have started to send data to TARN, which will facilitate comparison on trends and outcomes for trauma patients.

The Trauma Network has provided some early information relating to Northern Ireland from the TARN database to inform the development of this report. The information does not include data from all hospitals in Northern Ireland and is for the period June 2017 to December 2017. It cannot therefore be used to calculate trauma incidence rates for the population of Northern Ireland. Nevertheless, it provides a very interesting insight into the patterns of trauma by injury mechanism and age.

Figure 22 shows the breakdown by ISS and Injury Mechanism of 690 trauma patients which were reported to TARN, between June and December 2017, from Northern Ireland. 196 patients had an ISS of 16 or more indicating severe trauma. Of the total number, the most frequent mechanism was a fall from under 2 metres. For those patients with severe trauma, the most frequent mechanism reported was a road traffic collision.

[35] Guidelines and Audit Implementation Network, RQIA; *Northern Ireland Trauma Audit*; February 2016
[36] Kehoe A, et al: The changing face of major trauma in the UK; Emergency Med J 2015;32:911–915
[37] Beck B, et al: Major trauma in older persons: BJS Open: DOI:10.1002/bjs5.80

Figure 22: Reports to the Trauma Audit and Research Network by Injury Mechanism and Injury Severity Score, Northern Ireland June to Dec. 2017.

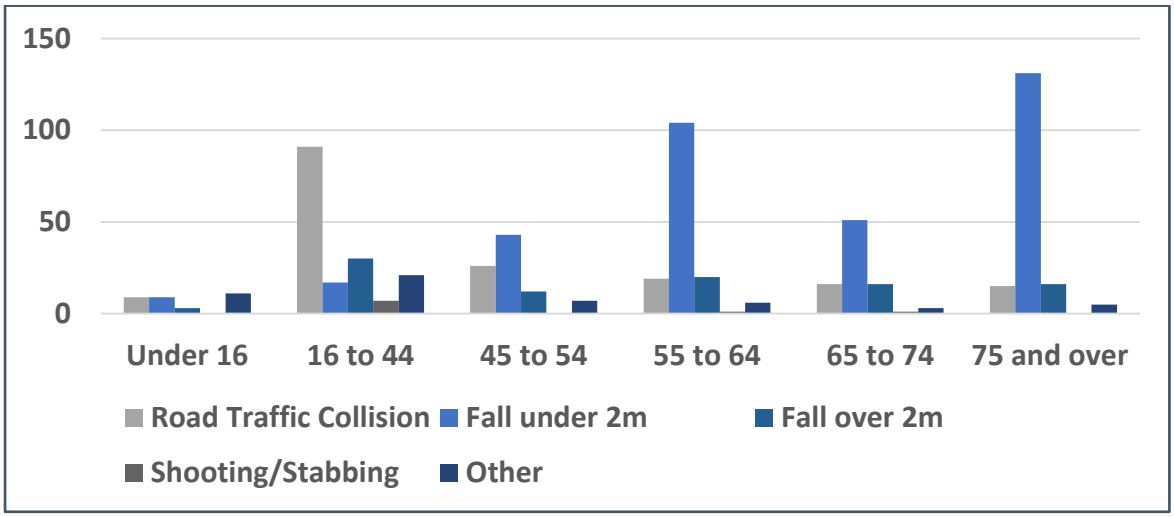


Source; Northern Ireland Trauma Network

Figure 23 shows the breakdown of reports to the database by age group and injury mechanism. There were 131 reports to the database of falls occurring in patients in the age group 75 and over.

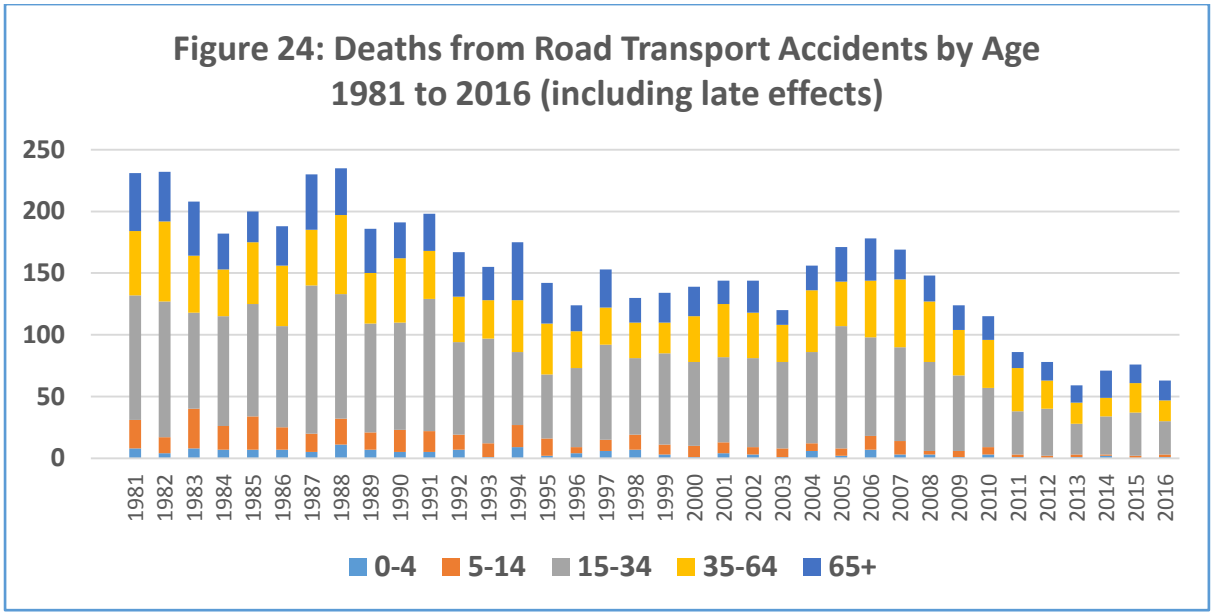
91 of the 176 reports relating to road traffic collisions were in the 16 to 44 age group.

Figure 23: Reports to the Trauma Audit and Research Network by Injury Mechanism and Age Group, Northern Ireland, June to December 2017.



Source: Northern Ireland Trauma Network

The number of people killed as a result of road traffic accidents in Northern Ireland fell between 1981 and 2016 (Figure 24). In 1988, 235 people died, of whom 101 were aged 15 to 34 years. The lowest figure was in 2013 when 59 people died.

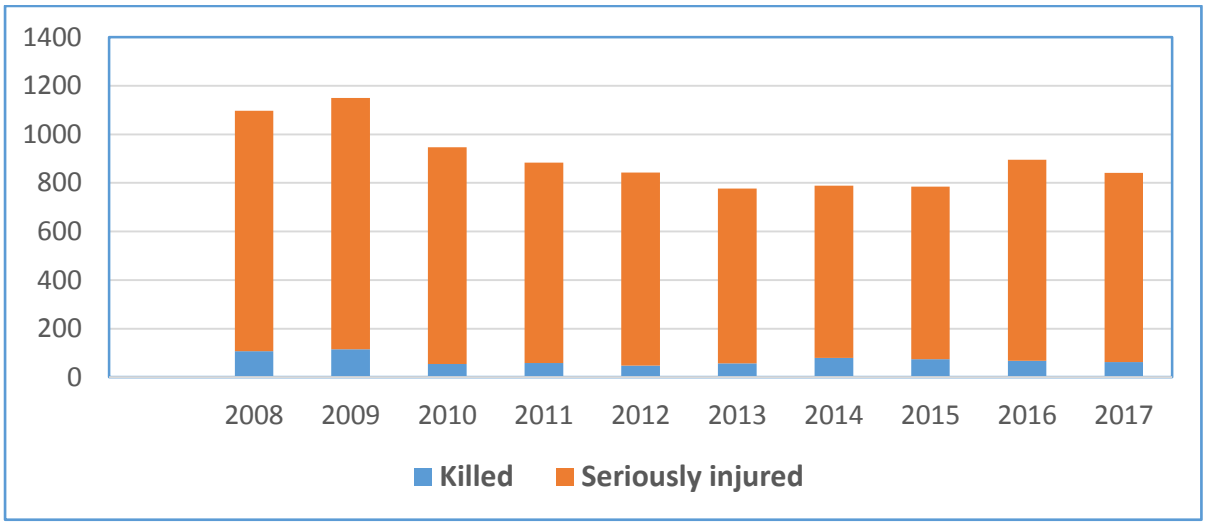


Source: NISRA: Registrar General Annual Report 2016, Deaths by Cause:

Police statistics show that the number of people killed or seriously injured (KSI casualties) in road traffic collisions fell between 2008 and 2016. In 2016, there was a six year high of 896, falling to 841, in 2017. (Figure 25).

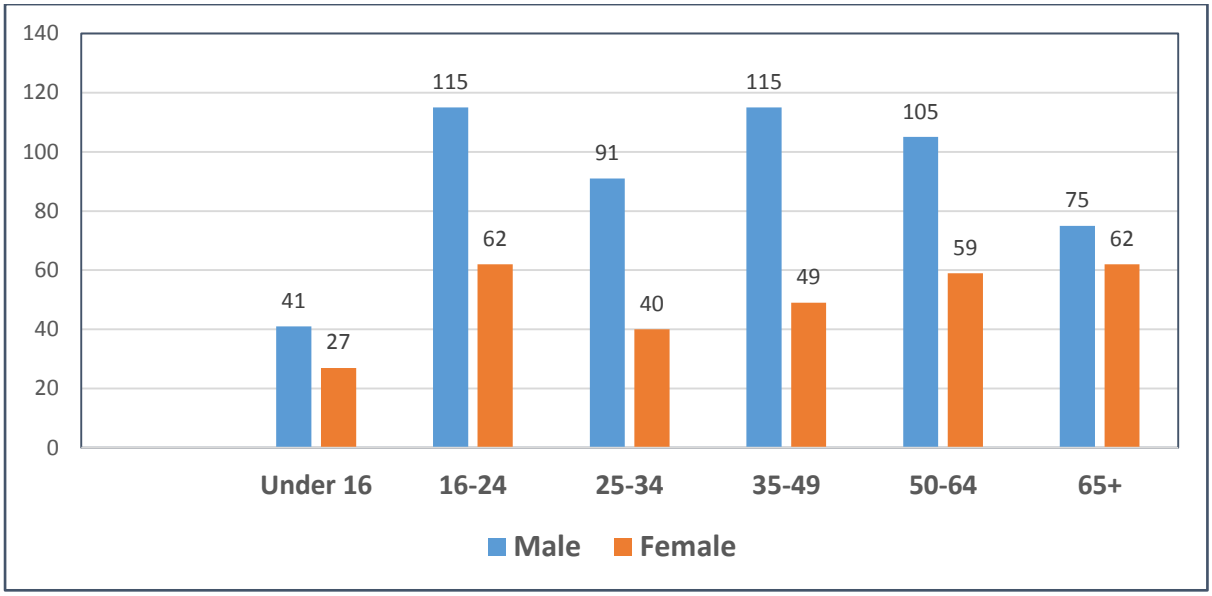
Males accounted for almost two thirds of all KSI casualties in 2017. The age group with the highest proportion was 16 to 24 years. (Figure 26).

Figure 25: Number of KSI Casualties resulting from Road Traffic Collisions, Northern Ireland, 2008 to 2017



Source: Police Recorded Injury Road Traffic Statistics: 2017 Key Statistics Report

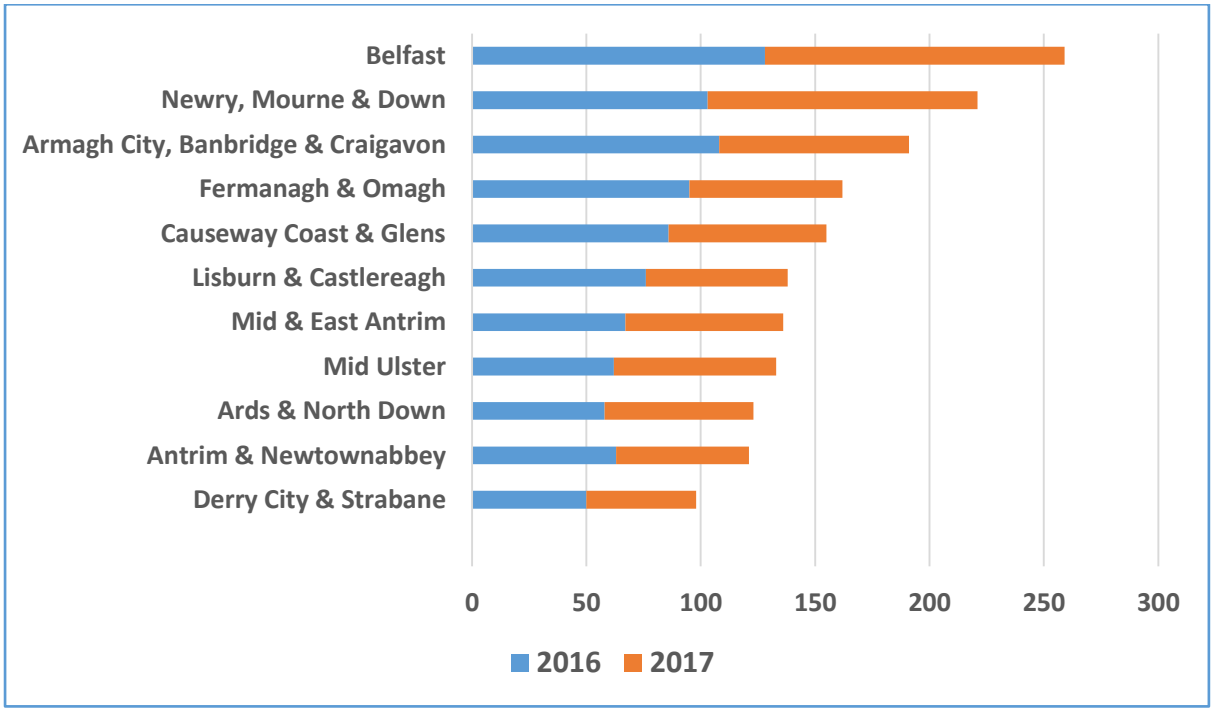
Figure 26: Number of KSI Casualties by Age and Gender, Northern Ireland, 2017



Source: Police Recorded Injury Road Traffic Statistics: 2017 Key Statistics Report

Figure 27 shows the number of people killed or seriously injured in road traffic collisions for each Police District in Northern Ireland during 2016 and 2017. The largest numbers were in Belfast District. High numbers were also recorded in Newry, Mourne and Down; and Armagh City Banbridge and Craigavon District.

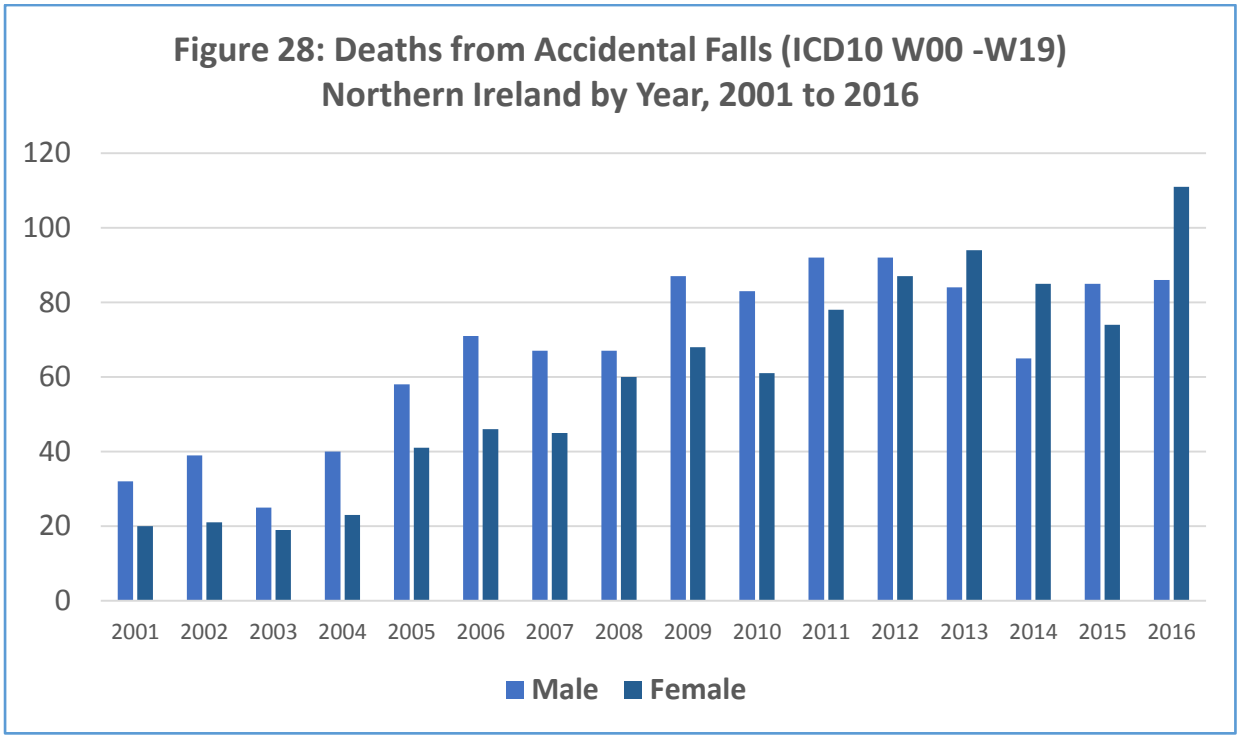
Figure 27: Numbers of KSI Casualties resulting from Road Traffic Collisions by Police District, Northern Ireland 2017



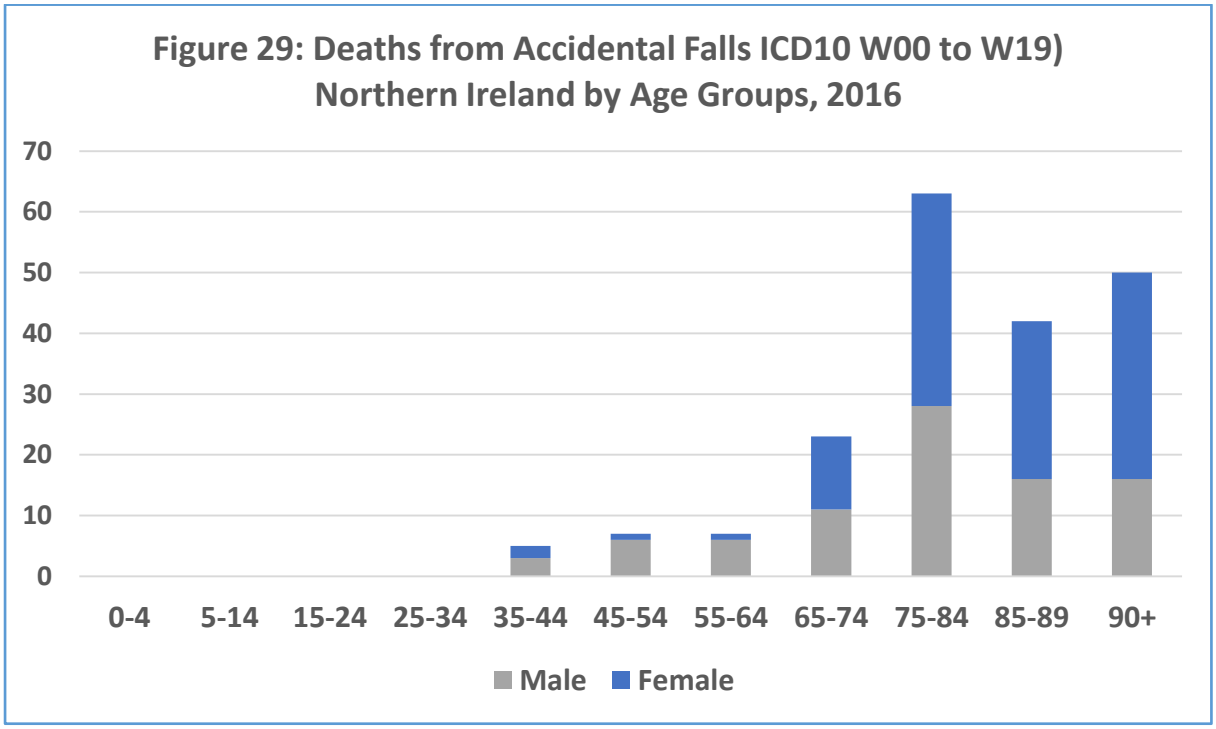
Source: Police Recorded Injury Road Traffic Statistics: 2017 Key Statistics Report

Figure 28 shows that the number of deaths attributed to falls in Northern Ireland rose during the period 2001 to 2016.

In 2016, there were 197 deaths from falls of which 155 took place among people over the age of 75 years (Figure 29).



Source: NISRA: Registrar General Annual Report 2016, Deaths by Cause



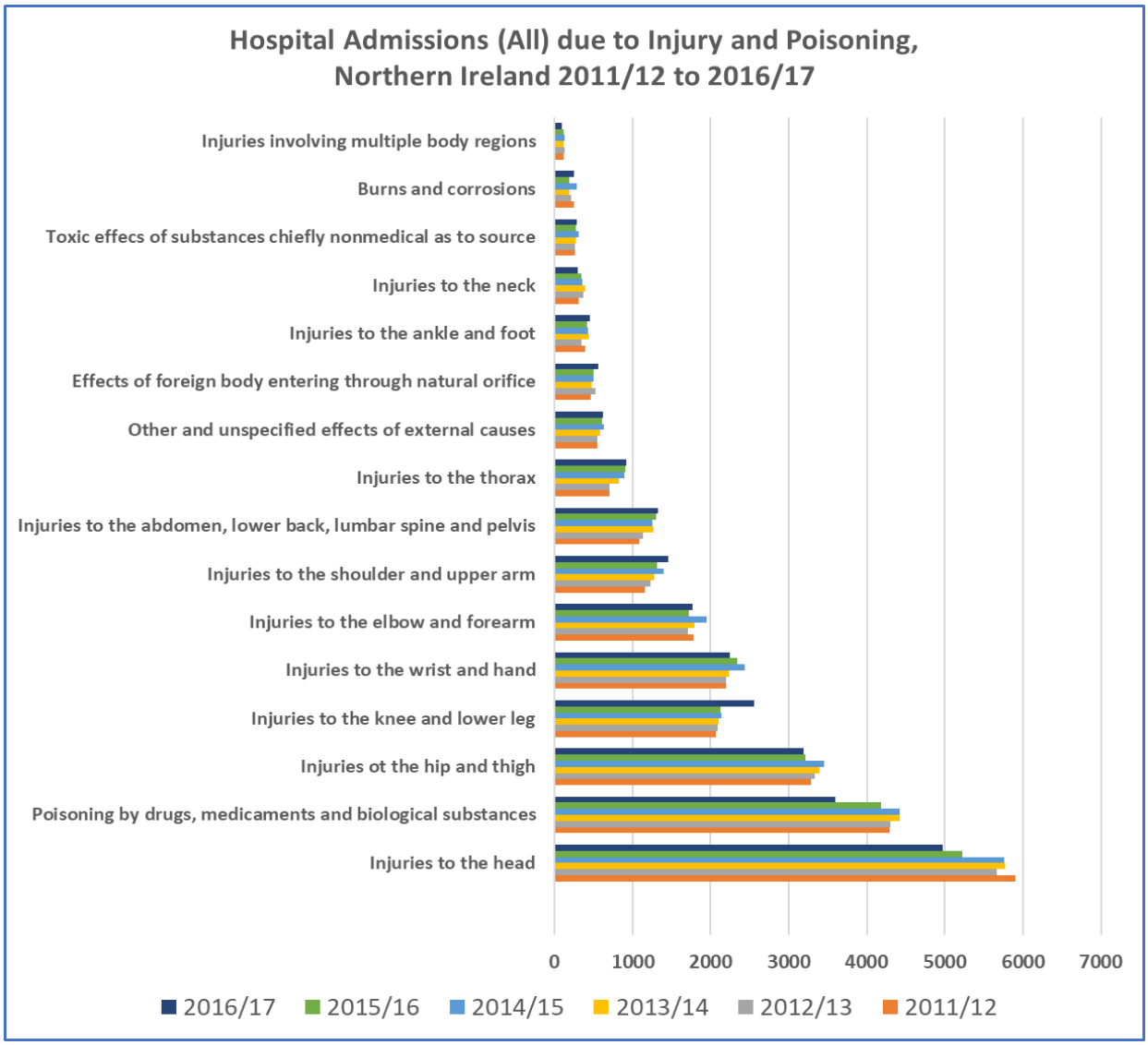
Source: NISRA: Registrar General Annual Report 2016, Deaths by Cause

In 2011/12 there were 29,444 admissions to hospitals in Northern Ireland under ICD10 Category XIX; *Injury, poisoning and certain other consequences of external causes*. In 2016/17, the total was similar when there were 29,596 admissions.

The total figures mask changes which have occurred in relation to particular types of injury. Figure 30 shows the breakdown of admissions by types of injury. The number of admissions due to the two largest diagnostic categories have fallen between 2011/12 and 2016/17. Injuries to the head fell by 18.8%. Poisoning by drugs, medicaments and biological substances fell by 19.3%.

During this period, the greatest proportionate rises have been in: Injuries to the thorax (24.5%); Injuries to the shoulder and upper arm (21.0%); and Injuries to the knee and lower leg (19.1%).

Figure 30: Number of Hospital Admissions (Emergency and Planned) due to Injury and Poisoning, by ICD10 Classification, Northern Ireland, 2011/12 to 2016/17

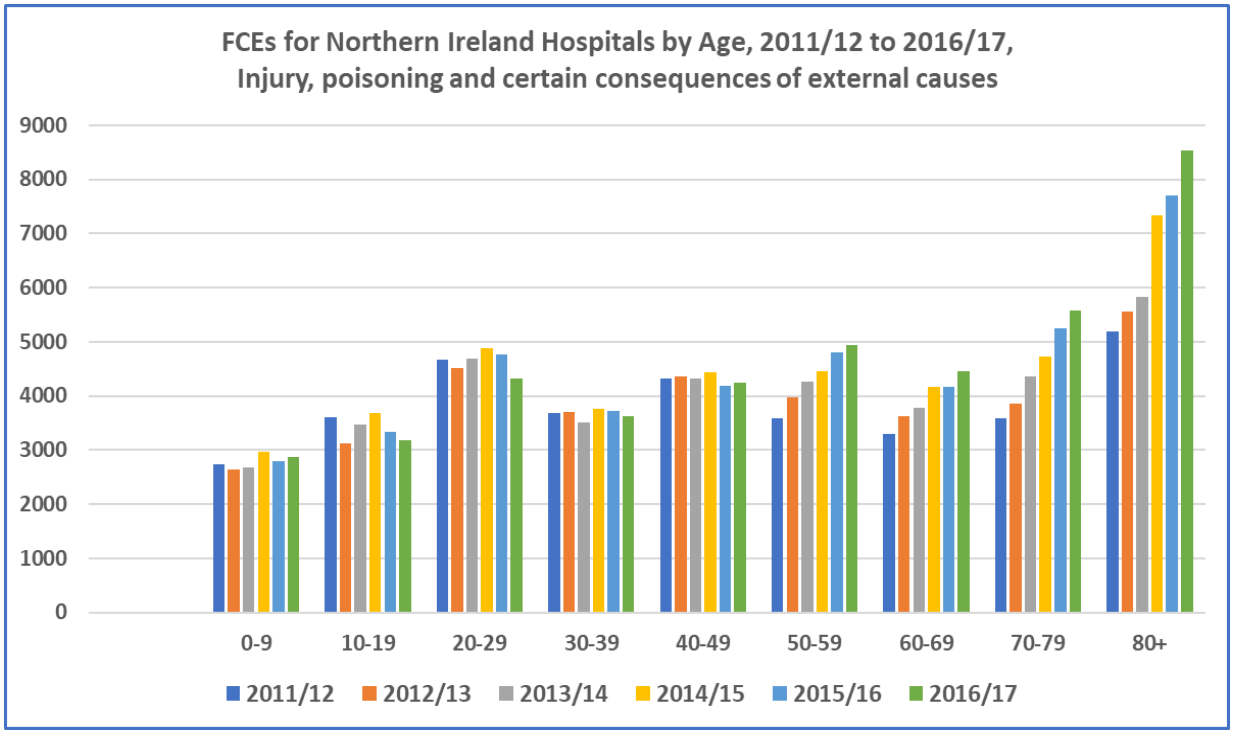


Source: Information Analysis Directorate: Hospital Statistics: Acute Episode-Based Activity Statistics; Volume 2, Diagnosis; Reports from 2011/12 to 2016/17

Figure 31 shows the breakdown of the number of Finished Consultant Episodes (FCEs) recorded for Northern Ireland Hospitals in recent years for the ICD10 Classification XIX: *Injury, poisoning and certain other consequences of external causes*. A patient may have several FCEs during a single admission.

The numbers stayed relatively stable between 2011/12 and 2016/17 up to age 49. There have been significant rises in the numbers of FCES from age 50 upwards.

Figure 31: Finished Consultant Episodes, Northern Ireland by Age Group; 2011/12 to 2016/17; Injury, poisoning and certain other consequences of external causes.



Source: Information Analysis Directorate: Hospital Statistics: Acute Episode-Based Activity Statistics; Volume 2, Diagnosis; Reports from 2011/12 to 2016/17

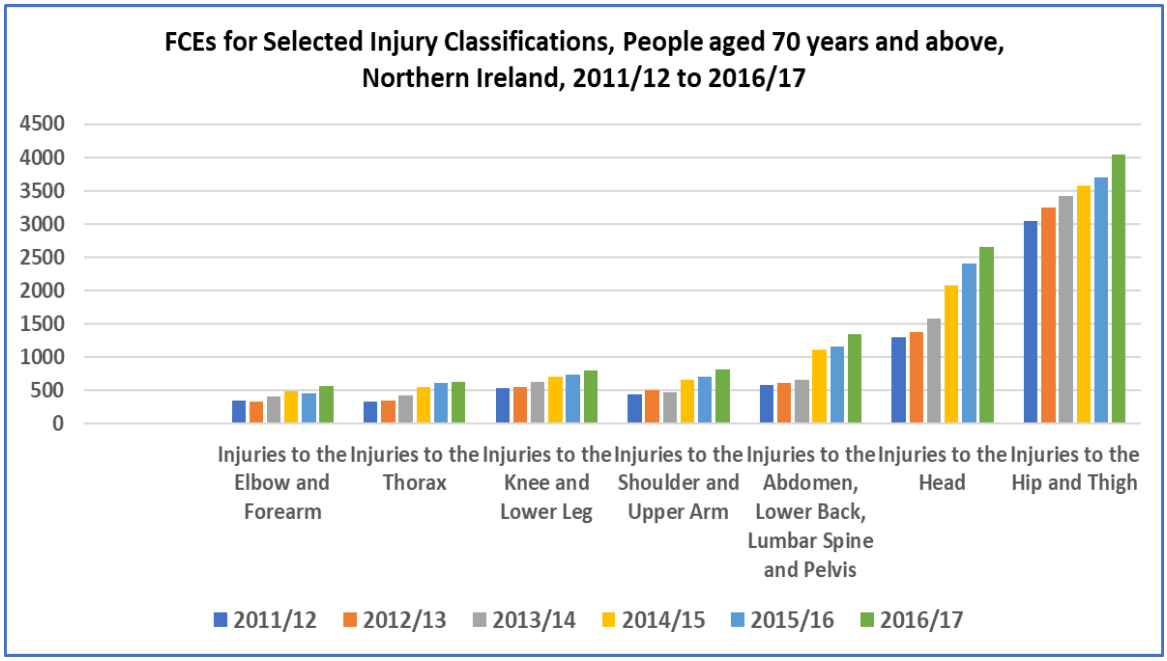
Figure 32 illustrates the trends for selected injury classifications, for people aged 70 and above. There were significant rises in several categories:

- Injuries to the Abdomen, Lower Back, Lumbar Spine and Pelvis rose by 132.3%
- Injuries to the Head rose by 105.9%.
- Injuries to the Hip and Thigh rose by 33.2%.

These changes require further investigation as they may reflect increases in the number of FCEs per admission.

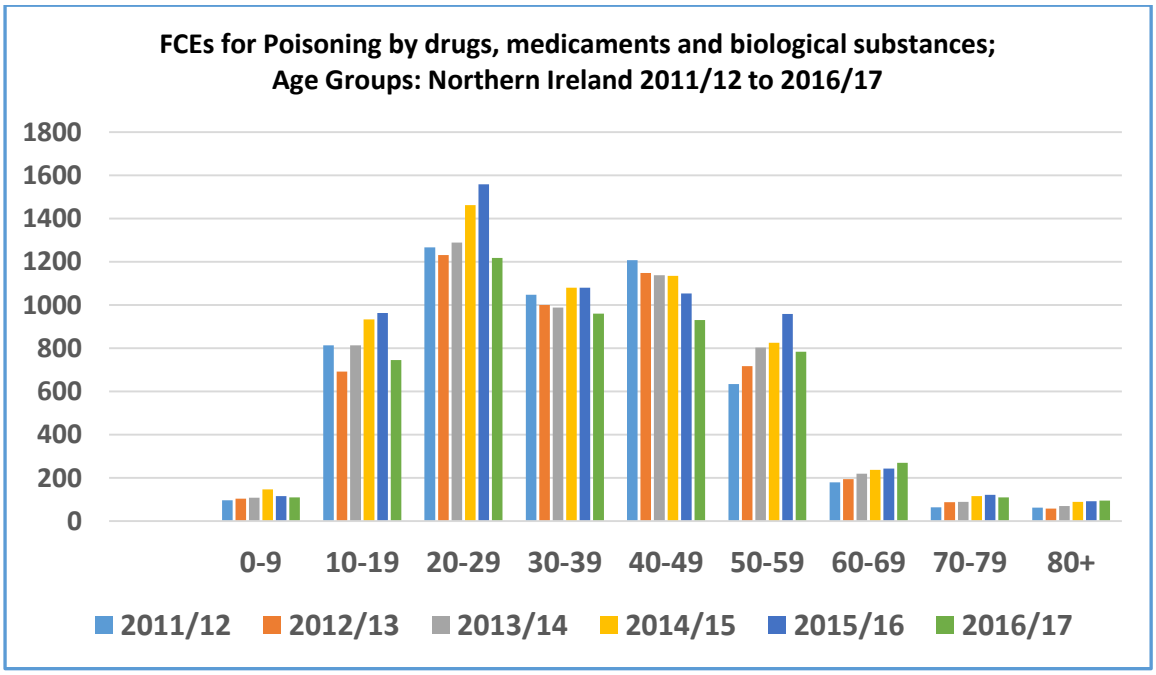
Figure 33 illustrates trends by age group of the numbers of FCEs due to Poisoning by drugs, medicaments and biological substances. For this classification, the highest numbers from 2011/12 to 2016/17 have been among those aged 20-29.

Figure 32: Finished Consultant Episodes for selected Injury Classifications: People aged 70 years and above, Northern Ireland, 2011/12 to 2016/17



Source: Information Analysis Directorate: Hospital Statistics: Acute Episode-Based Activity Statistics; Volume 2, Diagnosis; Reports from 2011/12 to 2016/17

Figure 33: Finished Consultant Episodes due to Poisoning by Age Group, Northern Ireland, 2011/12 to 2016/17



Source: Information Analysis Directorate: Hospital Statistics: Acute Episode-Based Activity Statistics; Volume 2, Diagnosis; Reports from 2011/12 to 2016/17

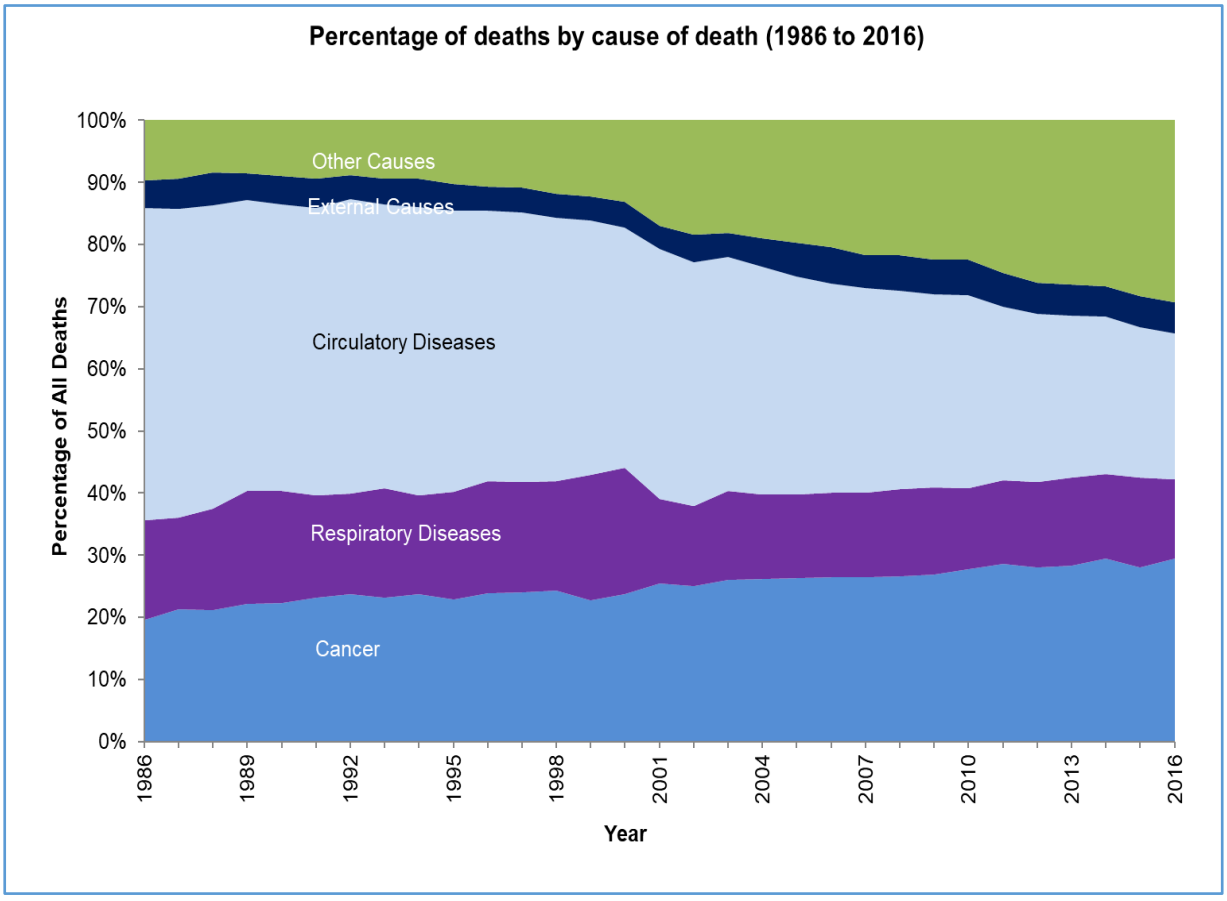
4.3 Major Illness

There have been significant changes in the patterns of major illness over the past 30 years. Figure 34 shows trends in the percentages of deaths attributed to different causes in Northern Ireland, from 1986 to 2016. During this period, the number of deaths due to Circulatory Diseases fell from 8,064 to 3,629 and from Respiratory Diseases from 2,581 to 1,973. Deaths from Cancer rose from 3,146 to 4,538. There were 730 deaths attributed to External Causes in 1986 and 772 in 2016.

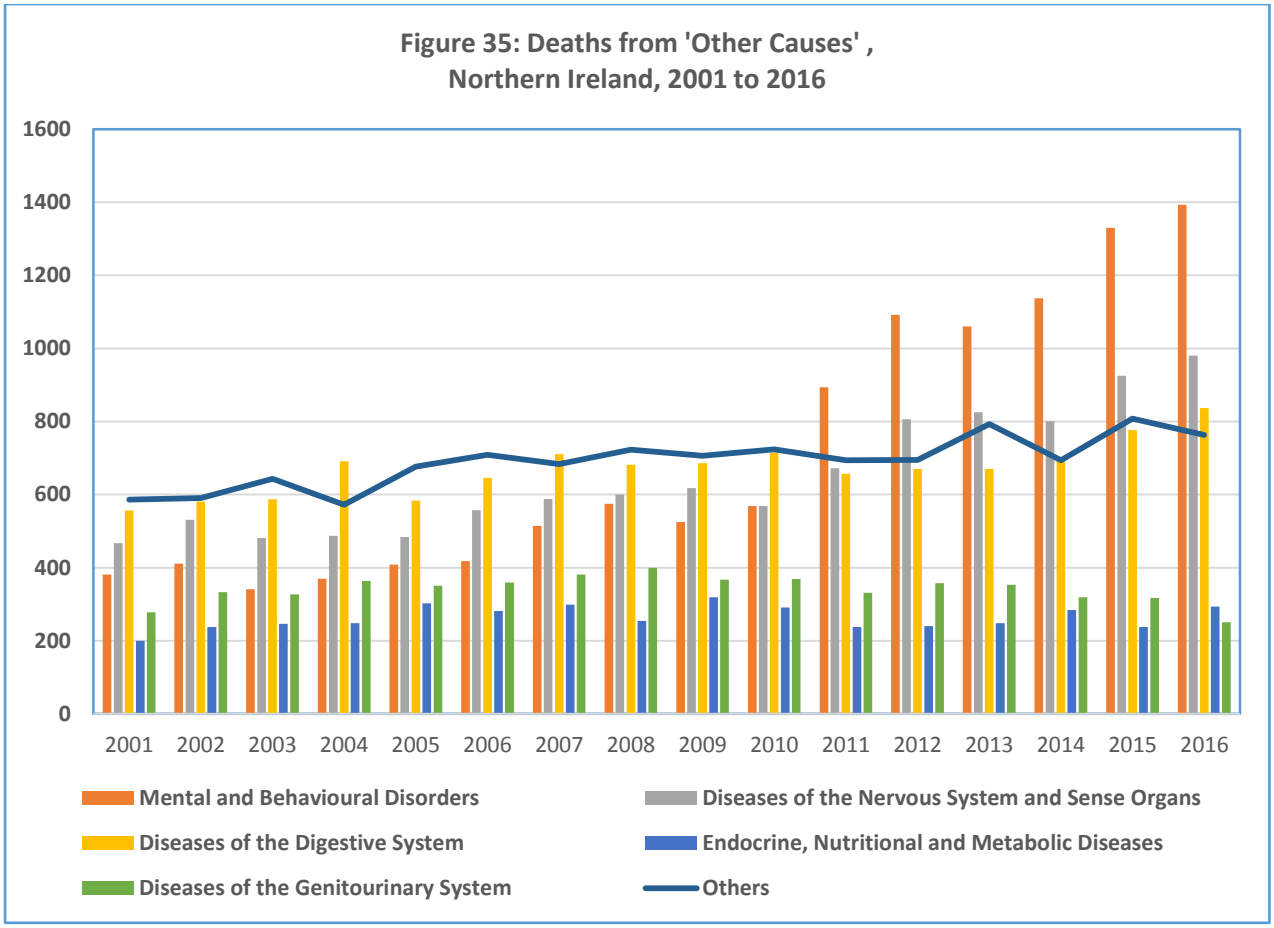
Of particular note in Figure 34 is the rise in the number of deaths attributed to other causes, from 1,544 in 2001 to 4,518 in 2016.

Figure 35 breaks this number down by attributed causes of death. It can be seen that the greatest rise has been in the number of deaths attributed to Mental and Behavioural Disorders. In 2001, there 381 deaths in this category. In 2016, the number has risen to 1,393 of which 1,331 were specified as due to vascular or unspecified dementia.

Figure 34: Percentage of deaths by cause, Northern Ireland, 1986 to 2016



Source: NISRA: Registrar General Annual Report 2016; Deaths by Cause

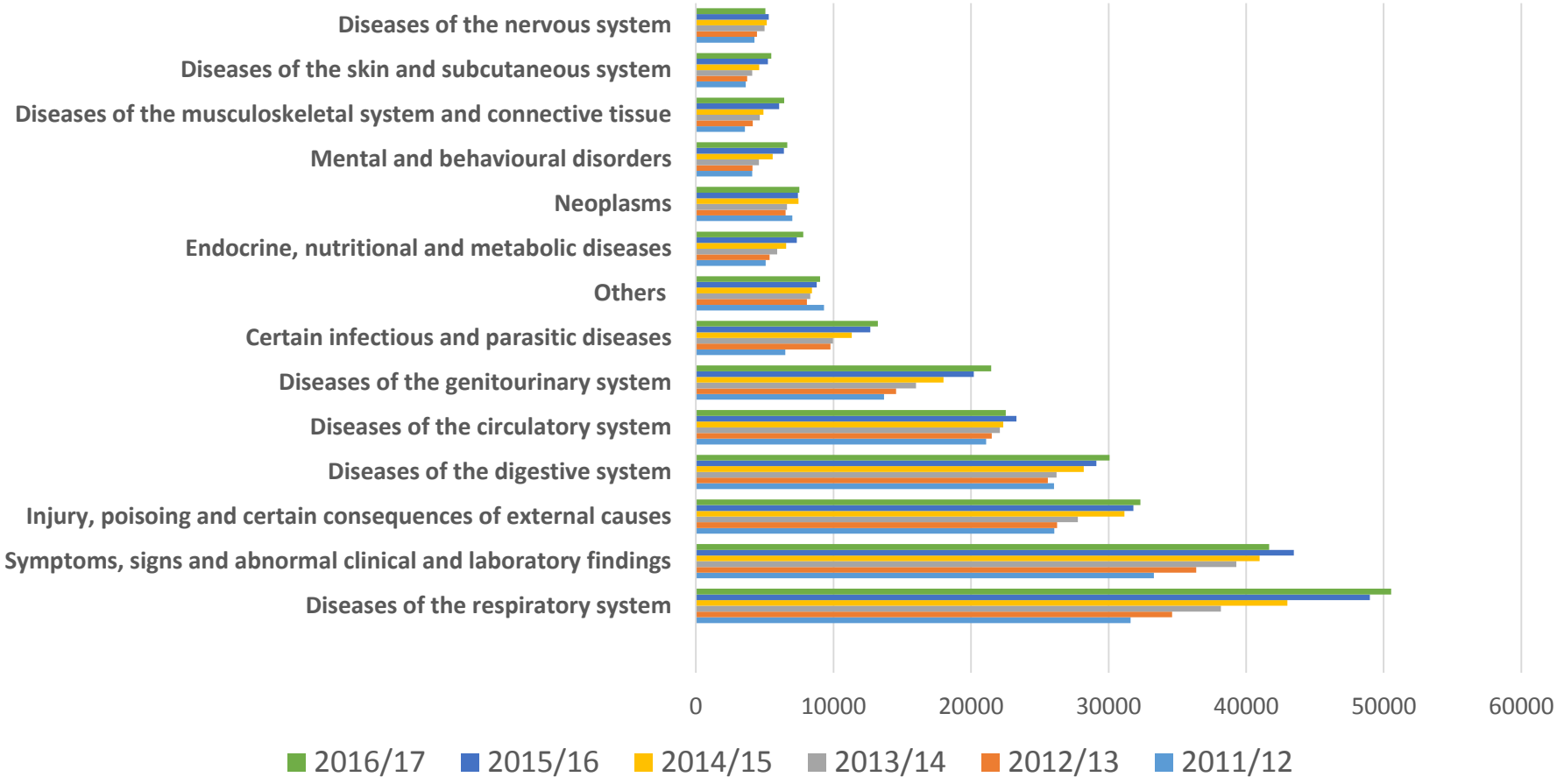


Source: Registrar General Annual Report 2016, Deaths by Cause: NISRA

Patterns of emergency hospital admission are also changing. Figure 36 shows the number of FCEs for emergency admissions in Northern Ireland, from 2011/12 to 2016/17 for diagnostic groups.

There have been rises in the number of FCEs in most groups, in particular for Diseases of the Respiratory System.

Figure 36: Number of Finished Consultant Episodes for Emergency Admissions by ICD10 Groups, Northern Ireland 2011/12 to 2016/17



Source: Information Analysis Directorate: Hospital Statistics: Acute Episode-Based Activity Statistics; Volume 2, Diagnosis; Reports from 2011/12 to 2016/17

4.4 Summary

Between 1980/82 and 2014/16, Life Expectancy at birth in Northern Ireland increased from 69.2 to 78.5 years for men, and from 75.5 to 82.2 years for women. These changes signify considerable improvement in the overall health of the population.

Profound changes have been observed in the age patterns of major trauma patients, as reported to the Trauma Audit and Research Network (TARN) for the United Kingdom. In 1990, the average age of major trauma patients was 36.1 years with the largest age group, aged 0-24 years. The most common mechanism of injury was road traffic collisions. By 2013, the average age had increased to 53.8 years. The single largest age group was 25 to 50, closely followed by those over 75 years. The most common mechanism was a fall from a low height. Similar patterns are emerging from initial returns to the TARN Database from Northern Ireland.

The number of people killed as a result of road traffic accidents in Northern Ireland fell between 1981 and 2016 (Figure 22). In 1988, 235 people died, of whom 20 were aged 15 to 34 years. The lowest figure was in 2013 when 59 people died.

The number of people whose death was attributed to an accidental fall rose between 2001 and 2006, with greater numbers over the age of 75.

While the overall numbers of hospital admissions due to injury and poisoning remained similar between 2011/12 and 2016/17, there have been changes in relation to particular types of injuries. Admissions following head injuries and poisoning have fallen. There have been rises in admissions due to injuries to the thorax; shoulder and upper arm; and knee and lower leg.

The number of Finished Consultant Episodes (FCEs) linked to Injury and Poisoning has remained relatively stable for age groups up to 50 years but there have been increasing numbers among older groups.

Patterns of major illness have changed over the past 30 years. Between 1986 and 2016, deaths due to circulatory disease fell by more than half and there were also reductions in those due to respiratory disease. Deaths from cancer rose as did those attributed to mental and behavioural disorders, and in particular, dementia. Deaths dues to external causes remained at a similar level.

Patterns of emergency hospital admission are changing. There have been rises in the number of FCEs across most diagnostic groups, in particular for diseases of the respiratory system.

The prevalence of many health conditions increases with age and the growing number of older people in Northern Ireland is being reflected in increased numbers of people accessing health care.

5. Emergency Department Trends

5.1 Emergency Departments in Northern Ireland

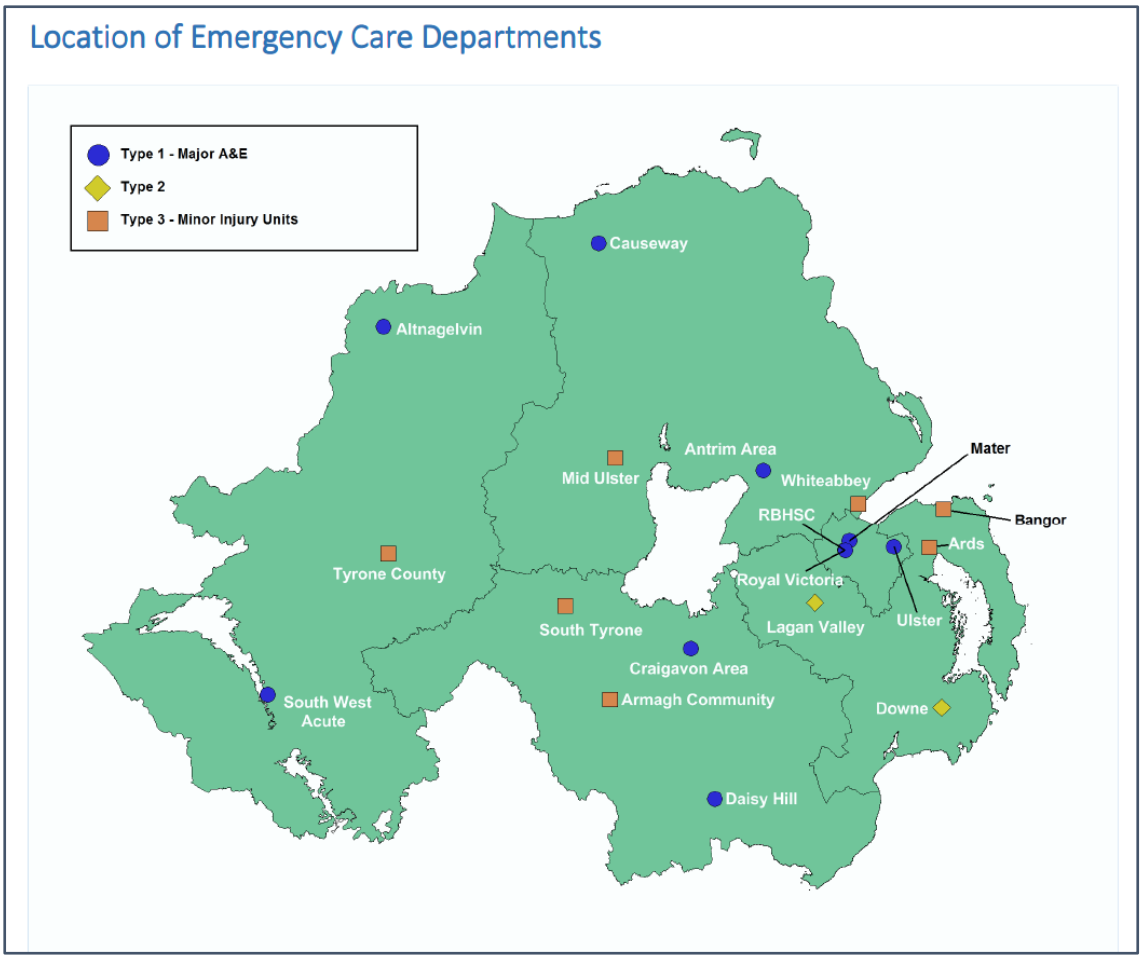
Emergency Departments (EDs) in Northern Ireland are divided into three separate categories.

Type 1 Departments are consultant-led services with designated accommodation for the reception of emergency care patients, providing both emergency medicine and emergency surgical services on a round the clock basis.

Type 2 Departments are consultant-led services with designated accommodation for the reception of emergency care patients, but which do not provide both emergency medicine and emergency surgical services and/or have time-limited opening hours.

Type 3 Departments are minor injury units (MIU) with designated accommodation for the reception of patients with a minor injury and/or illness. They may be doctor or nurse-led. A defining characteristic of these services is that they treat at least minor injuries and/or illnesses and can be routinely accessed without appointment.

There are 18 Emergency Departments in Northern Ireland, as shown below.

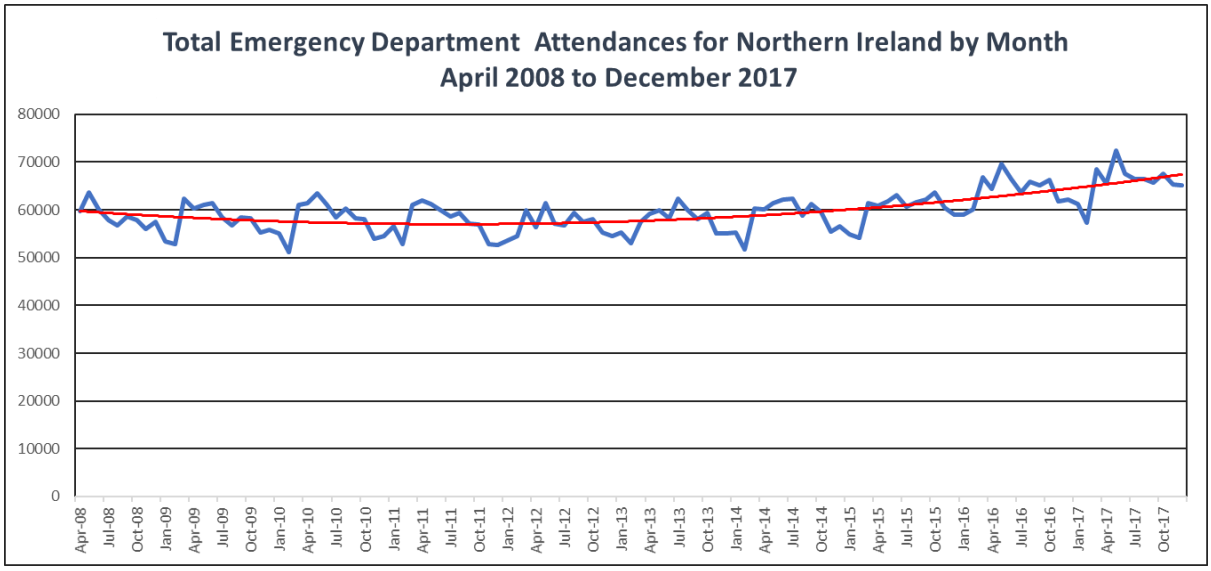


Source: Hospital Information Branch

5.2 Attendance trends

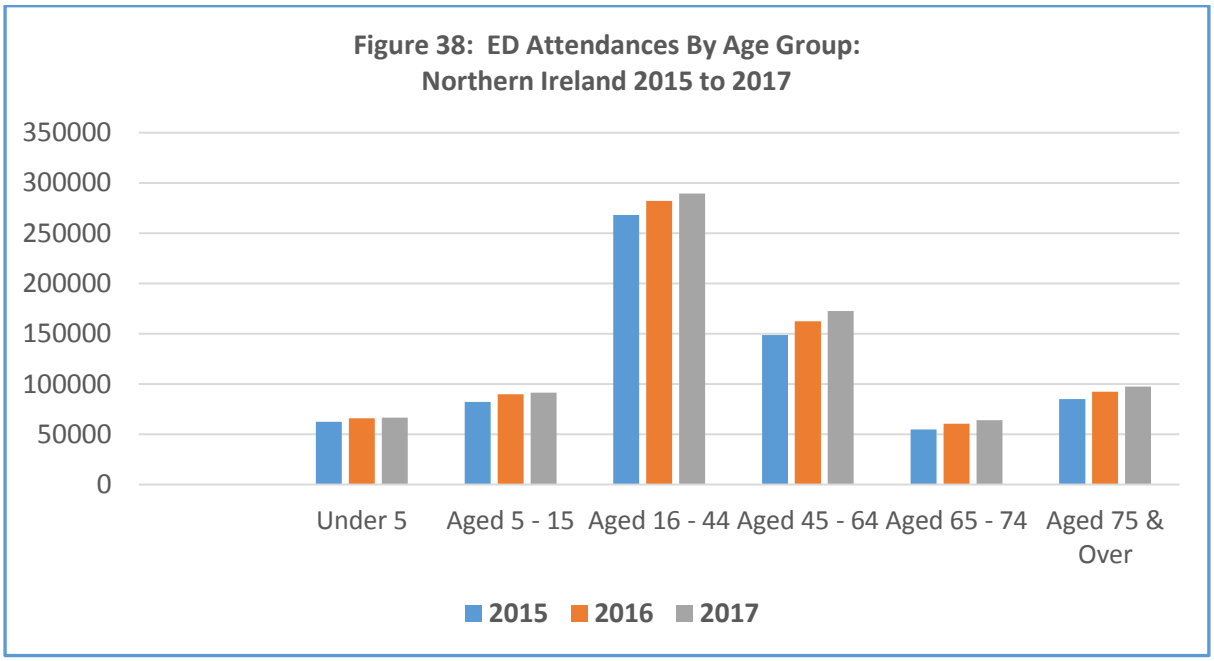
Figure 37 shows the trends in total attendances at EDs in Northern Ireland from April 2008 to December 2017. The numbers were relatively stable until 2015 but the numbers have increased in 2016 and 2017.

Figure 37: Total Emergency Department Attendances, Northern Ireland, 2008 to 2017



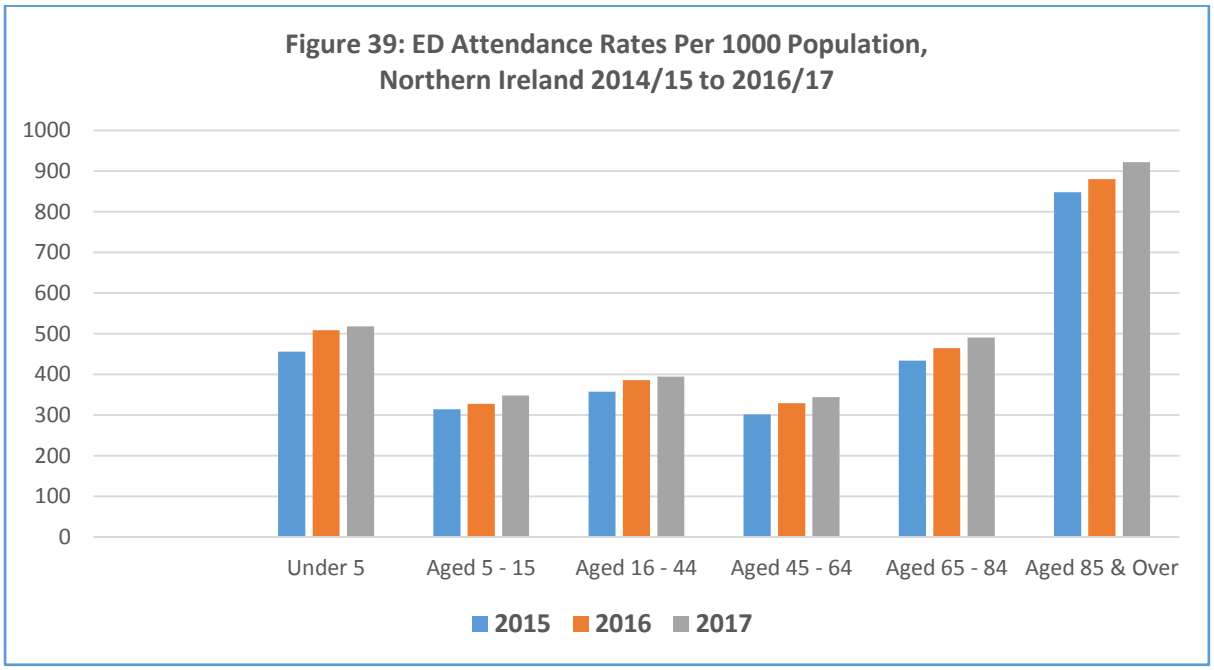
Source: Hospital Statistics: Emergency Care

Figure 38 shows the total numbers of people by age group attending EDs in Northern Ireland between 2015 and 2017. The greatest number is in the 16 to 44 age group. The numbers have increased in all age groups during this period.



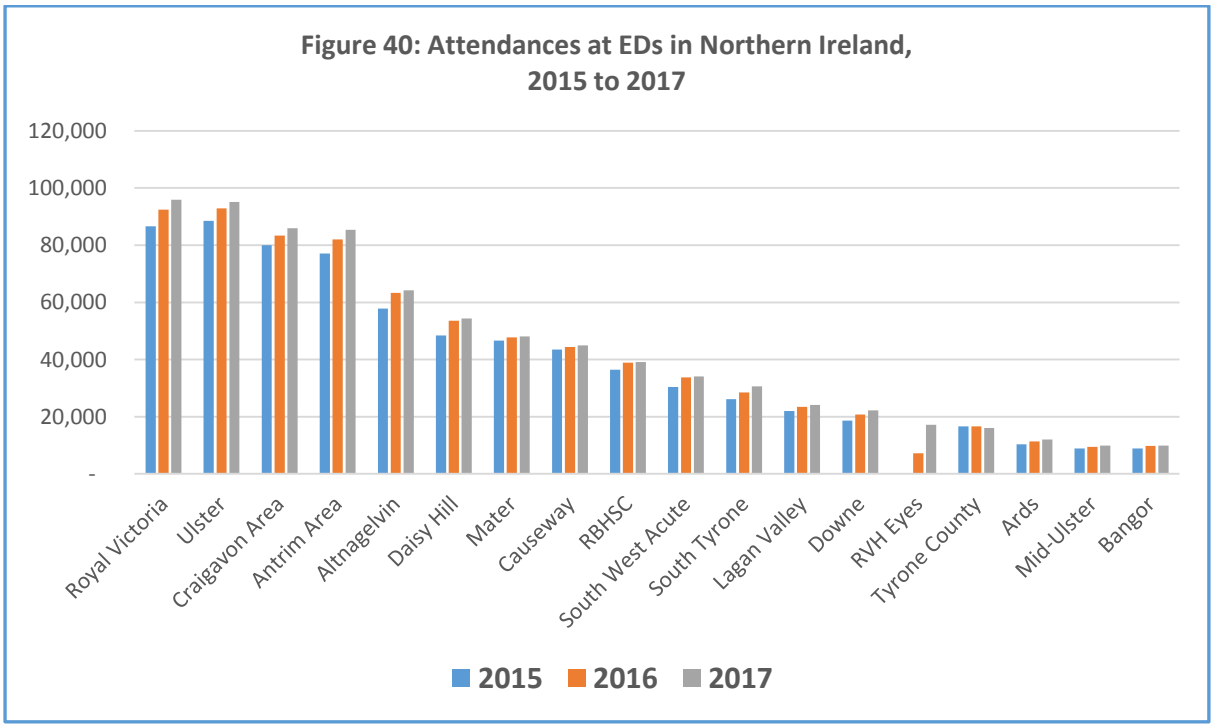
Source: Hospital Information Branch

Figure 39 shows the ED attendance rates per 1000 population by age group for the period 2014/15 to 2016/17. Over this period attendance rates increased in all age groups. The 85 and over age group have the highest attendance rates.



Source: Hospital Statistics: Emergency Care 2016/17

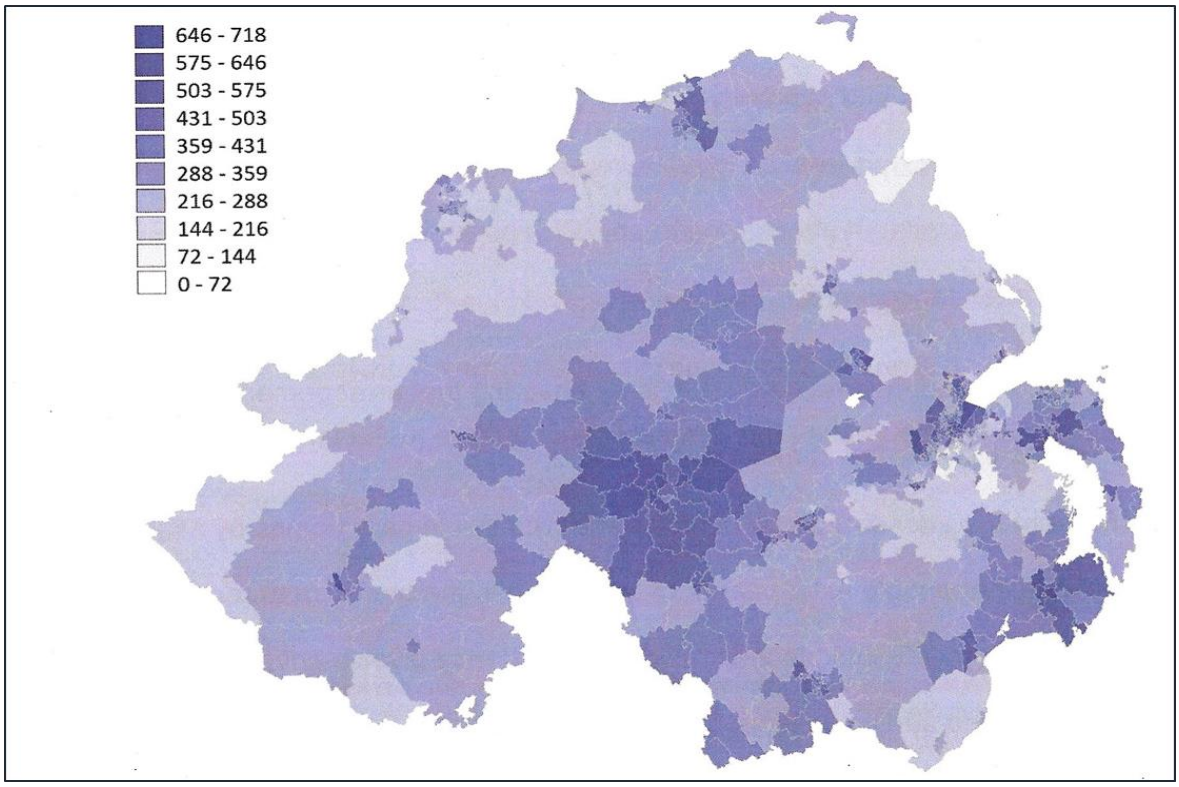
Figure 40 shows the number of attendances at each ED in Northern Ireland from 2015 to 2017. The increasing trend is seen in all of the Type 1 and Type 2 EDs.



Source: Hospital Information Branch

Directly standardised ED attendance rates for 2014/15 were prepared for Super Output Areas and Health and Social Care Trusts by the PHA and HSCB in 2016.[38] There was a wide range in rates by Super Output Area as shown in Figure 41.

Figure 41: Age and Sex Standardised ED Attendance Rate per 1,000 population by Super Output Area, Northern Ireland, April 2014 to March 2015.



Source: Public Health Agency and Health and Social Care Board: Demography and Patterns of Unscheduled Care Use in Northern Ireland, February 2016.

Belfast and Southern Health and Social Care Trust areas had the highest rates of ED attendance, after correction for age and gender, with the Western Health and Social Care Trust having the lowest rate. (Figure 42).

Figure 42: Age and Sex Standardised ED Attendance Rate per 1,000 population by HSC Trust Area, Northern Ireland, April 2014 to March 2015.

HSC Trust area	Attendances per 1,000 population
Belfast	393.6
Northern	356.2
South Eastern	385.5
Southern	390.3
Western	335.4

[38] Public Health Agency and Health and Social Care Board: Demography and Patterns of Unscheduled Care Use in Northern Ireland, February 2016.

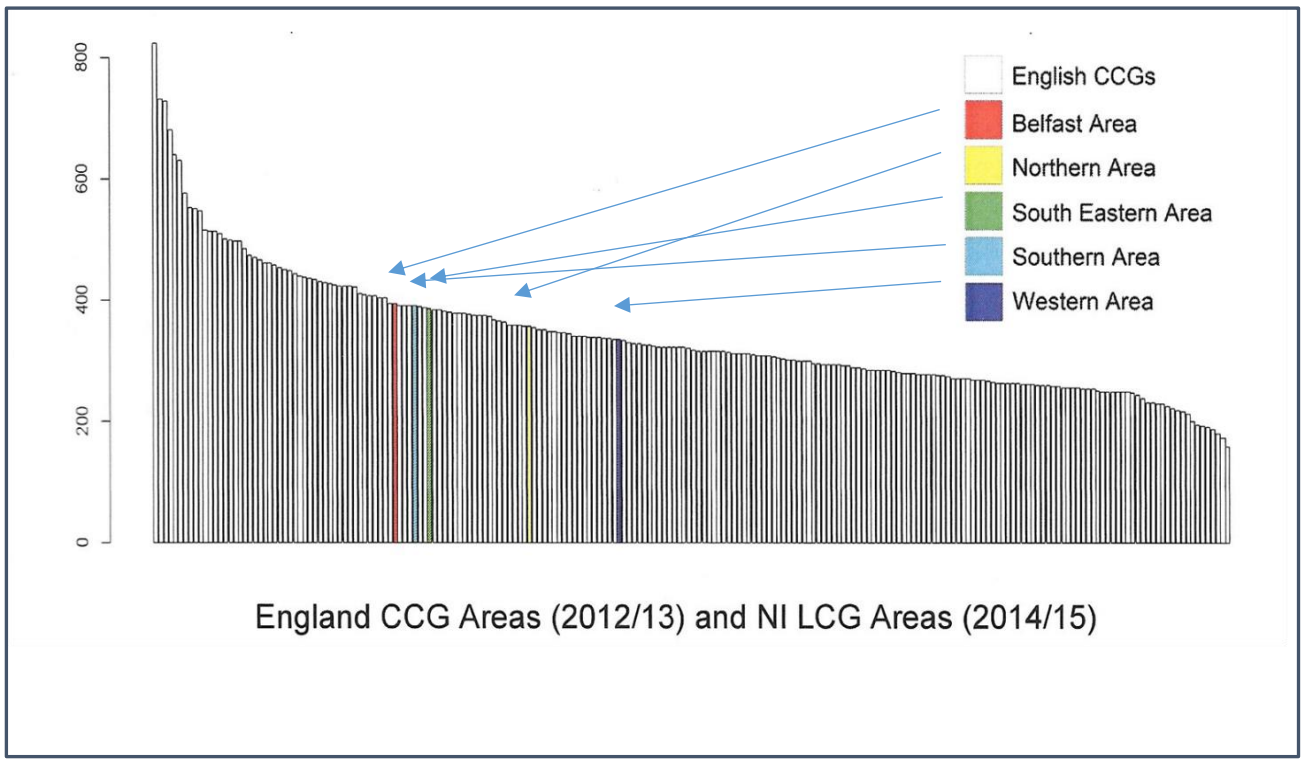
5.3 Comparisons with other areas

There are differences in the classification of types of emergency department across the United Kingdom (UK) which makes direct comparison of attendance rates difficult.

A Research Briefing for the House of Commons reported that, in 2015/16, Northern Ireland had the highest attendance rates of the four constituent countries of the UK for major emergency departments with 19% higher attendance rates than England. England had the highest total attendance rates as there were markedly higher attendances at minor A&E departments there.[39]

In 2016, the Health and Social Care Board and the Public Health Agency carried out an analysis of ED attendance rates in Northern Ireland Local Commissioning Group Areas (LCGs) compared with Clinical Commissioning Group Areas (CCGs) in England. On this comparison, the attendance rates in LCG areas in Northern Ireland were above the mean of those in England (Figure 43).

Figure 43: ED Attendance Rates in Northern Ireland LCG Areas (2014/15) and England CCG Areas (2012/13): Directly Standardised Rates by Age and Gender per 1000 population



Source: Public Health Agency and Health and Social Care Board: Demography and Patterns of Unscheduled Care Use in Northern Ireland, February 2016.

[39] Baker C. House of Commons Briefing Paper: Accident and Emergency Statistics: Demand Performance and Pressure, 21 February 2017

In 2016/17, in England, 15.9 million (67.9%) of the total 23.4 million ED attendances were to Major A&E Departments, with 7.5 million (32.1%) attending Minor Injury and Walk in Centres.

In 2016/17, In Northern Ireland, 651,041 (81.6%) of the total 797,666 attendances were to Type 1 Emergency Care Departments, 63,957 (8.0%) to Type 2 Departments and 82,668 (10.4%) to Type 3 Departments (Minor Injury Units).

5.4 Patterns of Use

Hospital Information Branch at the Department of Health has prepared an additional analysis of information relating to emergency care departments in Northern Ireland for this population needs assessment, which is included at Appendix B. In summary, the analysis shows the following patterns of use:

1. Arrivals at EDs vary considerably during the day, with patients more likely to arrive between 9am and 7pm, and less likely to arrive at night. The number of patients arriving at EDs peak at 11:00 am and whilst decreasing slightly, remained high until 7:00 pm. This pattern is similar to other UK regions.

2. In December 2017, there was a higher number of arrivals in each hour between 9am and 10pm compared with December 2016.

3. Analysis by age group indicates that people aged 65+ were more likely to arrive between 9am and 3pm, while those aged under 16 were more likely to arrive between 3pm and 11pm.

4. The pattern of attendances is slightly different during each day of the week, with the highest number of attendances tending to be on a Monday and the lowest on a Saturday.

5. As in other UK regions, there is a variation in the pattern of attendances at ED during the day, with notable variation between days of the working week and the weekends. For example, attendances at ED between Monday and Friday show two peak times when patients arrive at ED, one between 11am and midday, and the other at around 6pm in the evening. The late morning peak are mainly patients over 25 years old, whilst the evening peak are mainly those aged 25 & under. By contrast, attendances on weekend days display only one peak in patients arriving typically between midday and 2pm.

6. On average, 426 patients who attended an ED during 2017 were admitted to hospital during a normal week day compared to an average of 357 patients on a Saturday or Sunday. Patients were more likely to be admitted to hospital if they attended ED between midnight and 7am, with the highest proportion of patients admitted attending ED between 5am and 6am.

7. Based on the average daily attendances at ED over the last three years, there does not appear to be any seasonal pattern. The lowest average daily attendances were reported in January (1,855), with June (2,157) reporting the

highest average daily attendances. Despite a lower average number of daily attendances in January, performance against the emergency care waiting time target tended to be poorer in January each year.

8. Around 3% of attendances at Type 1 EDs each month were from residential / nursing homes. Almost 10% of emergency admissions from Type 1 EDs each month were from residential / nursing homes.

Figure 44 illustrates the attendance patterns by day of the week and time of the day for emergency departments in Northern Ireland, from 2015 to 2017. The Heat Map shows the morning peaks, with the highest levels on Mondays.

Figure 44: ED Activity Trends by Day and Time, 2015 to 2017

Year	Day	Activity Trends by Day and Time																						
		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
2015																									
	Sunday	2,275	2,173	2,055	1,814	1,465	1,184	1,051	1,289	1,973	3,631	5,323	6,223	6,361	6,211	6,302	6,165	5,783	5,228	4,841	4,819	4,205	3,885	3,176	2,573
	Monday	1,950	1,587	1,385	1,105	973	866	949	1,421	3,503	8,993	9,525	10,231	9,268	8,242	8,121	8,386	8,361	7,303	7,820	7,061	4,993	4,456	3,496	2,621
	Tuesday	1,861	1,454	1,159	1,007	899	762	807	1,264	3,491	8,002	8,130	8,541	7,964	7,115	7,022	7,343	7,276	6,573	7,004	6,575	4,742	4,085	3,383	2,547
	Wednesday	1,832	1,444	1,192	982	854	763	853	1,266	2,993	7,913	8,062	8,185	7,807	7,059	6,882	7,157	7,034	6,245	6,616	6,290	4,843	4,249	3,346	2,630
	Thursday	1,903	1,480	1,221	1,113	908	807	834	1,278	2,977	7,302	7,475	8,219	7,739	7,062	6,966	7,198	7,128	6,148	6,651	6,148	4,636	4,128	3,363	2,451
	Friday	1,831	1,444	1,197	1,023	881	780	803	1,278	3,163	7,111	7,499	8,047	7,452	6,792	6,899	7,230	7,532	6,611	6,295	5,727	4,464	3,901	3,314	2,582
	Saturday	2,086	1,688	1,666	1,323	1,152	981	1,017	1,284	2,165	3,671	5,300	5,825	6,130	6,098	6,001	5,922	5,632	5,000	4,362	4,541	3,878	3,520	3,070	2,638
2016																									
	Sunday	2,389	2,099	2,007	1,702	1,366	1,227	1,106	1,365	2,222	3,952	5,845	6,613	6,591	6,613	6,645	6,209	5,941	5,368	5,064	5,221	4,508	4,053	3,406	2,646
	Monday	2,086	1,686	1,348	1,109	984	875	963	1,545	3,722	10,238	10,515	11,221	10,405	8,978	8,601	8,966	8,909	7,711	8,255	7,588	5,443	4,703	3,728	2,887
	Tuesday	2,009	1,478	1,300	1,036	935	837	918	1,434	3,779	9,043	9,011	9,446	8,763	7,729	7,701	8,071	7,809	6,969	7,392	6,870	5,214	4,412	3,535	2,614
	Wednesday	1,951	1,540	1,230	1,053	953	814	844	1,361	3,330	8,635	8,613	8,913	8,549	8,087	7,628	7,967	7,667	6,864	7,037	6,792	5,056	4,328	3,571	2,652
	Thursday	1,921	1,461	1,189	1,082	908	824	899	1,324	3,392	8,148	8,046	8,934	8,307	7,574	7,453	7,691	7,454	6,574	7,008	6,625	5,048	4,400	3,535	2,713
	Friday	1,970	1,516	1,298	1,151	1,004	882	972	1,311	3,607	8,068	8,539	9,095	8,488	7,824	7,756	8,043	8,096	7,294	6,830	6,152	4,790	4,401	3,587	2,825
	Saturday	2,239	1,764	1,574	1,354	1,199	1,028	1,076	1,400	2,548	4,262	5,729	6,305	6,441	6,147	6,449	6,285	6,081	5,279	4,883	4,712	4,365	4,066	3,332	2,787
2017																									
	Sunday	2,413	2,188	2,033	1,849	1,543	1,258	1,168	1,482	2,508	4,367	6,461	7,266	6,939	6,919	6,936	6,668	6,280	5,513	5,340	5,488	4,549	4,307	3,410	2,795
	Monday	1,994	1,641	1,316	1,134	979	826	992	1,575	4,244	10,530	10,965	11,795	10,849	9,318	9,153	9,442	9,349	8,316	8,435	7,491	5,440	4,676	3,721	2,635
	Tuesday	2,017	1,572	1,250	1,122	956	853	888	1,449	4,153	9,486	9,675	10,236	9,314	8,260	8,208	8,468	8,288	7,334	7,811	7,229	5,279	4,604	3,617	2,699
	Wednesday	1,908	1,568	1,302	1,039	930	830	948	1,490	3,706	8,972	9,401	9,889	9,129	8,257	7,847	8,456	7,934	6,983	7,295	6,895	5,303	4,553	3,679	2,833
	Thursday	2,018	1,481	1,258	1,068	908	846	916	1,385	3,872	8,623	8,871	9,780	8,941	8,079	7,854	8,095	7,776	6,945	7,251	6,588	5,080	4,364	3,487	2,573
	Friday	1,943	1,489	1,205	1,089	875	775	923	1,433	3,791	8,383	8,960	9,632	8,922	8,302	8,073	8,283	8,329	7,375	6,947	6,114	4,900	4,211	3,604	2,829
	Saturday	2,179	1,867	1,605	1,336	1,160	1,028	1,039	1,518	2,762	4,418	6,081	6,633	6,570	6,596	6,480	6,394	6,031	5,399	4,802	4,854	4,296	4,093	3,348	2,979

Source: Hospital Information Branch

Mode of Arrival

The Hospital Information Branch analysis (Appendix B) shows that the method by which patients arrive at emergency departments varies depending on the time and day of the week. Between Monday and Friday, 70% of patients attending EDs did so of their own accord (self-referrals), compared with 78% of patients at the weekend.

Between 10am and 7pm on Mondays, around 23% of patients attending an ED had been referred by a GP, reflecting GP opening hours. During the weekend however, the number referred by a GP fell to around 10%.

Almost 30% of attendances arriving through the night (midnight to 6am) arrived by ambulance. Figure 45 illustrates these trends.

Figure 45: Percentage ED Arrival Mode by time of day: Monday and Sunday

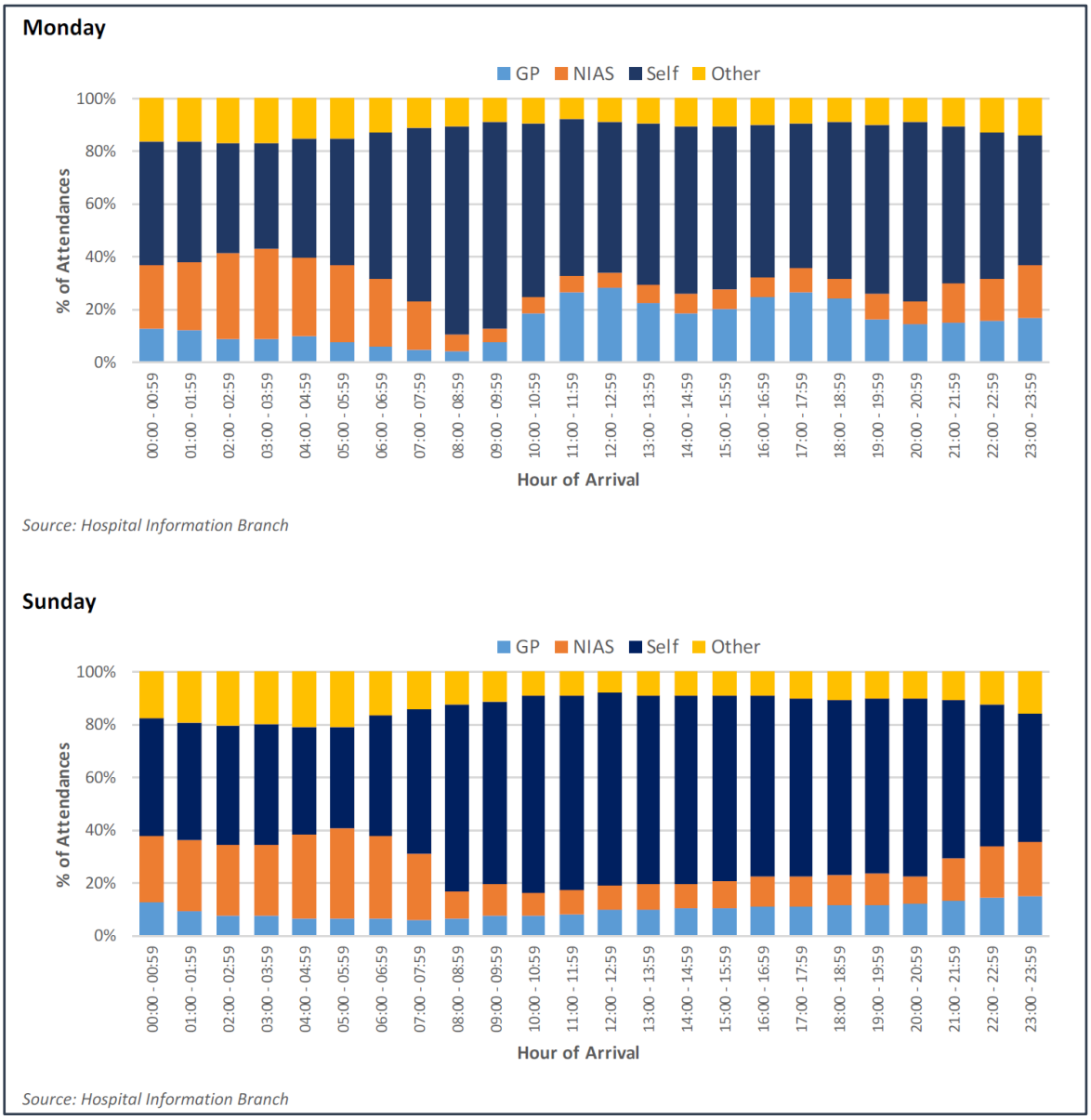


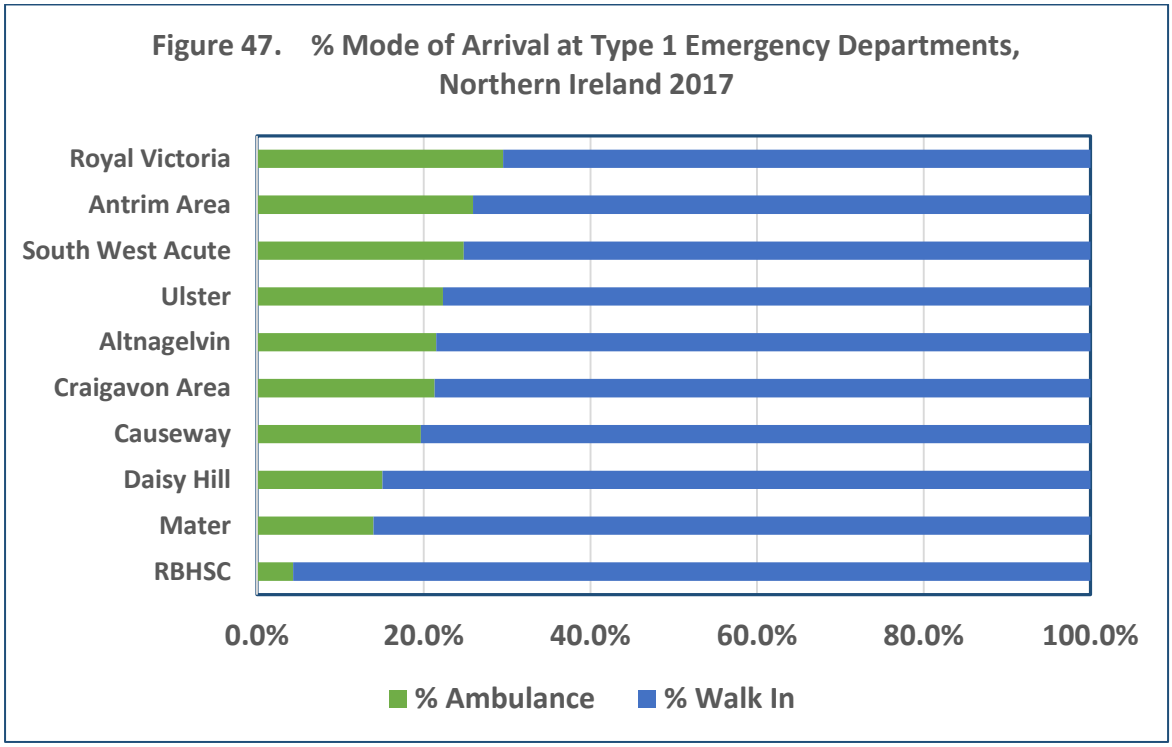
Figure 46 describes the trends in arrival at ED by ambulance or other methods from 2013 to 2017. The number of 'Walk in patients' rose by 107,358 during this period (20.1%). The number of patients arriving by ambulance rose by only 3,012 (2.2%).

Figure 46: Trends in Mode of Arrival at EDs, Northern Ireland, 2013 to 2017

Year	Number and Percentage of Patients arriving by Ambulance and by Other Methods				Total
	Ambulance	%	Walk in	%	
2013	137,634	*20.5%*	534,702	*79.5%*	672,336
2015	136,862	*19.5%*	563,878	*80.5%*	700,740
2016	140,909	*18.7%*	612,711	*81.3%*	753,620
2017	140,646	*18.0%*	642,060	*82.0%*	782,706

Source: Hospital Information Branch

Figure 47 shows the patterns of mode of arrival for each of the ten Type 1 Emergency Departments in 2017. The percentage arriving by ambulance varied from 4.3%, at the Royal Belfast Hospital for Sick Children, to 29.5% at the Royal Victoria Hosptial.



Source: Hospital Information Branch

Waiting times in the Emergency Department

The number of patients spending over 4 hours in EDs by quarter since April 2008 is shown in Figure 48. The number during the quarter ending March 2018 (65,897) was more than double the number waiting over 4 hours during the same quarter in 2009 (27,384).

Figure 48: Number of patients spending more than 4 hours in ED by quarter, Northern Ireland: 2008 to Q1 2018

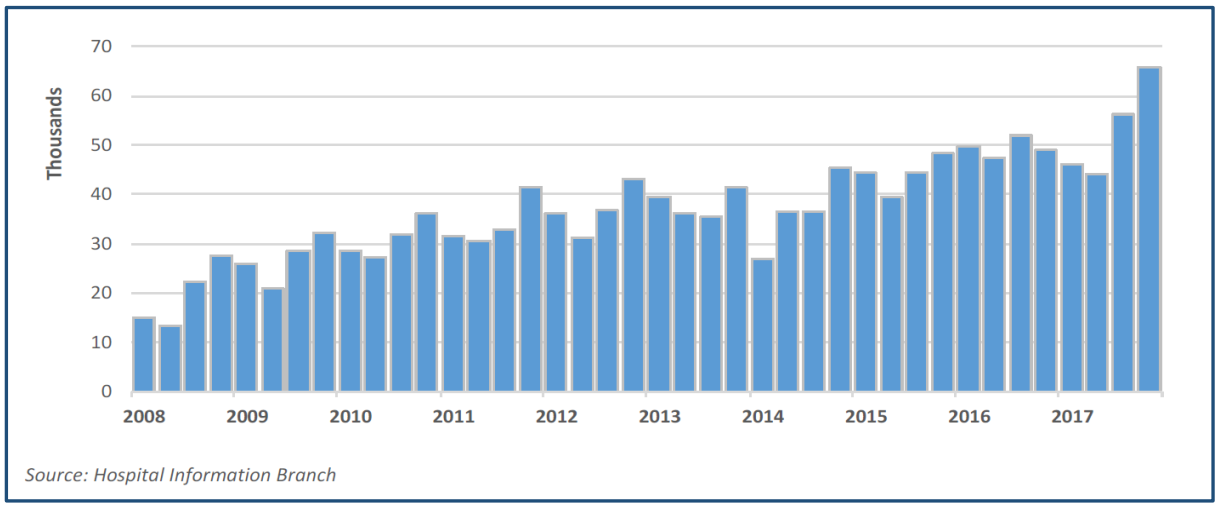


Figure 49 shows the percentage of attendances within each age group who waited over 12 hours in an ED, from arrival to discharge home or admission to hospital, from 2012/13 to 2017/18. The percentage of patients spending over 12 hours in ED increased from 0.8% in 2012/13 to 2.2% in 2017/18. The increase has been larger among older age groups. The percentage of patients aged 75 & over waiting over 12 hours increased from 3.3% in 2012/13 to 7.6% in 2017/18.

Figure 49: Percentage of Patients Waiting Over 12 Hours by Age Group and Year 2012/13 to 2017/18 (2017/18 figures are provisional)

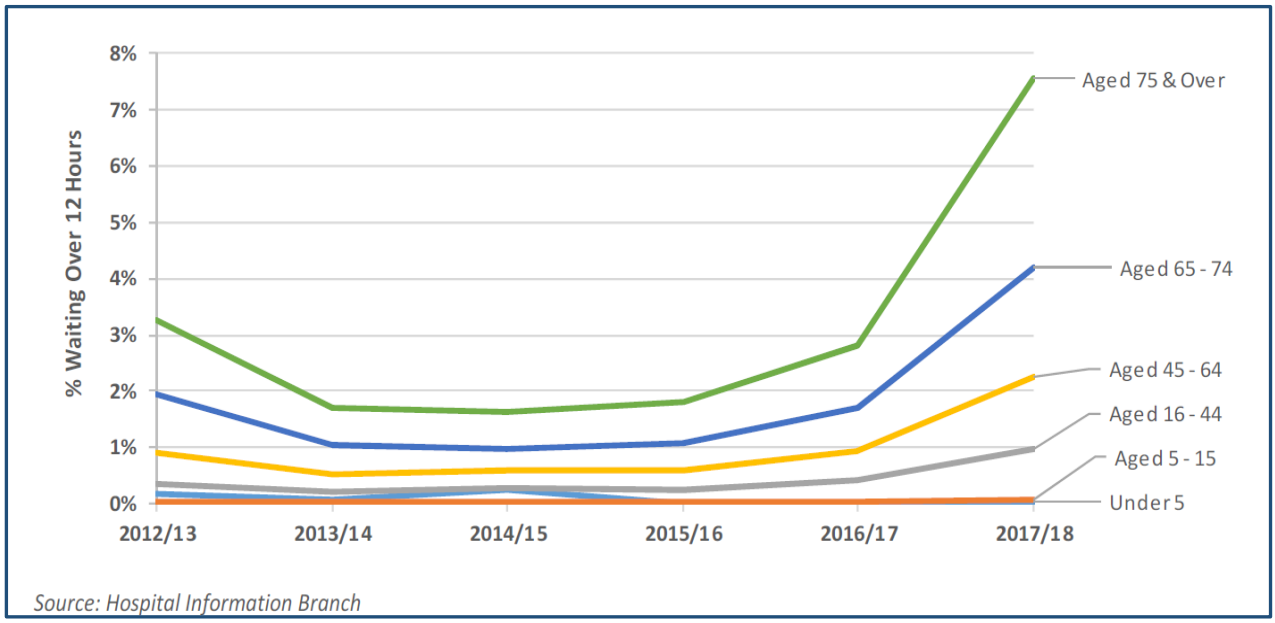
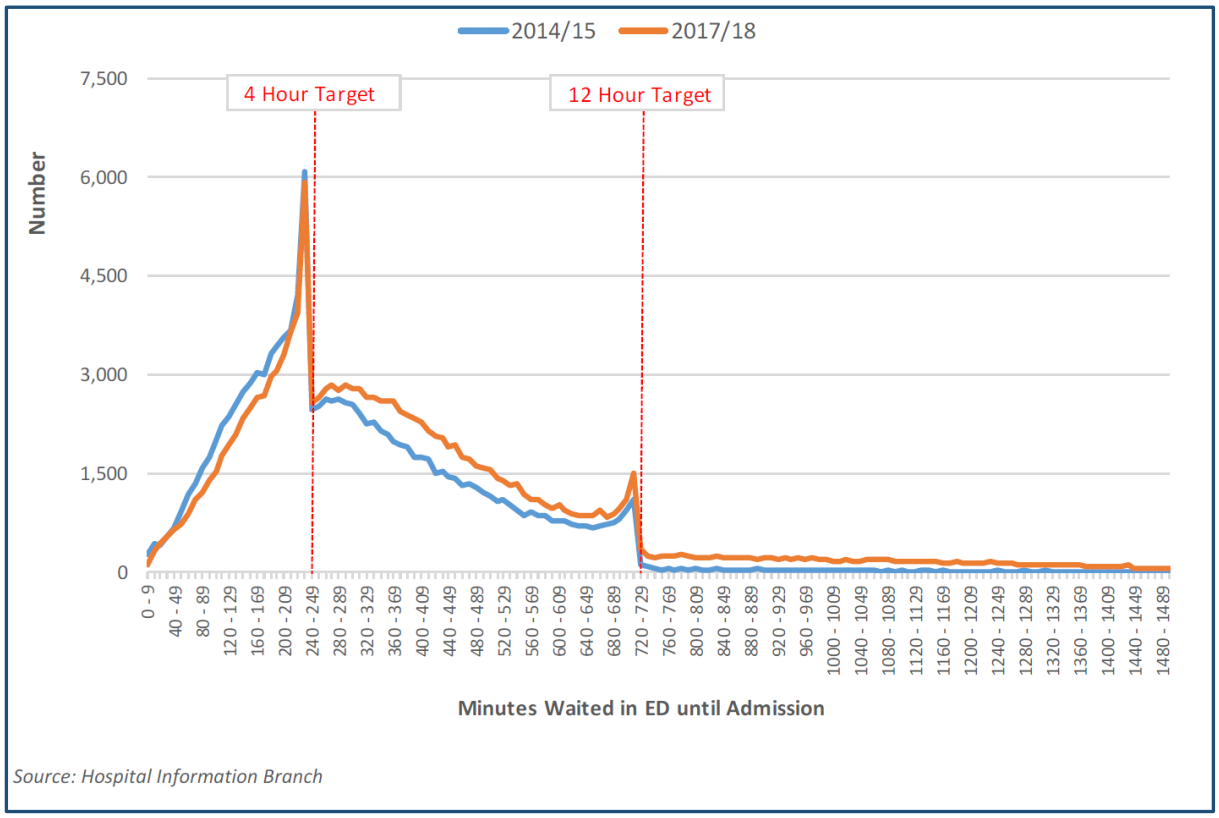


Figure 50 below shows the number of patients admitted to hospital from an ED by the length of time waited in ED from arrival to admission, in ten minute periods. It indicates that there is a peak in the number of patients admitted from ED in the ten-minute period immediately before breaching the 4-hour target (230 - 239 minutes), whilst the number of patients admitted in the ten-minute period immediately after the 4 hour target decreases sharply.

A similar pattern is observed around the 12-hour target, when there is another peak in the numbers of patients admitted in the ten-minute period immediately before breaching the 12-hour target (710 - 719 minutes). Similarly, the numbers admitted from ED decreases sharply in the ten-minute period after patients have breached the 12 hour target.

A higher number of patients admitted to hospital in 2014/15 waited less than 4 hours compared to 2017/18.

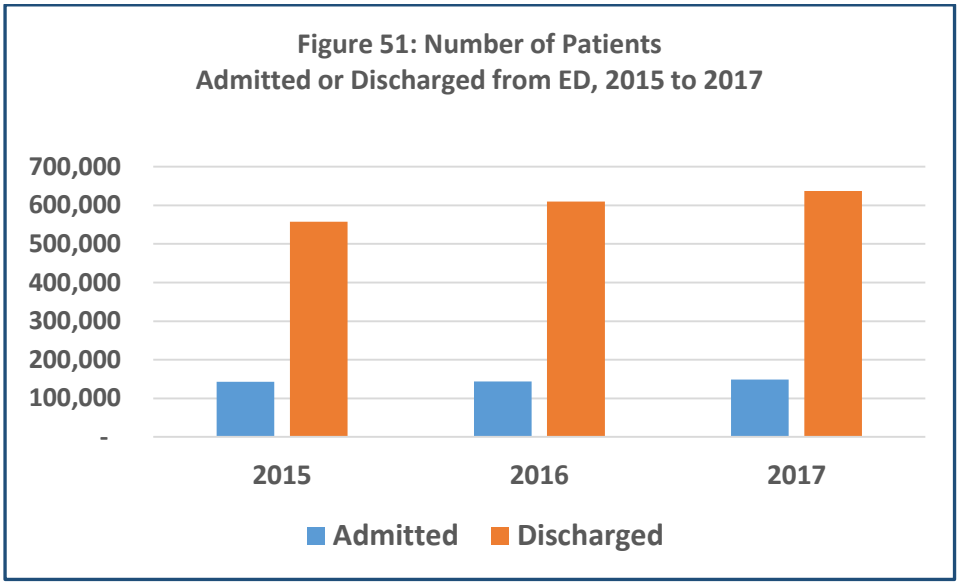
Figure 50: Patients Admitted to Hospital from ED, by Length of Time Waited in ED, Northern Ireland 2014/15 and 2017/18



Source: Hospital Information Branch

Admissions from the Emergency Department

During the period 2015 to 2017, the number of people admitted to hospital following attendance at ED rose by 5,122 (3.6%). The number of people discharged after attending ED rose by 79,548 (14.3%). This is shown in Figure 51.



Source: Hospital Information Branch

Figure 52 shows the percentage of patients admitted who arrived by ambulance at ED, or who walked in, from April 2004 to March 2018. The pattern shows minimal variation during this period for either group.

Figure 52: Percentage of ED Attendances Admitted to Hospital by Method of Arrival: Northern Ireland by month, April 2014 to March 2018

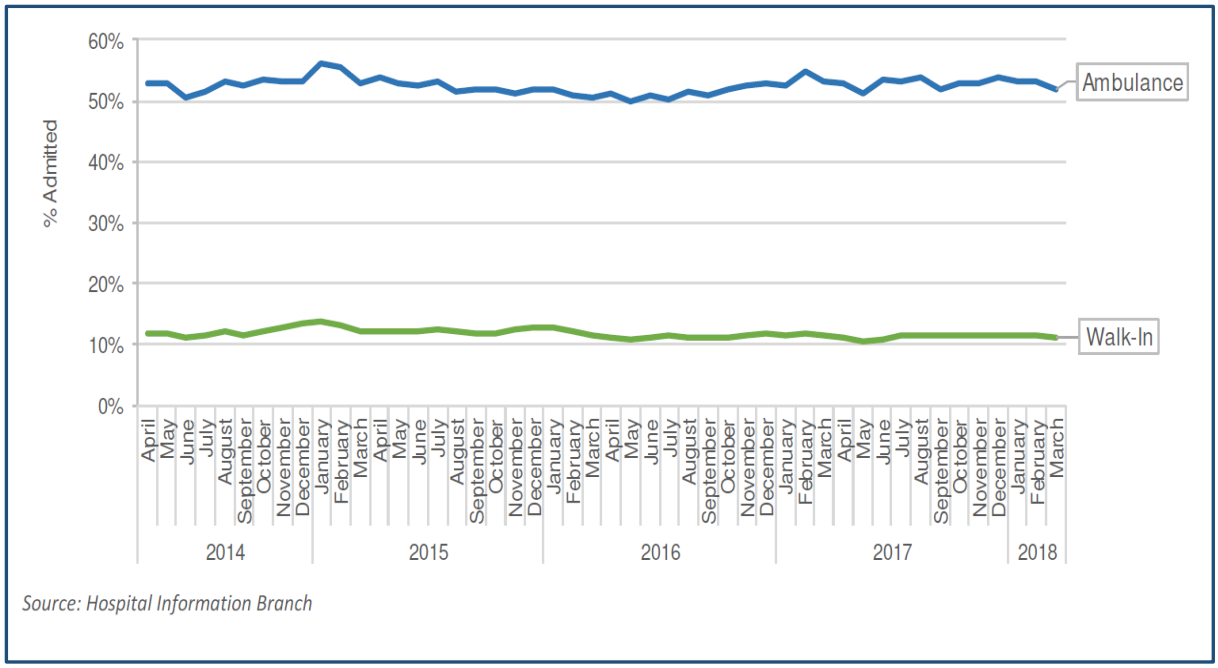


Figure 53 shows the percentage of patients arriving at EDs by ambulance who are admitted within each age group. Since 2014/15, over 60% of patients aged 65 & over arriving by ambulance were admitted to hospital, with almost 70% of patients aged 75 & over being admitted.

Figure 53: Percentage of Ambulance Arrivals admitted to hospital by Age Group: Northern Ireland by month, April 2014 to March 2018.

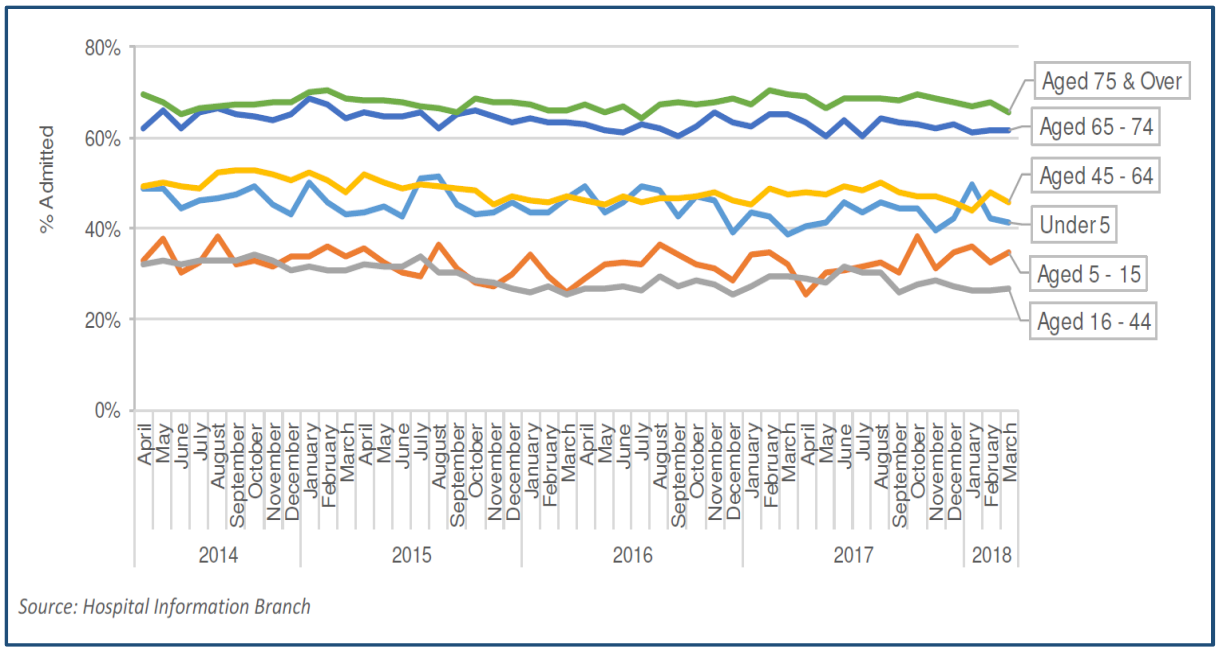
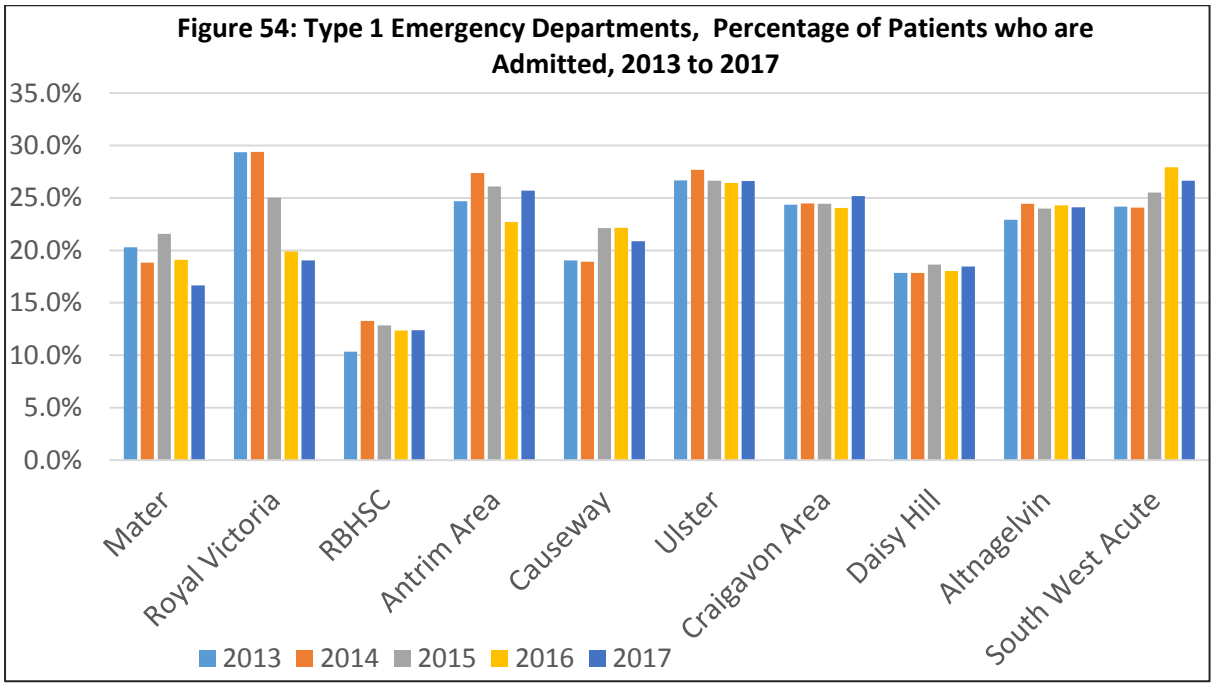


Figure 54 presents admission rates for each of the ten Type 1 Emergency Departments in Northern Ireland, from 2013 to 2017. It shows that there are differences in admission rates between hospitals. Generally, there is a consistent pattern for specific hospitals with the exception of the Royal Victoria Hospital where there has been a marked reduction in admission rates during this period.



Source: Hospital Information Branch

Classification of patients attending ED by Triage Groups

The Manchester Triage System is used to divide patients in Emergency Departments into 5 degrees of Urgency which are:

1 Immediate

2 Very Urgent

3 Urgent

4 Standard

5 Non-Urgent

Figure 55 shows trends in the percentage of patients who were triaged at Levels 1, 2 or 3 by the hour of arrival at EDs in Northern Ireland. Figure 56 shows the trends in the percentage of patients triaged in the less urgent Levels 4 and 5 by the hour of arrival.

During March 2018, 80.5% of patients arriving at ED between midnight and 6am were triaged at Levels 1/2/3, compared with 52.9% of patients arriving between 6am and midday.

Between 6am and 6pm there were higher percentages of patients triaged in the less urgent Levels 4/5 for each month during this period.

Figures 55 and 56 indicate that between April 2014 and March 2018, the number of patients triaged to the more urgent levels 1/2/3 has shown a slowing increasing trend.

Figure 55: Percentage of Patients Triaged at Levels 1/2/3, by Hour of Arrival and Month, April 2014 to March 2018

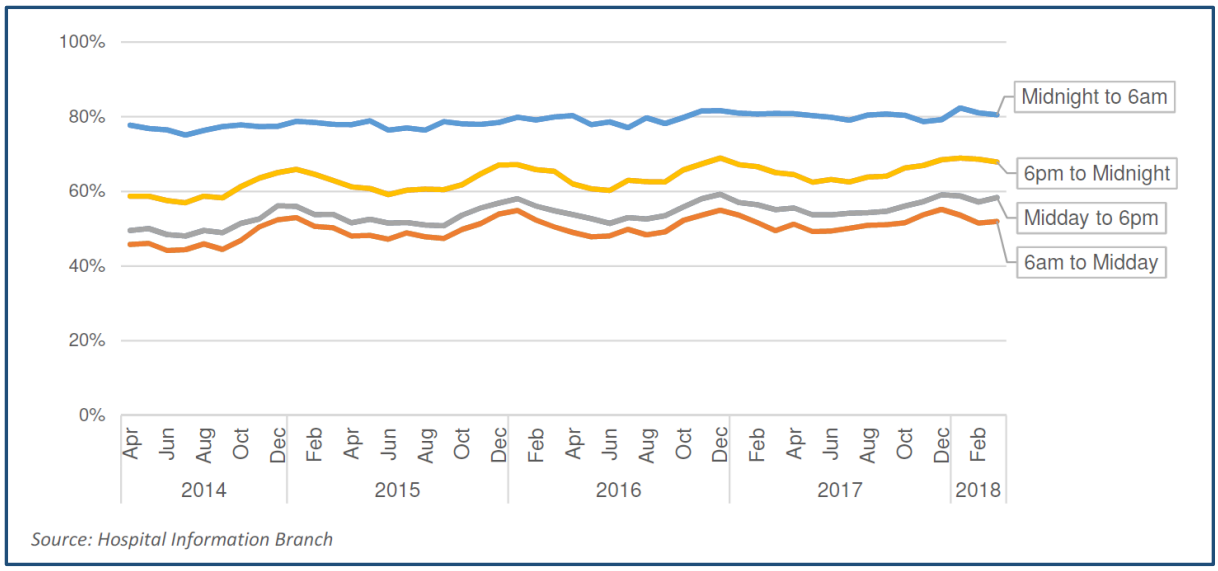
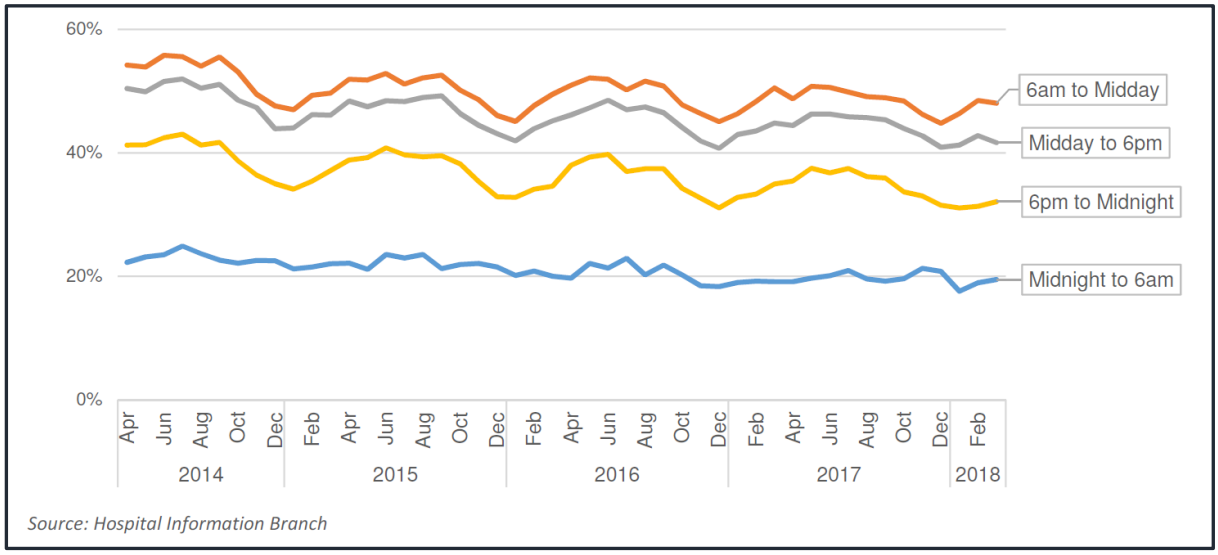


Figure 56: Percentage of Patients Triaged at Levels 4 / 5, by Hour of Arrival and Month, April 2014 to March 2018.



5.5 Summary

Emergency Departments (EDs) in Northern Ireland are classified into three groups. Type 1 EDs have consultant led services on a 24-hour basis. Type 2 EDs have consultant led services but do not provide both emergency medicine and emergency surgery services and/or are open for less than 24 hours. Type 3 Departments are minor injury units and may be doctor-led or nurse-led.

Attendance Trends

The total number of attendances at Emergency Departments (EDs) in Northern Ireland was relatively stable between 2008 and 2015 but the numbers increased in 2016 and 2017. The numbers and age specific attendance rates increased in all age groups. There were increases at all Type 1 and Type 2 EDs.

Northern Ireland was reported to have the highest attendance rates in 2015/16 of the four constituent countries of the UK for major EDs. England had the highest total attendance rates due to higher attendances at minor A&E departments.

There is a wide variety in age-standardised rates for Super Output Areas. Belfast and Southern Health and Social Care Trust areas had the highest rates with the Western Health and Social Care Trust having the lowest rate. Admission rates and GP referral rates to ED vary between Integrated Care Partnership areas.

Arrivals at EDs vary considerably during the day, with patients more likely to arrive between 9am and 7pm, and less likely to arrive at night. The number of patients arriving at EDs peaks at 11am and, whilst decreasing slightly, remain high until 7pm. This pattern is similar to other UK regions.

The pattern of attendances is slightly different during each day of the week, with the highest number of attendances tending to be on a Monday and the lowest on a Saturday. There is no clear seasonal pattern.

Around 3% of attendances at Type 1 EDs each month are from residential / nursing homes. Almost 10% of emergency admissions from Type 1 EDs each month are from residential / nursing homes.

Mode of Arrival

The method by which patients arrive at emergency departments varies depending on the time and day of the week. Between Monday and Friday, 70% of patients attending EDs are self-referrals, compared with 78% of patients at the weekend.

Almost 30% of attendances arriving through the night arrive by ambulance. The number of 'Walk in patients' rose by 107,358 between 2013 and 2017 (20.1%). The number of patients arriving by ambulance rose by 3,012 (2.2%) during this period.

Waiting times in the Emergency Department

Waiting times in EDs have increased. The percentage of patients spending over 12 hours in ED increased from 0.8% in 2012/13 to 2.2% in 2017/18. The increase has been larger among older age groups. The percentage of patients aged 75 & over waiting over 12 hours increased from 3.3% in 2012/13 to 7.6% in 2017/18. There are peaks in the number of patients admitted from EDs in the 10-minute periods before the 4-hour and 12-hour targets would be breached.

Admission patterns

During the period 2015 to 2017, the number of people admitted to hospital following attendance at ED rose by 5,122 (3.6%). The number of people discharged after attending ED rose by 79,548 (14.3%).

Over 60% of patients age 65 and over arriving by ambulance at ED are admitted and almost 70% of patients who are 75 and over are admitted.

There are differences in admission rates between hospitals having Type 1 EDs.

There are higher admission rates for patients attending between midnight and 7am.

Attendances at Emergency Department by Triage Groups

The Manchester Triage System is used to divide patients in Emergency Departments into 5 degrees of Urgency. Between April 2014 and March 2018, the proportion of patients triaged to the more urgent levels 1/2/3 has shown a slowing increasing trend.

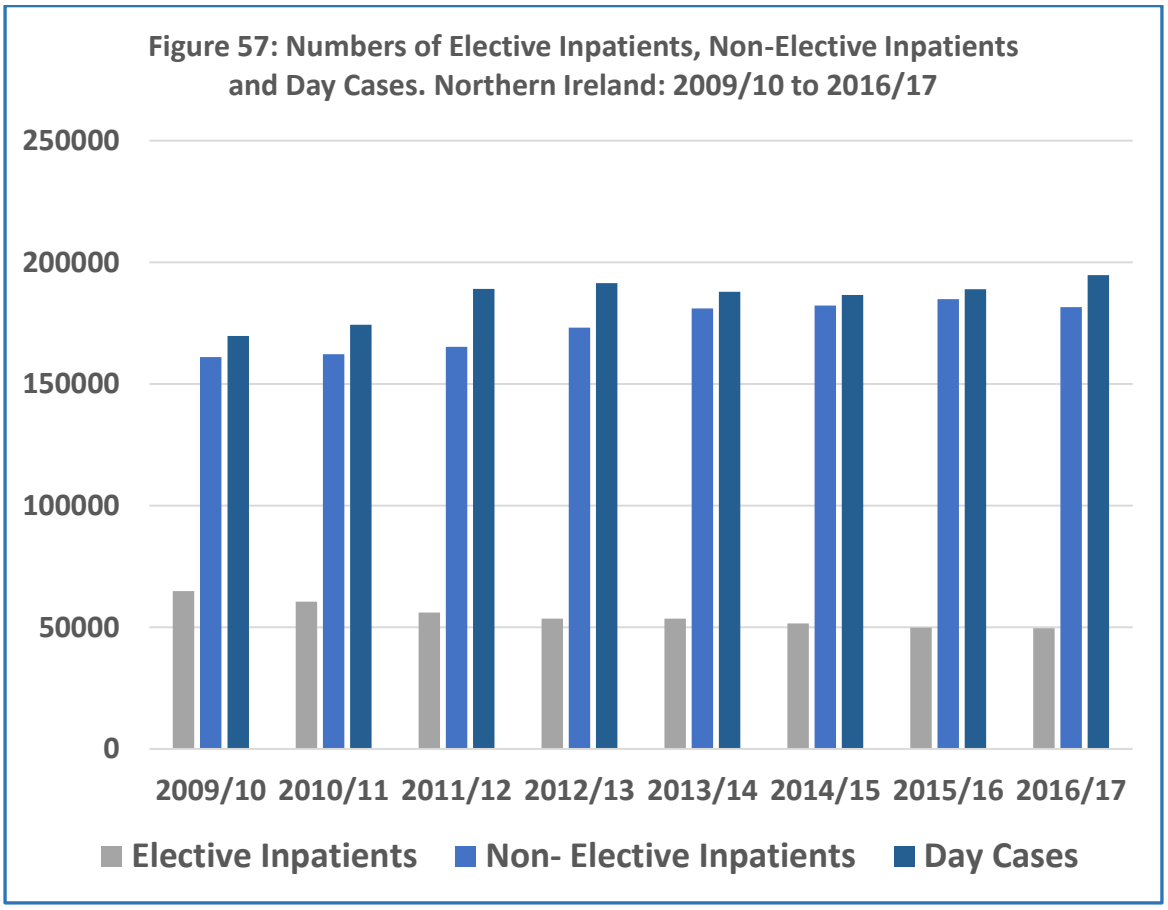
During March 2018, 80.5% of patients arriving at ED between midnight and 6am were triaged at levels 1 / 2 / 3, compared with 52.9% of patients arriving between 6am and midday.

6. Hospital Admission Trends

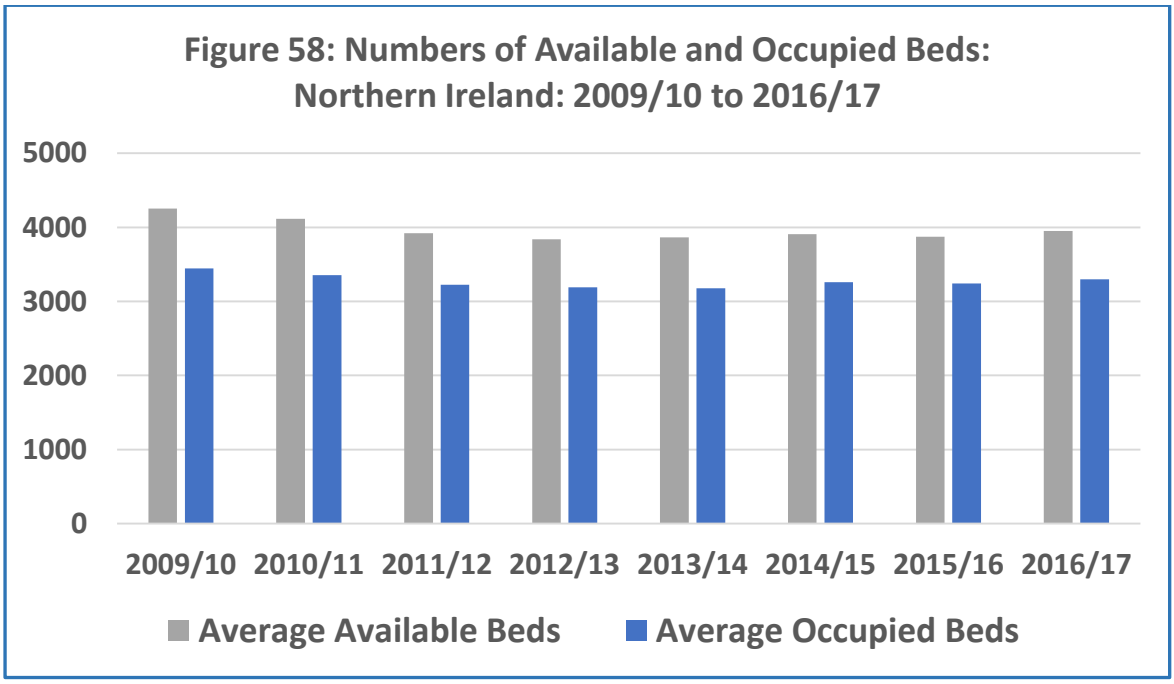
The number of patients admitted as emergencies (non-elective) to hospitals in Northern Ireland increased by 20,626 between 2009/10 and 2016/17. During this period, the number of elective inpatients fell by 15,203. The number of patients treated as day cases rose by 24,954. These trends are shown In Figure 57.

Figure 58 shows the trends in average numbers of Available and Occupied beds during this period. The number of occupied beds fell from 3,446 in 2009/10 to 3,188 in 2013/14 but then rose to reach 3,298 in 2016/17.

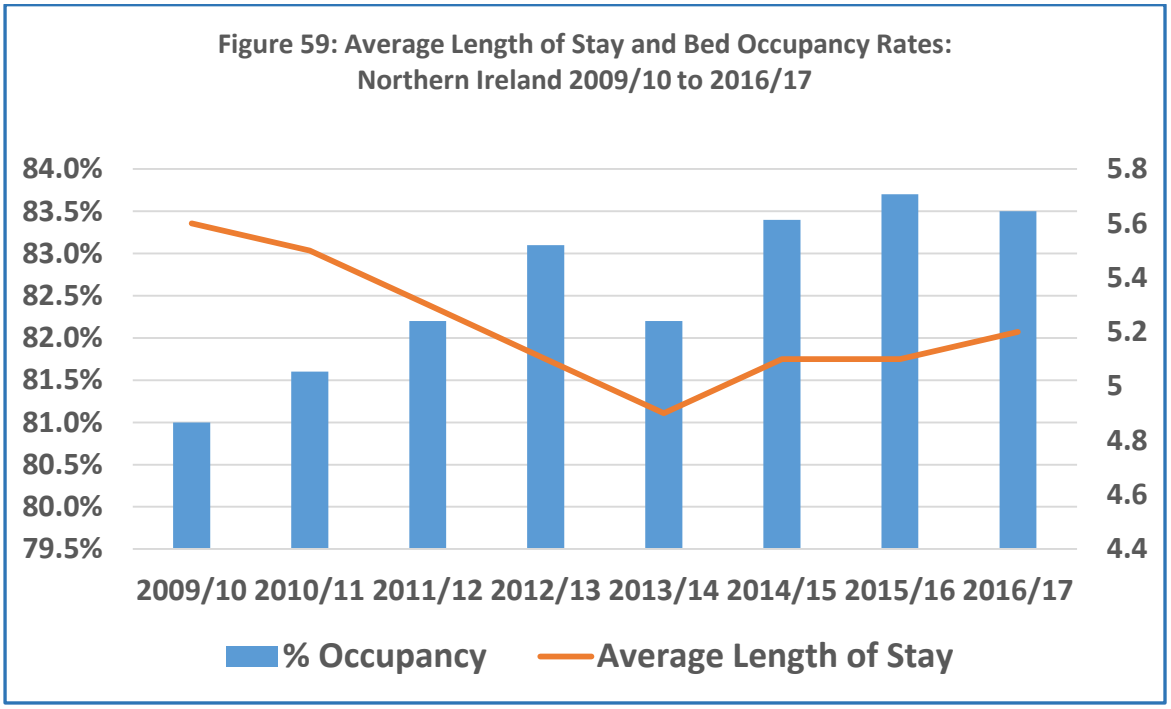
Figure 59 illustrates trends in average length of stay and bed occupancy rates for all hospital beds in Northern Ireland. Average length of stay fell from 5.6 days in 2009/10 to 4.9 days in 2013/14, and then rose to 5.2 Days in 2016/17. Bed occupancy rates have shown a generally increasing trend from 81.0% in 2009/10 to 83.5% in 2016/17.



Source: Inpatient and Day Case Activity Statistics; 2009/10 to 2016/17



Source: Inpatient and Day Case Activity Statistics; 2009/10 to 2016/17

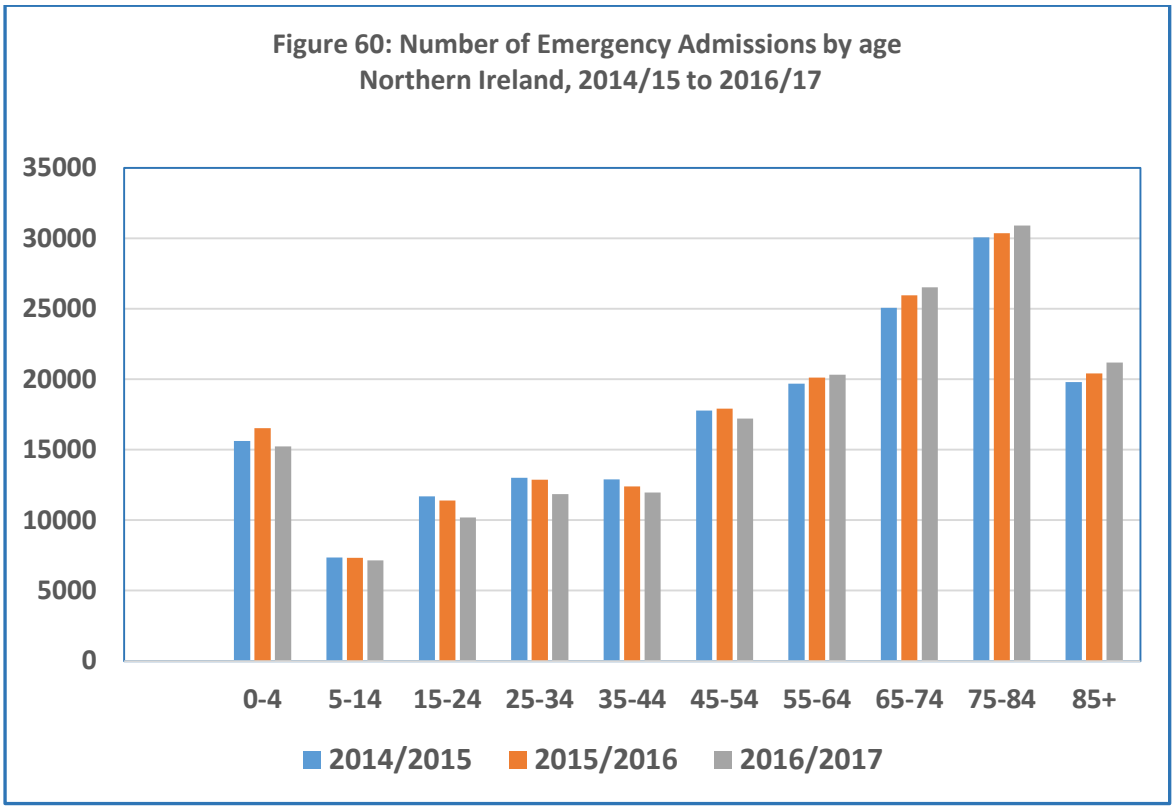


Source: Inpatient and Day Case Activity Statistics; 2009/10 to 2016/17

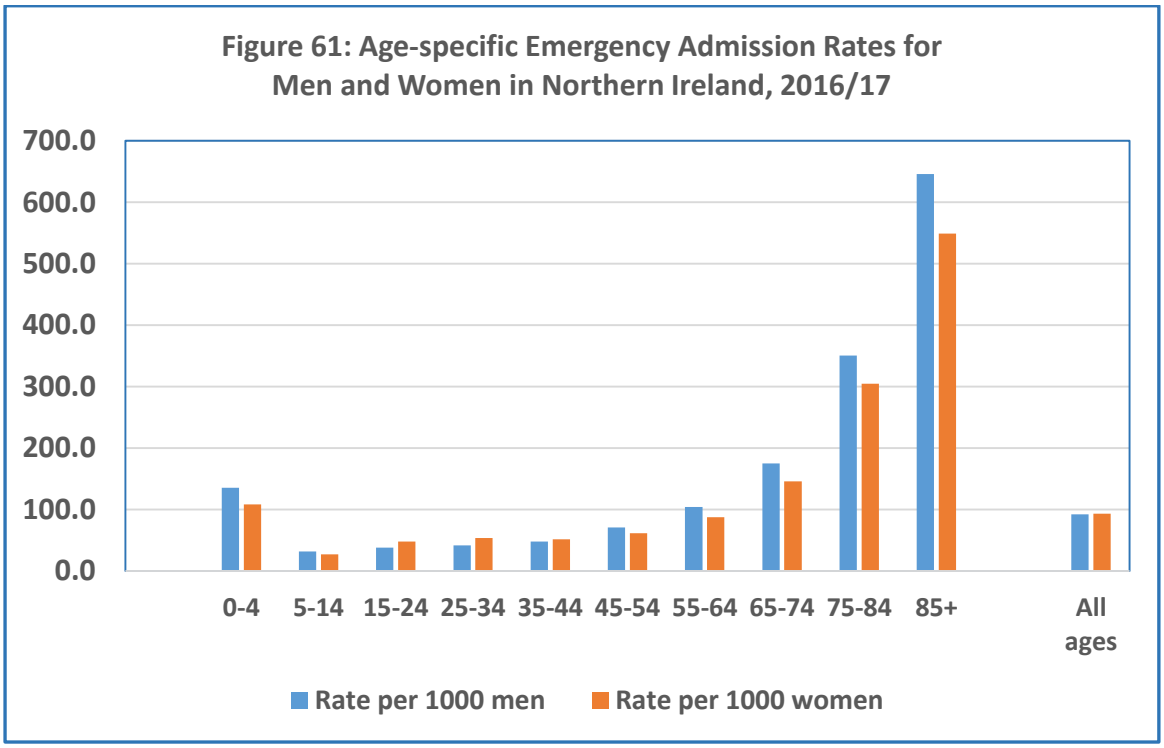
6.1 Age Patterns

Trends in the age distribution of emergency admissions to hospitals in Northern Ireland are shown in Figure 60 for the three years from 2014/15 to 2016/17. During this period, the numbers fell for all age groups between 0-4 years and 45-54 years. The numbers rose for all age groups from 55-64 years and above.

Figure 61 shows age-specific emergency admission rates for men and women in 2016/17 with much higher rates in the older age groups.



Source: Health and Social Care Board



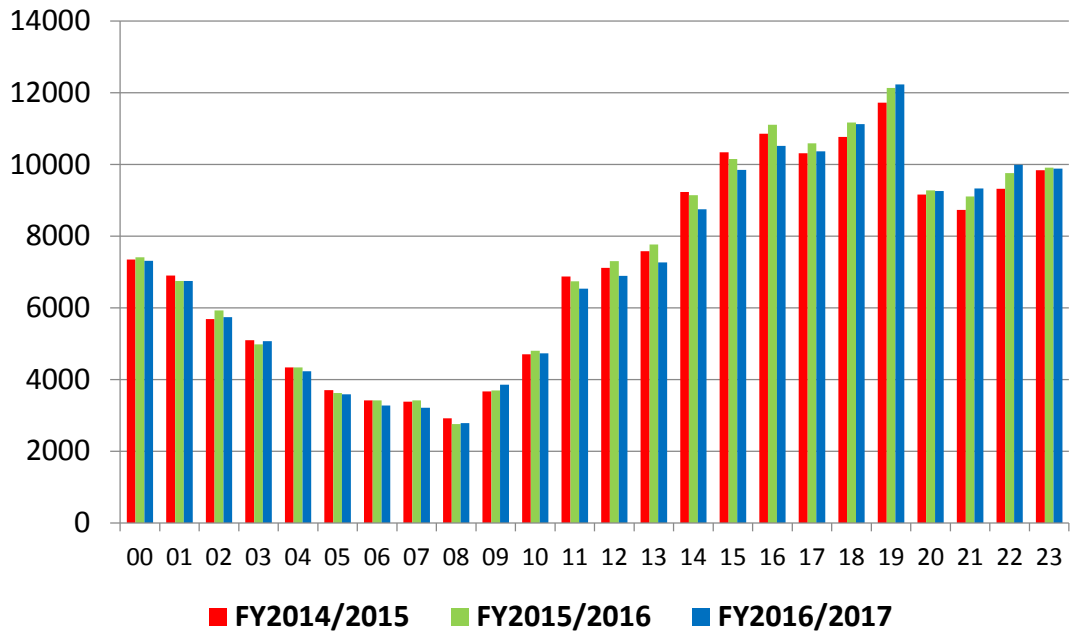
Source: Health and Social Care Board

6.2 Patterns by Time of Day

Figure 62 shows the number of emergency admissions to all hospitals in Northern Ireland by hour of the day. The numbers fall overnight and then rise gradually to reach a peak between 7pm and 8pm.

The pattern is generally similar across hospitals. Some hospitals such as Causeway and the Mater hospitals show peak admissions earlier in the day.

Figure 62: Emergency Admissions to Hospitals by Hour of the Day, Northern Ireland, 2014/15 to 2016/17

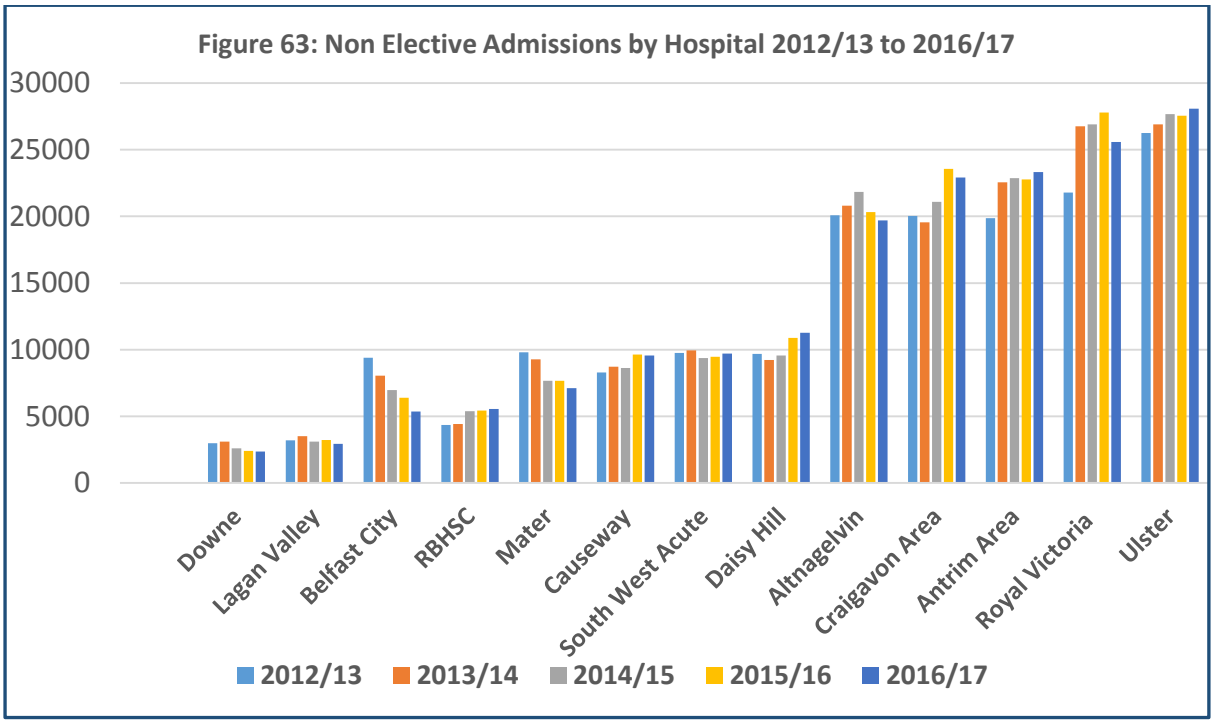


Source: Health and Social Care Board

6.3 Trends by hospital

Figure 63 illustrates trends in non-elective admissions by hospital from 2012/13 to 2016/17. There have been some variations during this period.

Numbers rose at the Ulster, Royal Victoria, Royal Belfast Hospital for Sick Children, Antrim Area, Craigavon, Daisy Hill and Causeway Hospitals but there were falls at the Belfast City, Mater, Lagan Valley, and Downe Hospitals. The numbers at Altnagelvin rose between 2012/13 and 2014/15 and then fell to 2016/17. South West Acute Hospital numbers were broadly similar in 2016/17, as compared to 2012/13.



Source: Inpatient and Day Case Activity Statistics; 2012/13 to 2016/17

6.4 Specialty patterns

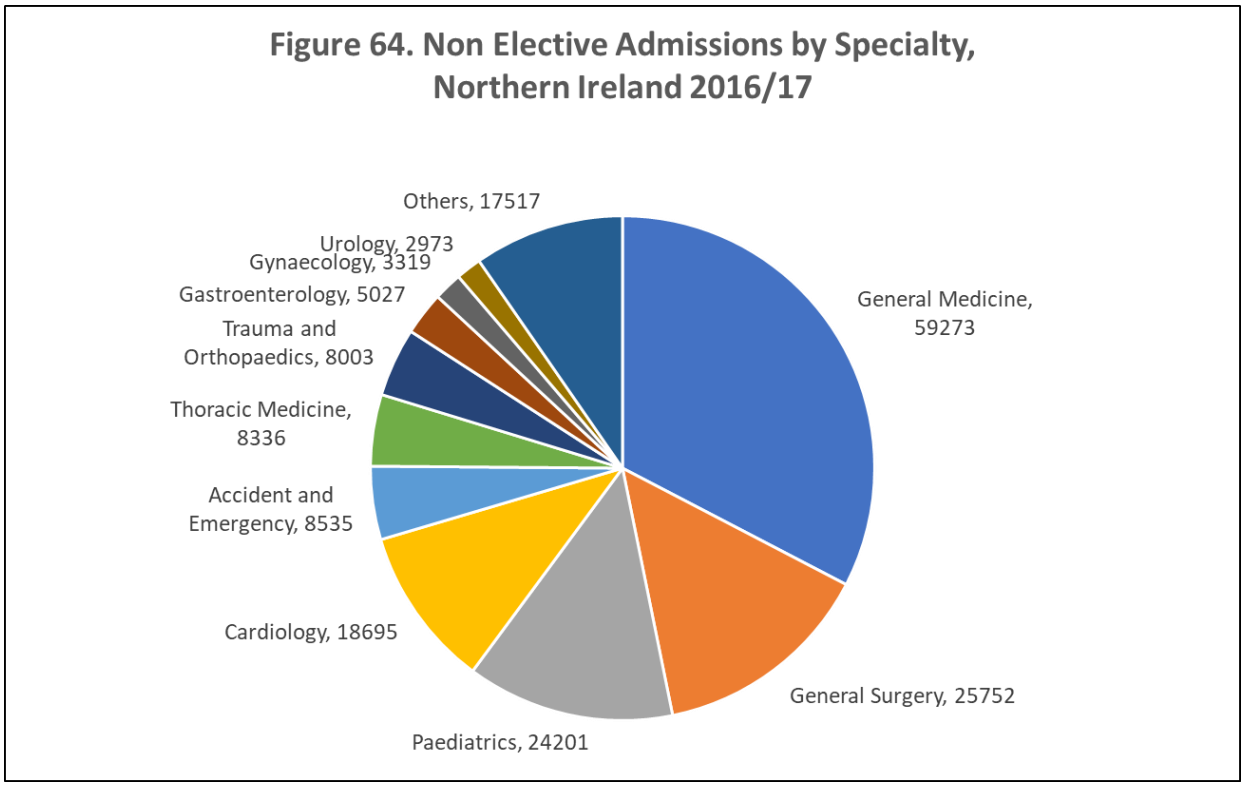
The breakdown of non-elective admissions by specialty in 2016/17 is shown in Figure 64. Admissions to the specialty of General Medicine comprised nearly a third of all non-elective admissions.

Trends in the eight highest admitting specialties, which together accounted for 86.9% of all non-elective admissions in 2016/17, are shown in Figure 65.

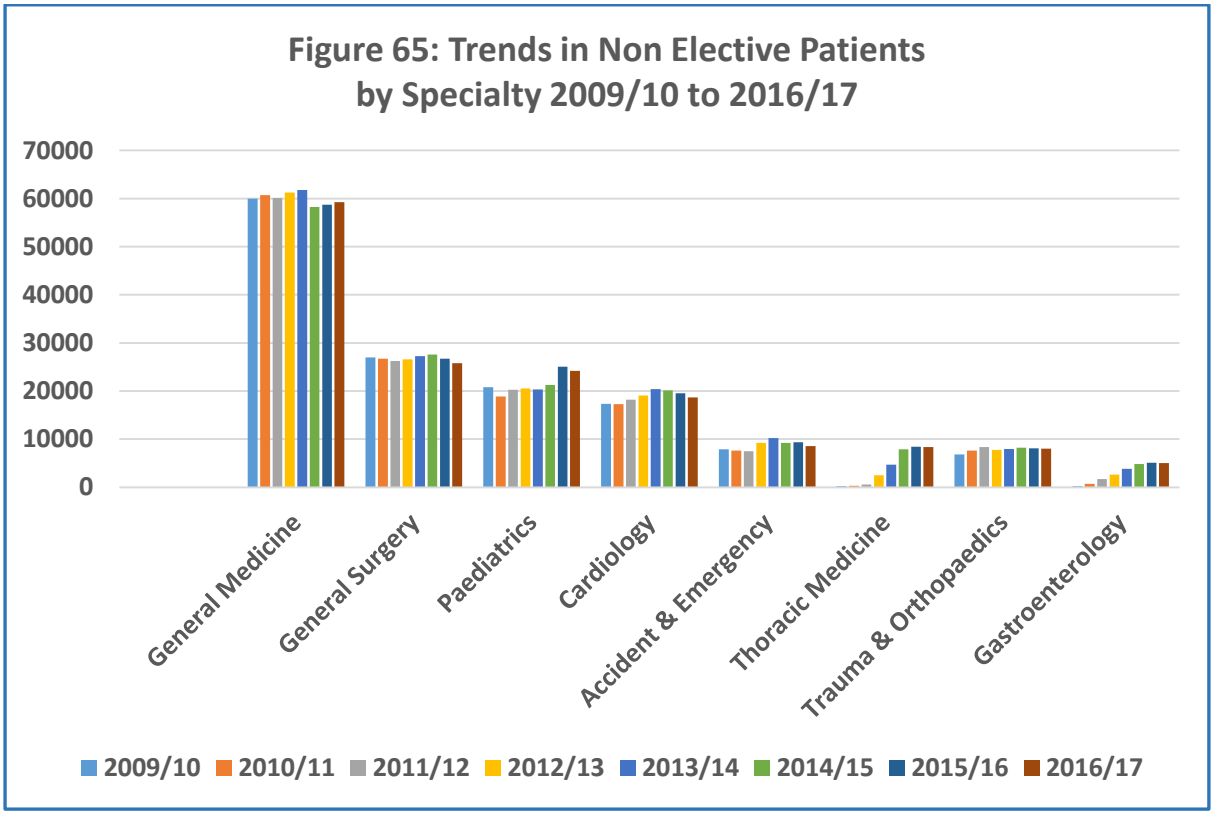
For General Surgery, the numbers of non-elective admissions rose from 26,984 in 2009/10 to 27,591 in 2014/15 and then fell to 25,752 in 2016/17. The number of non-elective admissions in Trauma and Orthopaedics rose from 6,821 in 2009/10 to 8,003 in 2016/17. Accident and Emergency admissions rose initially and then reduced again. The number of non-elective admissions in Paediatrics rose over the period by over 3,000.

The total number of non-elective admissions to the four specialties of General Medicine, Cardiology, Thoracic Medicine and Gastroenterology rose by 13,499 between 2009/10 and 2016/17. These specialties together admit a high percentage of the daily 'Medical Take-in' of acute hospitals.

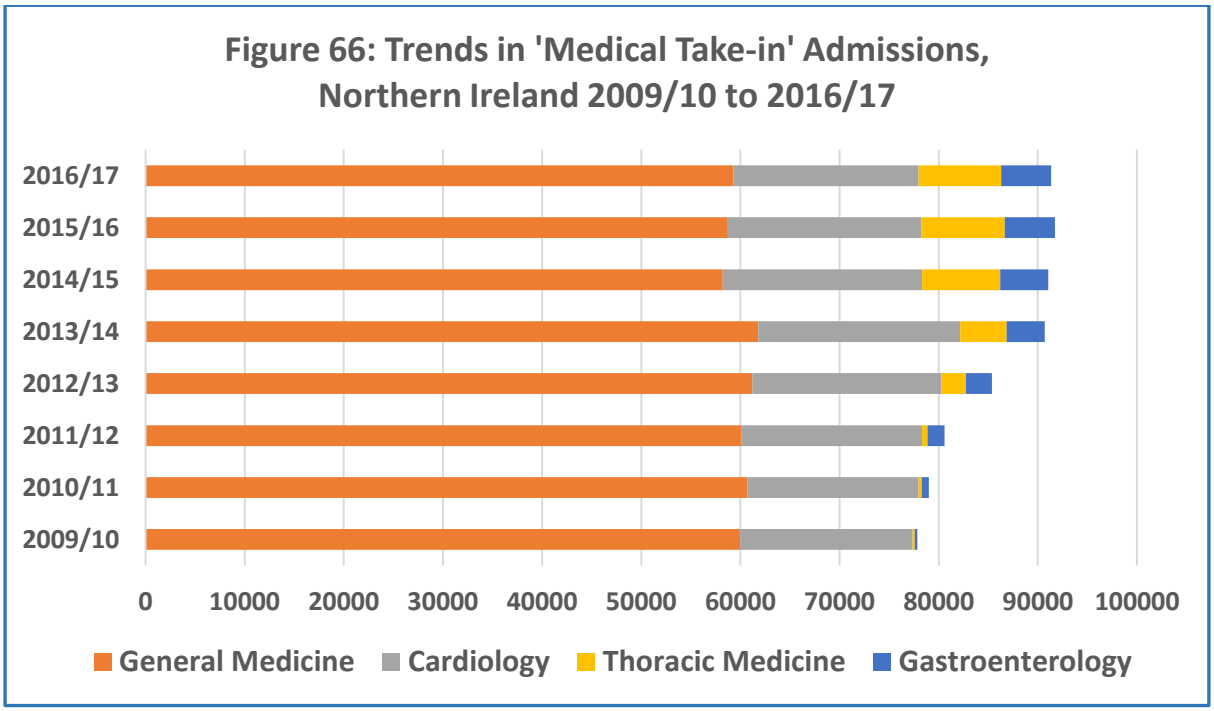
The pattern of admissions to specialties changed (Figure 66). While the number of General Medical admissions stayed relatively stable and the numbers of Cardiology admissions rose and then reduced again, the numbers of admissions recorded to the specialties of Thoracic Medicine and Gastroenterology rose very significantly. This pattern reflects the introduction of specialty take-in arrangements in several hospitals.



Source: Inpatient and Day Case Activity Statistics; 2016/17



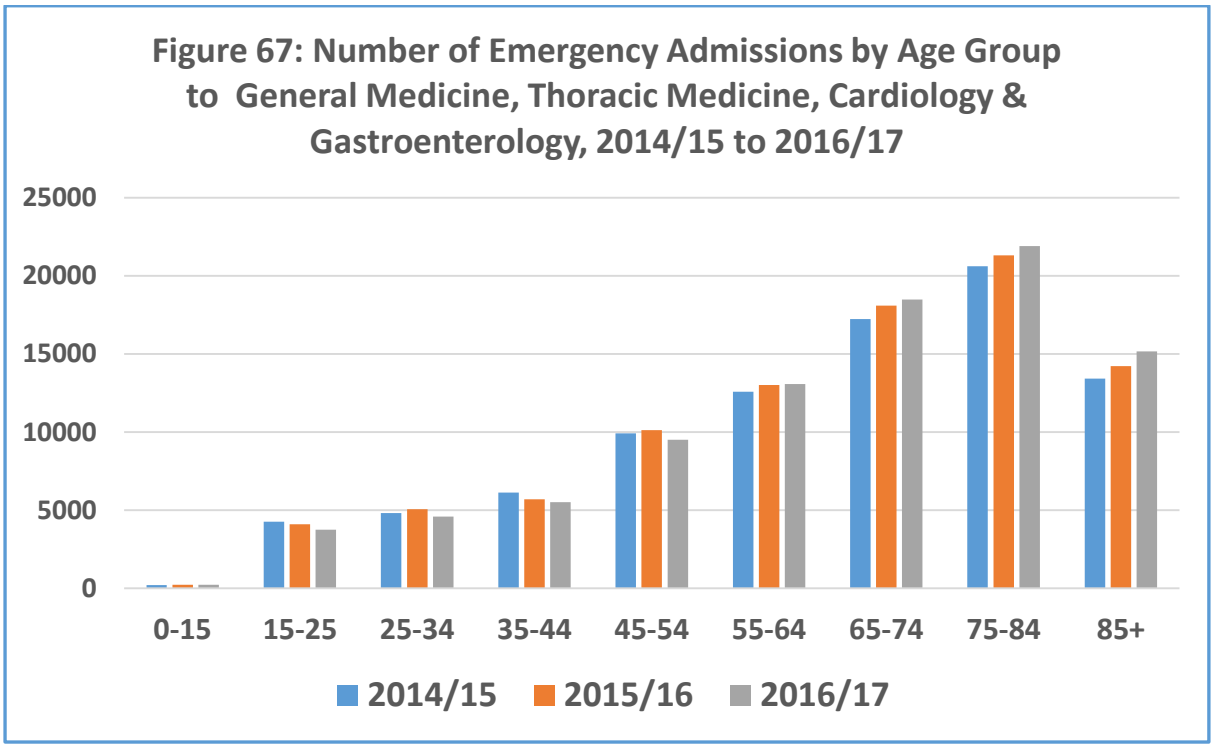
Source: Inpatient and Day Case Activity Statistics; 2009/10 to 2016/17



Source: Inpatient and Day Case Activity Statistics; 2009/10 to 2016/17

Figure 67 shows the trends by age group for the total number of admissions to these four specialties between 2014/15 and 2016/17. During this period the proportion of all emergency admissions they accounted for rose from 51.5% to 53.4%.

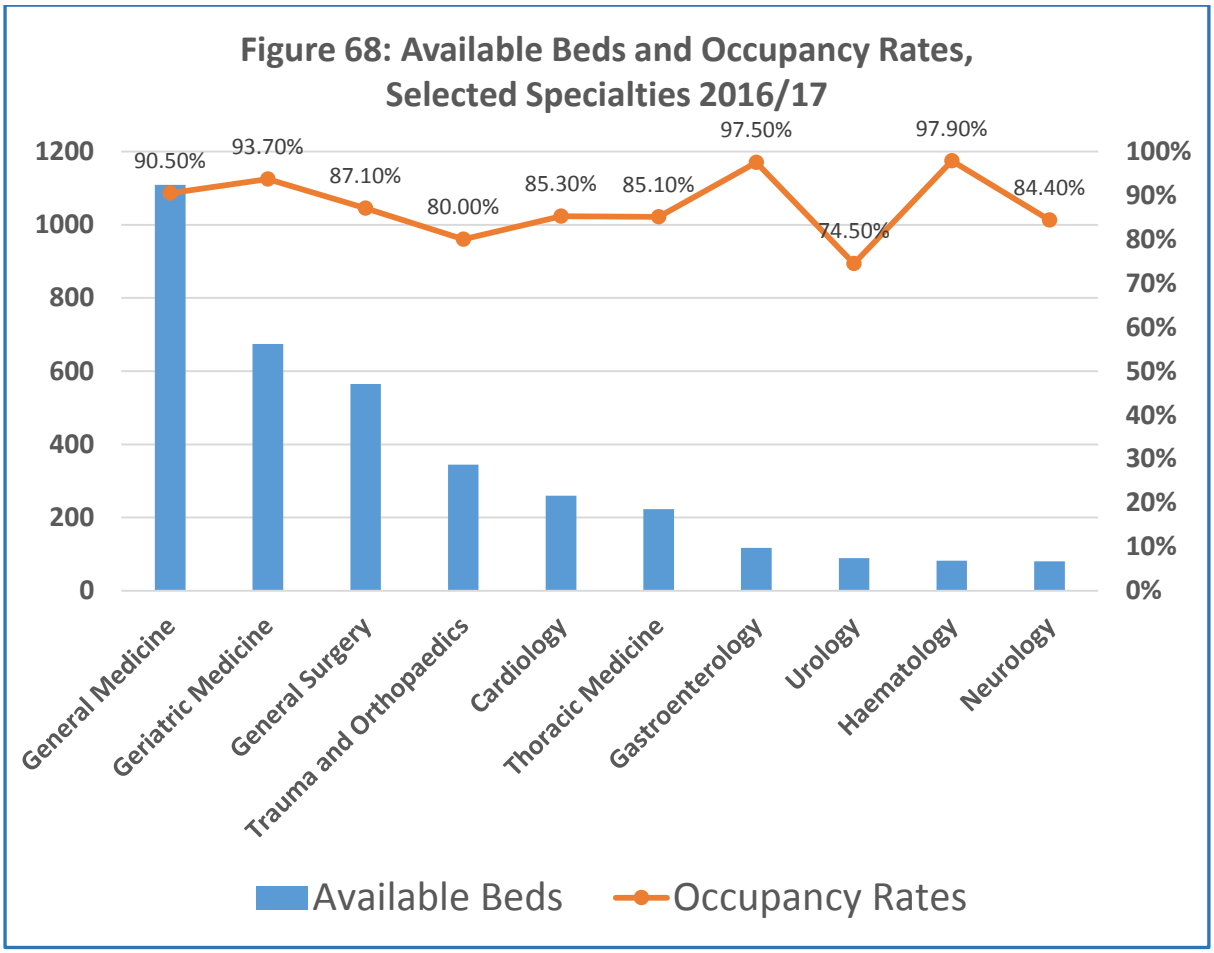
While the numbers or admissions fell or remained stable up to age group 55-64, the numbers rose in older age group. There were over 4,000 more admissions to these specialties of patients aged 65 and over in 2016/17, as compared to 2014/15.



Source: Health and Social Care Board

Figure 68 shows the average number of available beds and bed occupancy rates for selected medical and surgical specialties in 2016/17. These include beds being used

for elective and non-elective patients. The occupancy rates for General Medicine, Geriatrics, Gastroenterology and Haematology all exceeded 90%.



Source: Inpatient and Day Case Activity Statistics: 2016/17

6.5 Trends by Local Government District

Recent trends in the number of emergency admission by Local Government District of residence are shown in the table below. Between 2014/15 and 2016/17, the changes varied from a fall of 5 per cent for residents of Mid and East Antrim LGD to a rise of 7 per cent in residents of Causeway Coast and Glens LGD.

Percentage Change in Emergency Admissions For LGD District of Residence, 2014/15 to 2016/17

Increases	
Causeway Coast & Glens	7.07%
Newry, Mourne & Down	6.58%
Fermanagh & Omagh	5.99%
Armagh City, Banbridge & Craigavon	2.06%
Derry City & Strabane	0.84%
Ards & North Down	0.16%
Reductions	
Mid Ulster	-3.61%
Lisburn & Castlereagh	-3.91%
Belfast	-4.06%
Antrim & Newtownabbey	-4.90%
Mid & East Antrim	-5.13%

Source: Health and Social Care Board

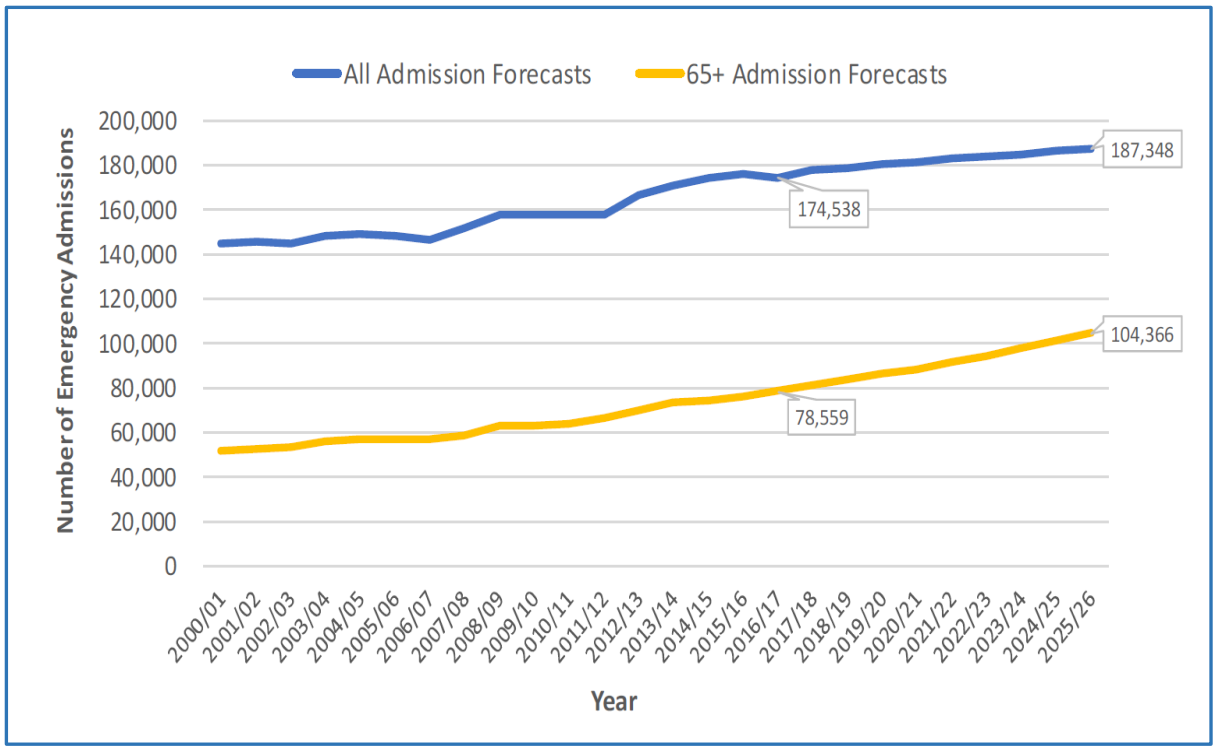
6.6 Projected Number of Emergency Admissions

Figure 69 provides a projection of the total number of emergency admissions to hospitals in Northern Ireland until 2025/26.

The forecasts are based on the number of emergency admission to hospital for each year from 2000 to 2017, and the population projections for each year from 2017/18 to 2025/26.

It is forecast that there will be 187,348 emergency admissions to hospital during 2025/26, almost 13,000 more than during 2016/17. Of this number, emergency admissions for those aged 65 & over are projected to increase from 78,559 in 2016/17, to 104,366 during 2025/26, a rise of 25,807.

Figure 69: Projected number of Emergency Admissions to Hospitals in Northern Ireland until 2025/26.



Source: Hospital Information Branch.

6.7 Summary

The number of patients admitted as emergencies (non-elective) to hospitals in Northern Ireland increased by 20,626 between 2009/10 and 2016/17. During this period, the number of elective inpatients fell by 15,203. The number of patients treated as day cases rose by 24,954.

Between 2009/10 and 2013/14, the average number of occupied hospital beds in Northern Ireland fell by 258 and the average length of stay for patients fell from 5.6 days to 4.9 days. Between 2013/14 and 2016/17, the number average number of occupied beds rose by 110 and the average length of stay rose to 5.2 days. Total bed occupancy rates have shown a generally increasing trend from 81.0% in 2009/10 to 83.5% in 2016/17. The occupancy rates for General Medicine, Geriatrics, Gastroenterology and Haematology all exceeded 90%.

For the three-year period between 2014/15 and 2016/17, the numbers of emergency admissions fell for all age groups between 0-4 years and 45-54 years. Numbers rose in older age groups. Age-specific emergency rates for men and women in 2016/17 show much higher rates in the oldest age groups.

Hospitals in Northern Ireland have a generally similar pattern of admissions by hour of the day. The numbers fall overnight and then rise gradually to reach a peak, usually between 7pm and 8pm

Between 2012/13 and 2016/17 the numbers of emergency admissions rose at the Ulster, Royal Victoria, Royal Belfast Hospital for Sick Children, Antrim Area, Craigavon, Daisy Hill and Causeway Hospitals but there were falls at the Belfast City, Mater, Lagan Valley, and Downe Hospitals. The numbers at Altnagelvin rose between 2012/13 and 2014/15 and then fell to 2016/17. South West Acute Hospital numbers were broadly similar in 2016/17 as compared to 2012/13.

The ‘Medical Take-in’ specialties of General Medicine, Cardiology, Thoracic Medicine and Gastroenterology together accounted for 13,499 of the total increase of 20,626 in emergency admissions, between 2009/10 and 2016/17. Between 2014/15 and 2016/17 there were over 4,000 more admissions to these specialties of patients age 65 and over.

The pattern of admissions to these specialties changed. While the number of General Medicine admissions stayed relatively stable, the numbers of admissions recorded to the specialties of Thoracic Medicine and Gastroenterology rose very significantly. This pattern reflects the introduction of specialty take-in arrangements in several hospitals.

Admission trends for residents of Local Government Districts reveal a varied pattern in recent years. Between 2014/15 and 2016/17, there was a fall of 5 per cent in admissions for residents of Mid and East Antrim LGD and a rise of 7 per cent for residents of Causeway Coast and Glens LGD.

It is forecast that there will be 187,348 emergency admissions to hospital during 2025/26, almost 13,000 more than during 2016/17. Of this number, emergency admissions for those aged 65 & over are projected to increase from 78,559 in 2016/17, to 104,366 during 2025/26, a rise of 25,807.

7 Hospital discharge patterns

A hospital discharge is regarded as **Complex** when it can only take place following the implementation of a significant home based or other community-based service (including residential or nursing home services).

A hospital discharge is regarded as **Non-Complex** where the patient has non-complex needs.

The Department of Health monitors information on the proportion of patients remaining in hospital after the time they were deemed medically fit for discharge.

A Ministerial target has been set in Northern Ireland for the effective discharge of patients from an acute hospital setting:

'From April 2015, ensure that 90% of complex discharges from an acute hospital take place within 48 hours, with no complex discharge taking place more than 7 days; and all non-complex discharges from an acute hospital within 6 hours of the patient being assessed as medically fit for discharge.'

The target is separated into three components for monitoring:

- **Complex Discharges** which took place within **48 hours** of the patient being declared medically fit for discharge;
- **Complex Discharges** from an acute setting taking longer than **7 days** of the patient being declared fit for discharge;
- **Non-Complex Discharges** from an acute hospital setting taking place within 6 hours of the patient being declared medically fit for discharge.

Discharges are considered to be **Delayed Discharges** for complex discharges if the discharge does not happen within 48 hours of the patient being declared medically fit for discharge. For non-complex discharges, the discharge is considered to be delayed if it does not happen within 6 hours of the patient being declared medically fit for discharge.

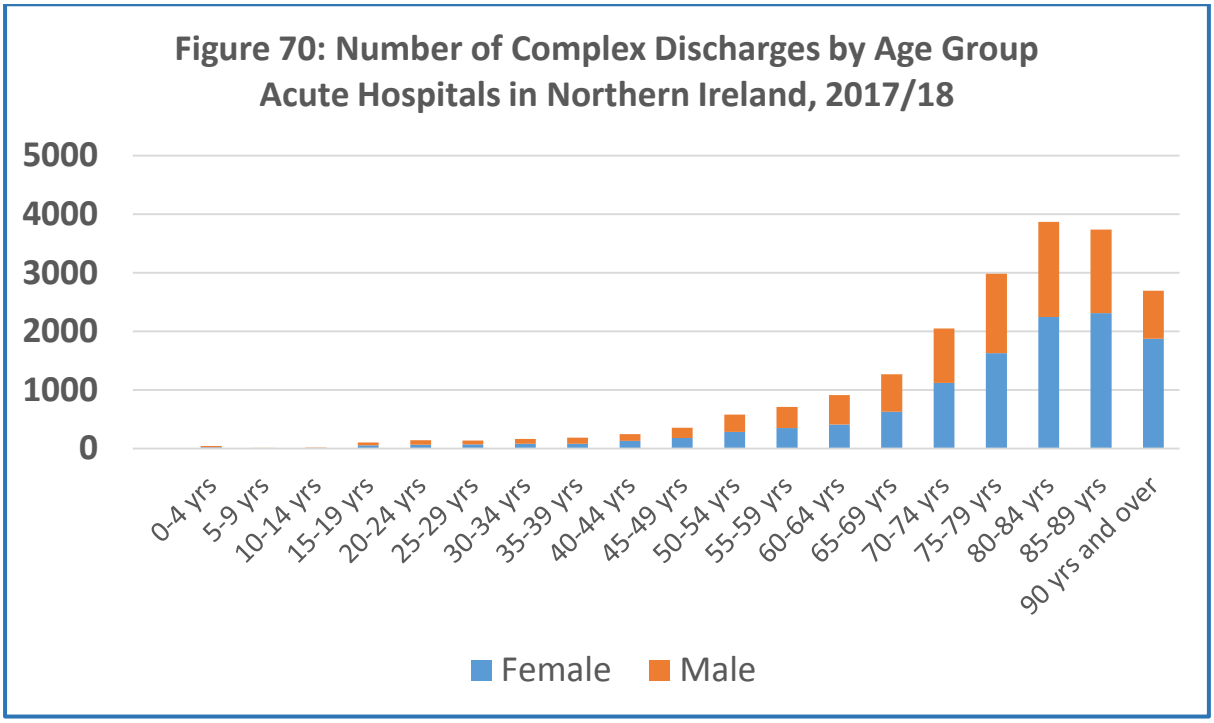
Provisional information about discharges has been very helpfully provided by Hospital Statistics Branch to inform the development of this report.[40] This information may vary from other published information on hospital admissions as discharge information has specific exclusions applied, whereby an agreed list of wards is excluded from any delayed discharge information.

[40] The list of hospitals for which Northern Ireland summary information about discharges is presented in this report includes: Belfast City Hospital; Belfast City Cancer Centre; Mater Hospital; Musgrave Park Hospital; Royal Victoria Hospital; Royal Belfast Hospital for Sick Children; Antrim Area Hospital; Causeway Hospital; Mid-Ulster Hospital (excluded from 27 April 2016); Whiteabbey Hospital (excluded from 1 April 2016); Downe Hospital; Lagan Valley Hospital; Ulster Hospital; Daisy Hill Hospital; Craigavon Area Hospital; Altnagelvin Area Hospital; and South West Acute Hospital.

7.1 Complex and Non-Complex Discharges

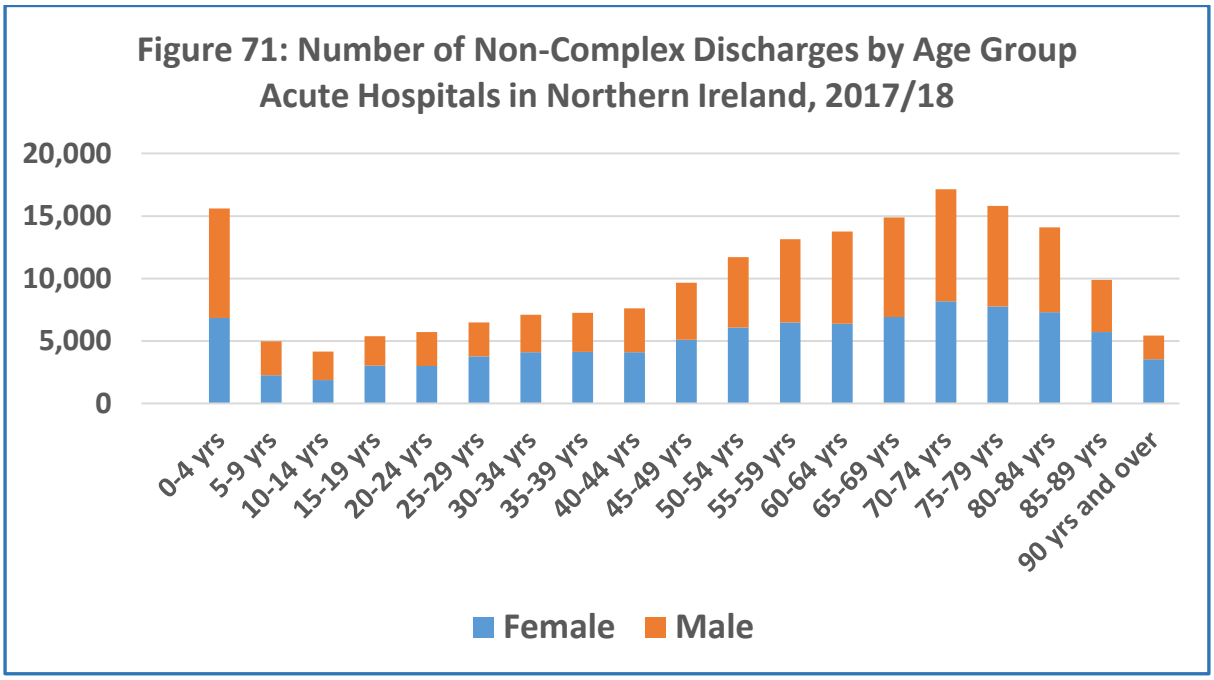
In 2017 /18 there were 20,230 complex discharges and 189,802 non-complex discharges reported from hospitals included in the monitoring arrangements.

Figure 70 shows the age distribution of the patients with complex discharges during this period. Higher numbers of complex discharges occurred in older age groups. 65.7% of all complex discharges occurred among patients over the age of 75 years.



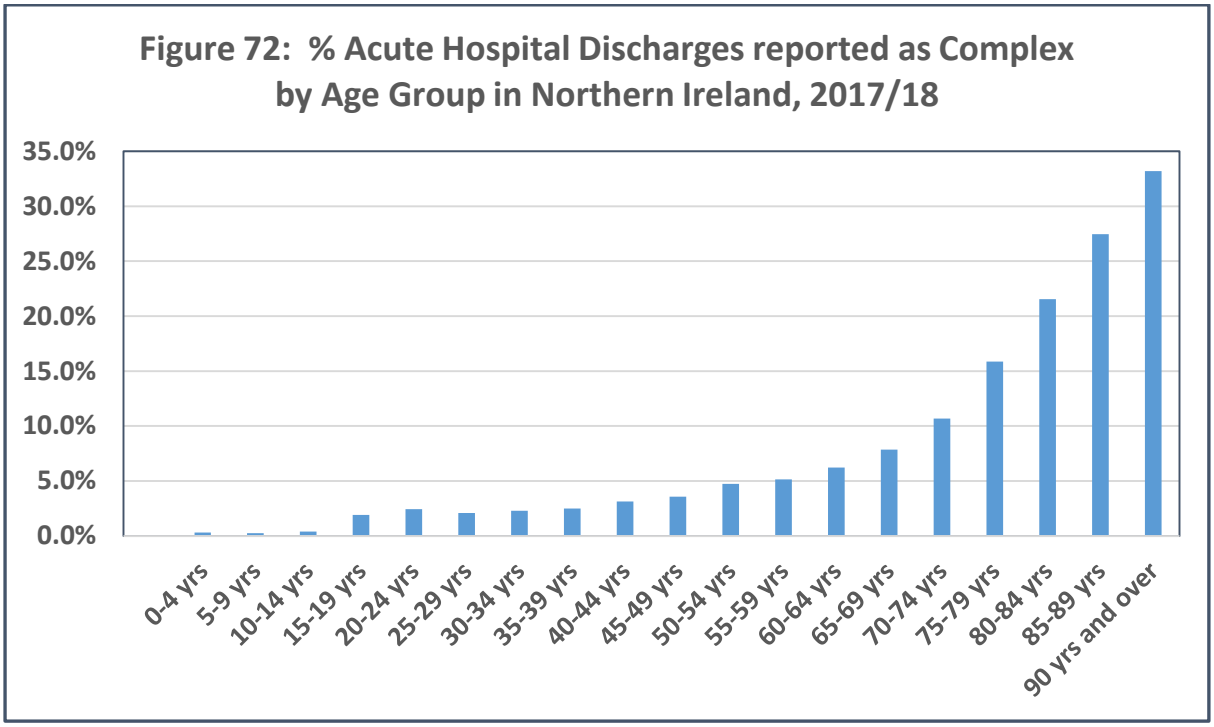
Source: Hospital Information Branch

Figure 71 shows the age distribution of patients with non-complex discharges for 2017/18. The age group with the highest number was 70 to 74 years.



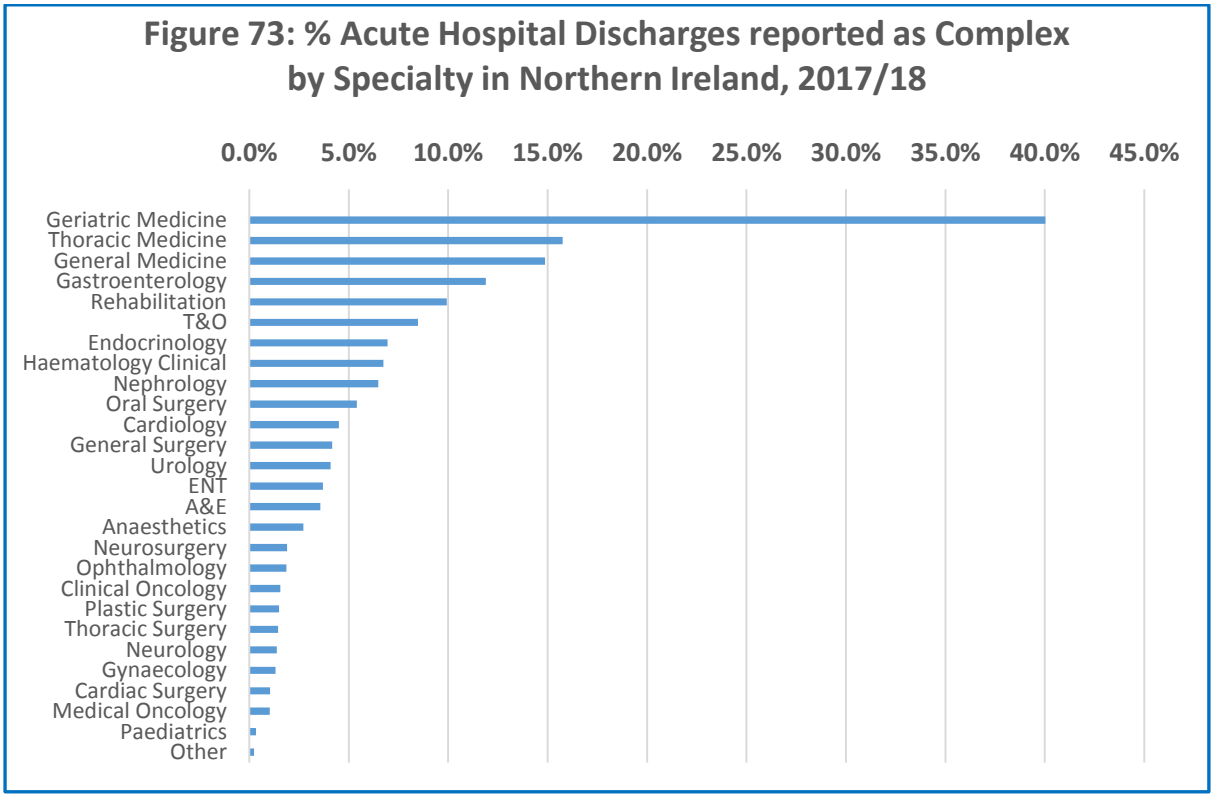
Source: Hospital Information Branch

Figure 72 show the percentage of all hospital discharges in 2017/18 which were reported as complex by age group. The percentage rises exponentially by age. 33.2% of discharges were reported as complex for patients aged 90 years and over.



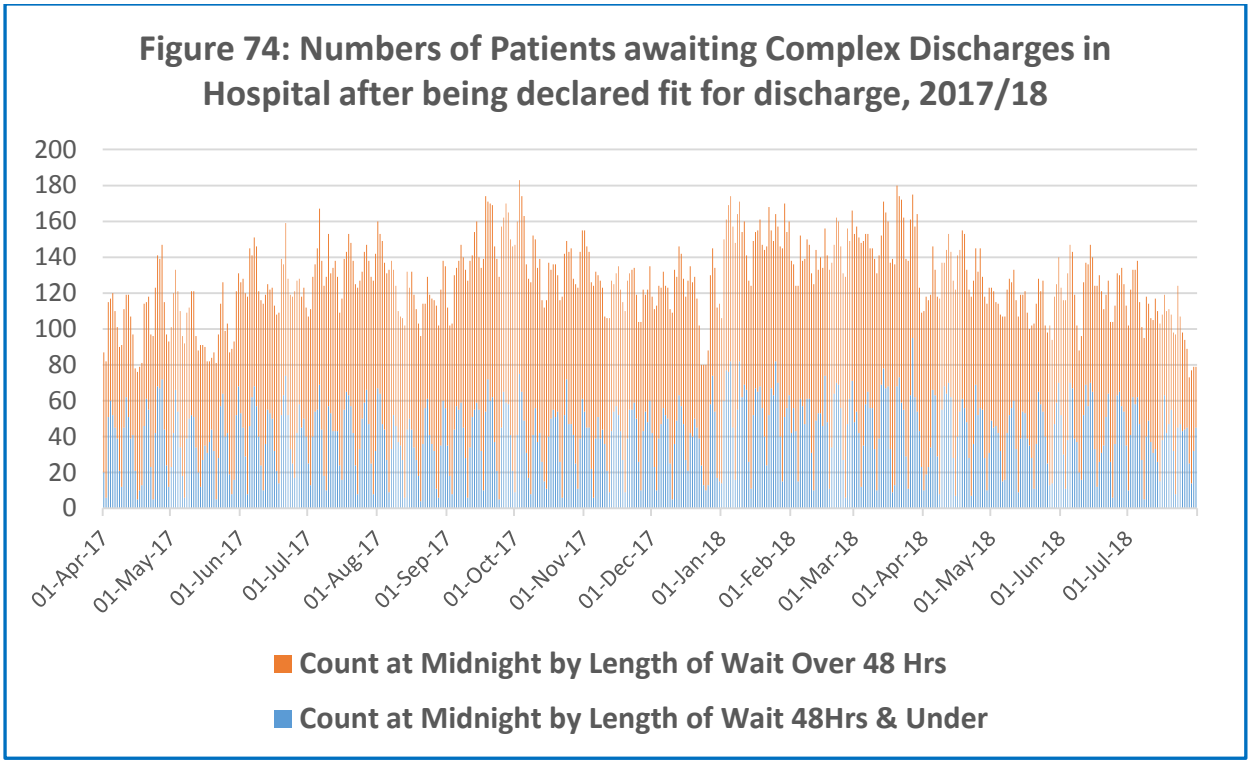
Source: Hospital Information Branch

Figure 73 illustrates the pattern by specialty. Of all discharges in geriatric medicine, 40% were reported as complex. Over 10% of the discharges in the specialties of thoracic medicine, general medicine and gastroenterology, were complex.



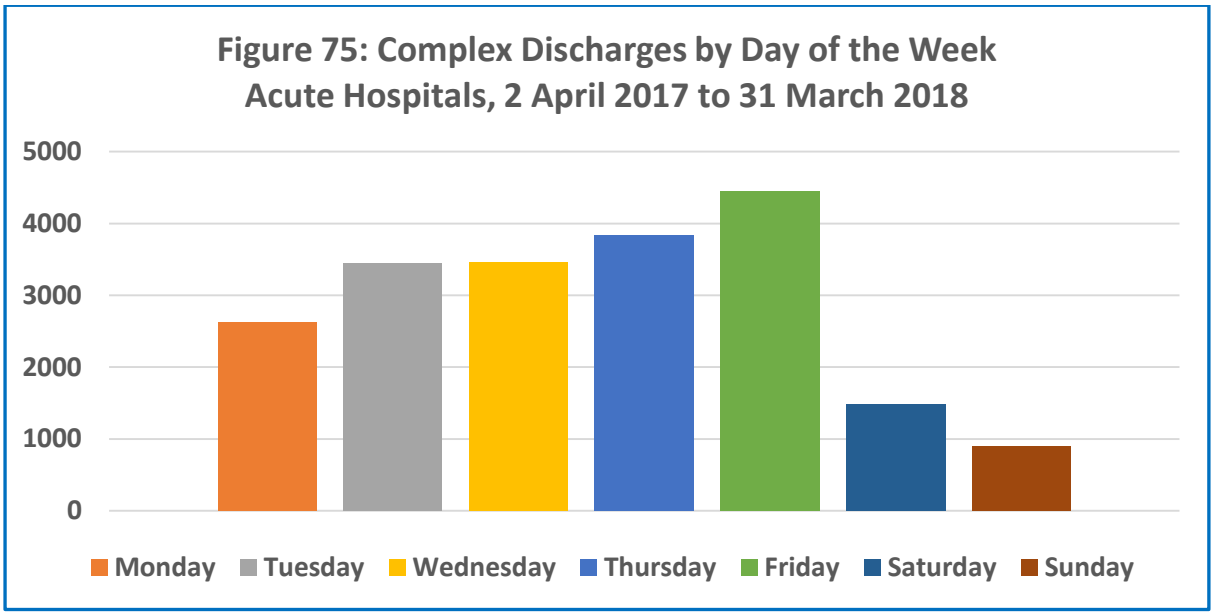
Source: Hospital Information Branch

Figure 74 shows the number of patients with complex discharges at midnight each day from 1 April 2017 to 31 July 2018, where the patient had been declared as medically fit for discharge but who remained in an acute hospital at midnight on each date. Those patients waiting longer than 48 hours are considered to be delayed discharges. The numbers of patients waiting for a complex discharge increased between January and April 2018.



Source: Hospital Information Branch

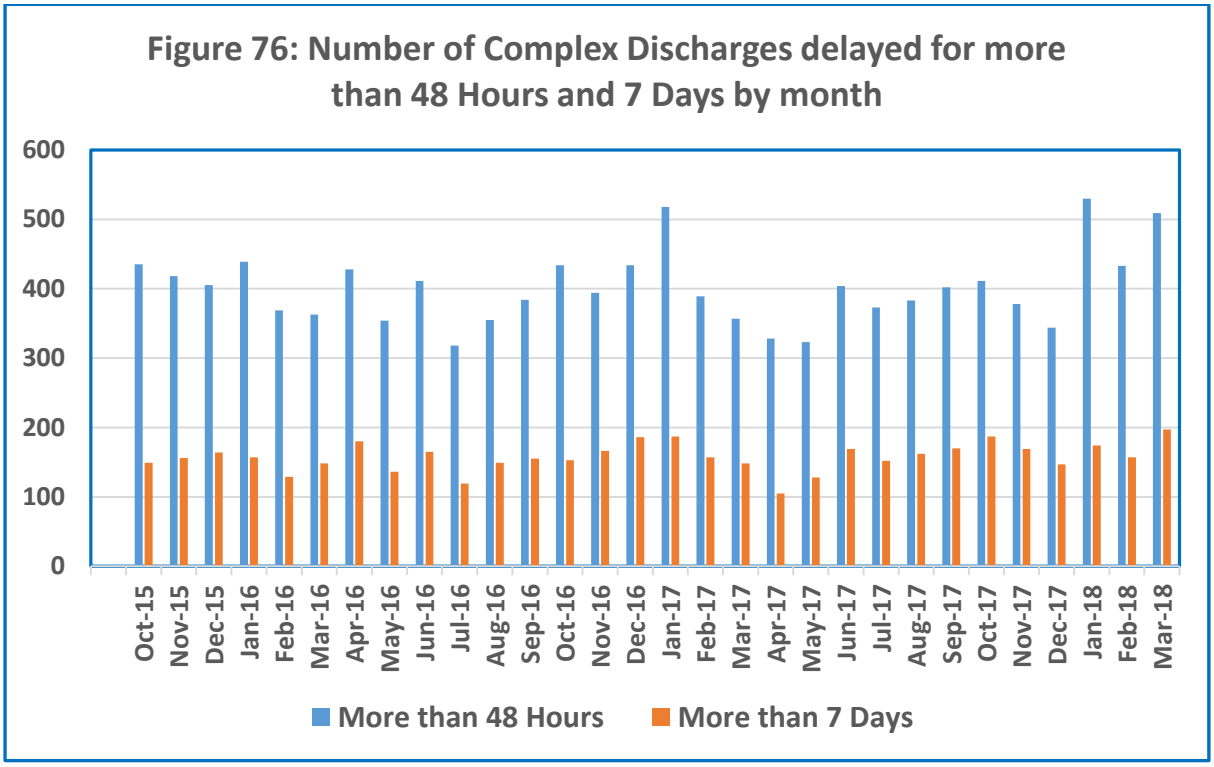
Figure 75 shows the number of complex discharges which took place, by day of the week, during a 52-week period from April 2017 to March 2018. Fewer complex discharges took place during Saturdays and Sundays with Fridays having a higher number.



Source: Hospital Information Branch

7.2 Delayed Discharges

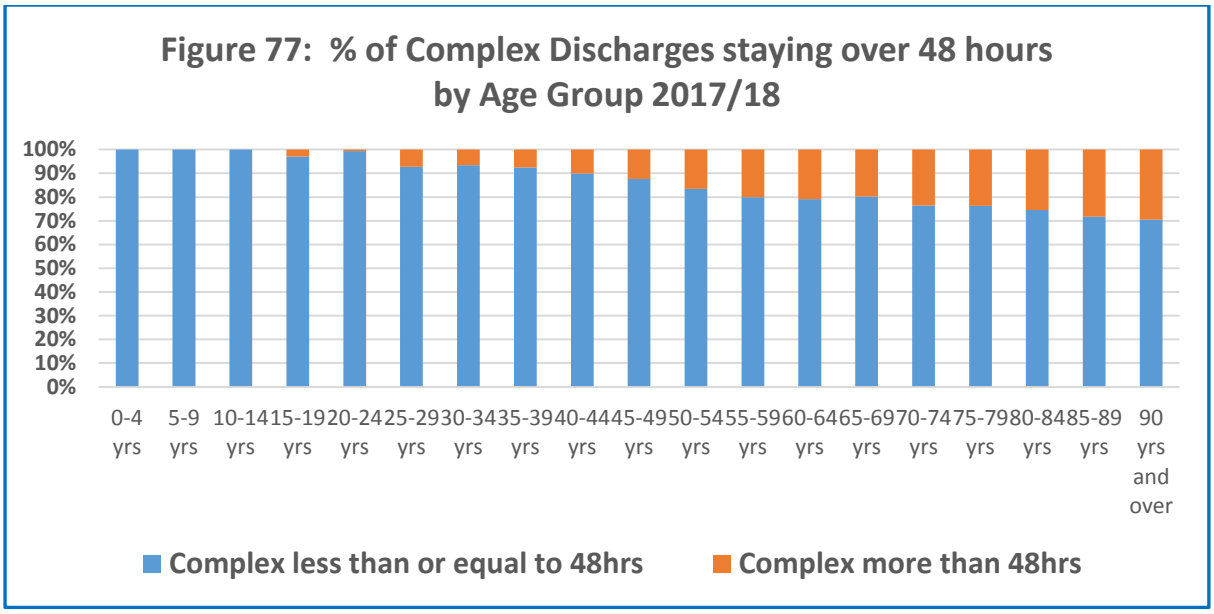
Figure 76 shows the number of patients with complex discharges who stayed in acute hospitals in Northern Ireland for over 48 hours, and for over 7 days, after they were declared medically fit for discharge. The highest numbers staying over 48 hours were in January 2017 (518) and January 2018 (530) with the highest number staying over 7 days in March 2018 (197).



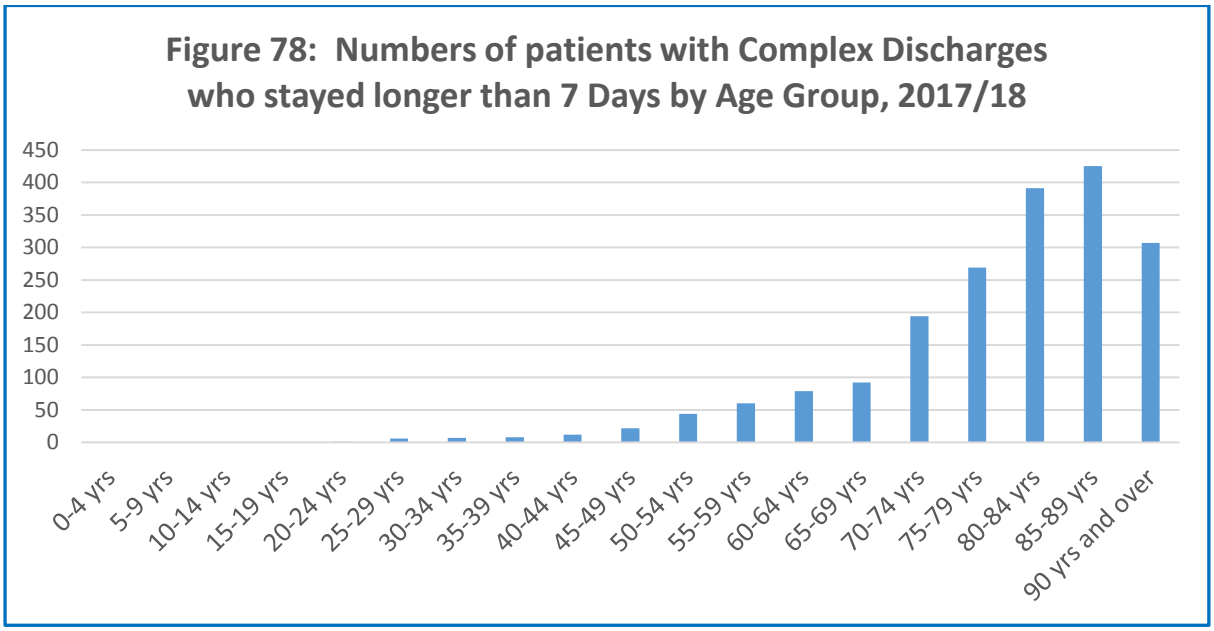
Source: Hospital Information Branch

The percentage of patients with complex discharges staying over 48 hours after being declared medically fit for discharge increases in older age groups as shown in Figure 77. Figure 78 shows that the patients staying longer than 7 days after being

declared medically fit for discharge are predominately in the age groups over the age of 75 years.

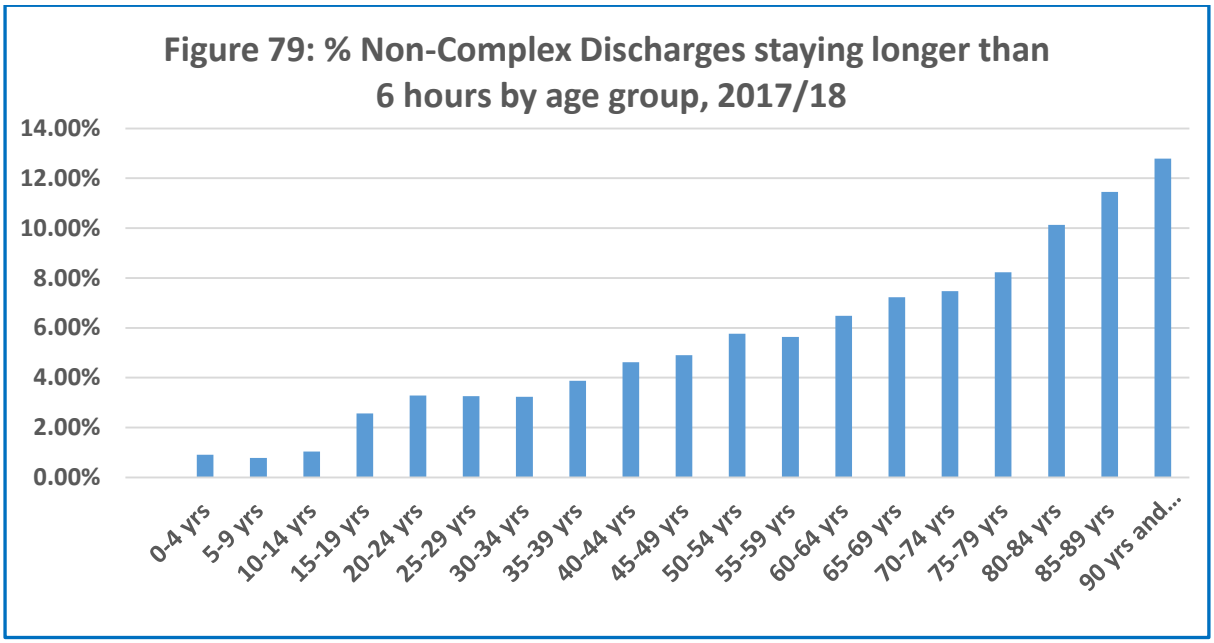


Source: Hospital Information Branch



Source: Hospital Information Branch

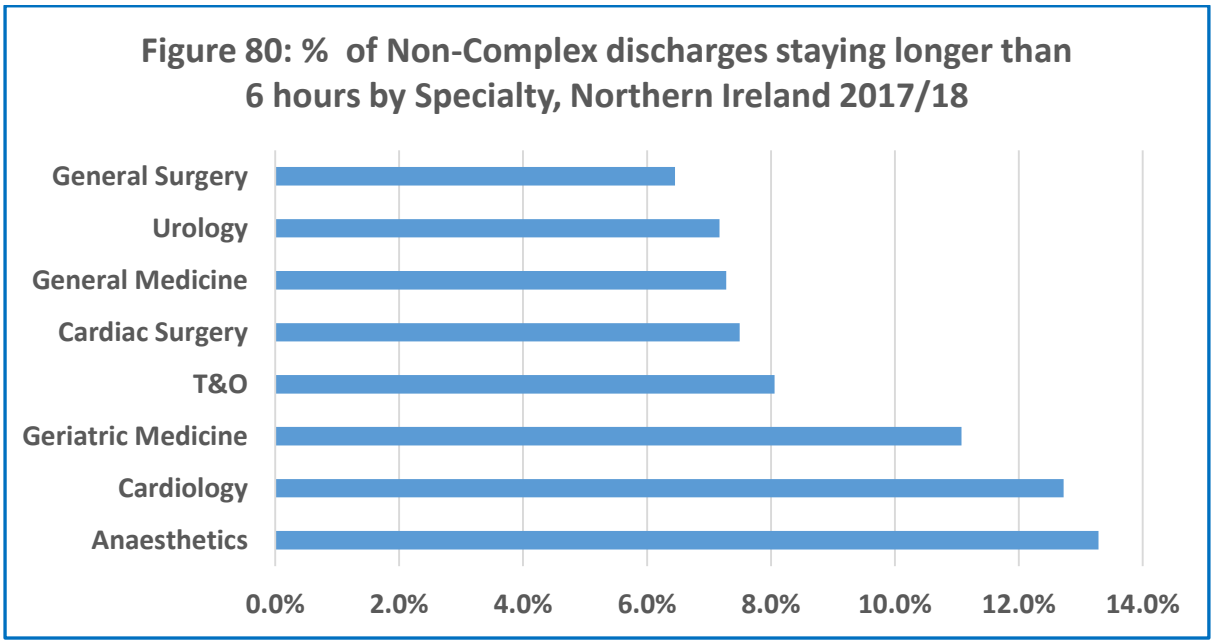
For non-complex discharges, a discharge is considered to be delayed if the patient has not been discharged within 6 hours of the patient being assessed as medically fit for discharge. Figure 79 shows that the percentage of patients whose non-complex discharge was delayed rises by age group.



Source: Hospital Information Branch

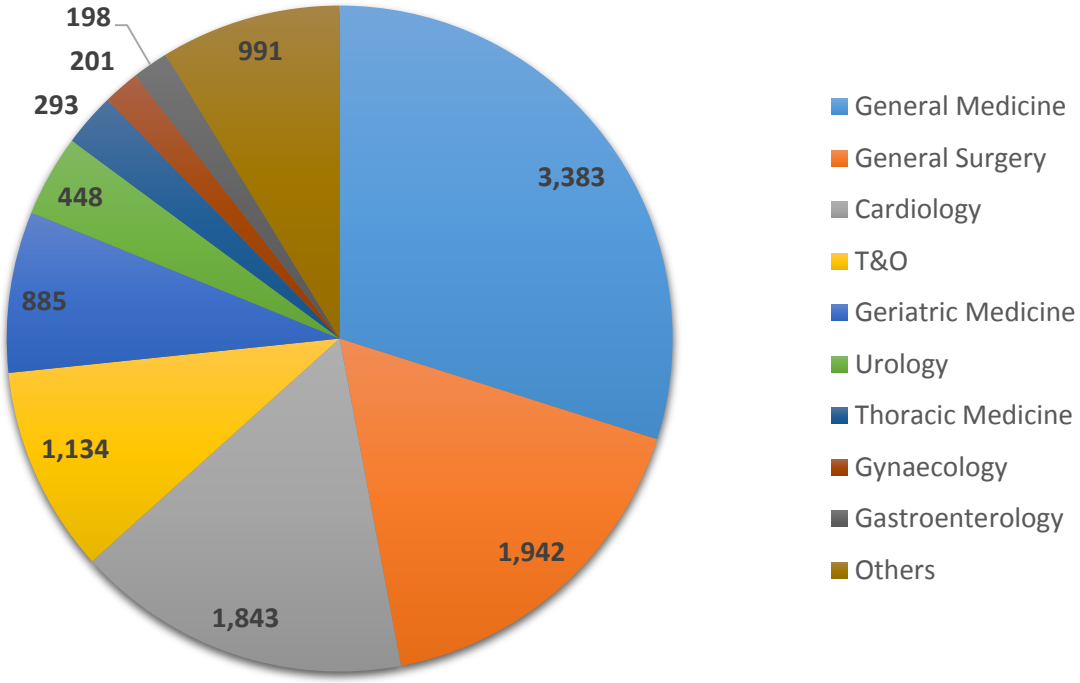
In 2017/18, 6% of all patients with non-complex discharges were reported to have stayed longer than 6 hours, after being assessed as medically fit for discharge.

Figure 80 shows the percentage staying longer than 6 hours for the 8 specialties which were above the Northern Ireland average. Figure 81 shows that the greatest numbers were in the specialties of general medicine, general surgery, cardiology and trauma and orthopaedics.



Source: Hospital Information Branch

Figure 81: Numbers of Non-Complex discharges staying over 6 hours by specialty, 2017/18



Source: Hospital Information Branch

7.3 Summary

A hospital discharge is regarded as **Complex** when it can only take place following the implementation of a significant home based or other community-based service (including residential or nursing home services).

A hospital discharge is regarded as **Non-Complex** where the patient has non-complex needs.

In 2017 /18 there were 20,230 complex discharges and 189,802 non-complex discharges reported from hospitals in Northern Ireland included in the monitoring arrangements.

Higher numbers of complex discharges occurred in older age groups. 65.7% of all complex discharges occurred among patients over the age of 75 years. For patients aged 90 years and over, 33.2% of discharges were reported to be complex.

For the specialty of geriatric medicine, 40% of all discharges were reported as complex. Over 10% of the discharges in the specialties of thoracic medicine, general medicine and gastroenterology, were complex.

During the period from 1 April 2017 to 31 July 2018, patients waiting in hospital for a complex discharge increased between January and April 2018. Fewer complex

discharges took place during Saturdays and Sundays with Fridays having a higher number.

The percentage of patients with complex discharges staying over 48 hours after being declared medically fit for discharge increases in older age groups. Patients staying longer than 7 days after being declared medically fit for discharge are predominately in the age groups over the age of 75 years.

For non-complex discharges, a discharge is considered to be delayed if the patient has not been discharged within 6 hours of the patient being assessed as medically fit for discharge. The percentage of patients whose non-complex discharge was delayed rises by age group.

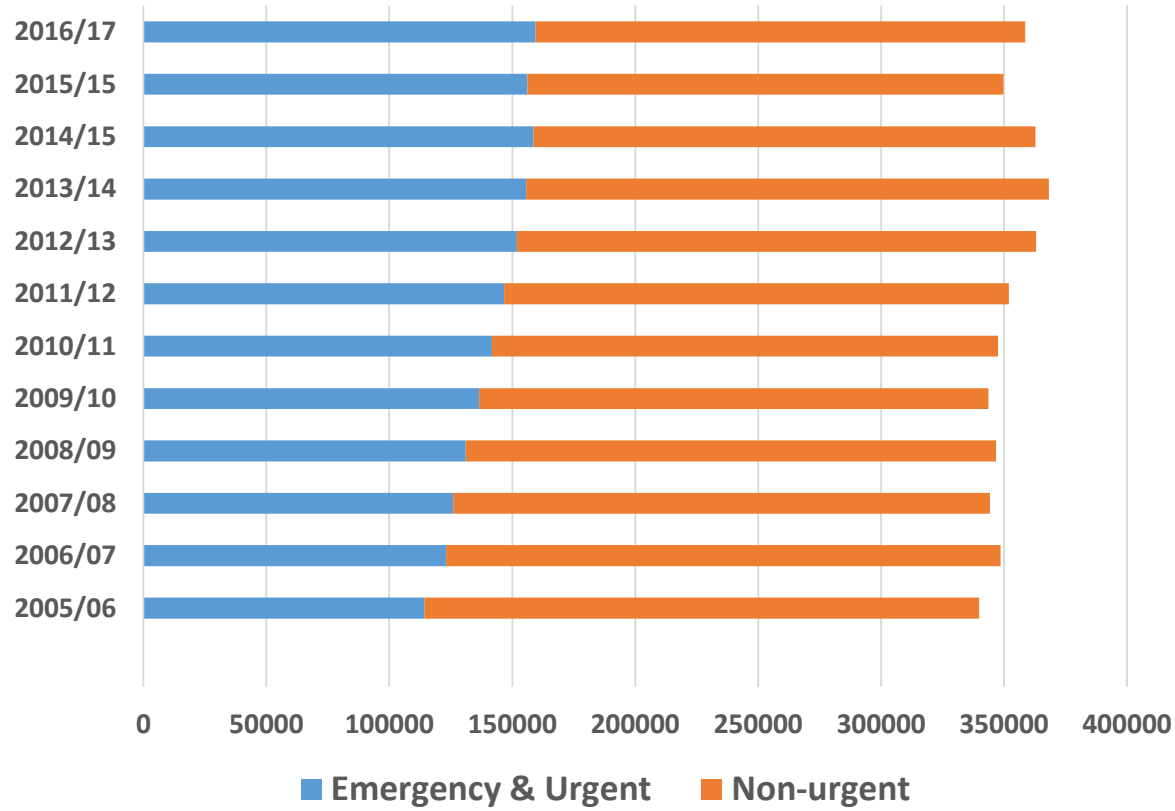
In 2017/18, on average, 6% of all patients with non-complex discharges were reported to have stayed longer than 6 hours, after being assessed as medically fit for discharge. The greatest numbers were in the specialties of general medicine, general surgery, cardiology and trauma and orthopaedics.

8. Ambulance Service Trends

8.1 Numbers of Patient Journeys

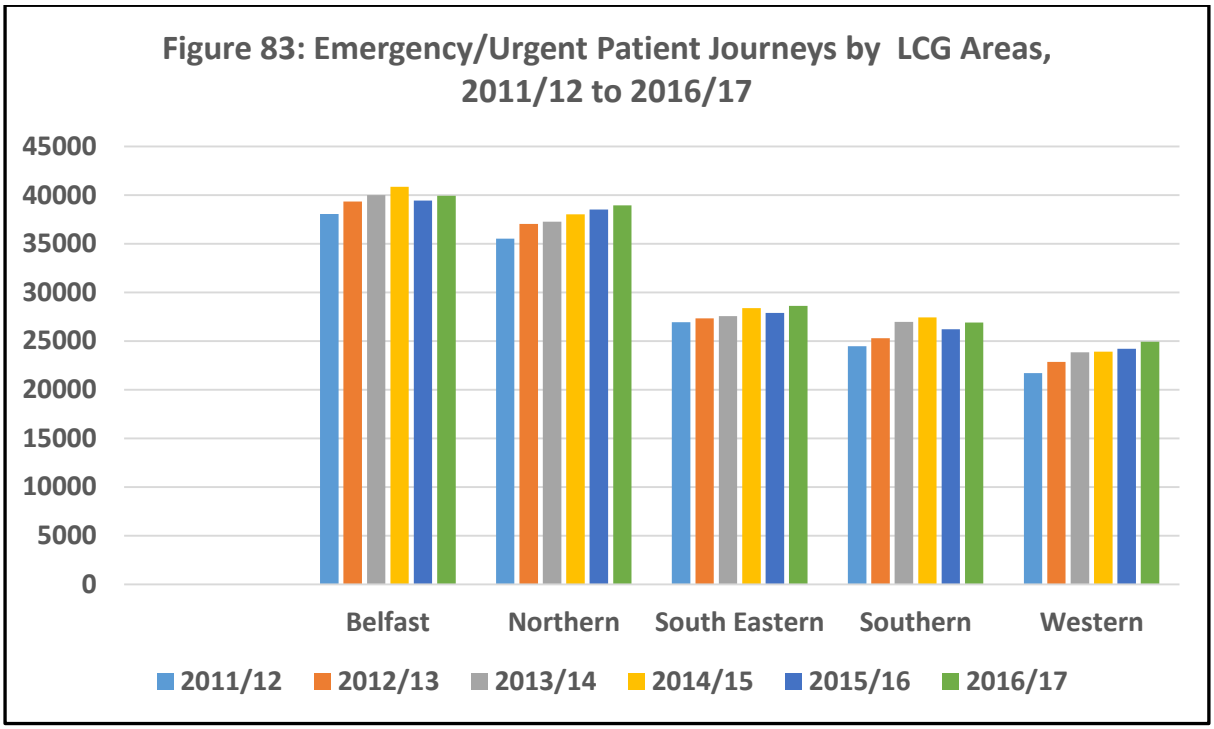
The total number of patient journeys performed by the Northern Ireland Ambulance Service (NIAS) increased by nearly 20,000 between 2005/06 and 2016/17. The number of journeys categorised as Emergency or Urgent rose by over 45,000 while the number of Non-Urgent journeys fell by around 25,000 (Figure 82).

Figure 82: Number of Emergency/Urgent and Non-Urgent Patient Journeys: Northern Ireland, 2005/06 to 2016/17



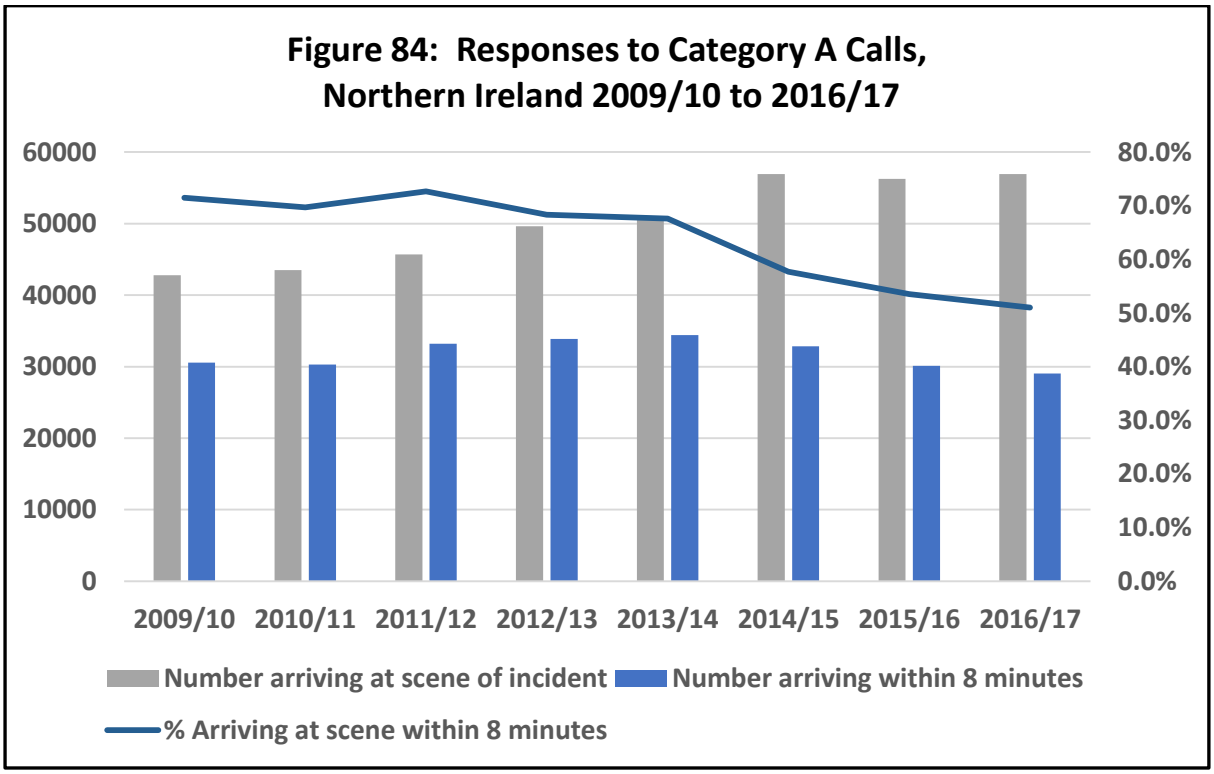
Source: Hospital Statistics: Emergency Care 2009/10 to 2016/17

The number of Emergency or Urgent journeys increased in each Local Commissioning Group area between 2011/12 and 2016/17 (Figure 83).



Source: Hospital Statistics: Emergency Care 2011/12 to 2016/17

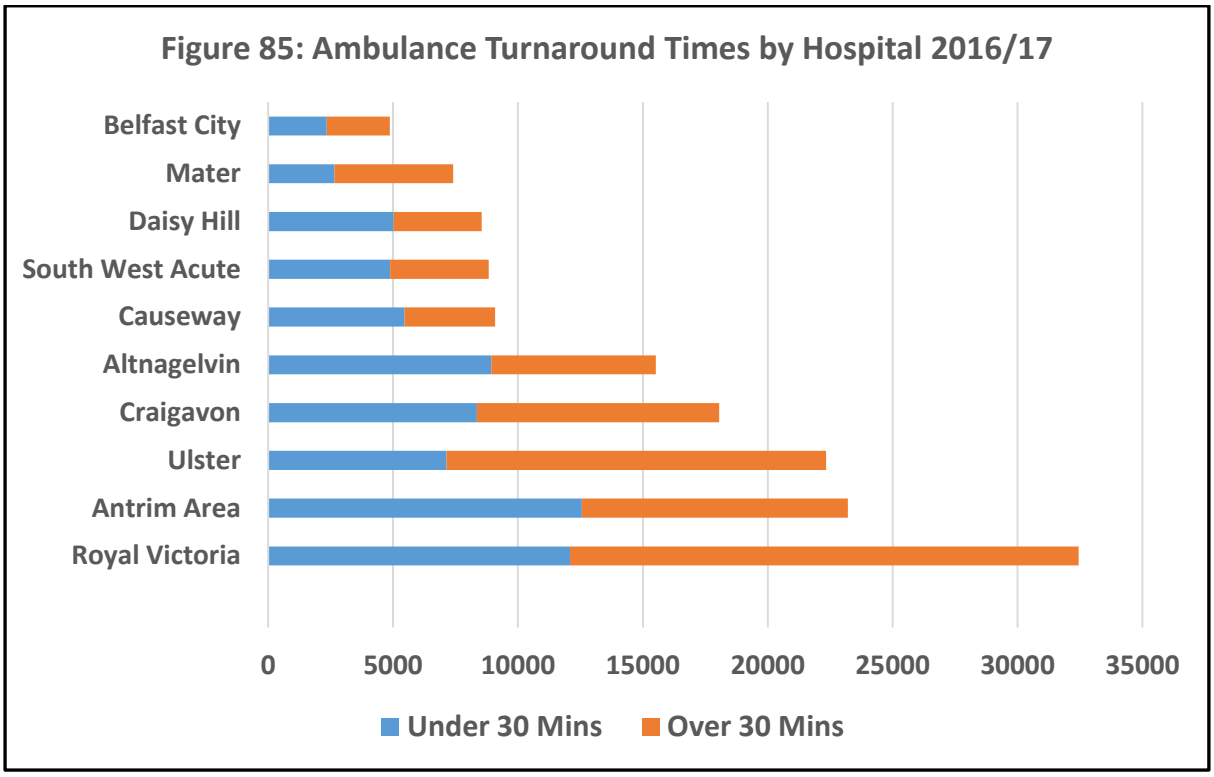
The performance standard for Category A Calls, where the presenting conditions may be life threatening, is for an emergency vehicle to be at the scene within 8 minutes on 72.5% of calls. Against the background of rising demand, the performance against this standard has fallen between 2009/10 and 2016/17 (Figure 84).



Source: Hospital Statistics: Emergency Care 2009/10 to 2016/17

One of the factors which impacts on ambulance performance is the turnaround time when ambulances bring patients to hospital. Figure 85 shows that there were

significant differences between hospitals in Northern Ireland in 2016/17. 68% of ambulances arriving at the Ulster Hospital had a turnaround time of over 30 minutes compared to 40% arriving at Causeway Hospital.



Source: NIAS Annual Report and Accounts 2016/17

8.2 Developments of alternative pathways.

NIAS has been developing a range of appropriate alternative care pathways which can avoid the requirement to bring all patients to the nearest hospital. These pathways include: “Hear-and-Treat” approaches (using GPs working in the NIAS Control Room); and “See-and-Treat” or “See-and-Refer” approaches following assessment by ambulance crews.

By the end of March 2017, in comparison to the same period in 2013-14, non-conveyance rates had increased from 17% (around 2,369 patients per month) to 24% (around 3,439 patients per month). [41]

8.3 Summary

The number of Emergency or Urgent patient journeys performed by the Northern Ireland Ambulance Service (NIAS) rose by over 45,000 between 2005/06 and 2016/17 while the number of Non-Urgent journeys fell by around 25,000.

The performance standard for Category A Calls, where the presenting conditions may be life threatening, is for an emergency vehicle to be at the scene within 8

[41] Source NIAS Annual Report and Accounts 2016/17.

minutes on 72.5% of calls. Performance against this standard fell between 2009/10 and 2016/17.

One of the factors which impacts on ambulance performance is the turnaround time when ambulances bring patients to hospital. There were significant differences in turnaround time between hospitals in Northern Ireland in 2016/17.

NIAS has been developing a range of appropriate alternative care pathways which can avoid the requirement to bring all patients to the nearest hospital. With the introduction of these pathways, non-conveyance to hospital rates increased from 17% in 2013/14 to 24% in 2016/17.

9. Trends in use of GP Out of Hours services

GP out of hours services provide urgent medical treatment for people when GP surgeries are closed. The services are available:

- After 6:00 pm on weekdays until surgeries are next open
- 24 hours on Saturday and Sunday
- 24 hours on public holidays.

Patients are expected to telephone the service first. Their case is assessed by a doctor or nurse who can then:

- Give advice by telephone
- Arrange for the patient to attend an Out of Hours centre to be seen
- Arrange a home visit
- Refer to another service

There are five providers of GP out of hours services in Northern Ireland:

1. Belfast Health and Social Care Trust, which provides centres at Knockbracken Centre for South and East Belfast and at 64 Crumlin Road for North and West Belfast.
2. Dalriada Urgent Care, which provides centres in Ballymena, Coleraine, Moneymore and Whiteabbey.
3. South Eastern Health and Social Care Trust which provides centres in Downpatrick, Lisburn and Newtownards
4. Southern Health and Social Care Trust which provides centres in Armagh, Craigavon, Dungannon, Kilkeel and Newry.
5. Western Urgent Care which provides centres in Enniskillen, Limavady, Londonderry, Omagh and Strabane.

Out of hours centres can be stand-alone services, such as in Ballymena; on sites which provide other community based health and social care, such as the Knockbracken Centre in South Belfast; or on hospital sites such as in Downpatrick and Enniskillen.

9.1 Trends

Figure 86 below illustrates trends in the use of GP out of hours services in Northern Ireland for four 12-month periods between 2008 and 2017/18. There has not been a clear trend in the overall number of calls to the services. Although the total number of calls fell from 606,395 in 2012/13 to 525,874 in 2016/17, they rose again to 576,558 in 2017/18.

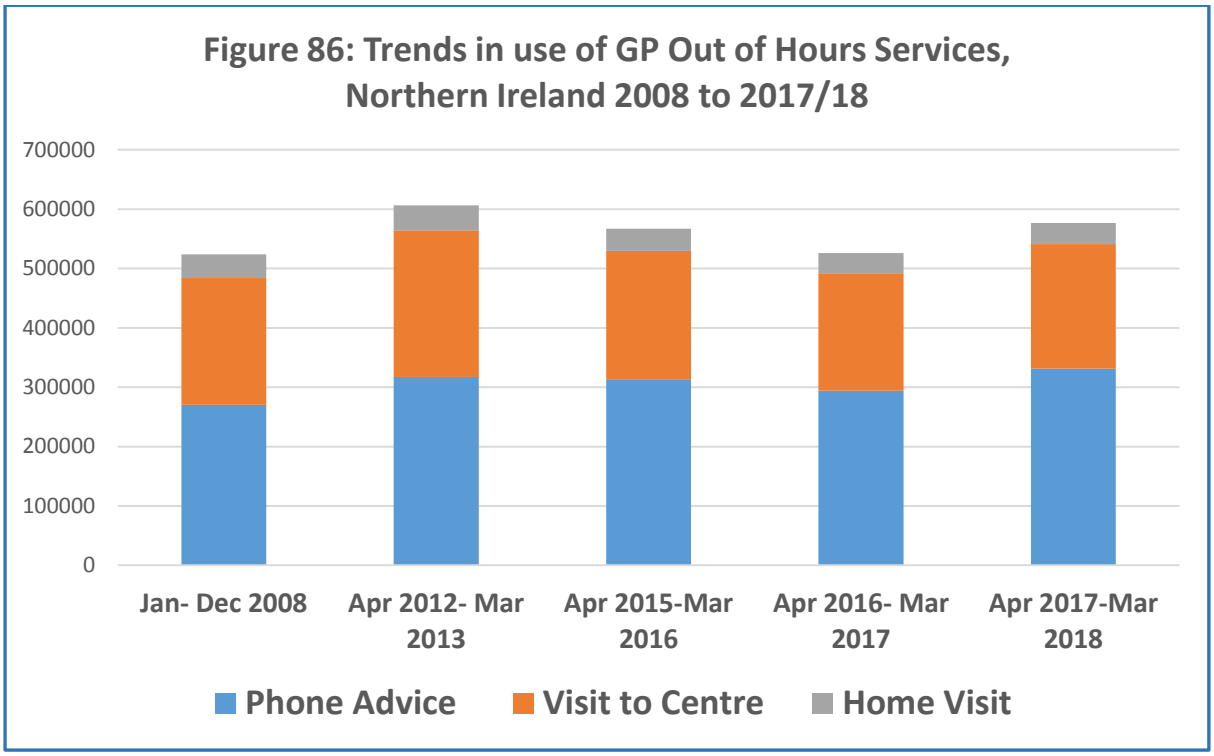


Figure 87 shows the trends for the five providers of out of hours services. The patterns are not consistent across the providers. The numbers of calls rose between 2008 and 2017/18 for four providers but fell in the Southern Trust.

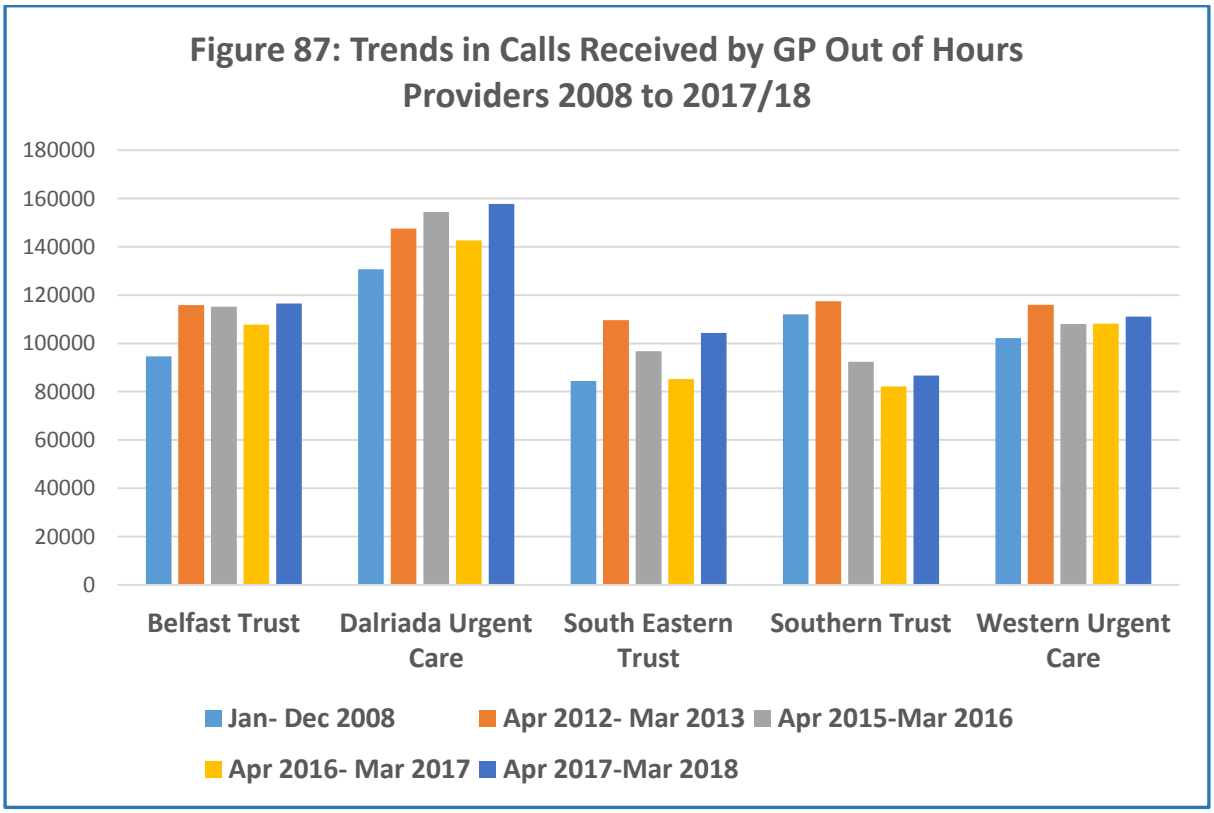
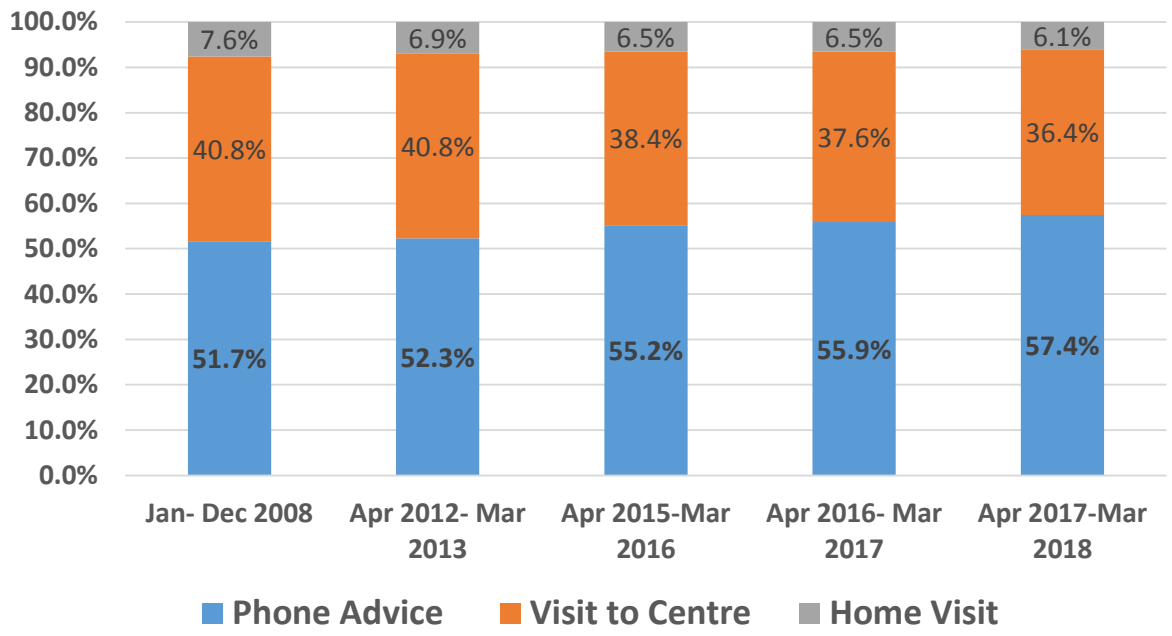


Figure 88 shows the percentages of calls which are responded to by telephone advice; a visit to the Out of Hours Centre; or a Home Visit. There has been some

change in the pattern of response between 2008 and 2016/17 with the percentage of calls managed by telephone advice rising from 51.7% to 57.4%. In 2017/18, as compared to five years earlier in 2012/13, the total number of calls managed by Telephone Advice rose by 13,828 whereas the number of visits to Out of Hours Centres fell by 37,133 and Home Visits fell by 6,532.

Figure 88: Trends in Call Responses by GP Out of Hours Services, Northern Ireland 2008 to 2017/18



9.2 Summary

There are five providers of GP Out of Hours Services in Northern Ireland. They provide a total of 19 Out of Hours Centres to serve local populations. Out of Hours centres can be stand-alone services, such as in Ballymena; on sites which provide other community-based health and social care, such as the Knockbracken Centre in South Belfast; or on hospital sites such as in Downpatrick and Enniskillen.

There has not been a clear trend in the overall number of calls to the services in recent years and there have been differences between providers. Although the total number of calls fell from 606,395 in 2012/13 to 525,874 in 2016/17, they rose again to 576,558 in 2017/18.

There have been some changes in the pattern of response to calls with an increase in the proportion of calls managed by telephone advice. The number of visits to Out of Hours Centres and the number of Home Visits were lower in 2017/18 as compared with 2012/13.

10. Staffing

The Daisy Hill Hospital Pathfinder Project was established in response to concern about the sustainability of Emergency Department (ED) services at that hospital, due to difficulties in the recruitment and retention of suitably qualified staff.

The Project Group established a Daisy Hill Hospital ED Workforce Group. The report of the group presents information on the overall position in relation to workforce across Northern Ireland as well as specific information in relation to Daisy Hill Hospital. Regional information included[42]:

a. An exercise was carried out during 2014/15 to inform the Department of Health and the Northern Ireland Medical and Dental Training Agency (NIMDTA) about the future requirements for consultant staffing in emergency medicine. The analysis drew on 2015 guidance issued by the Royal College of Emergency Medicine.[43]

   The recommended numbers required to staff all Level 1 Emergency Departments in Northern Ireland was 104. At that time there were 65 consultants in post indicating that a significant increase in output from the regional training programme would be required. Recruitment to the training programme was subsequently increased.

   The numbers in the training programme due to complete training were reported to be:

   - Due to complete in August 2018 – 6
   - Due to complete in August 2019 – 10
   - Due to complete in August 2020 – 17.

b. A new cohort of Advanced Nurse Practitioners (ANPs) commenced training in Northern Ireland in 2017 and are expected to enter the workforce in September 2019. The cohort included 10 Trainee ANPs (from across Trusts) who are undertaking the course specific to Emergency Care. A number of ANPs are already in post in Northern Ireland who were trained in other parts of the United Kingdom.

c. Physician Associates were introduced into the UK Workforce in 2003. In January 2017, the University of Ulster commenced a Postgraduate diploma programme in Physician Associate studies with an initial intake of 14 students. In the medium to longer term, Physician Associates may contribute to tackling workforce issues in EDs.

d. Delivering Care is a statement of policy, endorsed by the Chief Nursing Officer to promote the provision of high quality care through the development of a framework to determine nurse staffing levels across a range of settings and specialties.

[42] Southern Health and Social Care Trust: Final Report of the Daisy Hill Hospital Pathfinder Project: Appendix 3 Report of the DHH Emergency Department Workforce Group.
[43]The College of Emergency Medicine: Medical and Practitioner Staffing in Emergency Departments: February 2015.

Delivering Care: Phase 2 was published in September 2017 and focused on nurse staffing in Type 1 EDs. Although the framework provides an indicative range for nurse staffing to be between 1 nurse:700 ED attendances and 1 nurse:850 ED attendances, it recognises that final prescribed staffing levels for any department will depend on a range of local factors including the size and location of the department. Staffing levels should be developed in discussion with staff, managers and commissioners. [44]

Delivering Care seeks to address the association demonstrated between lower nurse staffing levels in EDs and negative impacts on patient outcome measures such as increased patient waiting times, increased number of patients leaving the department without being seen, time to triage, compliance with NEWS guidance[45], and administration/ assessment of effectiveness of pain relief.

e. Within Northern Ireland, and on a national and global context, there is a chronic shortage of Registered Nurses. Health and Social Care trusts continue to experience difficulties in achieving recommended staffing across a range of other specialties such as medicine.

Workforce issues at individual sites will be considered in the next phase of the Northern Ireland Needs Assessment Project for Urgent and Emergency Care. An updated position of the staffing of Emergency Departments across Northern Ireland was carried out by the Department of Health in April 2018 and this is included at Appendix C.

The impact of demographic change will need to be considered for all aspects of the Urgent and Emergency Care system in Northern Ireland during the determination of the future model for services.

[44] DoH and HSC: Delivering Care Phase 2: Emergency Departments Staffing Model.

[45] NEWS refers to National Early Warning Scores. NEWS is a tool developed by the Royal College of Physicians which improves the detection and response to clinical deterioration in adult patients and is a key element of patient safety and improving patient outcomes.

11. Conclusions

The Northern Ireland Needs Assessment Project for Urgent and Emergency Care has been established to develop a regional model for urgent and emergency care and a high-level implementation and investment Plan for the recommended model.

Objective 1 of the project is to complete a regional population health needs assessment to inform the work on subsequent objectives.

This report sets out the findings of the population health needs assessment. In completing this work, a number of key strategic drivers have emerged which will influence the development and delivery of urgent and emergency care services in Northern Ireland, during the implementation period of the 10-year vision set out in Health and Wellbeing 2026: Delivering Together.

11.1 The impact of demographic change

During the 25-year period from 1991 to 2016, the estimated population of Northern Ireland increased by over 250,000. While the number of children aged 0-15 years fell by some 28,500, the number of people aged 65 years and over rose by nearly 70,000. During the 10-year period, from 2016 to 2026, the population is projected to grow by a further 77,600. Of this number, the rise in the population aged 65 and over is projected to be 74,500.

The impact of the growing number of older people on urgent and emergency care services has been identified in trends presented in this report, including:

- Patterns of major trauma are changing with falls from under 2 metres among older people increasingly being reported as the cause.
- Waiting times for admission to hospital from Emergency Departments are rising with older people waiting longer. In 2016/17, 7.6% of patients aged 75 and over, who had emergency admissions, waited more than 12 hours in the ED.
- The 'Medical Take-in' Specialties of General Medicine, Thoracic Medicine, Gastroenterology and Cardiology together accounted for 13,499 (65.4%) of a total increase of 20,626 emergency hospital admissions between 2009/10 and 2016/17. These specialties have higher emergency admission rates among older people.
- The proportion of discharges from hospital which are complex rises in older age groups. Patients staying longer than 7 days after being declared medically fit for discharge are predominately in the age groups over the age of 75 years.

A trend analysis has been performed to project the impact of demographic changes on the number of emergency admissions to hospitals in Northern Ireland up to 2026. It is projected that the number of admissions for the population aged 65 and over will increase by 25,800. The number of admissions for younger groups is projected to reduce, so that the overall increase in admissions is projected to be around 12,800 by 2026.

New models of responding to the needs of older people are emerging. For example, the first Older People's Emergency Department has opened at Norfolk and Norwich University Hospital.

NICE has recommended that a priority research question should be to determine what is the most clinically and cost effective way to configure services to assess frail older people who present to hospital with a medical emergency.

In taking forward the subsequent phases of the Northern Ireland Needs Assessment Project for Urgent and Emergency Care, **it is recommended that there should be a particular focus on determining the most appropriate arrangements for the assessment and admission of older people with medical conditions**.

In view of the limited evidence currently available as to which models are most effective, **it is recommended that Northern Ireland uses the opportunity to contribute to the evidence base by building in a research component when any new services are being implemented for the assessment of frail older people who present to hospital with a medical emergency.**

Local Government Districts in Northern Ireland differ in their age structures. The recently published set of population projections for areas within Northern Ireland highlight that the growth in different age groups in different LGD areas will be different. **In planning services for local areas, it is recommended that the specific projected populations and service trends for those areas are considered in detail**.

11.2 Changes in the Delivery of Urgent Care

Urgent care is generally taken to mean the provision of advice or treatment for patients in situations which are not life threatening or life changing. Emergency Care is care provided in a medical emergency when life or long-term health is at risk.

Urgent care is provided for patients through a range of mechanisms in Northern Ireland including: GP Services during the day; GP Out of Hours Services; Minor Injury Units; 'Hear and Treat' and 'See and Treat' services by the ambulance service; and Emergency Departments.

There are differences in the relative use of different types of urgent care models in different parts of the United Kingdom. Northern Ireland has higher levels of attendance at Type 1 EDs than England. Historically there have been lower numbers of minor injury services here.

Recent trends show that the attendance rates at ED in Northern Ireland have been rising with greater proportions being discharged rather than admitted, which may indicate a greater number of people attending ED for urgent care.

There has not been a clear trend in the overall number of calls to GP Out of Hours Services in recent years and there have been differences between providers.

Although the total number of calls fell from 606,395 in 2012/13 to 525,874 in 2016/17, they rose again to 576,558 in 2017/18.

There have been some changes in the pattern of response to calls with an increase in the proportion of calls managed by telephone advice. The number of visits to Out of Hours Centres and the number of Home Visits were lower in 2017/18 as compared with 2012/13.

The role of the Northern Ireland Ambulance Service (NIAS) will be pivotal in taking forward new arrangements for the provision of urgent care services. NIAS has developed a number of alternative pathways in partnership with other providers which can avoid patients being brought to EDs, where an alternative approach is appropriate to their needs.

In England, there has been a recognition that the range of models and names of urgent care services is leading to confusion for members of the public, as to which services to access in particular situations. NHS England has issued a set of Principles and Standards for Urgent Treatments Centres. These services will be community and primary care facilities providing standardised access to urgent care for a local population.

In Scotland, a major review of GP Out of Hours Services has set out proposals for the introduction of Urgent Care Resource Hubs, networked to local Urgent Care Centres.

Emerging themes in relation to the design of urgent care services in other parts of the United Kingdom include:

- Standardisation of service delivery on elements such as: service names; opening hours; investigations and treatments available; and protocols to manage critical ill patients who arrive unexpectedly
- Integration between services including: co-location with Emergency Departments; the potential for co-location and joint working with GP in-Hours and Out of Hours services; and development of links with ambulance services to avoid unnecessary patient journeys where appropriate
- Localisation to avoid unnecessary visits to Emergency Departments and to promote links with other local services
- Navigation to the most appropriate services to meet patient needs.

When taking forward Objective 3 of the Needs Assessment Project for Urgent and Emergency Care, it is recommended that the regional model for Northern Ireland sets out proposed arrangements for the delivery of Urgent Care, building on the experience of the introduction of other systems in the United Kingdom.

11.3 A Growing Body of Evidence

The evidence base to underpin planning of urgent and emergency care is expanding rapidly. While key research questions remain to be answered, such as the arrangements of assessment of frail older people, there is a body of evidence to support action in a wide range of areas.

In March 2018, NICE published guidance based on a very extensive analysis of evidence relating to emergency and acute medical care in over 16s. NICE has made 23 recommendations for implementation. Several are reflected in work to improve services which is already being taken forward in Northern Ireland including the programme of action initiated in 2014 on Improving Flow in HSC Services. The guideline is accompanied by an Audit Tool to assess the current position in organisations against the guideline.

The new NICE guidance will usefully inform the subsequent elements of the Needs Assessment Project for Urgent and Emergency Care, including local Pathfinder Projects and the development of a regional model.

11.4 Summary of conclusions

1. During the subsequent phases of the Northern Ireland Needs Assessment Project for Urgent and Emergency Care, it is recommended that there should be a particular focus on determining the most appropriate arrangements for the assessment and admission of older people with medical conditions.
2. It is recommended that Northern Ireland uses the opportunity to contribute to the evidence base by building in a research component when any new services are being implemented for the assessment of frail older people, who present to hospital with a medical emergency.
3. In planning services for local areas, it is recommended that the specific projected populations and service trends for those areas are considered in detail.
4. When taking forward Objective 3 of the Needs Assessment Project for Urgent and Emergency Care, it is recommended that the regional model for Northern Ireland sets out proposed arrangements for the delivery of Urgent Care, building on the experience of the introduction of other systems in the United Kingdom**.**
5. It is recommended that the recently published NICE guideline on Emergency and Acute Medical Care in Over 16s. is used to inform the subsequent elements of the Needs Assessment Project for Urgent and Emergency Care, including local Pathfinder Projects and the development of a regional model.

Appendix A

Northern Ireland Population Health Needs Assessment for Urgent and Emergency Care

Terms of Reference

HEALTH AND SOCIAL CARE

NORTHERN IRELAND POPULATION HEALTH NEEDS ASSESSMENT FOR URGENT AND EMERGENCY CARE

Project Initiation Document

Objective 1

To complete a Northern Ireland regional population health needs assessment ("the Assessment") for urgent and emergency care, taking into account access and travel times as appropriate, and providing options for service reconfiguration.

Terms of Reference for the Population Health Needs Assessment

1. The purpose of this objective is to produce an Assessment, in the form of a report, which will provide a sound evidential basis for decisions by the Department of Health for the future configuration of sustainable emergency department (ED) services in Northern Ireland (NI). The Assessment will utilise available strategic data sources, local data sources, population profiles and relevant sources of evidence to address:

    - background to the current service provision;
    - key drivers for change;
    - current service profile;
    - current and projected patterns of use;
    - current user profile;
    - staffing profile;
    - distance;
    - mode of arrival;
    - small area analysis;
    - epidemiological patterns;
    - relevant clinical audits;
    - relevant interdependencies in secondary, primary and community care;
    - equality impact considerations;
    - rural impact considerations.

2. For the purposes of this objective, the Northern Ireland area is defined as a population of approximately 1.8 million people. There are 11 EDs operating in the area as at 1 January 2018, excluding the paediatric ED service provided by the Royal Belfast Hospital for Sick Children.

3. The Assessment should consider projected population needs for ED services for the implementation period of the 10 year approach set out in “Health and Wellbeing 2026: Delivering Together”.

4. The evidence provided by the Assessment will inform further work including proposals to be developed in relation to Objectives 2, 3 and 4 in the Project Initiation Document (PID).

5. The Assessment should consider potential regional strategic options to improve the future delivery of services. This will help inform the selection and completion of any future Pathfinder Projects which will include public engagement in line with PPI/co-production informed by local and regional PPI for a.

6. The Assessment should assume that the Royal Victoria Hospital and the Royal Belfast Hospital for Sick Children will continue to act jointly as the Major Trauma Centre for Northern Ireland.

7. The Assessment should give regard to the following key factors which underpin the planning and delivery of high quality and sustainable emergency and urgent care.

a) Volume and Activity: Safe and sustainable emergency services require an appropriate volume of activity, commensurate with the necessary staffing complement.

b) The Central Role of EDs: It is acknowledged that EDs are the hub for the delivery of urgent and emergency care for the population of NI. It is therefore essential that such services are available on a 24/7 basis and delivered by expert multidisciplinary teams in order to secure timely, safe and effective care for the NI population at regional and local levels.

c) Multidisciplinary team working: involves an ED being part of a whole systems approach to emergency care. This has many component parts including: emergency care delivered in the community; appropriate access to hospital based emergency care for those patients who require such expertise and potentially to be admitted to hospital for treatment; direct admission to specialist services thereby bypassing the ED; and, triage assessment and treatment by Northern Ireland Ambulance Service (NIAS) paramedics.

d) Education and Training: EDs provide a major function in the education, training and supervision of medical professional staff to ensure: an appropriate skills base and workforce supply in emergency care for future provision for the NI population; and, to demonstrate compliance with regulatory requirements.

e) Relationship to other hospital based services: no ED works in isolation from other major hospital based services which are relevant to the Assessment to be completed under Objective 1, including:
Critical care services, including emergency surgery and intensive care;
Trauma and Orthopaedic services;
PPCI;
Emerging reform of stroke services;
Acute medicine services;
Access to acute paediatric services;
Access to regional specialties including neurosurgery, major trauma, burns and plastic surgery;
Access to laboratory services including access to blood bank; and,
Access to imaging services.

f) Relationship to wider-HSC based services: no ED also works in isolation from other services based in the wider-HSC which are relevant to the Assessment to be completed under Objective 1, Including:
Services provided by the NIAS including HEMS; and,
Out of hours care provided by other healthcare professionals including, for example, GPs and specialist palliative care nursing staff.

g) Future proofing: Emergency medicine will continue to change in response to a range of factors including demographic changes, the opportunity for specialist interventions including, for example, in primary care and paramedic care and the increasing interdependency with other specialty clinicians such as acute physicians, emergency nurse practitioners and physician associates. There is the opportunity to build on the new patient pathways introduced in recent years by the HSC such as direct admission and short stay assessment units.

Assessment Timescale

8. It is envisaged that the Assessment will commence in January 2018 with a final report to be delivered to the Department by April 2018.

Appendix B

Occasional Paper

Additional Analysis of Emergency Care Departments NI

Information Analysis Directorate

May 2018

INFORMATION ANALYSIS DIRECTORATE

OCCASIONAL PAPER

Additional Analysis of Emergency Care Departments NI

Reader Information

This product is part of the IAD Information Brief series. IAD information briefs present information to help shape, develop and inform policy, and are primarily directed to DOH policy branches.

Purpose: This statistical brief was produced by IAD to support the work of Dr David Stewart on the Northern Ireland Population Health Needs Assessment for Urgent and Emergency Care.

The paper presents information on various aspects of emergency care services which were identified by Dr Stewart as priority areas for further exploratory analysis.

Data Sources: The information presented in this statistical brief is derived from the two administrative systems used to record emergency care services activity in Northern Ireland: (i) SYMPHONY, and (ii) Northern Ireland Regional Accident & Emergency System (NIRAES / EEMS).

Data Quality: Information is based on patient level information extracted from the two emergency care administrative systems detailed above, and is considered to be of a high quality.

The information detailed in this statistical release is not 'National Statistics', and has not previously been published in this form by the DOH. It should also be noted that as we develop and refine these analyses, and carry out further validation procedures, this information may be subject to change.

Information on attendances and admissions from Residential / Nursing homes is still in development and should be treated with caution.

Reporting Period: Information is presented where possible from 1st April 2014 to 31 March 2018.

Author: Kieran Taggart

Issued by: Hospital Information Branch

Information & Analysis Directorate,

Department of Health

Date of Circulation: 11th May 2018

Introduction

This statistical report from Hospital Information Branch, DoH, presents an analysis of attendances at emergency care departments in Northern Ireland. There are a total of 18 emergency departments (EDs) located across Northern Ireland's five Health and Social Care (HSC) Trusts, with three separate categories of emergency care facility:

Type 1 Departments

Consultant-led service with designated accommodation for the reception of emergency care patients, providing both emergency medicine and emergency surgical services on a round the clock basis.

Type 2 Departments

Consultant-led service with designated accommodation for the reception of emergency care patients, but which does not provide both emergency medicine and emergency surgical services and/or has time-limited opening hours.

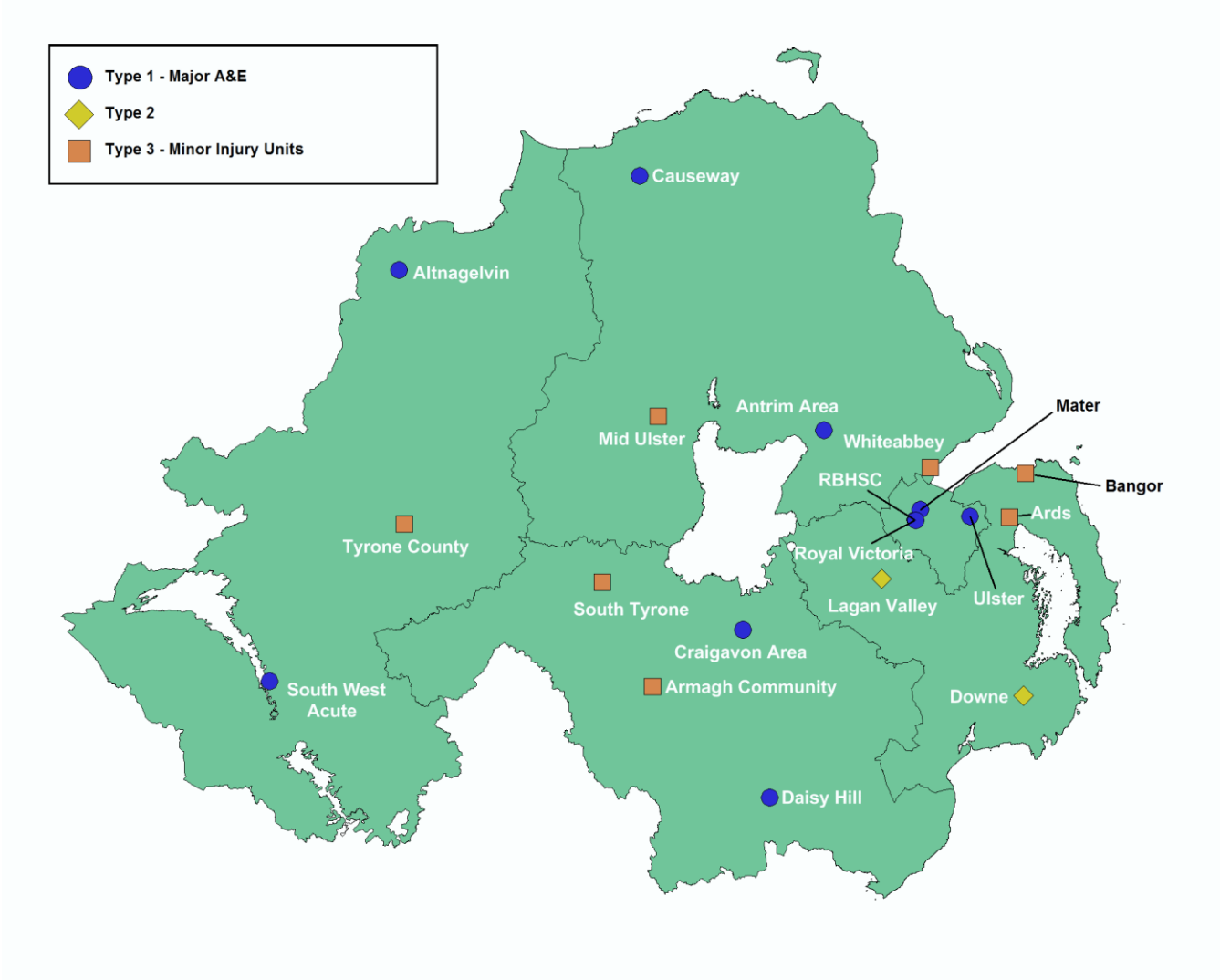
Type 3 Departments

Minor injury units (MIU) with designated accommodation for the reception of patients with a minor injury and/or illness. It may be doctor or nurse-led. A defining characteristic of this service is that it treats at least minor injuries and/or illnesses and can be routinely accessed without appointment.

Demand for emergency care has grown steadily over the past decade in Northern Ireland, due largely to an aging and growing population and increases in chronic illnesses. For example between 2008/09 and 2016/17[46] attendances at Type 1 EDs increased by 16.9%, from 540,000 to 631,378. Type 1 EDs account for more than 8 out of every 10 attendances at emergency care services in Northern Ireland and 19 out of 20 admissions to hospital from EDs.

[46] Most recently available data.

Location of Emergency Care Departments

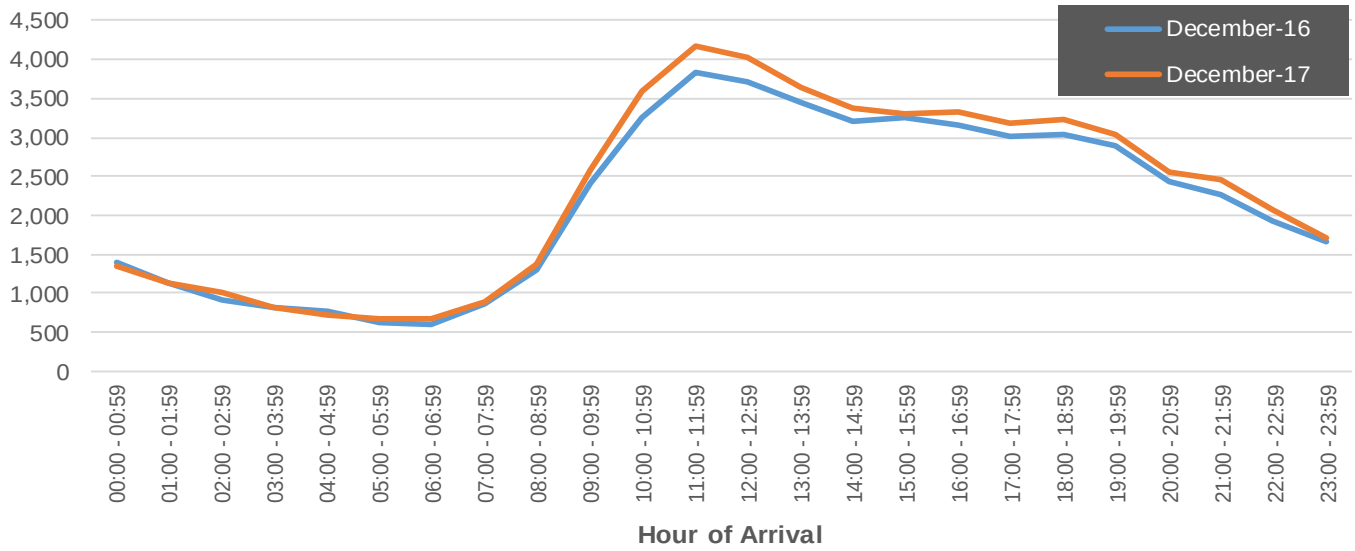


Attendances at Emergency Departments by Time of Day

Figure 1 below details the number of arrivals during each hour of the day during December 2017, compared with December 2016. Arrivals at EDs vary considerably during the day, with patients more likely to arrive between 9am and 7pm, and less likely to arrive at night.

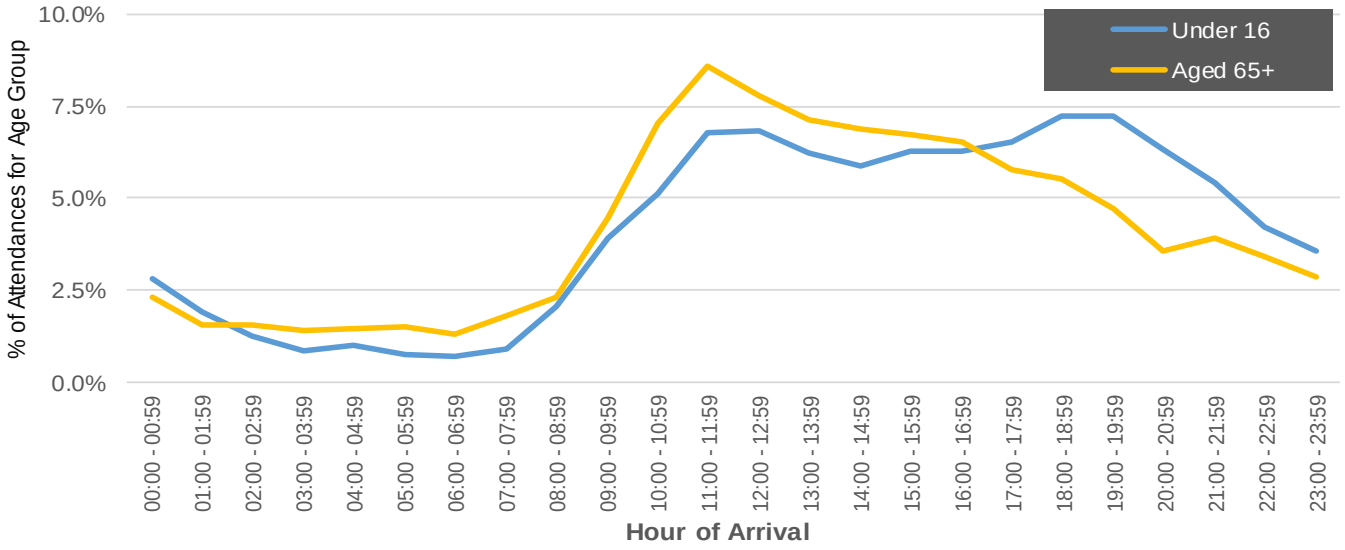
Similar to other UK regions, patients arriving at EDs peaked at 11am and whilst decreasing slightly, remained high until 7pm. In addition, December 2017 reported a higher number of arrivals in each hour between 9am and 10pm compared with December 2016.

Figure 1: Attendances at Emergency Departments by Hour of Arrival



Source: Hospital Information Branch

Figure 2: Attendances at Emergency Departments by Hour of Arrival and Age Group (December 2017)



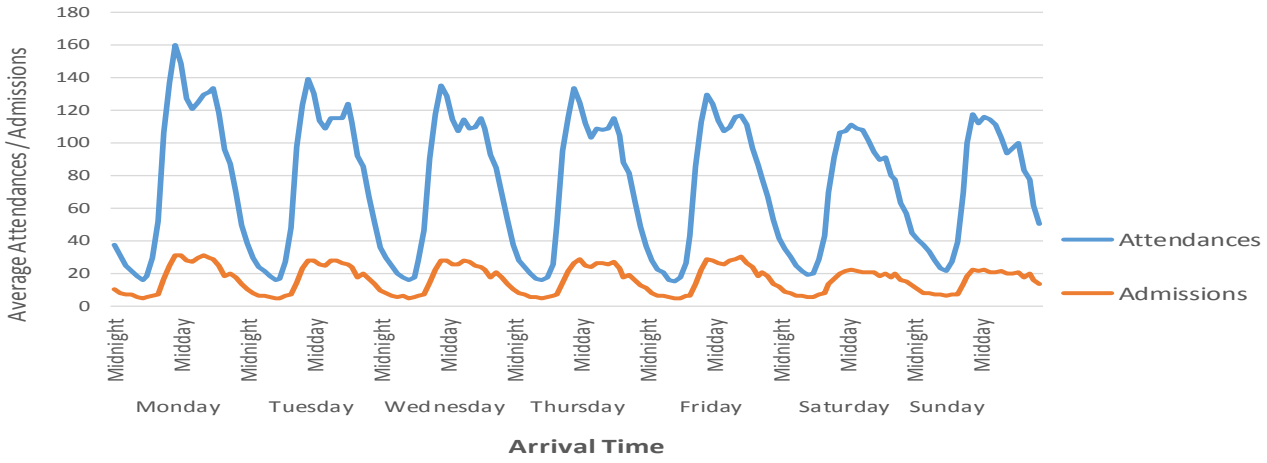
Source: Hospital Information Branch

Analysis by age group indicates that older people were more likely to arrive at ED between 9am and 3pm, whilst those aged under 16 were more likely to arrive between 3pm and 11pm.

Day and Time of Attendances / Admissions

The pattern of attendances is slightly different during each day of the week, with the highest number of attendances tending to be on a Monday and the lowest on a Saturday. Figure 3 below shows (i) the number of attendances and (ii) the number of admissions from ED, during each hour of each week day.

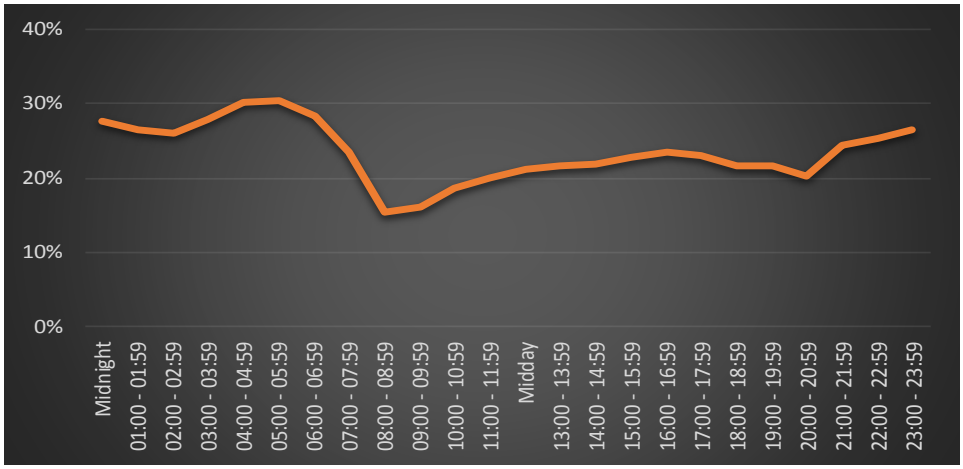
Figure 3: Average Attendances and Admissions at Emergency Departments by Day and Hour of Arrival (2017)



Source: Hospital Information Branch

Similar to other UK regions, there is a variation in the pattern of attendances at ED during the day, with notable variation between days of the working week and the weekends. For example, attendances at ED between Monday and Friday show two peak times when patients arrive at ED, one between 11am and midday, and the other at around 6pm in the evening. The late morning peak are mainly patients over 25 years old, whilst the evening peak are mainly those aged 25 & under. By contrast, attendances on weekend days display only one peak in patients arriving, typically between midday and 2pm.

Figure 4: Percentage of Patients Admitted by Hour of Arrival at ED



A different profile between week days and the weekend is also displayed for patients admitted from ED. On average, 426 patients who attended an ED during 2017 were admitted to hospital during a normal week day compared to an average of 357 patients on a Saturday or Sunday.

Source: Hospital Information Branch

Patients were also more likely to be admitted to hospital if they attended ED between midnight and 7am, with the highest proportion of patients admitted attending ED between 5 and 6am.

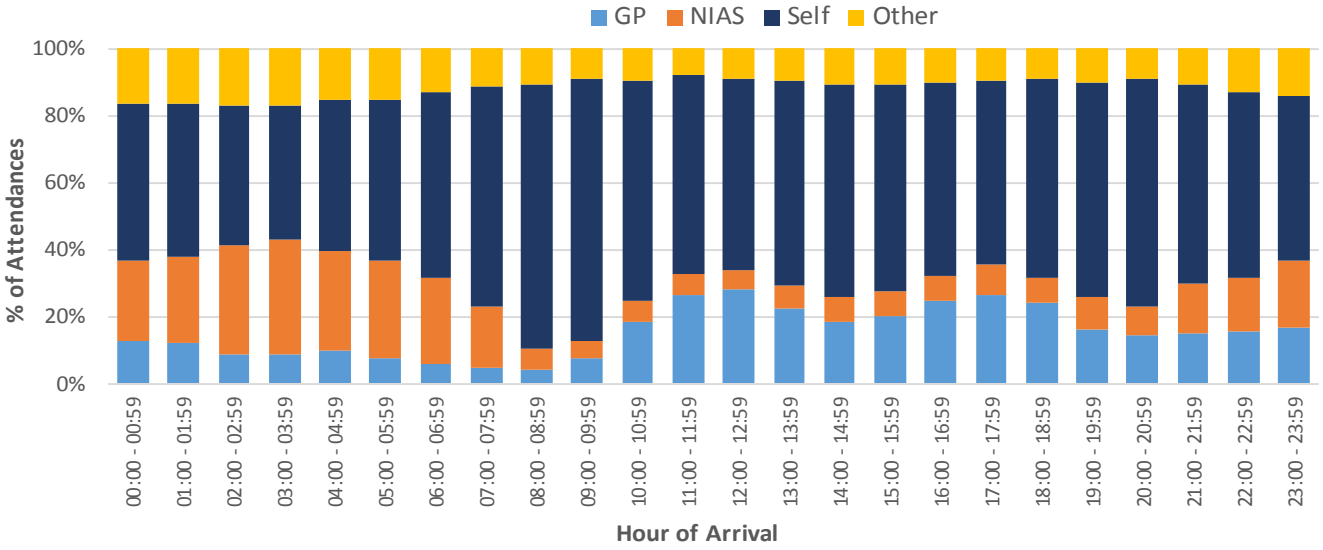
Arrival Mode by Day and Time

The method by which patients arrive at emergency departments varies depending on the time and day of the week. Between Monday and Friday, 70% of patients attending EDs did so of their own accord (self-referrals), compared with 78% of patients at the weekend.

Between 10am and 7pm on Mondays, around 23% of patients attending an ED had been referred by a GP, reflecting GP opening hours. During the weekend however, the number referred by a GP fell to around 10%.

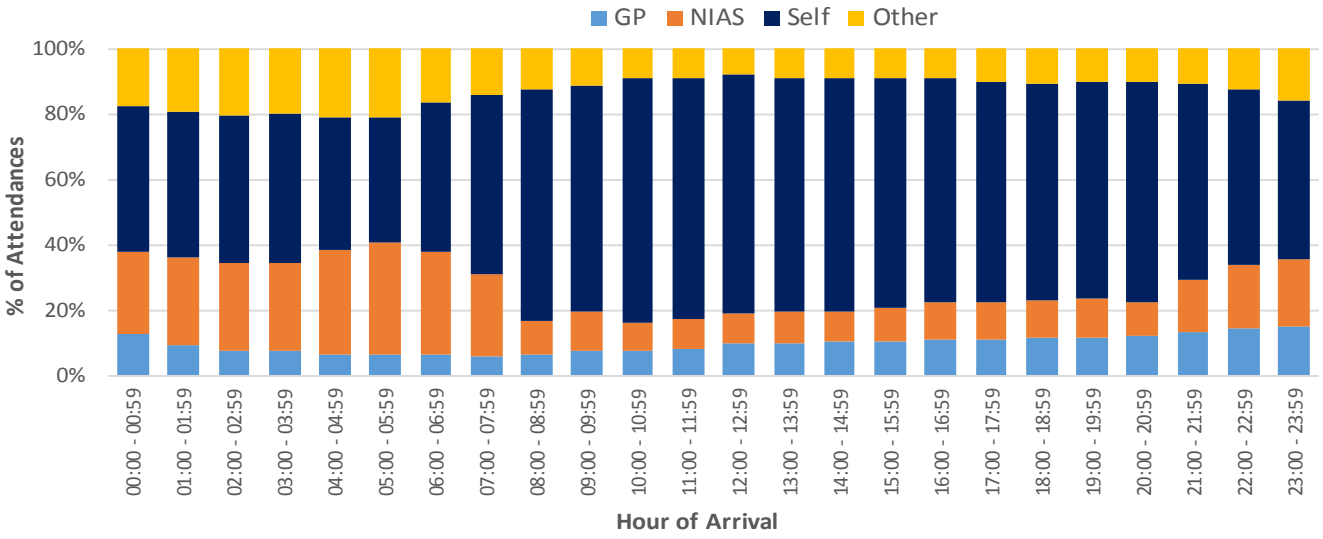
Almost 30% of attendances arriving through the night (midnight to 6am) had arrived by ambulance. On Sunday mornings between 5 and 6am, over a third (35%) of patients attending EDs arrived by ambulance.

Monday



Source: Hospital Information Branch

Sunday



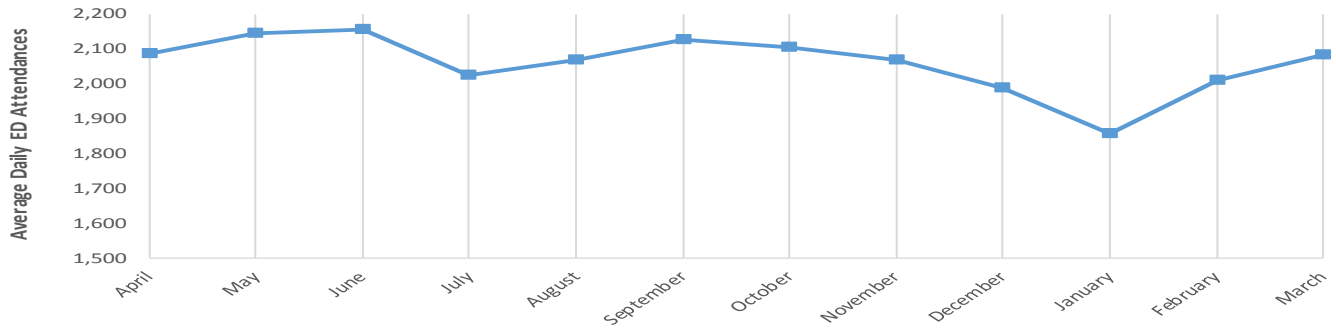
Source: Hospital Information Branch

Attendances by Arrival Month

Based on the average daily attendances at ED over the last three years, there does not appear to be any seasonal pattern. The lowest average daily attendances were reported in January (1,855), with June (2,157) reporting the highest average daily attendances.

Despite a lower average number of daily attendances in January each year, performance against the emergency care waiting time target tended to be much poorer in January than other months with higher daily attendances.

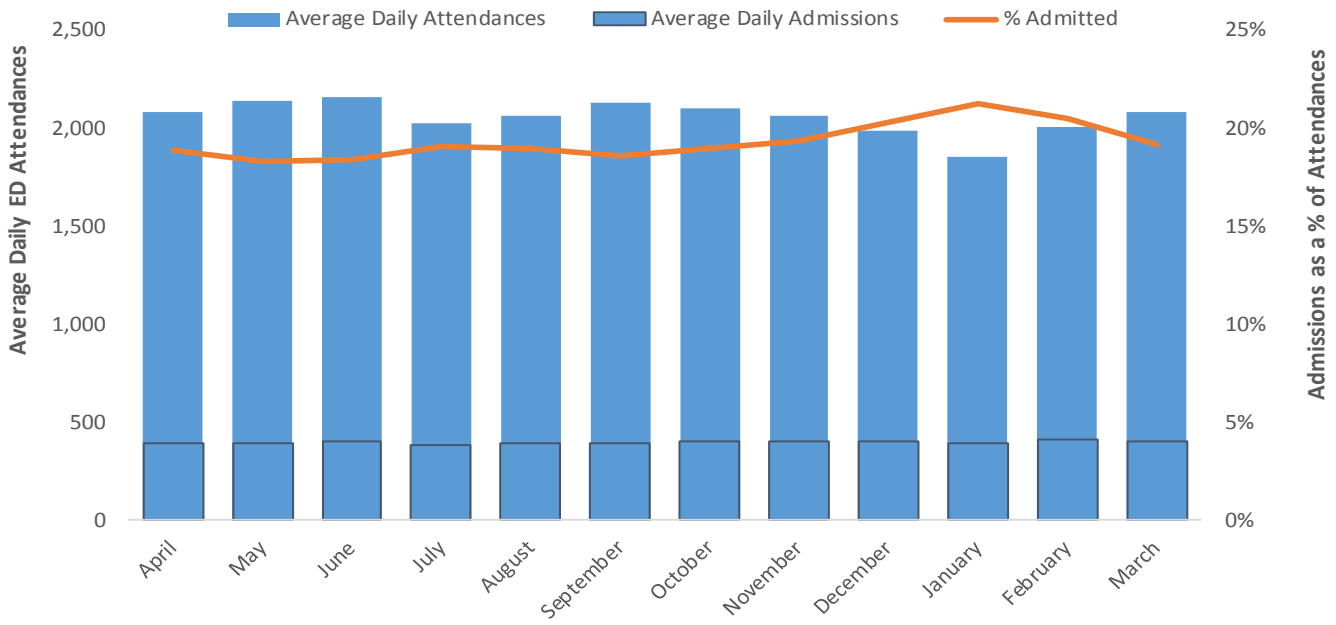
Figure 5: Average Attendances at ED by Month



Source: Hospital Information Branch

The average daily number of patients admitted to the same hospital after attending an ED remained fairly constant during each month of the year. However, there was a slightly higher percentage of attendances admitted during December, January and February each year. It should also be noted that during each month the average number of daily admissions remained similar.

Figure 6: Average Attendances to ED and Admissions from ED



Source: Hospital Information Branch

Attendances at ED per 1,000-Population

Information detailed in Table 1 below presents standardised information on attendances at ED per 1,000 population, based on the number of patients registered with a GP in each Integrated Care Partnership (ICP) area in Northern Ireland. Information is presented for the last six financial years, by the ICP area in which the patient attending ED resided; although information for 2017/18 is not yet complete and only refers to data up to 21st February 2018.

Table 1: Attendances at ED by Year and ICP Area per 1,000-population

ICP Area	2013/14	2014/15	2015/16	2016/17	2017/18[47]	Change 13/14 - 16/17
East Belfast	385.3	320.0	400.6	414.5	412.3	*29.3*
North Belfast	342.4	349.7	373.6	395.6	395.4	*53.2*
South Belfast	207.3	197.7	216.1	226.8	225.4	*19.5*
West Belfast	371.2	374.0	399.2	404.4	402.4	*33.2*
Ards	429.2	326.5	449.3	464.5	465.8	*35.3*
Down	387.6	294.1	406.3	440.9	446.4	*53.3*
Lisburn	498.7	427.6	519.3	543.9	551.3	*45.2*
North Down	398.2	299.9	407.5	425.7	412.8	*27.5*
Antrim / Ballymena	335.3	335.9	340.9	355.8	354.7	*20.5*
Causeway	343.7	352.7	370.5	376.4	377.0	*32.7*
East Antrim	405.3	392.8	403.6	433.2	437.5	*27.9*
Mid Ulster	375.8	329.4	415.2	447.1	450.6	*71.4*
Armagh / Dungannon	438.6	342.4	451.6	484.6	481.8	*46.0*
Craigavon / Banbridge	307.9	241.7	336.7	350.5	351.7	*42.6*
Newry / Mourne	285.1	230.2	336.9	360.1	360.0	*75.0*
Northern Sector	298.2	293.8	325.3	338.3	338.0	*40.1*
Southern Sector	329.8	308.2	352.5	368.8	361.0	*39.0*
Not known	-	-	-	-	-	-
Northern Ireland	**358.4**	**319.7**	**379.5**	**398.3**	**398.4**	*39.8*

Source: Hospital Information Branch

Since the establishment of ICPs in 2013/14, the number of attendances at ED by ICP area has varied significantly across Northern Ireland.

During 2016/17 (most recent full year available), South Belfast (226.8) reported the lowest rate of attendances per 1,000-population, whilst Lisburn (543.9) reported the highest rate of attendances.

Between 2013/14 and 2016/17, Newry / Mourne (75.0) and Mid Ulster (71.4) reported the highest increases in the rate of attendance at ED, whilst South Belfast (19.5) reported the lowest increase in the rate of attendance.

[47] Information for 2017/18 is provisional and may be subject to change.

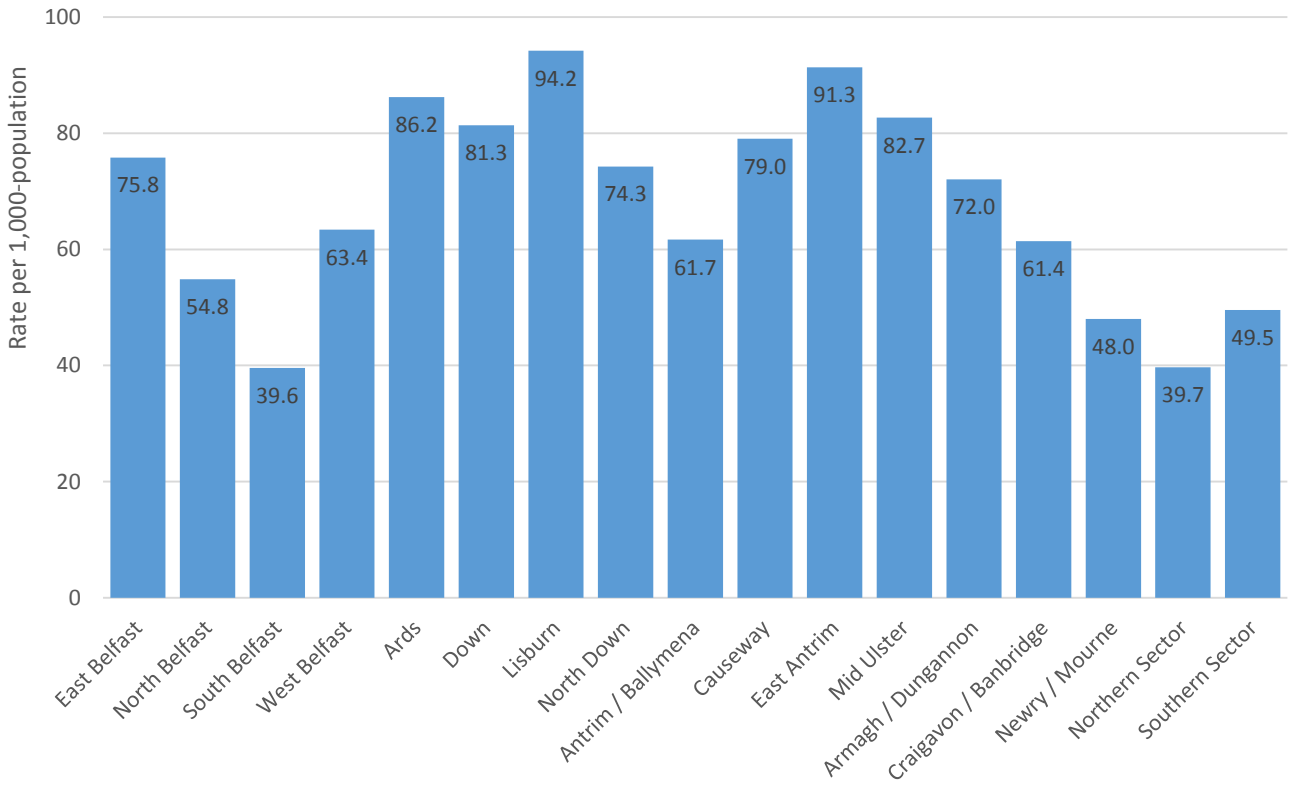
GP Referrals

Standardised information on attendances at ED which were referred by a GP per 1,000-population in each ICP area is detailed in Figure 7 below.

During 2016/17, Lisburn (94.2) and East Antrim (91.4) reported the highest rates of GP referrals to ED per 1,000-population, whilst South Belfast (39.6) and the Northern Sector of the Western HSC Trust (39.7) reported the lowest rates.

Since the establishment of the ICP areas in 2013/14, East Antrim (39.4) reported the highest increase in the rate of GP referrals to ED per 1,000-population, whilst Craigavon / Banbridge (3.8) reported the lowest rate of increase.

Figure 7: Attendances at ED Referred by a GP, by ICP Area per 1,000-population (2016/17)



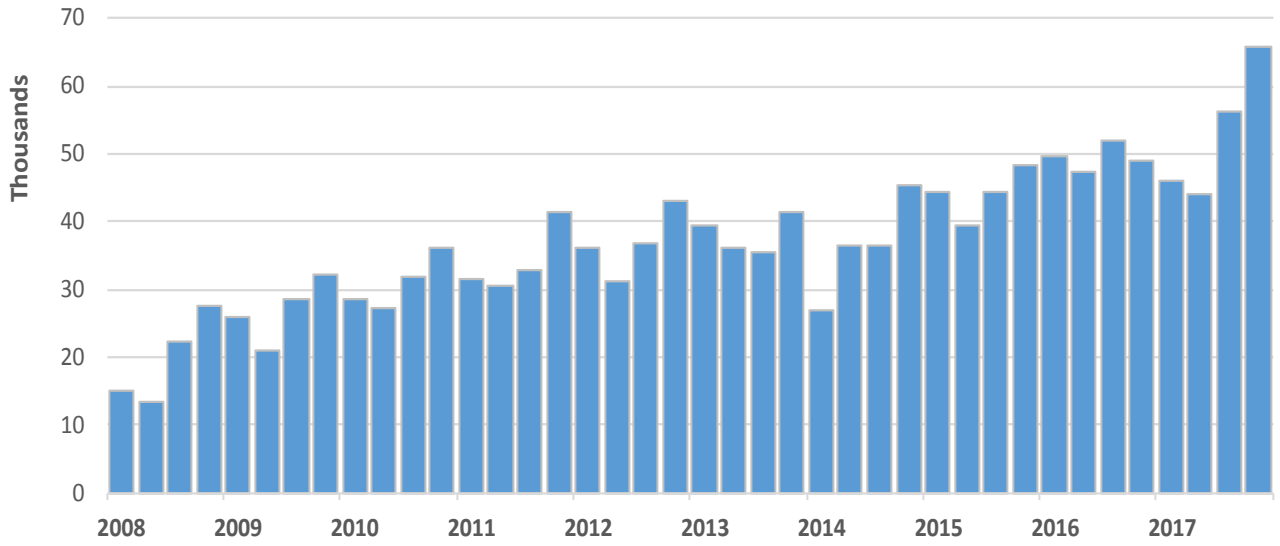
Source: Hospital Information Branch

Time Waited in ED

Figure 8 below details quarterly information on the number of patients spending over 4 hours in EDs since April 2008. This is not adjusted for changes in attendances over this period. It shows that the number of patients spending over 4 hours in EDs during the quarter ending (QE) March 2018 was more than double the number waiting over 4 hours during the same quarter in 2009, from 27,384 to 65,897.

There were an average of 418 extra 4-hour waits each day during the QE March 2018 (716), compared with the same quarter in 2009 (298).

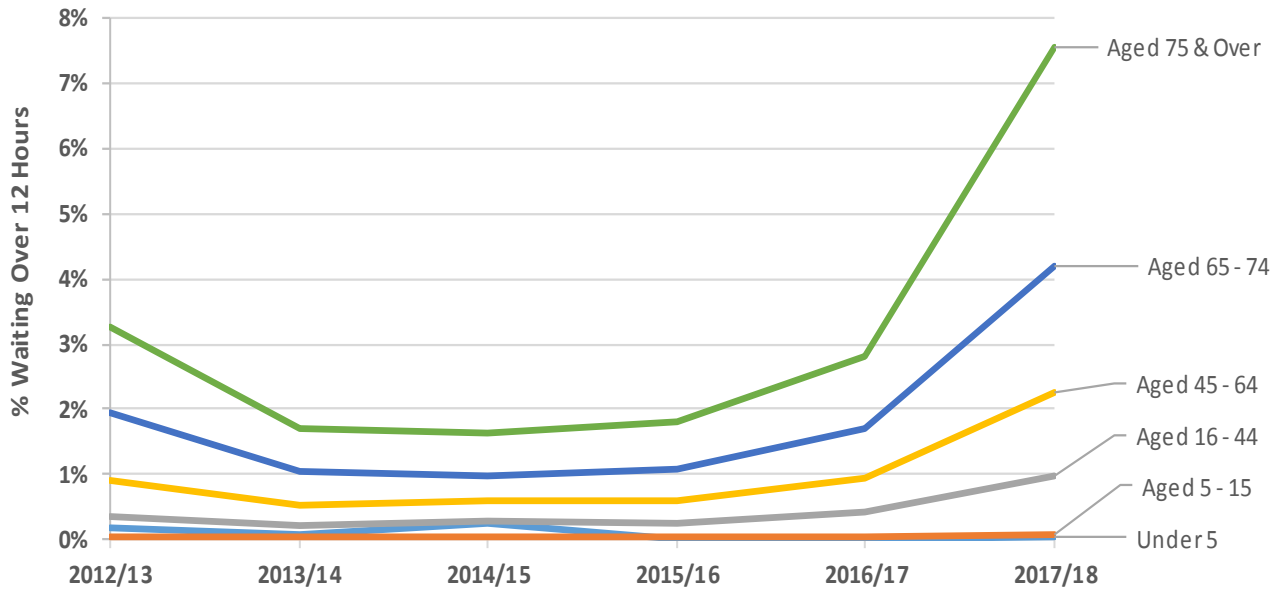
Figure 8: Number of Patients Spending More than Four Hours in ED each Quarter



Source: Hospital Information Branch

Figure 9 below details information on the percentage of attendances within each age group who waited over 12 hours in an ED, from arrival to discharge home or admission to hospital, during each of the last six financial years. The percentage of patients spending over 12 hours in ED has more than doubled over the last six years, from 0.8% in 2012/13 to 2.2% in 2017/18 [48]. The increase has been larger among the older age groups, with the percentage of patients aged 75 & over waiting over 12 hours increasing from 3.3% in 2012/13 to 7.6% in 2017/18.

Figure 9: Percentage of Patients Waiting Over Twelve Hours by Age Group and Year



Source: Hospital Information Branch

Time Waited for Admissions

Figure 10 below details the number of patients admitted to hospital from an ED by the length of time waited in ED from arrival to admission, in ten minute periods.

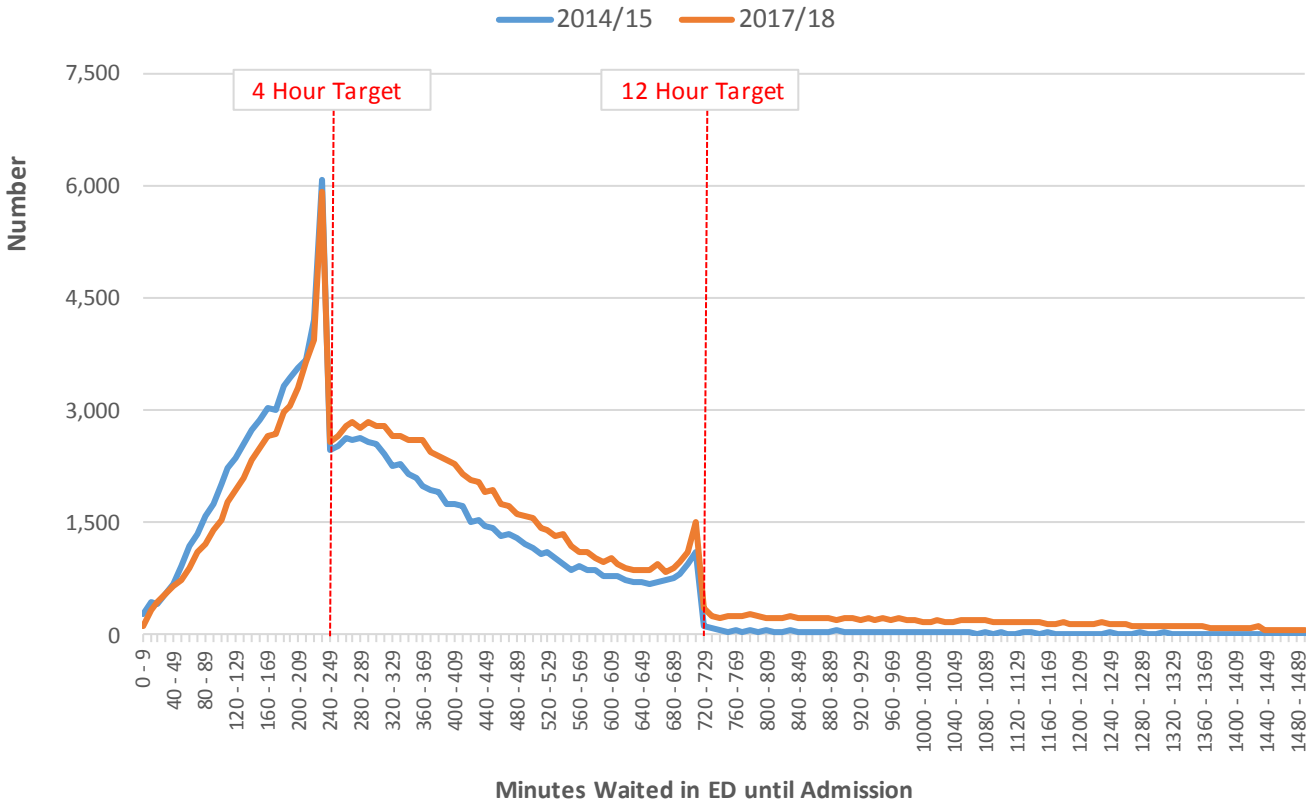
It indicates that there is a peak in the number of patients admitted from ED in the ten minute period immediately before breaching the 4 hour target (230 – 239 minutes), whilst the number of patients admitted in the ten minute period immediately after the 4 hour target decreases sharply.

A similar pattern is observed around the 12 hour target, when there is another peak in the numbers of patients admitted in the ten minute period immediately before breaching the 12 hour target (710 -719 minutes). Similarly, the numbers admitted from ED decreases sharply in the ten minute after patients have breached the 12 hour target.

[48] Information for 2017/18 is provisional and may be subject to change.

A higher number of patients admitted to hospital in 2014/15 waited less than 4 hours compared to 2017/18, whilst a higher number of patients admitted in 2017/18 waited more than four hours.

Figure 10: Patients Admitted to Hospital from ED, by Length of Time Waited in ED



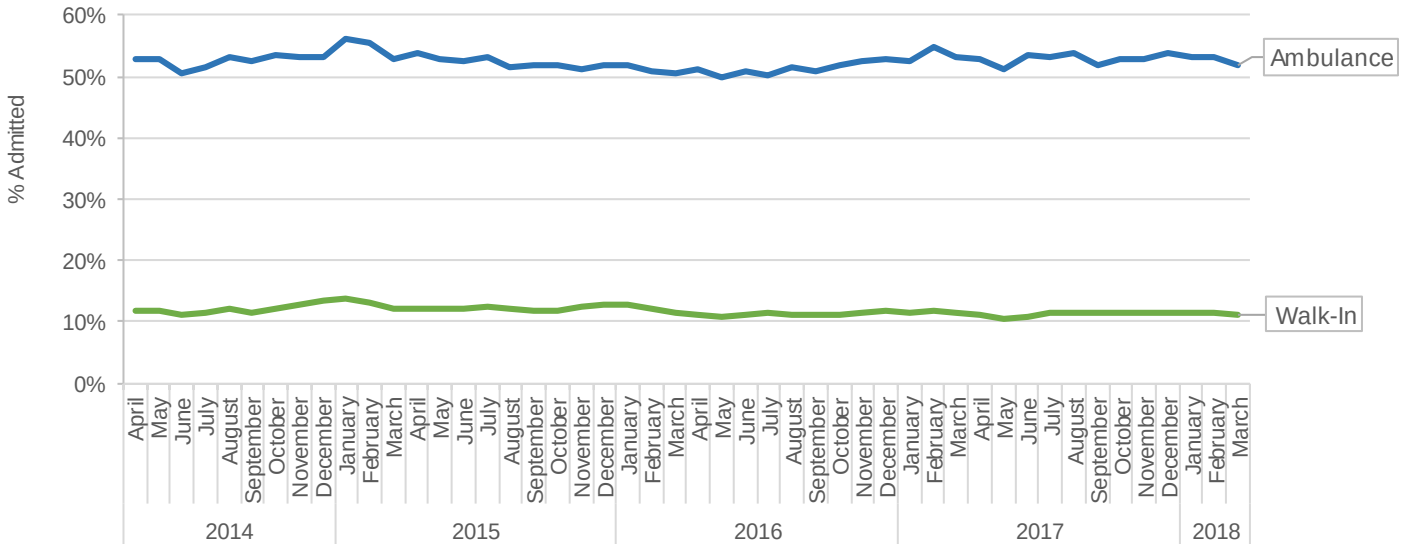
Source: Hospital Information Branch

Admission Rates by Arrival Method

Figure 11 below details the percentage of attendances arriving by (i) ambulance and (ii) walk-in, who were admitted to hospital.

Over half of patients arriving at EDs by ambulance were admitted to hospital during each month from April 2014, whilst just over 10% of patients making their own way to ED were admitted.

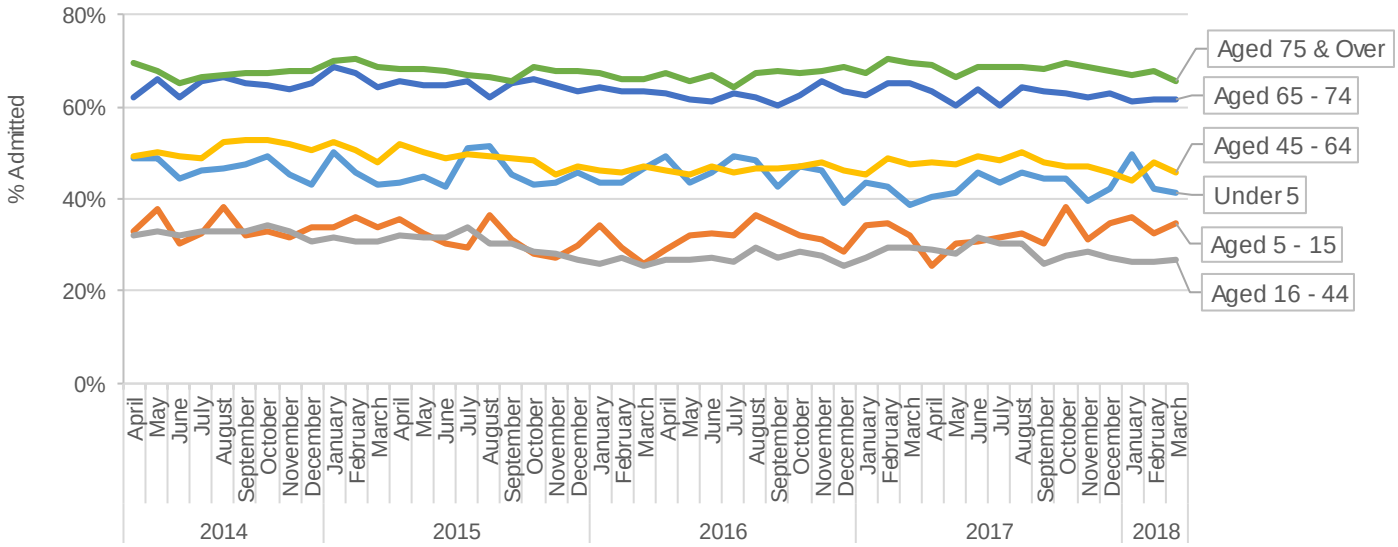
Figure 11: Percentage of ED Attendances Admitted to Hospital by Method of Arrival



Source: Hospital Information Branch

Figure 12 below presents information on the percentage of patients arriving at EDs by ambulance who are admitted within each age group. Since 2014/15, over 60% of patients aged 65 & over arriving by ambulance were admitted to hospital, with almost 70% of patients aged 75& over being admitted.

Figure 12: Percentage of Ambulance arrivals Admitted to Hospital by Age Group



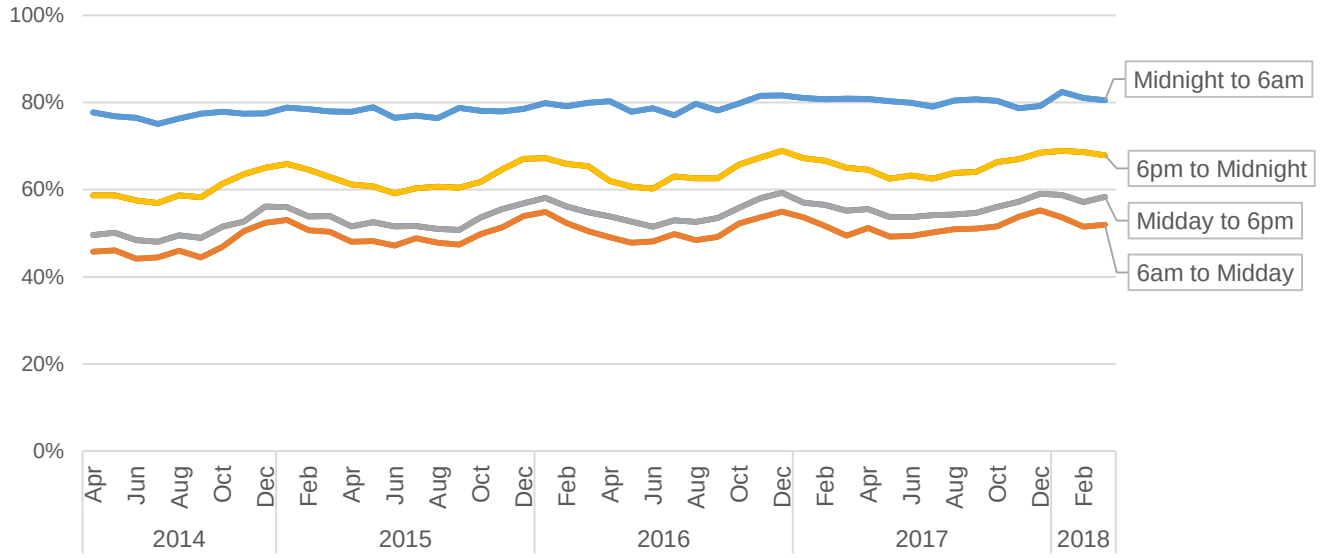
Source: Hospital Information Branch

Triage Group by Time of Day

Figures 13 and 14 below indicate the percentage of patients arriving at ED during each hour of the day who were assessed at (i) Triage levels 1 / 2 / 3, and (ii) Triage levels 4 / 5.

During March 2018, four in five (80.5%) patients arriving at ED between midnight and 6am were triaged at levels 1 / 2 / 3, compared with 52.9% of patients arriving between 6am and midday.

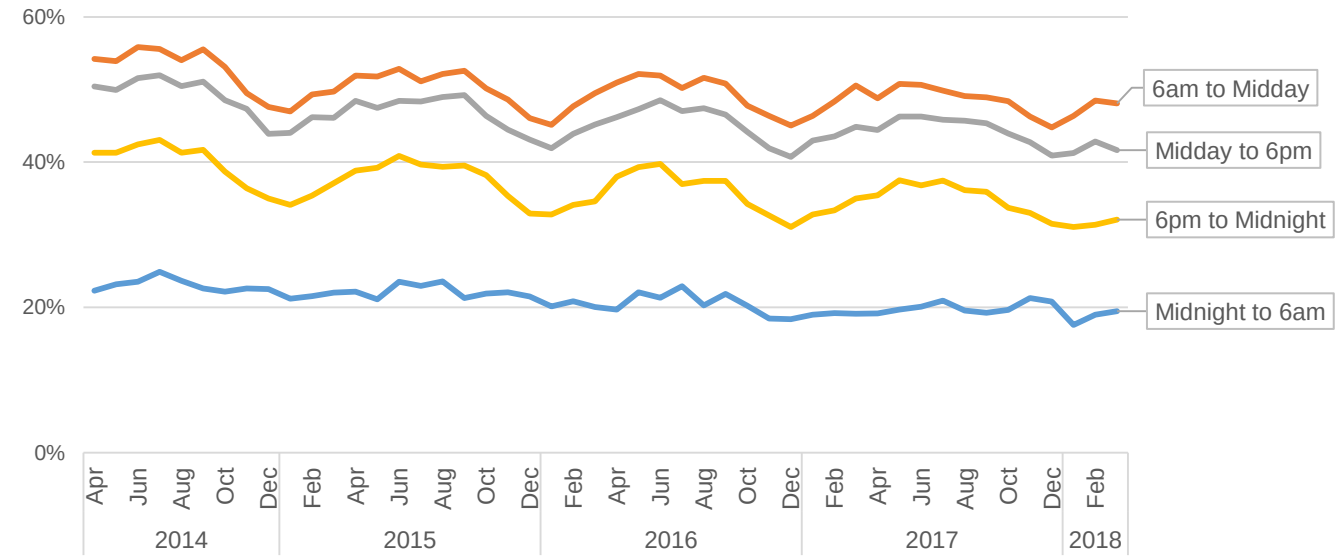
Figure 13: Percentage of Patients Triaged at Levels 1 / 2 / 3, by Hour of Arrival and Month



Source: Hospital Information Branch

Since April 2014, the highest percentage of patients triaged at levels 4 / 5 arrived between 6am and 6pm.

Figure 14: Percentage of Patients Triaged at Levels 4 / 5, by Hour of Arrival and Month



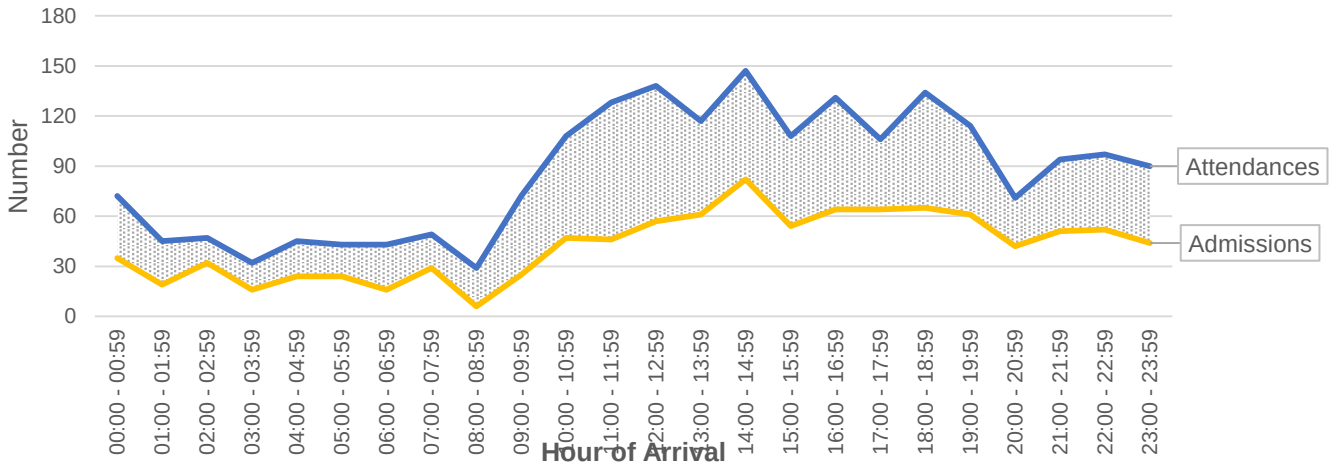
Source: Hospital Information Branch

Attendances from Nursing / Residential Homes

Information in Figure 15 below details the number of patients arriving at Type 1 EDs from Nursing and Residential homes in each hour of the day during March 2018. Please note that this information is still in development but has been included in this analysis in an attempt to present as full a picture as possible in patterns of attendances. In addition to presenting the number of attendances, information is also presented on the number of these arrivals who were subsequently admitted to hospital. The hour of arrival refers to the time they presented at ED.

A higher percentage of patients arriving at Type 1 EDs from residential and nursing homes between midnight and 8am were admitted to hospital. A higher number of attendances and admissions at Type 1 EDs were reported between 9am and 9pm, with a lower percentage of these patients admitted to hospital in comparison to those arriving overnight.

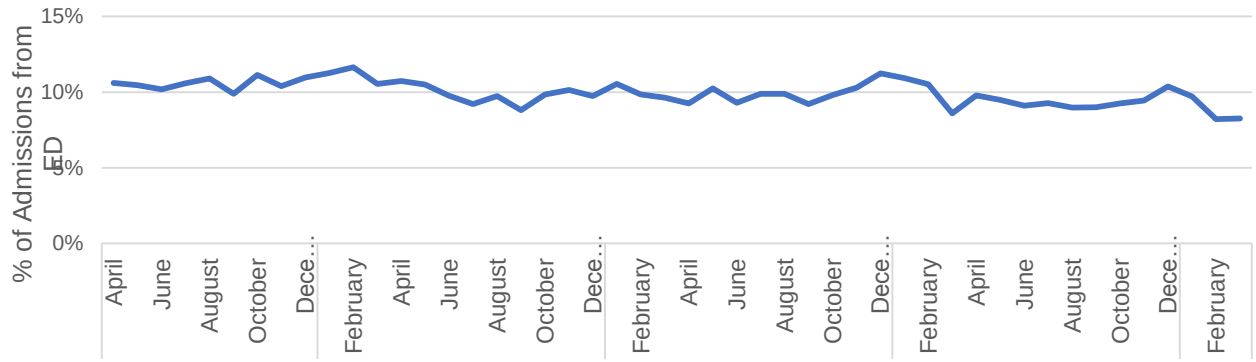
Figure 15: Residential / Nursing Home Attendances at Type 1 EDs and Admissions to Hospital by Hour of Arrival



Source: Hospital Information Branch

Around 3% of attendances at Type 1 EDs each month were from residential / nursing homes, whilst almost 10% of emergency admissions from Type 1 EDs each month are from residential / nursing homes.

Figure 16: Percentage of All Admissions from ED Arriving from a Residential / Nursing Home



Source: Hospital Information Branch

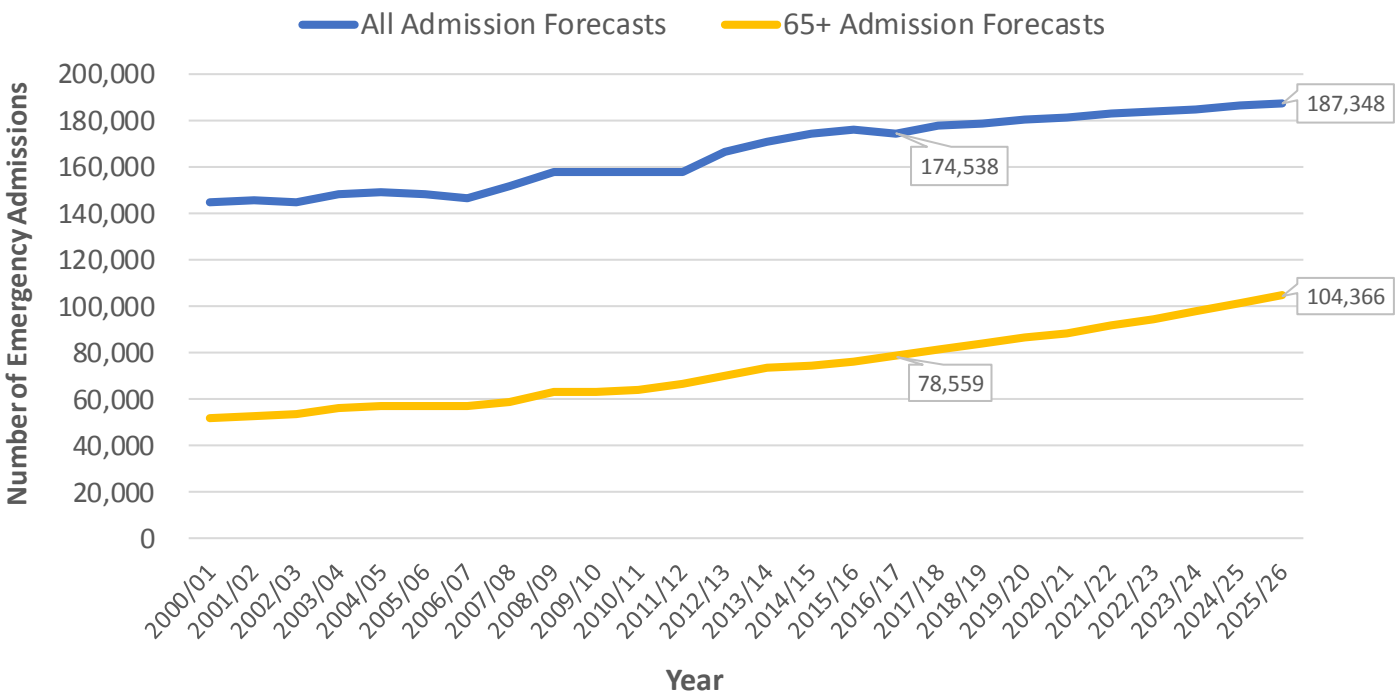
Emergency Admission Forecasts

The forecasts detailed in Figure 17 below are based on the number of emergency admissions to hospital each year from 2000 to 2017, and the population projections for each year from 2017/18 to 2025/26.

It is forecast that there will be 187,348 emergency admissions to hospital during 2025/26, almost 13,000 more than during 2016/17. During the same period, the number of emergency admissions for those aged 65& over is expected to increase by almost 26,000, from 78,559 in 2016/17 to 104, 366 during 2025/26.

It is projected that the percentage of all emergency admissions to hospital for those aged 65 & over will increase by 10 percentage points to 55.7% in 2025/26.

Figure 17: Projected Number of Emergency Admissions to Hospital (2000/01 – 2025/26)



Source: Hospital Information Branch

Appendix C

Updated Workforce Analysis of Emergency Care Departments NI

HSC ED Staffing and Shift Patterns – Position as of April 2018

Belfast HSC Trust

Type 1: Mater Hospital

Table 1 – Shifts and Coverage by Day in the Mater Hospital

Grade	Time period	Coverage						
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Consultant	08.00-17.00	2	2	2	2	2		
	13.00-18.00	1	1	1	1	1		
	09.00-17.00						1	1
	On-call out of hours	1	1	1	1	1	1	1
Associate Specialist / Specialty Doctor / Staff Grade	Schedule variable dependent on requirements	1	1	1	1	1	1	1
Registrar Level	Participate in RVH on-call rota. Day time roster variable depending on on-call commitment.							
Foundation Doctor	08.00-16.00	3	3	3	3	3	1	1
	15.00-23.00	3	3	3	3	3	3	3
	20.00-05.00	2	2	2	2	2	2	2
	12.00-20.00	3	3	3	3	3	3	3
	23.30-08.30	2	2	2	2	2	2	2
	10.00-18.00	3	3	3	3	3	3	3
Qualified Nurse*	Early 08.00-14.00	7	7	7	7	7	6	6
	Late 14.00-21.00	8	8	8	8	8	7	7
	Night	5	5	5	5	5	5	5

*The Belfast Trust notes that it has one unfunded Band 5 Nursing post 24 hours a day Monday-Thursday, and 8.5 hours on Friday.

Table 2 – Filled and Unfilled Posts in the Mater Hospital

Grade	Staff In Post		Unfilled posts covered by locums		Unfilled & unoccupied posts	
	HC	WTE	HC	WTE	HC	WTE
Consultant	5	5.0	1	1.0	0	0.0
Specialty Doctor / Associate Specialist / Staff Grade	3	3.0	0	0 .0	0	0.0
Registrar Level (incl. Core Trainee)	6	6.0	0	0.0	0	0.0
Foundation Doctor	5	5.0	0	0 .0	0	0.0
Qualified Nurse	52	47.81	0	0.0	0	0.0

Type 1: Royal Victoria Hospital

Table 3 – Shifts and Coverage by Day in the Royal Victoria Hospital

Grade	Time Period	Coverage						
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Consultant	08.00-18.00	3	3	3	3	3		
	18.00-00.00	1	1	1	1	1		
	09.00-13.00						1	1
	09.00-18.00						1	1
	On call out of hours	1	1	1	1	1	1	1
Associate Specialist / Specialty Doctor / Staff Grade AND Registrar level	08.00-17.00	2	2	2	2	2	1	1
	10.00-18.00	2	2	2	2	2		
	12.00-21.00	2	2	2	2	2		
	15.00-00.00	2	2	2	2	2	1	1
	22.00-08.00	1	1	1	1	2	2	2
	13.00-21.00						1	1
	10.00-22.00						1	1
	12.00-00.00						2	2
Foundation Doctor	08.00-17.00	1	1	1	1	1	1	1
	09.00-18.00	1	1	1	1	1	0	1
	10.00-19.00	1	1	0	1	1	1	1
	12.00-21.00	1	1	1	1	1	0	0
	13.00-22.00	1	1	1	1	1	1	1
	15.00-00.00	1	1	0	0	1	0	0
	18.00-02.00	1	1	1	1	1	1	1
	20.00-05.00	1	1	1	1	1	1	1
	23.00-08.00	1	1	1	1	1	1	1
Qualified Nurse	Early 08.00-14.00	16	16	16	16	16	15	15
	Late 14.00-21.00	18	18	18	18	18	17	17
	Twilight 18.00-00.00	1	1	1	1	1	1	1
	Night	10	10	10	10	10	10	10

Table 4 – Filled and Unfilled Posts in the Royal Victoria Hospital

Grade	Staff in Post		Unfilled posts covered by locums		Unfilled & unoccupied posts	
	HC	WTE	HC	WTE	HC	WTE
Consultant*	10	10.0	0	0.0	0	0.0
Associate Specialist / Staff Grade / Specialty Doctor*	5	5.0	0	0.0	0	0.0
Registrar Level (incl Core Trainee)	10	10.0	0	0.0	0	0.0
Foundation Year 1&2	8	8.0	0	0.0	0	0.0
Qualified Nurse	93	86.9				

*Belfast Trust advises that although posts are substantively filled, 3.0 WTE Consultant posts and 2.0 WTE Associate Specialist/Specialty Doctor/Staff Grade posts are currently being covered by locums due to maternity leave, long-term sickness absence, or career breaks.

Type 1: Royal Belfast Hospital for Sick Children

Table 5 – Shifts and Coverage by Day in the Royal Belfast Hospital for Sick Children

Grade	Time Period	Coverage						
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Consultant	09.00-14.00	2	2	2	4	2	0	0
	14.00-18.00	3	2	3	2	2	0	0
	18.00-23.00 (15.30 at weekend)	1	1	1	1	1	1	1
Consultant on call out of hours	23.00-09.00	1	1	1	1	1	1	1
Associate Specialist / Specialty Doctor / Staff Grade AND 1 Registrar	09.00-14.00	1	1	1	1	2	0	0
	14.00-18.00	1	2	1	1	2	0	0
	18.00-24.00	1	1	1	1	1	1	1
	24.00-09.00	0	0	0	0	0	0	0
Registrar (ST1 / 2, GP, Emergency medicine, Paediatric medicine trainees)	09.00-17.00	1	1	1	1	0	(09.00-16.00) 1	(09.00-16.00) 1
	11.00-1900	1	1	1	1	1	(10.00-20.00) 1	(10.00-20.00) 1
	13.00-22.00	1	1	1	1	1	(13.00-23.00) 1	(13.00-23.00) 1
	16.00-00.00	1	1	1	1	1	(16.00-02.00) 1	(16.00-02.00) 1
	18.00-02.00	1	1	1	1	1	0	0
	21.00-09.00	1	1	1	1	1	1	1
Nursing Compliment (includes Healthcare Support workers)	07.45-20.00 (Emergency Dept) Plus ENP	7	7	7	7	7	7	3
	Night shift 19.45-08.00 (Emergency Dept)	4	4	4	4	4	4	4
	Twilight 19.45-23.45 (Emergency Dept)	1	1	1	1	1	1	1
	07.45-20.00 (SSPAU*)	3	3	3	3	3	3	3
	19.45-08.00 (SSPAU*)	3	3	3	3	3	3	3

*Short-Stay Paediatric Unit

Table 6 – Filled and Unfilled Posts in the Royal Belfast Hospital for Sick Children

Grade	Staff in Post		Unfilled posts covered by locums		Unfilled & unoccupied posts	
	HC	WTE	HC	WTE	HC	WTE
Consultant	6	6.0	0	0.0	0	0.0
Associate Specialist / Specialty Doctor / Staff Grade	1	0.9	2	2.0	0	0.0
Registrar Level	1	1.0	0	0.0	0	0.0
Foundation Doctor	8	7.6	0	0.0	0	0.0
Qualified Nurse	39	35.33	0	5.48	0	0.0

Belfast Trust advises that although posts are substantively filled, 1.0 WTE Consultant posts are currently being covered by locums due to career break.

Type 2: Royal Victoria Hospital (RAES)

Table 7 - Shifts and Coverage by Day in the Royal Victoria Hospital (RAES)

Grade	Time period	Coverage						
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Consultant	9-5	0	0	0	0	0	0	0
Consultant on call	24hrs – 9am-9am	1	1	1	1	1	1	1
Associate Specialist / Specialty Doctor / Staff Grade	9-1pm	1	0	0	0	0	0	0
Registrar Level	9-5pm 5-8pm (on call) 8pm-9am (on call)	1	1	1	1	1	1	1
ST' / Foundation Doctor	9-5	2	2	2	2	2	2	2
	5-8pm	2	2	2	2	2	2	2
Qualified Nurse*	8:15- 6pm	4	4	4	4	4	4	4
	5-8pm	1	1	1	1	1	1	1
ENP	8.30-5.30pm	1	1	1	1	1	1	1
Optoms	8.30-5.30pm	1	1	1	1	1	1	1

Table 8 - Filled and Unfilled Posts in the Royal Victoria Hospital (RAES)

Grade	Staff in Post		Unfilled posts covered by locums		Unfilled & unoccupied posts	
	HC	WTE	HC	WTE	HC	WTE
Consultant						
Associate Specialist / Specialty Doctor / Staff Grade						
Registrar Level						
Foundation Doctor						
Qualified Nurse						

Northern HSC Trust

Northern HSC Trust noted that shift patterns take account of staff annual leave/professional leave/support to professional bodies.

Type 1: Antrim Area Hospital

Table 1 – Shifts and Coverage by Day in Antrim Area Emergency Department

Grade	Time period	Coverage (Headcount)						
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Consultant	08.00 – 17.00	1	1	1	1	1	0	0
	09.00 – 18.00	1	1	1	1	1	0	0
	17.00 – 22.00	1	1	1	1	1	0	0
	09.00 – 13.00	0	0	0	0	0	1	1
	22:00 – 08:00 On-call	1	1	1	1	1	0	0
	13:00 – 08:00 On-call	0	0	0	0	0	1	1
Specialty Doctor / Associate Specialist / Staff Grade	09.00 – 17.00	1	2	2	1	2	1	1
	11.00 – 19.00	1	0	0	1	0	0	0
	08.30 – 16.30	1	0	1	0	1	0	0
	07.00 – 22.00	0	0	1	0	0	0	0
	09.00 – 15.00	0	0	0	0	1	1	1
Registrar	08.00 – 18.00	1	1	1	1	2	0	0
	08.00 – 16.00	0	0	0	0	0	1	1
	09.30 – 17.00	1	1	1	1	1	0	0
	12.00 – 22.15	1	1	1	1	1	1	1
	21.00 – 08.15	1	1	1	1	1	1	1
Foundation Doctor / Core Trainee Doctor	08.00 – 18.00	1	1	1	1	1	1	1
	18.00 – 02.00	1	1	1	1	1	1	1
	10.00 – 21.00	1	1	1	1	1	1	1
	12.00 – 22.00	1	1	1	1	1	0	0
	14.00 – 00.00	1	1	1	1	1	1	1
	22.00 – 08.00	2	2	2	2	2	2	2
Qualified Nurse	07:30 – 20:30	9	9	9	9	9	9	9
	10:00 – 22:00	2	2	2	2	2	2	2
	09:00 – 17:00	2	2	2	2	2	0	0
	20:00 – 08:00	10	10	10	10	10	10	10

Table 2 – Filled and unfilled posts in Antrim Area Emergency Department

Grade	Staff in Post		Posts covered by locums		Unfilled & unoccupied posts	
	HC	WTE	HC	WTE	HC	WTE
Consultant	8	7.00	1	1.0	0	0 .00
Specialty Doctor / Associate Specialist / Staff Grade	6	4	2	2.0	0	0
Registrar	15	15.00	0	0	0	0.00
Foundation Doctor	3	3 .00	0.0	0.0	0	0.00
Qualified Nurse	69	60.57			11	8.64

Type 1: Causeway Hospital

Table 3 – Shifts and Coverage by Day in the Causeway Hospital Emergency Department

Grade	Time period	Coverage (Headcount)						
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Consultant	09.00 – 17.00	3	3	3	3	3	0	0
	17.00 – 22.00	1	1	1	1	1	0	0
	22:00 – 09:00 On-call	1	1	1	1	1	0	0
	09.00 – 13.00	0	0	0	0	0	1	1
	13:00 – 09:00 On-call	0	0	0	0	0	1	1
Specialty Doctor/ Associate Specialist / Staff Grade	09.00 -17.00	1	1	1	1	1	0	0
	13:00 - 21:00	1	1	1	1	1	0	0
	10:00 - 20:00	0	0	0	0	0	1	1
	17:00 - 3:00	1	1	1	1	1	1	1
ST1 + Doctor	08.00 - 18.00	2	2	2	2	2	2	2
	11.00 - 21.00	1	1	1	1	1	1	1
	12.00 - 22.00	1	1	0	0	1	1	1
	14.00 - 00.00	1	1	1	1	1	1	1
	16:00 - 00:00	1	1	0	0	0	0	0
	21.00 - 08.30	2	2	2	2	2	2	2
Qualified Nurse	07:30 – 20:00	5	5	5	5	5	5	5
	07:30 – 14:00	1	1	1	1	1	1	1
	09:00 – 17:00	1	1	1	1	1	1	1
	14:00 – 02:00	2	2	2	2	2	2	2
	19:30 – 08:00	5	5	5	5	5	5	5
	07:30 – 20:00	5	5	5	5	5	5	5

Table 4 – Filled and Unfilled Posts in the Causeway Hospital Emergency Department

Grade	Staff in Post		Posts covered by locums		Unfilled & unoccupied posts	
	HC	WTE	HC	WTE	HC	WTE
Consultant	1	1.0	5	5.0	0	0.0
Specialty Doctor / Associate Specialist / Staff Grade	0	0.0	6	6.0	0	0.0
Foundation Doctor/Trainee	1	1.0	11.0	11.0	0	0.0
Qualified Nurse	43	36.13			4	4.0

Type 3: Mid Ulster Hospital Minor Injuries Unit – ***Not applicable to Medical***

Table 5 - Shifts and Coverage by Day in the Mid Ulster Hospital Minor Injuries Unit

Grade	Time period	Coverage (Headcount)				
		Monday	Tuesday	Wednesday	Thursday	Friday
Consultant						
Specialty Doctor/ Associate Specialist / Staff Grade						
Foundation Doctor						
Qualified Nurse	09:00 - 17:00	2	2	2	2	2

Table 6 – Filled and Unfilled Posts in the Mid Ulster Hospital Minor Injuries Unit

Grade	Staff in Post		Posts covered by locums		Unfilled & unoccupied posts	
	HC	WTE	HC	WTE	HC	WTE
Consultant						
Specialty Doctor / Associate Specialist / Staff Grade						
Foundation Doctor						
Qualified Nurse	2	2.0			0	0

South Eastern HSC Trust

South Eastern HSC Trust noted that figures relate to the week commencing **a typical week from 1st April 2018** and take account of annual leave/professional leave and also that registrars normally work on integrated rota with two specialty doctors.

Type 1: Ulster Hospital

Table 1 – Shifts and Coverage by Day in the Ulster Hospital Emergency Department

Grade	Time period	Coverage (Headcount)						
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Consultant	08.00 – 17.00	4	4	4	4	4	0	0
	15.00 – 23.30	1	2	2	1	1	0	0
	08.00-14.00	0	0	0	0	0	1	0
	08.00-15.00	0	0	0	0	0		1
Specialty Doctor / Associate Specialist / Staff Grade	08.00 – 15.00	1	1	1	1	1		
	08.00 – 17.00	1	0	0	1	1	1*	1*
	09.00-17.00	3	2	3	1	3		
	10.00 -19.00	0	1	0	1	0		
	13.00 -22.00	1	1	1	1		1*	1*
	20.00 - 0300	1	1	1	1			
Specialty Registrar (STR)	08.00-17.30	3	3	4	4	4	0	0
	14.00 – 00.00	2	2	2	2	2	1	1
	23.00 – 08.30	1	1	1	1	1	1	1
Foundation Doctor / Core Trainee Doctor	08.00- 17.30	3	3	3	4	3	1	1
	12.00 – 22.00	3	2	3	2	1	2	2
	14.00 – 00.00	2	2	2	2	2	1	1
	22.00- 08.00	3	3	3	3	3	3	3
Qualified Nurse	07.30 – 20.30	14	14	14	14	14	14	14
	20.30 – 08.00	11	11	11	11	11	11	11

*Weekend cover by Specialty Doctor/Associate Specialist/Staff Grade is working on a 1 in 4 basis with 1 working either 8am to 5pm or 9am to 5pm and a second doctor on working 1pm to 10pm. Please note shifts can vary depending on rota gaps.

The above does not take into account annual leave which would reduce the above figures on average by 1 during the normal day shift eg 8am to 5.30pm or 8am to 5pm

The above figures do not include GP sessions.

Table 2 – Filled and Unfilled Posts in the Ulster Hospital Emergency Department

Grade	Staff in Post		Posts covered by locums		Unfilled & unoccupied posts	
	HC	WTE	HC	WTE	HC	WTE
Consultant	15	14.95	0	0.0	0	0.0
Specialty Doctor / Associate Specialist / Staff Grade	10	8.4	3	3.0	0	0.0
Specialty Registrar (STR)	10	10.5	0	0.0	0	0.0
Foundation Doctor / Core Trainee Doctor	9	9 .0	5	5.0	0	0.0
Qualified Nurse	93	82.87			8	8.0

Type 2: Lagan Valley Hospital

Table 3 – Shifts and Coverage by Day in the Lagan Valley Hospital Emergency Department

Grade	Time period	Coverage (Headcount)				
		Monday	Tuesday	Wednesday	Thursday	Friday
Consultant	08.00 – 16.00	1	1	1	1	1
	08.00 – 20.00	0	0	1	0	1
	11.00 – 23.00	1	1	0	0	0
	15.00 – 23.30	1	0	0	0	0
Specialty Doctor / Associate Specialist / Staff Grade	08.00 – 16.00	1	2	3	3	1
	12.00 – 20.00	0	0	0	0	1
	16.00 – 23.00			1	1	1
LAT Locum Appointment for Training / Foundation Doctor	08.00 – 17.00	1	1	1	1	1
	11.00 – 19.00	1	1	1	1	1
	12.00 – 21.00	1	1	1	1	1
	14.00 – 23.00	1	1	1	1	1
Qualified Nurse	Morning	5	5	5	5	5
	Afternoon	6	6	6	6	6
	Evening	7	7	7	7	7
	Twilight	3	3	3	3	3

-closed at weekends

The above Consultants figures do not include the Consultants who rotate from the Ulster to LVH with 2 covering on a Monday 8am to 4pm and 1 covering on a Thur and Fri 8am to 4pm

The above does not take into account annual leave which would reduce the above figures on average by 1 during the normal day shift eg 8am to 5.30pm or 8am to 5pm

Table 4 – Filled and Unfilled Posts in the Lagan Valley Hospital Emergency Department

Grade	Staff in Post		Posts covered by locums		Unfilled & unoccupied posts	
	HC	WTE	HC	WTE	HC	WTE
Consultant	1	0.85	1	1.0	0	0.0
Specialty Doctor	1	1.0	3	0.0	1	1.0
LAT / Foundation Doctor	2	2.0	0	0.0	3	3.0
Qualified Nurse	25	22.79	0	0.0	0	0.0

Locums are all agency who on the whole work set days per week wte approx. 1.4

Type 2: Downe Hospital

Table 5 – Shifts and Coverage by Day in the Downe Hospital Emergency Department

Grade	Time period	Coverage						
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Consultant	09.00-17.00	1	1	0	1	1	0	0
Specialty Doctor / Associate Specialist / Staff Grade	08.00-18.00	1	1	1	1	1	0	0
	11.00-21.00	1	1	1	1	1	0	0
	15.00-22.00	1	1	1	1	1	0	0
Qualified Nursing	08:00 – 14:00	5	4	4	4	4	2	2
	13:00 – 21:00	5	5	5	5	5	2	2
	20:45 – 08:00	2	2	2	2	2	2	2

Table 6 – Filled and Unfilled Posts in the Downe Hospital Emergency Department

Grade	Staff in Post		Posts covered by locums		Unfilled & unoccupied posts	
	HC	WTE	HC	WTE	HC	WTE
Consultant	Consultants rotate from other sites					
Specialty Doctor / Associate Specialist / Staff Grade	4	4.0	0	0.0	2	2.0
Qualified Nurse	23	20.71	0	0.0	0	0.0

Type 3: Ards Hospital Minor Injury Unit

Table 7 - Shifts and Coverage by Day in the Ards Hospital Minor Injuries Unit

Grade	Time period	Coverage (Headcount)				
		Monday	Tuesday	Wednesday	Thursday	Friday
Consultant						
Specialty Doctor/ Associate Specialist / Staff Grade						
Foundation Doctor						
Qualified Nurse	09:00-13:00	3	3	3	3	3
	13:00-17:30	3	2	2	2	3

Table 8 – Filled and Unfilled Posts in the Ards Hospital Minor Injuries Unit

Grade	Staff in Post		Posts covered by locums		Unfilled & unoccupied posts	
	HC	WTE	HC	WTE	HC	WTE
Consultant						
Specialty Doctor / Associate Specialist / Staff Grade						
Foundation Doctor						
Qualified Nurse	5	3.92			1	.64

Type 3: Bangor Hospital Minor Injuries Unit

Table 9 - Shifts and Coverage by Day in the Bangor Hospital Minor Injuries Unit

Grade	Time period	Coverage (Headcount)				
		Monday	Tuesday	Wednesday	Thursday	Friday
Consultant						
Specialty Doctor/ Associate Specialist / Staff Grade						
Foundation Doctor						
Qualified Nurse	09:00-13:00	3	2	2	2	3
	13:00-17:30	3	3	3	3	3

Table 10 – Filled and Unfilled Posts in the Bangor Hospital Minor Injuries Unit

Grade	Staff in Post		Posts covered by locums		Unfilled & unoccupied posts	
	HC	WTE	HC	WTE	HC	WT
Consultant						
Specialty Doctor / Associate Specialist / Staff Grade						
Foundation Doctor						
Qualified Nurse	4	3.92			1	.64

Nb Nurse Practitioners work across both Bangor & Ards Minor injuries units

Southern HSC Trust

Type 1: Craigavon Area Hospital

Table 1 – Shifts and Coverage by Day in the Craigavon Area Hospital Emergency Department

Grade	Time period	Coverage (Headcount)						
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	08.00 – 1.00						1	1
Consultant	08.00 – 17.00	2	2	2	2	2	1	1
	17.00 – 22.00	1	1	1	1	1	On Call	On Call
	22.00 – 08.00	On Call	On Call	On Call	On Call	On Call	On Call	On Call
Specialty Doctor / Associate Specialist / Staff Grade	08.00 – 17.00	2	2	2	2	2	1	1
	17.00 – 22.00	2	2	2	2	2	1	1
	22.00 – 08.00	1 (to midnight then on call)	1 (to midnight then on call)	1 (to midnight then on call)	1 (to midnight then on call)	1 (to midnight then on call)	0	0
Registrar	08.00 – 17.00	1	1	1	1	1	1 (to midnight then on call)	1 (to midnight then on call)
	17.00 – 22.00	0	0	0	0	0	1	1
Foundation Doctor	08.00 – 17.00	3	3	3	3	3	2	2
	17.00 – 22.00	3	3	3	3	3	3	3
	22.00 – 08.00	3 (until 1am, then 2 on duty)	3 (until 1am, then 2 on duty)	3 (until 1am, then 2 on duty)	3 (until 1am, then 2 on duty)	3 (until 1am, then 2 on duty)	3 (until 1am, then 2 on duty)	3 (until 1am, then 2 on duty)
Qualified Nurse	07.30 – 17.00	14	14	14	14	14	14	14
	17.00 – 21.00	16	16	16	16	16	16	16
	20.30 – 08.00	12	12	12	12	12	12	12

Table 2 – Filled and Unfilled Posts in the Craigavon Area Hospital Emergency Department

Grade	Staff in Post		Unfilled posts covered by locums		Unfilled & unoccupied posts	
	HC	WTE	HC	WTE	HC	WTE
Consultant *	8	8.0	0	0.0	0	0.0
Specialty Doctor / Associate Specialist / Staff Grade	5	4.0	1	1.0	0	0.0
Registrar	6	6.0	3	3.0	0	0.0
Foundation Doctor	10	10.0	0	0.0	0	0.0
Qualified Nurse	80	69.0	0	0.0		2.0

*Southern Trust advises that there is locum cover for 3 Registrars as 2 are on maternity leave and 1 on long term sick leave.

Type 1: Daisy Hill Hospital

Table 3 – Shifts and Coverage by Day in the Daisy Hill Hospital Emergency Department

Grade	Time period	Coverage (Headcount)						
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Consultant	09.00 – 17.00	3	3	3	2	2	1	1
	12:00-- - 20:00						1	1
	17.00 – 22.00	1	1	1	1	1	On Call	On Call
	16:00 – 00:00	1	1	1	1	1		
	22.00 – 08.00	On Call	On Call	On Call	On Call	On Call	On Call	On Call
Specialty Doctor/ Associate Specialist/ Staff Grade	08.00 – 17.00	0	1	1	1	1	0	0
	17.00 – 22.00	1	0	0	0	0	0	0
Registrar level*	08.00 – 17.00	2	2	2	2	2	1	1
	17.00 – 22.00	2	2	2	2	2	1	1
Foundation Doctor	08.00 – 17.00	3	3	3	3	3	2	2
	17.00 – 22.00	2	2	2	2	2	2	2
	22.00 – 08.00	1	1	1	1	1	2	2
Qualified Nurse	08.00 – 13.00	8	8	8	8	8	6	6
	12.30 – 22.00	11	11	11	11	11	11	11
	22.00 – 08.00	7	7	7	7	7	7	7

Consultant level shifts are covered by 2.8 WTE substantive posts and long term locums
*****Registrar level shifts in Daisy Hill are filled by a combination of sessional GP shifts and middle grade locums.

Table 4 – Filled and Unfilled Posts in the Daisy Hill Hospital Emergency Department

Grade	Staff in Post		Unfilled posts covered by locums		Unfilled & unoccupied posts	
	HC	WTE	HC	WTE	HC	WTE
Consultant	3	2.8	1	1.0	0	0.0
Specialty Doctor / Associate Specialist / Staff Grade	1	1.0	0	0.0	0	0.0
Registrar Level*	See note					
Foundation Doctor	6	6.0	2	2.0	2	2.0
Qualified Nurse	37	32.0	0	0.0	0	0.0

*****Registrar level shifts in Daisy Hill are filled by a combination of sessional GP shifts and middle grade locums - a total headcount of 4 (or 1 WTE).
Southern Trust has noted the figures given for Daisy Hill for both medical and nursing staff are above the funded staffing level.

Type 3: South Tyrone Hospital Minor Injuries Unit

Table 5 - Shifts and Coverage by Day in the South Tyrone Hospital Minor Injuries Unit

Grade	Time period	Coverage (Headcount)						
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Consultant	Note consultant in CAH ED can be contacted to discuss cases.	0	0	0	0	0	0	0
Specialty Doctor/ Associate Specialist / Staff Grade		0	0	0	0	0	0	0
Foundation Doctor		0	0	0	0		0	0
Qualified Nurse	ENP	3	3	3	3	3	2	2
	Band 5 staff nurse	1	1	1	1	1	1	1
	Band 3	1	1	1	1	1	1	1

Western HSC Trust

Type 1: Altnagelvin Hospital

Table 1 – Shifts and Coverage by Day in the Altnagelvin Hospital Emergency Department

Western Trust have noted that the shift pattern in Altnagelvin below is illustrative and does not take into account annual leave or sick leave, therefore numbers on duty can change.

Grade	Time period	Coverage (Headcount)						
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Consultant	09.00-17.00	6	6	6	6	6	0	0
	11.00-19.00	0	1	1	1	0	10-16:00	10-16:00
	15.00-22.00	1	0	0	0	1	On call	On call
Specialty Doctor / Associate Specialist / Staff Grade – **Each doctor works 1 weekend in 5**	08.00-17.00	2	2	2	4	6	0	0
	11.00-19.00	2	4	2	2	0	0	0
	16.00-00.00	4	3	2	2	1	0	0
	08.00-18.00 weekend	0	0	0	0	0	1	1
	12.00-21.00 weekend	0	0	0	0	14.00-22.00 1	1	1
Registrar **Each Registrar works 1 weekend in 4**	08.00-17.00	1	1			1		1
	11.00-19.00	0	0	0	0	1	0	0
	16.00-00.00	2	2	2	2	1	1	1
	23.00-09.00	1	1	1	1	1	1	1
	08.00-17.00	1	1			1		1
Foundation Doctor / GP Trainee / Core Trainee	08.30-16.30	1	1	1		1	1	1
	11.00-19.00	0	0	0	1	0	0	0
	11.00-21.00	0	0	0	0	0	1	1
	14.00-22.00	1	1	1	1	0	0	0
	15.00-01.00	0	0	0	0	1	1	1
	23.00-08.00	1	1	1	1	1	1	1
	21.00-09.00	1	1	1	1	1	1	1
Qualified Nurse	07.50-20.00	11	11	11	11	11	11	11
	19.45-08.00	9	9	9	9	9	9	9

Table 2 – Filled and Unfilled Posts in the Altnagelvin Hospital Emergency Department

Grade	Staff in Post		Posts covered by locums		Unfilled & unoccupied posts	
	HC	WTE	HC	WTE	HC	WTE
Consultant	5	5	1	1	0	2
Specialty Doctor / Associate Specialist / Staff Grade	4	0	0	0	0	7
Registrar	7	7	0	0	0	0
Foundation Doctor / GP Trainee and Core Trainee	5	5	0	0	0	3
Qualified Nurse**	50.83	52.83	0	0	0	2

Type 1: South West Acute Hospital

Table 3 - 'Shop floor' shifts and coverage by day in the South West Acute Hospital (SWAH) Emergency Department (ED)

The WHSCT have noted that the SWAH ED medical roster represents a typical week, but that the shifts and coverage will change subtly over a 12 week period and do not take into account annual or other leave.

Grade	Time period	Coverage (Headcount)						
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Consultant	09.00 - 17.00	0	0	2	1	2	0	0
	09.00 - 19.00	1	1	0	1	0	0	0
	12.00 - 22.00	1	1	0	0	0	0	0
	13.00 - 22.00	1	1	1	1	1	0	0
Specialty Doctor / Staff Grade Doctor / Junior Doctor	08.30 - 18.30	0	0	0	0	0	1	1
	08.30 - 20.30	1	1	1	1	1	0	0
	09.00 - 17.00	1	1	1	1	1	0	0
	10.00 - 20.00	1	1	1	1	1	0	0
	10.00 - 22.00	0	0	0	0	0	1	1
	11.00 - 21.00	0	0	0	0	0	1	1
	11.00 - 23.00	0	0	0	0	0	1	1
	12.00 - 22.00	1	1	1	1	1	0	0
	12.00 - 00.00	1	1	1	1	1	1	1
	16.00 - 00.00	1	1	1	1	1	1	1
	21.00 - 09.00	1	1	1	1	1	1	1
	22.00 - 08.00	1	1	1	1	1	1	1
GP Trainee	This post is currently unfilled and is filled using ad hoc and long term agency locums doctors, with these shifts included above.							
Emergency Nurse Practitioner	08.00 - 20.00	1	1	1	1	1	1	1
Qualified Nurses	08.00 - 20.00	7	7	7	7	7	7	7
	20.00 - 08.00	6	6	6	6	6	6	6

The WHSCT has noted that one of the qualified nurses from 08.00 - 20.00 is an Emergency Nurse Practitioner (ENP) who works as a clinical decision maker in support of the medical workforce. The SWAH ED ENPs also support service delivery at the OHPCC Urgent Care Centre / Minor Injuries Unit due to ongoing staffing issues there.

Table 4 - Filled and unfilled posts in the South West Acute Hospital (SWAH) Emergency Department (ED)

Grade	Staff in post		Posts covered by locums		Unfilled and unoccupied posts	
	HC	WTE	HC	WTE	HC	WTE
Consultant	5	5.0	0	0.0	1[*1]	1.0
Specialty Doctor / Staff Grade Doctor[*2]	1	1.0	Variable	15.0	0	0.0
GP trainee	0	0.0	Variable	1.0	0	0.0
Qualified Nurse (including ENPs)[*2]	35.14	36.41	0	0.0	1.27	1.27

[*1] - x 1 Locum Consultant has been appointed and will commence post later in 2018.

[*2] - The SWAH ED utilises the equivalent of an additional 10 WTE Specialty Doctors over and above the funded medical establishment. These posts are filled using ad hoc and long term agency locums doctors who are often junior doctors in lieu of (middle grade) Specialty Doctors / Staff Grade Doctors. The SWAH ED utilises the equivalent of an additional 10.5 WTE qualified nurses over and above the funded nursing establishment. These posts are filled using peripatetic and temporary nurses supplemented as required by bank and agency nurses. The WTE number of doctors and qualified nurses utilised by the SWAH ED was agreed by the WHSCT with the HSCB / PHA in January 2016 but as dedicated funding was not transferred at that time this is still not reflected in the funded establishment.

Again, the WHSCT has noted that one of the qualified nurses from 08.00 - 20.00 is an Emergency Nurse Practitioner (ENP) who works as a clinical decision maker in support of the medical workforce. The SWAH ED ENPs also support service delivery at the OHPCC Urgent Care Centre / Minor Injuries Unit due to ongoing staffing issues there.

Type 3: OHPCC Urgent Care Centre / Minor Injuries Unit

Table 5 - 'Shop floor' shifts and coverage by day in the OHPCC Urgent Care Centre / Minor Injuries Unit

Grade	Time period	Coverage (Headcount)						
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Emergency Nurse Practitioner[*1]	08.00 - 20.00	1 - 2	1 - 2	1 - 2	1 - 2	1 - 2	1 - 2	1 - 2
Qualified Nurse	08.00 - 20.00	1 - 2	1 - 2	1 - 2	1 - 2	1 - 2	1 - 2	1 - 2
Emergency Nurse Practitioner	20.00 - 08.00	1	1	1	1	1	1	1
Qualified Nurse	20.00 - 08.00	1	1	1	1	1	1	1

[*1] The SWAH ED ENPs also support service delivery at the OHPCC Urgent Care Centre / Minor Injuries Unit due to ongoing staffing issues there.

Table 6 - Filled and unfilled posts in the OHPCC Urgent Care Centre / Minor Injuries Unit

Grade	Staff in Post		Posts covered by locums		Unfilled and unoccupied posts	
	HC	WTE	HC	WTE	HC	WTE
Qualified Nurse (including ENPs)[*2]	15	12.34				