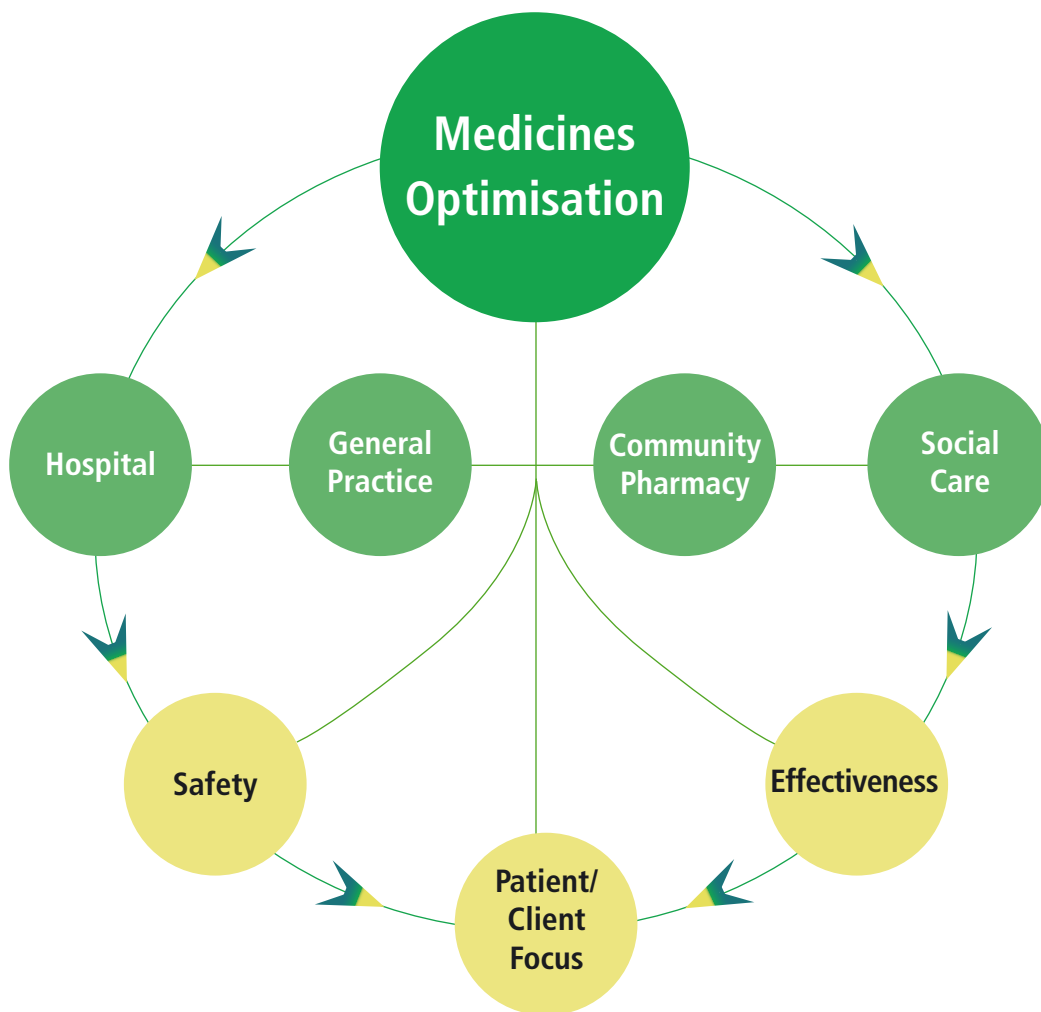




Northern Ireland Medicines Optimisation Quality Framework



Contents

	Page(s)
FOREWORD – Minister for Health, Social Services and Public Safety	1-2
EXECUTIVE SUMMARY	3-4
INTRODUCTION – Chief Medical Officer and Chief Pharmaceutical Officer	5-8
SECTION 1 – The Quality Framework	9-12
SECTION 2 – The Northern Ireland Medicines Optimisation Model	13-24
SECTION 3 – Quality Standards for Medicines Optimisation	25-64
SECTION 4 – Integrated Innovation and Change Programme	65-72
SECTION 5 – Summary of Recommendations	73-74
ANNEX A – History of Medicines Management in Northern Ireland 2000-2014	75-82
ANNEX B – Moving to medicines optimisation, the challenges and need for change	83-99

FOREWORD

Minister for Health, Social Services and Public Safety

As Minister for Health, Social Services and Public Safety, my mission is to improve the health and well-being of all people of Northern Ireland. Whilst healthier lifestyle choices may be all that is required for some people to maintain health, most will need medicines at some stage to treat or prevent illness.

Medicines are the most common medical intervention used in the health service with an annual expenditure of over £550m. In comparison with other UK countries the volume and cost of medicines used per head of population in Northern Ireland is high. With an aging population and a rising number of people with long term conditions, demand is expected to increase.

Unfortunately evidence shows variance in best practices relating to the appropriate, safe and effective use of medicines and many people do not take their medicines as prescribed resulting in sub optimal health outcomes, wasted medicines and pressure on acute health and social care services.

The Medicines Optimisation Quality Framework aims to support better health outcomes for our population by focusing attention on gaining the best possible outcome from medicines every time that they are prescribed, dispensed or administered.

The Framework supports quality improvement through the consistent delivery of recognised best practice and supports the development and implementation of new, evidence based best practice. Implementation will involve an innovation and change programme involving multi-disciplinary professionals working together and with patients.

Much has been done in recent years to improve the way medicines are used and Northern Ireland is recognised as one of the leading regions in Europe in addressing the health and social care needs of the older population through innovation in medicines management. However, more action is needed to gain optimal outcomes from medicines and provide a sustainable approach to clinical and cost-effectiveness whilst reducing avoidable adverse events and waste.

Everyone has a responsibility to improve medicines use and patients need to become more involved in decisions about their treatment and better informed about the role of medicines in their care. By encouraging dialogue and listening to patients' concerns about their medicines, we can empower them to make informed decisions to improve health outcomes.

The Framework promotes multidisciplinary working and recognises the role of pharmacists in integrated teams within primary and secondary care. I welcome this and would like to see an increased utilisation of pharmacists' clinical skills working collaboratively with other health and social care professionals optimising patients' medicines use.

The development of the Framework has been overseen by a multi-disciplinary and multi-agency Steering Group established by the Department of Health, Social Services and Public Safety. Members of the Steering Group included representatives from the Health and Social Care Board, Public Health Agency, Business Services Organisation, Royal College of General Practitioners, the Pharmaceutical Industry, Community and Hospital Pharmacy, Nursing, Social Care, Patient Client Council, RQIA, Local Commissioning Groups, and the Community Development Health Network.

I wish to thank the contribution made by all those individuals involved in its development. It establishes a solid foundation from which the application of good practice and continuous improvement and innovation in medicines use will ensure the best outcomes for the citizens of Northern Ireland.

SIMON HAMILTON MLA
Minister for Health, Social Services and Public Safety

EXECUTIVE SUMMARY

Introduction

In continuing to provide a world class Health Service, the Department is committed to supporting innovative ways of ensuring that services are safe, that they improve the health and wellbeing of our population and at the same time make the best use of available resources. As medicines are a critical element of what the health service delivers to help patients¹, the Department has developed this Medicines Optimisation Quality Framework so that patients and health care professionals can work together to make the most of their medicines.

This Medicines Optimisation Quality Framework provides strategic direction for actions to improve the use of medicines for the benefit of the health and wellbeing of people in Northern Ireland. The framework builds on existing quality systems and infrastructure to deliver improvements through evidence based services and technologies and seeks to consolidate good practice and support consistency and quality improvement across Health and Social Care (HSC).

Some people maintain a healthy lifestyle without using medicines but for others, medicines play an important part in maintaining their health and treating or preventing illness. However, there is evidence that patients do not always gain the optimal benefit from their medicines and a new approach is needed that focuses on optimising health outcomes when medicines are prescribed, dispensed or administered. Medicines Optimisation is defined by the National Institute of Health and Care Excellence (NICE) as “a person centred approach to safe and effective medicines use to ensure that people gain the best possible outcomes from their medicines.”

The overall aim of this Framework is to maximise health gain for patients through the appropriate, safe and optimum use of their medicines. It is split into five main sections.

Section 1: The Quality Framework – summarising what the framework is designed to do, who it is aimed at, what it seeks to deliver and lists its key recommendations. The Framework supports a patient focused approach in which patients are involved in decisions about their medicines and are supported by multidisciplinary² professionals working together to deliver best practice.

Section 2: The NI Regional Medicines Optimisation Model – outlining what should be done at each stage of the patient pathway in each of four different settings (hospital, general practice, community pharmacy, social care) to help gain the best outcomes from medicines.

Section 3: 10 Quality Standards – addressing the priority issues for medicines optimisation in Northern Ireland within the three overarching quality domains of safety, effectiveness and patient/client focus. The Quality Standards describe the best practices that should be delivered in each setting, identify gaps in best practices and the actions needed to address them.

1 Throughout the Quality Framework when patients are referred to this also refers to their families and carers.

2 Multidisciplinary includes all health and social care professionals involved in the prescribing, dispensing and administration of medicines. This includes specialist and generalist roles in medicine, nursing, pharmacy, allied health and social care.

Section 4: Implementation through an Integrated Innovation and Change Programme – applying a strategic approach to support and drive continuous improvement through the development and implementation of best practices in medicines optimisation with four components:

- a regional action plan for medicines optimisation;
- a medicines optimisation innovation centre;
- a medicines optimisation network; and
- a regional database to monitor improvement.

Section 5: Contains a summary of the nine overarching key recommendations to introduce and support the Regional Model for Medicines Optimisation.

1. A Regional Model for Medicines Optimisation should be introduced which outlines what patients can expect when medicines are included in their treatment as they access services in HSC settings.
2. The model should be delivered by a mutli-disciplinary medicines optimisation workforce trained and competent in medicines optimisation, with the involvement of pharmacists in all settings.
3. The medicines optimisation workforce should deliver regional services and roles which are commissioned and co-ordinated across all HSC organisations and related agencies involved in the prescribing, dispensing and administering of medicines.
4. The services and roles should aim to consistently deliver regional best practices in compliance with new Quality Standards for Medicines Optimisation.
5. Regional best practices should always be co-designed with patients, following the principles of Personal and Public Involvement (PPI).
6. An innovation and change programme should be implemented, linked to HSC commissioning plans, to support the development, testing and scaling up of technology and service solutions to deliver consistent best practices related to the Quality Standards.
7. Regional systems should be implemented supporting HSC connectivity, electronic transmission of prescriptions and access to the Electronic Care Record, prescribing support, Northern Ireland Formulary and enhanced data analysis.
8. Within the HSC a regional organisational infrastructure for medicines optimisation should be maintained that incorporates the Medicines Governance Team, Pharmacy and Medicines Management Team, Regional Pharmaceutical Procurement Service, Medicines Information service, Medicines Optimisation Innovation Centre ([MOIC](http://www.themoic.com))³.
9. A new regional database for medicines optimisation should be developed to monitor progress and enable comparisons regionally and with other UK countries.

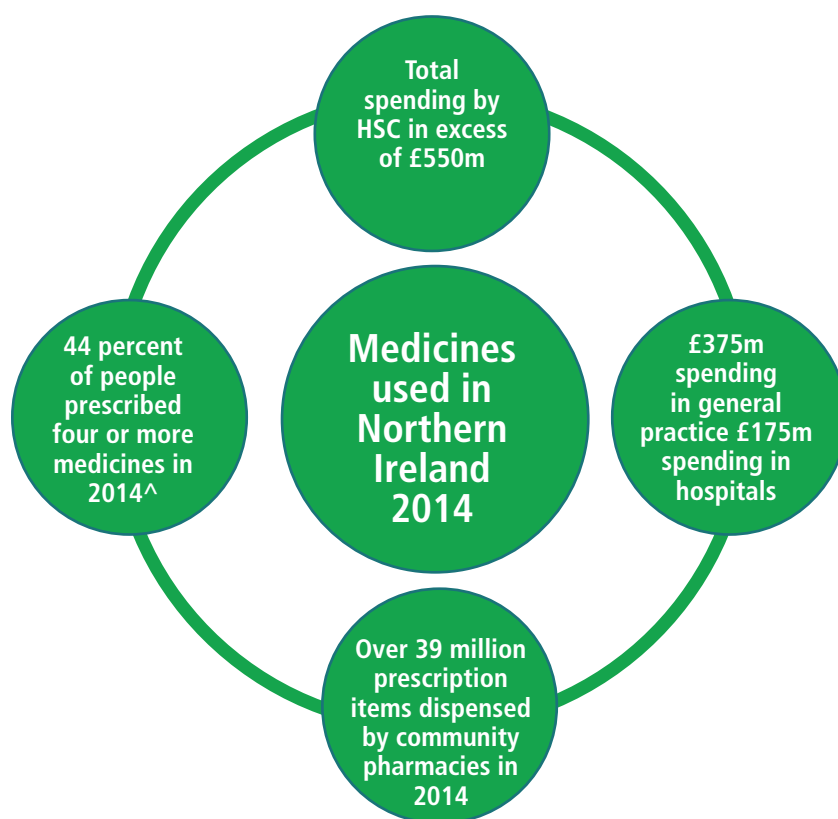
³ www.themoic.com

JOINT INTRODUCTION

Chief Medical Officer and Chief Pharmaceutical Officer

1. Medicines play an important role in maintaining wellbeing, preventing illness and managing disease. Most people will take a medicine at some point in their lives. This could be a short term curative treatment, for example, a course of antibiotics for an infection or long term treatment for high blood pressure to prevent heart disease.
2. Medicines are the most common medical intervention within our population and at any one time 70% of the population⁴ is taking prescribed or over the counter medicines to treat or prevent ill-health.
3. From a financial aspect, medicines expenditure equates to over £550m/annum in Northern Ireland, representing 14% of the total HSC budget and is the second largest cost after salaries.

Figure 1: Medicines Use in Northern Ireland 2014



⁴ Office of National Statistics Health Statistics 1997

[^] Figure based on the definition of a medicine as having a unique number used in the dictionary of medicines and devices (DM+D)

4. As the population ages and the prevalence of chronic disease increases the need for medicines is expected to rise. This will place direct pressure on prescribing budgets and lead to an increased demand across HSC services, particularly those involved with the prescribing, dispensing and administration of medicines.
5. To date, health policy has sought to address these challenges by supporting regional best practice relating to Pharmaceutical Care⁵ and Medicines Management⁶. This has introduced a range of services and systems⁷ for the safe and effective use of medicines, often associated with the 'five rights'.

Table 1: The Five Rights of Medicines Administration⁸

- | |
|--|
| <ul style="list-style-type: none"> • The Right Patient • The Right Medication • The Right Dose • The Right Time and Frequency of Administration • The Right Route |
|--|

6. With over 14 years of expertise in developing good practice in the area of Pharmaceutical Care and Medicines Management, Northern Ireland was recognised in 2013 as one of the leading regions in Europe with 3 star reference site status for medicines management⁹.
7. However, evidence shows that medicines use remains sub-optimal, with patients failing to gain the expected benefits of treatment and services coming under increasing pressure as their care needs escalate. For example:

5 Hepler CD & Strand LM. Opportunities and responsibilities in pharmaceutical care. American Journal of Health Systems Pharmacy 1990; 47: 533-543

6 Medicines management has been defined as "encompassing the entire way that medicines are selected, procured, delivered, prescribed, administered and reviewed to optimise the contribution that medicines make to producing informed and desired outcomes of patient care.

7 See Annex A, Table 12 – Examples of regional best practice in medicines management.

8 Jones and Bartlett, Nurse's Drug Handbook, 2009

9 European Innovation Programme- https://ec.europa.eu/research/innovation-union/pdf/active-healthy-ageing/rs_catalogue.pdf

Table 2: Examples of Sub-optimal Medicines Use

Ten days after starting a new medicine, 61% of patients feel they are lacking information and only 16% of patients who are prescribed a new medicine are taking it as prescribed, experiencing no problems and receiving as much information as they believe they need¹⁰.

One in 15 hospital admissions are medication related, with two-thirds of these being preventable¹¹.

One in 20 prescriptions in General Practice contains an error, with a higher prevalence associated with prescriptions for the elderly and those taking 10 or more medications¹².

Prescribing errors in hospital in-patients affect 7% of medication orders, 2% of patient days and 50% of hospital admissions¹³.

An estimated £18m of medicines are wasted annually in Northern Ireland¹⁴.

8. To address these challenges and the demands of an aging population with increasingly complex medicines needs, a new approach is needed which shifts the focus to Medicines Optimisation. This will ensure that patient facing medicines services are provided in support of improving care and to enable transformation of HSC services through closer cooperation between multidisciplinary professionals and HSC organisations.
9. **Medicines optimisation** is defined by the National Institute for Health and Care Excellence (NICE) as “a person centred approach to safe and effective medicines use to ensure that people obtain the best possible outcomes from their medicines”. This has evolved from the four principles of medicines optimisation developed by the Royal Pharmaceutical Society in 2013.

10 Barber et al. Patients' problems with new medication for chronic conditions. *Quality and safety in healthcare* 2004.

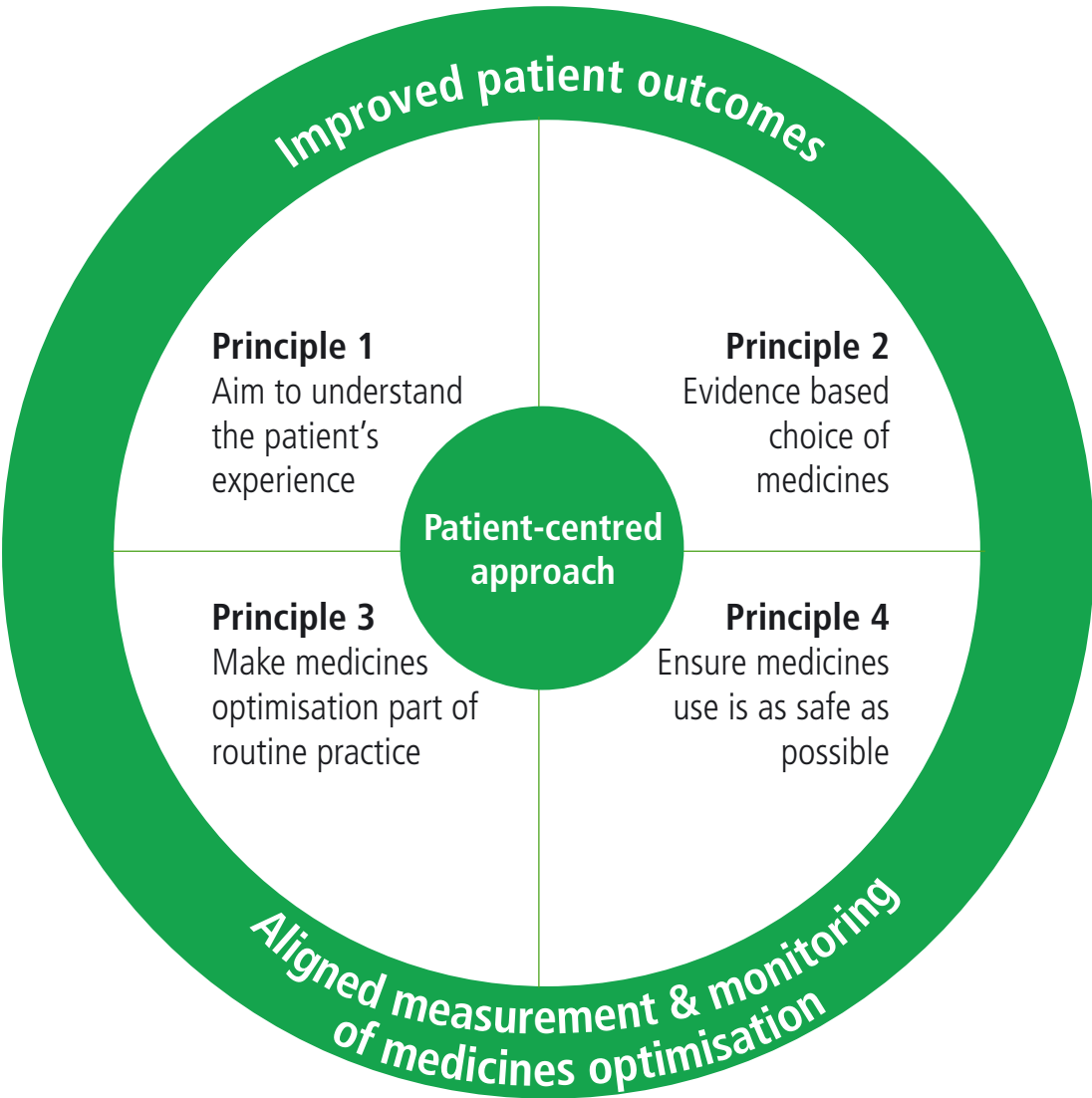
11 Garfield S, Barber N, Walley P, Willson A, Eliasson L. Quality of medication use in primary care--mapping the problem, working to a solution: a systematic review of the literature. *BMC Medicine* 2009; 7:50.

12 http://www.gmc-uk.org/Investigating_the_prevalence_and_causes_of_prescribing_errors_in_general_practice_The_PRACTiCe_study_Report_May_2012_48605085.pdf

13 Lewis PJ, Dornan T, Taylor D, Tully MP, Wass V, Ashcroft DM. Prevalence, incidence and nature of prescribing errors in hospital inpatients: a systematic review. *Drug Saf* 2009; 32(5):379-389.

14 Evaluation of the Scale, Causes and Costs of Waste Medicines, University of London and York 2010.

Figure 2: Patient Centred Approach Model¹⁵



10. In Northern Ireland the shift to medicines optimisation has started with the implementation of [NICE Guideline NG5 Medicines optimisation](#): the safe and effective use of medicines to enable the best possible outcomes¹⁶ and the recommendations of the Regulation and Quality Improvement Authority (RQIA) [Review of Medicines Optimisation in Primary Care](#)¹⁷.

11. However, to deliver sustainable and measurable improvements at a regional level a strategic approach is needed and the Medicines Optimisation Quality Framework has been developed to provide the necessary direction to support this.

15 <https://www.rpharms.com/promoting-pharmacy-pdfs/helping-patients-make-the-most-of-their-medicines.pdf>

16 <https://www.nice.org.uk/guidance/ng5>

17 http://www.rqia.org.uk/cms_resources/RQIA%20Medicines%20Optimisation%20in%20Primary%20Care%20Review%20July%202015.pdf

SECTION 1

THE QUALITY FRAMEWORK



- 1.1 The Medicines Optimisation Quality Framework provides a roadmap for improving how medicines are used across the HSC system (HSC). Building on existing quality systems and infrastructure, it seeks to deliver improvements in care through evidence based services and technologies that lead to better health outcomes for patients.
- 1.2 Primarily aimed at those with responsibility for, and influence on, commissioning decisions and front line service delivery in Northern Ireland, the Framework is underpinned by existing HSC responsibilities for ensuring the efficient use of resources and facilitating integration.
- 1.3 The Framework aims to support both patient care and the transformation of the HSC system by helping to deliver:
 - better health outcomes for patients through the appropriate use of medicines, taken as prescribed;
 - better informed patients who are engaged and involved in decisions about their medicines;
 - improved medicines safety at transitions of care;
 - an active medicines safety culture within HSC organisations;
 - reduced variance in medicines use through the consistent delivery of medicines management best practices;
 - improved intra and inter professional collaboration and a HSC workforce who recognise their role in medicines optimisation and are trained and competent to deliver it as part of routine practice;
 - better use of resources through the consistent, evidence based and cost effective prescribing of medicines; and
 - the development and implementation of best practice solutions in medicines optimisation across the HSC.
- 1.4 The Framework introduces a Regional¹⁸ Model for Medicines Optimisation to engage health and social care professionals across the HSC in delivering best practices, supported by quality standards and an integrated innovation and change programme.
- 1.5 The Framework makes nine key recommendations to introduce and support the Regional Model for Medicines Optimisation.

18 Regional relates to the whole of Northern Ireland

Table 3: Recommendations

1. A Regional Model for Medicines Optimisation should be introduced which outlines what patients can expect when medicines are included in their treatment as they access services in HSC settings.
2. The model should be delivered by a multi-disciplinary medicines optimisation workforce trained and competent in medicines optimisation, with the involvement of pharmacists in all settings.
3. The medicines optimisation workforce should deliver regional services and roles which are commissioned and coordinated across all HSC organisations and related agencies involved in the prescribing, dispensing and administration of medicines.
4. The services and roles should aim to consistently deliver regional best practices in compliance with new Quality Standards for Medicines Optimisation.
5. Regional best practices should always be co-designed with patients, following the principles of Personal and Public Involvement (PPI).
6. An innovation and change programme should be implemented, linked to HSC commissioning plans, to support the development, testing and scaling up of technology and service solutions to deliver consistent best practices related to the Quality Standards.
7. Regional systems should be implemented supporting HSC connectivity, electronic transmission of prescriptions and access to the Electronic Care Record, prescribing support, Northern Ireland Formulary and enhanced data analysis.
8. Within the HSC a regional organisational infrastructure for medicines optimisation should be maintained that incorporates, the Medicines Governance Team, Pharmacy and Medicines Management Team, Regional Pharmaceutical Procurement Service, Medicines Information Service, Medicines Optimisation Innovation Centre (MOIC).
9. A new regional database for medicines optimisation should be developed to monitor progress and enable comparisons regionally and with other UK countries.

1.6 The Framework complements existing health policy, [Transforming Your Care](https://www.dhsspsni.gov.uk/topics/health-policy/transforming-your-care)¹⁹ principles, recommendations in the [Donaldson report](https://www.dhsspsni.gov.uk/topics/health-policy/donaldson-report)²⁰ and is specifically aligned with the [Quality 2020](https://www.dhsspsni.gov.uk/publications/quality-2020-ten-year-strategy-protect-and-improve-quality-health-and-social-care)²¹ strategic themes of safety, effectiveness and patient/client focus.

1.7 It promotes multidisciplinary approaches which include all health and social care professionals

19 <https://www.dhsspsni.gov.uk/topics/health-policy/transforming-your-care>

20 <https://www.dhsspsni.gov.uk/topics/health-policy/donaldson-report>

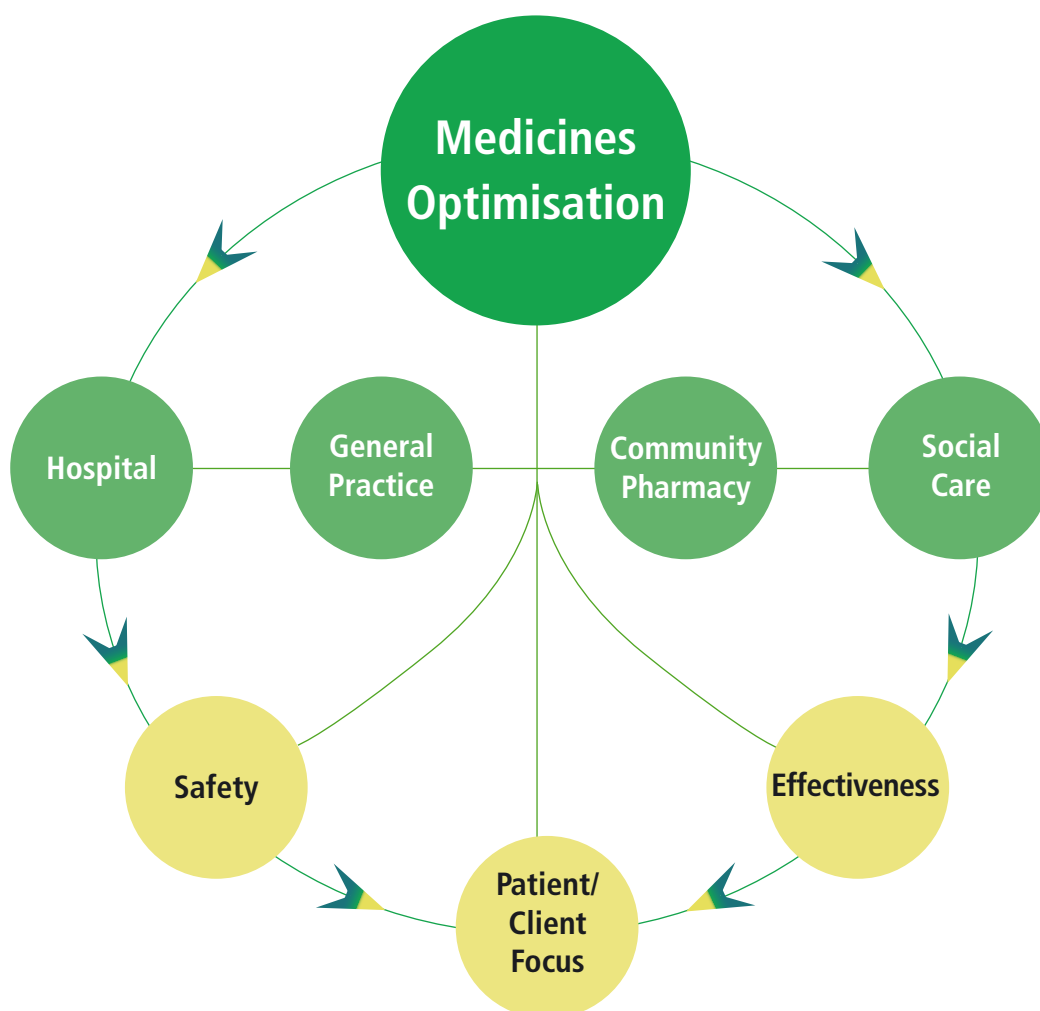
21 <https://www.dhsspsni.gov.uk/publications/quality-2020-ten-year-strategy-protect-and-improve-quality-health-and-social-care>

involved in the prescribing, dispensing and administration of medicines. This includes specialist and generalist roles in medicine, nursing, pharmacy, allied health and social care. NICE Guideline NG5 Medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes recommends that organisations consider a multidisciplinary team approach to improve patient outcomes with the integration of pharmacists. Historically this has not always been the case and the Framework addresses gaps in pharmacist to patient facing interventions in HSC settings.

- 1.8 The Framework seeks to build on the experience of the past, using existing medicines management services across the HSC as the foundation for improvement where possible. These services and the history of medicines management in Northern Ireland in the period 2000 - 2014 is described in detail in Annex A.
- 1.9 It has been developed in anticipation of demographic and financial challenges facing the HSC which require a renewed focus on gaining the best possible outcomes for patients from medicines at an affordable cost for the HSC. A detailed description of these challenges is included in Annex B.

SECTION 2

The Northern Ireland Medicines Optimisation Model



- 2.1 When medicines are prescribed patients should be involved in decisions about their use, know why the medicine is needed, understand the expected outcome, the duration of treatment and be informed of any risks or side effects.
- 2.2 When medicines are supplied, pharmacists should ensure that they are dispensed safely, that patients receive appropriate information to enable safe and effective use and are offered support to help them take their medicines as prescribed and on time, if needed. Pharmacists are also well placed to advise patients when the presentation of their medicine changes and provide reassurance of continued efficacy.
- 2.3 During treatment, patients should have their medicines reviewed on a regular basis and if a GP or other authorised health professional involved in assessing the patient makes a clinical decision that there is no health benefit or clinical need for the patient to continue taking the medication, the medication should be stopped.
- 2.4 When medicines for long term conditions are started, stopped or changed, patients should have their treatment regimen checked to ensure it remains safe and effective.
- 2.5 In day to day practice, medicines optimisation relies on partnerships between patients and health and social care professionals and aims to help more patients to self manage, to take their medicines correctly, reduce harm, avoid taking unnecessary medicines, cut down on waste and improve medicines safety. Ultimately it can help encourage patients to take increased ownership of their treatment and support care closer to home.
- 2.6 Within the HSC, success in medicines optimisation is reliant on multidisciplinary teams with the correct skill mix working collaboratively, delivering best practices, supported by quality systems and the necessary regional organisational infrastructure as illustrated by the diagram at the beginning of section 1.
- 2.7 The model is based on the principles of the [Integrated Medicines Management](#)²² (IMM) service in secondary care which targets the work of pharmacists at specific points in the patient journey on admission, during the hospital stay and at discharge.
- 2.8 The model seeks to deliver IMM consistently across secondary care and expand the pharmacist role into the interface and intermediate care²³, to general practice, community pharmacy and social care.

22 <https://www.dhsspsni.gov.uk/sites/default/files/publications/dhssps/northern-ireland-clinical-pharmacy-standards-2013.pdf>

23 Intermediate care means step up/step down beds

- 2.9 It supports the integration of pharmacists in multidisciplinary teams, providing support with medicines at key points of the patient's journey based on an assessment of need, for example, when a new treatment is started, after discharge from hospital or during a medication review.
- 2.10 At the interface the model includes roles for consultant pharmacists²⁴ and specialist outreach pharmacists²⁵ working with intermediate care, nursing home settings and GP practices, with links to community pharmacy.
- 2.11 The model introduces a new role for pharmacists working in General Practice. 'Practice-based' pharmacists integrated with and working collaboratively with pharmacists in community pharmacy and secondary care will utilise more fully the clinical skills of the profession to improve patient outcomes.
- 2.12 In community pharmacy the model includes enhanced roles for pharmacists that will support better outcomes from medicines by working with patients to provide appropriate information and advice when medicines are dispensed and to support adherence and safer transitions through services such as Medicines Use Reviews^{26 27}.
- 2.13 The model recognises the role of nurses and care workers in helping people with their medicines in residential, nursing and domiciliary care settings and the need for regional best practices that support role clarification, accredited training and support systems for staff.
- 2.14 The model recommends the optimal delivery of existing roles and commissioned services which are already supported by HSC contractual or service level agreements and funding streams as well as the need for new roles and services.
- 2.15 To deliver the model consistently in all settings additional recurrent funding will need to be targeted to support new roles and infrastructure which demonstrate clinical and cost effectiveness outcomes.

24 The term consultant pharmacist refers to a pharmacist who has advanced roles in patient care, research and education in a specific medical speciality or expert area of practice.

25 Specialist outreach pharmacists are pharmacists in secondary care who carry out patient medication reviews and follow up in GP practices and are linked with specialist secondary care clinical teams.

26 www.cpwales.org.uk/Contractors-Area/Pharmacy-Contact---Services/DMR/DMR-Evaluation_Final-Report_13082014.aspx

27 <http://www.elht.nhs.uk/Downloads-docs/Departmental/Refer-to-Pharmacy/Electronic%20referral%20from%20hospital%20to%20community%20pharmacy%20NWC%20AHSN%20report.pdf>

2.16 To monitor progress a regional medicines optimisation database is proposed, based on [NHS England's medicines optimisation dashboard](#),²⁸ to identify outcome measurements. This will largely bring together existing data related to medicines use from different sources across the region to monitor trends, enable benchmarking and help drive quality improvements using baselines established in recent years from, for example, health surveys. Categories of outcome measurements will include:

- patient/client satisfaction;
- medicines safety incident reporting;
- cost effective use of medicines;
- impact on acute health services; and
- achievement of expected therapeutic outcomes.

Table 4: Examples of Outcome Measurements

Outcome Measure	Examples of Indicators	Source for baseline data
Patient/client satisfaction	<ul style="list-style-type: none"> • On admission to hospital did a member of pharmacy staff discuss/ check what medicines you were currently taking? 	<ul style="list-style-type: none"> • Northern Ireland Inpatient Survey 2014²⁹
	<ul style="list-style-type: none"> • Percentage of people prescribed medicines in the previous 12 months involved as much as they wanted to be in decisions about prescribed medicines 	<ul style="list-style-type: none"> • Northern Ireland Health Survey 2012/13 & 2014/15³⁰
Medicines safety incident reporting	<ul style="list-style-type: none"> • Levels of reported medication incidents and yellow card reporting 	<ul style="list-style-type: none"> • Northern Ireland Medicines Governance network³¹ • Medicines and Healthcare Products Regulatory Agency (MHRA)³²
Cost effective use of medicines	<ul style="list-style-type: none"> • Percentage compliance with the Northern Ireland Medicines Formulary and generic dispensing rates 	<ul style="list-style-type: none"> • DHSSPS Commissioning Plan Direction 2015/16³³

28 <https://www.england.nhs.uk/ourwork/pe/mo-dash/>

29 <https://www.dhsspsni.gov.uk/sites/default/files/publications/dhssps/inpatient-patient-experience-survey-2014.pdf>

30 <https://www.dhsspsni.gov.uk/articles/health-survey-northern-ireland#toc-0>

31 <http://www.medicinesgovernance.hscni.net>

32 <https://www.gov.uk/government/organisations/medicines-and-healthcare-products-regulatory-agency>

33 <https://www.dhsspsni.gov.uk/publications/ministerial-priorities>

Outcome Measure	Examples of Indicators	Source for baseline data
Impact on acute health services	<ul style="list-style-type: none"> • Number and proportion of unplanned admissions to hospital for medicines related factors and non-adherence 	<ul style="list-style-type: none"> • DHSSPS Commissioning Plan Direction 2015/16
Achievement of expected therapeutic outcomes	<ul style="list-style-type: none"> • Percentage underlying achievement for Quality and Outcomes Framework (QOF) clinical indicators 	<ul style="list-style-type: none"> • QOF ³⁴

2.17 The Northern Ireland Medicines Optimisation Quality Framework is a 'living document' with examples of current best practice medicines optimisation in each of the four settings in Tables 5 to 8. This will provide a necessary short term focus on improving standards and reducing variance and provide a firm foundation on which to build the evidence base and develop services in all settings.

The Medicines Optimisation Model

What patients can expect when medicines are included in their treatment

Tables 5-8 below provide a summary of what patients can expect as routine practice with regards to medicines optimisation in different settings – Hospital, General Practice, Community Pharmacy and Social Care. The activities described are generic and can be applied across different areas of practice in each setting.

34 <https://www.dhsspsni.gov.uk/topics/dhssps-statistics-and-research/quality-outcomes-framework-qof>

Table 5: What you should expect when you are admitted to hospital as routine practice

Hospital

On Admission

- Patients bring their medicines to hospital so that they can be checked and used where possible.
- Within 24 hours of admission or sooner if clinically necessary, patients have their medicines reconciled by a trained and competent healthcare professional, ideally by a pharmacist. Medicines reconciliation³⁵ involves collecting information about current medicines, checking for omissions, duplications and other discrepancies and then documenting and communicating any changes. Patients, family members or carers should be involved in this process.
- Within 24 hours of admission, a clinical management plan is developed which includes discharge planning to help prevent delays on discharge.
- If patients move from one ward to another within a hospital, medicines reconciliation may need to occur again.

Following Medical Assessment/Accurate Diagnosis

- Patients are involved in decisions about their current and any new medicines, their needs, preferences and values taken into account and receive appropriate, tailored information about new medicines and the expected health outcomes.
- Patients have the opportunity to speak to a healthcare professional and ask questions about their medicines.
- During the inpatient stay, prescription charts are monitored by a pharmacist and reviewed in conjunction with medical notes and relevant medical laboratory results.
- Patient responses to medication therapy are monitored and best practices relating to 'high risk medicines' are followed.

Administration of medicines

- On some wards patients may be able to administer their own medicines. However, if this is not possible medicines are administered on time following a check that the direction to administer is appropriate and other related factors are taken into consideration.

³⁵ Medicines reconciliation, as defined by the Institute for Healthcare Improvement, is the process of identifying an accurate list of a person's current medicines and comparing them with the current list in use, recognising any discrepancies, and documenting any changes, thereby resulting in a complete list of medicines, accurately communicated. The term 'medicines' also includes over the counter or complementary medicines, and any discrepancies should be resolved. The medicines reconciliation process will vary depending on the care setting that the person has just moved into – for example, from primary care into hospital, or from hospital to a care home.

On discharge

- Prior to discharge the medicines reconciliation process is repeated.
- Patients receive an appropriate supply of their prescribed medicines which may be a combination of inpatient and discharge medicines dispensed as a single supply labelled for discharge. They are provided with accurate, up-to date information about their ongoing treatment where necessary.
- Patients are educated to ensure that they can use their medicines and devices for example inhalers appropriately.
- Patients know who to contact if they have a query about their medicines after discharge.
- Accurate and up-to date information about medicines is shared with healthcare professionals and communicated in the most effective and secure way such as electronically, ideally within 24 hours of discharge.
- Following discharge from hospital, patients are followed up to ensure that they are completely clear about their medicine regimens.

Other Hospital/Trust Services

- Patients attending outpatient clinics should expect:
 - to be involved in decisions about their medicines with their needs, preferences and values taken into account;
 - their response to medicines to be reviewed;
 - to have the opportunity to speak to a healthcare professional and ask questions about their medicines; and
 - to receive appropriate, tailored information about new medicines and the expected health outcomes.
- Patients in Intermediate Care settings (i.e. step up/step down beds) should have the same quality of care as in hospital.
- Patients receiving specialist outreach services and other services at the interface should expect:
 - links to be established between specialist secondary care clinical teams and primary care;
 - to be followed up in primary care; and
 - to have clinical medication reviews carried out.
- Patients in nursing, residential and children's homes (see table 7)

Table 6: What you should expect from general practice as routine practice

General Practice

- Patients registering with the practice for the first time have a medicines reconciliation check.
- During consultations, patients are involved in decisions about their current and any new medicines, their needs, preferences and values taken into account and receive appropriate, tailored information about new medicines and the expected health outcomes.
- Patients taking multiple medicines or taking 'high risk medicines' are identified and, where appropriate, receive additional information and advice to help take their medicines safely and effectively.
- Patients on repeat medications have checks carried out before issue of prescriptions to reduce the risk of waste.
- All patients on repeat medication have an annual clinical medication review with a GP or pharmacist. (This may be more frequent depending on the individual's care plan or type of medication).
- Patient responses to medication therapy are monitored. Medicines that are not beneficial and not evidence based are not continued.
- Patients with problems taking their medicines as prescribed (non-adherent) are referred for an adherence assessment.
- Patients are involved in decisions about their medicines and are encouraged to ask questions about their treatment and to be open about stopping medication.
- Patients discharged from hospital/other care setting have their medicines reconciled by a trained and competent healthcare professional as soon as possible, before a prescription or new supply of medicines is issued and within one week of the GP practice receiving the information. Patients, family members or carers should be involved in this process and any changes documented.
- Prescribers have up to date information to support clinically appropriate and safe prescribing.
- Prescribers have access to a pharmacist for information and advice about polypharmacy patients taking multiple medicines.
- Practices provide information about prescribed medicines to hospitals and other appropriately authorised health and social care professionals to assist medicines safety during transitions of care.

Table 7: What you should expect from your community pharmacy as routine practice

Community Pharmacy

- On presentation of a prescription the pharmacist will carry out a clinical check of the prescription using the patient's medication record before it is dispensed. This will inform the level of information and advice that is needed for the patient to take their medicines safely and effectively.
- High quality medicines are dispensed safely.
- Patients receive appropriate information and advice with the supply of medicines, particularly if a new medicine or a 'high risk medicine' is supplied.
- If the presentation of a repeat medicine changes, the patient is advised of this change and reassured of continued efficacy.
- Patients are offered a medicines use review after a significant change in their medication. For example, following discharge from hospital or after starting a new treatment regimen.
- Patients having problems taking their medicines as prescribed have their adherence needs assessed and appropriate support provided.
- Patients are asked if they need all their repeat medicines before they are supplied to reduce the risk of waste.
- Pharmacists work closely with other health and social care professionals to ensure patients are on the most appropriate medication and have contact with pharmacists working in local GP practices and hospitals.
- To support safe transitions, pharmacies provide information about medicines supplies to the pharmacist or pharmacy technician conducting a medicines reconciliation check after admission to hospital or to appropriately authorised health and social care professionals in a nursing or residential home.
- On discharge from hospital, community pharmacy receives information on the patient's current medication and medication changes to support safe transfer.
- Pharmacies may provide other services such as clinical medication reviews and monitor health outcomes from medicines to support medicines optimisation.

Table 8: What you should expect from social care as routine practice

Nursing homes

- When individuals first move into a nursing home and at each transition of care thereafter their medicines are checked with their GP Practice and Community Pharmacy.
- Adequate supplies of medicines are always available and prescription ordering systems in homes are carefully managed and monitored to avoid over-ordering and waste.
- Individuals with specific medication needs such as Parkinson's Disease or Diabetes or those taking multiple or 'high risk medicines' are identified and receive the appropriate care in line with best practice.
- Individuals who take their own medicines are monitored to ensure they are taking them as prescribed.
- Medicines are administered on time following a check that the direction to administer is appropriate.
- Individuals taking repeat medication have an annual clinical medication review; the frequency of the review may vary depending on the care plan.
- Staff in nursing homes have contact with pharmacists in the community to assist with queries about medication.

Residential homes

- When individuals first move into a residential home and at each transition of care thereafter their medicines are checked with their GP Practice and Community Pharmacy.
- Adequate supplies of medicines are always available and prescription ordering systems in homes are carefully managed and monitored to avoid over-ordering and waste.
- Residential care home staff who manage medicines are trained and competent.
- Residents self-administer their own medicines where the risks have been assessed and the competence of the resident to self-administer is confirmed. Any changes to the risk assessment are recorded and the arrangements for self-administering medicines are kept under review.
- Residential care home staff receive training on 'High Risk Medicines' and have easy access to information about all medicines.
- Staff have contact with pharmacists in the community to assist with queries about medication.

Children's homes

- When a child/young person first moves into a children's home and at each transition of care thereafter their medicines are checked with their GP Practice and Community Pharmacy.
- Adequate supplies of medicines are always available and prescription ordering systems in homes are carefully managed and monitored to avoid over-ordering and waste.
- The management of medicines is undertaken by trained and competent staff and systems are in place to review staff competency.
- Robust systems are in place for the management of self-administered medicines.
- Prior written consent is obtained from a person holding parental responsibility for each child or young person for the administration of any prescribed or non-prescribed medicine.
- Staff receive training on 'High Risk Medicines' and have easy access to information about all medicines.
- Staff have contact with pharmacists in the community to assist with queries about medication.

Domiciliary care

- Nurses and care workers have clearly defined roles in helping with medicines taking.
- Administration of, or assistance with, medication is facilitated when requested in situations where an individual is unable to self-administer.
- Administration or assistance with medication is detailed in a care plan and forms part of a risk assessment.
- Policies and procedures identify the parameters and circumstances for care workers administering or assisting with medication. They identify the limits and tasks that may not be undertaken without additional training.
- Care workers who administer medicines are trained and competent. A record is kept of all medicines management training completed by care workers and retained for inspection.
- When necessary, training in specific techniques (e.g. the administration of eye/ear drops or the application of prescribed creams/lotions) is provided for named care workers by a qualified healthcare professional.

- The care worker documents, on each occasion, the administration or assistance with medication.
- Care workers involved in the management of an individual's medication agree the arrangements for the safe storage within the individual's home. Appropriate information is available about the individual's current medication and staff are aware of any changes following a transition of care, such as discharge from hospital.
- Training on 'High Risk Medicines' is provided and staff have easy access to information about all medicines.
- Staff have contact with pharmacists in the community to assist with queries about medication.
- If an individual is having difficulties in managing their medicines, staff can refer them to the community pharmacist for assistance.

SECTION 3

Quality Standards for Medicines Optimisation

Quality Domain	Medicines Optimisation Standards
Patient/Client Focus Patients are involved in decisions about their treatment with medicines.	1. Safer Prescribing with Patient Involvement
	2. Better Information about Medicines
	3. Supporting Adherence and Independence
Safety Preventing and minimising harm related to medicines use.	4. Safer Transitions of Care
	5. Risk Stratification of Medicines
	6. Safety/Reporting and Learning Culture
Effectiveness Right patient, right medicine, right time, right outcome, right cost.	7. Access to Medicines you Need
	8. Clinical and Cost Effective Use of Medicines and Reduced Waste
	9. Clinical Medication Review
	10. Administration

- 3.1 In support of the Regional Medicines Optimisation Model new minimum quality standards will drive consistency and bring about a common understanding about what service providers are expected to provide and what patients can expect to receive when medicines are included as part of their treatment.
- 3.2 The ten standards address the priority issues for medicines optimisation in Northern Ireland within the three overarching quality domains of safety, effectiveness and patient/client focus and are compatible with the draft NICE Quality Standard on Medicines Optimisation³⁶.
- 3.3 The standards support delivery of best practice which should be developed and implemented in partnership with patients on an ongoing basis, actively seeking their views and listening to their experiences. For example via the Public Health Agency's [10,000 Voices](#)³⁷ initiative, involving patients in hospital and learning from their experience through projects like [ThinkSAFE](#)³⁸ and through regular health surveys which can be useful in determining behaviours and attitudes.

36 A NICE Quality Standard for Medicines Optimisation is expected in March 2016. NICE quality standards may be used to inform best practice in Northern Ireland but are not currently formally endorsed by DHSSPS or mandatory within the HSC.

37 <http://www.publichealth.hscni.net/publications/10000-voices-improving-patient-experience>

38 <http://www.thinksafe.care/>

STANDARDS

Standard 1 - Safer Prescribing with Patient Involvement

Prescribing is carried out in a manner which promotes safety and optimal health outcomes, with patients involved in decisions about their treatment.

Standard 2 – Better Information about Medicines

Patients/carers receive the information they need to take their medicines safely and effectively.

Standard 3 – Supporting Adherence and Independence

People are helped to remain independent and self manage their medicines where possible but receive support with adherence when needed.

Standard 4 – Safer Transitions of Care

Checks occur at each transition of care to ensure that the transfer of medicines and medicines information between patients, carers and health and social care workers is safe, accurate and timely.

Standard 5 – Risk Stratification of Medicines

Patients who may be at risk because of the medicines that they use receive the appropriate help to take their medicines safely.

Standard 6 – Safety/Reporting and Learning Culture

Organisations promote an open and transparent culture with evidence of processes for the reporting, prevention, detection, communication and cascade of learning from medication incidents and adverse drug reactions.

Standard 7 – Access to Medicines you Need

Patients have appropriate, equitable and timely access to quality assured, evidence-based and cost-effective medicines.

Standard 8 - Clinical and Cost Effective Use of Medicines and Reduced Waste

Within organisations a culture exists promoting a shared responsibility for the appropriate, clinical and cost effective use of medicines supported by systems for avoiding unnecessary waste.

Standard 9 – Clinical Medication Review

Clinical medication reviews are carried out with the patient and occur on a regular basis, at least annually.

Standard 10 – Administration

Following an initial check that the direction to administer a medicine is appropriate, patients who have their medicines administered receive them on time and as prescribed.

Quality Theme – Patient/Client Focus

Standard 1 - Safer Prescribing with Patient Involvement

Prescribing is carried out in a manner which promotes safety and optimal health outcomes, with patients involved in decisions about their treatment.

Why is the standard needed?

UK studies have highlighted the prevalence of prescribing errors in primary and secondary care showing that medication errors are common and are associated with considerable risk of potentially avoidable patient harm^{39 40}. Studies have also shown that the prevalence of error and potentially inappropriate prescribing are greater for people taking multiple medicines (polypharmacy); generally older people and those living in residential and nursing homes^{41 42}. A range of safer prescribing initiatives are in place to address these issues and a number of tools are available and in development for prescribing support. For example, the pharmacy-led technology intervention (PINCER)⁴³ has been demonstrated as an effective method for reducing the range of medication errors in general practice. In secondary care, computerised prescriber order entry and decision support have also been shown to improve safety⁴⁴.

Modern prescribing practice recognises the importance of involving patients in decisions about their treatment and medication. In this area prescribers are guided by the 2009 NICE Clinical Guideline 76, '*Involving patients in decisions about prescribed medicines and supporting adherence*' which recommends improving communication and increasing patient involvement in decisions about prescribed medicines; a better understanding of the patient's perspective and the provision of more information for patients⁴⁵. This guideline now overlaps with the NICE Guideline NG5 Medicines optimisation. Patients having problems because of

39 Investigating the prevalence and cause of prescribing errors in general practice

http://www.gmc-uk.org/investigating_the_prevalence_and_causes_of_prescribing_errors_in_general_practice_The_PRACTiCe_study_Reoprt_May_2012_48605085.pdf.

40 Dornan et al. An in depth investigation into causes of prescribing errors by foundation trainees in relation to their medical education. EQIP Study. 2009 A report to the GMC

41 Bradley et al. Potentially Inappropriate Prescribing and cost outcomes for older people: a cross-sectional study using the Northern Ireland Enhanced Prescribing Database. Eur J Clin Pharmacol, 2012

42 Allred et al. Care homes' use of medicines study: prevalence, causes and potential harm of medication errors in care homes for older people. Quality and Safety in Health Care. 2009

43 Avery et al: A pharmacist-led information technology intervention for medication errors (PINCER): a multicentre, cluster randomised, controlled trial and cost-effectiveness analysis. Lancet 2012

44 Bates D W. Using information technology to reduce rates of medication errors in hospitals. BMJ 2000 Mar 18; 320(7237): 788-791

45 <https://www.nice.org.uk/guidance/cg76>

language barriers need the support of advocates and language formats that they understand to ensure they are involved in decision making. Health and social care professionals who don't have English as their first language may also need support to ensure they have the necessary communication skills.

Doctors also comply with the GMC Good Practice in Prescribing Medicines and Devices 2013 which provides comprehensive advice on the prescribing of medicines to serve the patient's needs with agreement for the treatment proposed. In addition, the Service Frameworks for older people, mental health, learning disability and children all include standards for patient choice and shared decision making. However, time pressures for doctors may make this difficult to achieve and support from other healthcare professionals in supporting patients in decision making is needed.

Provider	What best practice should be delivered	Gaps in delivery of best practice
Hospital	<ul style="list-style-type: none"> • Patients are involved in decisions about their treatment. • To support clinically appropriate and safe prescribing, prescribers have access to end to end paperless prescribing and administration systems. 	<ul style="list-style-type: none"> • Sufficient time to enable an informed discussion with the patient/carer can be an issue. • An ePrescribing & Medicines Administration (EPMA) system should be developed.
General Practice	<ul style="list-style-type: none"> • Patients are involved in decisions about their treatment. • Prescribers have access to pharmaceutical advice and up to date information to support clinically appropriate and safe prescribing. 	<ul style="list-style-type: none"> • Routine GP consultation times may be insufficient for some patients. • Pharmacists and electronic prescribing support systems such as PINCER are not available in all GP practices.
Community pharmacy	<ul style="list-style-type: none"> • Increase in number of pharmacists trained as Independent Prescribers, built on a strong clinical foundation and working in Community Pharmacy settings. • Access to Electronic Care Record (ECR). 	<ul style="list-style-type: none"> • Low numbers of Pharmacist Independent Prescribers working in community pharmacies. • No access currently to ECRs.
Patients	<ul style="list-style-type: none"> • Patients are involved in decisions about their prescribed medicines. 	<ul style="list-style-type: none"> • Patients do not see themselves as equal partners in decision making.

Actions needed to address the gaps

- In secondary care an ePrescribing & Medicines Administration (EPMA) system and the computerisation of records and processes should be introduced, linked to general practice and community pharmacy (see standard 10).
- GP practices should have pharmacists available to advise on complex medicines and polypharmacy, to conduct clinical medication reviews and to help patients with information and advice to take their medicines safely and effectively.
- In GP practices the role of technology enabled screening tools and clinical decision support systems during prescribing for optimising medicines selection and reducing medication errors should be considered. See NICE Guideline NG5 recommendation 1.7, clinical decision support.
- The Northern Ireland Formulary should be integrated within GP and community pharmacy systems and an EPMA system.
- Greater awareness of the patient's role in decision making should be promoted.
- The use of patient decision aids in consultations involving medicines should be explored. See NICE NG5 recommendation 1.6, patient decision aids.
- Consideration should be given to how patients with low health literacy, where there are language barriers and those patients with mental health incapacity will be more readily included in their treatment decisions where possible.
- Community pharmacists should develop clinically and train as independent prescribers.
- Community pharmacists should have access to ECRs.
- The hybrid independent prescribing model should be expanded where doctors diagnose and routine prescribing is then carried out by non-medical prescribers.
- There should be a greater multi-disciplinary approach to prescribing in the most appropriate setting for the patient to ensure medicines use is optimised.

Standard 2 – Better Information about Medicines

Patients/carers receive the information they need to take their medicines safely and effectively.

Why is the standard needed?

Ten days after starting a new medicine, 61% of patients feel they are lacking information and only 16% of patients who are prescribed a new medicine are taking it as prescribed, experiencing no problems and receiving as much information as they believe they need⁴⁶. Good quality information is essential for greater patient involvement and shared clinical decision making and sufficient high quality information alongside good professional interaction is key to helping clinical decision making⁴⁷. In December 2009 NICE was certified as a quality provider of health and social care information by the [Information Standard](#)⁴⁸ - a certification scheme for health and social care information aimed at the public. When NICE guidelines are being developed the principles of the Information Standard are followed to ensure key messages of the guideline are summarised in everyday language for users of health and care services, carers and the public. The regional public health strategy [Making Life Better](#) states that we need to empower people to make informed decisions about their health by improving health literacy which includes providing appropriate and accessible health information (making greater use of modern communication technology) and advice to all, which is evidence informed and tailored to meet specific needs⁴⁹.

Information needs to be accessible to all and communicated effectively at a level that will help patients to manage their condition effectively as opposed to just providing information. Limited health literacy capabilities have implications regarding medicines use and not having English as a first language can also impact significantly on the ability to assimilate and use information related to medicines.

The timing and method of communicating information to enable patients to understand their medicines needs to be considered and the medicines optimisation model allows clarification of the roles of health and social care professionals at particular points in the patient journey.

46 Barber et al. Patients' problems with new medication for chronic conditions. *Quality and safety in healthcare* 2004.

47 Coulter et al. Assessing the quality of information to support people in making decisions about their health and healthcare. Picker Institute, 2006.

48 <https://www.england.nhs.uk/tis/>

49 <https://www.dhsspsni.gov.uk/articles/making-life-better-strategic-framework-public-health>

Provider	What best practice should be delivered	Gaps in delivery of best practice
Hospital	<ul style="list-style-type: none"> • Patients receive appropriate, tailored, reliable information about their medicines and support during pre admission clinics and pre discharge counseling. • Patients on specialist medicines have access to a healthcare professional for appropriate advice and tailored, reliable information and support. 	<ul style="list-style-type: none"> • Sufficient time to enable healthcare professionals provide patients with appropriate, tailored, reliable information and support can be an issue • There is no regionally agreed support system for patients post discharge.
General Practice	<ul style="list-style-type: none"> • Patients receive appropriate, tailored, reliable information and support about medicines when first prescribed and during clinical medication reviews. • Better integration of existing services for example GP referral to Community Pharmacy for medicines use reviews (MURs)/managing your medicines service 	<ul style="list-style-type: none"> • GP consultation times may not be sufficient to provide appropriate, tailored, reliable information and support about medicines required by the patient.
Community pharmacy	<ul style="list-style-type: none"> • Patients receive appropriate, tailored, reliable advice, information and support when medicines are supplied. • MURs are provided to improve patient knowledge, adherence and use of their medicines. • It is a legal requirement that all medicines are supplied with a Patient Information Leaflet (PIL) provided by the pharmaceutical manufacturer. 	<ul style="list-style-type: none"> • The provision of appropriate, tailored advice, information and support with medicines supplies is inconsistent. • MURs available in community pharmacies while offered by over 90% of community pharmacies, are currently capped in number and limited by patient condition. • The content of the PIL can be both difficult to read and comprehend and supplies with split packs can be problematic.
Social Care	<ul style="list-style-type: none"> • Nursing and social care staff have access to appropriate up to date information sources for medicines. 	<ul style="list-style-type: none"> • Access to accessible and appropriate up to date information about medicines is limited especially for domiciliary care workers.

Provider	What best practice should be delivered	Gaps in delivery of best practice
Patients	<ul style="list-style-type: none"> Patients are aware of where to access the recommended, reliable sources of information on medicines. Patients have access to information about medicines via the patient zone on the Northern Ireland Formulary website, a patient portal on the NIDirect website and other websites, for example NHS choices. Patients with mental illness have access to information about their medicines via the Choice and Medication website. Patient helpline available for advice and information. 	<ul style="list-style-type: none"> Patient awareness of recommended, reliable sources of information is low. There isn't a regional patient helpline however a helpline pilot is underway in BHSCT and WHSCT.

Actions needed to address the gaps

- A regional system should be agreed to support patients with their medicines after discharge from hospital.
- In GP practices, pharmacists should be available so that patients can be referred to them for appropriate, tailored, reliable information, advice and support to help them take their medicines safely and effectively.
- Community pharmacies should follow a Standard Operating Procedure (SOP) for the risk stratified provision of appropriate support, information and advice with supply of medicines. Information sources for patients should be promoted [patient portal].
- Increased use of technology to direct patients to information resources.
- If the pilot demonstrates benefits a regional patient helpline should be available for advice and information with appropriate signposting to existing national help lines.
- There should be increased availability of the current MUR service in community pharmacy and it should be developed further to include other conditions in particular for those patients prescribed new medications or recently discharged from hospital.
- Health and social care professionals should be trained on how to communicate information effectively to patients.
- Any information provided on internet sites for patients should be in a style accredited by the [Plain English Campaign](#)⁵⁰ or the Information Standard.

50 <http://www.plainenglish.co.uk/>

Standard 3 – Supporting Adherence and Independence

People are helped to remain independent and self manage their medicines where possible but receive support with adherence when needed.

Why is the standard needed?

UK evidence shows that 30-50% of long term conditions sufferers do not take their medicines as prescribed⁵¹. Consequences of non-adherence include poorer than expected clinical outcomes; reduced quality of life; deterioration of health and unplanned admissions to hospital. In the UK the NHS costs of hospital admissions resulting from people not taking medicines as recommended were estimated at £36-196 m in 2006-7⁵². A Cochrane review 'interventions for enhancing medication adherence' concluded that improving medicines-taking may have a far greater impact on clinical outcomes than improvements in treatments⁵³.

It is important that people are helped to remain independent and self-manage their medicines for as long as they are able, with the confidence that they will be supported if the time comes when they need more help. Self management should provide people with the knowledge and skills they need to manage their own condition more confidently and to make daily decisions which can maintain or enhance their health and well-being as well as their clinical, emotional and social outcomes⁵⁴. The King's fund paper, 'supporting people to manage their health – an introduction to patient activation describes the patient activation measure (PAM) which measures an individual's knowledge, skill and confidence for self-management. It is stated that patient activation is a better predictor of health outcomes than known socio-demographic factors such as ethnicity and age⁵⁵. Good communication and effective systems can help support people, particularly as they age, to stay in control of ordering, collecting and taking their prescribed medicines.

51 Horne R, Weinman J, Barber N, Elliott R, Morgan M. Concordance, adherence and compliance in medicine-taking. Report for the National Co-ordinating Centre for NHS Service Delivery and Organisation R & D. 2005.

52 NICE Costing Statement: Medicines Adherence: involving patients in decisions about prescribed medicines

53 Cochrane review: Interventions for enhancing medication adherence, 2008

54 DHSSPS Living with Long Term Conditions Strategy, 2012

55 Supporting People to Manage Their Health – An Introduction to Patient Activation. The King's Fund, 2014

Provider	What best practice should be delivered	Gaps in delivery of best practice
Hospital	<ul style="list-style-type: none"> On admission to hospital, patients with sub-optimal adherence are identified through the NI Single Assessment Tool (NISAT) and/or IMM Medicines Reconciliation. Their needs are assessed and appropriate post-discharge support is arranged prior to discharge. Improved clinical coding of the incidence of unplanned admissions to hospital associated with non-concordance. 	<ul style="list-style-type: none"> There is no common approach to using NISAT, identifying and assessing non-adherence and to the provision of solutions or support at discharge. The IMM service is currently only available for 50% of beds. The clinical coding of medicines related admissions including non-concordance is under reported.
General Practice	<ul style="list-style-type: none"> Patients who are experiencing problems adhering to their medicines are identified and referred for assessment. 	<ul style="list-style-type: none"> There is no common regional approach to identifying and assessing non-adherence and to the provision of solutions.
Community pharmacy	<ul style="list-style-type: none"> Patients with sub-optimal adherence are identified through the targeted medication use review (MUR) service which is offered by over 90% of community pharmacies and the Manage Your Medicines Service. Adjustments are made to medicines packs and adherence aids provided to assist patients to take their medicines more effectively. On the request of GPs community pharmacies can supply medicines weekly for high risk patients when it is essential to protect the patient and prevent life-threatening non-compliance. 	<ul style="list-style-type: none"> The targeted MUR Service is limited to patients with respiratory disease and/or diabetes and MURs are currently capped in number. The Manage Your Medicines Service has low uptake. There is no common regional approach to identifying and assessing non-adherence and to the provision of solutions. However a Medicines Adherence Support Service (MASS) pilot has been carried out and is currently being evaluated.

Provider	What best practice should be delivered	Gaps in delivery of best practice
Social Care	<ul style="list-style-type: none"> Patients should have the necessary support to remain independent and manage their medicines for as long as possible without the need for interventions such as Monitored Dosage Systems (MDS). 	<ul style="list-style-type: none"> Although healthcare professionals undertake many specialist clinics and invest significantly in supporting patients in medicine adherence and independence including for example inhaler techniques and discussions regarding adverse drug reactions (ADRs) there is still a heavy reliance on a one size fits all approach through MDS.
Patients	<ul style="list-style-type: none"> Patients have access to a wide range of patient education/self management and training programmes provided within the HSC and by voluntary and community organisations to help provide the skills and tools they need to self-care/manage for example the Pain Toolkit⁵⁶ and Beating the Blues⁵⁷ Patients have self-management plans to support self management of their chronic or long term condition using medicines 	<ul style="list-style-type: none"> There is low awareness of the resources available. There is no regional approach to self-management plans to empower patients to be more involved in managing their chronic or long term condition(s).
Other	<ul style="list-style-type: none"> Patients have access to tele-monitoring services which enable them to monitor e.g. BP at home, avoiding visits to GP or A&E with their readings being monitored remotely and help available if required. 	<ul style="list-style-type: none"> Tele-monitoring services are still under development.

56 <http://www.paintoolkit.org/>57 <http://www.beatingtheblues.co.uk/>

Actions needed to address the gaps

- An integrated regional system for identifying and assessing non-adherence and providing solutions should be agreed with defined roles for secondary care, general practice, community pharmacy services and social care.
- Appropriate clinical pharmacy staffing levels particularly in emergency departments to identify and help manage adherence/adverse drug reaction related admissions.
- Guidance for health and social care professionals on the availability of adherence solutions other than MDS.
- The roles of nurses and care staff in medicines optimisation in domiciliary care settings should be reviewed, clarified and agreed regionally with accredited training and competency based assessments for care staff.
- A range of low and high tech solutions to support adherence should be developed with patient involvement and commissioned.
- The MUR service should be developed for patients with multi-morbidities and polypharmacy.
- Development of new referral mechanisms to community pharmacists for patients who require adherence support..
- A regional system for improving the quality of coding for medicines related factors to identify admissions due to poor adherence should be developed and implemented.
- The availability of self help information relating to medicines and adherence should be promoted.
- Self-management plans should be developed to support patients with a chronic or long term condition(s). See NICE Guideline NG5 recommendation 1.5, self-management plans.

Quality Theme - Safety

Standard 4 – Safer Transitions of Care

Checks occur at each transition of care to ensure that the transfer of medicines and medicines information between patients, carers and health and social care workers is safe, accurate and timely.

Why is the standard needed?

When patients move between care settings it is important that their medicines and information about their medicines transfers safely and accurately with them, to avoid harm. Over half of all hospital medication errors occur at interfaces of care, most commonly on admission to hospital⁵⁸. A report for the General Medical Council in 2012 investigating the prevalence of prescribing errors in general practice highlighted risks at the primary/secondary care interface with significant problems concerning correspondence about medications particularly at the time of hospital discharge⁵⁹. Older people, those taking multiple and higher risk medicines are most at risk. Risks also exist at transitions of care with intermediate care, community settings including residential, nursing or children's homes, transfers between GP practices and entering or leaving prison. The Donaldson Report highlighted the role that pharmacy can offer at transitions between hospital and the community.

Provider	What best practice should be delivered	Gaps in delivery of best practice
Hospital	<ul style="list-style-type: none">Integrated Medicines Management (IMM) Service providing electronic medicines reconciliation at transitions; post-discharge communication with GPs, community pharmacies and other health and social care workers.	<ul style="list-style-type: none">The IMM service is limited to around 50% of hospital beds mainly during weekdays from 8:00am to 6:00 pm and delivery of the service varies between HSC Trusts.Electronic medicines reconciliation is not available in all Trusts.

58 Garfield S, Barber N, Walley P, Willson A, Eliasson L. Quality of medication use in primary care—mapping the problem, working to a solution: a systematic review of the literature. BMC Medicine 2009; 7:50.

59 Investigating the prevalence and cause of prescribing errors in general practice http://www.gmc-uk.org/investigating_the_prevalence_and_causes_of_prescribing_errors_in_general_practice The PRACTiCe study Reoprt_May_2012_48605085.pdf

Provider	What best practice should be delivered	Gaps in delivery of best practice
Hospital contd	<ul style="list-style-type: none"> • Consultant pharmacists led services/Senior Clinical Pharmacists supporting appropriate polypharmacy in older people in intermediate care and nursing/residential homes. • Regional Guidelines for the Supply of 'Take Home Medication' from Northern Ireland Emergency Departments⁶⁰ developed by GAIN • Regional Guidelines for Immediate Discharge Documentation for Patients Being Discharged from Secondary into Primary Care⁶¹ developed by GAIN, 2011 	<ul style="list-style-type: none"> • Consultant Pharmacist-led services for older people are not available in all Trusts.
General Practice	<ul style="list-style-type: none"> • GP practices provide information relating to prescribed medicines to secondary care and to appropriately authorised health and social care professionals looking after patients in care homes⁶² or their own homes. • GPs receive timely notification electronically when their patients are admitted to hospital and receive timely and accurate information about medication changes on discharge. 	<ul style="list-style-type: none"> • There is no agreed approach to the timely provision of this information. • GPs do not always receive timely notification that their patients have been admitted to hospital and post discharge medicines information is not always reconciled to the GP list before a prescription or new supply of medicines are issued and within 1 week of the GP practice receiving the information. • No process currently in place to ensure that GP practices are advised if any of their patients are admitted to prison.

60 http://www.gain-ni.org/images/Uploads/Guidelines/Regional_Guidelines_for_the_supply_of_Take_Home_Medications_from_Northern_Ireland_Emergency_Departments_DEC_2014.pdf

61 <http://www.gain-ni.org/images/Uploads/Guidelines/Immediate-Discharge-secondary-into-primary.pdf>

62 Where reference is made to 'care homes' this means Nursing Home, Residential Home and Children's Homes.

Provider	What best practice should be delivered	Gaps in delivery of best practice
General Practice contd	<ul style="list-style-type: none"> • People discharged from an acute care setting to primary care have their medicines documented in the discharge summary and reconciled in the GP list as soon as is practically possible, before a prescription or new supply of medicines is issued and within 1 week of the GP practice receiving the information. • GP practices are notified if a patient is admitted to prison and on release. Prescribing information from the Prison health GP IT EMIS system should be uploaded onto, and available on, the ECR. 	<ul style="list-style-type: none"> • Prison health can see ECR when prisoner arrives in prison, but cannot add to it, so that no information about prescribing during the prison stay is available to the patient's GP on release of the patient.
Community pharmacy	<ul style="list-style-type: none"> • With patient agreement a nominated community pharmacy receives post discharge medicines information from secondary care electronically. • The Royal Pharmaceutical Society Innovators' Forum has produced a toolkit⁶³ to support safer transition from secondary care to community pharmacy. • Information relating to medicines supplied is provided on request to secondary care and to appropriately authorised health and social care professionals in care homes. • There is a defined role for community pharmacy to support safer transitions at discharge. 	<ul style="list-style-type: none"> • HSC Trusts do not routinely provide information to community pharmacies post discharge. • There is no specific role or service for community pharmacy to support safer transitions for patients at discharge. • The ECR is not yet accessible to community pharmacies.

Provider	What best practice should be delivered	Gaps in delivery of best practice
<p>Social Care</p>	<ul style="list-style-type: none"> • Nursing staff conduct medicines checks for new patients in nursing homes and independent healthcare settings. • Medicines checks are completed by social care workers when children move into a children's home or change day care setting⁶⁴. • Domiciliary care staff are made aware of changes to patients' medicines following transitions of care. • Community nurses and appropriately authorised health and social care staff have visibility of medicines prescribed through access to ECR. 	<ul style="list-style-type: none"> • Community Nurses can contact GPs to discuss a patient's medication on transfers of care however the ECR is not accessible to them. • The ECR is not accessible to appropriately authorised health and social care professionals in care homes. • When patients are discharged from hospital or return home from a care setting there is no system to make domiciliary care workers, who assist them with their medicines aware of changes to their medication.
<p>Patients</p>	<ul style="list-style-type: none"> • Patients bring their current medication and related information with them to hospital and all Trusts have policies for using patients own drugs where possible. • Patients are responsible for knowing what medicines they are currently prescribed and why. • Patients have access wherever possible to ECR and/or a patient passport and are aware of who else has what information, under what circumstances and with what safeguards. 	<ul style="list-style-type: none"> • The patient's role in managing their own medicines and medicines information during transitions of care is not well understood. • Patients are not involved in decisions about their medicines as much as they should be to enable them to take responsibility for knowing what they are prescribed and why. • Patient view allows patients internet access to their own records but access to the ECR is needed to improve co-ordination of care

64 <https://www.dhsspsni.gov.uk/articles/care-standards>

Actions needed to address the gaps

- An Integrated Medicines Management Service with electronic medicines reconciliation should be delivered consistently across HSC Trusts which includes hospital attendance without admission for example at outpatient clinics. See also NICE Guideline NG5 recommendation 1.3, medicines reconciliation.
- A regional consultant pharmacist led service should be commissioned for managing polypharmacy in older people in intermediate care, nursing and residential care settings.
- There should be 'one single source of truth' for example ECR regarding patient's medications which is up to date and can be accessed by patients and shared by all healthcare professionals. See also NICE Guideline NG5 recommendation 1.2, medicines-related communications systems when patients move from one care setting to another.
- A regional protocol for safe transitions in the community should be developed to ensure that medicines checks occur at each transition of care with defined roles for GPs, Community Pharmacists, and health and social care workers in care settings, facilitated by appropriate access to the ECR.
- Electronic communication between hospitals and GPs should be improved to notify when patients are admitted to hospital and provide timely and accurate medicines information on discharge
- A process should be established to ensure that GP practices are advised if a patient is admitted to prison.
- Information about prescribing during a prison stay should be uploaded onto the ECR for the patient's GP to see on release of the patient.
- The patient's role in managing their own medicines and related information during transitions of care should be promoted.

Standard 5 – Risk Stratification of Medicines

Patients who may be at risk because of the medicines that they use receive the appropriate help to take their medicines safely.

Why is the standard needed?

Although the use of all medicines is associated with a level of risk, some medicines are known to carry a greater risk of side effects, adverse events and/or admission to hospital than others. A systematic review of medicines related admissions to hospital found that four groups of drugs account for more than 50% of the drug groups associated with preventable drug-related hospital admissions - antiplatelets, diuretics, NSAIDs and anticoagulants⁶⁵. In addition, a review was carried out of medication incidents reported to the National Reporting and Learning System in England and Wales over a 6 year period. The top 5 medicines for which the clinical outcome was death or severe harm were opioids, antibiotics, warfarin, low molecular weight heparins and insulin⁶⁶. Antimicrobial resistance is among the civil emergencies listed in the Cabinet Office's [National Risk Register of Civil Emergencies](#)⁶⁷. In Northern Ireland, antimicrobial prescribing is high and the prevalence of systemic antimicrobial prescribing in residential homes was found to be relatively high compared with care homes (particularly nursing homes) in other countries⁶⁸. By measuring and addressing performance indicators, the quality of antibiotic prescribing could be improved⁶⁹. The misuse of prescription and over the counter drugs is a significant public health and social issue in Northern Ireland, resulting in negative impacts on physical and mental health, and there have been an increasing number of deaths related to the misuse of a range of prescription drugs. There are particular issues in relation to poly-drug use, especially when combined with alcohol and the use of hypnotics which are associated with increased mortality, even in patients taking fewer than 18 Doses/Year⁷⁰. Other medicines also require caution in use including some specialist 'red and amber list' medicines which may need ongoing patient monitoring. These are initiated by a hospital prescriber and may be delivered directly to a patient's home with associated services (homecare services). Risks of harm are higher for some patient groups, for example, older people, those taking multiple medicines (polypharmacy), and for whom careful adherence is critical for example in the treatment of diabetes, Parkinson's Disease and some mental health conditions. A useful tool, [SPARRA](#)⁷¹ (Scottish Patients at Risk of Readmission and Admission) has been developed by the Information Services Department, Scotland which can be used to predict an individual's risk of being admitted to hospital as an emergency inpatient within the next year.

65 Which drugs cause preventable admissions to hospital? A systematic review. www.ncbi.nlm.nih.gov/pubmed/16803468

66 Cousins DH, Gerrett D, Warner B. A review of medication incidents reported to the National Reporting and Learning System in England and Wales over 6 years. *Br J Clin Pharmacol*; 2012 Oct; 74(4):597-604

67 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/419549/20150331_2015-NRR-WA_Final.pdf

68 McClean et al. Antimicrobial prescribing in residential homes. *J Antimicrob Chemother*, 2012.

69 Maripu H et al. An audit of antimicrobial treatment of lower respiratory and urinary tract infections in a hospital setting. *Eur J Hosp Pharm* 2014;21:139-144

70 Kripke DF et al. Hypnotics' association with mortality or cancer: a matched cohort study. *Pharmacology and therapeutics*, 2012

71 <http://www.isdscotland.org/Health-Topics/Health-and-Social-Community-Care/SPARRA/>

Provider	What best practice should be delivered	Gaps in delivery of best practice
Hospital	<ul style="list-style-type: none"> • There is an agreed approach across Trusts for the management of patients taking high risk or specialist medicines which includes specialist pharmacists with a strategic responsibility for high risk medicines across Trusts. • Clinicians record medicines related issues as causative factors for admission/ re-admission in patients' notes, supporting accurate clinical coding and monitoring trends across Trusts. • A regional electronic antimicrobial surveillance system is in operation which includes resistance tracking, alert functionality and antimicrobial stewardship. • The pharmacy management system (JAC) has high risk medicines flagged 	<ul style="list-style-type: none"> • The interface pharmacist network provides pharmaceutical care for some groups of patients on specialist medicines. This varies depending on service delivery and capacity and would not encompass all medicines on the red amber list. Other specialist pharmacists also play a significant role. There is inconsistency in the level of information provided to patients, carers and social care workers when high risk medicines are prescribed and dispensed. • There is low awareness among medical staff of medicines related issues as causative factors for admission/ re-admission leading to under reporting in patient's notes, incomplete clinical coding and lack of data for monitoring trends. • A system for surveillance and monitoring of antimicrobial resistance and antimicrobial stewardship with alert functionality is not available in all Trusts. • High risk medicines are not highlighted on JAC, the pharmacy management system.

Provider	What best practice should be delivered	Gaps in delivery of best practice
General Practice	<ul style="list-style-type: none"> • Patient safety tools are in use for example PINCER, STOPP/START and the GRASP suite of tools • Proactive case management and targeting care to those most at risk through a primary care enhanced service for risk stratification is included in the work of ICPs. • All patients on high risk medicines receive appropriate help to take their medicines safely. • A regional electronic antimicrobial surveillance system is in operation which includes resistance tracking, alert functionality and antimicrobial stewardship which collects data from GP practices across the region. • Patients' records including the ECR highlight the use of high risk and specialist medicines. • A local enhanced service (LES) for those patients in nursing and residential homes supports those who may have more complex needs supported by pharmacist prescribers and case management nurses in primary care. 	<ul style="list-style-type: none"> • There is no regional multi-disciplinary approach to the management of patients on high risk medicines. • A surveillance system to capture microbiological data in general practice is not available across the region. • Examples of high risk medicines are available on a poster for practices however there is no agreed system for highlighting high risk and specialist medicines on patient records and ECR. • The LES for nursing and residential homes does not currently specify management of patients on high risk medicines.
Community pharmacy	<ul style="list-style-type: none"> • Risk stratified provision of appropriate support, information and advice with supply of medicines. • Community pharmacies have access to up to date information relating to patient medication including high risk and specialist medicines. 	<ul style="list-style-type: none"> • Examples of high risk medicines are available on a poster for community pharmacies however there is no protocol which they use to stratify risk. • Community pharmacies do not currently have access to the ECR.

Provider	What best practice should be delivered	Gaps in delivery of best practice
Social Care	<ul style="list-style-type: none"> • Patients in nursing and residential homes taking high risk medicines are identified and receive appropriate care. • In domiciliary care there is compliance aid support for at risk patients based on a person's physical capability/cognitive ability/mental health difficulties. • The roles of nurses and care staff support patients on high risk medicines in domiciliary care settings agreed regionally with accredited training and competency based assessments for care staff. • Consistent provision to social care workers of information regarding patients on high risk medicines. • A regional electronic antimicrobial surveillance system is in operation which includes resistance tracking, alert functionality and antimicrobial stewardship which collects data from nursing and residential homes across the region. 	<ul style="list-style-type: none"> • The roles of nurses and care staff supporting patients on high risk medicines in domiciliary care settings is unclear. • A surveillance system to capture microbiological data in nursing/residential homes is not available across the region.
Patients	<ul style="list-style-type: none"> • Patients with a greater awareness of high risk medicines and empowered to seek support, information and advice in the use of these medicines. 	<ul style="list-style-type: none"> • There is a lack of knowledge among patients regarding high risk medicines to enable them to manage them appropriately.

Actions needed to address the gaps

- A regional risk stratification tool should be developed and implemented in primary and secondary care which includes outpatients to identify patients who may be at risk because of the medicines they use.
- Patients and carers should be made aware when high risk medicines are prescribed and dispensed and receive the necessary support and information to assist safe and effective use.
- An ePrescribing & Medicines Administration (EPMA) system and JAC in hospitals should highlight when high risk medicines are being used.
- Increased use of patient safety tools for example PINCER, STOPP/START and the GRASP suite of tools.
- The ECR should highlight when high risk and specialist medicines are being used.
- Information to patients and their GPs regarding specialist medicines should be consistently provided.
- A regional plan to improve reporting/clinical coding of the incidence of unplanned admissions to hospital associated with medicines should be developed and implemented.
- GP and community pharmacy computer systems should have high risk and specialist medicines highlighted.
- High risk patients should be prioritised for regular clinical medication reviews (See Standard 9).
- Roles and responsibilities relating to risk stratification and medicines optimisation should be included in ICP patient pathways for at risk patient groups.
- A regional antimicrobial prescribing and surveillance system should be established which includes resistance tracking, an alert functionality and antimicrobial stewardship.
- The roles of nurses and care staff in medicines optimisation in domiciliary care settings should be reviewed, clarified and agreed regionally with accredited training and competency based assessments for care staff.
- For high risk drugs there should be shared care guidelines not only with the GP but also with the patients chosen community pharmacist.

Standard 6 – Safety/Reporting and Learning Culture

Organisations promote an open and transparent culture with evidence of processes for the reporting, prevention, detection, communication and cascade of learning from medication incidents and adverse drug reactions.

Why is the standard needed?

The medicines governance teams in primary and secondary care are well established in promoting medication incident reporting, developing risk management processes, implementing regional best practice policies and risk education. However there is variance in the degree to which medicines incidents are reported across the HSC and reluctance from community pharmacies to report due to current legislative penalties for errors. One of the recommendations of the Donaldson Report was a need to make incident reports really count.

The MHRA has received over 700,000 UK spontaneous adverse drug reactions (ADRs) since the scheme was first started and typically they receive around 25,000 reports per year. In the 5 years prior to June 2013, there have been 2,110 ADR reports reported to MHRA from Northern Ireland. We need to improve our reporting of medicines incidents including ADRs across the HSC and raise public awareness of patient reporting of ADRs.

Provider	What best practice should be delivered	Gaps in delivery of best practice
Hospital	<ul style="list-style-type: none"> All medicines incidents and ADRs are reported via the appropriate mechanisms All near miss information from pharmacist interventions are captured electronically to enable learning. A modified risk assessment tool based on the national quality assurance and fit for purpose and medicines error potential tools is used in the procurement process. However, there is a need for other tools to identify medication safety risks. 	<ul style="list-style-type: none"> The rates of medicines incident reporting and yellow card reporting are low and vary between Trusts, professionals and clinical areas/specialities The Electronic Pharmacist Intervention Clinical System (EPICS) software to capture pharmacist interventions is not in use in all Trusts. Although Datix is used to report adverse incidents (AIs) and serious adverse incidents (SAIs), and can be used to help identify medicines safety risks, there are currently no tools, for example, global trigger tool/ medication safety thermometer tool.

Provider	What best practice should be delivered	Gaps in delivery of best practice
General Practice	<ul style="list-style-type: none"> • A software system is in place to allow the recording of medicines incidents by GPs in their general practice (e.g. Datix) and to analyse medicines incidents. • All ADRs are reported via the yellow card scheme through the GP IT clinical system. • Tools are available to identify medication safety risks. 	<ul style="list-style-type: none"> • The rates of medicines incident reporting are low. • The rates of yellow card reporting are low. • There are currently no approved tools for example global trigger tool/medication safety thermometer tool.
Community pharmacy	<ul style="list-style-type: none"> • A software system is in place to allow the recording of medicines incidents by community pharmacists in their pharmacy practice (e.g. Datix) and to analyse medicines incidents. • Community pharmacists actively report ADRs via the yellow card scheme and can do so through their pharmacy IT system. 	<ul style="list-style-type: none"> • The rates of medicines incident reporting are low. • The rates of yellow card reporting are low.
Social Care	<ul style="list-style-type: none"> • Systems are in place to report ADRs and incident reporting systems for medicines. • Medication incidents are reported from all registered facilities to RQIA. 	<ul style="list-style-type: none"> • The rates of incident and yellow card reporting are low.
Patients	<ul style="list-style-type: none"> • Systems are in place to allow patients to report medication incidents. • Patients report ADRs via the yellow card scheme. 	<ul style="list-style-type: none"> • Patients are not currently encouraged to report medication incidents. • The rates of yellow card reporting are low.

Actions needed to address the gaps

- An open and fair culture to encourage timely reporting of medicines incidents and ADRs should be established across the HSC.
- A regional programme should be launched to increase yellow card reporting by health care professionals and patients with consideration of introducing contractual requirements to support implementation.
- A regional system should be introduced to allow electronic reporting, monitoring and analysis of medicines incidents by GPs, Community Pharmacies and Social Care Workers.
- A regional system should be introduced to identify and review incident data, identify and develop learning and explore new ways of how to deliver learning and share knowledge. See NICE Guideline NG5 recommendation 1.1
- Formal links should be established with other UK countries with respect to medication incident reporting and learning.
- Process reviews along with engineering and technological solutions should be developed which aim to minimise system failures that underpin medication errors.
- The use of Institute for Healthcare Improvement (IHI) methodology and other improvement science tools should be increased to improve medicines safety.
- A Never Event approach should be introduced as recommended in the Donaldson report for medication errors.

Quality Theme – Effectiveness

Standard 7 – Access to Medicines you Need

Patients have appropriate, equitable and timely access to quality assured, evidence-based and cost-effective medicines.

Why is the standard needed?

Improved access to medicines has contributed to an increase in life expectancy, helping people to stay healthy for longer and many previously debilitating or fatal conditions are now prevented or managed, often on a long term basis, through regular medicines use. The population of Northern Ireland uses a high volume of medicines per head of population. Robust systems are in place to ensure that medicines are prescribed to patients across the region in line with evidence and best practices in a cost effective manner. Furthermore, regional and local procurement practices in Trusts ensure the availability of quality assured medicines in hospitals. Equally, community pharmacies comply with professional standards for the sale and supply of medicines in the community and go to great lengths to ensure that patients have access to the medicines they have been prescribed, whether these are one-off prescriptions or ongoing medicines for long-term conditions. However, Northern Ireland is part of a wider UK and global medicines market and shortages can and do arise within the medicines supply chain which are frequently beyond their control. The consistent delivery of safe, high quality and cost effective prescribing and procurement is essential to facilitate continued access to medicines for the population. For new medicines, a regional managed entry process exists which aims to ensure timely and equitable access for patients to those medicines for which there is an evidence base on efficacy and cost-effectiveness. However, there is a perception that there are differences in access across the region and compared to other UK countries particularly in respect to cancer and specialist medicines.

Provider	What best practice should be delivered	Gaps in delivery of best practice
Hospital	<ul style="list-style-type: none"> • Hospital pharmacies ensure timely access to safe, quality assured medicines so as to avoid delays in administration. • All Health and Social Care Professionals are aware of the HSCB Regional Managed Entry⁷² process which supports timely and appropriate access to new medicines for which there is an evidence base on efficacy and cost-effectiveness. • Timely and appropriate access to new medicines for patients for which there is an evidence base on efficacy and cost-effectiveness. • Compliance with regional guidelines for managing medicines shortages in hospitals. • All Individual Funding Request (IFR) applications subject to regionally consistent clinical input and peer review. • Improved support regarding access to unlicensed or off-label medicines in areas of unmet medical need, thus enhancing the landscape for developing, licensing and procuring innovative medicines. 	<ul style="list-style-type: none"> • The funding mechanisms and the process of applying for funding for new, unlicensed and specialist medicines is not well understood. • Unlicensed and off-label medicines are not part of the established regional IFR process. • There is inconsistency across Trusts regarding Non-NICE medicines approval however work is progressing on the implementation of the DHSSPS IFR consultation recommendations.

72 <http://niformulary.hscni.net/ManagedEntry/Pages/default.aspx>

Provider	What best practice should be delivered	Gaps in delivery of best practice
General Practice	<ul style="list-style-type: none"> All Health and Social Care Professionals are aware of the HSCB Regional Managed Entry process which supports timely and appropriate access to new medicines for which there is an evidence base on efficacy and cost-effectiveness.. Compliance with regional guidelines for managing medicines shortages in primary care. 	<ul style="list-style-type: none"> The funding mechanisms for new, unlicensed and specialist medicines is not well understood. There are no regional guidelines for managing medicines shortages in primary care.
Community pharmacy	<ul style="list-style-type: none"> All community pharmacists are aware of the HSCB Regional Managed Entry process which supports timely and appropriate access to new medicines for which there is an evidence base on efficacy and cost-effectiveness. Community pharmacies ensure timely access to safe, quality assured medicines so as to avoid delays in administration However if there are shortages outwith their control, they cannot be held accountable. Compliance with regional guidelines for managing medicines shortages in primary care. All patients have their repeat medicines dispensed on time to avoid clinical consequences. 	<ul style="list-style-type: none"> The funding mechanisms for new, unlicensed and specialist medicines is not well understood. There are no regional guidelines for managing medicines shortages in primary care.
Patients	<ul style="list-style-type: none"> Patients are aware of the HSCB Regional Managed Entry process which supports timely and appropriate access to new medicines for which there is an evidence base on efficacy and cost-effectiveness. Timely and appropriate access to new medicines for patients for which there is an evidence base on efficacy and cost-effectiveness. 	<ul style="list-style-type: none"> There is public perception of variance in the managed entry of new, unlicensed and specialist medicines.

Actions needed to address the gaps

- Regional guidance should be developed to improve public and healthcare professional awareness and understanding of the processes for managed entry and access to new, unlicensed and specialist medicines in Northern Ireland. This should include accessible, accurate and up to date information for the public to view and include a schematic that shows how to access medicines in the HSC.
- Regional guidelines on handling medicines shortages in primary care should be developed. This would include the provision of advice by community pharmacists to prescribers of stock shortages and making recommendations for alternative products. If shortages arise within the medicines supply chain which are outwith the control of community pharmacists, they cannot be held to account.
- The recommendations of the DHSSPS IFR consultation should be implemented.

Standard 8 - Clinical and Cost Effective Use of Medicines and Reduced Waste

Within organisations a culture exists promoting a shared responsibility for the appropriate, clinical and cost effective use of medicines supported by systems for avoiding unnecessary waste.

Why is the standard needed?

Within HSC organisations it is important that systems for the procurement, prescribing, ordering and supply of prescribed medicines provide cost effective use of medicines providing optimal health outcomes, safety and avoiding waste.

A regional focus on evidence based and cost effective prescribing has resulted in significant improvements in the quality of prescribing in recent years with evidence of change in terms of drug costs, volumes and levels of compliance with the Northern Ireland Formulary. Advertising campaigns have sought to raise public awareness of the need to reduce medicines waste by only re-ordering repeat medicines that are needed and highlighting actions for community pharmacies, GP practices and care homes. However, evidence shows that around 11% of UK households have one or more medicines that are no longer being used⁷³ and estimates, based upon a study conducted by the University of York, put the cost of wasted medicines in Northern Ireland at £18m per year⁷⁴. The highest levels of wasted medicines are associated with repeat medicines that are ordered, prescribed, dispensed, collected by the patient/carer but never used and subsequently wasted. Waste in nursing and residential homes is recognised as a particular challenge.

Provider	What best practice should be delivered	Gaps in delivery of best practice
Hospital	<ul style="list-style-type: none">• Prescribing is informed by the Northern Ireland Formulary.• All Trusts have policies promoting the use of patient's own drugs (PODs) where possible on admission to hospital.	<ul style="list-style-type: none">• Prescribing data by clinical indication in secondary care is not available.• There are differences between Trusts in how the process of using PODs is adopted.

73 Woolf, M. Residual medicines: a report on OPCS Omnibus Survey data

74 Evaluation of the Scale, Causes and Costs of Waste Medicines, University of London and York 2010

Provider	What best practice should be delivered	Gaps in delivery of best practice
General Practice	<ul style="list-style-type: none"> • Prescribing is informed by the Northern Ireland Formulary. • HSC Board medicines management advisors, prescribing support pharmacists and practice-based pharmacists support effective prescribing in GP practices. • Repeat prescribing policies and processes aim to restrict over-ordering and reduce errors in ordering. 	<ul style="list-style-type: none"> • The Northern Ireland Formulary is not linked to GP ICT systems. • Not all GP surgeries have prescribing supporting. • The current repeat dispensing service is paper based, inefficient and underused. • Unwanted items previously prescribed may be re-ordered in error.
Community pharmacy	<ul style="list-style-type: none"> • Systems are in place to check that items ordered on repeat prescription are required before supply is made. • Medicines waste returned to pharmacies for disposal is safely handled and levels of waste are monitored. • Pharmacies follow HSC Board guidance relating to ordering and collection of medicines. 	<ul style="list-style-type: none"> • There is no requirement for pharmacies not to dispense prescribed items and unwanted items ordered in error may still be supplied. • The level of waste returned for disposal is not monitored. • Full compliance with the HSC Board guidance relating to ordering and collection of medicines is not assured.
Social Care	<ul style="list-style-type: none"> • Systems are in place to manage the ordering of prescribed medicines to ensure adequate supplies and prevent wastage. The RQIA encourages and promotes good stock control. 	<ul style="list-style-type: none"> • Stock control is an ongoing problem. • Over ordering and waste returned for disposal from nursing and residential homes is not monitored.
Patients	<ul style="list-style-type: none"> • Systems are in place to allow patients to order their medicines when needed and prevent inappropriate ordering. 	<ul style="list-style-type: none"> • Inappropriate ordering (over ordering, ordering unwanted items and under ordering) may still occur.

Provider	What best practice should be delivered	Gaps in delivery of best practice
Other	<ul style="list-style-type: none"> An ongoing regional medicines waste advertising campaign which seeks to influence patient behaviour and prescription ordering processes in GPs, Community Pharmacies and care homes. This should also encourage patients to bring their medicines into hospital with them to avoid unnecessary waste 	

Actions needed to address the gaps

- A regional prescribing database should be available for secondary care with the Dictionary of Medicines and Devices (DM&D) as the dictionary to enable merging with primary care data.
- Prescribers should have access to an electronic Northern Ireland Formulary which is linked to GP ICT systems to inform prescribing.
- Consistent prescribing compliance with the Northern Ireland Formulary should be achieved.
- Levels of waste returned from pharmacies and care homes should be monitored and the impact of interventions on waste reduction measurement.
- Consideration should be given to a role for minimising medicines waste to be included in GP and community pharmacy contracts.
- The repeat dispensing service should be reviewed and re-launched in electronic form.
- To influence patient behaviour regarding medicines waste, the medicines waste advertising campaign should be ongoing.
- New approaches to minimising wasted medicines should be explored including collaboration with the pharmaceutical and technology industry.

Standard 9 – Clinical Medication Review

Clinical medication reviews are carried out with the patient and occur on a regular basis, at least annually.

Why is the standard needed?

The importance of medication reviews is recognised and a number of health policies and service frameworks recommend regular reviews for specific patient groups including: older patients, people with diabetes, respiratory disease and cardiovascular disease.

Medication reviews in this context are clinical reviews conducted with the patient and with full access to patient medication records. They are not medicines reconciliation checks, medicines use reviews (MURs), Manage Your Medicines service reviews or desk top patient medication record checks.

Currently medication reviews may occur at various stages in the patient journey carried out by a range of healthcare professionals with varying levels of clinical autonomy and expertise in medicines. There is a level of inconsistency in approach in terms of what the review involves, the optimal time and frequency for completion and who is best to conduct it.

An increasing challenge for medication reviews is the prevalence of multi-morbidities and polypharmacy as the population ages. Another issue is that patients may have medicines prescribed concomitantly by a number of different doctors and non-medical prescribers involved in their care.

These issues reinforce the need for a robust regional approach to clinical medication reviews.

Provider	What best practice should be delivered	Gaps in delivery of best practice
Hospital	<ul style="list-style-type: none">95% of people admitted to hospital receive a clinical medication review during their stay which is documented.Clinical medication reviews to optimise medicines use in outpatient clinics for example diabetes, anti-coagulant and rheumatology.	<ul style="list-style-type: none">There is inconsistency in clinical medication reviews carried out in secondary care as the IMM service is currently only available for 50% of beds and there is variance in the quality of delivery of the service between Trusts.

Provider	What best practice should be delivered	Gaps in delivery of best practice
General Practice	<ul style="list-style-type: none"> • Within the core GMS contract is an expectation that patients on chronic medication have an annual clinical medication review. The appropriate frequency should be tailored to the individual and their care plan and may need to be carried out more frequently than annually • High risk patients are prioritised for 'regular' medication reviews as agreed in patient's care plans. 	<ul style="list-style-type: none"> • Detailed clinical medication reviews are not being undertaken with patients on a consistent basis. • There is no regionally agreed best practice approach to clinical medication reviews resulting in duplication between reviews offered in secondary care, primary care and community pharmacy.
Community pharmacy	<ul style="list-style-type: none"> • Suitably trained Pharmacist Independent Prescribers (PIPs) with remote access to patient records from general practice have a role in the provision of clinical medication reviews. 	<ul style="list-style-type: none"> • There is no defined role or service for community pharmacy in the provision of clinical medication reviews. • The number of PIPs working in community pharmacy is currently low.
Social Care	<ul style="list-style-type: none"> • Consultant pharmacist led care in intermediate care, nursing and residential homes supporting appropriate polypharmacy through clinical medication reviews. • GP Local Enhanced Service (LES) 2014/15 PIPs conduct clinical medication reviews of registered patients in nursing and residential homes. 	<ul style="list-style-type: none"> • There is currently no agreed regional service available to provide clinical medication reviews for older people in intermediate care, nursing and residential homes settings.
Patients	<ul style="list-style-type: none"> • Patients are aware of what a full clinical medication review involves, when it should be carried out and by whom. • Clinical medication reviews should be carried out in a setting and time convenient to the patient where possible. 	<ul style="list-style-type: none"> • Lack of understanding of what a full clinical medication review involves and when it is required.

Actions needed to address the gaps

- A regional model for clinical medication reviews should be developed which describes what should be included in the review, when it should be conducted and by whom. See NICE Guideline NG5 recommendation 1.4, medication review
- In primary care the frequency of clinical medication reviews for patients should be agreed within individual care plans and the requirement for completion of reviews included in GP contracts.
- In Trusts the availability of the IMM service should be increased and the service delivered to a consistent quality involving a clinical medication review conducted by a pharmacist.
- Within multi-disciplinary teams in primary care, secondary care and as outreach from Trusts, pharmacists should conduct clinical medication reviews and a role should be developed for community pharmacists
- The clinical medication review standard should be included as a generic standard in all service frameworks relating to patients with long term conditions, multi-morbidity and polypharmacy.

Standard 10 – Administration

Following an initial check that the direction to administer a medicine is appropriate, patients who have their medicines administered receive them on time and as prescribed.

Why is the standard needed?

A review of all medication incidents reported to the National Reporting and Learning System (NRLS) and England in Wales between 1st January 2005 and 31st December 2010 was undertaken. Incidents involving medicine administration (50%) and prescribing (18%) were the process steps with the largest number of reports. Omitted and delayed medicine (16%) and wrong dose (15%) represented the largest error categories⁷⁵. A Rapid Response Report from the National Patient Safety Agency on 'Reducing harm from omitted and delayed medicines in hospital' highlighted that medicine doses are often omitted or delayed in hospital for a variety of reasons⁷⁶. This can lead to serious harm or death for some critical conditions, for example patients with sepsis or pulmonary embolism where there is a delay/omission of intravenous medicines⁷⁷. [Parkinson's UK - Get it On Time campaign](#)⁷⁸ outlines the importance of people getting their Parkinson's medication on time, every time in hospitals and care homes. A GAIN audit carried out in 2013 - [The Importance of Timing in Parkinsons Medication](#)⁷⁹ found that 59% of patients did not receive their medication on time during their hospital stay. A study which investigated the prevalence of medication errors in care homes in the UK found that 22.3% of 256 residents were observed to receive an administration error. The commonest administration errors were omissions because the drug was not available, so omissions need to be monitored and ordering, particularly of "as required" medicines, needs to be improved⁸⁰. In a 2011 study of medicine administration errors in older persons in hospital wards in the UK, the number and severity of medication administration errors was found to be higher than previous studies. During 65 medicine rounds 38.4% of doses were administered incorrectly⁸¹. In domiciliary care settings nurses and care workers are involved in activities which range from administration to prompting patients to take their medicines. More older people are being cared for in their own homes often with complex and multiple medicines regimens and there is the need for regional best practices that support role clarification, accredited training and support systems for staff.

75 Cousins DH, Gerrett D, Warner B. A review of medication incidents reported to the National Reporting and Learning System in England and Wales over 6 years. *Br J Clin Pharmacol*; 2012 Oct;74(4):597-604

76 National Patient Safety Agency. Patient Safety Observatory Report 4: Safety in doses; 2007.

77 National Patient Safety Agency. Rapid Response Report, 2010.

78 <http://www.parkinsons.org.uk/content/get-it-time-campaign>

79 http://www.gain-ni.org/images/Uploads/Audit/GAIN_-_FINAL_GIOT_REPORT_-_19_April_2013.pdf

80 Allred DP, Barber N, Carpenter J, Dean-Franklin B, Dickinson R, Garfield S, Jesson B, Lim R, Raynor DK, Savage I, Standage C, Wadsworth P, Woloshynowych M, Zermansky AG. Care homes use of medicines study (CHUMS). Report to the Patient safety (Portfolio, department of Health). 2009.

81 Kelly J and Wright D. Medicine administration errors and their severity in secondary care older persons' ward: a multi-centre observational study *J Clin Nursing*. 2011

Provider	What best practice should be delivered	Gaps in delivery of best practice
Hospital	<ul style="list-style-type: none"> All patients should receive their medicines on time following a check that the direction to administer is appropriate and other related factors taken into consideration for example insulin dose close to meal time and meals are not delayed. Patients self-administer their own medicines, where the risks have been assessed and the competence of the patient to self-administer is confirmed. 'One-stop' dispensing⁸² and the use of patient bedside medicines lockers to improve access and reduce medicines administration errors. The move from a 'trolley-based' system for administering medicines to a 'one-stop' dispensing system using patient's own drugs and custom-designed patient bedside medicine lockers has resulted in safer and faster medicine administration rounds^{83 84}. 	<ul style="list-style-type: none"> Doses of medication are being omitted and delayed as shown in an audit carried out in the five Trusts in Northern Ireland in 2013. 12.7% of doses were omitted and delayed. (NB however work is ongoing to ascertain how many were true omissions/failure to record). Self-administration occurs to varying degrees in Northern Ireland hospitals. One-stop dispensing occurs in varying degrees in Northern Ireland hospitals.

82 'One-stop' dispensing refers to the practice of combining inpatient and discharge dispensing into a single supply labelled for discharge. Patients are encouraged to bring their own medicines into hospital on admission and medicines are assessed by pharmacy as suitable for use or used for the patient during their hospital stay. A 28-day supply is given of any medicines deemed unsuitable for us, when the quantity of a particular medicine is depleted and when new medicines are commenced
<http://www.hospitalpharmacyeurope.com/featured-articles/one-stop-dispensing-and-discharge-prescription-time>

83 Anon. Giving medicines from patient lockers reduces errors. *Pharmaceut J* 2002;268:274

84 Hogg et al. Do patient bedside medicine lockers result in a safer and faster medicine administration round? *Eur J Hosp Pharm*, July 2012 <http://ejhp.bmj.com/content/19/6/525.abstract>

Provider	What best practice should be delivered	Gaps in delivery of best practice
Community Pharmacy	<ul style="list-style-type: none"> • All patients required to take their medicines under supervision are treated in a confidential, non-judgmental manner in a private area within the pharmacy. • Community pharmacists helping to facilitate administration through new systems or additional support provided to care homes. • In domiciliary care community pharmacists supporting self administration of medicines through the provision of a variety of medicines adherence support solutions. 	<ul style="list-style-type: none"> • Patients requiring medicines to be taken under supervision may not always feel that they are treated in a confidential, non-judgemental manner. • There is a limited evidence base for support systems for care homes and domiciliary care and no common regional approach to identifying and assessing non adherence and to the provision of solutions. However Medicines Adherence Support Service (MASS) pilot has been carried out and is currently being evaluated.
Social care	<ul style="list-style-type: none"> • All residents in care homes who have their medicines administered should receive their medicines on time following a check that the direction to administer is appropriate. • Patients self-administer their own medicines, where the risks have been assessed and the competence of the patient to self-administer is confirmed. • Community nursing core services associated with medicines administration of high risk and specialist medicines as well as other medicines such as vaccines in patients own home. • Domiciliary care workers are appropriately trained and supported to contribute to medicines optimisation. 	<ul style="list-style-type: none"> • Evidence of administration errors in care homes due to omissions. • The roles of nurses and domiciliary care workers in medicines optimisation need to be reviewed and clarified.
Patients	<ul style="list-style-type: none"> • All patients living at home with predictable conditions are supported to self-administer their medicines and to remain independent for as long as possible. 	<ul style="list-style-type: none"> • There are limited solutions available for supporting independence with medicines taking.

Actions needed to address the gaps

- In secondary care an ePrescribing & Medicines Administration (EPMA) system and the computerisation of records and processes should be introduced, linked to general practice and community pharmacy (see standard 1).
- An increase in the number of wards in hospital providing a 'one-stop' dispensing service should be considered.
- There should be an appropriate skill mix within clinical settings to ensure safe administration of 'critical' medicines.
- Self-administration schemes should be rolled out in secondary care and intermediate care where the risks have been assessed and the competence of the patient to self-administer is confirmed.
- Community pharmacies providing a substitution treatment service should have a private area where supervised administration can be undertaken which serves to normalise the process for patients.
- Consideration should be given as to how community pharmacists could provide additional support in relation to administration to patients living both in their own home and in a care home environment.
- The roles of nurses and care staff in medicines optimisation in domiciliary care settings should be reviewed, clarified and agreed regionally with accredited training and competency based assessments for care staff.
- There should be a regionally agreed process to support community nursing teams and care staff to administer medicines on time.

Integrated Innovation and Change Programme



Smarter Medicines Better Outcomes

this page is intentionally blank

SECTION 4

Integrated Innovation and Change Programme

Supporting Continuous Improvement and Innovation in Medicines Use

- 4.1 The Quality Standards have identified a number of gaps in medicines management systems which impact on the delivery of the Regional Medicines Optimisation Model. Many of the actions needed to address these gaps require regional systems which may involve an element of whole system change with interdependencies across the HSC.
- 4.2 Traditionally a range of organisations have had active programmes of research and service development relevant to medicines optimisation with funding coming from a variety of sources.
- 4.3 The ultimate success of these programmes is for their outputs to inform practice throughout the HSC through changes to medicines policy or commissioned services. However, this does not always occur and in many instances outputs are not recognised or valued by commissioners and policy makers or practices are not successfully translated across the HSC leaving fragmented or disjointed services. Outputs need to be demonstrably transferrable across the wider HSC and monitored to ensure the programmes continue to be a success following roll-out.
- 4.4 A new strategic approach to pharmaceutical innovation is proposed to support and drive continuous improvement through the development and implementation of best practice in medicines optimisation in Northern Ireland exploiting new funding opportunities whilst using existing funding streams and resources efficiently and following the core values and principles of Personal and Public Involvement (PPI).
- 4.5 This will require a dedicated oversight group to drive the development and implementation of evidence based best practice associated with each medicines quality standard.
- 4.6 The strategic approach has four components:
 - a regional action plan for medicines optimisation;
 - a medicines optimisation innovation centre;
 - a medicines optimisation network; and
 - a regional database to monitor improvement.

Regional Action Plan for Medicines Optimisation

- 4.7 The Regional Action Plan for medicines optimisation will prioritise activities in a regional change programme of research, service development and translation with clear outputs and timelines for developing, testing and implementing solutions.
- 4.8 Methodology to develop the plan will include:
- a baseline assessment of all activities underway or in development across the HSC relating to each quality standard;
 - stratification of the activities to identify those capable of informing regional versus local best practice;
 - agreement with commissioners of the priority and timescales related to the regional activities; and
 - analysis of the regional activities to identify the different actions needed, timeframes and costs as follows:

Table 9: Regional Action Plan Analysis of Activities

Type of Activity	Action needed	Timeframe and costs
Activities involving best practices that are or have the potential to be regionally commissioned through existing services or contractual agreements and performance managed thereafter.	<ul style="list-style-type: none"> • Promote the best practice regionally to all relevant providers and set quality expectations • Amend contractual agreements and/or job descriptions of service providers to include responsibility for delivery • Manage performance 	<ul style="list-style-type: none"> • Immediate to Short term. • No cost.

Type of Activity	Action needed	Timeframe and costs
<p>Activities involving best practices that are available in some but not all areas regionally which need support to scale up and roll out.</p>	<ul style="list-style-type: none"> • Develop a business case for scale up and roll out • Utilise change management principles to implement consistently across HSC • Amend contractual agreements and/or job descriptions to include responsibility for delivery • Manage performance 	<ul style="list-style-type: none"> • Medium term • Costs associated with regional roll out
<p>Activities addressing gaps in best practice which involve the development, feasibility testing and evaluation of new solutions.</p>	<ul style="list-style-type: none"> • Agree a prioritised innovation programme of research and service development to develop and test new solutions • Engage the Medicines Optimisation Innovation Centre to manage the programme • Consider the evidence base and type of solution needed • Test and evaluate the solution within the HSC • Develop a business case for scale up and roll out • Utilise change management principles to implement consistently across HSC • Amend contractual agreements and/or job descriptions to include responsibility for delivery • Manage performance 	<ul style="list-style-type: none"> • Longer term • Costs associated with R&D and pilots for service development.

4.9 Methodology to deliver the plan will include:

- an agreement across HSC organisations to adopt regional best practices;
- a system for the timely translation of best practice across the HSC including support for organisations and staff involved in change, utilising evidence based change methodology;
- a prioritised innovation programme of research and service development to develop and test new solutions;
- an agreed process for involving patients in research and service development in medicines optimisation;
- a training and development plan for staff involved in new medicines optimisation roles; and
- a financial plan outlining revenue and capital investment, invest to save approaches and the utilisation of HSC, UK and EU funding streams and resources to deliver the work plan objectives.

Medicines Optimisation and Innovation Centre

4.10 An element of the regional action plan will involve projects seeking new solutions, to address gaps in best practices for the quality standards, which are developed and tested within the HSC prior to commissioning for scale up and implementation regionally. These projects will be undertaken in collaboration with the Medicines Optimisation and Innovation Centre (MOIC).

4.11 The MOIC centre provides a locus for developing a systematic approach to finding and testing solutions for the HSC with the following functions.

- Project manage an innovation programme of research and service development projects.
- Develop, test and evaluate solutions to pre-commissioning stage.
- Support successful translation into HSC service delivery and commissioning.
- Help projects to access and utilise available funding streams.
- Provide a regional centre of expertise for research and service development in medicines optimisation and post-implementation review of service delivery.
- Build local expertise and competence in developing and translating research into practice.
- Facilitate a continuous cycle of improvement within the HSC in the area of medicines optimisation.

4.12 The centre also has wider benefits combining pharmaceutical and R&D skills with technology and business acumen to:

- provide evidence based solutions for medicines optimisation which could be developed commercially, marketed and sold to other countries with the HSC as a beneficiary;
- promote Northern Ireland as a leading area for medicines optimisation research and development and strengthen Northern Ireland's 4 star EU reference status bid;
- attract inward investment into a Northern Ireland Medicines Optimisation Innovation Fund/ Programme; and
- increase collaborative work with other established research networks in UK, Europe and internationally.

Medicines Optimisation Network

4.13 The work of the MOIC will lead to the development of a medicines optimisation network linking the HSC with other health and life science networks and innovation centres in Northern Ireland, UK and internationally. It will also support knowledge sharing both within the HSC and with wider networks and the development of collaborative working partnerships and joint working arrangements between participants that may include the following.

- Commissioning organisations (HSC Board, Trusts, PHA, BSO)
- Policy (DHSSPS)
- Patients and their representative bodies
- Independent contractors (GPs and community pharmacists)
- Independent Domiciliary Care Providers
- Academia (UU and QUB)
- Pharmaceutical and Technology Industries
- Voluntary sector
- Charities
- Expert(s) with research skills
- NIMDTA, NICPLD, NIPEC
- Other Innovation Centres and translational research groups
- Health and Social Care professionals
- Experts from across the UK and international

Regional Database to Monitor Improvement

4.14 To allow commissioners and policy leads to monitor progress and enable comparisons regionally and with other UK countries a new regional database is proposed. This will largely bring together existing data related to medicines use from different sources across the region to monitor trends, enable benchmarking and help drive quality improvements. It will also provide an understanding of how well patients are supported across the region to use their medicines safely and effectively to improve health outcomes. Outcome measurements include:

- patient/client satisfaction;
- medicines safety incident reporting;
- cost effective use of medicines;
- impact on acute health services; and
- achievement of expected therapeutic outcomes.

4.15 Methodology to develop a regional database to monitor improvements will include:

- agreement of core outcome measurements for medicines optimisation in Northern Ireland;
- alignment with a Medicines Optimisation dashboard based on NHS England's dashboard which was developed in collaboration with Clinical Commissioning Groups, Trusts and the pharmaceutical industry; and
- the inclusion of questions relating to patient's experience of medicines in relevant Northern Ireland Health Surveys.

4.16 Implementation of the Medicines Optimisation Quality Framework will be monitored by DHSSPS through existing arrangements for HSC commissioning plans.

4.17 The Medicines Optimisation Quality Framework will be reviewed in 2021.

SECTION 5

Summary of Recommendations

Table 10: Recommendations

1. A Regional Model for Medicines Optimisation should be introduced which outlines what patients can expect when medicines are included in their treatment as they access services in health and social care settings.
2. The model should be delivered by a multi-disciplinary medicines optimisation workforce trained and competent in medicines optimisation, with the involvement of pharmacists in all settings.
3. The medicines optimisation workforce should deliver regional services and roles which are commissioned and coordinated across all HSC organisations and related agencies involved in the prescribing, dispensing and administration of medicines.
4. The services and roles should aim to consistently deliver regional best practices in compliance with new Quality Standards for Medicines Optimisation.
5. Regional best practices should always be co-designed with patients, following the principles of Personal and Public Involvement (PPI).
6. An innovation and change programme should be implemented, linked to HSC commissioning plans, to support the development, testing and scaling up of technology and service solutions to deliver consistent best practices related to the Quality Standards.
7. Regional systems should be implemented supporting HSC connectivity, electronic transmission of prescriptions and access to the Electronic Care Record, prescribing support, Northern Ireland Formulary and enhanced data analysis.
8. Within the HSC a regional organisational infrastructure for medicines optimisation should be maintained that incorporates, the Medicines Governance Team, Pharmacy and Medicines Management Team, Regional Pharmaceutical Procurement Service, Medicines Information Service, Medicines Optimisation Innovation Centre (MOIC).
9. A new regional database for medicines optimisation should be developed to monitor progress and enable comparisons regionally and with other UK countries.

this page is intentionally blank

History of Medicines Management in Northern Ireland 2000 - 2014

1. Medicines are the most common medical intervention within our population and at any one time 70% of the population⁸⁵ is taking prescribed or over the counter medicines to treat or prevent ill-health.
2. From a financial aspect, HSC medicines expenditure equates to £550m/annum in Northern Ireland, representing 14% of the total HSC budget and is the second largest cost after salaries. This does not take into account private transactions.
3. Social deprivation is linked with health and social care needs and levels of need for medicines. In comparison with other UK countries the volume and cost of medicines used per head of population in Northern Ireland is historically high, as detailed in Figures 3 and 4 and Table 11.

Number of items prescribed per head of population in the UK from 2007-2013

Figure 3: Source – NI Audit Office Primary Care Prescribing Report 2014



85 Office of National Statistics Health Statistics 1997.

Prescribing cost per head of population

Figure 4: Source – NI Audit Office Primary Care Prescribing Report 2014

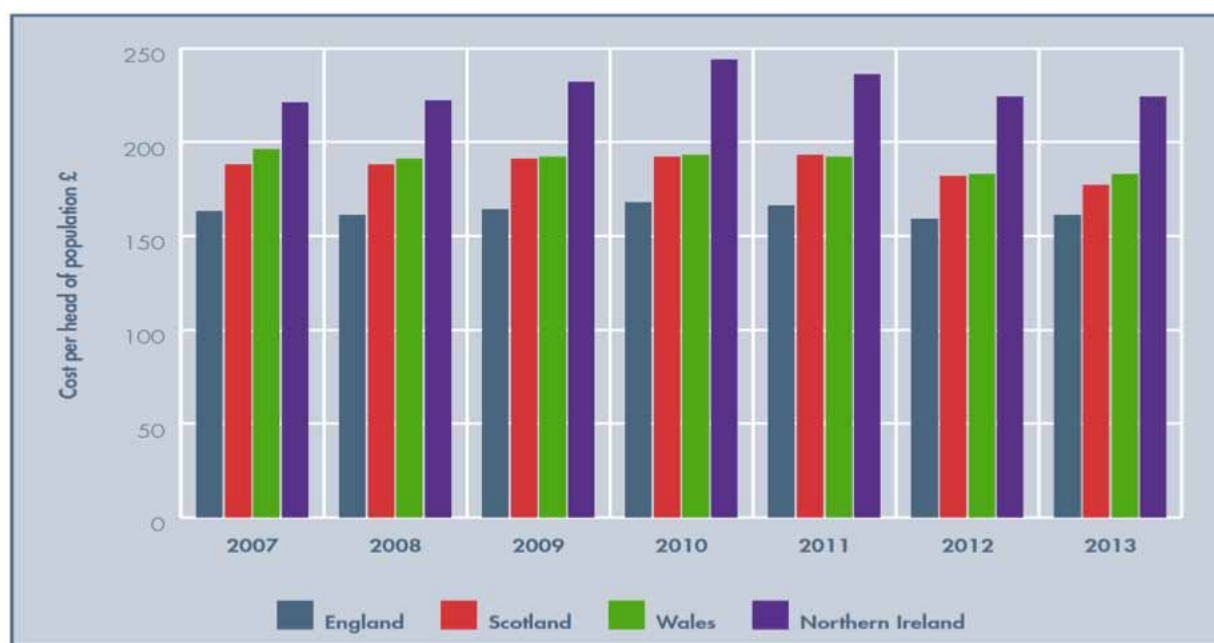


Table 11: Source - Business Services Organisation – Prescription Cost Analysis Reports

		2007	2010	2013
	NI	£221.09	£243.94	£223.54
	England	£162.95	£167.82	£160.12
	Scotland	£187.92	£192.25	£183.73
	Wales	£196.37	£193.05	£182.96

- The [2014 NI Audit Office Primary Care Prescribing Report](#)⁸⁶ highlighted that the volume of items prescribed per head of population per annum has been higher in Northern Ireland than in England and Scotland from 2007 and primary care prescribing costs have been consistently the highest here compared with the other regions in the UK from 2007 to 2013. However, it should be noted that the analysis does not consider the differences in data definitions and prescribing arrangements between the four countries so care is required on interpretation.

86 http://www.niauditoffice.gov.uk/primary_care_prescribing-2.pdf

5. High prescribing costs were first highlighted in 2000 when the limited outcome of the Comprehensive Spending Review required the Department to review spend against all budget areas, including the medicines budget.
6. In response, the Department established a Pharmaceutical Services Improvement Plan (PSIP) which for the first time considered a whole system approach encompassing both primary and secondary care.
7. This work identified and challenged all parts of the medicines journey from procurement through to prescribing, supply and utilisation introducing the concept of “Medicines Management”^{87 88} to HSC practice.
8. Professor John Appleby’s Review in 2005 helped inform the next phase of PSIP. The report highlighted the need for new mechanisms to tackle high prescribing costs and to encourage greater use of generic drugs⁸⁹.
9. In response the existing PSIP programme was augmented with a new Pharmaceutical Clinical Effectiveness (PCE) Programme comprising a number of initiatives designed to work together to optimise medicines management which delivered savings across the HSC during the period from 2005/06 to 2007/08. Savings of £54m were made against a community drugs budget of approximately £387m. Re-engineering of pharmacy services in secondary care demonstrated savings as described in paragraph 16.
10. The PCE programme was extended into the 2008/09 - 2010/11 period and several new initiatives were added to provide a regional focus to medicines management establishing an infrastructure within the HSC through operational models, systems and policies to deliver:
 - a. clinical and cost effective procurement;
 - b. clinical and cost effective prescribing;
 - c. behavioural change by engaging healthcare professionals in decision making;
 - d. Integrated Medicines Management within the HSC; and
 - e. extension of the secondary care medicines governance team which was established in 2002 to primary care.

87 Medicines management has been defined as “encompassing the entire way that medicines are selected, procured, delivered, prescribed, administered and reviewed to optimise the contribution that medicines make to producing informed and desired outcomes of patient care.

88 Audit Commission (2001) A Spoonful of Sugar – Medicines Management in NHS Hospitals.

89 <https://www.dhsspsni.gov.uk/publications/appleby-report>

11. In the 2014 NI Audit Office Primary Care Prescribing Report it was noted that in the three year period following the introduction of PCE significant efficiencies had been made and the rate of growth in expenditure on drugs was reduced to less than 5 per cent per annum.
12. Responsibility for the prescribing budget was transferred from DHSSPS to the HSC Board in July 2010 and an annual PCE programme was established which continues today⁹⁰.
13. In the four year period from 2010/11 to 2013/14 the PCE programme has delivered a total of £132.2m against a target of £122m, an overachievement of approximately £10m.
14. Although the prescribing budget transferred to the HSC Board in 2010 the Department retained a role in pharmaceutical innovation, leading a regional 'Innovation in Medicines Management Programme' based on an 'invest to save' ethos which continues today. The Innovation Programme has overseen a range of medicines optimisation projects within the HSC including the development of the Northern Ireland Medicines Formulary.
15. The PCE and Innovation programmes have resulted in a range of best practices for medicines management as listed in Table 12, many of which are now embedded within HSC systems, services and patient pathways whilst others are suitable for regional roll out.

90 HSC Board's Pharmaceutical Clinical Effectiveness Programme 2014/15 <http://www.hscboard.hscni.net/medicinesmanagement/NMP%20-%20Pharmacist%20Prescribing/03%20Pharmaceutical%20Clinical%20Effectiveness%202014-15.pdf>

Table 12: Examples of regional best practice in medicines management

Procurement	The rational selection and therapeutic tendering of medicines, in secondary care, in line with NICE guidance and emerging evidence using the Safe and Therapeutic Evaluation of Pharmaceutical Product Selection (STEPSelect) [*] model ^{91 92}
Selection	Northern Ireland Medicines Formulary ^{93*}
Prescribing	<p>Prescribing Policies</p> <ul style="list-style-type: none"> • Generic medicines (Generics leaflet)[*] (Medicines unsuitable for Generic Prescribing)[*] • Identified therapeutic classes of medicines[*] (Anticoagulants) (Antipsychotics) (Controlled Drugs) (Diabetes) (Lithium) (Opioid Substance) • Specialist medicines (Interface Pharmacist Network Specialist Medicines, red/amber drugs)[*] (Trust interface arrangements for patients in the community, eg mental health) • NI Wound Care Formulary[*] • Prescribing guidance for safe and evidence based prescribing (NICE)^Y • Antimicrobial guidelines⁹⁴ for primary care (Primary Care Management of Infection Guidelines)[*] and secondary care • Independent Pharmacist, Nurse and other Non-Medical Prescribers (DHSSPS Non-Medical Prescribing)[*]
Supply	<ul style="list-style-type: none"> • Extended supplies on hospital discharge (PCE Programme)[*] • Repeat Dispensing (Repeat Dispensing Guidance)[*] • Minor Ailments scheme (Minor Ailments)[*]

* regional initiatives

Y UK-wide guidance

91 Scott MG ,McElnay JC Janknegt R et al Safe Therapeutic Economic Pharmaceutical Selection (STEPSelect) :development .introduction and use in Northern Ireland European Journal of Hospital Pharmacy Practice 2010 ;16:81-3

92 Scott MG Pharmaceutical Clinical Effectiveness Programme (PCEP) –STEPSelect (Safe Therapeutic Economic Pharmaceutical Selection) British Journal of Pharmaceutical Procurement 2012; 3(1):23-6

93 The Formulary provides guidance on first and second line drug choices and covers the majority of prescribing choices and is focused on non-specialist prescribing choices in Northern Ireland. Whilst the Formulary will aim to standardise practice and ensure a level of consistency, it is recognised that individual patients may require medicines which lie outside such guidance.

94 Antimicrobial Guidelines for Primary Care can be accessed in digital format, including through smartphone apps and in secondary care settings, antimicrobial prescribing guidelines are accessible on Trusts' websites, and in some Trusts are also available to download as an app.

Adherence	<ul style="list-style-type: none"> • NI Single Assessment Tool* (NISAT) • Targeted Medicines Use Reviews (MURs) (Guidance for conducting Medicines Use Reviews)* • Managing Your Medicines Service (Managing Your Medicines)*
Safe transitions of care and Medicines Reconciliation	<ul style="list-style-type: none"> • The Integrated Medicines Management Service NI clinical pharmacy standards* • Regional Guidelines for the Supply of 'Take Home Medication' from Northern Ireland Emergency Departments* • Regional Guidelines for http://www.gain-ni.org/images/Uploads/Uploads/Guidelines/Immediate-Discharge-secondary-into-primary.pdf*
Appropriate polypharmacy and optimal outcomes in the elderly	<ul style="list-style-type: none"> • Pharmaceutical Care Model for Older People within intermediate care, residential and nursing homes^{95 96 a} • Consultant led Pharmacist clinical medication reviews in nursing homes^{97 a} • Application of PINCER⁹⁸ • Application of STOPP/START tool⁹⁹
Governance	<ul style="list-style-type: none"> • Medicines Governance Networks in Primary and Secondary Care Medicines Governance*
Cost effectiveness	<ul style="list-style-type: none"> • Pharmaceutical Clinical Effectiveness (PCE) programme (PCE Programme)*
Medicines Information Services	<ul style="list-style-type: none"> • Regional Medicines and Poisons Information Service* http://www.belfasttrust.hscni.net/Pharmacy.htm

* regional initiatives

a Local Pilot

95 Darcy C, Miller R, Friel A, Scott M. Consultant pharmacist case management of elderly patients in intermediate care. British Geriatrics Society for better health in old age, Book of Abstracts, Spring Meeting 2014; p78 http://www.bgs.org.uk/pdf/cms/admin_archive/2014_spring_abstracts.pdf

96 Miller R, Darcy C, Friel A, Scott M, Toner S. The introduction of a new consultant pharmacist case management service on the care of elderly patients in the intermediate care setting. Int J of Phar Prac, 2014; 22 (Suppl 2): 106-107. Available at: <http://onlinelibrary.wiley.com/doi/10.1111/ijpp.12146/pdf>

97 McKee H A, Scott M G ,Cuthbertson J and Miller R. Do consultant led pharmacist medication reviews lead to improved prescribing? British Geriatrics Society Autumn Meeting 2014 Page 26 http://www.bgs.org.uk/pdf/cms/admin_archive/2014_autumn_abstracts.pdf

98 Avery et al: A pharmacist-led information technology intervention for medication errors (PINCER): a multicentre, cluster randomised, controlled trial and cost-effectiveness analysis. Lancet 2012

99 Gallagher et al: STOPP (Screening Tool of Older Person's Prescriptions) and START (Screening Tool to Alert doctors to Right Treatment). Consensus validation. Int J Clin Pharmacol Ther. 2008 Feb; 46(2):72-83

Integrated Medicines Management Service (IMM)

16. One example of best practice is the Integrated Medicines Management Service (IMM) which has strategically re-engineered clinical pharmacy services in HSC Trusts. By targeting the work of pharmacists and pharmacy technicians on admission, during the patient's inpatient journey and at discharge, the service has demonstrated significant improvements in patient care validated by two randomised controlled trials. These included reduced length of stay, lower re-admission rates, reduced medication errors and increased medicines appropriateness and revealed that each £1 invested equated to £5-8 in non cash-releasing efficiencies^{100 101}. It was demonstrated that the IMM programme of care was transferable to routine hospital care in two hospital sites in NI supporting the case for roll out of IMM as routine clinical practice in all NI Trusts by 2008¹⁰². A more recent study which applied risk predictive algorithms to a sample of patients who received IMM throughout their hospital stay has shown a correlation between the number of ward-based clinical pharmacy services with a reduction in risk-adjusted mortality index (RAMI)^{103 104}.
17. Many best practices work synergistically to drive whole system improvements in the use of medicines. For example, innovative methodology for medicines selection has resulted in prescribers within the HSC referring to a Northern Ireland Medicines Formulary. This along with a regional generic prescribing policy has helped support the effective utilisation of medicines resources in line with clinical guidance for the benefit of patients. Prescription data analysis relating to the period April-June 2013 shows a high level of prescribing compliance (83%) in primary care with Northern Ireland Formulary recommendations and a 68% generic dispensing rate. Generic prescribing policies are also in place in secondary care with generic supply from pharmacy, where appropriate.
18. In community pharmacy the MUR Service aims to improve patients' knowledge, adherence and use of medicines and vulnerable or at risk patients are further supported through the Managing Your Medicines service.

100 Scullin et al. An Innovative approach to integrated medicines management. *Journal of evaluation in clinical practice*. Vol 13, issue 5. Oct 2007: 781-788.

101 Burnett et al. Effects of an integrated medicines management programme on medication appropriateness in hospitalised patients. *American journal of health-system pharmacy*. May 1 2009 vol 66, no.9: 854-859

102 Scullin C Hogg A Scott MG et al Integrated Medicines Management-can routine implementation improve quality? *Journal of Clinical Evaluation* 2012 ;18(4) :807-15

103 Feras et al. Enhanced clinical pharmacy service targeting tools: risk-predictive algorithms. *Journal of Evaluation in Clinical Practice*. Vol 21, issue 2. April 2015: 187-197

104 RAMI is a predictive tool which was developed to calculate the risk of death during inpatient stay based on a range of variables – age, gender, diagnosis-related group, diagnosis and specific co-morbidities within the population being investigated.

19. These are among the initiatives that helped Northern Ireland to be formally identified as a reference site within the European Innovation Partnership in Active and Healthy Aging (EIP-AHA) in April 2013 and awarded three stars for the level of innovation, scalability and outcomes demonstrated in medicines management¹⁰⁵. This recognises Northern Ireland as one of the leading regions in Europe in addressing the health and social care needs of the older population through innovation in medicines management.

105 European Innovation Programme- https://ec.europa.eu/research/innovation-union/pdf/active-healthy-ageing/rs_catalogue.pdf

Moving to Medicines Optimisation – The Challenges and Need for Change

1. It is clear that a significant amount of work has been undertaken to improve how medicines are managed within the HSC Service. However, Northern Ireland has the fastest growing population in the UK, a rising number of older people with increasing multi-morbidities and a health seeking culture in which people use more medicines with higher associated costs per head per annum than other UK countries. The Regulation and Quality Improvement Authority (RQIA) carried out a Review of Medicines Optimisation in Primary Care in 2015 and concluded that more work needs to be done to achieve optimal medicines optimisation processes, leading to better, measurable outcomes for patients. There are potentially significant challenges ahead which require a renewed focus on using medicines to gain the right outcomes for patients at the right cost for the HSC.

Increasing Need

2. Global innovation in medicines development and improved access to medicines with a good evidence base, for example [NICE Guidance](#)¹⁰⁶ have contributed to an increase in life expectancy helping people to stay healthy for longer and many previously debilitating or fatal conditions are now prevented or managed, often on a long term basis, through regular medicines use.
3. Medicines use increases with age and 45% of medicines prescribed in the UK are for older people aged over 65 years and 36% of people aged 75 years and over take four or more prescribed medicines¹⁰⁷.
4. Each year community pharmacies in Northern Ireland dispense in excess of 38 million prescription items, for medicines costing £375m. In addition, some £175m of medicines are dispensed in the hospital setting.

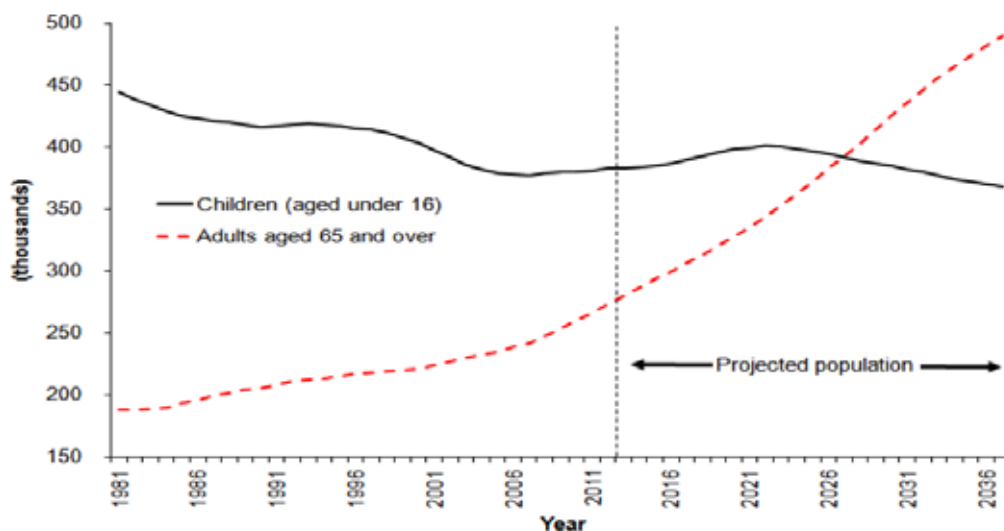
106 <https://www.nice.org.uk/guidance>

107 Department of Health (2001). Medicines and Older People. Implementing medicines-related aspects of the NSF for Older People. Department of Health. www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT_ID=4008020

5. Within Northern Ireland the future need for medicines is expected to increase as the population ages and the prevalence of chronic disease increases. Northern Ireland has the fastest growing population in the UK. Currently there are approximately 1.8m people living in Northern Ireland, a figure which is expected to rise to 1.918m by 2022. In 2012, it was estimated that 15% of the population were aged 65 and over. This figure is expected to rise by 26% by 2022 and those aged 85 years and over will increase by 50%¹⁰⁸.

Children aged under 16 and adults aged 65 and over, actual and projected, 1981-2037 (non-zero y-axis)

Figure 5: Source – Northern Ireland Statistics and Research Agency, Statistical Report 2012



6. A report from Public Health Ireland predicts that between 2007 and 2020 the number of adults living with long term health conditions (LTC) in Northern Ireland will rise by 30%¹⁰⁹.

108 Northern Ireland Statistics and Research Agency, Statistical Report 2012 [NISRA 2012 Based Population Projections](#)

109 Institute of Public Health in Ireland, 2010 - "Making Chronic Conditions Count"

Table 13: Source – Institute of Public Health - “Making Chronic Conditions Count”

	2007		2015		2020	
	No.	% of population	No.	% of population	No.	% of population
Hypertension	395,529	28.7	448,011	30.3	481,867	31.7
CHD	75,158	5.4	87,848	5.9	97,255	6.4
Stroke	32,941	2.4	38,405	2.6	42,457	2.8
Diabetes (Type 1 & 2)	67,262	5.3	82,970	6.0	94,219	6.6

7. Low health literacy alongside cultural and structural factors have a significant influence on lifestyle decisions. These decisions such as unhealthy diets, smoking and harmful misuse of alcohol also contribute to the overall prevalence of disease in Northern Ireland. Rates of admission to hospital due to alcohol continue to rise year on year and national data indicates that around 70% of weekend emergency department attendances are alcohol-related¹¹⁰. From the Northern Ireland health survey 2014/15 - 60% of adults measured were either overweight or obese and 7% of children aged 2-15 years were assessed as being obese. Loss to the local economy as a result of obesity is estimated at £400 m, £100m of these costs being direct healthcare costs¹¹¹.
8. As well as the impact on prescribing budgets a rising need for medicines will place increased pressure on primary and secondary care services and community pharmacies. Increased use of medicines by a larger older population will also impact on social care services.

110 <http://www.publichealth.hscni.net/sites/default/files/Drug%20and%20Alcohol%20Commissioning%20Framework%20Consultation%20Document.pdf>

111 The Cost of Overweight and Obesity on the Island of Ireland – Safefood, November 2011)

Patient Engagement

9. In NI, the involvement of users and carers is a statutory duty for all those employed in statutory HSC organisations¹¹². Donaldson highlighted that we are trailing behind with patients and families having a much weaker voice in shaping the delivery and improvement of care than is the case in the best healthcare systems of the world. It is crucial that Personal and Public Involvement (PPI) is supported by all involved in decisions at all levels of care; including at a strategic level and that the values that underpin all PPI work which include dignity and respect, inclusivity, equality and diversity, collaboration and partnership, transparency and openness are promoted. The value and importance of involving individuals in decisions about their care is recognised in the [King's Fund paper](#)¹¹³ and in national guidance from NICE [NICE Clinical Guideline 76 which now overlaps with NICE Guideline NG5 Medicines optimisation] although full implementation of its recommendations will require change in existing service models. For example, consultations with patients may need to be longer to provide time to prescribers to listen to any concerns patients may have, provide better information about newly prescribed medicines empowering patients to make informed decisions, anticipated treatment outcomes and to consider patient choice, benefits and acceptability. Furthermore, sufficient time will be needed for regular medication and adherence reviews and patients taking multiple or high risk medicines will require regular scheduled specialist clinical reviews. Patients living with their health condition(s) are often 'experts by experience' and communication with patients about their experience helps inform decisions regarding their medication at review.

Non Adherence

10. The volume and costs of prescribed medicines are increasing but there is evidence that between a half and a third of medicines prescribed for long term conditions are not taken as recommended¹¹⁴.
11. This is known as non-adherence and can involve people taking either more or less medicines than prescribed or not taking them at all. The factors which contribute to non-adherence fall into two overlapping categories.
 - **Intentional** where the individual decides not to follow the treatment recommendations perhaps because of concerns about the value or effectiveness of medicines, their side-effects, and the inconvenience of taking the drugs at the prescribed times and frequency. Also, patients with a mental health illness for example, schizophrenia, may have altered thinking and beliefs about medicines and their illness which may affect adherence.

112 www.publichealth.hscni.net/sites/default/files/PPI%20Strategy%20-%20March%202012_0.pdf

113 http://www.kingsfund.org.uk/sites/files/kf/Making-shared-decision-making-a-reality-paper-Angela-Coulter-Alf-Collins-July-2011_0.pdf

114 Horne R, Weinman J, Barber N, Elliott R, Morgan M. Concordance, adherence and compliance in medicine-taking. Report for the National Co-ordinating Centre for NHS Service Delivery and Organisation R & D. 2005.

- **Unintentional** where the individual wants to follow the treatment recommendations but is prevented from doing so by practical barriers which include cognitive problems, poor organisational skills, polypharmacy and difficulty accessing medicines¹¹⁵.
12. There are many layers to non-adherence and whatever the cause(s), non-adherence represents a health loss for the individual and an economic loss for society. Consequences include; reduced quality of life; deterioration of health; and unplanned admissions to hospital as people fail to gain the optimal outcomes from their medicines.

Generic Medicines

13. Government policy promotes the use of generic medicines, where appropriate. However, patients concerns regarding inconsistency in the medicines they are supplied with has been highlighted in the [Patient Client Council Report 2011](#)¹¹⁶. For example, variations in size, colour and shape of their medicines which are made by a range of manufacturers. This is particularly confusing for the elderly who may be on multiple medications leading to an inability to manage their medicines appropriately, risking their independence and impacting on the help they need from carers and families. Lack of support and unexplained changes to how a medication looks can result in patients not taking their medicines. Community pharmacists are well placed to provide advice if the presentation changes but all health and social care professionals and patients should be aware that the presentation of medicines can change and that there is a system to support patients when this occurs.

Medicines Related Harm

14. All medicines are associated with a level of risk and each year millions of people worldwide are hospitalised due to potentially avoidable, medicine-related factors. Medicines used in combination and patients with multiple co-morbidities who are taking multiple medicines are at increased risk. The constant repeating of medicines without regular medication reviews leaves patients susceptible to harm from medicines which they may not need to be taking. Additionally an individual's social circumstances can significantly affect the level of harm related to medicines use. On average, around 3-6% of hospital admissions are due to the adverse effects of medicines^{117 118 119} and this can increase up to almost 30% in elderly

115 Steinman MA and Hanlon JT. Managing Medications in Clinically Complex Elders "There's Got to Be a Happy Medium". Journal of the American Medical Association. 2010; 304(14):1592-1601. doi: 10.1001/jama.2010.1482

116 http://www.patientclientcouncil.hscni.net/uploads/research/People%E2%80%99s_views_about_prescription_charging_and_products_available_on_prescription_-_June_2011.pdf

117 Lazarou J, Pomeranz BH, Corey PN. Incidence of adverse drug reactions in hospitalized patients: a meta-analysis of prospective studies. JAMA 1998; 279:1200-5.

118 Pirmohamed et al. Adverse drug reactions as cause of admission to hospital: prospective analysis of 18 820 patients. BMJ 2004;329:15-9

119 Roughead EE. The nature and extent of drug-related hospitalisations in Australia. J Qual Clin Pract 1999;19:19-22

people who are taking more medicines and are more susceptible to their adverse effects¹²⁰. In Northern Ireland, positive steps taken to reduce harm related to medicines include the work of multidisciplinary medicines governance committees in HSC Trusts, the implementation of National Patient Safety Agency (NPSA) alerts and the HSCB/PHA management of serious adverse incidents (SAIs) through the Quality, Safety and Experience (QSE) multidisciplinary group and the Safety, Quality and Alert Team (SQAT). More recently to improve safety, there has been a standardisation of adult medicines kardexes (process for prescribing and recording administration of medicines to patients in hospital).

15. UK evidence shows that one in 15 hospital admissions are medication related, with two-thirds of these being preventable¹²¹. Evidence also shows that some medicines are associated with a higher risk of harm than others with four groups of drugs accounting for 50% of preventable drug related admissions to hospital¹²². A review carried out of medication incidents reported to the National Reporting and Learning System in England and Wales over a 6 year period showed that the top 5 medicines where the clinical outcome was death or severe harm were opioids, antibiotics, warfarin, low molecular weight heparins and insulin¹²³. In Northern Ireland, examples of high risk medicines are available on a poster for GPs and community pharmacies however there is no agreed system for highlighting high risk and specialist medicines on patient records and ECR.
16. Another cause of harm is medication errors which can occur at any stage of the medicines process from prescription, to dispensing to the patient taking the medication. A report for the General Medical Council in 2012 investigating the prevalence of prescribing errors in general practice found that one in 20 prescriptions contained an error with a higher prevalence associated with prescriptions for the elderly and those taking 10 or more medications¹²⁴. Prescribing errors in hospital in-patients are a common occurrence affecting 7% of medication orders, 2% of patient days and 50% of hospital admissions¹²⁵. The NPSA estimated that medication errors in 2007 cost £770m due to the cost of admissions for adverse drug reactions and the cost of harm due to medicines during inpatient stay¹²⁶.

120 Chan M, Nicklason F, Vial JH. Adverse drug events as a cause of hospital admission in the elderly. *Intern Med J* 200; May-Jun;31(4):199-205

121 Garfield S, Barber N, Walley P, Willson A, Eliasson L. Quality of medication use in primary care--mapping the problem, working to a solution: a systematic review of the literature. *BMC Medicine* 2009; 7:50.

122 Which drugs cause preventable admissions to hospital? A systematic review. www.ncbi.nlm.nih.gov/pubmed/16803468

123 Cousins DH, Gerrett D, Warner B. A review of medication incidents reported to the National Reporting and Learning System in England and Wales over 6 years. *Br J Clin Pharmacol*; 2012 Oct;74(4):597-604

124 http://www.gmc-uk.org/Investigating_the_prevalence_and_causes_of_prescribing_errors_in_general_practice___The_PRACtICE_study_Reoprt_May_2012_48605085.pdf

125 Lewis PJ, Dornan T, Taylor D, Tully MP, Wass V, Ashcroft DM. Prevalence, incidence and nature of prescribing errors in hospital inpatients: a systematic review. *Drug Saf* 2009; 32(5):379-389.

126 NPSA safety in doses: medication safety incidents in the NHS 2007

17. When patients transfer between HSC settings there is a greater risk of medication error and evidence shows that 30% to 70% of patients have an error or unintentional change to their medicines when their care is transferred¹²⁷. In a study carried out in Northern Ireland, it was shown that 33% of patients post discharge had medication related problems¹²⁸.

Polypharmacy

18. Polypharmacy, the concurrent use of multiple medications by one individual, is becoming increasingly common. UK data highlight that of those patients with two clinical conditions, 20.8% were receiving four to nine medicines, and 10.1% receiving ten or more medicines; in those patients with six or more co-morbidities, these values were 47.7% and 41.7 %, respectively, and increasing with age¹²⁹.
19. The 2013 Kings Fund report on Polypharmacy and Medicines Optimisation¹³⁰ proposes that polypharmacy can be classified as appropriate or problematic recognising that it has the potential to be beneficial for some patients, but also harmful if poorly managed. The value of a co-ordinated, multidisciplinary approach to managing polypharmacy has been recognised by other UK countries and the Scottish Government has issued specific guidance on polypharmacy in the elderly.¹³¹
20. Patients are finding it increasingly difficult to manage the volume of medicines they are prescribed. In particular, older people are most likely to be prescribed multiple medications for multi morbidities (different diseases) and polypharmacy is a growing challenge for individuals, carers and social care workers trying to manage complicated medicines regimens at home. Multi-compartment compliance aids/Monitored dosage systems (MDS) are often used to support patients to manage their medicines and are currently perceived as the only solution for the elderly and those with dementia in particular. However, there are many other ways in which patients can be helped to take their medicines safely, or carers supported to administer medicines correctly, and alternative interventions should be considered as outlined in the Royal Pharmaceutical Society guidance, [The Better Use of Multi-compartment Compliance Aids](#)¹³².
21. Polypharmacy is also a challenge for prescribers. Prescribing is largely based on single disease evidence-based guidance which does not generally take account of multi-morbidity, now the

127 Campbell et al. A systematic review of the effectiveness and cost-effectiveness of interventions aimed at preventing medication error (medicines reconciliation) at hospital admission. The University of Sheffield, School of Health and Related Research (SchARR), Sep 2007

128 Brookes K Scott MG McConnell JB The benefits of a hospital based community liaison pharmacist. *Pharmacy World and Science* 2000; 22(2): 33-8

129 Payne RA, et al. Prevalence of polypharmacy in a Scottish primary care population. *Eur J Clin Pharm* 2014; in press.

130 The Kings Fund 2013 Polypharmacy and Medicines Optimisation - Making it Safe and Sound

131 Scottish Government 'Polypharmacy Guidance' October 2012

132 <http://www.rpharms.com/support-pdfs/rps-mca-july-2013.pdf>

norm in those over 65 years¹³³. Also, prescribing decisions may be made by different medical and non-medical prescribers involved in the individual's care resulting in combinations of medicines which may not work effectively together and increase the risks of medicines related harm. Deprescribing i.e. the process of tapering, reducing or stopping medication which may be causing harm, may no longer be providing benefit or may be considered inappropriate should be a planned process for patients on multiple medications. There are barriers to deprescribing so guidance and the use of tools such as STOPP/START could help facilitate the process.

Specific Patient Groups

22. Difficulties arise across interfaces when specific patients for example mental health patients who live in the community require secondary care services. The primary/secondary care interface and responsibilities of the various professionals can make it difficult for patients to receive the medication they require. For patients with Parkinson's disease where it is crucial that they get the right medication at the right time, there is a clear need for a consistent service when they move across interfaces and between different healthcare professionals. Those with life-long conditions for example Inflammatory Bowel Disease which most commonly presents in patient's teenage years/early twenties need access to multidisciplinary teams working collaboratively with them and each other and is key to ensuring optimisation of their medicines.
23. Better knowledge and understanding of rare diseases among healthcare professionals is essential to ensure that patients receive a timely and accurate diagnosis. Delays in diagnosis of rare diseases can lead to patients not receiving timely and appropriate medication for their condition. Additionally, misdiagnoses can mean that patients may receive inappropriate treatment and lack of support. A multidisciplinary approach to accurate and safe care plans and shared decision making regarding treatment choices is necessary to delivering effective care to these patients.

133 Barnett K, Mercer SW, Norbury M et al. Epidemiology of multimorbidity and implications for healthcare, research, and medical education: a cross sectional study. *The Lancet* 2012;380:37-43

Access to Information

24. Access to good quality information about medicines is essential to enable optimal management of clinical conditions. However, there is a vast amount of information on the internet regarding medicines, some of which is reliable and relevant in the UK and some is not. There are some credible websites and proposed plans for the development of a patient portal on the NIDirect website to help direct patients to appropriate information about medicines and how to use this information are welcomed.

Over Use and Misuse of Medicines

25. Increased access to medicines via prescription, internet and over the counter sale introduces new risks. The New Strategic Direction for Alcohol and Drugs Phase 2 highlighted the emerging issue of the misuse of prescription drugs and over-the-counter drugs with benzodiazepines reported as one of the main drugs of misuse¹³⁴ in Northern Ireland. Although there has been some success in tackling benzodiazepine use, other challenges with regards to potential for abuse remain with commonly prescribed medicines including opiate painkillers and pregabalin.
26. A Scottish literature review explored the links between poverty, social exclusion and problematic drug use. It supported the view that the extent of drug problems is strongly associated with a range of social and economic inequalities and is complex¹³⁵. A study which looked at the influence of socioeconomic deprivation on multimorbidity at different ages found that higher rates of drug misuse correlated with deprivation across all age groups, but particularly in those under 45 years of age¹³⁶.
27. Inappropriate and overuse of antimicrobial medicines is a particular concern and the consequences are that common infections will be harder to treat as the incidence of antimicrobial resistance and healthcare acquired infections increases presenting a major public health challenge¹³⁷. Increasing healthcare professional, patient and public awareness and changing behaviour by applying behavioural science may help address this issue. A recent literature review and behavioural analysis carried out by the Department of Health and Public Health England proposes a range of behavioural science interventions that could be tested in practice¹³⁸.

134 DHSSPS (2011) New Strategic Direction for Alcohol and Drugs, Phase 2 2011-2016

135 Drugs and poverty: A literature review. Scottish drugs forum report, March 2007

136 McLean G et al. The influence of socioeconomic deprivation on multimorbidity at different ages: a cross-sectional study. *Br J Gen Pract.* Jul 2014; 64(624): e440-e447

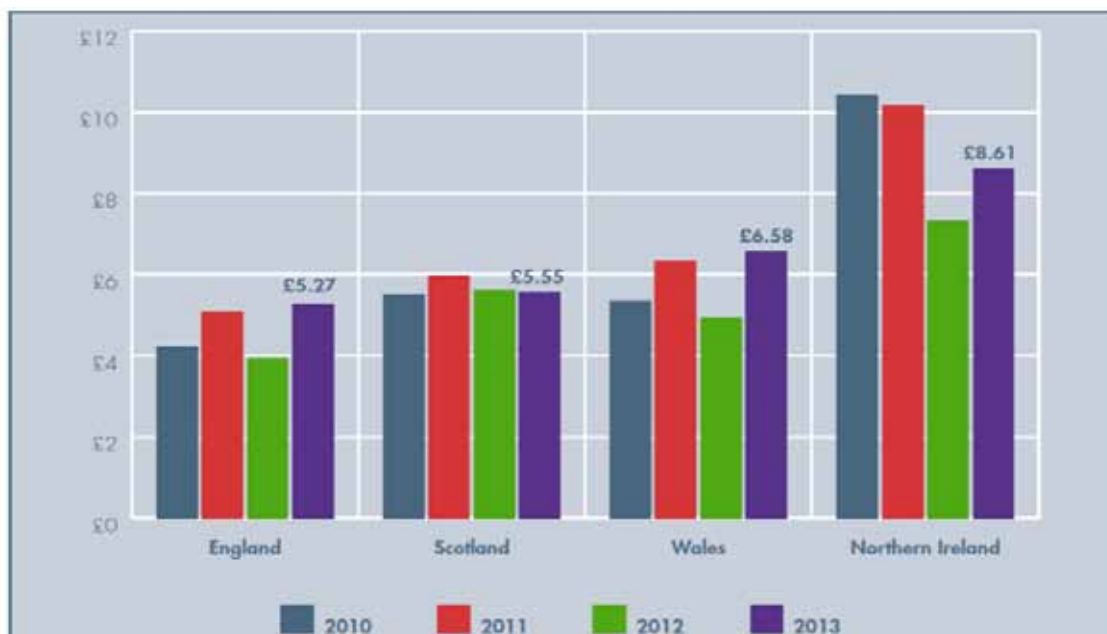
137 DHSSPS Strategy for tackling antimicrobial resistance (STAR) 2012-2017

138 Behaviour change and antibiotic prescribing in healthcare settings, literature review and behavioural analysis. February 2015 <https://www.gov.uk/government/publications/antibiotic-prescribing-and-behaviour-change-in-healthcare-settings>

28. Antidepressant use in Northern Ireland is high compared to other countries in Western Europe. In comparison to other countries in the UK, Northern Ireland had higher antidepressant costs per head of population from 2010 to 2013.

The cost of anti-depressant prescribing per head of population in the UK over the 4 year period to 2013

Figure 6: NI Audit Office Primary Care Prescribing Report 2014



29. Better access to services, for example counselling, stress and anxiety management is crucial if we are to see a reduction in the use of medicines to manage some mental health conditions. [Choice and Medication](http://www.choiceandmedication.org/hscni/)¹³⁹ is a good example of where people can access information regarding alternatives to medicines and when necessary and appropriate, information regarding their medicines to manage their condition.

Waste

30. Wasted medicines are a significant problem in Northern Ireland with large quantities of unused medicines regularly returned to community pharmacies for safe disposal. These medicines are either ordered but no longer required or no longer prescribed for a particular condition. Returned medicines to community pharmacies cannot be re-used and are destroyed because their safety and effectiveness cannot be guaranteed. Not all unused medicines are returned

139 www.choiceandmedication.org/hscni/

to pharmacies and many are kept in patients' homes, sometimes well past their expiry date, or are incorrectly added to household waste. In hospital, medicines that are no longer required are returned to the hospital pharmacy for safe disposal or, where appropriate, recycled and reused to minimise waste. It is difficult to measure the exact value of medicines wasted. Based on research findings elsewhere in the UK the value of medicines wasted in Northern Ireland is estimated to be around £18m per annum¹⁴⁰ although as yet there is no way of accurately validating this figure.

Reform of Health and Social Care Services

31. Ongoing HSC reform supporting care closer to home will mean that in future more people will receive care at home rather than in residential care or hospital. For many people care at home will require support with managing and taking multiple medicines. This will require changing roles for social care workers and an increasing demand for pharmaceutical care in the community and primary care to support safe and effective medicines use¹⁴¹.
32. As new services develop creating new interfaces for example acute care at home and rapid response respiratory services, issues of prescribing and supply need to be addressed. Drug specific shared care agreements are available already for specialist medicines through the 'Interface Pharmacist Network Specialist Medicines' but are not yet available for non specific prescribing and supply in such new settings.
33. Another issue is the increasing use of third party homecare services. A homecare service in this context is defined as the delivery of medicines and where necessary, associated care, which is initiated by the hospital prescriber, direct to the patient's home with their consent. This is a growing market and the volume and costs of medicines supplied through homecare services in Northern Ireland has increased from £6m in 2008 to almost £22m in 2014. Homecare services bring both benefits and risks for patients and new challenges for the provision of pharmaceutical care by HSC Trusts. A review of homecare medicines supply in England in 2011¹⁴² included having stable contractual arrangements which would enable Trusts to adapt easily and safely to changes in homecare providers and through a quality framework have clear lines of responsibility for dispensing, delivery to patients and nursing care provision when required. Better use of technology could track expenditure and interface with electronic care

140 Evaluation of the Scale, Causes and Costs of Waste Medicines, University of London and York 2010

141 Pharmaceutical Care is defined as "A patient-centred practice in which the practitioner assumes responsibility for a patient's medicines-related needs and is held accountable for this commitment". Cipolle RJ, Strand LM, Morley PC. Pharmaceutical care practice: the clinicians guide. 2nd ed. New York:McGraw-Hill; 2004.

142 Homecare medicines – towards a vision for the future, DH 2011

records would allow information to be available in real time. Communication of the service to all healthcare professionals involved in a patient's care is essential. A regional assessment of the optimal approach to homecare medicines is needed to ensure quality, good governance, accountability and effective use of resources.

34. HSC reform will also support new integrated models of care as exemplified by Integrated Care Partnerships (ICPs). ICPs are collaborative networks of care providers, bringing together doctors, nurses, pharmacists, social workers, hospital specialists, other healthcare professionals and the voluntary and community sectors, as well as service users and carers to design and coordinate local HSC services. These collaborative networks present new opportunities for the integration and co-ordination of care for frail older people and those with long term conditions. ICPs are tasked with focussing on four key aspects for delivery of integrated care; Risk Stratification, Information Sharing, Care Planning and Evaluation (RICE). All 17 ICPs in Northern Ireland are currently delivering person centred proactive care management for a risk stratified cohort of patients through collaborative multidisciplinary working. A more co-ordinated and person centred approach to medicines management has been an important aspect of this work. There are also a number of local ICP service improvements which involve improved integration of community pharmacy services as part of the care pathway. The structure of ICPs which has community pharmacists embedded at a local level to promote the development of collaborative relationships is an effective platform for the delivery of improved medicines management and associated patient outcomes.
35. More recently the Northern Ireland General Practice Committee (NIGPC) has developed a network of GP Federations with the vision of supporting primary care and working at the scale needed to realise the ambitions of Transforming Your Care.
36. In future, patients are likely to have a number of health and social care professionals involved in their overall care at the same time. This will include an increasing number of non-medical prescribers (DHSSPS non-medical prescribing) using existing skills and knowledge to ensure better patient access to advice about medicines, assessment of their condition and help patients receive appropriate medication without delay alongside helping reduce demand on GPs and medical staff in hospitals.

37. The Donaldson Report, Transforming Your Care, [Living with Long Term Conditions Framework](#)¹⁴³ and the RQIA Review of Medicines Optimisation in Primary Care all recognise the increased role that pharmacists (in particular community pharmacists) have to play in raising a patient's quality of care and improving their health outcomes. The [Community Pharmacy Future Project](#)¹⁴⁴ shows that patients derive considerable benefits in terms of health outcomes and quality of life when they receive additional support and advice from community pharmacists alongside the supply of their normal medication. The profession could be further utilised in this setting by using their clinical skills, working in partnership with patients and other health and social care professionals to contribute significantly to medicines optimisation.
38. A recent [Royal Pharmaceutical Society \(RPS\) and Royal College of General Practitioners \(RCGP\)](#)¹⁴⁵ Joint Statement supports the inclusion of practice based pharmacists within primary care teams to improve patient care. They state that there is considerable evidence to support the benefit of this role and the RPS and RCGP will work together to promote the uptake of practice based pharmacists.
39. As new models of care develop it will be necessary to establish a clear understanding of roles and responsibilities for medicines optimisation for health and social care professionals within the patient's care. This will require clarification of existing roles and the development of new roles within integrated secondary care, general practice and community pharmacy linking to social care supporting safe, appropriate and effective medicines use throughout the patient journey. This is a patient centred model in which multidisciplinary professionals will work collaboratively and share information to meet the needs of patients.

Variance

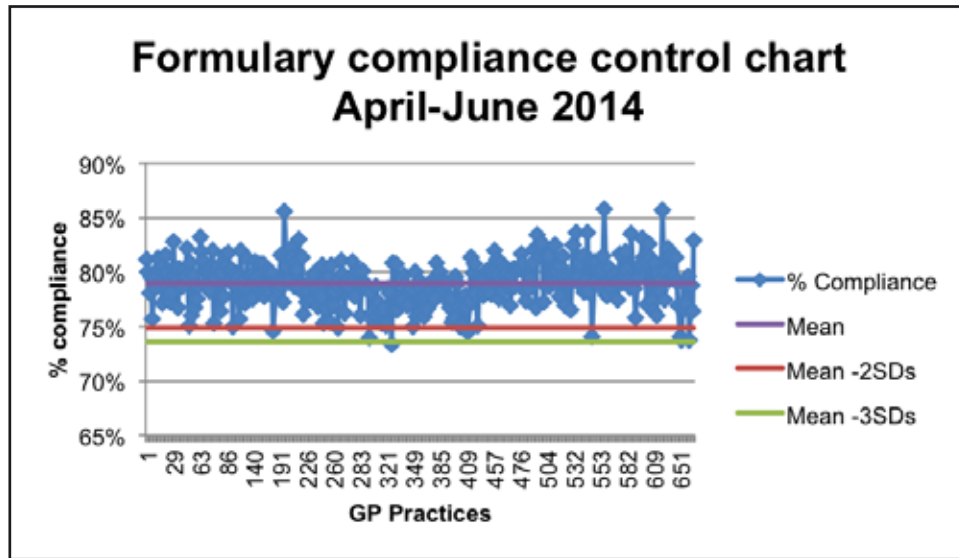
40. There is variation in how medicines are used and managed across the HSC. For example there are differences in; the uptake of NICE approved medicines and implementation of NICE guidance; delivery of the IMM Service and service provision across seven day working within HSC Trusts. The introduction of the Northern Ireland Formulary is supporting a reduction in variance in prescribing in general practice as demonstrated in Figure 7.

143 <https://www.dhsspsni.gov.uk/publications/living-long-term-conditions-policy-framework>

144 <http://www.communitypharmacyfuture.org.uk/pages/sitesearch.cfm>

145 <http://www.rpharms.com/promoting-pharmacy-pdfs/rcgp-joint-statement-for-pharmacists-in-gp-surgeries-version-2.pdf>

Figure 7: % compliance with the Northern Ireland Formulary, quarter 2, 2014



41. A King's Fund report in 2011 concluded that there are wide variations in the quality of care in general practice stating that the delivery of high-quality care requires effective team working for which the skill-mix needs to evolve, so that the GP should no longer be expected to operate as the sole reactive care giver, but should be empowered to take on a more expert advisory role, working closely with other professionals¹⁴⁶.
42. There is a growing awareness of the risks of variance in the quality of service delivery within the health service as exemplified by the Francis Report 2013 which emphasised the need to put patients first at all times and that they must be protected from avoidable harm and the Berwick Report 2013 which recommends 4 guiding principles for improving patient safety including:
 - place the quality and safety of patient care above all other aims for the NHS;
 - engage, empower and hear patients and carers throughout the entire system and at all times;
 - foster wholeheartedly the growth and development of all staff, especially with regard to their ability and opportunity to improve the processes within which they work; and
 - insist upon, and model in your own work, thorough and unequivocal transparency, in the service of accountability, trust, and the growth of knowledge.

146 Improving the quality of care in general practice. Report of an independent inquiry commissioned by the King's Fund, 2011. <http://www.kingsfund.org.uk/publications/improving-quality-care-general-practice>

