Northern Ireland Medicines Optimisation - a Model for Innovation and Change

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Abstract

Title
Northern Ireland Medicines Optimisation - a Model for Innovation and Change

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Summary
The Medicines Optimisation Quality Framework was developed in response to the need for safer, more effective care and improved patient experience aligned to prescribed treatments. The Framework has three components:

- A Model for Medicines Optimisation describes what patients can expect when medicines are included in their treatment plans in the four main care settings of hospital, general practice, community pharmacy and social care.
- A set of Quality Standards to engage multi-professional teams to develop best practice and deliver high quality outcomes from medicines each occasion they are prescribed, dispensed or administered.
- An Innovation and Change Programme to support implementation of the framework through the identification, testing and scaling up of best practices.

The newly established Medicines Optimisation and Innovation Centre (MOIC) provides a regional centre of expertise for research, service development, knowledge transfer and innovation in medicines optimisation.

Keywords: Quality, framework, MOIC, standards, programme

Introduction

In 2016 the Department of Health for Northern Ireland launched a Medicines Optimisation Quality Framework[1] and pledged support for its implementation as part of a major transformation programme for health and social care. In this article the authors outline how the Framework provides a model for innovation and change in medicines optimisation in Northern Ireland.

Background

Medicines are the most common medical intervention used in the Northern Ireland 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.[2] With an aging population and a rising number of people with long term conditions, pressures associated with demand for medicines, polypharmacy and complexity of care are increasing. In response, health and social care services are adapting by introducing integrated models of care delivered by multi-professional teams in order to improve productivity and sustainable services. However, evidence shows variance in the appropriate, safe and effective use of medicines and poor adherence is common, resulting in suboptimal health outcomes for patients, waste and pressure on health and social care services.

Medicines Optimisation Quality Framework

The Medicines Optimisation Quality Framework was developed in response to the need for safer, more effective care and improved patient experience aligned to prescribed treatments. The Framework represents a summation of a range of improvements involving professionals, industry, academia and patients. As a result, the Medicines Optimisation Quality Framework provides a roadmap aimed at delivering:

- better health outcomes for patients through the appropriate use of medicines
- 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 health and social care organisations
- reduced variance in medicines use through the consistent delivery of best practices
- improved professional collaboration and a 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
- the development and implementation of best practice solutions to medicines optimisation deficiencies.

NICE Clinical Guideline 5 Medicines Optimisation recommends that organisations consider a multi-professional team approach to improve patient outcomes with the integration of pharmacists.[3] Historically, there has been insufficient integration of the unique clinical and technical skills of the pharmacy team. The Framework identifies opportunities to develop patient facing interventions by pharmacists at the stages in care where the patient is most likely to benefit.

The Framework has three components:

- A Model for Medicines Optimisation describes what patients can expect when medicines are included in their treatment plans in the four main care settings of hospital, general practice, community pharmacy and social care (See Figure 1 and Tables 1-4).
- A set of Quality Standards to engage multi-professional teams to develop best practice and deliver high quality outcomes from medicines each occasion they are prescribed, dispensed or administered.
- An Innovation and Change Programme to support implementation of the framework through the identification, testing and scaling up of best practices.

The model has evolved from medicines management strategies developed to deliver innovative clinical interventions which have reduced morbidity and mortality in addition to a reduction in healthcare resource utilisation through improvements in the selection and procurement of medicines. The model integrates patient facing clinical pharmacy services at specific points in the patient journey in hospital, general practice, community pharmacy and social care.

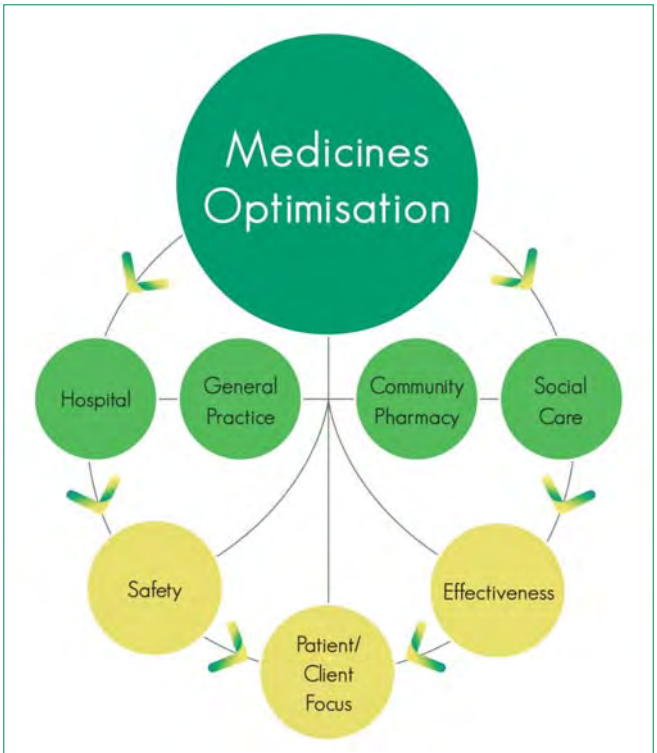

Figure 1: The Medicines Optimisation Model

The model promotes new roles for consultant and specialist pharmacists in hospitals linking with pharmacists in general practice and community pharmacy to provide a network of pharmacy support for patients and multi-professional teams. Implementation of the Framework provides an enhanced opportunity for multi professional and cross sectoral medicines processes to achieve sustainable health gain while addressing adverse events and waste. The activities described are adaptable and can be applied across different areas of practice in each setting.

Quality Standards for Medicines Optimisation

In support of the Medicines Optimisation Model new minimum quality standards address the priority issues for medicines optimisation within the three overarching quality domains of safety, effectiveness and patient/client focus. Compatible with NICE guidance, the quality standards support delivery of best practices which should be developed and implemented in partnership with patients on an ongoing basis, actively seeking their views and listening to their experiences.

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.

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 reconciliation* 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.

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 using 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 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
  - 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
  - to have clinical medication reviews carried out.
- Patients in nursing, residential and children's homes
  - see Table 4

* 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.

Table 1: What you should expect when you are admitted to hospital 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 and 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 2: What you should expect from general practice 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 the community pharmacy accesses information on the patient's current medication and medication changes and community pharmacy is alerted 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 3: What you should expect from your community pharmacy 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.

Table 4: What you should expect from social care as routine practice

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.

Innovation and Change Programme

Implementation of the Framework will involve an Innovation and Change Programme to drive improvements in medicines use by implementing and scaling up best practice and supporting the development of new solutions to address identified gaps in medicines processes.

During 2016/17, the Programme will deliver initiatives at both local and regional level to prioritise the implementation of a range of service development, translation and innovation projects. To accelerate improvement a number of roles and services will be scaled up that have already been piloted and demonstrated benefits in optimising patient outcomes, safety, cost-effectiveness, reducing pressure on Health and Social Care (HSC) services or minimising waste. These include the roll-out across all Trusts of a new consultant pharmacist-led service for medicines optimisation in older people[4] and a specialist mental health pharmacist role. In addition, a new Medicines Optimisation and Innovation Centre (MOIC) will lead an innovation work plan seeking new service and technology solutions to address gaps in best practice which, if proven, can be prioritised and scaled up. Regional workstreams will also establish baseline/benchmarking arrangements for medicines optimisation and deliver a personal and public involvement work plan. Links will be established between the Programme and the Regional e-Health and Care Strategy implementation programme to support the improvements in connectivity and e-health in primary and secondary care needed to support the Framework.

Medicines Optimisation and Innovation Centre (MOIC)

The newly established Medicines Optimisation and Innovation Centre (MOIC) provides a regional centre of expertise for research, service development, knowledge transfer and innovation in medicines optimisation.

The MOIC is part of the Northern Ireland European Innovation Partnership on Active and Healthy Aging Reference Site which recently achieved the highest recognition of 4 Star Status. The Reference Site status is granted to organisations that have demonstrated excellence in the development, adoption and scaling up of innovative practices for active and healthy ageing, in line with the strategic objectives of the European Innovation Partnership on Active and Healthy Ageing (EIP on AHA) and particularly the European Scaling Up Strategy for Innovation in Active and Healthy Ageing. Part of the MOIC's work in this area involves working in partnership with the Scottish Government and organisations from seven other countries on a European Union (EU) funded project titled Stimulating Innovative Management of Polypharmacy and Adherence in the Elderly (SIMPATHY). This project aims to stimulate, promote and support innovation across the EU in the management of appropriate polypharmacy and adherence in the elderly.

The Medicines Optimisation Quality Framework will be reviewed in 2021.

Declaration of interests

The authors have nothing to disclose.

References

1. Department of Health, Social Services and Public Safety. Northern Ireland Medicines Optimisation Quality Framework. March 2016. Available at: https://www.health-ni.gov.uk/sites/default/files/consultations/dhssps/medicines-optimisation-quality-framework.pdf .
2. Northern Ireland Audit Office (N IAO). Primary Care Prescribing. Report by the Comptroller and Auditor General. 27th November 2014. Available at: 2014 NI Audit Office Primary Care Prescribing Report
3. National Institute for Health and Care Excellence (NICE). Medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes. NICE guidelines [NG5]. March 2015. Available at: https://www.nice.org.uk/guidance/ng5 .
4. Miller R, Darcy C, Friel A, Scott M, Toner S. Consultant pharmacist case management of older people in intermediate care: a new innovative model. European Journal for Person Centered Healthcare 2016;4(1):46-52. Available at: http://www.bjll.org/index.php/ejpch/article/view/1056 .