Future Pharmacy Practice in Ireland

Meeting Patients' Needs

PSI
CUMANN CÓGAISEOIRÍ NA hÉIREANN
The Pharmaceutical Society of Ireland
AN RIALTÓIR CÓGAISÍOCHTA
THE PHARMACY REGULATOR

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Acknowledgements

The Pharmaceutical Society of Ireland (PSI) would like to thank the Future Pharmacy Practice Steering Group and Community Pharmacy and Hospital Pharmacy Subgroups for contributing their expertise so generously and for their help and guidance over this project and specifically to Dr Norman Morrow for his expert guidance, as Steering Group Chair.

The PSI would also like to express its gratitude to the patients, patient advocacy groups, pharmacists (both community and hospital), other healthcare professionals, national healthcare representatives, the Department of Health, Health Service Executive, regulatory bodies, academics, pharmacy students and a wide range of other stakeholders for providing their comments and suggestions that have helped make this Report as inclusive as possible.

The PSI would like to acknowledge PwC for carrying out the underpinning research and consultation and for their role in supporting the Steering Group in the development of their report on the future of pharmacy practice.

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PSI President's Introduction

I am delighted to present this report and hope that the findings and recommendations will help outline a real vision for the future direction of pharmacy in Ireland, which will valuably contribute to the health and wellbeing of patients.

The Pharmaceutical Society of Ireland (PSI), as the regulator of pharmacists and pharmacies, is responsible for the health, safety and wellbeing of patients and the public. As the body responsible for setting standards for pharmacy education and training, and developing practice standards and guidance for the profession, we need to better understand the role that pharmacy might play in the future care of patients.

It is with this in mind that the PSI Council commissioned this report, *Future Pharmacy Practice in Ireland– Meeting Patients' Needs*, to provide insight into the envisaged role of pharmacists in healthcare delivery that focuses on patient benefit and the value of making best use of pharmacists' education and expertise in the wider health service.

The practice of pharmacy, like many professions, has grown over time in the face of evolving patient and economic needs, and in response to significant progressions and changes in medicines, technology and regulation. It is widely accepted that our population's health needs will continue to change and place greater demand on existing health services. The current Programme for Government continues to support prioritising patients' healthcare needs as close to home as possible, and emphasises the development of primary care as a starting point for effective and integrated care, and indeed integration between the primary and secondary care settings.

This report reflects both the needs of patients and the vision of policy-makers. Engagement with many people throughout this project has helped to identify how patients consider pharmacists could best use their skills, and where policy-makers believe pharmacists could contribute more valuably to the healthcare system to ensure the needs of patients are being met in the most cost-effective way. It acknowledges the available network and resource of pharmacists with the opportunity to make most appropriate use of their knowledge and professional insight to support and promote the national health promotion and wellness strategy and oversee the safety and efficacy of medicines use. With both requirement and drive for health system reform, the role that pharmacists could play as part of an integrated solution to patient and healthcare demands, now requires wider attention.

We are conscious as a Council that the PSI must play a part in furthering effective public healthcare provision and facilitate an evolving pharmacist role in accordance with changing societal and policy demands, where there is clear patient value. This requires that we continue to have in place the standards of pharmacy education and training to facilitate any expanded role for pharmacists, ensuring safety with appropriate regulation. Across the healthcare system, we must truly start to focus our attention on patient benefit and cost efficiencies that can be achieved by developing multi-disciplinary approaches to healthcare delivery.

I would like to thank all those who have taken the time to participate in workshops and meetings, to inform research and give their considered advice in the development of this report. I also thank the Steering Group, chaired by Dr Norman Morrow, which was made up of many key players involved in devising or delivering on health strategy, all of whom were integral to the success of this initiative. With the input of those many contributors, this report provides an inclusive view of where we are now, how we can direct health related services in this country, and where the particular knowledge of pharmacists – be that in the community, in hospital or other areas of practice – can be best placed to contribute to the healthcare needs of patients into the future.

Dr Ann Frankish
President,
Pharmaceutical Society of Ireland (PSI)

Steering Group Chair Foreword

Today, healthcare systems across the world are facing unprecedented pressure to provide for the healthcare needs of their populations within the resources available. Consequently, many countries have introduced major healthcare reforms in an attempt to maximise existing financial and human resources to deliver improved health outcomes at an affordable cost.

Ireland is not immune from these challenges and indeed the demographic evidence points to a rapidly ageing population, expanding at approximately 3% annually, with associated increase in the burden of chronic illness. While national policy is focused on preventing illness, it is also focused on transitioning care such that there is a more effective and efficient use of acute and non-acute facilities. Further, since medicines are the ubiquitous technology to treat disease, there is a particular challenge to ensure their safe, effective and economic use.

Additionally, in any reform agenda, the deployment of the healthcare workforce is a vital consideration to positively exploit their inherent training and skills. Increasingly, traditional professional boundaries are being blurred through differentiation of practice and specialisation. Complexity of practice also militates in favour of team working where patients and practitioners benefit from integrated practice.

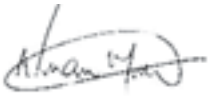
Against this background, this Report is fundamentally about patients and the public and how the pharmaceutical profession can contribute more effectively to the health and wellbeing of the population. It is not designed to be self-serving or indeed to present a 'wish list' of services, rather the recognition that pharmacy is part of the solution to the formidable healthcare challenges facing the country.

The Report, therefore, provides an evidential base, drawn from research within Ireland and other jurisdictions to offer new ways of working that will, on the one hand, benefit patient care, and on the other, more fully utilise pharmacists' skills, working collaboratively with other healthcare professionals and carers. Central to their role is their contribution to obtaining optimal outcomes from medicines and providing a sustainable approach to clinical care and cost-effectiveness while reducing avoidable adverse events and waste.

This Report is the result of work led by the Pharmaceutical Society of Ireland bringing together key stakeholders from the pharmacy profession, the wider healthcare sector and patients. It offers a direction of travel for the profession within the context of Government strategy and reform that will provide for multidisciplinary team working and a more integrated approach to managing the care of patients and the public in Ireland.

On behalf of the Steering Group, I wish to acknowledge the contribution made by both the Community and Hospital subgroups to this project. In addition, I want to thank the PwC project team and the PSI team for their hard work and support.

I am privileged to have been part of this project. My hope is that it will inspire leadership and innovation and will empower pharmacy to play its full part within the healthcare system in Ireland, supporting the public in healthy lifestyle choices and assisting patients in managing their conditions to offer better quality of life.



Dr Norman Morrow
Chairman

Executive Summary

This Report is fundamentally about patients and how the pharmacy sector can continue to contribute to public and patient care. It aims to build on the existing good practice and patient trust currently in place, to develop new practices to meet the evolving needs of the patient and the health system of the future.

The Future Pharmacy Practice in Ireland – Meeting Patients' Needs Report has been written following an extensive consultation process involving patients, patient advocacy groups, pharmacists (both community and hospital), other healthcare professionals, national healthcare representatives (including the Department of Health, Health Service Executive), regulatory bodies, academics, pharmacy students and a wide range of other stakeholders. This was supplemented with national and international research on healthcare trends and the changing role of pharmacy, along with submissions by the pharmacists of Ireland on current innovative practice, demonstrating cases of evolving delivery of pharmacist expertise. This research and consultation identified key areas of patient and health system needs and identified priorities for the use of pharmacists' skills and expertise in supporting patients manage their medicines and their health.

Strategic focus of Irish healthcare

Like most developed countries, patients in Ireland have an escalating need for healthcare. This reflects trends including the growth in the number of people aged over 65, which is expected to grow by circa 3% per year over the next ten to fifteen years and an increasing prevalence of chronic illness, with 40% of the population forecast to have at least one chronic illness by 2020.

In response, health strategies are concentrating on driving structural reform and improvements in healthcare in order to provide high quality, reliable and safe healthcare to the population in the most effective, efficient and accessible way within the resources available. National policy, such as 'Healthy Ireland' is focused on keeping people healthy, and where illness occurs, policy is focused on treating patients in the most appropriate setting and building capacity for self-management. Irish health policy also increasingly focuses on treating patients as close to their own home as possible via a multidisciplinary approach that utilises the skills of a range of healthcare professionals working collaboratively to deliver optimal care to the patient. Care is to be integrated so that patients are kept safe and receive a quality service across all settings.

Medicines are the most common healthcare intervention within the health system and both the use and complexity of medicines are increasing. Pharmacists are the healthcare professional with the widest knowledge of medicines and the potential complexities associated with the increasing use of medicines. Therefore, pharmacy as a profession has a critical role to play within the health system to ensure the rational use of medicines by maximising the benefits and minimising the potential for patient harm with regard to medicines.

The evolving role of Irish pharmacy

The pharmacy profession represents a cohort of highly skilled individuals with a high level of clinical governance and regulatory standards. As a profession, it has changed and evolved in recent years, with community pharmacies providing patient consultation rooms, supporting health information campaigns and successfully delivering public health initiatives such as vaccination programmes. In hospitals, pharmacists have successfully contributed to antimicrobial stewardship and infectious disease care and emerging advanced practice in multidisciplinary teams.

With a young demographic, an unequalled reach in terms of patient contact and access through an infrastructure of 1,885 pharmacies, pharmacists, as experts in medicines, are a unique resource to the health system and patients, to support enhanced delivery of cost effective improvements to public health and therapeutic management in a variety of settings.

Such improvements include:

- Contributing to **health and wellbeing** initiatives through structured population health information and awareness campaigns and preventative medicine to support the maintenance and improvement of the health of the public,
- Providing expertise in assisting patients to manage their **chronic diseases** and medication through structured initiatives and, where appropriate, through supplementary prescribing in collaboration with a patient's GP,
- **Managing medicines throughout the patient care pathway** via structured initiatives such as medication reviews for at-risk and vulnerable patients in the community and local settings e.g. nursing homes; and the greater presence of pharmacy throughout the patient pathway in acute settings, reducing prescribing errors and optimising the impact of medicines for patients.

The physical settings for services and patient care delivered by pharmacists are also likely to evolve with changing healthcare delivery patterns. International experience has shown an increase in pharmacists successfully working in GP surgeries, in nursing homes and in tandem with domiciliary care.

Enabling change in pharmacy in Ireland

Pharmacy's evolving role in Irish healthcare is enabled by a strong education and professional development structure, supported by the introduction of the MPharm qualification for new pharmacists and advances in continuing professional development (CPD), facilitated by the Irish Institute of Pharmacy (IIOP). The development of an advanced practice and specialisation framework would allow for further formal development of pharmacist skills in line with patient needs. Development of a research culture will lead to robust evidence supported by co-ordinated studies that focus on demonstrating the logic and cost effectiveness of investing in pharmacy to provide greater patient care throughout the patient care pathway in a cost-effective manner.

The robust regulatory system in place provides a platform for the continued development and advancement of the profession while providing the required oversight necessary for increased patient care roles. In order to achieve these goals, pharmacy will require strong leadership nationally, regionally and locally, to enable the pharmacy profession to contribute to new integrated models of care, to work collaboratively with healthcare colleagues as part of a multidisciplinary team in different care settings and to optimise medicines management in partnership with patients.

Pharmacy resourcing both in hospitals and community pharmacies, are substantial enablers to the advancement of clinical pharmacy activities. Due consideration to effective deployment of the pharmacy workforce and adequate resourcing of a new model of healthcare will prove beneficial in the longer term.

Technology is a key enabler of future pharmacy practice. Implementation of technology advancements will allow shared patient care and information. To fully implement and support medicines management throughout the patient pathway, electronic patient medication records need to be accessible to all healthcare providers. This would help to resolve current communication failings at the point of transitioning care. Increased automation will allow for operational efficiencies and greater focus on clinical and patient facing activities.

Conclusion

In summary, patient demand for healthcare in Ireland is growing at a rapid rate in terms of volume, cost and complexity. The only affordable solution to meeting this demand is through a multidisciplinary approach to healthcare to deliver the highest quality of care, as close to the patient's home as possible. The outputs from the Future of Pharmacy Practice in Ireland – Meeting Patients' Needs Report will be a critical part of the delivery of this care through the utilisation of the skills and access of the pharmacists of Ireland, providing optimal care with regard to medicines, with patients' needs at the heart of all care.

In this context, the Report makes a number of important recommendations for the planning and delivery of future pharmacy practice in Ireland.

Future Pharmacy Practice Recommendations

Health System Reform

Healthcare in Ireland (Chapter 2)

1. As the health system in Ireland continues to be reformed, policy makers should consider the role that pharmacists, with their unique expertise in medicines, could play as part of an integrated solution to patient and healthcare demands.

Pharmacy in Ireland (Chapter 4)

2. The resource that the pharmacy sector, both hospital and community, provides within the health system should be capitalised on for the enhancement of patient care.

The Potential Role of Pharmacy Practice in Patient Care

Pharmacy Supporting Health and Wellbeing (Chapter 6)

As pharmacists are the most accessible health practitioner in Ireland, with approximately 2 million people visiting a pharmacy monthly, both healthy and ill, they are ideally placed to support patients to protect and improve their health and further contribute to the national health and wellbeing strategy. In order to achieve this, the Steering Group make the following recommendations:

Information and awareness

3. The role of pharmacists as an integral part of the health sector delivering on the goals of Healthy Ireland should be strengthened and expanded. This includes the delivery of national information and awareness campaigns, prevention and early intervention initiatives, as well as initiatives supporting and empowering people to look after their own health and wellbeing. **Section 6.1**

Prevention and early intervention

4. The role of pharmacists in supporting self-care and health behaviour change should be expanded to capitalise on their high level of contact with patients and the public to ensure prevention of and early intervention in illness. Pharmacists should be included in the training and development on health and wellbeing interventions and skills rolled out by the health service. Furthermore, community pharmacies should be considered as a possible provider of national screening services, where appropriate. **Section 6.2**

Supporting management of minor and self-limiting conditions

5. The existing role that pharmacists play in supporting patients treating minor and self-limiting conditions, in the community should be further expanded. **Section 6.3**

Pharmacy Supporting Patients in the Prevention and Management of Chronic Diseases (Chapter 7)

Considering the frequency of attendance by patients with chronic disease, community pharmacists are ideally placed to support patients living with chronic disease in Ireland in self-care and self-management of their condition. In order to achieve this, the Steering Group make the following recommendations:

Pharmacy support and engagement with patients on self-management of chronic disease

6. Pharmacists should be integrated into building the capacity for patients' self-care and self-management of chronic diseases, including helping patients manage their medicines. This could be provided through structured education and medicines management programmes to at-risk chronic disease patients. **Section 7.2**

7. Pharmacists should provide a structured patient education and adherence programme for newly diagnosed chronic disease patients to improve adherence and their health outcomes. **Section 7.2**

Supporting chronic disease management through advanced pharmacy practice and collaborative shared care

8. Where monitoring of patients with a chronic disease can be appropriately managed in the community, consideration should be given to establishing advanced pharmacy services for this purpose. **Section 7.3**

9. As integrated programmes of care are rolled out, mechanisms should be explored to enable pharmacists and GPs to work more closely together to support patients in the management of their chronic conditions. This could include supplementary prescribing activities such as dosage adjustment or therapy continuation by the pharmacist in line with agreed protocols. **Section 7.3**

Pharmacy supporting medicines management throughout the patient pathway (Chapter 8)

With rising levels of polypharmacy, coupled with more complex medicines, the knowledge and expertise of the pharmacist should be used to ensure the safety and efficacy of patients' medication in all care settings. In order to achieve this, the Steering Group make the following recommendations:

Medicines management in primary and non-acute care

10. Pharmacists should provide enhanced support to patients with complex medicines needs in the community. This could be provided using targeted medicines review and medicines management strategies for at-risk patients. These reviews should be in collaboration with other professionals including GPs. **Section 8.1**

Patients in formal care or residential care

11. Patients in formal care settings, such as residential care, would benefit from targeted structured medicines review conducted by pharmacists and in collaboration with the patient's doctor or GP. **Section 8.1**

Home care

12. In keeping with government policy to manage patients at the lowest level of complexity and as close to home as possible, consideration should be given to provide for pharmaceutical domiciliary care for at-risk patients. **Section 8.1**

Medicines management at transitions of care

13. In line with HSE Integrated care guidelines, patients should receive pharmacist-led medication reconciliation and medicines review upon entry to and discharge from hospital, which should involve the community pharmacist when returning to primary care. **Section 8.2**

Medicines management in acute hospital settings

14. A wider range of patients in acute hospital settings would benefit from having their medicines screened for pharmaceutical and therapeutic appropriateness by the pharmacist. Standards for clinical pharmacy should be developed to support this process. **Section 8.3**

15. Patients with illnesses that require treatment with complex medicine regimes should have access to trained specialist pharmacists (e.g. palliative care). The specialist expertise should be used effectively throughout the new hospital group structure. **Section 8.3**

16. In order to enhance patient outcomes and increase medication safety, multidisciplinary teams, which include pharmacists should be used to develop collaborative models of medicines management. This includes development of appropriate pharmacist prescribing models. Supplementary prescribing by pharmacists in the first instance would aid the patient management process and should be developed. Longer term consideration should be given to giving pharmacists independent prescribing rights. **Section 8.3**

Enablers of Change (Chapter 9)

A number of key enablers were identified that support the development of future pharmacy practice to deliver patient care. In relation to the key enablers, the Steering Group make the following recommendations:

Leadership (9.1)

17. The leadership potential of the pharmacy profession should continue to be a focus of development. **Section 9.1**

Continuing Professional Development and Education (CPD) (9.2)

18. The CPD system for pharmacists as delivered through the Irish Institute of Pharmacy (IIOP) should continue to be used to deliver quality assured CPD to enable pharmacists provide the patient care and practice developments as identified. **Section 9.2**

Integrated care and collaboration (9.3)

19. As a system of integrated care is developed within Irish health and social care services the opportunity for pharmacists to further develop shared care with other healthcare professionals, especially doctors, should be explored. **Section 9.3**

Development of both advanced pharmacy practice and specialisation (9.4)

20. To maximise the benefit to patient care, an advanced pharmacy practice and specialisation framework should be developed to further enhance the skills of pharmacists in all settings. **Section 9.4**

Research and an evidence base (9.5)

21. Pharmacy practice research should be used to provide an evidence base focusing on and informing health policy. The optimal model for co-ordinating this research should be explored with the relevant stakeholders, including the pharmacy academic institutions and IIOP. **Section 9.5**

Regulation and governance (9.6)

22. Monitoring, audit and regulatory functions should underpin the implementation of these recommendations to ensure that professional accountability, clinical governance and delivery of improved health outcomes for patients are achieved. **Section 9.6**

Pharmacy resourcing (9.7)

23. Greater structure in pharmacy teams, with delegation of operational roles to appropriately trained staff members, would facilitate the increased clinical role of pharmacists in clinical practice. Regulation of pharmacy support team members would facilitate greater involvement of pharmacists in enhanced roles. **Section 9.7**

Technology (9.8)

24. Technology should be used to enable sharing patient care, realise work efficiencies, and facilitate safe transitioning of care. In the development of national IT systems, opportunities should be explored to incorporate the pharmacy element. In the development of pharmacy IT systems provision for integration with wider health system functionality should be considered. **Section 9.8**

Benefits of Future Pharmacy Practice for Patient Care

Pharmacy supporting health and wellbeing

The network of over 1800 pharmacies in primary care is ideally placed to support and promote patient self-care and prevention through early intervention initiatives as part of the national health and wellbeing strategy.

Evidence suggests that 2 million people visit a community pharmacy each month and that 20 million prescriptions are filled in pharmacies annually.

Pharmacy supporting the prevention and management of patients with chronic disease

Patients with chronic diseases are already frequent pharmacy visitors and pharmacists could increasingly assist and support their self-management of those diseases as part of an integrated approach across the healthcare team.

Research indicates that 40% of Ireland's population will have at least one chronic disease by 2020.

Pharmacy supporting medicines management throughout the patient pathway

With increasingly complex medicines available and rising rates of polypharmacy, the knowledge and expertise of pharmacists should be better used to ensure the safety and efficacy of medications in all patient care settings.

Irish health statistics show 26% of people over 50 are using 5 or more medicines each day.

Benefits for patients

- Wider access in the community to reliable information and prevention techniques to encourage healthy lifestyles.
- Wider access to immunisation and health screening for early intervention and referral.
- Broader community based support for the management of minor and self-limiting health conditions.

Benefits for the health service

- Strengthened support for national health and wellbeing initiatives, such as health screening, by making use of the network of pharmacists to keep people well at all life stages.
- Maximise existing patient contact with professional pharmacy services as a means to provide collaborative access to awareness and information campaigns.
- Reduced pressures on the wider health system by delivering appropriate care in the pharmacy, and providing accurate referral pathways.

- Improved disease management with pharmacists providing a trusted source of patient information, accessible education and medicines adherence programmes for patients.
- Ongoing, collaborative disease monitoring and opportunity for appropriate supplementary or repeat prescribing by pharmacists.

- Care provided close to the patient's home and at the lowest level of complexity.
- Improved management of chronic conditions by increasing understanding of medicines and raising patient adherence.
- Better disease management resulting in reduced hospital admissions and decreased long term complications.
- Reduced cost burden and resource pressures in acute care services as patients are better managed close to home and at the lowest level of complexity.

- Structured, collaborative supports on complex medicines for at-risk patients, in the community.
- Driving patient safety with medicines reviews and reconciliation preventing error and complications, and reducing length of hospital stays.
- Improved communication ensuring smoother and safer transitions of care for patients.

- A safe, standardised and integrated medicines service for patients.
- Optimisation of medicines use in formal and residential care settings, minimising patient adverse events and reducing waste of medicines.
- Cost avoidance opportunities with pharmacists collaborating on care and medicines interventions reducing hospital stays, medicine costs and waste.
- Improved efficiency and better use of skilled resources, ensuring best value and safer, rational use of medicines in all patient care settings.

1

Introduction

Introduction

In Ireland, as in most developed countries, patients have an escalating need for healthcare. In response, health strategies are focusing on driving reform and improvements in healthcare in order to provide high quality, reliable and safe healthcare to the population in the most effective, efficient and accessible way within the resources available[1]. Core themes of these reforms identify the need to better involve patients and the public in the management of their health and to take control of the longer-term issues facing the health sector by improving the health of the nation and individuals.

While this presents a considerable challenge to the healthcare sector in general, this Report examines how these challenges affect the future practice of the pharmacy profession considering its key role in providing healthcare to the public and that medicines are the ubiquitous technology used to improve and maintain patients' health.

The Pharmaceutical Society of Ireland (PSI) is the regulatory body for pharmacists and pharmacies in Ireland. The PSI regulates approximately 5,600 pharmacists and 1,885 pharmacies in Ireland. The PSI works in the public interest to protect and promote the health, safety and well-being of patients and the public. As part of the PSI's wide regulatory functions, the Pharmacy Act 2007 confers on the PSI, the duty to "take suitable action to improve the profession of pharmacy". The PSI Council identified this duty as one of the core elements of its ongoing corporate strategy to facilitate the development of the profession of pharmacy as an integrated part of the healthcare system with a focus on determining long-term healthcare and public benefit that might be provided by pharmacists. Also of consideration to the PSI was that current pharmacy students and recent graduates would expect to be practising pharmacists and treating patients as far out as 2060. Therefore, long-term challenges to the health system and changing patient profile should inform the planning of any developments in pharmacists' education and practice.

As a result, the PSI Council commissioned the Future Pharmacy Practice Project - Meeting Patients' Needs Report to examine how pharmacy practice in Ireland can meet patients' needs in the future. The aim of the work is to provide insight into the envisaged role pharmacists should be playing in the context of national strategy, examining how pharmacy practice can progress, improve and most valuably contribute to the health and wellbeing of patients in an evolving healthcare sector. This work followed on from that carried out for the PSI in 2008 in the 'Interim Report of the Pharmacy Ireland 2020 Working Group'[2] which outlined how the pharmacy profession could contribute to the development of a more integrated approach to healthcare in Ireland in order to enhance services to patients. The work also builds upon the findings of the Baseline Community and Hospital Pharmacy Reports published by the PSI in 2011[3] and 2012[4] respectively, which identified a need to examine how pharmacy fits into the wider healthcare delivery system.

Therefore, this Report is fundamentally about patients and how the pharmacy sector can contribute to public and patient care. It aims to build on the existing good practice and patient trust currently in place to develop new practices to meet the evolving needs of the patient and health system of the future.

Aims, Principles and Research Approach

Aims

The PSI Council appointed a Future Pharmacy Practice Project Steering Group to oversee the project. The Steering Group provided the expertise of representatives from the Department of Health, Health Service Executive, academia, industry, hospital and community pharmacists, patients and other health care professionals. The members of the Steering Group are listed in Table 1.

Table 1. Future Pharmacy Practice Project Steering Group Membership

Group Member	Organisation
Dr Norman Morrow (Chair)	Chief Pharmaceutical Officer Northern Ireland(retired)
Ms Teresa Cody*	Department of Health
Mr Eugene Lennon/Ms Maria Egan	Department of Health
Ms Kate O'Flaherty	Department of Health
Ms Kate Mulvenna	Health Service Executive
Dr Catriona Bradley	Irish Institute of Pharmacy
Mr Keith O'Hourihane (Community Subgroup Chair)	Pharmacy First Plus
Ms Elaine Conyard (Hospital Subgroup Chair)	Our Lady of Lourdes Hospital
Ms Leonie Clarke	Industry/Regulatory Consultant
Prof Stephen Byrne	University College Cork
Ms Katie Murphy	Cystic Fibrosis Ireland
Dr Ruairi Hanley	Medical Council Representative
Dr Paul Gorecki	PSI Council Representative

* Ms Cody resigned from the Steering Group in December 2015, following her change in role in Department of Health (DoH)

As part of the terms of reference (Appendix A) the Future of Pharmacy Project Steering Group were tasked with overseeing the production of a report to provide insight into the envisaged role pharmacists should play in the context of national strategy, examining how pharmacy practice can progress and improve and most valuably contribute to the health and wellbeing of patients in an evolving healthcare sector.

The objectives of the Future Pharmacy Practice Project Steering Group (FPPSG) were;

- To ensure compliance with the stated objectives of the project,
- To provide practical guidance and expertise to the project team,
- To approve interview questions/format for focus groups,
- To monitor progress of the project in line with the project plan,
- To peer review the final draft report and provide expert commentary.

Principles

The Steering Group, conscious of the importance of the task assigned, agreed the following principles to guide their work and decisions during the Future of Pharmacy Practice project.

Future Pharmacy Practice Project Steering Group Principles

In the overarching interest of patient safety, aspects of future pharmacy practice and potential initiatives supporting these should demonstrate the following:

- Offer patient/public benefit,
- Be evidence based, outcome focused and practice informed,
- Be cognisant of declared health policy,
- Be flexible to enable application in different contexts,
- Be responsive to multidisciplinary issues and build multidisciplinary collaboration,
- Support integration and continuity of care across the primary/secondary interface,
- Engender public support,
- Be legislatively possible should legislation be required,
- Offer cost effective use of resources,
- Optimise/build on the use of existing systems and prevent unnecessary duplication,
- Ensure clear lines of accountability and responsibility,
- Contribute to the equity of provision of care,
- Obtain consistency of standards of pharmaceutical practice,
- Provide for the sharing of information,
- Optimise current and future technology,
- Achieve a balance between pragmatism and innovation,
- Build on the recent developments in pharmacy practice and education including CPD.

As both community and hospital pharmacy practice is involved, the PSI Council appointed two practice subgroups of experts representing both community pharmacy and hospital pharmacy (Appendix A) to provide technical support to the Steering Group.

Following a public procurement process, the PSI appointed PwC to carry out the project work in line with the project tender (Appendix A).

Research approach

The project brief required national and international research to identify current best practice nationally and internationally, and engagement with patients, pharmacists, the health service, policy makers, and all other relevant stakeholders to identify how they envisage pharmacists could best use their skills in the evolving healthcare system. The research approach is outlined in Figure 1 below.

Figure 1. Research approach

Our approach – an overview

National and International Research

Detailed research of ***international pharmacy practice*** in six jurisdictions was conducted, including interviews with subject matter experts in each country.

A review and research of Irish health issues and ***national healthcare policy*** also informed the recommendations.

Innovation portal

An innovation portal was developed to allow pharmacists across the country to showcase and contribute their innovations.

The innovation portal received a strong level of response, and the contributions were used as a basis for the focus group and consultation stages as new services were tested with patients and policy makers.

Nationwide focus groups

Views of ***patients and members of the public*** were captured through focus groups run around the country.

Community and hospital pharmacist focus groups were also conducted nationwide to gather views from within the profession.

Extensive consultation

A wide range ***of patient representative and advocacy groups*** were consulted for input on how the future of pharmacy can help those patients.

Consultations were held with key ***policy and regulatory stakeholders.***

The views of a range of ***other healthcare professionals*** were also sought to determine how best to collaborate.

National and international research

National and international research was undertaken through an extensive literature review. Pharmacy practice in Ireland and six benchmark countries (the UK, the USA, Australia, Canada, New Zealand and the Netherlands) was examined. This was supplemented with follow-up telephone consultations with key experts in each of the six comparator countries. The following areas were researched:

- Irish healthcare landscape,
- Demographic and disease trends,
- National health policy,
- National developments in pharmacy practice,
- International benchmarking.

This research identified the context of the changing healthcare environment in Ireland, and identifies for the report those patient health needs where pharmacists could be part of the solution. It also looks at current pharmacy practice in Ireland and internationally to identify successful pharmacy initiatives used to meet patient and health system demands. The outcomes of this work are reflected in the Report and have helped inform the final recommendations, particularly in the context of national health policy.

The work is summarised in a supporting paper A National and International Research-supporting research for the Future Pharmacy Practice in Ireland - Meeting Patients' Needs Report, 2016.

National consultation process

An extensive engagement exercise was undertaken with patients, pharmacists, the health service policy makers, and other relevant stakeholders to identify how they envisage pharmacists could best use their skills in the evolving healthcare system.

The consultation involved the following stakeholders: focus groups of patients from various locations in Ireland, patient representative groups, Department of Health (DoH), Health Service Executive (HSE), Regulatory bodies (e.g. Health Products Regulatory Authority (HPRA), Health Information and Quality Authority (HIQA), etc.), Schools of Pharmacy and Irish Institute of Pharmacy (IIOP), focus groups with pharmacy interns and students, focus groups with community, hospital and other (e.g. industry, academia) pharmacists, other healthcare professionals (e.g. general practitioners, practice nurses, dentists).

This process of engagement was very positive. A number of overarching and converging themes emerged in the course of the consultation process. These included; medicine safety and efficacy, transitions of care for patients, underutilisation of pharmacist expertise, chronic illnesses and 'at risk' categories, resourcing, technology, evidence based practice, multidisciplinary working in various care settings.

The Steering Group considered the themes identified by this work and ensured that they are reflected in the main report. This work is summarised in supporting paper B - Consultation Programme-Summary of stakeholder responses from the consultation exercise for the Future Pharmacy Practice in Ireland - Meeting Patients' Needs Report, 2016.

Innovation portal

Current innovation in community and hospital pharmacy practice was captured via an innovation portal that was open to submissions from all registered pharmacists. An excellent response was received to the call for submissions with 141 submissions being made. Key themes were identified and then grouped into the following key areas for innovation: Medicines Optimisation, Population Health and Wellbeing, Chronic Disease Management, Advanced Practice and Specialisation and Technology.

The outcomes of the innovation portal were considered by the expert Subgroups and Steering Group. The Steering Group would like to thank all those who provided submissions. The summary of the inputs received via the innovation portal are presented in supporting paper C- Innovation Paper– Summary of submissions received via the innovation portal for the Future Pharmacy Practice in Ireland - Meeting Patients' Needs Report.

Cost avoidance/reduction opportunities

The Steering Group exercised its option to conduct a cost effectiveness review of three potential new services identified during the main research and analysis of patient needs. These included a new or enhanced service relating to;

- Community [Section 7.2] - medicines optimisation for newly diagnosed asthmatics,
- Nursing home/residential care settings [Section 8.1] – medicines optimisation by a pharmacist in collaboration with the patient, nursing and medical team,
- Hospital [Section 8.3] – medicines management in a hospital setting – clinical pharmacy services.

This work is summarised in supporting paper D – Potential Cost Avoidance Opportunities- supporting research for the Future Pharmacy Practice in Ireland - Meeting Patients' Needs Report 2016.

The supporting papers (A to D) are available on the PSI web site: www.psi.ie

Report of the Steering Group

The outcomes of the national and international research, the submissions to the innovation portal, the feedback from the extensive consultation exercise, the cost reduction opportunities and the input from practice subgroups on the research exercise, informed the Steering Group's deliberations and recommendations in this final Report.

2

Healthcare in Ireland

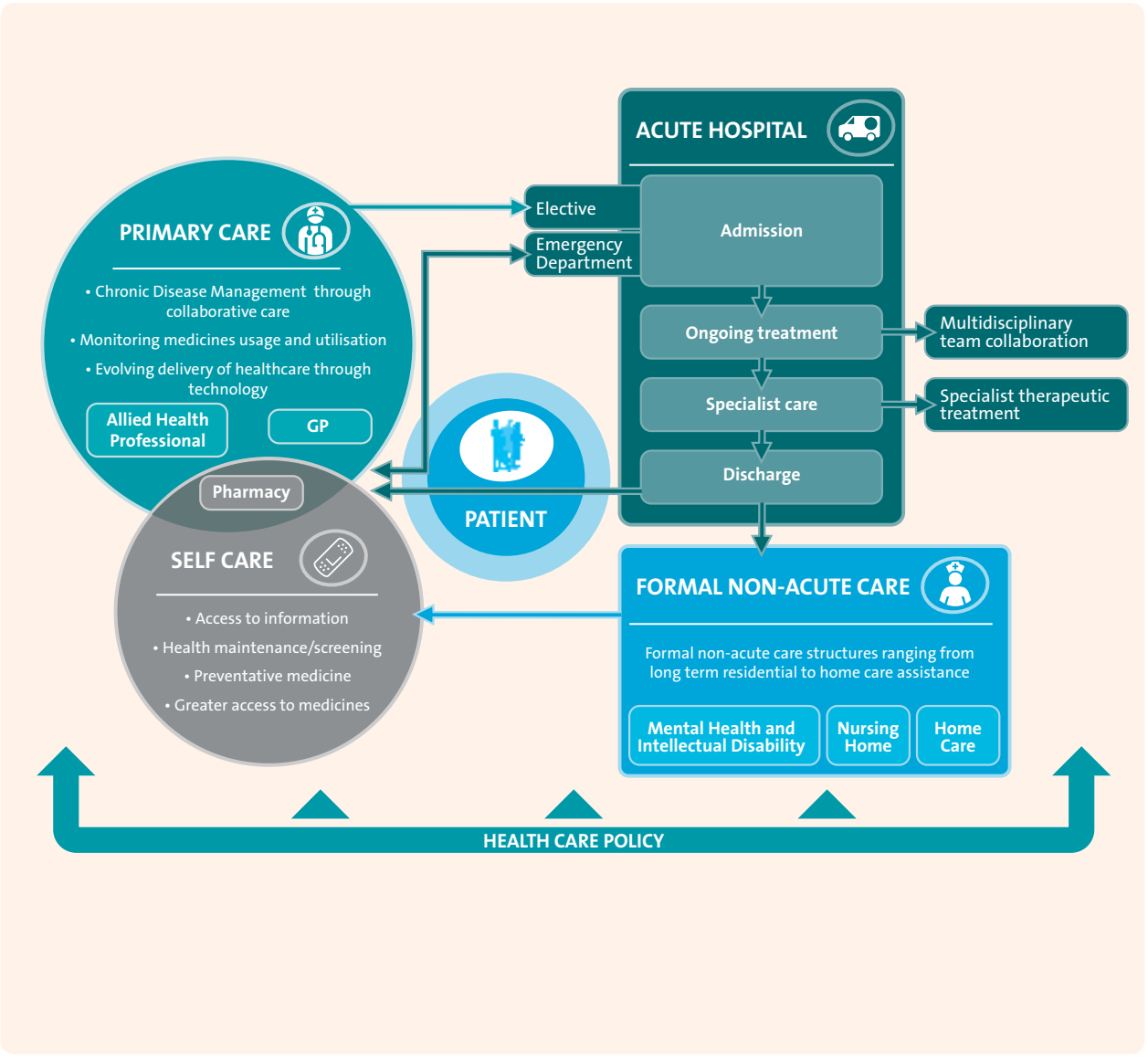
Healthcare in Ireland

Patients and the population receive healthcare in various settings across the healthcare system and at various stages in their lives.

The patient care journey, in Figure 2, illustrates the various pathways the patient may take when using health care services. This may include:

- Self-care defined as "what people do for themselves to establish and maintain health, prevent and deal with illness"[5];
- Primary Care - all health services outside hospital;
- Hospital Care - either for emergency or elective care/treatment as a day case or inpatient; and
- Formal Non-Acute Care e.g. residential care, step down care.

Figure 2. Outline of patient care journey



Every resident in Ireland is entitled to healthcare through the public health system, which is managed by the Health Service Executive (HSE). This public healthcare system provides over 1.5m public hospital discharges[6] yearly and an estimated 14 million GP visits per year, made by both private and public patients[7,8]. All maternity services and healthcare for children under six weeks are available for free under the Maternity and Infant Scheme. Other health services are subject to subsidy based on age, illness and means, with 38% of the population being Medical Card holders and thus entitled to free healthcare services including hospital, general practitioner(GP) and dentist's visits, as well as most prescription medicines (though a dispensing charge applies)[9]. However, there is also a substantial private component to Irish healthcare, largely funded by private health insurance (PHI) with 46% of the population holding insurance.

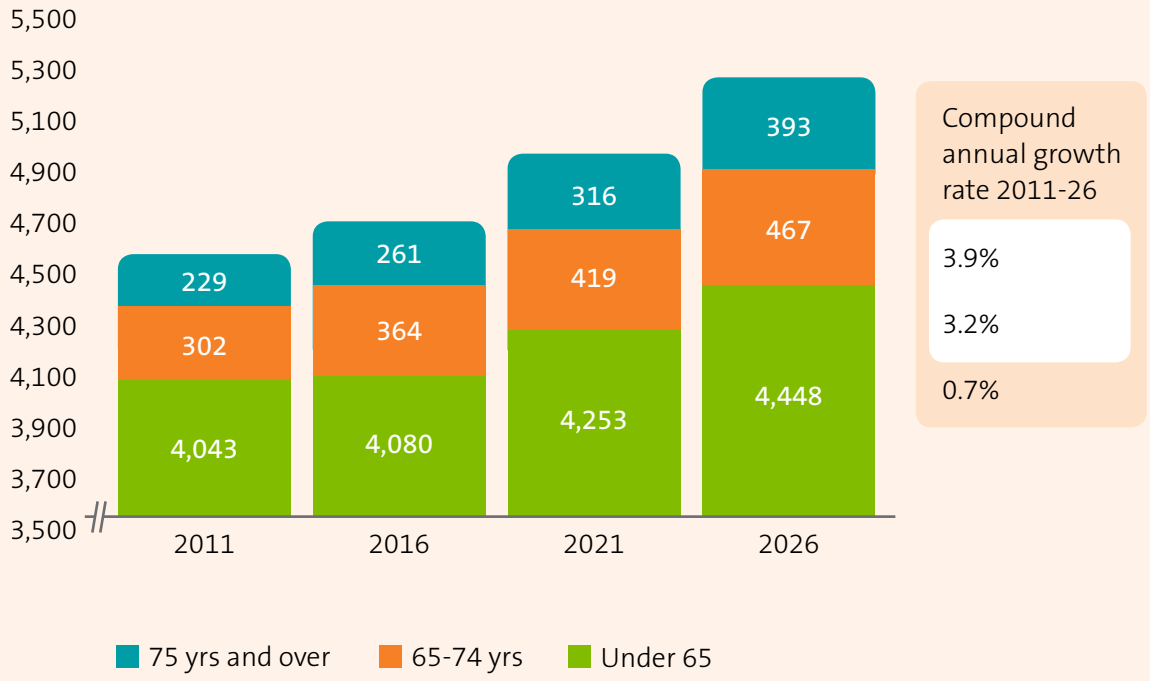
Life expectancy in Ireland stands at 81 years, almost one year above the Organisation for Economic Co-operation and Development (OECD) average (80.2)[10]. This has risen from 76.5 in 2000 and 74.7 in 1990, marking a trend of overall health improvement. This improvement is largely due to lower mortality and better survival from conditions such as heart disease and cancer affecting older age groups.

While an overall trend of health improvement is seen, there still remain risks to Irish health as the population alcohol; cigarette consumption and obesity rates are higher than in many other European countries.[11]

In addition, the population over the age of 75 is expected to experience a 72% growth between 2011 and 2026. [12] (Figure 3)

This ageing of the population has profound implications for the health economy and an increased demand for healthcare is forecast over the coming years.

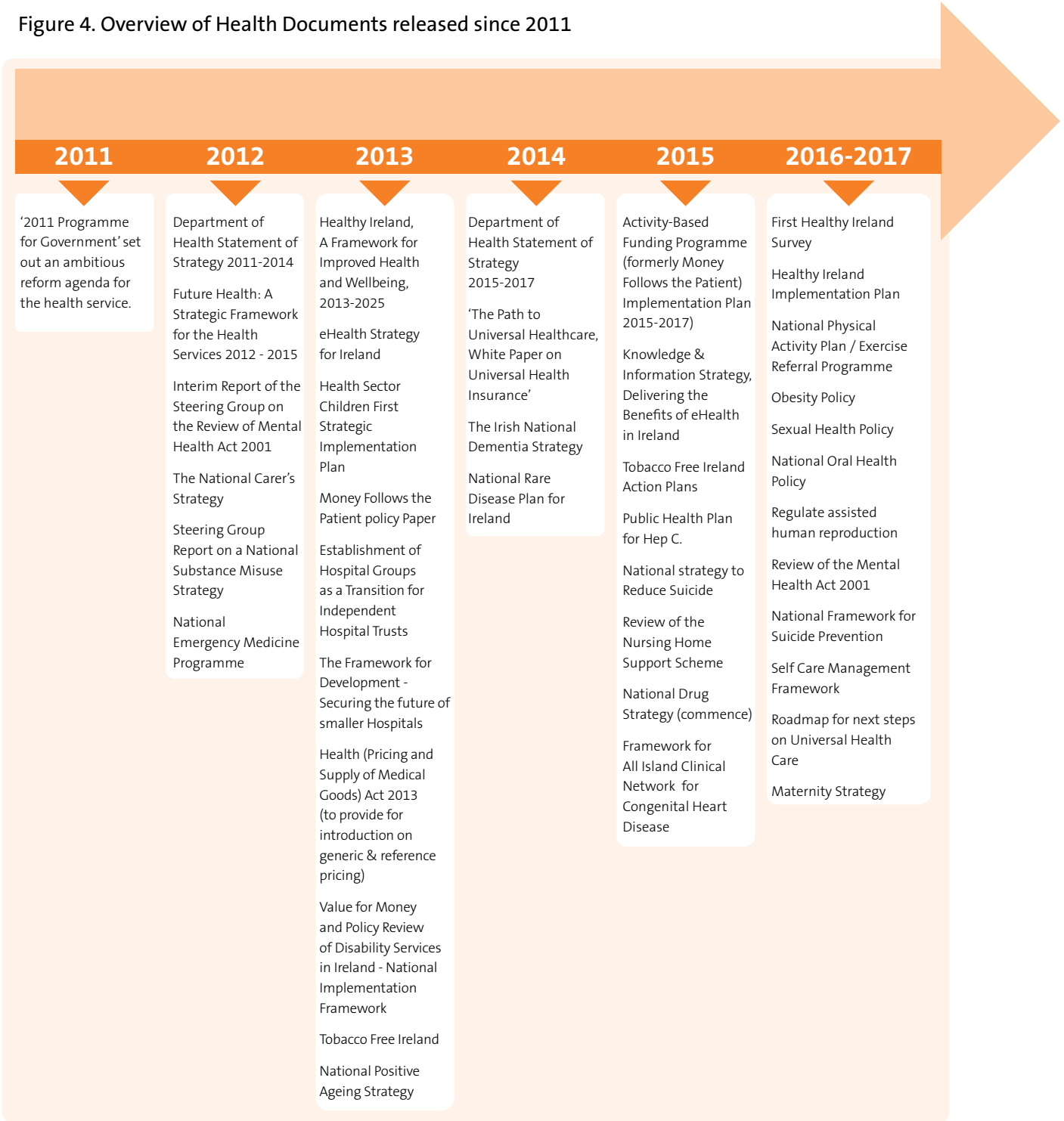
Figure 3. Ireland population projections 2011-2026[12] (000's)



National health policy

An examination of health policies and engagement with policy makers confirms the agenda of healthcare reform underway in Ireland.

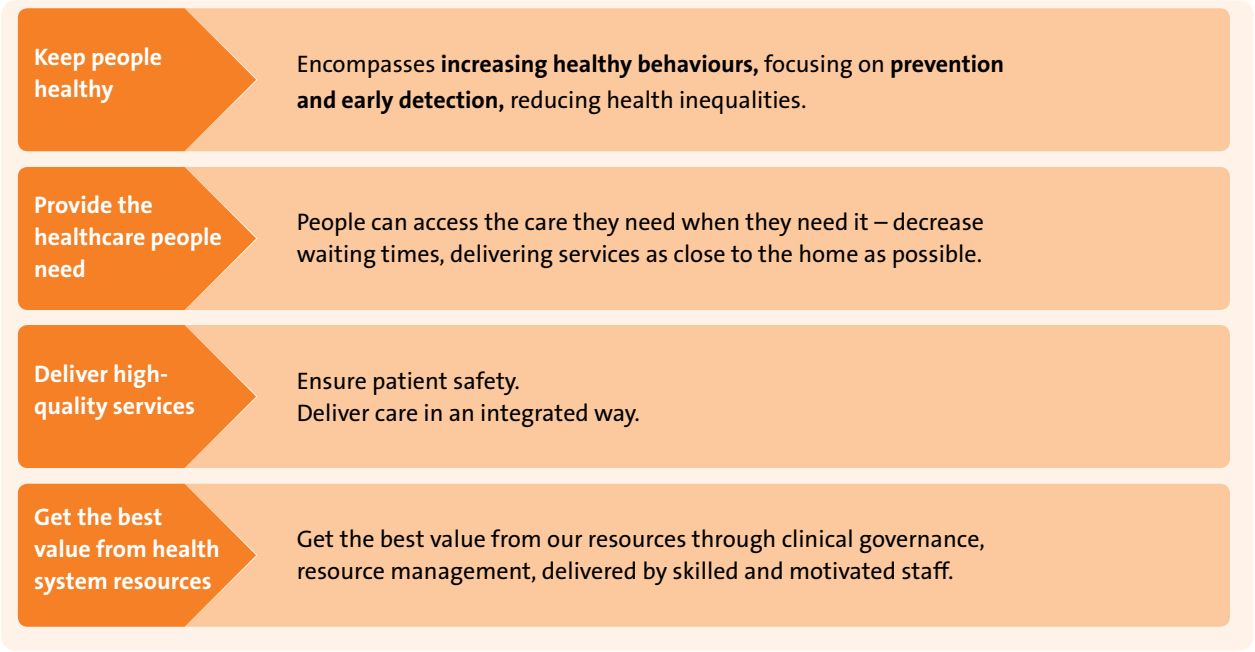
Figure 4. Overview of Health Documents released since 2011



This reform agenda is in response to the rising demand for healthcare, from an ageing population and increased chronic disease burden. The focus is to keep people healthy, and when they need treatment, provide this as close to home as possible.

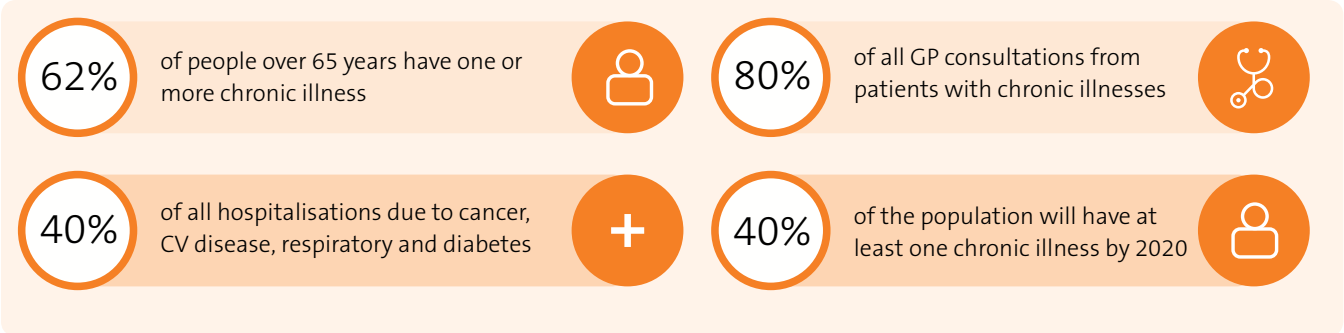
Care is to be integrated so that patients are kept safe and receive a quality service across all settings. With expenditure needing continuous control, best value from all health resources is a necessity (figure 5).

Figure 5. Priorities of Department of Health Statement of Strategy 2015-2017



Many older patients have multiple co-morbidities and chronic illnesses, which have been identified by the Department of Health as requiring specific treatment strategies[13]. Patients with chronic conditions are heavy users of the health services. It is estimated that three quarters of the healthcare expenditure is allocated to the management of chronic diseases[14]. Currently 38% of the Irish population report that they have a chronic disease and over half of all people over 50 years have at least one chronic disease rising to 62% in the over 65 years category[15]. By 2020, 40% of the population are forecast to have at least one chronic illness. Chronic conditions require disease management strategies to alleviate symptoms and modify the progression of the disease to a lower acuity level, thus enhancing the patient's quality of life. The future outlook for the estimated cost and growth of a number of chronic illnesses is detailed in figures 6 and 7[16].

Figure 6. Chronic illnesses in Ireland[16]



The rapid growth of chronic illnesses and an ageing population demographic is leading to a major increase in demand for health services. However, due to public spending constraints in the wake of the 2008 economic crisis, there has been a reduction in health spending in recent years[17], with budget cuts and a recruitment moratorium in place for a period of six years. While economic pressures have eased somewhat, Irish healthcare appears to have entered a 'new normal' whereby substantial budget increases are unlikely in the short to medium term.

The outcome of these factors is a system with areas of severe ongoing resource constraint with growing treatment waiting lists and high profile crises in emergency departments. This constraint has necessitated a policy focus on achieving "more for less" in terms of restructuring of service delivery, increased productivity of care delivery and quality of patient outcomes in a manner that is most cost effective through an integrative healthcare approach[1]. Healthcare policy has thus focused on restructuring patient care to models of lower acuity settings, including a move of inpatient treatment to day-case and an increased focus on primary care. This is to be sustained by a greater level of community supports, as attempts are made to treat patients closer to their own homes rather than in institutional care settings.

An integrated approach is proposed which is underpinned by a focus on prevention of disease for the wider health population. 'Health and Wellbeing' initiatives such as *Healthy Ireland*[13] aim to tackle the behaviours of the population and the management of chronic illness, thus keeping a greater proportion of the population healthy, rather than treating the disease after it is diagnosed. This will be achieved through greater integration of all services including sharing of information and more seamless monitoring of health indicators enabled by technology[18,19].

Figure 7. Chronic disease statistics in Ireland

Chronic Disease	Population	Estimated Cost	Annual Growth
Coronary Heart Disease [20,21]	182,000	€2.3 billion	3.75%
COPD [22,23]	110,000	€0.4 billion	2.3%
Diabetes [14]	225,000	€1.3 billion	3%
Asthma [24,25]	450,000	€0.5 billion	N/A
Cancer [26]	129,000	€1.5 billion	6.5%

Case Study 1: Diabetes in Ireland

Between 2010 and 2020 the number of adults with diabetes is **expected to rise by 30%.** This means the number of adults aged 45+ years with diabetes is expected to **rise by an additional 40,000 people in ten years.**

The cost of treating diabetes in Ireland has been estimated to be approximately **€1.3bn**, with 57% of all amputations (nominally costing €30,000 in inpatient care) being attributable to diabetes – **80% of which could have been avoided with earlier diagnosis and treatment**.

A further major healthcare reform is the establishment of six Hospital Groups designed to provide greater autonomy for providers of hospital care and allow hospitals to be more responsive to the needs of their locality. These Hospital Groups will be supported by a network of Community Healthcare Organisations (CHOs) structured to deliver an integrated model of care. There will be 90 Primary Care Networks set up, averaging a population of 50,000 each to support groups of Primary Care Teams. These Primary Care Networks will enable integration of all services for a local population. This structure places an accountable person as responsible for actual service delivery to a defined local population.

The HSE Clinical Strategy and Programmes Division is focused on bringing clinical leadership to the heart of the decision-making process within the health system with the ultimate aim of improving quality, access and value of healthcare in the country. The National Clinical Programmes (NCPs) and their supporting initiatives are a significant and positive development in the Irish Health Service. They have changed, and continue to change, how care is delivered using evidence-based approaches to system reform. The NCPs are being restructured into integrated care programmes, which aim to develop a system of integrated care within Irish health and social care services. The stated aims are to 'join up' health and social care and put good patient and service user outcomes at the centre. It is part of a long-term programme, which aims to improve and streamline healthcare by changing the way that care is provided, so that people with complex needs can live healthier and more independent lives. There are five Integrated Care Programmes focused on older persons, prevention and management of chronic disease, patient flow, children's health and maternity. The goal is to ensure that the health service is able to provide person-centred, coordinated care to all its users, by interdisciplinary care teams.

Through the consultations and focus group interactions, a number of challenges for patients were identified as they journey through our health system. These include a need to support patient self-care, particularly in the prevention and management of chronic diseases. Patients want and need better communication with and between healthcare professionals concerning their medicines, especially when they transition between multiple healthcare professionals and care settings. Access to clinical pharmacy services for patients is seen as a positive in preventing harm, promoting agreed medication guidelines and protocol use, rational use of medicines and saving costs to the health service. Patients in formal care settings also need support with the use of their medicines. Many patients are prescribed multiple medicines (five or more is classified as polypharmacy) which can be appropriate or inappropriate[27]. Optimisation of prescribing medicines in this group of patients should be a priority due to significant clinical and economic costs of drug related illnesses[28]. This is a high-risk group who could benefit from the structured review of their medicines by a pharmacist.

Conclusion

Demand for healthcare in Ireland is projected to grow rapidly over the next fifteen years driven by an ageing population with a growing incidence of chronic illness. The growing cost of this healthcare demand comes at a time of continued financial strain on public spending, resulting in severe capacity and resource constraints in the public health service. This represents a "burning platform" in terms of a requirement for new, innovative, cost effective delivery of healthcare. Irish healthcare of the future will require greater collaboration of all healthcare professionals, each utilising their unique skills to best effect. All of these factors indicate a requirement for a greater contribution to patient outcomes in the future by the pharmacy profession, delivered in a collaborative and integrated way in both acute and community settings. How this future of pharmacy practice can be achieved is outlined through recommendations in this Report.

Recommendation 1

As the health system in Ireland continues to be reformed, policy makers should consider the role that pharmacists with their unique expertise in medicines, could play as part of an integrated solution to patient and healthcare demands.

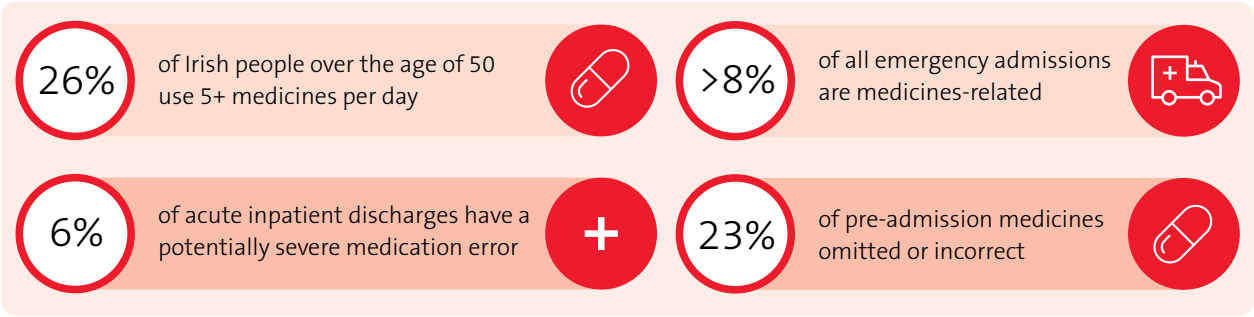
3

Safe and Rational Use of Medicines in the Healthcare System

Safe and Rational Use of Medicines in the Healthcare System

Medicines are the most common healthcare intervention within the health system. When used correctly medicines can alleviate disease or even cure, enhance quality of life and improve patient outcomes. However, the complexities of ensuring optimal use of medicines cannot be underestimated, and are arguably increasing[29]. Of all the healthcare professions, pharmacists have the widest knowledge in the science and use of medicines, and therefore have a key role to play in maximising the benefits arising from medicine use and minimising the potential for patient harm.

Figure 8. Medication related risks[32]



There has been a dramatic increase in medicine use in recent times[30,31], particularly for older people with multiple conditions that require treatment. Polypharmacy describes the use of five or more medicines by a patient. There has also been an increased risk of adverse events including adverse medicine/drug reactions (ADRs) and medication error associated with this increased medicine use[27]. Figure 8 highlights the risks associated with the use of medicines[32]. Medication related adverse events are a major cause of preventable patient harm with associated hospital admissions. Pharmacists, as medicines experts, play a key role in the prevention of errors and the promotion of medication safety, both in the hospital and community setting.

The rational use of medicines requires that "patients receive medications that are appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community"[33]. In 2014, an estimated €2.25 billion was spent on medicines. This is comprised of 80% public spending (representing 18% of total public health spend) with the remainder from private spending. Expenditure on medicines as a percentage of Gross Domestic Product (GDP) in Ireland is in line with the OECD average of 1.4%. Although this expenditure has been greatly reduced in recent years[34], there is still a need to manage it, as demand for newer costly medicines increases e.g. monoclonal antibodies used to treat Crohn's disease, rheumatoid arthritis, and some cancers.

Pharmacists, therefore, have a critical role to play in ensuring the safe and rational use of medicines and adding value to the healthcare system. They are well placed, both in the community and hospital care settings, to educate and advise patients on the correct use of their medicines. They provide objective prescribing information for other healthcare professionals and work in collaboration with them to improve and minimise the risk of adverse drug reactions and potentially inappropriate prescribing. Their knowledge and training in medicines efficacy and management makes them strong advocates for good medicines governance across all relevant settings.

With the consumption and complexity of medicines forecast to increase, the paramount role for pharmacists in patient care is ensuring the rational and safe use of medicines, a consideration that will be at the forefront of pharmacy practice into the future.

4

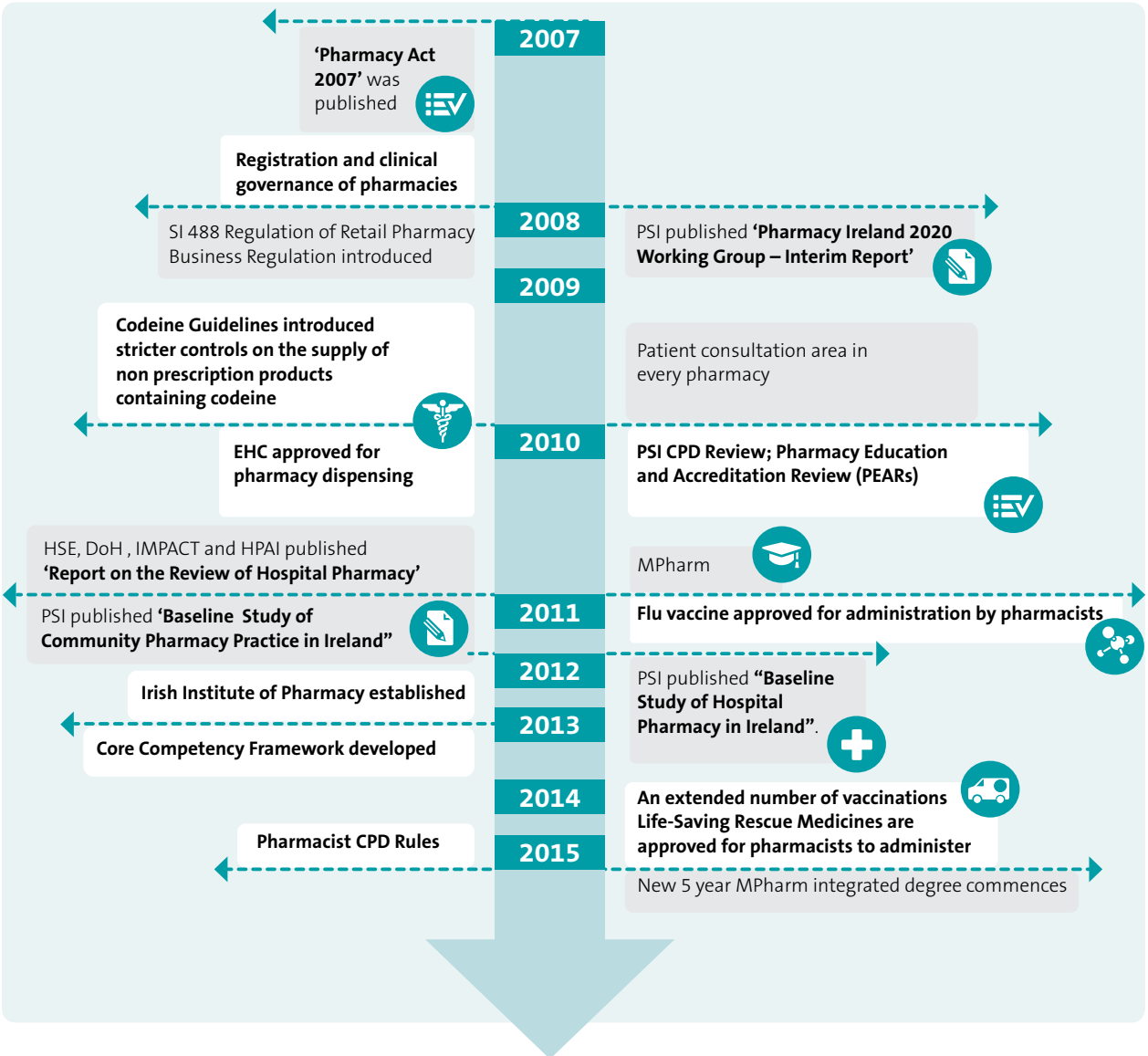
Pharmacy in Ireland

Pharmacy in Ireland

In Ireland, there are currently 5,636 registered pharmacists, 385 pharmaceutical assistants and 1,885 registered pharmacies (June 2016). International research conducted for this Report showed that Ireland has a notably higher number of pharmacies per 10,000 population (4.05) compared with countries such as the UK, Australia, Netherlands and the USA (2.24, 2.37, 1.18 and 2.1 respectively). While there is a high relative number of pharmacies, Ireland's pharmacist per community pharmacy ratio is low at 2.9 per pharmacy compared with other countries such as Australia, USA and Canada (5.3, 4.3 and 3.9 respectively) but on a par with New Zealand. The research also reported that approximately 10% of registered pharmacists work in hospital pharmacy in Ireland, compared to 11% in New Zealand, 15% in Canada, 15-20% in Australia, 21%, in the UK and 24% in the USA[35]. The pharmacy profession in Ireland is a notably young one with over 70% being under the age of 45.

There has been significant change in the pharmacy profession in recent years. The Pharmacy Act 2007 introduced a modern regulatory system for the profession including a statutory code of conduct for pharmacists, fitness to practise procedures, continuing professional development, and new standards for retail pharmacy businesses. (See figure 9 for overview)

Figure 9. Overview of recent developments in pharmacy in Ireland



Registration and clinical governance of pharmacies

In 2008,[36] specific regulations were published for Retail Pharmacy Businesses (pharmacies) under the Pharmacy Act 2007. Each pharmacy premises must be registered with the PSI, and must meet a range of legislative criteria relating to storage of medicines, consultation areas, operational processes and certification of staff. All pharmacies are subject to inspection by PSI inspectors. Continued registration of each premises is required annually.

Each retail pharmacy business (pharmacy) must identify the superintendent pharmacist who is in personal control of the management and administration of the sale and supply of medicinal products, either where such control is exercised in respect of a single retail pharmacy business or in respect of a number of such businesses. In addition, for each pharmacy premises a supervising pharmacist must be identified as the person who is in whole-time charge of carrying on the retail pharmacy business. Under the legislation, there are clear legislative responsibilities associated with the roles of superintendent and supervising pharmacists and the pharmacy owner. This structure provides clarity and assurance to patients and the public with regard to the responsibilities of the pharmacist and the management of medicines within a pharmacy.

In addition to the pharmacist structure in pharmacies, most pharmacies also employ pharmacy technicians and other staff to support the pharmacy functions. However, these roles are not currently regulated.

Developments in practice

There have been significant developments in the practice of pharmacy in recent years including the provision of new services such as seasonal influenza vaccinations and emergency hormonal contraception now directly available to patients from their pharmacists. Pharmacists have supported health policy implementation by educating and counselling patients on the introduction of interchangeable medicines and reference pricing. In 2015, new legislation allowing pharmacists to administer emergency medicines to patients in life-threatening situations was introduced and the vaccines that pharmacists may administer was expanded to include pneumococcal and herpes zoster vaccines. Since 2010, all pharmacies have a designated patient consultation area [36], which has enabled pharmacists to provide more direct patient care, and provides a private space for patients to discuss their medicines with their pharmacist. The availability of a patient consultation area in each pharmacy was a key enabler to pharmacists providing influenza vaccination to patients. Since June 2015 in Ireland, it is legal to purchase non-prescription medicines through a registered online supplier, but prescription medicines are not permitted to be sold over the internet.

There have been a number of initiatives, through structured investment by the HSE, in hospital pharmacy. The Strategy on Antimicrobial Resistance in Ireland (SARI) provided[37] the impetus in many respects for moves to increase numbers of specialist antimicrobial pharmacists providing antimicrobial stewardship within the hospital, controlling the growing threat of antimicrobial resistance and realising cost savings by appropriate antimicrobial therapies. Additionally, Hepatitis C pharmacist specialists have been introduced to support the national programme to treat patients with this condition.

Through both the consultation process and the innovation portal, it was found that there were many individual developments in practice. Pharmacists consistently demonstrated that they offering innovative services in order to improve patient care or access. Innovations in hospital pharmacy practice included; the transplant pharmacist, implementation of smart pump technology for paediatric patients; pharmacy discharge project. Innovations in community pharmacy practice included; an anticoagulation service in collaboration with the hospital haematologist; structured smoking cessation and blood pressure management programmes[38].

Developments in the education and training of pharmacists to first registration

Substantial developments in the initial education and training of pharmacists leading to the qualification for practice have occurred in the last number of years. The PSI undertook a review of the qualification for practice in 2008-the Pharmacy Education and Accreditation Reviews (PEARs) project-which reported to the PSI Council in 2010. Based on the recommendations in that report, the qualification for practice as a pharmacist is now a five-year integrated Master's degree in pharmacy with an increased clinical focus. The first graduates from the revised structure of the qualification will qualify in 2020 having followed a new curriculum that allows for the dispersal of practice placements throughout the five years of the qualification and, for the first time, will enable students to gain experiences of varying durations in the three main pharmacy practice settings of community, hospital and industry. This change to the pharmacist qualification is intended to benefit the health system through the training of pharmacists in a more rounded and integrated manner. The transition to these new arrangements has been in place since 2010 when pharmacists qualifying in Ireland achieved a level 9 Master's degree in pharmacy following the successful completion of their final year's practical training programme and registration examination.

Developments in Continuing Professional Development (CPD) for pharmacists

Under the Pharmacy Act 2007, the PSI is required "to ensure that pharmacists undertake appropriate continuing professional development, including the acquisition of specialisation". In 2009, the PSI undertook a review of national and international CPD models across a range of professions to assist the PSI Council's determination of the most effective model of CPD for pharmacists registered in Ireland. The report to the Council in 2010 recommended a portfolio-based self-directed reflective model of CPD be implemented in Ireland, based on the system in place since 1997 for pharmacists registered in Ontario, Canada. The phased implementation of this model in Ireland culminated with the commencement on January 1st 2016 of the Pharmaceutical Society of Ireland (Continuing Professional Development) Rules 2015[39], which have made CPD mandatory for all registered pharmacists. Pharmacists are required to engage in CPD in a way that is relevant to them and their area of practice and which will contribute to enhanced patient care. The system, which focuses heavily on reflective practice, is outcomes focused and involves robust quality assurance processes, managed by the Irish Institute of Pharmacy.

Irish Institute of Pharmacy (IIOP)

The IIOP was established by the PSI in response to the Review of International CPD Models 2010[40] and the recommendations of two reports that were commissioned by the PSI[3,4]. It was intended that the Institute would have two core roles:

- The development of a CPD system for pharmacists in Ireland and ensuring its effective ongoing operation,
- The development of the practice of pharmacy in line with international best practice and evolving healthcare needs.

The IIOP was formally established in August 2013, and its first strategic plan outlines how it will support the pharmacy profession. The three key tasks in the first four years post-establishment are to:

- Support competence development within the profession – including the establishment and management of the CPD system and engagement of the profession,
- Boost the leadership potential of pharmacists,
- Contribute to the development of a research culture within Irish pharmacy.

Most of the focus of the IIOP to date has been on the establishment of the CPD system. Once this is established and operational, an increased focus will be placed on the leadership and research agendas.

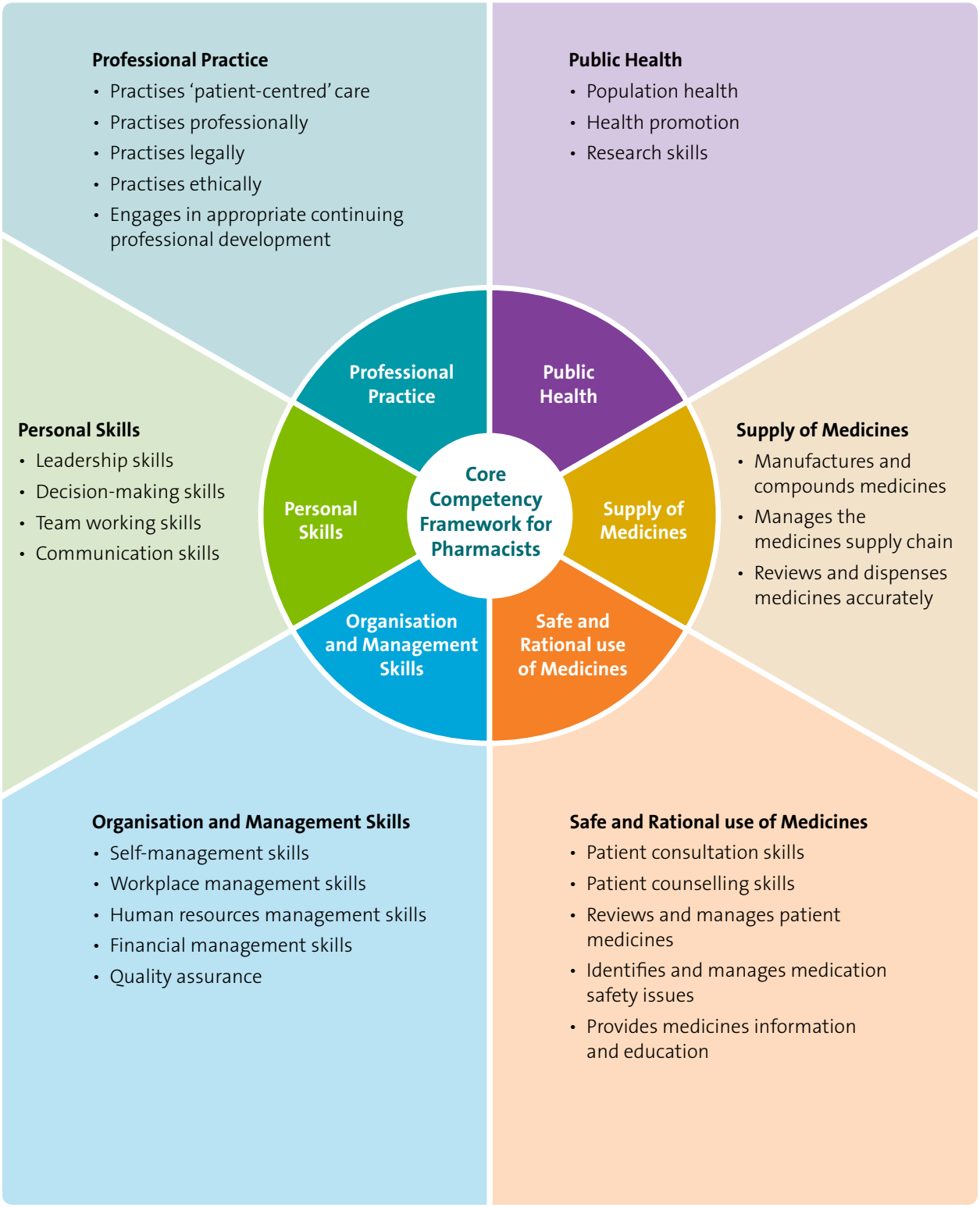
The Institute supports pharmacists to engage with CPD and commissions education and training programmes in line with national policy. Recent CPD programmes delivered via the IIOP include: Seasonal Influenza Vaccination Training, Antibiotic Stewardship, Medicines Management in the Older Persons, Pharmacy Addiction Services, Developing Effective Communication Skills for Pharmacists, Managing Quality in Pharmacy Practice, Quality Improvement in the Supply of High Risk Medicines, Supporting Mental Health in Pharmacy Practice, Personal Development Training and Superintendent Pharmacist Training. This CPD system supports pharmacists in meeting the needs of current and future practice, and provides a quality assured mechanism of upskilling pharmacists, where required, for participation in advanced services. Of note is the upcoming delivery of new courses to assist pharmacists to undertake training in order to supply and administer various emergency medicines listed in SI 449/2015. This is relevant in the context of the current Report, which explores the potential for future pharmacy practice.

Pharmacists' skills and competencies

Pharmacists undergo extensive scientific and clinical training in the area of medicines and the unique skills and knowledge of pharmacists were outlined in the Core Competency Framework for pharmacists, developed by the PSI, which outlines six domains of practice for pharmacists and 25 core competencies as given in figure 10. These domains include Public Health, Supply of Medicines, Safe and Rational Use of Medicines, Professional Practice, Personal Skills and Organisation and Management Skills.

The competency framework is used to guide pharmacists in identifying their CPD needs, to inform undergraduate training and, to provide a platform for the development of specialisation and advanced practice within pharmacy.

Figure 10. PSI Core Competency Framework for Pharmacists



Pharmacists' profile in community pharmacy

Pharmacists in the community have a key role in managing the safe supply and rational use of medicines within the community. The professional role of a pharmacist in the pharmaceutical and therapeutic review of a patient's prescription and providing advice, is enshrined in legislation in Regulation 9 of the Regulation of Retail Pharmacy Businesses Regulations 2008 (S.I. 488 of 2008), which provides for 'the review of medicine therapy and counselling of patients in the supply of medicines on foot of a prescription' as described below:

Regulation 9 of S.I. 488 of 2008, The Regulation of Retail Pharmacy Businesses Regulations:

- **Ensuring the medicine is pharmaceutically and therapeutically appropriate**
- **Screen for**
  - potential interactions with other prescribed medicines, over the counter (OTC) medicines, herbal products, food etc.,
  - adverse events,
  - correct dose and duration,
  - possible allergic reactions,
  - potential clinical abuse/misuse.
- **Patient knows**
  - how to take the medicine correctly,
  - benefits expected,
  - possible interactions/side effects/adverse events and what to do if they occur,
  - what to do if a dose is missed,
  - importance of compliance and techniques for self-monitoring,
  - correct disposal,
  - any other relevant information the pharmacist feels relevant.

The pharmacist has also a specific role to counsel the patient in the supply of non-prescription medicines and ensure that the patient knows the correct use of the medicine.

Community pharmacy in Ireland is funded by a public and private model. The HSE enters into contracts with community pharmacists to provide services to patients under general medical services (GMS) and other community drug schemes. The therapeutic review and patient counselling requirements of Regulation 9 above reflect a similar contractual requirement under Clause 9 of this contract.

According to a community pharmacy baseline study conducted in 2011, 86% of pharmacists surveyed indicated the majority of their time is spent dispensing prescriptions, followed by counselling patients on prescription and non-prescription medicines[3]. On average, older patients made up 60% of respondents' profiles, with families with young children representing 26.7%, younger patients (12-30) making up 16.2%, and patients in residential care making up 5.4%. Pharmacists indicated that repeat or regular patients make up 78% on average of the pharmacy patient profile. It was reported in the baseline study that 32% of community pharmacies provide services to patients in residential care settings. The baseline study also showed that for the majority of pharmacists their main professional relationship is with local doctors and most were satisfied/very satisfied with this relationship however, most community pharmacists (> 90%) were not involved with multi-professional or patient support groups.

Many respondents to the baseline study were of the view that the pharmacist was under-utilised and that there was potential to expand the role of pharmacy in healthcare services to patients. Pharmacists also expressed a desire to see closer integration of pharmacy into the primary healthcare structure, working more closely with GPs and other healthcare providers in a multidisciplinary team set-up. These findings were confirmed during the consultation process with pharmacists.

Pharmacists' profile in the hospital setting

Pharmacists are employed in both public and private hospitals to supervise and provide safe, rational and cost-effective medicines for patients. Hospital pharmacists, in addition to dispensing, procurement, compounding medicines, medicines information and oversight activities, also spend time in patient facing roles delivering clinical pharmacy services. For some hospitals, these clinical pharmacy services include care of the elderly, acute medicines admission units, intensive care units, pre-admission clinics, oncology, haematology, respiratory, heart failure, infectious diseases, antimicrobial stewardship.

The PSI baseline study on hospital pharmacy[4] found that 76.6% of hospital pharmacists held postgraduate qualifications and a significant number have experience of another sector or jurisdiction. Most Irish hospitals worked on a model of centralised distribution, and had a risk management policy in place, as well as medication safety initiatives. While the majority of respondents agreed that hospital pharmacists took responsibility for medication-related outcomes, and that pharmacy had influence over prescribing, many expressed the view that pharmacy performed well within its limited scope and that there was a desire and capability to do more. The baseline study found that access to hospital pharmacy services is restricted in most hospitals to weekday office hours.

In the baseline study, hospital pharmacists reported generally that their relationships with other professionals in the hospital were good, but there were few links beyond the hospital with, for example, primary care doctors or even community pharmacists. Pharmacists were involved in multidisciplinary teaching and learning, audit and committees, but there were only ad hoc opportunities to join ward rounds. The study concluded that pharmacists might need to be more visible in multidisciplinary team-based activities to further develop relationships with doctors, nurses and patients through common goals.

Aseptic compounding of medicines for individual patients in hospitals is a critical service provided by a limited number of hospital pharmacies. This supports patient treatment particularly in oncology, and haematology.

The outcomes of the baseline study highlighted that there was significant variation in the level of clinical pharmacist review of patients in hospitals especially in many of the smaller hospitals and also some regional centres. There were similar findings from research conducted in 2010[41]. This research concluded that the development of national standards of practice might help eliminate variation between hospitals and support service development. There is no equivalent standard for pharmaceutical and therapeutic review (Regulation 9) for hospital inpatients.

Pharmacists' profile in other settings

Due to their education and training, the pharmacist qualification has broad applicability and a growing number of pharmacists are now entering careers in the med tech industry, in pharmaceutical and medical device companies. In addition to traditional roles in manufacturing plants, many pharmacists are now based in the commercial affiliates working in diverse roles such as medical affairs, regulatory affairs, clinical trials, pharmacovigilance, quality, compliance, marketing, market access, business development and general management.

Throughout the consultation process, it was noted that pharmacists are also making an important contribution to the work of organisations involved in regulation and policy setting in Ireland, including, but not limited to: Department of Health, Pharmaceutical Society of Ireland, Health Products Regulatory Authority, Health Service Executive, National Centre for Pharmacoeconomics, Health Information & Quality Authority, and National Medicines Information Centre.

Many of these regulatory and policy making bodies referenced their own positive experience of the value of pharmacy input into regulatory and policy shaping roles. However, pharmacy's contribution to patient care is significantly influenced by where and how it is deemed to fit into wider health policy by policy makers. In order for pharmacy to successfully advocate for the enhanced patient outcomes that the profession can deliver, pharmacists must be involved in developing health policy at the highest levels. In jurisdictions where pharmacists have key policy influence, for example, Northern Ireland, Scotland[42], England and Australia, there has been substantial innovation in pharmacy. In this respect, it is noted that while there are a number of pharmacists working in the Department of Health, there has been no Chief Pharmacist for over two years.

Conclusion

Pharmacists as healthcare professionals have unique skills and expertise. They are recognised as experts in medicines in the healthcare system. However, it is reported that this expertise is currently underutilised. Advances in practice and regulation in recent years have assured a high level of clinical governance within pharmacies with regulatory standards in place for all registered pharmacies. There have been significant developments in the qualification for practice as pharmacists. The IIOP provides a demonstrable quality assurance system for pharmacists' competence that further enables the realisation of the profession's potential.

Overall the picture is of a highly qualified profession that is a unique resource to the health system and patients and which could be capitalised upon to support the enhanced delivery of public health and therapeutic management.

Recommendation 2

The resource that the pharmacy sector provides within the health system should be capitalised on for the enhancement of patient care.

5

The Potential Role of Pharmacy Practice in Patient Care

The Potential Role of Pharmacy Practice in Patient Care

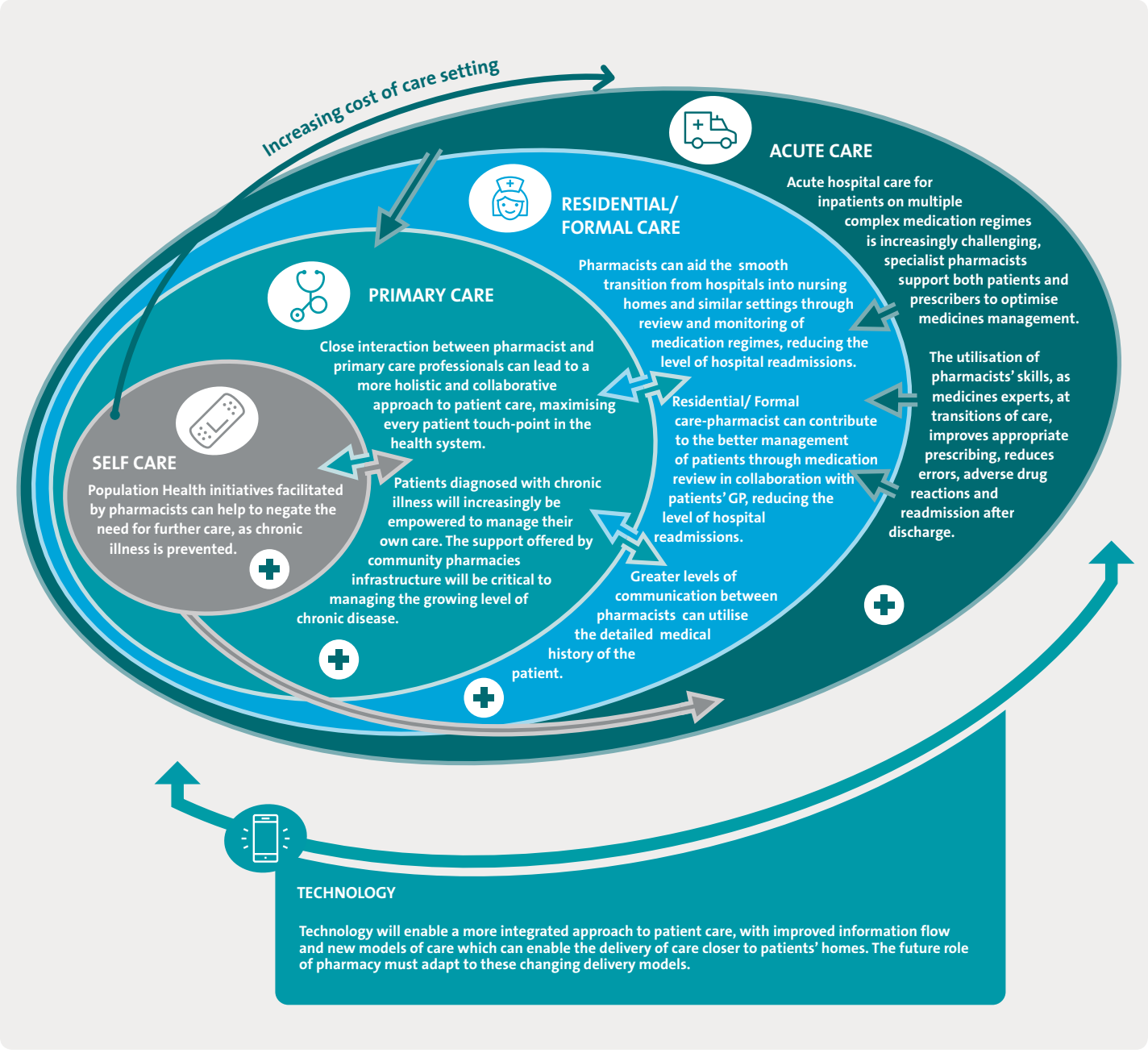
Arising from national research and the consultation process, the key health and medicines needs of patients as they travel through the health system were identified from the perspective of a wide range of stakeholders. These included the need for continuity in prescribed medicine therapy, the need for appropriate ongoing review of patients' medication and the need for information to aid patient adherence and safety. The increased complexity of the medicines regimes and the complexity of medicines themselves were highlighted by many stakeholders as well as the complexity of the multiprovider health system within which the patient receives their healthcare and medicines are prescribed. The international research and national consultation outlined the trends and developments in pharmacy practice both here and in other jurisdictions as they struggle to meet the same or similar health challenges. Evidence from here and other jurisdictions are presented as case studies, which illustrate the different approaches taken to support keeping patients healthy, support the improvement in the management of medicines and the safety of patients while at the same time effectively using scarce resources and minimising waste.

Three core strategic areas emerged as central to the evolving role of pharmacy in meeting those patients' needs:

- Improving health and wellbeing of the public
- Supporting and improving the health of at-risk patients with chronic disease
- Management of medicines throughout the patient pathway

As medicines are relevant to all stages of the patient care pathway, figure 11 has been developed to demonstrate the potential role for pharmacy in contributing to patient care as a strategic part of Irish healthcare, with the skills of the profession utilised in collaboration with other healthcare professions to enhance patient care and experience. The desired result is to increasingly empower patients through correct supports to receive treatment as close to home as possible and in the lowest cost setting for the health system.

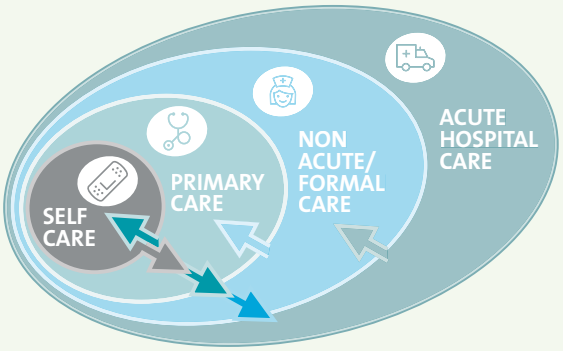
Figure 11. The potential role of pharmacy in patient care across Irish healthcare settings



The following chapters (6 to 8) explore key areas in the future of pharmacy practice in Ireland and outline core recommendations as to how the pharmacy profession can improve patient safety and care and can contribute positively to the health system through utilisation of their expertise.

6

Pharmacy Supporting Health and Wellbeing



Through preventative medicine and health and wellbeing initiatives pharmacy has an important role to maintain and enhance public health. Given the unequalled access in terms of patient contact points, pharmacy is ideally placed to contribute effectively to structured initiatives to tackle population health issues that will help to prevent first occurrence of chronic illness.

Pharmacy Supporting Health and Wellbeing

Preventive healthcare focuses on initiatives employed to prevent disease as opposed to treatment post-diagnosis[43]. A number of key government policies exist which support the increasing importance of preventive healthcare initiatives in the Irish Healthcare system.

Healthy Ireland, A Framework for Improved Health and Wellbeing 2013-2025 sets the overarching context within which the focus on prevention is driven. Healthy Ireland's goals are:

- Increase the proportion of people who are healthy at all stages of life,
- Reduce health inequalities,
- Protect the public from threats to health and wellbeing,
- Create an environment where every individual and sector of society can play his or her part in achieving a healthy Ireland.

Under the *Healthy Ireland* banner, a comprehensive range of policies and strategies are underway which seek to address the major lifestyle risks that lead to chronic disease, such as tobacco use, physical inactivity and obesity.

In addition, *Healthy Ireland* acknowledges that broader societal determinants, such as employment, education and the physical environment, influence the distribution of risk factors in the population, thereby resulting in health inequalities. *Healthy Ireland* also recognises that a partnership, cross-sectoral approach is required to address these factors, and to enable people to better look after their own health and wellbeing.

Figure 12. Average number of health service contacts in a year (HSE Statistics-Healthy Ireland HSE Implementation Plan)[44]

Healthy Ireland in the health services

Healthy Ireland recognises that the multidisciplinary 'health and wellbeing' workforce is diverse and that in addition to traditional public health occupations, other health professionals such as pharmacists play an increasingly important role. It also recognises that more effective co-operation and collaboration within the health sector is required to deliver on the goals of *Healthy Ireland*.

The HSE Healthy Ireland Implementation Plan 2015-2017 focuses on strategic priorities to embed health and wellbeing goals into reform objectives and to reduce the burden of chronic disease. It identifies the development of a National Brief Intervention Model as a key driver to support and leverage the leadership role of healthcare professionals and teams in 'making every contact count'.

The need to support the building of people's own capacity for self-care and self-management, as well as health literacy, are also identified as key aspects of a health service focused on enabling people to look after their own health and wellbeing.

Taking into account pharmacists interactions with members of the public, as well as for those patients whom the HSE report that 20 million prescriptions have been dispensed across the health sector (figure 12), the frequency of contact of the population with pharmacists is unequalled. The existing 1,810 Irish community pharmacies (June 2016), each with a patient consultation area, represent a unique network of healthcare professionals which have unparalleled reach in terms of public access.

Health and wellbeing initiatives could use this accessible network of healthcare professionals in a structured and focused manner to help achieve the *Healthy Ireland* goal of "Increase[ing] the proportion of people who are healthy at all stages of life".

When recently surveyed[45], 89% of people were found to be supportive of expanded health promotion services within community pharmacies, with 58% of those surveyed visiting their pharmacy at least once a month or more frequently, equalling two million pharmacy visits per month. Health policy implementation supports an increased emphasis on patient self-management and healthcare delivery in a primary care setting.

In the same survey, 93% felt that community pharmacies are a good place to make more health services available. When asked about the following specific additional services, over 85% of people surveyed would like a smoking cessation service, cholesterol check, blood pressure check and diabetes check to be available in their community pharmacy.

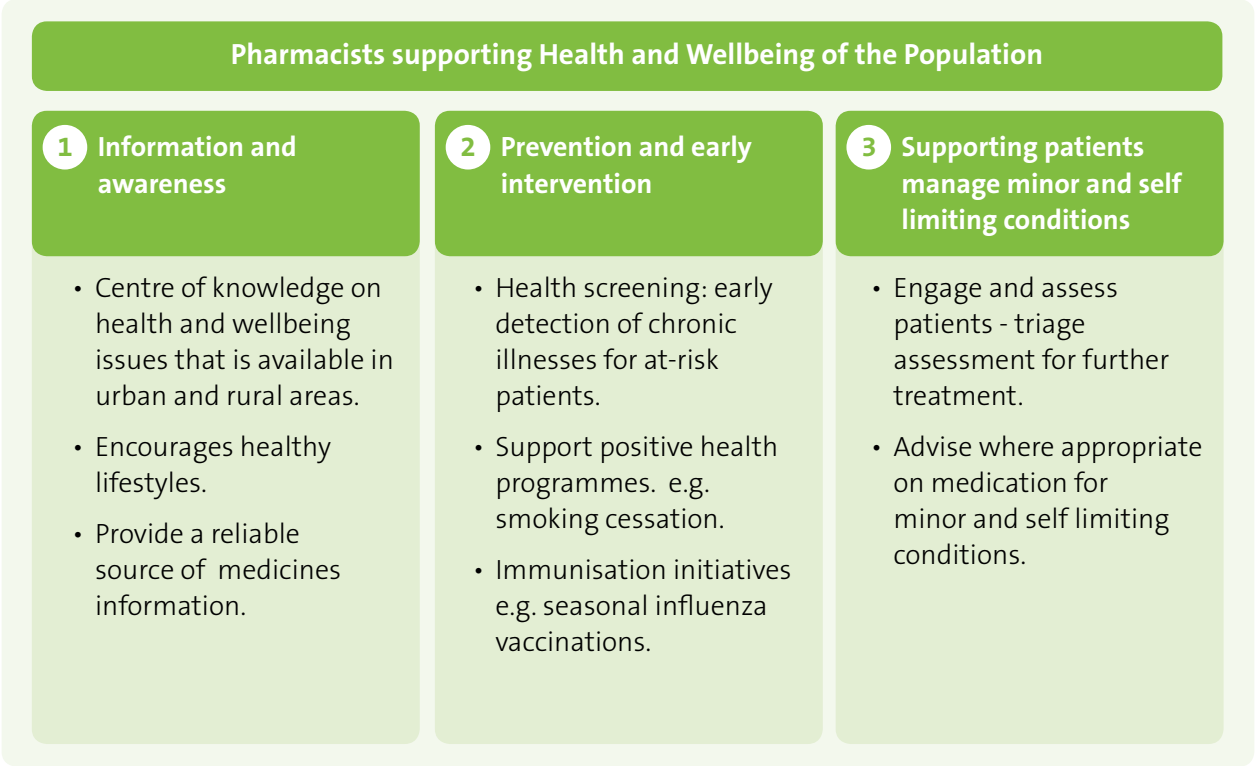
The successful integration of pharmacy into the national influenza vaccination programme is evidence of pharmacists' ability to play a key role in national preventive health programmes, which, if structured appropriately, could address many more population health issues. New legislation has further extended this role to two additional vaccines. There is scope to expand this further in line with public health policy.

Structured population health initiatives could be expanded and implemented in Irish pharmacies under three broad categories;

1. Information and awareness,
2. Prevention and early intervention,
3. Supporting management of minor and self-limiting conditions.

These can either be nationally available in all pharmacies or selectively available based on local need or supply constraint of a particular service:

Figure 13. Overview of pharmacy role supporting health and wellbeing of the population



6.1 Information and awareness

Information and awareness campaigns are nationally co-ordinated, to encourage healthy lifestyle choices amongst segments of the public who may be at risk, through dissemination of information and general health promotion. In community pharmacy, these campaigns are frequently co-ordinated through partnerships between the HSE, Department of Health, and the Irish Pharmacy Union (IPU), and often in association with a patient advocacy group (e.g. Asthma Society of Ireland). Public Health information areas focused on previously include child and baby health, sexual health, exercise and lifestyle advice, awareness of signs of cancer, seasonal healthcare, mental health, education on family health, and antibiotic awareness.

As internet use has become ubiquitous, online access to health and medicines information has been increasingly available to the public. National initiatives such as the recent **www.undertheweather.ie** provide detailed online health information for the public.

Case Study 2: Operation Transformation 2015

In January 2015 as part of the popular RTÉ television programme "Operation Transformation", and in partnership with the Irish Pharmacy Union (IPU), a campaign was initiated to encourage viewers to visit their local community pharmacy to "Check Your Number". This process involved the measurement of BMI, waist circumference and weight. The initiative received a high degree of media exposure and high levels of participation, particularly amongst women who represented 80% of participants.

- 670 pharmacies took part in the initiative with over 2,500 people having their measurements taken.
- 77% of patients were given lifestyle advice to improve their health, with nearly a third of these patients advised to return for follow-up health checks.
- 6% of patients were referred to GPs for further consultation.

Other schemes include supporting people to give up smoking **www.quit.ie** and **www.yourmentalhealth.ie** for information and advice about looking after your mental health. Community pharmacy is one of the key partners in the promotion of these national campaigns. Community pharmacy is also one of the key partners in the harm reduction services in the health system for the addiction service including the provision of methadone replacement therapy and needle exchange programmes.

It was found through patient consultation, undertaken to inform this Report, that there are segments of society who are less likely to access this kind of information online, particularly elderly members and vulnerable groups of the public. Pharmacies, represent an important hub for information for the public, particularly for those with health literacy problems or lack of access to information.

Community pharmacists are an accessible resource who can signpost patients and the vulnerable population to specific health services to support their health and wellbeing e.g. mental health and addiction support services.

Public health including health promotion is a key competency for pharmacists within the PSI's Core Competency Framework, and one that should be harnessed further. The continued and co-ordinated expansion of these national information and awareness campaigns in pharmacies remains an important aspect of improved public health, particularly in topics relating to the prevention of chronic diseases and medication related issues.

Recommendation 3

The role of pharmacists as an integral part of the health sector delivering on the goals of Healthy Ireland should be strengthened and expanded. This includes the delivery of national information and awareness campaigns, prevention and early intervention initiatives, as well as initiatives supporting and empowering people to look after their own health and wellbeing.

6.2 Prevention and early intervention

Health screening

The principles of health screening are well established[46] with a number of health parameters being successfully screened internationally including blood pressure, cholesterol, and obesity / weight. Benefits of nationally co-ordinated screening programmes through pharmacies include:

- Regular access to the public to engage persons with minor symptoms which may be indicators of early stage chronic illnesses,
- Early detection of health problems with intervention to empower and educate patients to manage their health,
- Minimal capital expenditure required to engage and monitor conditions,
- Access to longitudinal data sets at a national level.

From the innovation portal data and pharmacist focus groups, some pharmacists currently engage in health screening. However, it is on an informal and ad hoc basis. In the community pharmacy baseline study, 47.5% of pharmacies had blood pressure screening facilities, and 56.8% had weight/height/BMI assessment facilities[3]. Such testing can detect and monitor illnesses relating to coronary heart disease, diabetes and hypertension among others.

Smoking cessation: Smoking cessation initiatives that involve specialist behavioural support and pharmacotherapy have been shown to be three times as successful as cessation attempts without structured supports[47].

Blood pressure screening and intervention: Improving blood pressure control in community pharmacies[48,49] as part of an integrative approach to primary care has been shown to be successful in reducing the onset of causes of hypertension in populations.[50]

Technology and Innovation

New technology being implemented in the USA proposes to use a blood testing service that can test for 20 common conditions with only a small amount of blood taken. An accompanying device uses a fingerstick to draw a microliter sample of blood into a disposable cartridge, which is loaded into the device's "reader" for analysis; results are sent wirelessly from the reader to a secure database, from where they go online to the patient or patient's doctor.

Patient view: Blood Pressure

"My new pharmacist takes my blood pressure reading on a regular basis. This is a great service that would be useful in all pharmacies."

Some community pharmacies in Ireland have invested in 24-hour Ambulatory Blood Pressure Monitoring (ABPM) machines, with GP practices working with the pharmacy to have patients tested and the results fed back to them.

Health interventions by pharmacists to reduce the risk behaviours and risk factors in areas such as coronary heart disease have been demonstrated in the past[51], with both pharmacists and patients indicating satisfaction with pharmacy-based initiatives[52,53]. Confident well-trained pharmacists were identified as a key to successful service delivery.

There are regulatory standards and guidance for pharmacists in place on carrying out patient testing in pharmacies[54]. Given the unique access afforded by the network of community pharmacies across the country, there are a high number of touch points with the public who may be attending a pharmacy to screen and identify at risk patients.

It is important that there are correct referral procedures when providing interventions to patients. This should be done in collaboration with both the patient and the patient's GP. A structured screening service with clear patient pathways would be a good use of health resources, avoiding duplication of both effort and tests.

Community pharmacies should be considered as a provider of national screening services where appropriate. Technology has a place to play both in the equipment used for testing and also sharing of patient information, with the patient's consent.

Patients identified during the consultation process expressed an appetite for more healthcare initiatives to be provided in pharmacies due to high levels of accessibility. A National Brief Intervention Model is being developed by the Health and Wellbeing Division in the HSE. Health professionals will be trained to incorporate prevention and support for behaviour change as a routine part of healthcare delivery. Together with a Health and Wellbeing strategy of "Making Every Contact Count", and over 20 million prescriptions dispensed by community pharmacists per annum, community pharmacists are particularly well placed to actively support and influence the health and wellbeing of the people for whom they provide care. Our recent survey confirmed that approximately 2 million people per month visit their community pharmacy[45].

One structure used internationally for advanced community health intervention is that of a Health and Wellbeing Pharmacy[55,56]. These pharmacies are designated health hubs with selective health promotion and screening initiatives that would require more substantive capital or ongoing funding than existing population health initiatives.

Case Study 3: Melanoma screening in Australia

Community pharmacy in association with the Cancer Council of Australia provided a free Melanoma Screening Service to the public. Each participant was allowed three free pictures and an external dermatologist inspected and advised whether it was cancerous or benign. This service was provided by the public health service for free in order to raise awareness on melanoma in Australia.

Patient view: Health Screening

"I would certainly be in favour of screening services in my pharmacy if it was at a reasonable price...I only go to my doctor if I'm already sick. I trust my pharmacist's advice on most health matters."

Such services could be offered in Ireland to address populations with a high prevalence of certain illnesses or conditions, as would be indicated by the disease demographics of the population in proximity to a pharmacy, thereby, addressing a key goal of the *Healthy Ireland* initiatives to tackle healthcare inequality throughout Ireland.

Of particular note, the successful integration of pharmacists into the national influenza vaccination service in pharmacies since 2012 has assisted in the increased uptake of influenza vaccination in the general population. 53,047 people received the flu vaccine during the 2014/2015 flu season in pharmacies, of which 83% were in at-risk cohorts and 23% had not previously availed of the flu vaccination. Pharmacists' vaccination accounts for approximately 10% of the total population immunisation.

This initiative demonstrates evidence of pharmacists' ability to play a key role in implementation of national preventive health programmes. Legislation has recently been amended to expand the vaccines that a pharmacist can administer to pneumococcal and herpes zoster vaccines.

Case Study 4: Healthy Living Pharmacies, UK

Healthy Living Pharmacies (HLP) started in the south of England in response to a 2008 government policy document, which aimed to bring pharmacies beyond the dispensing role. HLPs were established to give out information and guide self-care and healthy lifestyles in the communities they serve. In order to achieve HLP status pharmacies must demonstrate the suitability of their premises, systems and resources, and a commitment to a healthy living ethos illustrated by a proactive approach to self-care and healthy lifestyles in their community. Interventions in HLPs were done in collaboration with other primary care professionals, with over a third of referrals to HLPs coming from GPs. A key element of these selectively provided services is that of data capture, continuous improvement of interventions and support for attending patients.

Evidence base / outcomes[56]

98% patient satisfaction rate.

140% increase in those participating in smoking cessation plans with 70% of those suffering respiratory problems showing improvements in their condition.

23% of those taking part in weight loss programmes lost over 5% of their body fat.

Recommendation 4

The role of pharmacists in supporting self-care and health behaviour change should be expanded to capitalise on the high level of contact with patients and the public to ensure prevention of and early intervention in illness. Pharmacists should be included in the training and development on health and wellbeing interventions and skills rolled out by the health service.

Furthermore, community pharmacies should be considered as a possible provider of national screening services, where appropriate.

6.3 Supporting management of minor and self-limiting conditions

Pharmacists also play a key role in helping patients manage minor and self-limiting conditions in the community. This role involves the supply of appropriate non-prescription medicines, or advice or referral of the patient to another healthcare practitioner for further assessment if necessary. This provides timely access to healthcare for patients and reduces the burden on other healthcare services.

An increase in the reclassification of medicines from prescription to non-prescription status has occurred in Ireland in recent years. The Health Products Regulatory Authority (HPRA) has proactively published a list of medicines suitable for reclassification to non-prescription. There has been successful implementation of the reclassification of some medicines such as the Emergency Hormonal Contraception (EHC), which is now available for patients directly from the pharmacist.

In addition, recent legislation[57] has enabled appropriately trained pharmacists to supply and administer certain prescription only medicines to patients in the event of an emergency, including epinephrine (adrenaline), salbutamol, glyceryl trinitrate, glucagon, and naloxone.

Both of these initiatives demonstrate the role that pharmacists can play in directly treating patients in the community. These initiatives combined with the availability of a private patient consultation area within community pharmacy creates the potential for further development of this role.

Other jurisdictions have introduced structured schemes for pharmacists to provide advice and treatment if required to patients for specified minor illnesses and complaints e.g. Minor Ailments Scheme. It has been proposed that such a scheme should be introduced in Ireland[58]. The benefits and cost effectiveness of Minor Ailments Schemes are currently under review with the Department of Health and the Health Research Board. A Minor Ailments Scheme is currently being piloted in Ireland.

In addition, our research has confirmed that in other jurisdictions, while referral to the GP or acute setting is extremely important, it can also work in the opposite way and reduce pressure on the health system. Community

Case Study 5: Minor ailments service in Scotland

The Minor ailment service is an NHS service for children, people aged 60 or over, people who hold a medical exemption certificate and people on certain benefits.

Advice and free treatment (if required) is available from pharmacists for the following minor illnesses and complaints:

- Acne
- Athlete's Foot
- Backache
- Cold sores
- Constipation
- Cough
- Diarrhoea
- Earache
- Eczema and allergies
- Haemorrhoids (piles)
- Hay fever
- Head lice
- Indigestion
- Mouth ulcers
- Nasal congestion
- Pain
- Period pain
- Thrush
- Sore Throat
- Threadworms
- Warts/Verrucae

pharmacies can and do provide treatment and advice for patients with minor or self-limiting conditions that could otherwise increase demand on other healthcare services. For example, data from one large emergency department (ED) and two general practices in North East Scotland showed that at least 5% of ED and 13% of GP attendances were for common ailments that could have been managed in a community pharmacy[59].

Recommendation 5:

The existing role that pharmacists play in supporting patients treating minor and self-limiting conditions in the community should be further expanded.

Conclusion and recommendations

National health policy places significant emphasis on the importance of preventive medicine and population health initiatives designed to maintain and improve the health of the public, avoiding illness and the treatment costs associated with it. Key areas of focus include smoking cessation and weight management, both of which are precursors to chronic diseases such as diabetes and cardiovascular disease.

Pharmacists are the most accessible health practitioner in Ireland, with potentially over 20 million "contact points" with the public per annum, both healthy and ill, the highest number of any healthcare professional. This unique position enables the community pharmacy contribute to national health goals through structured population health initiatives including *information and awareness campaigns* related to major health issues.

In the pharmacist's role as a trusted healthcare professional, there is an opportunity to aid and empower the public to care for their own health. This can be achieved through proactive engagement with patients who may be at-risk. Pharmacists can help these members of the public by conducting *screening tests,* by acting as a *formal triage for primary or acute services,* and/or by advising the patient on *managing self-limiting conditions*.

Since 2010, all registered retail pharmacy businesses, in Ireland, have at least one private consultation area for patients. The ability to provide direct patient care has been facilitated by this valuable infrastructure, e.g. immunisation of the public against seasonal influenza.

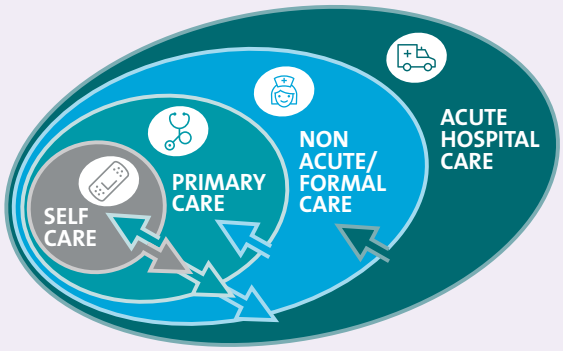
Pharmacy can help to lead population health initiatives to promote health and wellbeing as part of the integrated primary care strategy due to the accessibility of the large network of community pharmacies across the country.

Patient view: Additional pharmacy services

"I got the flu vaccination in my pharmacy this year...it was great – the convenience is a huge positive for me, I wouldn't have got the vaccination if I needed a GP appointment. It definitely changed my perception of the pharmacist and I'd be interested to know what other services they can offer".

7

Pharmacy Supporting Patients in the Prevention and Management of Chronic Diseases



Pharmacy will increasingly aid patients in the management of their care in collaboration with GPs. Pharmacy supports will allow patients to 'own' their own treatment and relieve pressure on primary care resources.

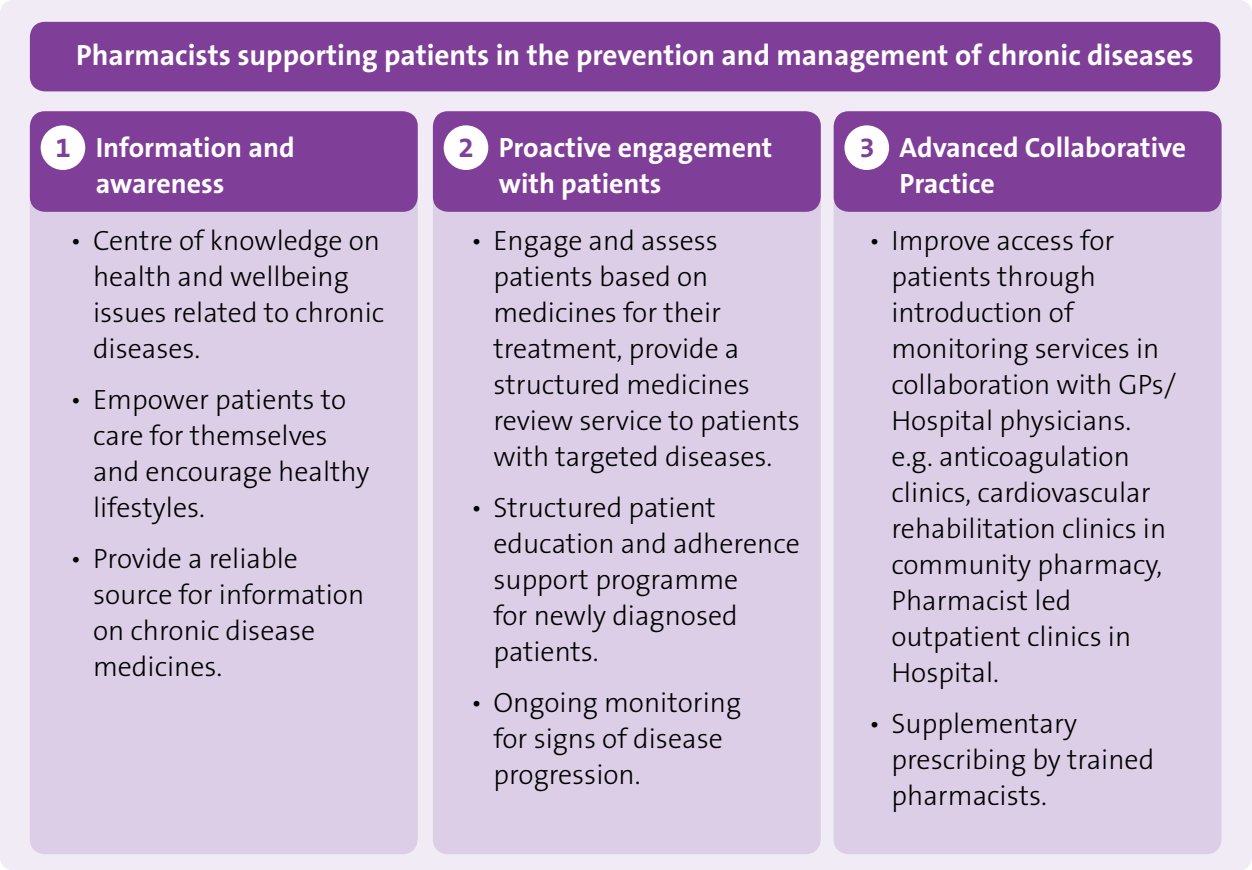
Pharmacy Supporting Patients in the Prevention and Management of Chronic Diseases

Chronic diseases are long-term, life-limiting conditions, which can be treated and controlled but not cured. Chronic conditions require disease management strategies to alleviate symptoms and modify the progression of the disease to a lower acuity level, thus enhancing the patient's quality of life. The prevalence of chronic diseases in Ireland is increasing, with 40% of the population predicted to have at least one chronic condition by the year 2020.[60] Ongoing chronic disease management is therefore a priority for healthcare policy in Ireland[61]. The HSE's Integrated Care Programme for Prevention and Management of Chronic Disease aims to integrate chronic disease prevention and management services that care for and support individuals with chronic disease who may require treatment for particular illnesses or disability. This is best provided by an integrated team that spans professional and service boundaries.

In addition, the HSE has proposed through the implementation of the Healthy Ireland framework to increase its focus on developing self-care management models and support to empower people to manage their chronic conditions. As most patients with chronic illnesses require medicines to manage their condition, they have a significant interaction with pharmacists on a regular basis. In a recent survey of the general public,[45] conducted for the PSI, 67% of the people aged 55-64 reported visiting their pharmacy monthly while 80% of the people aged over 65 visited monthly.

The framework below outlines how the pharmacy profession can continue to meet patients' need for information and medicines while contributing to national policy of better chronic disease management.

Figure 14. Overview of the role of pharmacy in chronic disease prevention and management



7.1 Information and awareness

Given the frequency of attendance by patients with chronic illness, community pharmacies are ideally placed to offer information and awareness concerning their condition. Being initially diagnosed with a chronic condition can be a stressful and traumatic time for many patients. With large amounts of new health information received in a short period, this can lead to confusion and also non-adherence to medication.

HIQA undertook a review on chronic disease self-management interventions in 2015. In this review, HIQA concluded that there is some evidence that community pharmacy interventions, which include patient education, may lead to improvements in blood pressure control[62]. However HIQA identified that other studies within the review on the implementation of pharmacy interventions, had limited or inconclusive clinical and cost effectiveness. This was largely due to the difficulty in applying many international studies to an Irish context highlighting a requirement for further investigation into possible programmes in an Irish setting.

Pharmacies represent an important information hub for patients with chronic illnesses. Pharmacists should continue to provide patient education and awareness with advantages seen for structured adherence programmes for newly diagnosed patients. There is a wide opportunity for patients to improve their knowledge about their condition and develop their chronic disease self-management skills.

7.2 Pharmacy support and engagement with patients on self-management of chronic disease

Long-term medications for the treatment of chronic conditions are effective in combating disease, though their full benefits are often not realised, as almost half of patients do not take their medications as prescribed[63]. This leads to poor disease management resulting in unnecessary hospital admissions and increased long-term complications. Strategies to improve chronic disease management and medicine adherence reduce the burden on the health system and result in better health outcomes for the patient.

For example, the asthma national clinical plan aims to reduce GP out of hours (OOH) visits due to asthma by 10% (5,000), Emergency Department visits due to asthma by 10% (2,000) and asthma inpatient bed days by 10% per year over the next 3 years[64]. It has been shown that inhaler technique can be improved after educational intervention, and this education needs to be repeated appropriately to improve and maintain compliance[65].

Other jurisdictions provide community-based, pharmacist-delivered medicines management programmes. This includes adherence programmes for chronic disease patients such as Medicines Use Reviews (MUR) in the UK, which target at-risk patients such as those with Type 2 Diabetes and Medscheck (medicine review service) in Australia[66], with Canada having annual care plans for specific patients e.g. asthma, diabetes and standard medication management assessment for patients with chronic diseases and taking more than 4 medications. The aims of these programmes are to better manage and support chronic disease patients in the community. The evidence to date for these programmes is variable. When targeted at specific at-risk groups such programmes have

Technology and Innovation

Certain smartphone apps can help track heart-related variables, such as blood pressure, pulse, and sodium intake. The monitoring of blood pressure from a patient's home through tele-monitoring functions has proven highly successful in the USA and UK after various multifaceted trials and pilots.

Patient view: New Medicines Service

"I was diagnosed with diabetes ten years ago. At the start, it was very daunting with the amount of medicines, strips, finger pricking that goes along with it. I really could have used some more time to ask questions about it all."

Recommendation 6

Pharmacists should be integrated into building the capacity for patients' self-care and self-management of chronic diseases, including helping patients manage their medicines. This could be provided through structured patient education and medicines management programmes to at-risk chronic disease patients.

demonstrated improved patient benefits e.g. benefits of a structured medicines review service were apparent in the USA for patients with hypertension, with pharmacist interventions reducing systolic and diastolic blood pressure[67]. In 2012, a review of medication reviews concluded[68] that in order for medicines reviews to be most effective there are certain key elements required: targeting, multi-professional involvement and paying greater attention to medicines, which could be safely stopped.

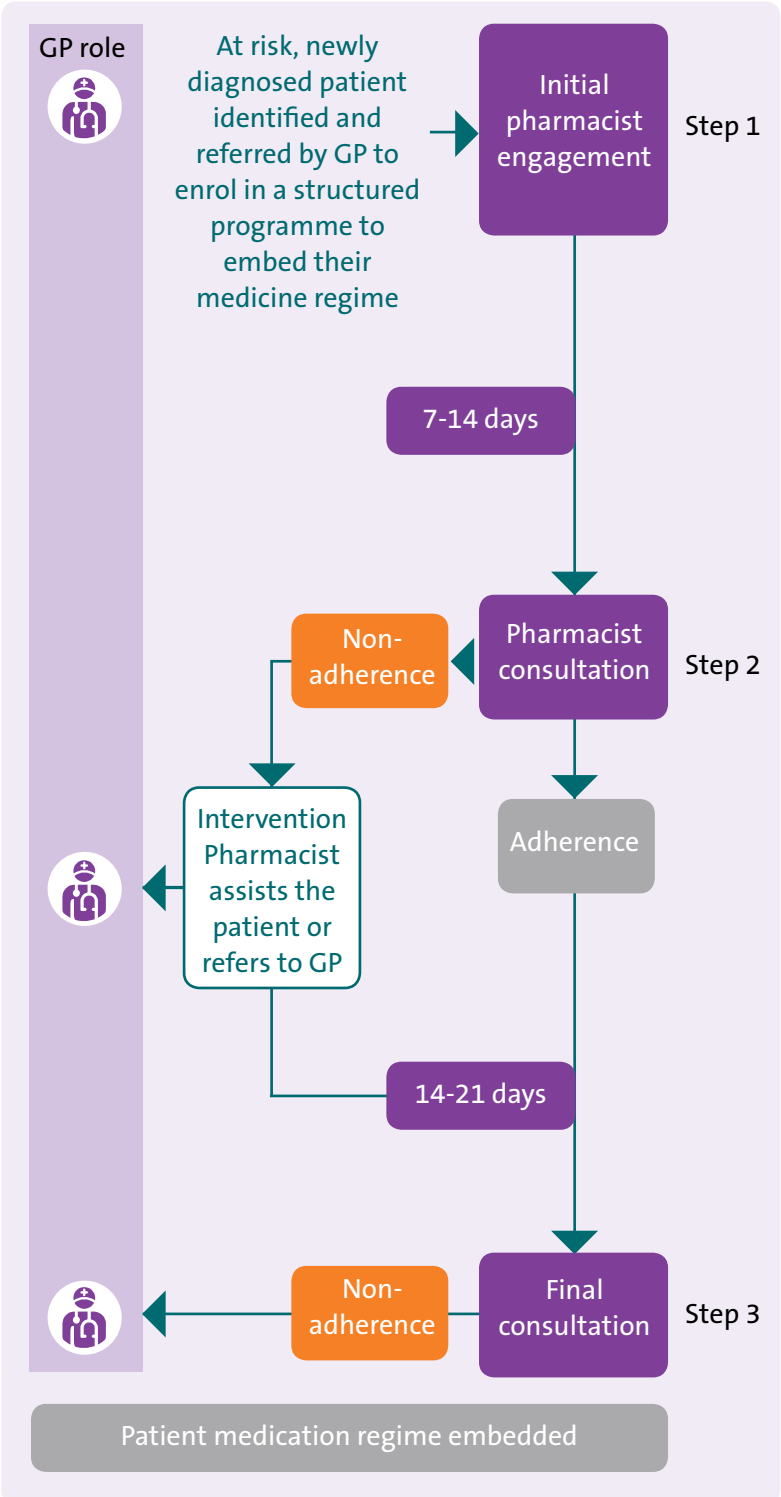
Further research indicates that the New Medicine Service in England increased adherence in patients by 10% with long-term analysis showing positive patient outcomes for the NHS, with a cost-effectiveness of £20,000 per QALY (quality-adjusted life-year)[69]. (See Case study 6 and 7)

Case Study 6: UK New medicine service

Newly diagnosed patients with a chronic disease received structured support by a pharmacist to increase adherence and optimise therapy

Chronic illness patients in England who are initiated on medication can avail of a structured patient education and adherence programme called the New Medicines Service. This service involves three consultations with the patient where the pharmacist answers any questions regarding their medicines along with other educational aspects such as lifestyle choices. The purpose of this service is to improve the levels of compliance for those who have received a medical prescription (adherence) which, for conditions such as asthma, can be as low as 67%. Research indicates that this service in England increased adherence in patients by 10% with long-term analysis showing positive patient outcomes for the NHS, with a cost-effectiveness of £20,000 per QALY (quality-adjusted life-year)[69]. The openness and collaboration in these services regarding the patient and their pharmacist also fosters an improved relationship between the parties, promotes medication safety, partnership in their healthcare, and gives the patient confidence in the self-management of their condition.

Figure 15. Outlines the process of structured introduction of new medicines in the UK



Case Study 7: Medicines optimisation services-newly diagnosed asthma patients, with structured support to optimise therapy

As part of the supporting work for this Report, the cost impact of a medicines optimisation service for asthma patients in Ireland was estimated. Based on available data, the service was found to provide a €1,466 cost avoidance over the lifetime of the average asthma patient, with an estimated €2.6m net saving nationally (after the cost of conducting the structured introductions) over a five year period. The details of this cost estimation are outlined in paper D – Potential Cost Avoidance Opportunities[137]. Therefore, targeting specific patients groups with chronic illnesses, with such medicines management programmes should improve chronic disease management and medicines adherence in the Irish context. This could contribute to the national clinical programmes on the prevention and management of chronic diseases.

Recommendation 7

Pharmacists should provide a structured patient education and adherence programme for newly diagnosed chronic disease patients to improve adherence and their health outcomes.

7.3 Supporting chronic disease management through advanced pharmacy practice and collaborative shared care

A key part of chronic disease management is ongoing monitoring of disease progression.

In some areas, it is more difficult to access such specific monitoring services, with patients having to travel to their local hospital or regional hospital.

Anticoagulation clinics in community pharmacies have been successful in New Zealand[70] and on a smaller scale in rural Ireland[71]. This service monitors patients on warfarin and is typically provided through an outpatient clinic in an acute setting in the majority of cases. Through the use of pharmacy infrastructure, anticoagulation clinics can move out of the hospital and into the primary care setting, increase patient access and reduce costs to the health service. Other clinics such as asthma clinics have also been successful in community pharmacy[69].

It is envisaged that, the community pharmacist can be integrated into the care pathways for such patients to allow for greater efficiencies for the patient and the health system. Such services would only be provided as part of integrated care in collaboration with other local healthcare professionals in order to obtain the best outcomes for the patient. These initiatives are in line with the health policy aim of managing patients appropriately in the community with the correct supports.

As the current National Programmes for Integrated Care are being rolled out, there is an opportunity for pharmacists to collaborate with GPs and provide appropriately shared care as part of these programmes.

Internationally there has also been a growth in the role of the pharmacist in chronic disease management in Canada, the UK, particularly Scotland and Northern Ireland, and in certain states in the USA. These roles have developed in response to similar health system demands and patient needs as seen in the Irish population.

Case Study 8: New Zealand community pharmacy anticoagulation management (CPAM) service

The CPAM Service uses international normalised ratio (INR) point-of-care testing and adjusts warfarin doses with the aid of a decision support system in the pharmacy. The CPAM Service is an integrated care model providing an example of the pharmacist and GP working collaboratively for the benefit of the patient. All patients on the CPAM service must be referred by their doctor. The doctor will always have final responsibility for the patient treatment, the pharmacist assists them. The 2014 CPAMS application round brought the number of community pharmacists providing the CPAMS service to 149 with over 4,904 patients currently working directly with their local pharmacist to manage their warfarin levels. The provision of CPAM has funded pharmacists for the provision of an advanced service and the success of this initiative is opening further opportunities for additional services.

Recommendation 8

Where monitoring of patients with a chronic disease can be appropriately managed in the community, consideration should be given to establishing advanced pharmacy services for this purpose.

In addition, as a result of disease progression and monitoring, changes to the patient's medication can occur for patients with chronic illnesses. Currently in Ireland, changes to a prescription must be made by the medical practitioner, dentist or registered nurse prescriber. Many patients in the consultation expressed interest in avoiding unnecessary trips to the GP for minor changes or renewals to their prescription. However, during the consultation process medical practitioners expressed some concern in the area of accountability, and cautioned that any such continuation of therapy could only be safely implemented in close consultation with the primary prescriber.

Internationally, supplementary prescribing, as part of chronic disease management and shared care with a medical practitioner, is being carried out by specially trained pharmacists. Supplementary prescribing involves a pharmacist entering into a partnership with the independent prescriber (e.g. doctor, dentist) to implement a management plan for the care of a patient. The pharmacist can make adjustments or prescribe new medicines within limits agreed with their GP colleague in the patient's management plan.

In the USA, pharmacists can enter into a collaborative agreement with their healthcare providers to provide an integrated care approach to their chronic illness. This is illustrated in case study 9.[72]

This kind of collaborative management of diabetes can show positive clinical and economic outcomes[73] and the study concluded that pharmacist supplementary prescribing in chronic diseases provided an opportunity for the health service to get "the best value from resources". Under an integrated approach with the prescribing doctor, pharmacists would be able to adapt prescriptions within specified limits, as agreed with the prescriber. This collaboration would be greatly enhanced by the initiation of e-prescribing and electronic patient records, which is forecast to be introduced in the near future[74]. E-prescribing is established in the UK and is operating effectively[75]. A further expansion of e-prescribing to non-chronic illnesses can also be an advantage to patients.

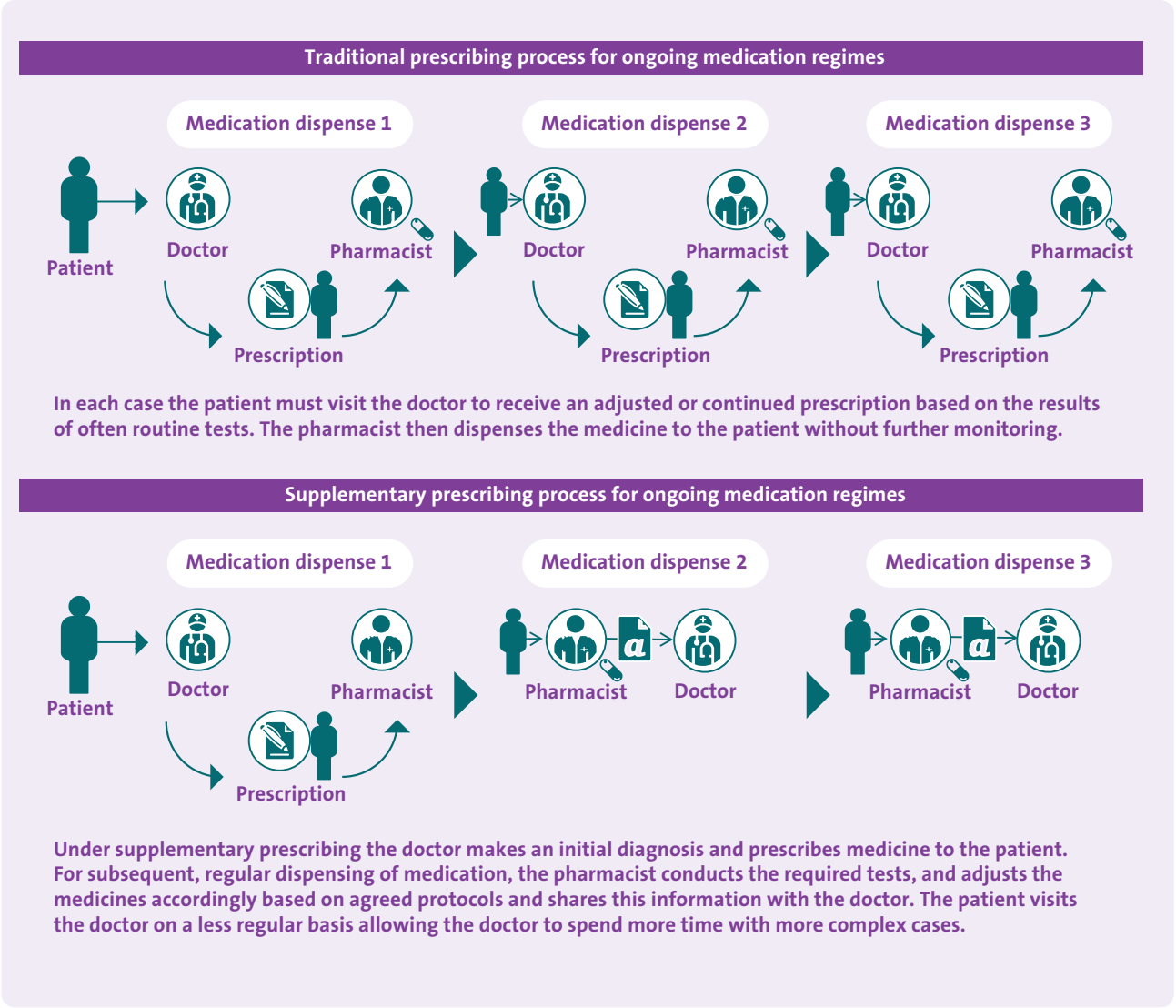
Case Study 9: Collaborative drug therapy management (CDTM) for chronic disease patients in Arizona

El Rio, a health centre in Arizona, serves a large Hispanic and Native American patient population, many with diabetes. In 2011, they saw 76,190 patients, over 56% from public healthcare (Medicaid and Medicare), 13% had private insurance and 28% were uninsured patients. In 2012, approximately 800 patients received Collaborative Drug Therapy Management (CDTM) services, mostly for diabetes. The CDTM protocols also cover hypertension, hyperlipidaemia, asthma, and other conditions. Collaborative Practice Agreements (CPAs) authorise pharmacists to assess patients, review medication regimens, adjust medications in approved drug classes, and perform specified examinations (e.g. foot examinations) as well as patient drug reviews for medications that require monitoring, such as anticoagulation therapy. The service is reimbursable by public healthcare and private insurers.

Patient view: Repeating prescription

"My dosage rarely changes and yet I need to go to the doctor every few months for a new prescription. It would be good if I could be checked by the pharmacist and checked by the doctor once a year instead."

Figure 16. Potential variations in prescribing utilising collaborative supplementary prescribing



In addition to chronic disease management, supplementary prescribing can be used to continue therapy for patients on long-term medication for other reasons. For example, patients in focus groups identified the need for six-monthly prescription renewals to the GP for the oral contraceptive pill as an area to look at. Through the consultation process patients were found to be strongly in agreement when asked if they would be comfortable with a pharmacist repeating their prescription in these cases, and were supportive of the pharmacist performing this function while also counselling them on areas such as any adverse effects, how to manage missed doses, patterns of bleeding etc. In the UK, pharmacists are providing blood pressure and weight checks before dispensing oral contraceptives by Patient Group Directions, reducing the need for a visit to the GP. Currently in Ireland, online doctors

Patient view: Oral Contraception

"At the moment I visit my GP every six months to continue with contraception. It would be great if I could have some of my more routine required health checks carried out by the pharmacist."

prescribe the contraceptive pill for individual patients on condition that the patient provides the pharmacist with blood pressure and weight check results prior to dispensing the oral contraceptive. In consultations, as part of the patient engagement for this Report, patients responded positively to the idea of a pharmacist measuring a patient's blood pressure and weight in order to repeat a prescription for oral contraception. This was thought to provide more access that is convenient for patients and increase patients' choice.

A proposal for implementation would be through a supplementary prescribing arrangement for contraception whereby following initial assessment and therapy initiation at the GP, the pharmacist can continue to monitor the patient for any changes while also being able to repeat their medicines for a defined time period. The pharmacist would also be closely in contact with the GP to inform them if any prescriptions are repeated and also any details regarding the patient e.g. blood pressure or weight.

Recommendation 9

As integrated programmes of care are rolled out, mechanisms should be explored to enable pharmacists and GPs to work more closely together to support patients in the management of their chronic conditions. This could include supplementary prescribing activities such as dosage adjustment or therapy continuation by the pharmacist in line with agreed protocols.

Conclusion and recommendations

The escalating number of patients with chronic diseases who require complex medication regimes and lifestyle changes to manage their conditions will require a collaborative healthcare approach between multiple healthcare professionals in the future. National policies such as the integrated care programmes indicates that the majority of this care should take place in the community for the benefit of patients and for the cost effective use of health system resources. Pharmacists' expertise in the area of medicines and frequent patient contact means that they are well placed to be an integral part of the multidisciplinary approach to care for these patients.

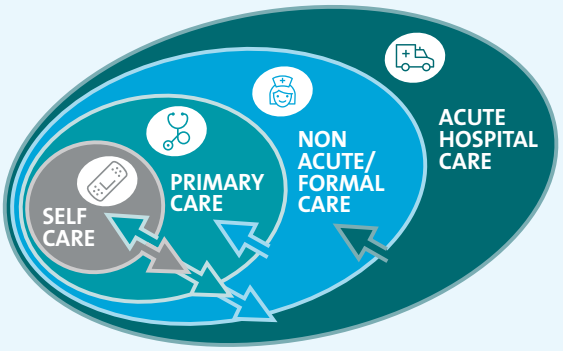
Patients, in consultations for this Report, noted in particular, that starting new medicine regimes can often be stressful and daunting, and pharmacist supports can be of great value to ensuring full understanding of, and adherence to complex new regimes.

Thus, pharmacy supporting and improving the health of patients with chronic diseases can be achieved as follows:

- Members of the public could be educated about warning signs and factors causing chronic illnesses through information and awareness campaigns.
- Notwithstanding pharmacists' current professional role and patient counselling in regulation [36] and clause 9 of the GMS contract, patients diagnosed with chronic diseases should receive a structured introduction to their new medicine and ongoing reviews to assist with adherence, in consultation with the pharmacist.
- Where the patient can be appropriately monitored in the community, the patient's pharmacy could be the provider of ongoing monitoring (e.g. anticoagulation clinics for patients in remote areas).
- Patients' prescription medication would be adjusted by the pharmacist to optimise the health benefits through designated protocols and in collaboration with the GP, using technology where possible.

8

Pharmacy Supporting Medicines Management Throughout the Patient Pathway

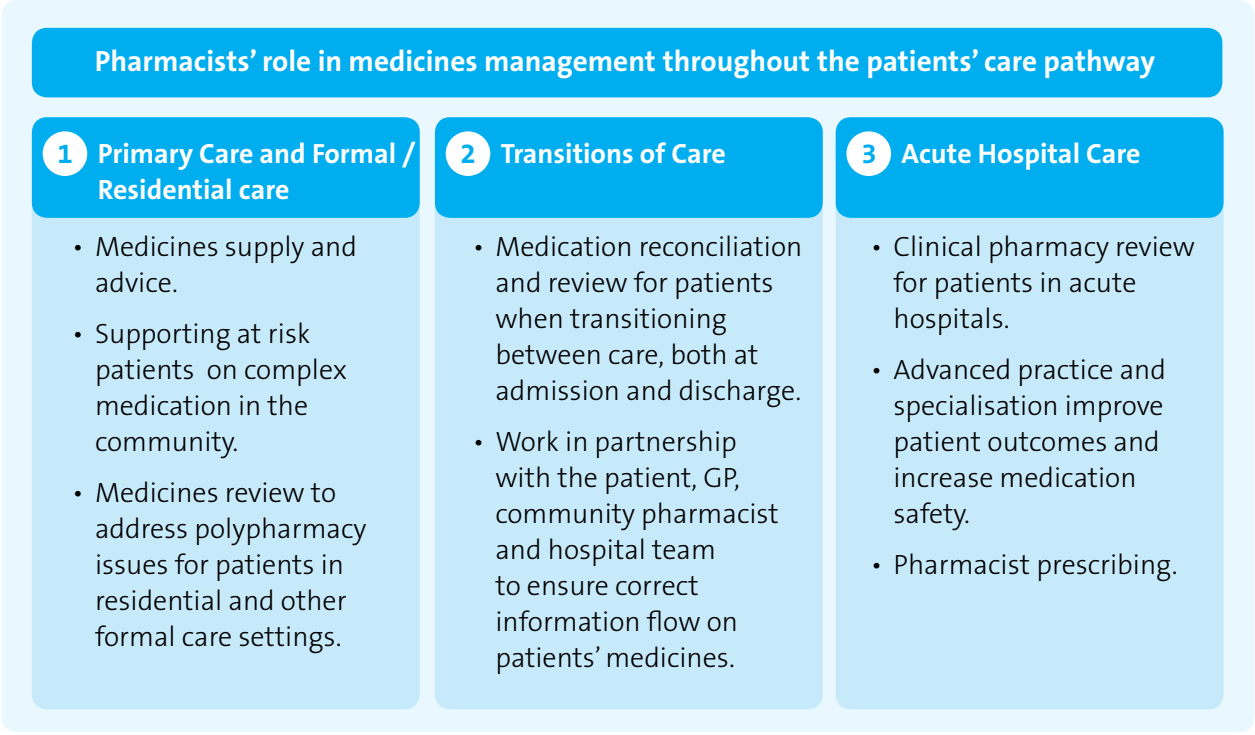


A key role for pharmacy will be in optimising medicines management throughout the patients' care pathway, ensuring safe and rational use of medicines and avoiding waste right across the health system.

Pharmacy Supporting Medicines Management Throughout the Patient Pathway

Medicines are the most common healthcare intervention. There has been an increase in both the number and complexity of medicines available in the past 20 years. People are living longer and coping with multiple chronic diseases all treated with medicines. As health reforms move patients as close to home as possible for treatment, patients in the community will require support for increasingly complex medicine regimes. This, together with polypharmacy (5 or more medicines prescribed per patient), presents challenges for the patient, in terms of taking medicines appropriately (medicine adherence), adverse drug reactions, and potential additional drug interactions as therapy becomes more complex. Throughout the consultations and focus groups process carried out for this Report, transitions of care were highlighted as a significant problem area for both patients and healthcare professionals. The role of the pharmacist, with their unique knowledge of medicines, will therefore be important in supporting patients to manage their medicines throughout their care pathway.

Figure 17. Overview of the role of pharmacy in medicines management for patients



Medicines Management in hospitals has been defined as encompassing 'the entire way 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'[76].

However, medicines management stretches beyond the confines of acute hospitals. Pharmacists, as medicines experts, have unique knowledge and skills to optimise medicines management in all care settings.

Medicines Optimisation is a newer term used to describe *'a person-centred approach to safe and effective medicines use, to ensure people obtain the best possible outcomes from their medicines.'* [77]

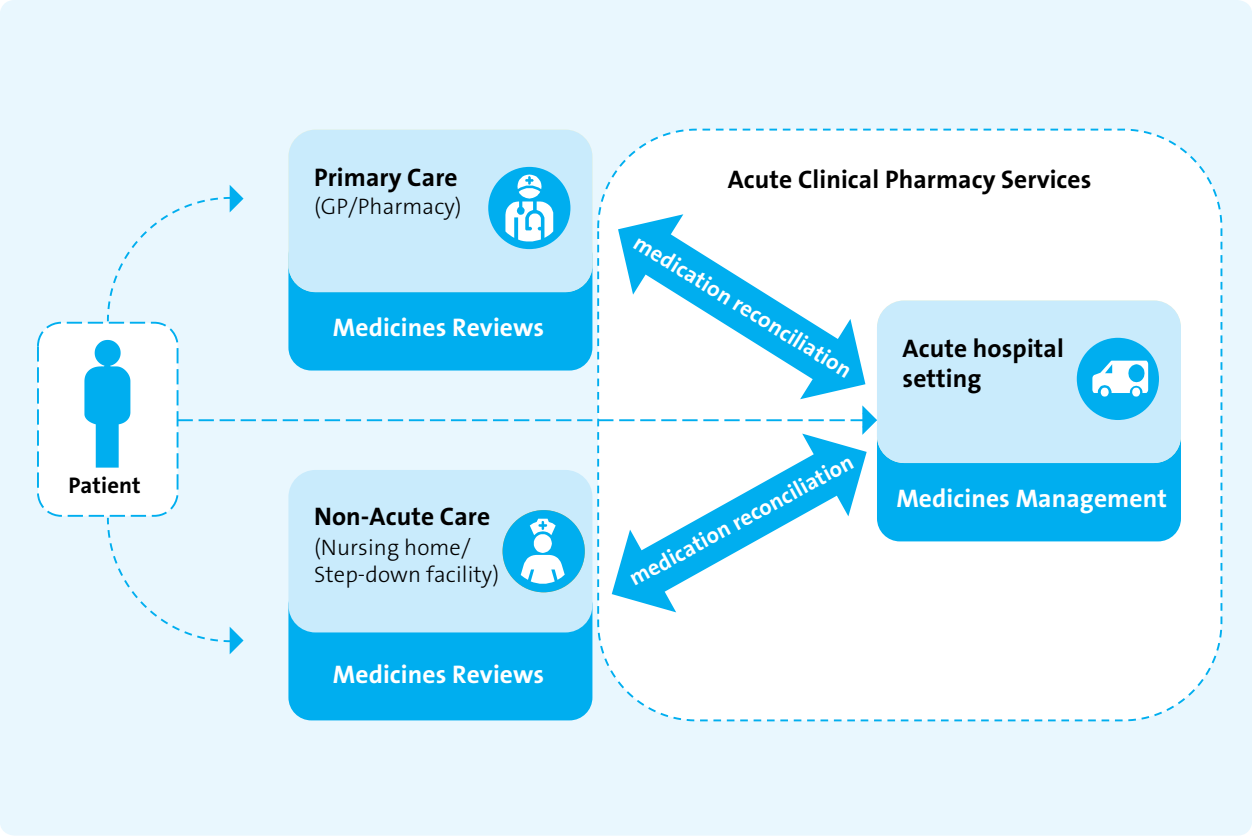
In day-to-day practice, medicines optimisation relies on patient and health care professional partnerships. It aims to help more patients to self-manage, to take their medicines correctly, reduce harm, avoid taking unnecessary medicines, cut down on waste and improve medicines safety. Ultimately, it can help encourage patients to take increased ownership of their treatment and support care closer to home.

Medicines optimisation focuses on actions taken by all health care practitioners and requires greater patient engagement and professional collaboration across all care settings to improve patient outcomes. Thus ensuring that the patient and the payer get better value from medicines.

The following areas have been prioritised to best meet patients' needs both now and in the future:

- *Medicines review in the primary care and non-acute setting,*
- *Reconciliation in the transitions between care,*
- *Medicines management in acute hospital settings,*

Figure 18. Overview of key areas for pharmacy input to improve medicines management



8.1 Medicines management in primary and non-acute care

The key role of the pharmacist in the community is the supply of medicines and advice to patients. This involves the review of prescriptions to ensure the pharmaceutical and therapeutic appropriateness of the medicines for the patient and providing patient counselling and education to ensure the patient has sufficient information on the correct use, storage and disposal of the medicine. This is both a regulatory and professional standard that is in place for pharmacists[36]. This review is part of the dispensing and medicine supply process, and accounts for the majority of the pharmacists' role in the community.[3]

As outlined previously, a general pharmaceutical review is carried out for all patients when prescriptions are dispensed. However, there remains a proportion of high-risk patients in the community setting, who are receiving high risk and/or complex medication regimes. In addition, with the planned increase in patients being cared for in the community, the number of patients with these complex needs is set to grow. Such at-risk or complex patients could benefit from a more structured and systematic approach to optimise the management of their medicines. These include patients where adherence to medicines regimes has been identified as problematic e.g. mental health patients, patients with intellectual disability, and patients with multiple co-morbidities. There are substantial healthcare costs associated with this level of non-adherence including disease progression and complications, the majority of which can be prevented. The large incidence of polypharmacy in the growing elderly population[31] means that correct use of medicines is of upmost importance, especially in this at-risk group[78,79].

In the UK, a number of strategies have been put in place to support and appropriately manage these patients in the primary care setting[80,81].

Case Study 10: Medicines use review (MUR) in NHS England

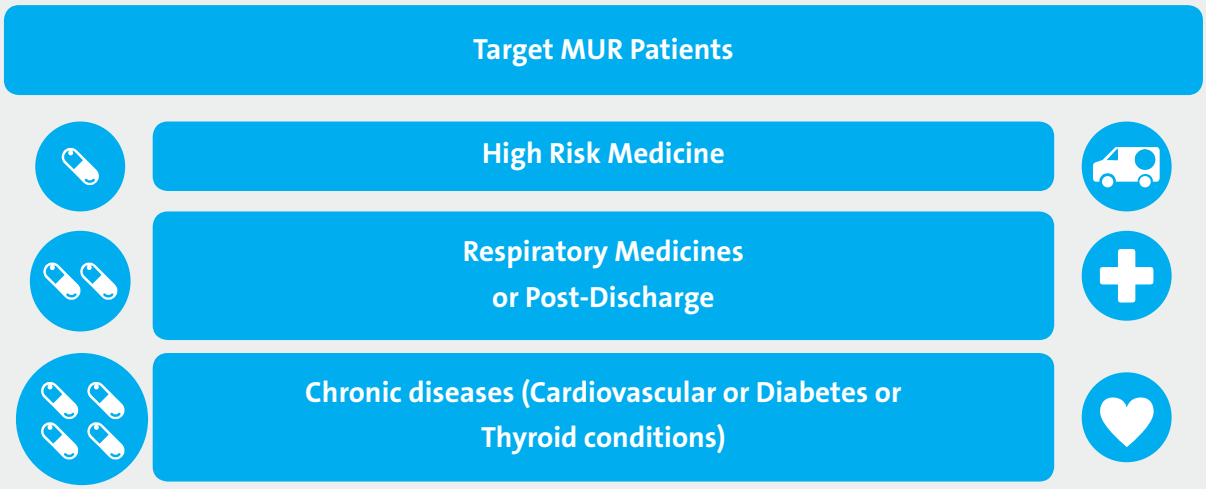
An MUR service in England is available in community pharmacies that are under contract from the National Health Service (NHS). The MUR process targets specific high-risk medicines, chronic diseases and patients post-discharge from an acute setting.

Targeted patients include patients on one high-risk medicine (e.g. Anticoagulant), two or more respiratory medicines, recently post-discharge or at least four medicines relating to chronic diseases such as cardiovascular disease or diabetes.

The average pharmacy completes between 20-30 MURs/month, 70% of which are in these required target categories.

Medicines Use Reviews are also performed in GP surgeries in the UK, these surgeries hire pharmacists as part of their team to perform MURs, allowing GPs to focus attention on more advanced consultations.

The role of pharmacists in GP surgeries is discussed further in this chapter under "Pharmacists in new primary care settings".



From a patient perspective, patients report understanding more about their medicine, feeling more engaged, and enabled to make informed choices about illness prevention and healthy living. Patients can take their medicines as agreed and they feel confident about sharing the experiences of taking or not taking their medicines, and how this affects their daily life.

While medicines reviews are currently carried out by some pharmacists in Ireland, there is potential for a structured service to systematically target those at risk, creating a structured process to tackle non-adherence. As more complex patients move into primary care such structure will be necessary to manage the risks.

A case study from Northern Ireland[82] on specialist medicines and shared care illustrates a way to manage patients who have been prescribed specialist medicines, as they move out of more acute settings into the community. A traffic light system has been developed (Red/Amber) of prescribing

responsibility, monitoring and supply of specialist medicines, in the interests of patients' safety. Guideline development is shared and agreed at regional level. A regional group on specialist medicines that includes, GPs, community pharmacists, hospital consultants, specialist medicine pharmacist, nurses and patients, and representatives from the Department of Health and HSE equivalent organisations, approves medicines on the list. This presents a unified approach to ensuring patient safety with specialist medicines.

Case Study 11: Northern Ireland – Complex medicines in the community

The Red Amber List of specialist medicines, is a guide for practitioners in both Primary and Secondary care on where prescribing responsibility should lie for specialist medicines that appear in the List, to ensure that clinicians can make an informed choice with regard to the prescribing of these medicines, and thereby facilitate access to these medicines by patients throughout Northern Ireland. A specialist medicine is defined as a medicine, which has significant pharmacological complexity and/or rarity of use to make the prescribing of the medicine relatively uncommon in the community. Patients, for whom complex medicines are prescribed, may have particular monitoring requirements, which require specialist knowledge for the appropriate interpretation of results.

In such circumstances, due consideration needs to be given to the settings and knowledge required by the professional to undertake the prescribing, monitoring and supply of the medicine, in order to ensure high quality patient care. Its primary function relates to patient safety and enhancement of services for patients prescribed specialist medicines. Supporting Guidelines are developed through an Interface Pharmacist Specialist Medicines Network, (IPSMN) and approved via local Drugs and Therapeutic Committees, with input from local GPs and community pharmacists to a Regional Group on Specialist Medicines. Implementation is facilitated through IPSMN specialist pharmacists.

Recommendation 10

Pharmacists should provide enhanced support to patients with complex medicines needs in the community. This could be provided using targeted medicines review and medicines management strategies for at-risk patients. These reviews should be in collaboration with other professionals including GPs.

Patients in residential care or formal care

Formal care in Ireland can encompass nursing homes for older persons and residential facilities for those with intellectual disabilities. Pharmacy services to residential care patients are provided by pharmacists working in either community pharmacy or hospitals.

Older people resident in these settings tend to have multiple conditions that are treated with medicines, making prescribing for this population challenging, with the potential for adverse outcomes with drug –drug interactions and adverse drug events (ADEs) increased in this population. Potentially inappropriate prescribing (PIP) describes a number of suboptimal prescribing practices, particularly the use of medicines that can introduce a greater risk of ADE when a safer and as effective alternative is available to treat the same condition. PIP in older people is common across all health settings and our research has found that it can result in increased morbidity, ADEs and hospitalisations. The case study below illustrates the results of research conducted in seven nursing homes in the south of Ireland[83].

Case Study 12: Potentially inappropriate prescribing in older residents in Irish nursing homes[83]

313 patients were recruited to this study from seven publicly funded nursing homes in the Munster region over a three week period. All patients were greater than 65 years of age, with 54.6% aged 80 or over. The total number of medicines prescribed were 2,555; range 1-16; median 8. The study identified, using screening tools, 329 instances of potentially inappropriate prescribing (PIP) in 187 patients (59.8%) and 199 instances of potential prescribing omissions (PPOs) in 132 (42.2%) of patients.

Benzodiazepines accounted for the highest proportion of PIP identified (25%), the second most common was the prescribing of proton pump inhibitors at extended full dose (17%).

This study illustrates the high proportion of older patients in nursing homes that are prescribed potentially inappropriate medicines or are not prescribed clinically indicated medicines (PPOs).

Pharmacists and GPs are currently required to conduct reviews in these settings in line with HIQA requirements[84]. From consultations with stakeholders, there was a recognition that collaborative practice in reviewing these patients would give the best patient outcomes.

As these care settings become more numerous with population growth in older age cohorts, pharmacists may increasingly be required to manage more complex medicines regimes and oversee the appropriate distribution of medicines (which may often include special requirements for patients who have difficulty swallowing, for instance). However, there may be a further role in ensuring medicines efficacy and best practice in the future.

Case Study 13: Medicines optimisation by a pharmacist in a nursing home setting, in collaboration with the patient, nursing staff and patient's GP.

As part of the development of this Report, an estimation of the potential cost reduction that could be realised with the introduction of structured pharmacist-led medicine reviews for patients with five medications or more in nursing homes was made. While available data was limited, there was an estimated €2.74m savings potential identified due to a reduction in inappropriate prescribing and adverse drug events resulting in potential reduced hospitalisations of patients in this cohort. The details of this cost estimation are outlined in paper D – 'Potential Cost Avoidance Opportunities'.[137]

In other jurisdictions, pharmacists have been successfully utilised to address medication issues for mental health patients in both long-term residential and community settings[85]. The review highlights studies where pharmacist conducted medication reviews can reduce exposure to potentially harmful sedative and anticholinergic medicines, often psychotropic medicines, which in turn may minimise decline in physical and cognitive function.

Recommendation 11

Patients in formal care settings, such as residential care, would benefit from targeted structured medicines review conducted by pharmacists and in collaboration with the patient's doctor or GP.

Pharmacists in new primary care settings

A new model of practice whereby a clinical pharmacist works directly with the GP in a GP practice exists in the UK, and has been found to lead to reduced error and better prescribing practice (see Case Study 14). The principles of medicines optimisation along with advanced practice and collaborative prescribing could well be implemented in this setting in Ireland. Canada has also introduced pharmacists in the primary care team setting, and guidelines for the introduction of pharmacists into the wider primary care team are now well established in that jurisdiction.[86]

Case Study 14: Pharmacist presence in GP practices in the UK

In 2015, NHS England set aside an initial £15m to recruit pharmacists into GP practices. GPs submit a business case to the NHS and if successful the NHS pay 50% of the pharmacist's salary in year 1, reducing over the following years. The Royal Pharmaceutical Society (RPS) and the Royal College of General Practitioners (RCGP) worked together to advance this programme. Patients were helped by the GP based pharmacists to better manage their long term conditions, they received specific advice when they were on multiple medicines, especially when transitioning care settings and had better access to health checks.
The pharmacist also helped with repeat prescription management and evidence based prescribing which in turn reduced drug costs. As a member of the practice team the clinical pharmacist took some work pressure off the GP to allow the GP to see more complex and acutely ill patients in a more timely manner.

Recently, NHS England has more than doubled funding from £15m to £31m for its clinical pharmacists in general practice pilot, due to an overwhelmingly positive response from GP surgeries who are dealing with increasing numbers of patients and insufficient GPs available. NHS England plans to invest £112 million in extending the programme to have a clinical pharmacist per 30,000 population for all practices not in the initial pilot, leading to 1,500 pharmacists in general practice by 2020. Northern Ireland have also invested in pharmacists in GP surgeries. £2.55m will be rolled out during 2016/17, rising to £14 million a year in 2020/21.

A pharmacist will be part of the clinical team within a practice to relieve work pressure on GPs, freeing up time for the GP to spend with patients with more complex medical needs and improving the quality and safety of prescribing for better patient outcomes.

The core responsibilities of clinical pharmacists within GP surgeries working with the practice team are:

- medication reviews in high risk patient groups, e.g. revolving door hospital admissions,
- improve prescribing practice through educational support for all prescribers in the practice,
- lead on where changes in evidence require changes in prescribing across a patient population e.g. where a drug is withdrawn or indications change,
- support improvements in clinical care through practice based audit and implementing change,
- ensure patient safety when they are transferred between care providers through reconciliation of prescribed medicines,
- liaise with colleagues in the community pharmacy to align support for medicines adherence,

Source: Royal Pharmaceutical Society of Great Britain (accessed June 2016).

Home Care

As has been previously described, the population over the age of 75 is expected to experience a 72% growth between 2011 and 2026. Home care, and in the form of Home Care Packages, provided by the HSE (increasingly outsourced to private providers) is likely to see rapid growth in line with ageing demographics. In addition to elderly patients, at-risk patients will increasingly be cared for in their own homes such as those with mental health issues or intellectual disability. Home care is a potential area for future regulation. Patient representatives noted a high level of non-adherence, because the patient does not visit the pharmacist themselves, but rather a family member or carer collects their medication for them. As more patients will be cared for in their home, pharmacists will have an increasingly important role in appropriately managing these patients' medicines. There would be significant benefits accrued from domiciliary visits by a pharmacist to such at-risk patients in these care settings.

Treatment in the home may increasingly become a viable and cost effective option for many acutely ill patients also. This is already underway in Ireland with over 3,000 of a private insurer's customers electing to use their Hospital in the Home service in 2015, and private companies are currently providing an OPAT (Outpatient Parenteral Antimicrobial Therapy) service as part of National Clinical programme for OPAT, ensuring no patient receiving intravenous antimicrobials, who could be treated out of hospital, remains an in-patient. This is also prevalent in other jurisdictions, most notably Australia (see Case Study 15) and in the USA. Ambulatory pharmacy services is a new innovation in Ireland, which is being offered through home visits by some Irish based pharmacies. Patients can book a home visit by a pharmacist to review a prescription and provide their medication.

Other examples of non-traditional settings include those of Ambulance Pharmacists. These positions now exist in three states in Australia ensuring medicine standards, governance and unique pre-hospital care in an ambulance setting[87].

Case Study 15: Hospital in the home (HITH) in Australia

In Australia, some patients can be treated as hospital 'inpatients' in their homes. Many are treated daily with intravenous medicines that are prepared and monitored by the hospital pharmacist, who also provide a Drug Use Evaluation service. The HITH service was found to have equivalent patient outcomes to treatment in the hospital with greater patient satisfaction and decreased costs.

Recommendation 12

In keeping with government policy to manage patients at the lowest level of complexity and as close to home as possible, consideration should be given to provide for pharmaceutical domiciliary care for at-risk patients.

8.2 Medicines management at transitions of care

There is an inherent risk when patients move between different care settings due to the introduction and potential interaction of a changed medicines regime. When patients are discharged from hospital into the community or non-acute setting, it has been shown that there can be significant rates of error, for example:

- Discharge prescription error has been reported for up to 50% of patients[88],
- 27% error when transcribing discharge prescriptions to GMS prescriptions[89],
- At least one medication discrepancy persisted at 14 days post discharge in 38% of patients[90].

A frustration highlighted in the consultation process by patients, pharmacists and doctors was the poor availability of and the transfer of information between care settings, particularly in terms of information on medication. All groups highlighted their positive experience and the value of pharmacists being involved in improving the transfer of care and information for medicines. In particular, the value of hospital pharmacists undertaking a medicines review of the patients discharge prescription and communication across the care settings was noted by numerous stakeholders during consultation including doctors, pharmacists, policy makers and regulatory bodies. The use of the community pharmacists as an accurate source of information on patients' medicines was also thought to be an important aspect in ensuring a smooth transition of care.

Medication reconciliation is the term used to describe the process of ensuring a patient is provided with correct medications at all points within and between different care settings. Medication reconciliation is a continuous process and starts when a patient is admitted to a service, continues whenever the patient is moved or transferred to a different level of care, and occurs again when the patient is discharged. Studies indicate that 23% of pre-admission medicines are omitted from, or incorrect in hospital records.[91] Many of these errors can lead to decreased patient safety, additional costs to the health system and social cost to the patient and his/her family.

Medication reconciliation can be considered complete when each medication that a person is taking has been actively and appropriately continued, discontinued, held or modified at each point of transfer, and these details have been communicated to the patient and next care provider. In Ireland, medication reconciliation is recommended immediately on patient arrival into hospital or as soon as possible thereafter[92,93] and on discharge[94]. It has been shown that pharmacists contribute positively to admission medication reconciliation.[115]

In a global review of effective strategies to improve patient safety, pharmacist-led medication reconciliation was identified as a key cost-effective strategy to reduce adverse drug events thus improving patient safety and outcomes.[95]

Pharmacist view: Sharing of information

"The less information I have about the patient and their medicines the more I am hindered in ensuring their safety and good care. The lack of an integrated communication system for patient information limits the detail of this information, often to the bare minimum."

Case Study 16: Medication reconciliation on admission

An Irish study involving two public hospitals examined the patient outcomes from commencing a pharmacist-led medication reconciliation service at admission. Adults admitted via the emergency department, from a non acute setting, reporting the use of at least three regular prescription medications, were included in the study[115]. Medication reconciliation at admission was provided by clinical pharmacists to randomly selected patients within this patient cohort within 24 hours of admission. The pharmacist intervention included collecting a comprehensive pre-admission medication list, checking this against the admission prescription and communicating any changes (i.e. discrepancies) to the clinician. Discrepancies were communicated to the clinician in the patient's healthcare record. Potentially harmful discrepancies were also communicated verbally. A validated tool was used to assess the clinical significance of the interventions by the pharmacist.

In total, 134 patients with 1,556 medications, were included in the study. Over 97% of patients (involving 59% of medications) experienced a medication change on admission. Over 90% of patients (involving 29% of medications) warranted a clinical pharmacist input to determine whether such changes were intentional or unintentional. There were 447 interventions by clinical pharmacists regarding apparently unintentional discrepancies, a mean of 3.3 per patient. Medication omission (65.3 %), and incorrect dose or frequency (22.5%) were the most common problems. 70% of the resolved unintentional discrepancies were judged to have the potential to cause harm, none had the potential to cause severe harm.

This study demonstrates the complexity of ensuring medication safety and continuity at transitions of care. It also illustrates the positive contribution that a pharmacist-led medication reconciliation can make to ensure the continuity and safety of patient care and transitions of care.

The case study[96] below illustrates the benefit for patients when there is interdisciplinary collaboration between the clinical pharmacist and hospital doctor.

Case Study 17: Interdisciplinary collaboration in the provision of a pharmacist-led discharge medication reconciliation service at an Irish teaching hospital.[96]

A large Irish teaching hospital introduced a clinical pharmacist discharge medication reconciliation service. Non-reconciliations identified e.g. omission of new medicines, dosage information, and duration of therapy errors were communicated verbally to the doctor, and documented in the patient's medical notes as appropriate. The pharmacist and/or doctor resolved the identified discrepancies according to predetermined guidelines. In total, discharge prescriptions for 224 patients, involving 2,245 medications were included in the study. A prescription 'non-reconciliation' was identified in 62.5% of prescriptions, and for 15.8% of medications. The total number of non-reconciliations per prescription ranged from 1 to 14. Omissions of preadmission medications and new medication non-reconciliations were the most common findings. All communication non-reconciliations were resolved prior to discharge, with 55.7% of prescription non-reconciliations fully resolved. The study demonstrated that interdisciplinary collaboration between the clinical pharmacist and the non-consultant hospital doctor (NCHD) improves the completeness and accuracy of discharge prescriptions. Thus reducing medication errors and improving patient safety and outcomes through the provision of a pharmacist led discharge medication service.

The benefits of improved communication and medication reconciliation on discharge have been proven with local initiatives in Irish hospitals receiving positive results including: more timely dispensing of paediatric prescriptions, and improved design of discharge prescriptions[96,97]. Medication errors[98] are identified and reduced, inappropriate polypharmacy is addressed, patient harm is reduced, including readmissions for drug related illnesses, and time spent by the community pharmacist, GP and patient to contact and clarify the hospital prescribers' intention is saved. A guidance[99] document has already been developed for medication reconciliation in Ireland. The Quality and Patient Safety Division of the HSE published "Integrated Care Guidance – a practical guide to discharge and transfer from hospitals" in 2014, which outlines clearly the need for medication reconciliation, and medicines review at both admission and discharge. The future implementation of e-prescribing and electronic health records will bring advantages for patients and healthcare professionals through the improved sharing of information[100], which is discussed in Chapter 9.

Transition of care issues have been comprehensively addressed in Northern Ireland as part of an integrated medicines management programme, through the introduction of a comprehensive clinical pharmacy services as discussed later in Case Study 18. In Sweden, the Lund group, showed significant benefit of multidisciplinary collaboration on admission and discharge and medication review of elderly hospitalised patients. The pharmacist was an integral part of this team. The cost benefits of this comprehensive approach are discussed in more detail in our supporting paper D[137].

Recommendation 13

In line with HSE Integrated care guidelines, patients should receive pharmacist-led medication reconciliation and medicines review upon entry and discharge from hospital, which should involve the community pharmacist when returning to primary care.

8.3 Medicines management in acute hospital settings

In the acute hospital setting, patients often present with multiple medical issues. Nearly every patient who is admitted to hospital will receive at least one medicine during their stay, with many of the medical patients prescribed anything between five to nine medicines, and some patients receiving up to thirty medicines[27], this is particularly the case with elderly patients across all health settings[101]. In a recent Irish study, 84.5% of older hospitalised patients on admission had polypharmacy, with 43% having major polypharmacy with 10 or more medicines prescribed[102]. Therefore, patients in this setting frequently have complex medicines needs.

The combined drug budget for hospital medicines is in excess of €300 million per annum[103]. These medicines vary from simple aspirin to more complex intravenous medicines that need to be specially compounded for patients for their cancer and other treatments.

552 PSI registered pharmacists in April 2016, indicate hospital pharmacy as their area of practice. This represents approximately 10% of the register. In 2011, the Review of Hospital Pharmacy reported that there were 442 Whole Time Equivalent (WTE)[103] pharmacists working in the public hospitals in Ireland. Hospital pharmacists are engaged in the procurement, dispensing, compounding, distribution, medicines information and safe use of medicines within their hospitals. The role of the clinical pharmacist has developed in many hospitals where the pharmacist have a patient-facing role, either ward or team-based, which involves the clinical review of the patients' medication.

Case Study 18: Integrated medicines management programme[106]

In Northern Ireland, the integrated medicines management programme introduced in 2000 has demonstrated the use of comprehensive pharmacy teams involved at admission, inpatient stay and discharge, incorporating communication at intersector transitions at admission and discharge where most medicines–related problems occur. This medicines optimisation programme resulted in reduced length of stay for patients by 2 days, decreased re-admission rates post discharge, has had a positive impact on risk adjusted mortality index, improved communication across transitions of care and a return on investment of £5 to £8 for every £1 invested.

In the UK, clinical pharmacy services improve the quality of care for patients, particularly allied to the safe and effective use of medicines[104]; and also, attain significant cost savings for the health system. International research showed that a core set of clinical pharmacy services is associated with favourable outcomes such as decreased mortality rates[105], reduced length of stay[106], and avoidance of adverse events for the patient[107]. Structured pharmacist interventions were found to improve both the appropriateness and accuracy of medication regimes and the prevention of adverse drug reactions of older hospitalised inpatients[102,108,109]. Many of the medication related admissions to hospital have been shown to be avoidable. One study in Cork found that 8.8% of all admissions to an Irish hospital were medication related, with over half of these being avoidable[110]. The cost associated with these admissions are also considerable, with average costs of over €6,000 for one potentially preventable, medication-related hospital admission[111].

A major Australian hospital-based study found that for every dollar spent on a clinical pharmacist to initiate changes in medicines therapy or management, approximately $23 (€15)[112] was saved on length of stay, readmission probability, medicines, medical procedures and laboratory monitoring[113]. In Ireland, a year-long study in Cork on clinical pharmacy interventions for 2,147 patients resulted in a total cost avoidance of €708,000 with a cost benefit ratio of 1:8.64[114].

In Ireland there remains significant variability in clinical pharmacy practice, both from the level and type of service currently offered[4]. A 2010 study found[41], that while the majority of Irish hospitals (71%) reported delivering a clinical pharmacy service, 44% of these reported delivering a service to selected inpatients only, with these services available on a Monday to Friday basis only. The consultations with stakeholders, for this Report, confirmed that services have not expanded since this survey in 2010. Therefore, it is clear that there is scope for further development of these services to improve patient care, increase medication safety and reduce medication-related readmissions. There are no national standards of practice in place for clinical pharmacy and the development of such national standards may support patient care and help provide consistency between hospitals. In 2014, after an extensive review and consultation process the European Association of Hospital Pharmacists (EAHP) issued EAHP Statements on Hospital Pharmacy, which express 44 commonly agreed objectives in relation to the delivery of hospital pharmacy services. The specific statements on clinical pharmacy services could be used as a basis for the development of national clinical pharmacy standards in Irish hospitals.

Case Study 19: Medicines management in in an Irish hospital setting- clinical pharmacy services

As part of the research for this Report (detailed in the supporting report paper D – 'Potential Cost Avoidance Opportunities')[137], an assessment of the potential for cost avoidance as a result of the implementation of clinical pharmacy services in all Irish hospitals was estimated. This estimation was based on previous academic work. Based on the available data, it was estimated, that by extending clinical pharmacy services, assumed to be available in large tertiary and specialist hospitals, to all smaller hospitals, a net cost avoidance (after the cost of extra pharmacy resource) of €19.7m could be achieved while improving patient outcomes. This saving is due to the cost of Adverse Drug events (ADEs) avoided. In addition to this, there may be significant cost savings achieved through the reduced volume of drugs consumed as well as the greater use of biosimilar medication and preferred formulations.

In summary, delivery of clinical pharmacy services are an important part of medicines optimisation by ensuring the safe and appropriate use of medicines by patients in hospitals. A comprehensive service encompasses **medication reconciliation** upon admission and discharge, and **medicines management** while in an acute setting, including the pharmaceutical and therapeutic review of the patients' prescription (Kardex).

Development of clinical pharmacy services offer four main patient benefits:

- enhance medication safety for the patient by assuring the patient is receiving the correct therapy,
- improve therapeutic effectiveness by informing and supporting prescribing,
- provide education and monitoring of patients, and
- increase financial efficiency (by contributing to a decrease of inpatient stay and use of more cost effective medicines)[114,116].

Recommendation 14

A wider range of patients in acute hospital settings would benefit from having their medicines screened for pharmaceutical and therapeutic appropriateness by the pharmacist. Standards for clinical pharmacy review should be developed to support this process.

Advanced clinical pharmacy practice and specialisation in hospitals

Increasingly, pharmacists are involved in multidisciplinary teams (MDT) in the acute settings. As these pharmacists spend a greater amount of their time in patient facing roles as part of a MDT, they can become involved in more advanced practice including collaborative prescribing activities, as shown through the PACT initiative (see Case Study 20) in Tallaght Hospital[117]. This initiative added significant value to patient care by improving quality and safety of prescribing for medical patients, reducing the prevalence of medication error including potentially severe error. The recommendations of the study are to implement collaborative models of medicines management between medicine and pharmacy and to facilitate collaborative prescribing of pharmacists within this model.

Internationally, pharmacists are embedded in MDTs in many jurisdictions including Australia and the UK.

Case Study 20: Collaborative Pharmaceutical Care in Tallaght Hospital (PACT)[117]

Traditionally, clinical pharmacists are ward-based, contributing to medication history taking and prescription review, but not involved at discharge. The innovative PACT intervention involved clinical pharmacists being team-based, leading admission and discharge medication reconciliation and undertaking prescription review.

The PACT intervention allowed for the clinical pharmacist, in consultation with the medical team, to make major and minor changes to the patient's drug chart or patient's discharge medication list. These activities are consistent with the notion of collaborative prescribing. There is evidence that collaborative prescribing reduces the prevalence of medication error and unintentional discrepancies in emergency department and perioperative settings. This is consistent with the study finding that PACT patients experience more clinical pharmacist recommendations that are accepted more frequently and earlier in the hospital episode than standard care.

The initiative was found to protect against severe medication errors in acute medical patients and improved prescribing quality in older patients. Cost effectiveness research work is currently being undertaken for the PACT model of care.

Specialisation

The complexity of hospital patient treatments has increased significantly with a correspondent growth in pharmacy service provided, including specialisation in such areas as medicines information, medication safety, disease areas specialities, aseptic compounding and infectious disease. Specialist pharmacists inform best practice prescribing protocols and guidelines for use within their hospitals.

In practice, many pharmacists in Irish hospitals already have key expertise and experience in clinical specialties. It was reported during the consultation process, that those patients who had contact with pharmacists with particular expertise in medicines in their area of illness felt more at ease and were more likely to discuss issues regarding their medication.

Patient view: Specialist Pharmacists

"I have only ever had one interaction with the pharmacist who specialises in Cardiology medicine. I came away from the meeting with a lot of confidence about my medication and how to manage my condition. I think other patients would get a lot out of a similar session with a specialist."

Cardiac Rehabilitation Patient

Specialties discussed during consultation, and mirrored by international specialty designation in other jurisdictions include, but are not exclusive to the following:

- Antimicrobial stewardship[118,119,120,121]
- Paediatrics,
- Infectious diseases,
- Oncology/Haematology,
- Psychiatric/Mental Health,
- Cardiology,
- Geriatric/Care of the Elderly,[122]
- Aseptics,
- Medicines Safety,
- Informatics,
- Procurement.
- Renal,
- Intensive care

Case Study 21: Antimicrobial pharmacist in Ireland

International growth in the use of antibiotics has led to patients often being over-prescribed antibiotics. Patient cohorts have thus begun to build a resistance to these drugs. The consequences of this resistance have been treatment failures (and resultant negative patient outcomes) and the continuing use of broader spectrum, more costly antibiotics. Structured investment in antimicrobial pharmacists was introduced in thirty irish hospitals by 2007. Their role includes the following:

- Lead on implementation of antimicrobial stewardship policies,
- Clinical role to include dose adjustment, therapeutic drug monitoring and identification of patients for stewardship interventions,
- Provision of expert advice on antimicrobial use to promote safe, effective and cost efficient use of antimicrobials,
- Surveillance of antimicrobial use, and
- Education of patients and other healthcare professionals.

The introduction of antimicrobial stewardship has been found to have a strong positive effect in a number of Irish hospitals. Galway University Hospital (GUH) spend on antibiotics has reduced from €4million in 2008 to €2million in 2013 (a total of €9.8 million saved). The GUH antimicrobial stewardship team includes an antimicrobial pharmacist and a clinical pharmacist, who have over the period introduced a number of different initiatives to improve appropriate prescribing of antibiotics. In addition, both the quality of empiric antimicrobial prescribing at Temple Street University Hospital improved significantly, as well as year on year cost savings. Antimicrobial spend reduced year on year from €447,149 in 2013, €390,674 in 2014 to €289,596 in 2015, on the appointment of an antimicrobial pharmacist.

Specialisation in antimicrobial stewardship delivers patient benefits such as decreases in antimicrobial resistance and cost savings through pharmacist guided appropriate use of antibiotics.

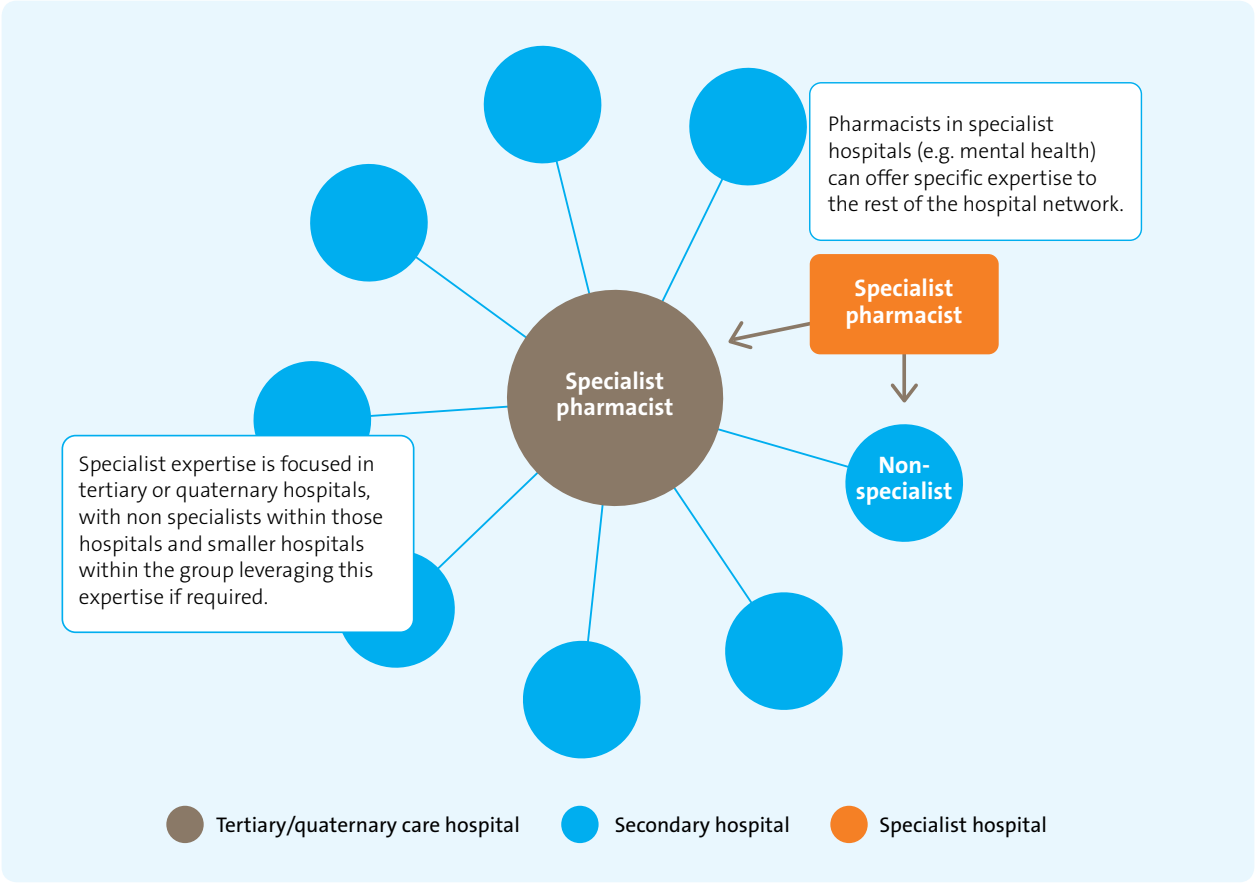
The continued success of antimicrobial stewardship in Ireland requires appropriate specialist pharmacists with expertise in the domain. Other care settings, (including long-term care) have also been identified where antimicrobial stewardship may have strong patient outcomes.

Other jurisdictions examined e.g. the UK, Canada and the USA have introduced both collaborative and independent prescribing by hospital pharmacists. This is a specialist activity. It is supported by legislative change and credentialing of prescribing pharmacists. The examples of these, in the main, have a clear separation between prescribing and dispensing activity.

We have also seen a growth in day cases in our hospitals with more complex patients being treated in these settings e.g. oncology. These patients also require medicines review by the clinical pharmacist in assuring that their proposed medication therapy is pharmaceutically and therapeutically appropriate. This is supported by recommendations for prescription checking for both oral and parenteral chemotherapy treatments as outlined in the National Cancer Control Programme Oncology Medication Safety Review Report 2014[123].

In Ireland, specialisation in hospital pharmacy is recognised in the agreed Review of Hospital Pharmacy 2011[103] and all parties are currently actively engaged in the implementation of this review within the new hospital group structure.

Figure 19. Illustrative implementation of specialist expertise across a hospital group



While clinically specialised pharmacy is of value to hospitals, it is not practical for every hospital to have specialist pharmacists. However, with the implementation of the hospital group structure, greater access to the expertise of a specialist pharmacist can be realised. Specialist pharmacists can act as a resource for the entire hospital group. In this model, the smaller hospitals could draw on specialist expertise in the tertiary and quaternary hubs in the relevant hospital group.

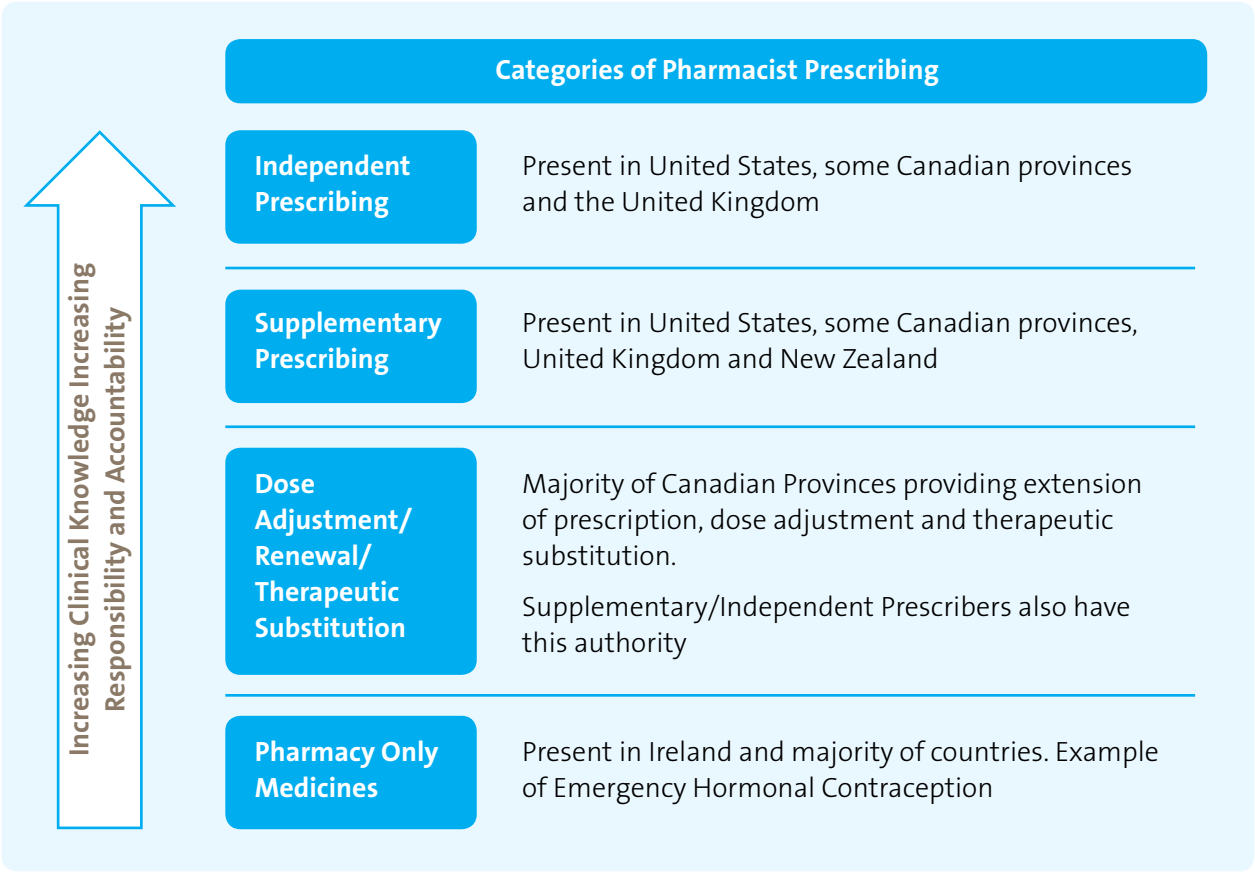
Designation of roles and responsibilities of specialised pharmacists is detailed internationally in the Pharmine documentation[124]. On a national basis, some clinical areas already have guidelines to indicate the requirement of specialist pharmacists in the area such as the National Competency Frameworks for Pharmacists Working in Cancer Care and Palliative Care.

Recommendation 15

Patients with illnesses that require treatment with complex medicine regimes should have access to trained specialist pharmacists (e.g. palliative care). The specialist expertise should be used effectively throughout the new hospital group structure.

Pharmacist prescribing

Figure 20. Overview of pharmacy prescribing categories internationally



Various forms of pharmacist prescribing are in place internationally (figure 20). Supplementary or delegate prescribing is prescribing based on a collaborative therapy agreement with a physician. This is the model favoured in Canada.[125] Independent prescribing is prescribing without a collaborative agreement with a medical practitioner. This is in place in the UK. In New Zealand, prescribing is mainly restricted to products for minor ailments, emergency contraception and smoking cessation; these vary from region to region. Pharmacists can also renew/extend prescriptions, change the drug dosage/formulation and make therapeutic substitutions.[126] Pharmacist prescribers work in a collaborative health team environment with other healthcare professionals and are not the primary diagnostician. Pharmacists can be independent and supplementary prescribers in the UK and prescribe all types of medication with some small restrictions. In order to qualify as an independent prescriber pharmacists must complete an accredited programme[125]. In Ireland, nurses have been able to prescribe since 2007, which has led to greater autonomy and improved patient outcomes[127].

The foremost objectives of pharmacist prescribing should be to enhance patient safety and timely access to medicines. Supplementary prescribing or dose adjusting, as described in the section on managing chronic disease, could allow for easing of patient access and better efficiencies for the health system. Supplementary or independent prescribing would be more suitable for pharmacists in the hospital care setting that are established in multidisciplinary and specialist teams. Pharmacists prescribing in these areas has shown to improve safety and patient outcomes. Any implementation of pharmacists prescribing would require in addition to a change in legislation, a nationally agreed written decision framework and procedures to be in place to include the components above and provide for a division of prescribing and dispensing, where possible. Multiple stakeholder engagement and collaboration would be required.

Recommendation 16

In order to enhance patient outcomes and increase medication safety, multidisciplinary teams, which include pharmacists, should be used to develop collaborative models of medicines management. This includes development of appropriate pharmacist prescribing models. Supplementary prescribing by pharmacists in the first instance would aid the patient management process and should be developed. Longer term consideration should be given to giving pharmacists independent prescribing rights.

Conclusion and recommendations

Increasingly the patient care pathway is considered as a continuum of treatment for the patient, particularly when health policy advocates a more integrated approach between settings. At each care setting (Self-care, Primary, Acute and Formal /Non-acute) their medication needs safe prescribing, adherence, efficacy and management.

In Primary care, rising levels of polypharmacy coupled with complex medicines now being used in the primary care setting, prescription errors and over half of patients not taking medications as recommended, lead to significant risks to patient safety, reduced medicines efficacy and cost implications for the health service. Structured Medicines Reviews in particular for at-risk patients have been shown to improve patient understanding of their medicines regimes and thus improve the adherence to and efficacy of the medication. Such reviews carried out by community pharmacists, in liaison with the patients' GP, have been successfully implemented internationally, most notably in the UK, Canada and Australia.

Formal and residential care setting patients are a vulnerable group that need support in their medicines management due to the increasing level of polypharmacy coupled with potentially inappropriate use of medicines. Support in the management of the medicines of these patients may be delivered by the community pharmacist in collaboration with the patient's GP or in the case of the public system by the hospital pharmacy services to ensure safe and rational use of medicines for patients in these settings.

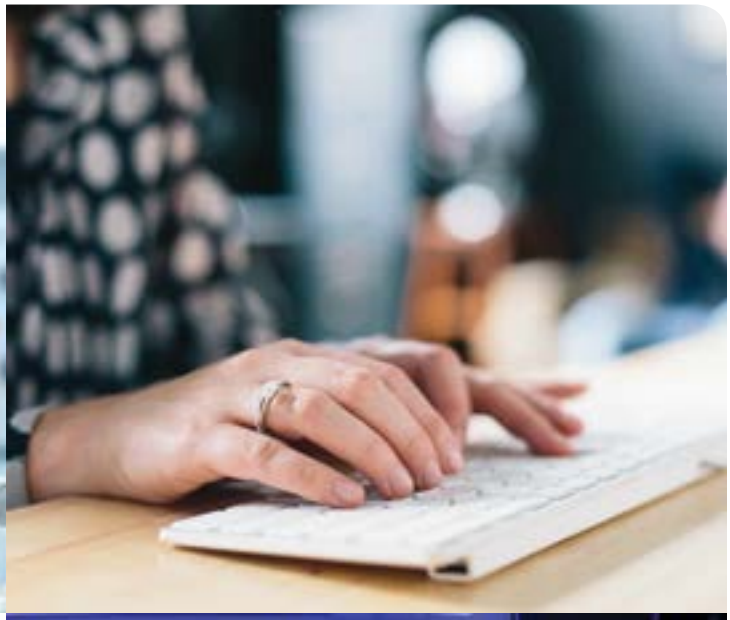
The difficulties in consistent application of medicines treatment when patients transition between care settings create the potential for risks to patient safety and medicines efficacy. Therefore, to support the patient care pathway as a continuum requires effective transition of care from one setting to another, particularly on admission to, and discharge from, acute care facilities. While Irish health policy already advocates this practice, consultations indicate varying degrees of implementation on the ground.

In hospital settings, the involvement of pharmacists in integrated clinical teams to review patients' medicines to ensure they are clinically appropriate and to detect prescription errors, results in both a better outcome for the patient and a more cost-effective solution. The benefits of medicines management in an acute setting are demonstrated both internationally and nationally e.g. the PACT initiative in Tallaght Hospital, although resource constraints prevent a comprehensive availability of the service nationally. As the advanced pharmacy practitioners in multidisciplinary teams develops, this model of care should be further explored by the health system

As national policy focuses on the continuum of treatment for patients, and delivering care in an appropriate setting, evidence shows that the management of medicines and optimising their use at all stages along this continuum will generate healthcare cost savings, while positively affecting patient outcomes.

In order to ensure the safe, effective and cost efficient care of patients, the unique skills of pharmacists should be employed in structured medicines optimisation consultations including:

- Medicines reviews for at-risk patients in primary care,
- Targeted medicine reviews for patients in formal care settings,
- Medicines reconciliation and prescription review by clinical pharmacy services within acute settings,
- Introduction of pharmacist prescribing.



9

Enablers of Change

Enablers of Change

As part of the consultation process for this Report, a number of key enablers were identified that are needed to support the development of future pharmacy practice:

- Leadership,
- Education and continuing professional development (CPD),
- Acquisition of specialisation and advanced practice,
- Research,
- Integrated care and collaboration,
- Regulation and governance,
- Resources, and
- Technology.

9.1 Leadership

Leadership is critical to any organisational performance and plays a vital role in instilling a culture of patient safety in health care systems[128]. Strong leadership nationally, regionally and locally, will enable the pharmacy profession to contribute to new integrated models of care, to work collaboratively with healthcare colleagues as part of a multidisciplinary team in different care settings and to optimise medicines management in partnership with patients. The importance of strong leadership in the hospital setting is also recognised throughout the agreed Review of Hospital Pharmacy 2011[103].

Practitioners, policy makers, regulators, and researchers will need to display leadership and strategically co-ordinated focus to realise an integrated patient care role for the profession. Leadership development is an important part of CPD programmes for pharmacists. The Irish Institute of Pharmacy, as part of its strategic plan, proposes to support the pharmacy profession by boosting the leadership potential of pharmacists.

Recommendation 17

The leadership potential of the pharmacy profession should continue to be a focus of development.

9.2 Continuing Professional Development and Education

In every profession, continuing professional development (CPD) is important to update knowledge, developing new skills and ensuring continued competency to practice. Therefore, CPD and education are important enablers for pharmacy practice to evolve and meet patient needs. The introduction of the new five-year MPharm degree in the three Irish universities is designed to equip new pharmacists with many of these skills including greater interaction with other healthcare professionals and more hands-on learning experience.

Pharmacists, as a profession in Ireland, participate in a notable high level of post-registration training, with a high proportion holding diplomas and postgraduate degrees. This is a strong base for further education. CPD will become an increasingly critical component in maintaining and enhancing professional standards, and will be a strong enabler of future pharmacy practice as it continues to evolve.

The Irish Institute of Pharmacy (IIOP) supports pharmacists to engage with CPD and commissions education and training programmes in line with national policy. This offers an excellent structure to enable any development of pharmacist interventions with appropriate training and quality assurance.

Pharmacist view: Professional Development

"We have so much to offer patients and other healthcare professionals, but I'm not sure if the mind-set is there yet to move away from more operational aspects of our role.

In order to take our place in the multidisciplinary team, we need to raise the standard in terms of communication, leadership and patient interaction skills."

Recommendation 18

The CPD system for pharmacists as delivered through the Irish Institute of Pharmacy (IIOP) should continue to be used to deliver quality assured CPD to enable pharmacists to provide the patient care and practice developments identified.

9.3 Integrated care and collaboration

As outlined in Healthcare in Ireland (Chapter 2), a system of integrated care is being developed within Irish health and social care services. Integrated care puts the patient perspective as an organising principle of service delivery. This involves a variety of health and social care professionals working together to provide a flexible network of care that is responsive to the changing needs of patients. The Steering Group recognises the importance of integrated care and collaborative working of healthcare professionals so that patients can achieve the benefits of their individual skills or expertise. The roll out of integrated care is seen as a key enabler for pharmacy practice to integrate fully into the care of patients. Pharmacists currently share the care of patients with other healthcare professionals, in particular with doctors in the prescribing and dispensing of medicines. There is an opportunity to further develop this as integrated care is developed in the health system.

Recommendation 19

As a system of integrated care is developed within Irish health and social care services the opportunity for pharmacists to further develop shared care with other healthcare professionals, especially doctors, should be explored.

9.4 Development of both advanced pharmacy practice and specialisation

The recognition of specialisation both from professional accreditation and within the workplace is increasingly becoming a feature of international pharmacy practice.

As the health system and patient medicines needs continue to evolve in complexity and challenge, pharmacy practice will need to respond to this challenge.

Development of both Advanced Pharmacy Practice and Specialisation is rooted in the Pharmacy Core Competency Framework and is in line with requirements placed on the PSI under the Pharmacy Act 2007 to ensure that *"pharmacists obtain appropriate experience"; and "to ensure that pharmacists undertake appropriate continuing professional development, including the acquisition of specialisation"*[129].

The baseline studies of pharmacy confirmed that significant numbers of pharmacy graduates continue their formal learning post registration and already hold higher degrees and diplomas. This gives a strong base for advanced and specialisation development, building on their learning and expertise.

In addition, national collaboration and networks between pharmacists in specialties will allow for greater collaboration and knowledge sharing, by creating forums for specialists to share findings and collaborate in research initiatives, both in community and hospital settings.

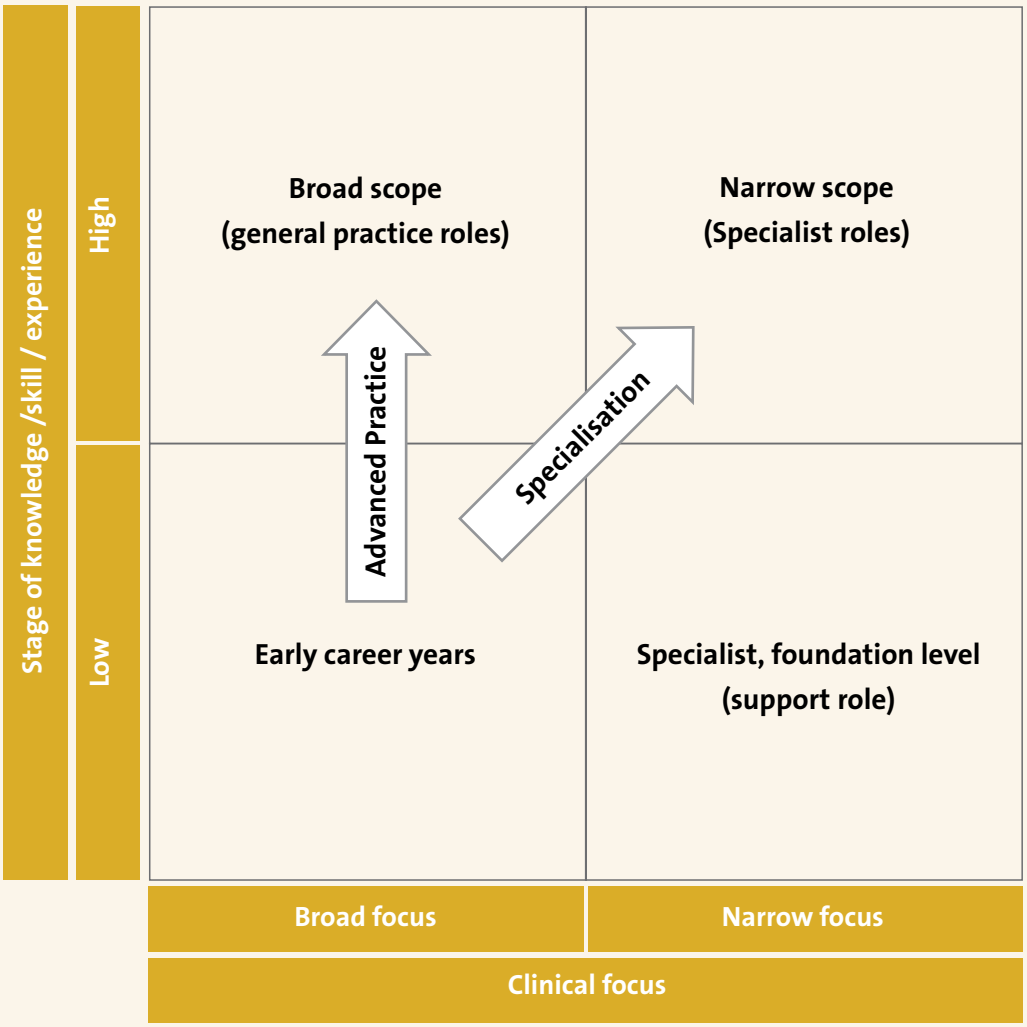
The 2013 amendment to the European Directive on professional qualifications and regulation[130] provides the legal framework for the recognition of a common training framework (CTF) for specialists' within professions. Since the amendment came into effect in January 2014, the European Association of Hospital Pharmacists (EAHP) have been working on the development of a CTF for hospital pharmacy specialisation.

Advanced practice and specialisation is relevant to all pharmacy practitioners. With the establishment of the Irish Institute of Pharmacy (IIOP) in 2014, Irish pharmacy now has the appropriate structure to provide ongoing professional development and support recognition of advanced practice and specialisation for all practice settings.

Defining Specialisation and Advanced Practice

As described within FIP definitions[136], Advanced Practice and Specialisation refer broadly to two categories of higher practice beyond initial education, training and foundation practice. *Specialisation'* relates to a higher, but narrow focus on scope of practice, whereas *Advanced Practice* relates to a higher but broad scope of practice. In either case, higher practice can be recognised to be the ability of an advanced pharmacy practitioner to make clinical decisions and deliver patient care at a significantly higher level than the abilities of an entry-level pharmacist.

Outline of career paths for higher practice



Case Study 22: Specialisation in Australia and the UK

Australia: There is a nationally agreed Advanced Practice Framework in Australia, which describes practitioner development in all sectors of pharmacy practice, along a continuum, with three defined levels of advancement: L1 (Transition); L2 (Consolidation) and L3 (Advanced).

England: The Royal Pharmaceutical Society (RPS) provides a professional recognition programme for advanced practice across Great Britain. The RPS Faculty provides resources and services to assist practitioners' development by meeting competencies outlined in the Advanced Pharmacy Framework (APF).

There are three developmental stages of recognition and credentialing available to advanced practitioners based on a review of a submitted professional portfolio, peer-assessment evidence and scope of practice evidence. Specialist pharmacists in hospitals spend a majority of their time on clinical duties such as ward rounds, this has been enabled by automation in dispensing; and advances in the role of pharmacy technicians (being able to provide final accuracy check). The example below is of a consultant pharmacist in England.

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. Their role revolves around four main functions: expert practice in their area; research, evaluation and service development, education, mentoring and overview of practice and professional leadership.

Recommendation 20

To maximise the benefit to patient care, advanced pharmacy practice and specialisation framework should be developed to further enhance the skills of practising pharmacists in all settings.

9.5 Research and an evidence base

To the extent that research was explored as part of this Report, it was clear that research and an evidence base is a key enabler of future pharmacy practice. In addition, through the project research and consultations with key stakeholders, including the Health Research Board (HRB), a number of key observations on research were made:

A. Previous attempts to advocate for the role of the pharmacist in improving patient outcomes have failed to gain traction with policy makers, partly due to a lack of robust evidence to support the proposed services. This evidence gap was also noted during the research to support this project.

B. The innovation portal identified some ongoing projects and initiatives. A very encouraging level of self-directed research and innovation across the country including a number of pilot initiatives both in community and hospital pharmacy settings were seen. However, it was found that some initiatives are conducted without processes for evaluating impact. Where robust evidence has been generated, it has typically occurred in conjunction with academia. Therefore, more collaboration with the academic institutes should be encouraged.

C. To develop pharmacy practice research, a number of elements were considered by stakeholders to be important, including developing larger scale research with a more strategic focus, aligning research to national policy and building a culture of pharmacy practice research within practice settings.

Recommendation 21

Pharmacy practice research should be used to provide an evidence base focusing on and informing health policy. An optimal model for co-ordinating larger research projects should be explored with the relevant stakeholders, including the pharmacy academic institutions and IIOP.

9.6 Regulation and governance

A robust regulatory system is essential for the continued development and advancement of the profession, including pharmacist prescribing. As pharmacists take on increased patient care activities, they must also take on the increased responsibility and accountability that comes with these enhanced roles. Further, the pharmacy regulator, the PSI, has a responsibility to ensure that registered pharmacists are fulfilling their professional obligations in respect of the services they provide and holding them accountable for doing so.

As outlined in the Pharmacy in Ireland Section, (Chapter 4), since the commencement of the Pharmacy Act 2007, pharmacists in Ireland are subject to a robust regulatory system which has a system of clinical governance established in each pharmacy.

In addition, in the roll out of any pharmacy service identified, good governance of the service is considered essential to ensure the service operates in the manner intended. The design and management of the service should be underpinned by principles of quality and risk management and incorporate a system of audit and review in order to ensure that the delivery of the desired patient outcomes are achieved.

Recommendation 22

Monitoring, audit and regulatory functions should underpin the implementation of these recommendations to ensure that professional accountability, clinical governance and delivery of improved health outcomes for patients are achieved.

9.7 Pharmacy resourcing

Pharmacy resourcing both in hospitals and community pharmacies, and reimbursement for services, are substantial enablers to the advancement of clinical pharmacy activities. Throughout the consultation process conducted as part of this Report, pharmacists outlined their willingness to contribute to patient and public health benefit, with almost all pharmacists saying that they thought the unique skills of the pharmacist were currently underutilised.

However, this Report, allied to its remit, has concentrated on the potential future provision of pharmacy services to enhance the health and wellbeing of the population in Ireland. To that extent, it has demonstrated the pharmaceutical resources that are available in terms of both workforce numbers and skills. It has also indicated the benefits that could accrue from more effective deployment

Pharmacist view: Hospital services

"I would love to spend more time with the patient improving their care. The reality is that we are too stretched with dispensing and administration. Without more resourcing we are restricted in the service we can give to patients."

of the workforce. Clearly, in any implementation plan, consideration will need to be given to resourcing and reimbursement but it is considered that well targeted services, based upon experience in other jurisdictions, will prove cost effective. Indeed such initiatives could be characterised as 'Invest to Save'.

In addition, the role of the wider members of the pharmacy team was also identified as a potential enabler through the realisations of greater work efficiencies. Currently, pharmacy technicians and other staff support the pharmacy functions in both community and hospital practice however, these roles are not regulated. In other jurisdictions, where pharmacy technicians are registered and regulated it has allowed technicians to provide greater support to pharmacists in dispensing, enabling pharmacists to take on greater patient care roles.

Pharmacist view: Community services

"I spend as much time as I can advising patients, but with a queue of people waiting for me to dispense, I often spend most of my time behind the counter. Without reimbursement for services it becomes impractical for me to hire another pharmacist to provide all of the patient advice and counselling that they could benefit from."

Recommendation 23

Greater structure in pharmacy teams, with delegation of operational roles to appropriately trained staff members would facilitate the increased clinical role of pharmacists in clinical practice. Regulation of pharmacy support team members would facilitate greater involvement of pharmacists in enhanced roles.

9.8 Technology

Technological advancements can be categorised into three main areas in which pharmacy and other healthcare providers will most likely have to implement to take advantage of their benefits.

Figure 21. Future technology in Irish pharmacy

Technology and Future Pharmacy Practice

1 Information Flow	• Transfer and sharing of information • Patient records consistent across all settings • Evidence base informed by data-driven insight • Remote tracking/monitoring
2 Operational Efficiency	• Increased automation • Allows for greater focus on clinical/specialty cases • Improved efficiencies and reduced wastage
3 Delivery of Care	• Convenience • Improved availability of information • Cost reduction

9.8.1 Data and information

Lack of information was one of the main concerns across healthcare professions in the consultation process. Priority projects, identified in the Department of Health's e-health strategy, revolved around information availability to the patient and how relevant healthcare professionals could best use this information along the patient journey. These include the forecasted **Unique Health Identifier, Electronic health records** and **e-Prescribing**. Furthermore, the development of an ePharmacy strategy by the HSE will provide for the ability to deploy digital solutions across different care settings to make the delivery of pharmacy safer and more efficient[131].

The advantages of existing e-Prescribing can be seen in the case study for the Netherlands below[75].

Case Study 23: Advantages seen from e-Prescribing in the Netherlands

- Reduction in medication errors,
- Improved patient safety,
- Less legal liabilities for GPs and pharmacists due to reduced medication errors,
- Administrative burden reduced,
- Standardisation of formularies, terminology and processes allowed for greater safety and faster processes,
- Improved communication through, for example, pharmacies and laboratory systems allowed greater interprofessional communication and patient knowledge.

To fully implement and support medicines management throughout the patient pathway, electronic patient medication records need to be accessible to all healthcare providers. This would help resolve a number of the current communication problems at transitions of care.

Remote monitoring would also be an advantage for patients on long-term medications. In Northern Ireland, funding has been allocated towards new technology solutions to optimise the health benefits of medicines by supporting people to take the right medicines at the right time and as prescribed.[132]

9.8.2 Operational efficiency

Automation of dispensing in pharmacy was introduced in the 1990s. Stock robot is the most prevalent in Europe, for instance 57% of hospitals in the UK have stock robot systems, along with 35.7% who have unit dose automation. This uptake in the UK is from a paper published in 2001[76], which recommended that dispensing be automated to improve the safety and efficiency of the process, and release pharmacists' time for clinical care. According to the European Association of Hospital Pharmacists (EAHP), Ireland has one of the lowest uptake of automation in hospitals in Europe (as of 2010) at 3.3% using only stock robots, but this number is beginning to grow. In the USA, 97% of hospitals use some form of automated dispensing cabinets in their medication distribution systems, 65.7% of which used individually secured lidded pockets as the predominant configuration[133].

Automated decentralised medication systems, such as automated dispensing cabinets, have been piloted in Irish hospitals, with a small number using them routinely. These allow for quick access to common medicines. These operational efficiencies in the dispensary allows extra capacity to be moved to other areas such as clinical pharmacy services, patient reviews or more advanced dispensary services.

The new hospital group structure should ensure that pharmacy technology could be integrated into any new system wide development, including e-prescribing.

Case Study 24: Hospital pharmacy robot in the USA

University of California San Francisco Medical Centre has a fully automated dispensary service. The doctor enters the prescription into a computer and the robots select barcoded drugs and fill the prescription order with the nurse scanning this barcode on the ward and administering the medicine. The automated system also compounds sterile preparations of chemotherapy and non-chemotherapy doses and fills IV syringes or bags with the medications. The pharmacists provide oversight of the systems to ensure safe and rational use of medicines.

9.8.3 Delivery of care

With the advent of modern telecommunications and internet services, healthcare can move towards a more "virtual" environment. We have found through submissions to the innovation portal that pharmacists are actively involved with their IT colleagues in drug database verification, smart pump implementation and decision support for e-prescribing. Many hospital pharmacists have participated and driven the development of Apps to drive clinical decision making for antimicrobial stewardship and paediatric formularies, in recent years.

Telemedicine care is becoming a more common form of healthcare. An example of this is seen in some USA community pharmacies, where a specialist private consultation could be achieved through a high-powered camera for patients with dermatology conditions. In Ireland, there are now applications, which can provide a video call with your GP, and Irish private insurance companies are also taking advantage of telemedicine care. The case study shows an example of a robotic community pharmacy located in a shop where the pharmacist can talk to the patient over teleconference[134].

Internet and mail-order pharmacies are a model that is growing internationally. Internet and mail order pharmacies are in the UK, Netherlands, Sweden, and North America for example. In Ireland, the supply of prescription-only medicines by mail order is currently prohibited by legislation. In 2015, legislation was introduced permitting the online supply of non-prescription medicines[135]. Pharmacists and regulators should consider the implications of future prescription dispensing by online pharmacies and what this means for the profession and the future role of pharmacists.

Case Study 25: Community pharmacy robot in Scotland

Technology has been used to help deliver care to patients in remote areas. A trial of a robotic pharmacy has begun in Aberdeenshire in Scotland. Using this machine (located in a local shop), patients can speak to a pharmacist through a webcam while medicine is safely and securely dispensed by the kiosk. Patients can also deposit prescriptions, which can be filled and collected later, and access to other services such as Minor Ailment Scheme.

Technology and Innovation

Online supports will become more advantageous to people who are confined to homes. Technology will aid healthcare professionals, including pharmacists,to deliver care to patients.

Conclusion

Future technology can provide a large patient benefit and allow removal of lower end tasks, which can allow pharmacists to focus time on more advanced and clinical services. It is important to note that even though these advances can replace many of the standard tasks, the principal oversight role of a pharmacist to ensure the safety of patients must still remain.

Recommendation 24

Technology should be used to enable sharing patient care, realise work efficiencies, and facilitate safe transitioning of care.

In the development of national IT systems, opportunities should be explored to incorporate the pharmacy element. In the development of pharmacy IT systems provision for integration with wider health system functionality should be considered.

10

Conclusions

Conclusions

In 2012, the Department of Health (DoH) published Future Health: A Strategic Framework for Reform of the Health Service 2012 -2015 which set out the actions for health service reform over the term of the government and in 2013, Healthy Ireland – A Framework for Improved Health and Wellbeing 2013-2025 was published. These policy documents envisaged a number of changes for patients and the public including; improved health and wellbeing, reduced health inequalities, better chronic disease management, increasing the proportion of people who are healthy at all stages of life, more people cared for in their homes, care being provided at the lowest level of complexity, improved quality, safety and affordability.

These key strategies are in response to key issues facing both the health service and patients including the escalation in growth of an ageing population, together with 40% of the population forecast to have at least one chronic disease by 2020. This means that people will live longer and that their health needs will be more complex. These health trends also result in a growing trend of increased medicines use, particularly for the older person. These are significant challenges for the government and the population.

In 2015, the DoH published its Statement of Strategy 2015-2017. This document clearly states the aims of the health services in keeping people healthy, providing healthcare people need, delivering high quality services and getting the best value from the health services resources.

In support of these challenges this Report identifies key areas where pharmacists can address patients' needs and contribute to existing health strategies. These include pharmacists' role in:

- Keeping people healthy longer
- Supporting patients who have chronic illnesses.
- Ensuring safe and rational use of medicines in all care settings and throughout the patient care pathway.

In this context, the Report makes a number of important **recommendations** for the planning and delivery of future pharmacy practice in Ireland in the following areas:

Health System Reform – During health system reform to meet patient healthcare needs, the existing resource that pharmacists are in the health system should be recognised and capitalised on to support and deliver on some of the current health policy challenges.

Pharmacy Supporting National Health and Wellbeing (Chapter 6) - Pharmacists, as the most accessible health practitioner in Ireland, are ideally placed to support patients to protect and improve their health and further contribute to the national health and wellbeing strategy.

Pharmacy Supporting Patients in the Prevention and Management of Chronic Diseases (Chapter 7) -Patients with chronic diseases are already frequent pharmacy attendees and they can be better supported to manage their disease with further integration of pharmacy with the rest of the healthcare team. This includes facilitating patients to receive more healthcare, as appropriate, at pharmacy level e.g. chronic disease monitoring and medication therapy continuation.

Pharmacy Supporting Medicines Management throughout the Patient Pathway (Chapter 8)-With rising levels of complex medicines, coupled with polypharmacy, the knowledge and expertise of the pharmacist should be better used to ensure the safety and efficacy of patients' medication in all care settings.

A number of enablers for change (Chapter 9) are recognised to support the development of future pharmacy practice to deliver these improvements to patient care. These include: leadership both at government and local level, integrated care and collaboration, technology, research, continuing professional development and education, development of both advanced pharmacy practice and specialisation, pharmacy resourcing, regulation and governance ,

Implementation of the recommendations identified in this Report and the evolution of the pharmacist role in line with international trends, will have substantial benefits for stakeholders across the health system.

Health system

The international research conducted as part of this Report found that many of the most beneficial pharmacy services that have been introduced in other jurisdictions have been as a reaction to supply/capacity constraints within the respective health systems. As the demand for healthcare services increases, the Irish health system will rely to a greater extent on primary care services and supports to effectively treat patients. As primary care services increasingly handle more complex cases, the Irish health system will rely on all health care professionals to work in a more integrated manner, and for their skills to be utilised to their full extent. Pharmacy can play a key role in supporting this changing model of care for the public by making every touchpoint with the public count and providing structured supports to these patients in the community.

In order to benefit fully from the skills and accessibility of pharmacists, policy makers and implementers will need to design care pathways and health infrastructure with the pharmacist embedded as a key member of the collaborative health team. Through doing this, the Irish health system can achieve a greater level of cost effective healthcare through improved patient safety, better outcomes from medicines and reduced wastage.

Pharmacy

In order for pharmacy practice to achieve its potential and contribute most effectively to improving the public and patients' health, there are significant implications for pharmacists at all levels. Practising pharmacists, regulators, policy makers and researchers will need to display leadership and strategically co-ordinated focus to achieve an enhanced role for the profession. Pharmacists must continue to adapt their skills to become more patient centric rather than medicine / product centric, with changing delivery models requiring a continued focus on delivering the best outcomes regardless of the setting or channel.

As technology becomes a more significant aspect of healthcare delivery, regulators and policy makers will need to foster and lead the implementation of technology solutions through appropriate guidelines, to ensure that the outcomes remain safe and take advantage of advances in technology infrastructure to support healthcare professionals deliver better healthcare.

The future of pharmacy practice is one whereby the unique skills of the pharmacy profession are utilised to their full potential to meet the health requirements of the public. Through the implementation of the recommendations of this Report, this future is an expanded role working in greater collaboration with all other healthcare professionals for the benefit of patients.

Patients

Finally and most importantly is the patient. As the role of the pharmacist expands to meet the growing requirements of the Irish health system, patients can expect a greater level of accessibility to treatment in the community through the network of community pharmacies. This is in line with numerous government policies to treat patients in primary care, and empower the public to care for themselves. This is particularly the case for the prevention and management of chronic diseases, where service settings will move away from hospitals and patients can expect more formal supports delivered by community pharmacists.

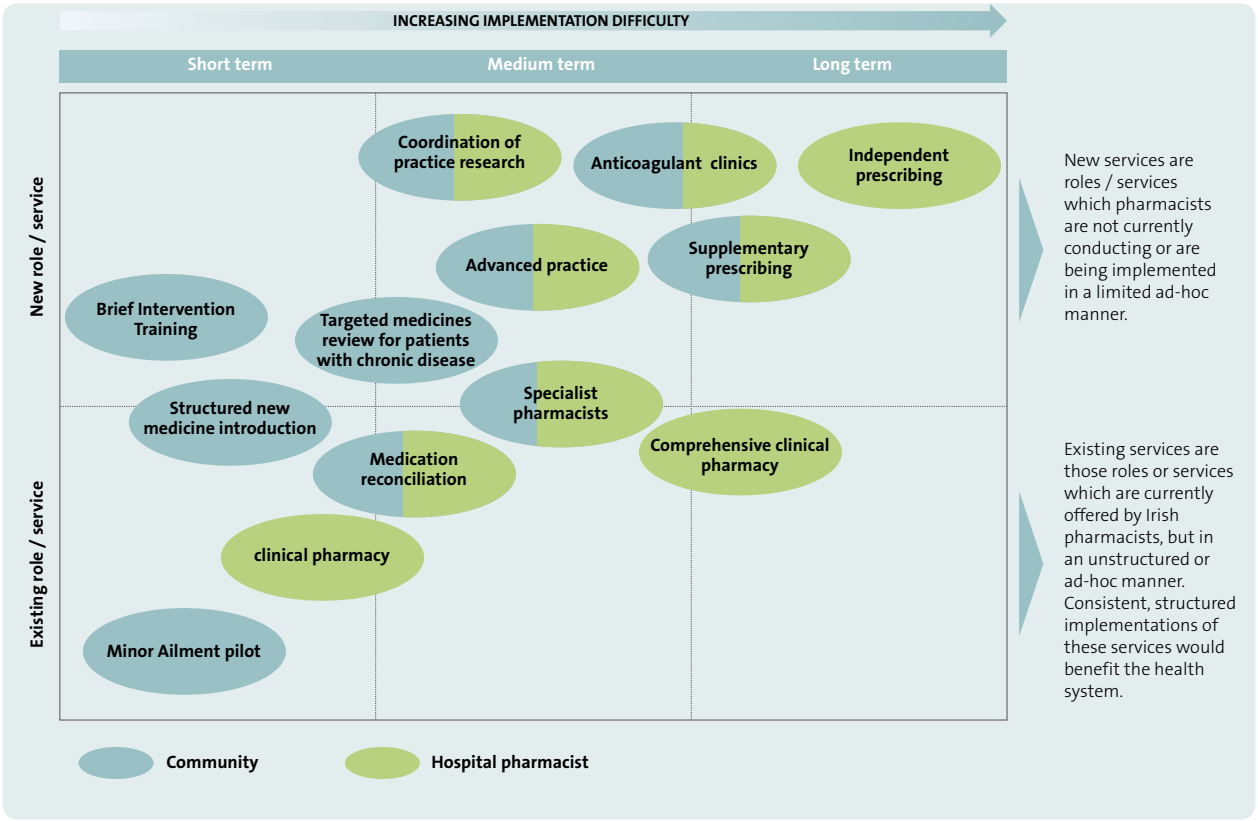
Patients receiving treatment in a hospital setting can expect to see a pharmacist more regularly throughout the care pathways, in particular at the points of entry, transition and discharge. Patients with higher acuity illness can increasingly expect more input from a pharmacist concerning their medication, either by way of the pharmacist being part of the multidisciplinary team within the hospital, or specialist services that may be delivered in some clinical specialties. This increased face-to face visibility of the pharmacist will lead to a more seamless and integrated care experience, both within the hospital setting and between primary and secondary care.

With the evolution and proliferation of technology, patients can expect the physical role and delivery channel of the pharmacist to change and adapt to new models of care. This will include more sophisticated monitoring, and remote patient management.

As national policy focuses on the continuum of treatment for patients, and delivering care in an appropriate setting, evidence shows that the management of medicines and optimising their use at all stages along this continuum will generate healthcare cost savings, while positively affecting patient outcomes.

Pharmacists have a key role in future society in managing the safe and rational use of medicines for patients.

Figure 22. Indicative timeline for implementing change in the role of pharmacy



Glossary

Abbreviation or Term	Full Description
Acute care	Healthcare that is generally provided for a short but severe episode of illness, such as emergency or other trauma, or during recovery from surgery. Acute care is usually provided in a hospital and it may involve intensive or emergency care.
Adherence	Adherence to (or compliance with) a medication regimen is generally defined as the extent to which patients take medications as prescribed by their health care providers.
Antimicrobial stewardship	Describes a system or collection of measures introduced in a healthcare setting that aim to improve the quality of antimicrobial usage across a patient population, to optimise outcomes, reduce adverse events, minimise emergence of antimicrobial resistance and reduce treatment costs.
BMI	Body Mass Index (BMI) is a simple index of weight-for-height that is commonly used to classify underweight, overweight and obesity in adults. It is defined as the weight in kilograms divided by the square of the height in metres (kg/m^2).
Clinical governance	In healthcare, the systems, processes and behaviours by which services lead, direct and control their functions in order to achieve their objectives, including quality and safety of services for patients.
Clinical pharmacist	A registered pharmacist who develops and promotes the rational, safe and appropriate use of medicines.
Clinical pharmacy services	The following 'core' activities are involved in providing clinical pharmacy services:-prescription monitoring, prescribing advice, optimising therapeutic use of medicines, adverse drug reaction detection and prevention, patient education and counselling, inter-professional education about medicines. It may also involve some or all of the following: medication history taking, medication reconciliation, specialist clinics e.g. HIV, clinical audit, protocol/guideline development.
Co-morbidity	The co-existence of two or more conditions simultaneously.
COPD	Chronic Obstructive Pulmonary Disease is a common clinical condition characterised by slowly progressive airways obstruction.
Domiciliary care	Care delivered in the home environment.

Abbreviation or Term	Full Description
E-prescribing	The electronic prescribing of medicines is the secure creation and transmission of the prescription by an authorised prescriber to a pharmacist of the patient's choice.
Fitness to practise procedures	Statutory complaints and disciplinary procedures.
Formal care	Formal care in Ireland can encompass nursing homes for older persons and residential facilities for those with intellectual disabilities, as well as step down care from hospitals.
Hospital models	The acute medicines programme defines hospitals as Model 1 to 4 based on the type of activity. Model 1 hospitals are community hospitals where patients are currently under the care of resident medical officers, with no surgery or emergency care. Model 2 can provide the majority of hospital activity including extended day surgery, selected acute medicine, palliative care, some radiology. Model 3 will provide 24/7 acute surgery, medicine and critical care. Model 4 hospitals will be similar to model 3 but will provide tertiary care and in certain locations supra-regional care.
Interchangeable medicines	Under the Health (Pricing and Supply of Medical Goods) Act 2013, the role of HPRA is to establish, publish and maintain a list of interchangeable medicines on their website. Under this legislation, interchangeable medicines are defined as those medicines that (1) contain the same active ingredient in the same strength, (2) are in the same pharmaceutical form, and (3) have the same route of administration.
Integrated care	WHO definition: "The organisation and management of health services so that people get the care they need, when they need it, in ways that are user friendly, achieve the desired results and provide value for money".
Medical practitioner	As used in this report, refers to any medical doctor e.g. GP, hospital consultant, non- consultant hospital doctors.
Medicines management	Encompasses the entire way 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.
Medicines optimisation	A person-centred approach to safe and effective medicines use, to ensure people obtain the best possible outcomes from their medicines.

Abbreviation or Term	Full Description
Medication reconciliation	Medication reconciliation is a process when each medication that a person is taking has been actively and appropriately continued, discontinued, held or modified at each point of transfer, and these details have been communicated to the patient and next care provider.
Multidisciplinary team	A group of healthcare professionals who work together to provide integrated care for the patient by planning treatment and delivery of care for the patient or service user.
Medicines review	For the purpose of this report, medicines review is defined as a structured, critical examination of a person's medicines with the objective of reaching an agreement with the person about their medicines, optimising the impact of the medicines, minimising the number of medication –related problems and reducing waste. The review should be with the patient and their current medication should be to hand. Ideally, the reviewer should have access to the patient's notes. The review should be done in collaboration with the patient's medical practitioner.
OPAT	Outpatient Parenteral Antimicrobial Therapy is where select patients receive intravenous antimicrobials in their own homes.
OTC medicines	Over the Counter medicines that can be bought, mainly in a community pharmacy, without a prescription.
Pharmaco economics	The scientific discipline that compares the value of one pharmaceutical drug or drug therapy to another. It is a sub-discipline of health economics.
Polypharmacy	Polypharmacy is when patients are prescribed and are taking five or more medicines.
Primary care	Primary care is all of the health or social care services that you found in the community, outside of hospital. It includes GPs, Public Health Nurses and a range are other services.
Primary care centre (PCC)	Purpose built centres designed to provide a one-stop unit for all of a patient's primary care needs such as a GP, physiotherapist, occupational therapist, counsellor and more.
Self-care	Is defined as "what people do for themselves to establish and maintain health, prevent and deal with illness".

Abbreviation or Term	Full Description
Self-limiting conditions	An *illness* or *condition* which will either resolve on its own within a short period of time or which has no long-term harmful effect on a person's health.
Smart pump	An infusion pump equipped with IV medication error-prevention software that alerts operators when a pump setting is programmed outside of pre-configured limits.
STOPP	The Screening Tool of Older Persons' Prescriptions.
Supplementary prescribing	A voluntary prescribing partnership between an independent prescriber (a doctor or dentist) and a supplementary prescriber to implement an agreed patient specific clinical management plan with the patients' agreement. (UK DOH definition).
Superintendent pharmacist	The management and administration of the sale and supply of medicines is under the personal control of the superintendent pharmacist who is essentially the person in overall control of the management of a pharmacy, including its professional and clinical management. While a superintendent pharmacist can act in respect of more than one pharmacy, a supervising pharmacist can only act in respect of one pharmacy.
Supervising pharmacist	The person responsible for the day-to-day management and operation of a pharmacy.
Telemedicine	The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation.

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Appendix A: Future Pharmacy Practice Project - Terms of Reference

Future Pharmacy Practice Project - Steering Group

Terms of Reference

Background

Following on from the Pharmacy Ireland 2020 Interim Report[1], the findings of the baseline studies in community[2] and hospital pharmacy[3], and in light of the envisaged role pharmacists should be playing in the context of national health strategy[4, 5, 6,] the Pharmaceutical Society of Ireland is seeking to examine how pharmacy can most valuably contribute to the health and wellbeing of patients in an evolving healthcare sector.

This will be carried out through national and international research and engagement to identify current best practice nationally and internationally and inform recommendations applicable to the Irish context going forward.

The Council of the PSI have agreed to tender for this research and plan to appoint an external contractor to complete this work (Appendix 2 - specification of requirements).

The project will be carried out under the stewardship of the Future Pharmacy Practice Project Steering Group.

The objectives of the Future Pharmacy Practice Project Steering Group (FPPSG) are:

- To ensure compliance with the stated objectives of the project
- To provide practical guidance and expertise to the project team
- To approve interview questions/format for focus groups
- To monitor progress of the project in line with the project plan
- To peer review the final draft report and provide expert commentary for same

Membership

The membership of the Steering Group will be set at X (to be confirmed) members comprised of the following:

- Chairperson-expert in pharmacy policy at national level
- Department of Health Representative (s) x 2/3
- HSE Representative(s) x 1
- Irish Institute of Pharmacy (IIOP)
- Community Pharmacy subgroup chair
- Hospital Pharmacy subgroup chair
- Industry/Regulator pharmacist representative
- Patient Representative
- PSI Council Representative
- Practice Pharmacist representing the 3 Schools of Pharmacy
- Other Health Care Professional

The contractor will attend all meetings, as will the PSI project pharmacist.

Reporting structure

The group will report through the Chair, to the Pharmacy Practice Development committee.

Frequency and Format of Meetings

It is envisaged that there will be four or 5 Steering Group meetings during the project, including one at the start and one towards the end after the draft final report has been received. The expectation is that all Steering Group meetings will be held in PSI House, Fenian Street, Dublin 2, and such meetings will be facilitated by teleconference. The first meeting should be face to face.

Subsequent meetings and dates will be proposed at the first meeting.

The contractor is expected to attend all Steering Group meetings and take –on board commentary offered through them, and provide a report of the meetings.

As both Community and Hospital pharmacy practice is involved, a sub group of experts representing both sectors will be formed. The chair of each group will sit on the Steering group, and will report their findings and proposals to the group.

Change Control

Any proposed changes to the scope of work will need PSI Council Approval, as there would be budget implications.

Duration of the Project Steering Group

The group will cease to function on the group's approval of the final report and its presentation.

References:

1. Interim Report of the Pharmacy Ireland 2020 working Group, April 2008

2. Baseline study of Community Pharmacy Practice in Ireland, January 2011.

3. Baseline study of Hospital Pharmacy in Ireland, December 2012

4. Future Health: A Strategic Framework for reform of the Health Service 2012-2015

5. Healthy Ireland – A framework for Improved Health and Wellbeing 2013-2025

6. The path to Universal Healthcare: white paper on Universal Healthcare Insurance

Reports 1 to 3 are available on www.thepsi.ie, and reports 4 to 6 are available on www.health.gov.ie

Future Pharmacy Practice Project - Steering Group and Subgroup Membership

Organisation	Group Member
Chief Pharmaceutical Officer Northern Ireland (retired)	Dr Norman Morrow (Chair)
Department of Health – Primary Care	Ms Teresa Cody*
Department of Health – Medicines Unit	Mr Eugene Lennon
Department of Health – Office of the Chief Medical Officer	Ms Kate O'Flaherty
Health Service Executive	Ms Kate Mulvenna
Irish Institute of Pharmacy	Dr Catriona Bradley
Community Subgroup Chair	Mr Keith O'Hourihane
Hospital Subgroup Chair	Ms Elaine Conyard
Industry/Regulator Pharmacist representative	Ms Leonie Clarke
Pharmacist from Academia	Prof Stephen Byrne
Patient Representative	Ms Katie Murphy
Other healthcare professional (Medical Council)	Dr Ruairi Hanley, GP
PSI Council Representative	Dr Paul Gorecki

* resigned from group in December 2015

Community Pharmacy Sub-group

Organisation	Group Member
Community Pharmacist superintendent, with 5 or more pharmacies	Mr Keith O'Hourihane (Chair)
Community Pharmacist superintendent < 5 pharmacies	Mr Dan Ahern
Community Pharmacist-symbol group	Noel Stenson
Community Pharmacist Employee	Ms Susan O'Dwyer
Irish Pharmacy Union (IPU)	Mr Daragh Connolly
Patient Representative	Kate Durrant
Nurse Prescriber*	Dr Linda Latham

* resigned from group after 2 meetings

Hospital Pharmacy Sub-group

Organisation	Group Member
Hospital Pharmacy Superintendent	Ms Elaine Conyard (Chair)
Hospital Pharmacist employee	Ms Jennifer Browne
Hospital Pharmacist employee	Ms Ciara Fitzgerald
Hospital Pharmacists Association of Ireland (HPAI) representative	Ms Deirdre Lynch
Hospital Consultant	Prof David Williams
HIQA Medicines Management	Aoife Fleming
Nursing Representative	Mr Paul Mason

Extracts from tender

- **Scope of Requirements (Tender Section 4)**
- **Specification of Requirements (Tender Appendix 1).**

The PSI is seeking to engage external experts to examine how pharmacy practice in Ireland can meet patients' needs in the future. This will be carried out through research of National and International pharmacy practice, identifying best practice and by engaging with patients, policy makers, pharmacists and other relevant stakeholders to identify how they envisage pharmacists should best use their skills in the future.

This will also involve the production of a final report, overseen by the Future of Pharmacy Project Steering Group and with input from practice subgroups. The report will provide insight into the envisaged role pharmacists should be playing in the context of national strategy, examining how pharmacy practice can progress, improve, and most valuably contribute to the health and wellbeing of patients in an evolving healthcare sector.

This is a significant assignment, which calls for input from experienced professionals with substantial expertise in the fields of research, practice development, change management, strategy, economics and health sector management.

Specification of requirements sets out the background to the PSI's need for external assistance, including historical data and project requirements.

The Project will be overseen by the Future Pharmacy Practice Project Steering Group made up of a Chairperson and Stakeholder Representatives. The contractor will be required to attend all of these Steering Group meetings and take on board commentary offered through them. It is envisaged that there will be four or five Steering Group meetings during the project, including one at the start and one towards the end after the draft final report has been received. The expectation is that all Steering Group meetings will be held in PSI House, Fenian Street, Dublin 2

As both Community and Hospital pharmacy practice is involved, a sub group of experts representing both sectors will be formed. The chair of each group will sit on the Steering Group.

The required outputs for dissemination purposes are:

- the full text of the draft and final reports in electronic format
- the final report to include an executive summary
- a presentation of findings to the Steering Group and PSI Council

Specification of requirements

The Provision of a Report on Future Pharmacy Practice in Ireland – Meeting Patients' Needs

1.1 Background to the Tender Requirements

As the Pharmacy Act 2007 confers on the PSI, the duty to "take suitable action to improve the profession of pharmacy", the PSI Service Plan identified a "Review and update of PSI Pharmacy Ireland 2020 Interim Report to further develop pharmacy practice" as an action targeted for the Pharmacy Practice Development Unit in 2014.

Interim Report of the Pharmacy Ireland 2020 Working Group

In 2008, the Council of the Pharmaceutical Society of Ireland (PSI) approved the establishment of a sub-committee, the Pharmacy Ireland 2020 Working Group, to perform a review of pharmacy services in Ireland and prepare an Interim Report, which would be presented to the Minister for Health and Children. The purpose of the Interim Report was to review pharmacy services currently provided in Ireland and compare them with best practice in other countries; it was also to outline how the pharmacy profession could contribute to the development of a more integrated approach to healthcare in Ireland in order to enhance services to patients.

The report looked at pharmacy services including: chronic disease management in pharmacy, medicine use review, minor ailments schemes, clinical pharmacy services in hospitals, pharmacist prescribing, medicines reclassification, health screening and pharmacist vaccination. A number of these services are now provided in pharmacies. Medicines such as emergency hormonal contraception are available without prescription (medicines reclassification), pharmacists are vaccinating against influenza and the PSI has recently published guidance on the provision of testing services in pharmacies (health screening).

Baseline Studies of Community Pharmacy Practice and of Hospital Pharmacy Practice

Since 2010, the PSI Council has commissioned two baseline studies of pharmacy practice, i.e. the Baseline Study of Community Pharmacy Practice in Ireland (published in May 2011) and the Baseline Study of Hospital Pharmacy in Ireland (published in December 2012). These studies reported on the current status of community and hospital pharmacy in Ireland and the nature of services provided, compared Irish and international practice and recommended strategies to expand and improve pharmacy practice in Ireland.

Both baseline studies cite a lack of national focus for the progress of pharmacy in Ireland. It is intended that the proposed project would provide that focus through a two-pronged approach with both community and hospital branches.

All three publications are available on:

http://www.thepsi.ie/tns/publications/CorePublications/

National Policy Context

In the context of national policy and strategy, in 2012 the Department of Health published Future Health: A Strategic Contract for Reform of the Health Service 2012 -2015 which sets out the contract for health service reform over the term of the government and in 2013, Healthy Ireland – A Contract for Improved Health and Wellbeing 2013-2025 was published. These documents envisage a number of changes for patients/ the public including; improved health and wellbeing, reduced health inequalities, better chronic disease management, increasing the proportion of people who are healthy at all stages of life, more people cared for in their homes, care being provided at the lowest level of complexity, improved quality, safety and affordability and creating an environment where every individual and sector of society can play their part in achieving a healthy Ireland. It is in the context of this national strategy that the progress of the profession of pharmacy and the direction of the proposed project, must to be considered.

Challenges in the current context

Current pharmacy students would expect to be practicing pharmacists in 2060; therefore, the long-term challenges to the health system should be considered when planning the development of pharmacy practice. These include:

- An ageing and changing population – the number of people over the age of 85 is set to double between 2011 and 2025
- Changing dependence – due to the aging population and the impact of chronic disease we are likely to see an increase in the number of "dependent" patients, requiring support in their own home
- Significant growth in the incidence of chronic illnesses - due to our ageing population and lifestyle factors, chronic conditions will generally increase by around 40% between 2007 and 2020, meaning patients will live longer and their needs will be more complex

Other likely trends include:

- New technologies allowing clinicians to do more and patients becoming empowered, making health choices and having expectations of the services they access
- Development of new more sophisticated and more individualized medicines, requiring more complex pharmaceutical care
- Cost burden of providing a good standard of healthcare to all in the future

Next Steps

Following on from the Pharmacy 2020 interim report, the findings of the baseline studies and in light of the envisaged role pharmacists should be playing in the context of national strategy, the PSI is seeking to examine how pharmacy can most valuably contribute to the health and wellbeing of patients and members of the public in Ireland in an evolving healthcare sector.

This will be carried out through national and international research to identify current best practice nationally and internationally, and engagement with patients, pharmacists, the health service, policy makers, and all other relevant stakeholders to identify how they envisage pharmacists could best use their skills in the evolving healthcare system.

1.2. Project Brief

The requirements of this invitation to tender are as follows:

- To conduct research and produce a report overseen by the Future Pharmacy Practice Project Steering Group, known as the Steering Group. The final report will provide insight into the envisaged role pharmacists, should be playing in the context of national health strategy, examining how pharmacy can progress and improve and most valuably contribute to the health and wellbeing of patients in an evolving healthcare sector.

The contractor will be required to:

- Co-ordinate, engage and report on all Steering Group Meetings. The Project will be overseen by a Steering Group made up of a Chairperson and Stakeholder Representatives. The contractor will be required to attend all of the Steering Group meetings and take on board commentary offered through them. It is envisaged that there will be four or five Steering Group meetings during the project, including one at the start and one towards the end after the draft final report has been received. The expectation is that all Steering Group meetings will be held in PSI House, Fenian Street, Dublin 2. All documentation for the steering group meetings should be compiled and issued by the contractor at least seven days ahead of the meeting.

  As both Community and Hospital pharmacy practice is involved, a sub group of experts representing both sectors will be formed.

  For the subgroups, the contractor will set up and manage the on line submissions of examples of innovation in pharmacy practice in both community and the hospital sector in Ireland, summarise and provide a written report on same to the Chair of each sub group. The contractor will attend four subgroup meetings (two from each speciality).

  The Chair of each group will sit on the Steering Group. Communication from the subgroups will be directed through their Chairperson to the Steering Group for discussion and agreed action. **(Work package 1)**

- Complete research of national and international pharmacy practice to identify, in addition to current practice, uptake and effectiveness of pharmacy services offered, and learnings from the provision of pharmaceutical care, to inform recommendations for the Irish context. International literature should include the United Kingdom, United States, Australia, Canada, New Zealand, the Netherlands.

  Output required: Preliminary written report of findings for Steering Group. This will include a brief description of current services offered by both community and hospital services. It will also describe the identified service enhancements, extension of pharmacists' scope of practice, improvements in patient care and safety found through the critical literature review. This will be done in the context of the Irish National Health strategy. This report will be presented initially in draft form to the steering group, so that steering group commentary is taken on board. **(Work package 2)**

- Conduct focus groups with patients, patient representative groups, pharmacists, pharmacy students, healthcare professionals and any other key stakeholders to identify patients' needs and future pharmacy practice. This will entail an agreed format and topics, approved by the Steering Group. Allowance should be made to assure patient/consumer representation from different socioeconomic groups. The contractor will prepare a written report of the summary of outcomes of focus group engagements.

  Output required: a written summary report on outcomes from the focus group meetings for the Steering Group (Work package 3)

- Produce a final written report setting out a summary of the research and engagement carried out and evidence based proposals for the role pharmacists should play in the context of the national healthcare strategy. It will include an executive summary, an introduction chapter, methods chapter for each element of research, from the different work packages, findings and preparation of tables, conclusions and recommendations. This will be presented in draft form to the Steering group and for peer review. The final report will take on the corrections and comments. **(Work package 4)**

- Comprehensive cost effectiveness review of three of the potential new services that are provided in other jurisdictions, as may be recommended by the Steering Group to the PSI. This cost effective analysis should assess the efficiency and benefit to the wider Irish health service of any proposed new pharmacy-based service or intervention, in the context of public health expenditure. This would require the development of a model based on the Irish Health Service costs, for each proposed new service.

  Output required: Cost effectiveness report. **(Work package 5)**

The final report **(Work package 4)** should encompass all of the above work and meet the objectives of the PSI for this project. It is of note that the PSI may not progress with work package 5.

The required outputs for dissemination purposes are:

- the full text of the draft and final reports in electronic format
- the final report to include an executive summary
- a presentation of findings to the Steering Group and PSI Council

1.3. Methodology & Requirements

The PSI requires detailed information on your overall approach to include information on each of the following phases:

1.3.1 Literature Review Approach

1.3.2 Communications Plan

1.3.3 Implementation/Administration of Stakeholder Engagement and Focus Groups

1.3.4 Analysis & Reporting:

Please provide an outline of the methodology you propose to employ to carry out this specification, addressing all requirements as indicated in the overall brief above.

1.3.5 Timing

Tenderers are invited to provide timings and relevant milestones for this work. We expect the project to start on 30th June 2015. A final draft report will be required to be provided to the PSI Steering Group by the end of January 2016 with an agreed final report by the end of February 2016 or earlier.

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