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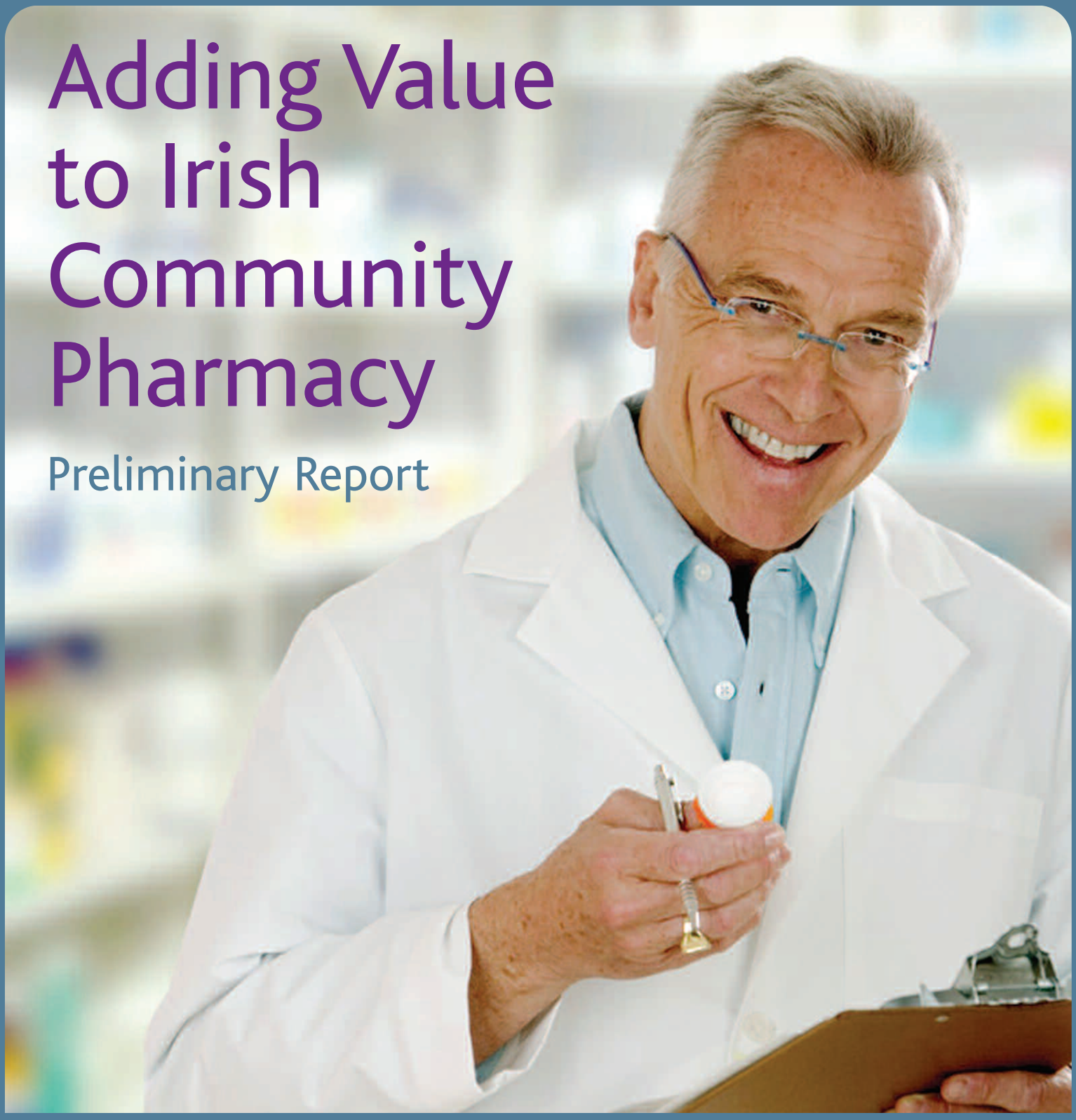
Adding Value to Irish Community Pharmacy

Preliminary Report



Charter House, Cobh, Co.Cork, Ireland

Suite 800, 120 Eglinton Avenue East, Toronto ON, M4P 1E2, Canada

Kent Business School, University of Kent at Medway, Kent ME4 4AG, UK

info@leanscm.com, www.leadingedgescm.com

T: +353-21-4855863(Irl), +1-416-637-5074(Can), +44 75803-15309(UK)

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More information on Leading Edge Group is available at www.leadingedgescm.com, by emailing info@leanscm.com or by contacting one of Leading Edge's national offices:

Ireland

Charter House,
Harbour Row,
Cobh,
Co. Cork.

Tel +353-21-4855863

Canada

Suite 800,
120 Eglinton Avenue East,
Toronto ON,
M4P 1E2.

Tel +1-416-637-5074

United Kingdom

C/O Centre for Value Chain Research,
Kent Business School,
University of Kent
at Medway, The Medway Building, Chatham Maritime,
Canterbury, Kent ME4 4AG.
Tel +44 7580315309

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Executive Summary

This report estimates that readily achievable efficiency gains in the Irish community pharmacy sector can produce cash and cost savings that could exceed €300m over the next five years.

There is a compelling rationale for both the Irish state and Irish pharmacists to take measures to realise these potential gains. For the Irish state, the network of over 1,700 community pharmacies represents an extensive national asset with additional capacity to contribute towards population health gain and more efficient and cost-effective health system design. For owners and operators of community pharmacies, adding more value can offer protection against a downward spiral of reducing margins on the sale of medication (an issue emphasised by the reduction in mark-ups on prescription drugs announced by Boots Ireland and Sam McCauley pharmacists in June 2012) and make more rewarding use of the expensively acquired skills of highly trained staff.

In preparing this preliminary report, the authors applied a process improvement tool called Lean that is playing an increasing role in improving the performance of healthcare systems around the world to conduct an initial analysis of three Irish community pharmacies. Two of the pharmacies are based in major metropolitan centres and one is a rural pharmacy.

Based on observations of workflows and interviews with staff conducted by the authors in these Irish community pharmacies, a number of specific areas where significant efficiency savings and additional value could be achieved have been identified. Based on the staffing levels, turnover, management and mix of services of these pharmacies the authors believe that the potential efficiency gains in pharmacies they examined is likely to provide a good guide to the potential efficiency gains achievable in Irish pharmacies more generally.

If the key recommendations in this report were immediately implemented at a health systems level and in all community pharmacies simultaneously, then the authors estimate that the potential cash and cost savings to Irish community pharmacies could exceed €300m over five years. Irish community pharmacists would benefit from initial cash and cost savings of €150m in 2013, followed by ongoing efficiency savings of almost €40m a year in each subsequent year:

- Improved management of stock in pharmacies could generate one off cash savings of over €114m to Irish community pharmacies and ongoing cost savings of €17m p.a.
- Eliminating or significantly reducing the need for pharmacists to rework scripts could save Irish community pharmacies in the region of €13m p.a., freeing up pharmacist time equivalent to adding 170 pharmacists to the national pharmacy workforce
- Significantly reducing the time pharmacy technicians spend completing HSE paperwork could save Irish community pharmacies up to €9m p.a., freeing up pharmacy technician time equivalent to adding almost 300 pharmacy technicians to the national pharmacy workforce.

The Irish State would also benefit from significant gains if pharmacist and pharmacy technician time liberated by the above measures is dedicated to providing additional health services that relieve pressure on the wider health system. Health screening, minor ailments, medicines management reviews and immunisation are potential areas in which an increased role for pharmacists would be likely to generate health gain while relieving pressure elsewhere in the system. These savings will be additional to the significant cost savings to the Irish Government, community pharmacists and the wider community that are anticipated to accrue through increased adoption of generic medications as an alternative to branded medications.

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As the potential value of achievable efficiency gains in Irish community pharmacy is likely to be so significant, the authors recommend policymakers conduct further health economic analysis of the principal recommendations contained in this report.

This report recommends action at the health system and individual pharmacy level to enhance the health of the Irish population, improve the cost-effectiveness of public health expenditure and secure the viability of pharmacy businesses. Recommended actions that can be taken at a health system level should further develop the overall direction of recent policy reforms that have enhanced Irish community pharmacy's capacity to provide quality, accessible, community based health services. Report recommendations relate to:

- streamlining and enhancing funding schemes,
- introducing a printed prescription system,
- enhancing IT infrastructure,
- addressing supply chain challenges,
- improving the approach to unlicensed medications, and
- standardising packaging quantities.

The report further recommends that Irish community pharmacists implement Lean thinking in their operations in order to achieve efficiency gains in

- core patient care services,
- services for high-risk populations,
- distribution services,
- procurement,
- storage,
- inventory,
- information and communication, and
- education, training and research.

The report includes a Lean Pharmacy Self-Assessment tool (LEAP©-Self Assessment) that Irish community pharmacists can use to identify areas where efficiency gains are most readily achievable.

Finally, although this report focuses on community pharmacy in Ireland, the authors recommend that a similar analysis be conducted for hospital pharmacy in Ireland, where significant efficiency gains are also likely to be achievable.

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1. Introduction

The purpose of this preliminary report is to recommend actions that can increase the value contributed by community pharmacy to the health and wellbeing of the Irish people and the cost-effectiveness of the Irish healthcare system. The report has been prepared by the Leading Edge Group following discussions with and encouragement from the Pharmaceutical Society of Ireland (PSI).

1.1 REPORT SCOPE

This preliminary report identifies how a process improvement tool called Lean that is playing an increasing role in healthcare systems around the world can be applied to add value and increase efficiency in the Irish community pharmacy sector. The report includes a Lean Pharmacy Self-Assessment Tool (LEAP©-Self Assessment) that has been developed by the authors for use by Irish community pharmacists. The report is specific to the healthcare related functions (e.g. sale and supply of medicinal products, provision of healthcare advice and services) of Irish community pharmacies. Therefore the report does not examine the related but distinct issues occurring in hospital pharmacies nor does it address the non-healthcare related activities occurring in community pharmacies such as the sale of beauty products and provision of passport photo services.

1.2 REPORT RATIONALE

There is a compelling rationale for both the Irish state and Irish pharmacists to take measures to grow the value contributed by Irish community pharmacy.

For the Irish state, the network of approximately 1,700 community pharmacists represents an extensive national asset with additional capacity to contribute towards population health gain and more efficient and cost-effective health system design. For owners and operators of community pharmacies, adding more value can offer protection against a downward spiral of margins from the sale of medication and increased regulatory compliance costs and make more rewarding use of the expensively acquired skills of highly trained staff.

Government invests heavily in maintaining pharmacy as a major part of our health system. Government spending on pharmaceuticals accounted for 12.9% of Ireland's total public health expenditure in 2010 (an increase from 10.1% in 2000[1]). Government is the dominant purchaser in the Irish medicines market, accounting for €1.9b of the estimated €2.2b spent on pharmaceuticals in Ireland[2]. Approximately three quarters of Government medicines spending is paid to pharmacists under the Health Service Executive's (HSE) Primary Care Reimbursement Service (PCRS)[3] through programmes that include General Medical Services (GMS), Drugs Payment Scheme (DPS), Long Term Illness (LTI) scheme, European Economic Area (EEA), patient care fees relating to High Tech Drugs (HTD), Methadone Treatment Scheme, Dental Treatment Service prescriptions and Pharmacy Training grants. Payments to wholesalers under the High Tech Drug scheme total a further €345.76m.

Over the last five years, a number of legislative and regulatory reforms have been implemented, significantly reshaping the landscape in Irish pharmacy. These reforms established the Pharmaceutical Society of Ireland as the regulator of the Irish pharmacy sector with powers of investigation and enforcement[4], ensure that the clinical governance of all community pharmacies in Ireland is firmly under the control of a senior pharmacist[5] , ensure that private consulting rooms are available in all community pharmacies[6] , and extend the role of pharmacists to administering vaccinations for seasonal influenza[7] .

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1 ESRI 2012, *Delivery of Pharmaceuticals in Ireland – Getting a Bigger Bang for the Buck, www.esri.ie/UserFiles/publications/RS24.pdf*

2 ESRI 2012, *Delivery of Pharmaceuticals in Ireland – Getting a Bigger Bang for the Buck, www.esri.ie/UserFiles/publications/RS24.pdf*

3 Health Service Executive, Primary Care Reimbursement Service Statistical Analysis of Claims and Payments 2010, accessed from www.hse.ie/eng/staff/PCRS/PCRS_Publications/claimsandpayments2012.pdf , viewed on April 24 2012.

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By establishing better clinical governance and new professional standards, these initial reforms have the potential to support evolution of Irish pharmacy from an overwhelming focus on medication supply to frontline professional health service provision. Building on these reforms by developing the role of pharmacists in Ireland in line with current international evidence based practice in countries such as the UK, Canada, Australia, New Zealand and the United States has been identified as an opportunity to further increase the value contributed by Irish pharmacy[8].

Irish community pharmacists are still adapting to the significant changes occurring in the pharmacy sector and there are varying levels of appetite amongst community pharmacists for further development of their role[9] . However, there may be a viability imperative for community pharmacy businesses to critically examine their current operations and explore potential future development of their processes and activities. After almost a decade of significant growth in per capita expenditure on pharmaceuticals that averaged 9% p.a.[10] the current policy environment and the Government's dominant purchaser position is exerting significant downward pressure on the price of medications. The 35% reduction in the price of medications under the current agreement between the Health Service Executive and the Irish Pharmaceutical Healthcare Association has contributed to shrinking the value of the medicines market in Ireland by 5.5% even though market volume has grown by 5%. [11] Some medicines, such as GMS fridge items, are currently sold below cost.

In the context of a significant squeeze on margins from the sale of medications, applying Lean to secure process improvements in community pharmacies is doubly relevant. Efficiency savings can enable new services to be developed without requiring investment capital for new staff or premises. These new services can in turn generate additional revenue streams that are independent of margins on the sales of medications.

This report addresses opportunities for adding value at both the health system and individual community pharmacy level.

1.3 REPORT PREPARATION

In preparing this report, the authors conducted workflow observation and team interviews in three Irish community pharmacies with significant dispensing businesses – two in urban centres and one in a rural environment. The authors then combined the findings from these three community pharmacies with a review of relevant literature and further informant interviews.

4 The Stationery Office 2007, Pharmacy Act 2007
5 Pharmaceutical Society of Ireland 2010, Superintendent Pharmacists – Responsibilities and Accountabilities
6 The Stationery Office 2008, Regulation of Retail Pharmacy Business Regulations 2008
7 The Stationery Office 2011, Medicinal Products (Prescription And Control Of Supply) Regulations
8 Pharmaceutical Society of Ireland 2009 Submission from the Pharmaceutical Society of Ireland to the Expert Group on Resource Allocation and Financing in the Health Sector
9 Pharmaceutical Society of Ireland 2011, Baseline Study of Community Pharmacy in Ireland
10 ESRI 2012, *Delivery of Pharmaceuticals in Ireland – Getting a Bigger Bang for the Buck, www.esri.ie/UserFiles/publications/RS24.pdf*
11 Irish Pharmaceutical Healthcare Association 2012, IPHA responds to ESRI report on use of pharmaceuticals, www.ipha.ie/alist/press-reseases.aspx?article=0d16bf74-93bd-4ada-a9f5-a8412f7b8819 , viewed on April 24 2012

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2. Lean as a framework for adding value in healthcare

Healthcare systems across the world are increasingly using a process improvement methodology called Lean to improve their quality, efficiency and cost-effectiveness. Lean is the framework that the authors of this report have applied to analyse the scope for adding value to the Irish pharmacy sector. This chapter will provide background to the origins and principles of Lean and overview its application to healthcare.

2.1 BACKGROUND TO LEAN

Lean is a management methodology derived principally from the Toyota production system that evolved in post war Japan during the 1950's. Initially Lean was applied mostly in manufacturing, but it is now utilised in other sectors, with a major emphasis being healthcare.

A central premise of Lean is that any step in a process that doesn't add value to the customer (in healthcare this is the patient) is waste, and therefore should be targeted for elimination. The process for achieving greater value through Lean involves applying a set of principles to reviewing the current state, imagining and describing the ideal state and then developing and implementing a plan to achieve the ideal state. The principles that underpin the Lean framework are that:

- Work only adds value to a process if it generates a transformation that the customer (patient) would be prepared to pay for and if it is done right the first time.
- People are at the core of all successful work-process transformations and the people who know the most about work processes are those who perform the work.
- Work cannot be assessed, critiqued or improved without being observed in situ.
- Work processes that result in rework, require activities that do not directly contribute value, or delay or prevent productive work, create waste.
- Quality is a key factor in eliminating waste and must be built into each step of the process.
- Efficiency gains within a department are not meaningful if they result in waste in the overall work-flow; analysis of a process for Lean transformation requires the effect of any change to be measured against the upstream and downstream effects of the transformation.
- Improvement is a continuous process. Lean transformations are not once-and-done activities, but represent an ongoing quest for improving the way work is performed. There is always something else that can be improved in a process.[12]

2.2 HEALTHCARE OUTCOMES FROM APPLYING LEAN

One of the significant contributors to healthcare cost is operational inefficiencies in medical service delivery[13] . In the context of rising healthcare costs, process improvement methodologies such as Lean are increasingly being applied to healthcare, where its systematic approach to improving quality, safety and efficiency has produced positive results in areas such as decreasing incidence of ventilator-associated pneumonia, improving patient access to clinical services, reducing catheter related bloodstream infections and reducing turnaround times for pathology reports[14] .

Some healthcare providers that have successfully implemented Lean include:

12 Education Review Systems, Lean Pharmacy, www.baxa.com/resources/docs/technical/Papers/LeanPharmacyTechnicalPaper.pdf viewed 24th April 2012

13 Koning et al 2006, Lean Six Sigma in Healthcare, Journal for Healthcare Quality, 28 (2), 4-11

14 Kim et al 2006, What Can Hospitals Learn From A World Class Automaker. Journal of Hospital Medicine, 1 (3), 191-199

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- ThedaCare (United States) is a community health system comprising of four hospitals in Wisconsin. Implementing Lean has resulted in $27m savings and improvements that include a 44% reduction in wait time for oncology patients and better facilities planning and development that extracted an additional 70 days of clinical services from a new purpose build ambulatory care centre[15] .

- The Royal Bolton Hospital (UK) is a 673 bed hospital that forms part of the Bolton NHS Foundation Trust and which serves the population of Bolton (263,000) in the North-West of England. Since first introducing Lean processes in 2005, over 3,700 staff members have participated in more than 40 Lean events. The results have included lower mortality, reduced length of stay, reduced waiting times and financial stability[16] . Bolton NHS Foundation Trust's process improvements have been recognized by awards from the British Medical Journal and the Process Excellence Network.

- Flinders Medical Centre (Australia) is a 580 bed public teaching hospital in Adelaide, South Australia serving a population of about 300,000. Flinders Medical Centre has implemented Lean since 2003 with outcomes that include reducing wait times[17], a 50% increase in the number of patients seen in the Emergency Department (using the same physical space and the same staff-patient ratios), stabilisation of staffing levels, savings of 15,000 bed days through reductions in the length of stay for patients admitted as emergency cases and a reduction in the number and types of serious adverse events throughout the hospital[18] .

Our 2012 survey of over 150 healthcare professionals in 12 countries (principally Canada and Ireland)[19] who are experienced Lean users found that:

- Implementing Lean in healthcare results in significant efficiency gains in a range of key domains. Three quarters of respondents reported achieving efficiency gains of more than 10%, with almost half reporting gains exceeding 20%. Reported efficiency gains include better delivery performance, higher quality, improved employee productivity, flexibility and motivation, better management of inventory supplies and reduced costs.

- Implementing Lean in healthcare is affordable and produces a significant return on investment. 70% of Lean implementations were reported as costing less than €50,000. Nearly 60% of Lean implementations reported returns of over €100,000. The mean reported return on investment from implementing Lean is almost 5:1.

- Patients, staff and funders benefit from implementing Lean. Efficiency gains achieved through implementing Lean are used to reduce patient waiting times, improve the functioning of emergency departments, improve the productivity and performance of operating rooms, improve patient flow and improve staff culture, conditions and productivity.

- Healthcare organisations are using Lean to target improvements in a wide range of departments. Laboratories, Emergency Departments, wards and stock are the areas most commonly targeted for improvement through implementing Lean. Lean is also applied to achieve improvements in areas such as diagnostics, patient records, operating room, outpatient services, pharmacy, quality assurance, office, IT and accounts.

- Resource constraints, knowledge gaps and conflicting priorities are the main barriers to healthcare organisations implementing Lean.

- There are significant similarities in the experience of Canadian and Irish healthcare organisations in implementing Lean. Canadian and Irish respondents reported a very similar distribution of efficiency gains from implementing Lean and similar levels of benefit. Irish respondents reported spending less on Lean implementation, while Canadian respondents reported relatively higher financial gains as a result of implementing Lean.

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15 www.hhmglobal.com/knowledge-bank/case-studies/thedacare-improved-outcomes-with-lean-management viewed on April 25th 2012
16 www.boltonhospitals.nhs.uk/bics/default.html viewed on April 25th 2012
17 www.flinders.sa.gov.au/redesigningcare/pages/leanthinking/intro viewed on April 25th 2012
18 Ben-Tovim et al 2008, Redesigning care at the: Flinders Medical Centre: clinical process redesign using lean thinking, Medical Journal of Australia 188 (6):27
19 Leading Edge Group 2012, Impact and Cost Effectiveness of Implementing Lean in Canadian and Irish Healthcare.

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3. Applying Lean in Irish Community Pharmacy

The current environment of financial pressures and regulatory reform creates an added imperative for Irish community pharmacy to examine ways in which it can become more efficient and add more value. Many community pharmacies have already responded to current pressures by adopting measures to contain costs. The systematic approach represented by Lean is likely to present further opportunities to improve performance within tight financial constraints. This chapter will provide a guide to the practical application of Lean to Irish community pharmacy and identify priority action areas to target for waste reduction and increased value-add. Consistent with Lean principles - that the people who know the most about work processes are those who perform the work and that work cannot be assessed, critiqued or improved without being observed in situ - the authors wrote this chapter based on workflow observations and staff informant interviews conducted at three Irish community pharmacies.

3.1 IDENTIFYING CURRENT VALUE STREAMS

An essential component of applying Lean is describing the current state by identifying the value stream, which in healthcare includes all the individual processes and suppliers whose collective activities provide a product or service to a patient. A significant number of value streams exist in pharmacy, both in terms of providing services (advice) and in providing physical products (medicines).

For example, the value stream elements within a pharmacy for a patient presenting to have a prescription filled potentially involves 17 steps for pharmacy staff:

1. Receiving the scripts,
2. Checking for legibility and correctness of prescription,
3. Verifying if the correct script has been used (medical card or private),
4. Looking up patient record electronically,
5. Cross checking for contra -indications and previous issues,
6. Checking if the patient has a new or a repeat prescription,
7. Preparing medication,
8. Printing labels,
9. Printing receipt/drug repayment scheme receipt (for High Tech Drugs scheme),
10. Entering sale on cash register (for additional items or prescription levy),
11. Giving patient advice and medications,
12. Accepting payment,
13. Obtaining customer signature on payment scheme receipt,
14. Processing the script,
15. Storing a paper copy for return to HSE,
16. Filing records of scripts sent to HSE and
17. Batching and queuing receipts.

Figure 1 on the next page, describes this process graphically.

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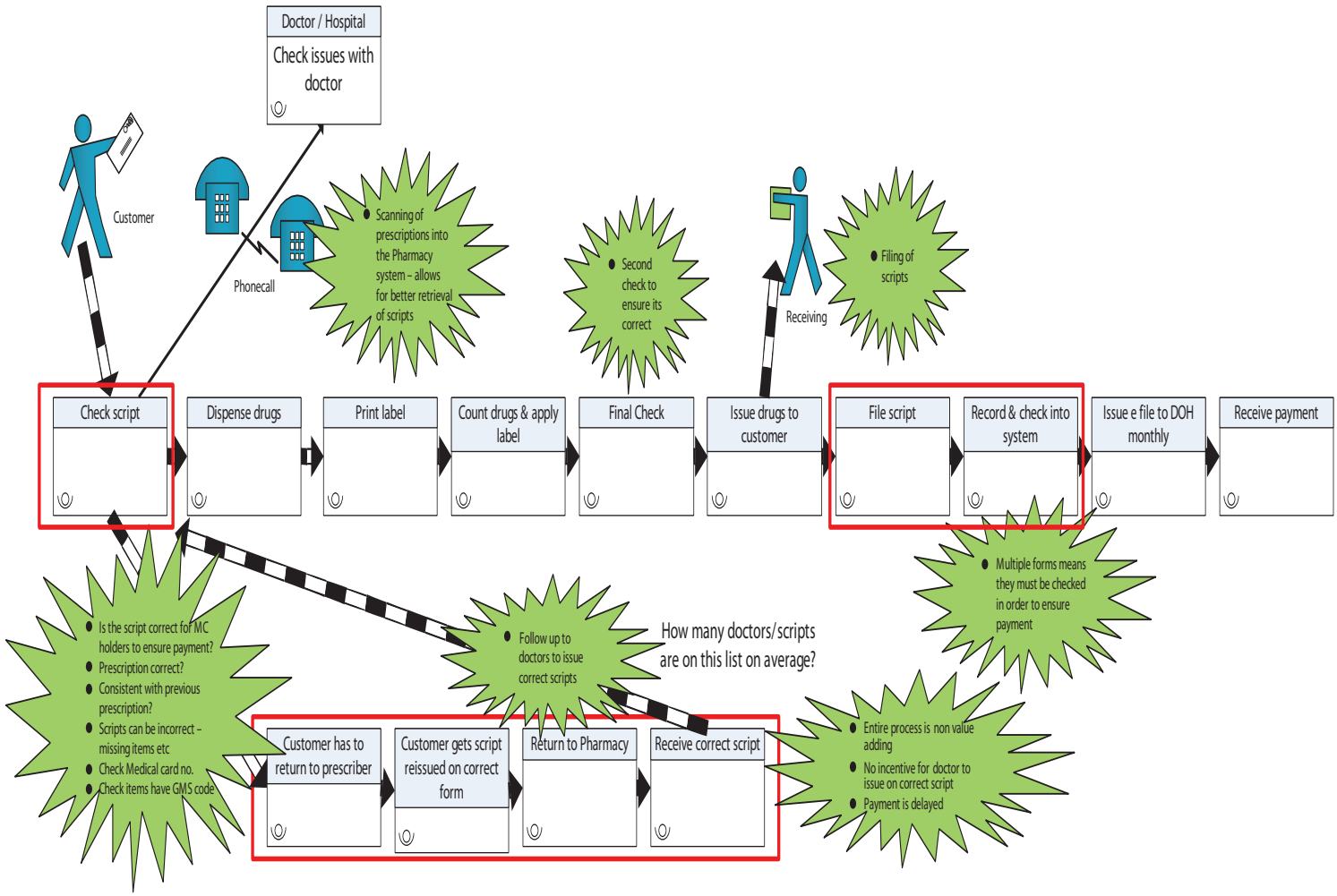
Figure 1: Medical Card Holder Pharmacy Dispensing Value Stream Map

100 scripts per day
300 items dispensed per day
Approx. 80%medical card
20% private patients

Pharmacy Dispensing Process for Medical Card Holders



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3.2 IDENTIFYING WASTE

By describing and discussing a value stream, staff have the opportunity to identify activities that are wasteful – i.e. activities that do not add value for the patient. Lean specifies seven categories of waste – transportation, unnecessary movement, inventory, waiting, over-processing, defects and underutilised skills. Examples of potential waste in community pharmacies under each of these categories include:

Transportation	• Moving stock or equipment from one part of the pharmacy to another. • Patients being required to travel to hospital or their GP for particular services. • Family members of care center patient traveling to fill prescriptions.
Unnecessary movement	• Unnecessary movement of pharmacy staff, for example, walking around looking for supplies, or working between geographically dispersed pharmacies.
Inventory	• Keeping excessive inventory that ties up money and reduces available space. • Inventory issues within the supply chain (wholesalers, regional drug companies, etc).
Waiting	• Patients being required to wait between treatment steps and staff being required to wait, for example for prescriptions to be filled. • Waiting for a doctor to clarify information on a script. • Waiting for drugs that are in short supply from the manufacturer.
Overprocessing	• Excessive form filling, documentation preparation and photocopying to comply with HSE, or audit regulations. • Ordering stock too frequently.
Defects	• Not doing things right the first time e.g. wrong prescription, wrong dose or wrong medication. • Scrap due to out-of-date medications.
Underutilised Skills	• Not engaging the frontline pharmacy staff to actively participate in problem solving in the area in which they are the experts. • Pharmacists performing administrative functions that restrict their ability to use their expertise.

Pharmacies reviewed in preparing this report identified a significant number of areas where waste can occur. These pharmacies provide a wide range of dispensing services to their local populations as well as related medical and retail activities. While pharmacy technicians can provide some of these services, a number of pharmacists are still required to perform a final inspection role prior to medication being dispensed. In addition to this, the staff must spend a significant portion of their time on work that does not add any value to their clients, such as prescription deciphering, reconciliation processes, inventory management and filing of patients details in hard copy.

The use of pharmacists in these roles detracts from their ability to expand the service they can offer clients, and results in an underutilization of their expertise in medication therapy. However, in one of the reviewed pharmacies, the four pharmacists are already used at or near full capacity without providing any of the additional services that could make better use of their skills. On any given day they are not only dealing with the normal activities involved in safely dispensing medications, a significant part of every process also requires them to interpret legislative and regulatory requirements regarding multiple drug schemes and the General Medical Services scheme. Furthermore, there is the issue of unlicensed medications that are available for use in Ireland, but which are prescribed and dispensed to clients under strict protocols.

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Many of the administrative tasks relating to schemes such as the Long Term Illness, Dental, General Medical Services, Hardship, High Tech Drugs, Drug Payment, Drug Refund, Health Amendment (Hepatitis C) and Hospital Emergency schemes involve duplication that does not add any value from patient and commercial perspectives. The current system requires a pharmacist to reconcile invoices and prescriptions, to generate claims, to enter them manually into their database and to send them to the HSE. Hard copies need to be sent to the same HSE department by the fifth day of each month. When reimbursement has been received by the pharmacy from the HSE and the hard copy return invoices received, a pharmacist is again required to check each of these manually against the hard copy invoices sent to the HSE the previous month.

Current legislation also dictates that prescriptions are issued by the prescriber on the correct script prior to them being presented to a pharmacist for dispensing. Currently there are several types of scripts that a prescriber needs to use depending on the drug and client type that is receiving the medication. Different scripts are required for medical card patients as opposed to private or self- paying patients, and there are also prescriptions solely used for high tech, high cost items, or for items to be considered under the Hardship Scheme. As a result, significant time can be spent by the prescriber and by the dispensing pharmacists to ensure that the correct script is used. Often the patient is required to return to the prescriber to have a script amended prior to returning to the pharmacist.

In addition to the types of scripts that are available for use, there is no standardised way for prescribers to issue prescriptions. Many prescriptions are still hand written and require the pharmacist to make a call to the prescriber to ensure they have interpreted the hand writing correctly. During direct observation of some pharmacists by the authors, it became apparent that only their experience of reading local prescribers' writing and shorthand notations allowed them to dispense medication safely without the need for additional clarification. However, this personal knowledge-dependent process is far from ideal.

In one of the pharmacies reviewed for this report, some of the pharmacy technicians have been allocated specialised roles, for example, the maintaining of the monitored dose systems. These specialist roles however are developed solely on the discretion of the pharmacies owner and superintendent pharmacist. At present, this grade of staff, although commonly employed in many commercial pharmacies, are not recognised, nor regulated by the PSI. Qualifications for this role can be gained though FETAC type courses and are commonly run over two years. The only criterion for gaining entrance to these courses is simply to be employed in a pharmacy setting, with no other academic or experiential requirements. To this end, the standard of pharmacy technicians varies and the role they play in support of qualified pharmacists has not yet been established or standardised across the country. For pharmacists to be able to spend more of their time providing advice and health services, pharmacy technicians may also need to evolve their role, supported by a programme of continuous professional development.

Other issues that were identified include:

- Unlicensed medications for medical card patients need individual scripts from a GP (a hospital consultant may issue an initial prescription, such a prescription may not be used for a GMS claim).

- The reimbursements process for Methadone patients is cumbersome.

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- Stock of palliative drugs frequently expires as prescriptions for these drugs change frequently, are infrequently used, and need to be ordered for each patient. For pharmacies located in areas with a significant number of palliative patients (e.g. near hospices), the cost of these obsolete drugs can be high. Furthermore, there are now multiple generic versions available of some branded drugs and a pharmacy may carry several versions of the same medication. However, pharmacies offering patients the generic version of drugs (saving the patient money), may risk large amounts of branded stock expiring if not used.

- Storing oral medications alphabetically, not pharmacologically means that new generic versions can't easily be stored with branded versions, missing an opportunity to remind pharmacists and technicians of the alternatives available for their patients.

- Lack of an IT system that allows connectivity between pharmacies and hospitals and GPs means that there is no way to electronically check patient prescriptions that have been issued elsewhere. Pharmacists thus receive prescriptions, but no context. They are not informed of the patients medical condition, which makes it more difficult to decipher handwritten scripts, or to check if the correct dose for a medical condition has been prescribed.

- The large volume of monitored dose systems dispensed to the local community is time consuming and sometimes is prepared well in advance instead of just in time when it is needed (but which is difficult to do due to time consuming nature of this task).

- Antiretroviral drugs are currently dispensed only by hospitals, creating issues for patients not living near a hospital (e.g. in rural areas). Drugs such as Clozaril are sometimes sent to patients in taxis and patients may present to community pharmacists for other prescriptions without the community pharmacist being aware that the patient is also using such medicines.

3.3 IDENTIFYING AN IDEAL FUTURE STATE

Having identified and discussed the current value stream and existing areas of waste, the next part of the Lean methodology is for staff to describe an ideal achievable future state. Elements of an ideal state that were identified from analysis conducted in the pharmacies reviewed in preparing this report include:

- Pharmacists are free to spend the majority of their time as members of the patient care teams handling complex medication-use issues and advising members of the multidisciplinary teams on current issues regarding medications and prescribing.
- Pharmacy services incorporate health promotion and surveillance.
- Some services currently performed by primary care physicians are transferred to pharmacists.
- Inventory levels are appropriate to the level of demand, and wastage of drugs is minimised.
- Time spent managing inventory is reduced, releasing time for quality initiatives by pharmacists.
- Pharmacy technicians are highly trained and competent to manage the preparation and distribution of medicines and in some cases the administration of these medicines to the patient, reducing requirements on pharmacists, acute hospital or GP services. Established standard work for this staff group increases safety and builds capacity within the pharmacy.
- Information Technology and automation are applied effectively to ensure patient safety and to identify those most in need of the attention of a pharmacist.
- All prescriptions are printed or electronic, eliminating time spent deciphering handwriting.
- Information on patient medicines is stored and accessed when needed by the relevant persons, to ensure accuracy and appropriateness. There are closer links between the prescriber and dispensary, with information shared electronically to ensure that the correct medications are dispensed in the correct volumes in order to deliver the most efficient and safe service to the patient.

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- Patients have a relationship with pharmacy staff who are actively engaged in patients' healthcare experience, reducing the risk of adverse drug events and assisting with health promotion.
- Pharmacy sensitive data is available to assist with workforce and resource planning

Many of the opportunities for improvement identified in the pharmacies reviewed in this report are consistent with the recent direction of initial reforms within the Irish pharmacy sector, where the pharmacist's traditional medicine supply role has been enhanced with an increased focus on frontline professional healthcare service provision.

From a whole of health system perspective, there are a number of areas where pharmacists can add value at an earlier stage in the value stream, and facilitate health gain earlier and at lower cost. These opportunities for adding value include providing patient services, providing services to residential care facilities, knowledge provider services and enhanced integration and networking with primary care teams.

3.3.1 Patient Services

There are a number of opportunities for pharmacists to relieve pressure on other parts of the health system by providing specific healthcare services that are currently provided by GPs or hospitals. The Interim Report of the PSI's Pharmacy Ireland 2020 Working Group identified a number of areas in which pharmacy could play an enhanced role, including chronic disease management, medication error reporting, pharmaceutical care, medicines management, minor ailments and medication use reviews. The same report recommended national policies on pharmacist prescribing, vaccination administration and health screening. [20]

Some examples of where additional patient services can add value include:

- Allowing pharmacists to dispense antiretroviral drugs directly within the community will reduce loading on hospital pharmacies allowing the hospital pharmacies to concentrate on the needs of acute hospital patients. Currently these drugs are only dispensed from hospitals, forcing unnecessary travel, hospital congestion, parking issues, and other difficulties and cost for patients.

- Conducting a variety of simple non-invasive community health screening checks in pharmacies could provide an early warning system, where any abnormalities are referred to the local GP or directly to a specialist where appropriate. Under such an arrangement, there may be scope for pharmacists to provide statistical data to the CSO for consolidation, providing the health service with valuable data on the overall health of the population. Potential foci for monitoring could include blood pressure, blood sugars, cholesterol levels, respiratory checks, eye checks and warfarin levels checks. Potentially, some of these checks could be performed on a call-out basis (e.g. to local schools) as well as on the pharmacy premises. Screening, advice and review and administration of medication relating to travel vaccines and sexual health are other functions that pharmacists could potentially provide.

- Advising and assisting patients with particular well known health risk issues such as managing weight loss, advising on dietary needs, managing stress, or reducing dependency on smoking has the potential to contribute to more effective preventative healthcare.

- Providing drug therapy reviews to patients due for admission to or recently discharged from hospitals would be a significant improvement in patient care. The pharmacist could ensure that hospital staff are aware of the patients' prescription profile at admission. The pharmacist could also then review the medications prescribed at discharge, with a view to ensuring the least costly options are being selected.

20 Pharmaceutical Society of Ireland 2008 Interim Report of the Pharmacy Ireland 2020 Working Group - Advancing Clinical Pharmacy Practice to Deliver Better Patient Care and Added Value Services

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The following case study illustrates how additional patient services could be applied.

Expanded Patient Services

Provision of an Anti-Coagulation Service

In late 2008, an Irish pharmacy serving a rural community received a patient enquiry as to whether blood tests could be conducted in the pharmacy, in order to relive the patient of the necessity of traveling to a hospital in an urban centre on a regular basis. The patient required frequent blood tests to ascertain the therapeutic dose of a blood-thinning drug, Warfarin, that requires close monitoring. It was causing the patient significant problems to travel to hospital on a frequent basis, yet at the time this service was not available outside of hospitals and some doctors' offices.

Within just over a year of receiving this request, the pharmacy launched an anti-coagulation service for patients in the local area. A pharmacist worked and trained extensively with the Consultant Haematologists in the region's hospital until the pharmacist was deemed competent by them to work under protocol. The pharmacist's role involves testing, monitoring and dosing Wafarin to up to 40 patients. Additionally, the pharmacist is required to counsel patients regarding lifestyle and the use of other medications and alcohol, which will affect their blood clotting capabilities.

The pharmacy uses a software system that helps monitor patient results over time and plots trends which enables the pharmacist to predict periods of likely over or under anti-coagulation and to develop patient specific plans based on their history of Warfarin use and reactions. The service also allows for patients to be adequately prepared for cardioversion in hospital, with the main constraint being the availability of a hospital bed. Anecdotally, it appears that many patients attend hospital for this reason only for the procedure to be cancelled as a result of their warfarin levels not being within the required range on arrival at the hospital. Such cancellations cause frustration and inconvenience for the patients, and significant wasted resources in the hospital.

To establish this service, the pharmacist had to undergo extensive training and development of protocols and SOP's and be monitored by an external source on a regular basis. Furthermore, although this service takes up a significant amount of pharmacist time, and involves some significant start up and ongoing costs, it accounts for less than 1% of pharmacy revenue. Therefore, in the absence of reviewing and addressing incentives, these practical barriers are likely to prevent many community pharmacists from implementing this type of service, despite the potential to benefit local patients and to relieve pressure on the acute healthcare sector. The demand for these type of services are likely to be higher in rural areas, where patients are not located near a hospital, or the local GP is not offering the service.

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3.3.2 Residential Care Facility Services

Residential care facilities are essentially communities within communities where there is a high concentration of a population with specific health needs. A link to a particular pharmacy for each facility would allow more coordinated and controlled management of the prescription needs of the residents. Such a one-stop-shop approach could significantly reduce the potential for residents to not fill prescriptions on time as well as reducing the need of families and carers to invest time in traveling to fill prescriptions. Regular reviews could be carried out to ensure appropriate and best practices treatments are being employed, and the drug therapy reviews previously mentioned could be provided as well. This type of service is already being provided by some pharmacists to some residential care facilities with good results.

3.3.3 Knowledge Provider Services

The specialist expertise of pharmacists means that community pharmacies are well positioned to become the hub or centre of pharmacological excellence in a community. A potential role could be to ensure that information about new drugs and treatment options or best practices is shared with the local GPs, specialists and hospitals. Pharmacists could review GP prescriptions and where appropriate, recommend changes.

Pharmacists could also play a much larger role in the interface between drug manufactures and health care services, reducing waste and duplication that is carried out by them in providing information. Providing doctors with information relating to the best cost options may help ensure that prescribing practice takes advantage of new generic medications as they come on the market. Finally, pharmacist's specialist knowledge can help resolve situations where drug shortages arise by providing guidance and advice on what appropriate alternatives could be used.

Furthermore, as the level of complexity in health care continues to increase, individual pharmacists may respond to the consequent need for specialisation in many areas by becoming the area expert or specialist for specific health conditions. For example, in Northern Ireland, pharmacists operate a Palliative Care Network, with one pharmacy in a district acting as a hub. Such specialisation may ensure each geographic area has access to high quality services using the most up to date best practice. Such expert pharmacists could also be involved in the research and development of new drug therapy or treatment methods. These pharmacists could be working to develop the protocols for clinical care programs, and designing standard operating procedures (SOPs).

3.3.4 Integration and Networking with Primary Care Teams

The creation of Primary Care Teams or networks throughout the country is a recognised approach to ensuring the community level services are all functioning together to provide holistic healthcare services. These include acute needs, chronic needs, and general wellness and quality of life. Ensuring that each of these teams includes the local pharmacy could deepen the involvement of pharmacies in local healthcare provision. Similarly, further developing relationships and regular contact between pharmacists and GPs or specialists will help ensure issues are coordinated and dealt with in a timely, high quality and cost effective manner. Equally, there is a need for pharmacies to network with local clinics and/or day hospitals.

3.4 ACHIEVING CHANGE

Once an achievable vision of change is identified, the next step in the Lean process is to develop a plan to achieve that vision and to put that plan into action. Achieving the vision outlined in the previous section presents challenges and opportunities for the broader health system and individual community pharmacists. Therefore, the next chapter will look at systemic issues to be addressed, which will in turn be followed by a chapter that outlines a simple tool for community pharmacists to use to begin their Lean journey.

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4. Adding Value at the Health System Level

This chapter will identify areas for health system reforms that can help improve Irish pharmacy's contribution to optimum patient outcomes and better resource allocation within the Irish healthcare system. Many of the recommendations in this section echo the findings of previous PSI reports and submissions including the 2011 *Baseline Study of Community Pharmacy in Ireland, the 2009 Submission from the Pharmaceutical Society of Ireland to the Expert Group on Resource Allocation and Financing in the Health Sector and the 2008 Interim Report of the Pharmacy Ireland 2020 Working Group Advancing Clinical Pharmacy Practice to Deliver Better Patient Care and Added Value Streams.*

4.1 THE HEALTH SYSTEM PERSPECTIVE

At a health system level, the value stream is defined from the Government perspective of seeking to ensure a healthy population with the most cost-effective use of health resources. This perspective takes into account both services that remedy individuals when they are not healthy, and also those that are designed to be predictive or preventative. Work done at earlier steps in the value stream generally provide benefits at a lower cost than activities performed at the ending steps. Thus, moving activity further upstream can yield an overall more cost effective result for the patient and the Government.

Pharmacy makes a significant contribution to the health of the Irish population and the functioning of the broader health system. Adults make more visits to Ireland's national community pharmacists on a monthly basis than any other part of the primary health care system. Three quarters of the adult population use community pharmacist at least once a month. In 2007, the year of the landmark Pharmacy Act, four million visits to GPs and Accident and Emergency were avoided because of patient pharmacy consultations. [21]

The pharmacy has traditionally been mainly involved at the final end of the branch of the value stream that provides patients with both prescription drugs, as well as other over the counter medical supplies and equipment. However, the skill sets of pharmacists, combined with the widespread physical distribution of community pharmacies throughout Ireland provide opportunities for pharmacists to be utilised in other ways within the overall value stream.

Pharmacies tend to be located in the heart of communities, provide access to healthcare professionals without appointment and are open 50% longer than GP clinics. As facilitators of ready access to skilled, registered and regulated healthcare professionals, pharmacies have significant potential to free up additional primary care resources (with flow on benefits to secondary care) by supporting the redirection of patients to self-care under the expert supervision of a pharmacist. Health screening, minor ailments, medicines management reviews and immunisation are potential areas in which an increased role for pharmacists would be likely to generate health gain while relieving pressure elsewhere in the system. It has been estimated the potential savings from pharmacist supervised self medication programs alone could be up to €75m. [22]

21 Pharmaceutical Society of Ireland 2009 Submission from the Pharmaceutical Society of Ireland to the Expert Group on Resource Allocation and Financing in the Health Sector

22 Pharmaceutical Society of Ireland 2009 Submission from the Pharmaceutical Society of Ireland to the Expert Group on Resource Allocation and Financing in the Health Sector

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4.2 ACTIONS AT A HEALTH SYSTEM LEVEL

A number of actions can be taken at a health system level that will help eliminate waste and generate added value in Irish pharmacy. These actions include streamlining and enhancing funding schemes, introducing a printed prescription system, enhancing IT infrastructure, addressing supply chain challenges (e.g. with High Tech Drugs), improving the approach to unlicensed medications and standardising packaging quantities.

4.2.1 Streamlining And Enhancing Funding Schemes

In 2010, the HSE's Primary Care Reimbursement Service payments to pharmacists totalled €1.56b. The General Medical Services scheme funded 54.4m items at a cost of €1.2b, the Drugs Payment scheme funded 11.1m items at a cost of €173.4m, the Long Term Illness scheme funded 2.8m items at a cost of €126.9m, the High Tech Drugs scheme funded patient care fees totalling €15.5m, the Methadone Treatment Scheme funded methadone services at a cost of €14m and the European Economic Area (EEA) scheme funded items for residents of eligible states at a cost of €1.74m .[23]

As identified in Chapter 3, there is a significant amount of waste that is generated due to the variety and administrative requirements of such schemes to reimburse patients or pharmacies for services provided by pharmacies. Each of these schemes has its own system to follow, its own particular paperwork needs, and in some cases, even their own script form. The end result is that pharmacists are diverting their time from direct patient contact to managing these schemes.

The authors recommend reviewing the purpose and benefits of each scheme and how these schemes fit into the larger future state plans for the Irish healthcare value stream. There may be potential for rationalisation, consolidation, or adjustments to the schemes. Any reforms that reduce the high administrative burden on pharmacists (including duplication of work) relating to these schemes will free up skilled healthcare professionals to provide more frontline services. There is also likely to be scope for reforms that address some disjointed reimbursement systems that drive poor patient behaviour.

Finally a broader reform of the funding model for pharmacists could move pharmacist remuneration away from a fee-per-item volume model and increasingly align incentives with broader healthcare priorities.

4.2.2 Introducing A Printed Prescription System

Introducing a printed prescription system across all surgeries and hospitals would be a simple and effective measure to enhance safety and efficiency and ensure that prescriptions originating in the doctors surgery or the hospital are legible. This would eliminate phone calls to originating prescribers to check illegible writing, and avoid possible dispensing errors. This system may or may not support electronic transmission of scripts (see next recommendation).

4.2.3 Enhancing IT Infrastructure

Developing an electronic script system has the potential to reduce a multitude of waste. Doctors would no longer hand write prescriptions, but would use standardised electronic forms. These could be designed to have drop down menus or other interface tools to minimise the amount of typing required.

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23 Health Service Executive, Primary Care Reimbursement Service Statistical Analysis of Claims and Payments 2010, accessed from www.hse.ie/eng/staff/PCRS/PCRS_Publications/claimsandpayments2012.pdf , viewed on April 24 2012.

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Once the scripts are in electronic form, there are several next stage enhancements that could take place. The script can be sent by secure email to the pharmacy of the patient's choice. Alternatively, the patient could save their prescriptions on a small personal memory device (USB stick) which could also be used to store other health history. This could then be brought to the pharmacy by the patient. However, the most obvious way to manage the electronic scripts would be for them to reside in a cloud database. Different levels of access can be defined, with approval structures via a password or pin and chip card that each patient carries.

The benefits of such an approach would be that any pharmacy could have access to the entire prescription history of the patient, not just those for which that pharmacy had filled in the past. This will enhance their ability to check drug compatibility and safety. Furthermore, there would be a significant reduction in excess communication and verification that occurs between pharmacies and doctors to clarify information that is illegible on scripts, or obtain additional information.

Such a system would facilitate closer collaboration and communication between hospital and community pharmacist, which is a key goal of both groups. This enhanced communication may facilitate the development of shared protocols to address current system gaps, for example relating to potential patient misuse of over the counter medications such as Nurofen Plus. In the absence of shared information and common protocols, a patient denied over the counter by a pharmacist not satisfied with patient responses about intended use could successfully purchase the medication at another pharmacy.

4.2.4 Addressing Supply Chain Challenges

Ireland is at the periphery of the supply chain of drug products in relation to Europe and the UK. The population is relatively small, and as an island, there are other logistical issues not faced by other countries.

The role of the supply chain is to ensure availability of the right products at the right time and the right place, in an efficient manner (to ensure best price). In Ireland, pharmacies are supplied by three main wholesalers which provide the full range of pharmacy drug needs, as well as the majority of other over the counter products and retail items. These wholesalers in turn have distribution businesses which purchase direct from the manufacturers. There are also smaller parallel importers who are essentially traders, and provide a small select number of items. Finally, some drug manufacturers are now beginning to supply directly to pharmacies.

The other valuable service that the supply chain currently provides is a twice daily delivery to each pharmacy throughout the country. This, combined with the fact that the three main wholesalers operate the same order protocol system, ensures a very high potential of product availability for sale to pharmacy customers.

The current pressures on the supply chain are largely driven by price. The Irish government negotiates price directly with the manufacturers, and has been eliminating cost from the system over the last number of years. This puts pressure on the total supply chain to become more efficient to absorb these changes.

There are a variety of opportunities that the authors have identified which can further improve the supply chain. Firstly it would be beneficial to do a current state assessment of inventory levels or turnover through the entire value stream. With twice daily deliveries, a pharmacy could theoretically carry only one or two days of inventory. Some wholesalers provide the morning delivery direct from a central delivery centre and the afternoon delivery is provided via regional centres. This means the regional centres are also carrying inventory. Holding the inventory at a common point in the supply chain allows for much less overall inventory, as the variation in demand that occurs on a combined basis is always much smaller than that at a regional level or at an individual pharmacy. So there is opportunity to reduce the overall level of inventory in the system.

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Knowing the demand as early as possible provides the supply chain a better chance of providing the product in an efficient way. Making information available as scripts are written would give the supply chain advance knowledge of what drugs are going to be required. Perhaps in the future, the supply chain could have access to the cloud database described previously in this report. Obviously this would have to be a consolidated view, without patient identifying information.

There is scope for the pharmacies to develop an automatic replenishment system with the wholesalers, or for the wholesaler to have visibility of pharmacy stock levels in real time and manage deliveries accordingly. This would eliminate pharmacists having to estimate usage, decide on an order quantity and place an order each time they take the last box from their shelf.

If the wholesaler had knowledge and shelf life information of drugs within each pharmacy, it could also assist in reducing the amount of wastage of out-of-date drugs. They could ensure slow movers in one pharmacy are recalled and sent on to a pharmacy where a known demand exists. Also, where supply shortages occur, a consolidated management of available inventory could take place.

The current communication system between commercial pharmacies and the wholesalers is through a modem Electronic Data Interchange (EDI) system. In the future this could be upgraded to broadband, or could be via a web-based system. There are already some moves towards web based ordering systems. Advantages would be the availability of stage communications to the pharmacy, giving notification of when an order is received, when it is filled and when it is shipped. A significant deficiency identified in the current system is that most hospital pharmacies are not using an EDI system to place orders. Instead, hospitals currently rely on phone calls or emails with lists of requirements. These must then be key-punched into the system by the wholesaler.

Nearly all drugs and retail products are produced with bar code identifiers, but these, in most instances, are not used by the pharmacies. The benefits in the supply chain are rapid receipt of goods as well as an electronic proof of receipt. However, the bar code could also be used in the dispensing process as a way to quickly identify and verify the correct drug is being dispensed, and to automatically update inventory levels.

4.2.5 Improving The Approach To Unlicensed Medicines

At the moment there are a variety of medications that are unlicensed for use in this country. Patients need to be made aware by the pharmacist every time an unlicensed medication is dispensed. Additionally, scripts for unlicensed medications differ from regular scripts and not all medical practitioners prescribe on the correct form. Each unlicensed medication for medical card patients must be written on an individual script from a GP. These medications can be prescribed by a hospital physician, but for a GMS patient this must be written by a GP. Reviewing this situation may find a simpler solution to these wasteful activities that occur as a result of unlicensed medications.

4.2.6 Standardising Packaging Quantities

Varying interpretations about the length of a month creates significant issues in pharmacies, as doctors prescribing for a month might suggest 30 days, whereas most drugs are packed in sets of 28 (four weeks). The resulting waste is that sets are split to obtain the extra 2 days, leaving less than full packs for the next customer, and the problem is continued. Splitting packs means the pharmacy has to photocopy the safety leaflets to ensure they send one with each prescription. It also can cause errors at the pharmacy or by the patient, as the split elements of the packs may not have the full label on them. A country wide standard for the entire health service should be adopted to eliminate this problem.

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5. Adding Value In Individual Community Pharmacies

Although systemic reforms are important to enable the full potential value of Irish community pharmacy to be realised, individual community pharmacies do not need to wait for these systemic reforms to secure significant process improvements. This section will provide community pharmacists with a practical "how to" guide to begin implementing Lean.

5.1 THE INDIVIDUAL COMMUNITY PHARMACY PERSPECTIVE

Irish community pharmacists are currently grappling with adapting to a new regulatory environment, reducing margins and changing expectations as to their professional role. In addition to the Government as the dominant purchaser negotiating lower medication prices, market conditions have been further tightened by Budget 2012's 10% increase in the monthly threshold for the Drugs Payment scheme to €132 and the 50c charge per prescription item for medical card patients introduced in 2010[24]. Competition is increasing as well, with Tesco entering the Irish community pharmacy market from November 2011 with a policy of applying a 20% mark-up and flat €3.50 dispensing fee[25].

It is likely that further downward pressure will be brought to bear on prices and margins and the recent publication of the ESRI report Delivery of Pharmaceuticals in Ireland – Getting a Bigger Bang for the Buck contains a number of recommendations (including eliminating mark-ups on pharmaceutical products by pharmacies and measures to promote greater consumer visibility of and competition on pharmacy pricing policies) that, if adopted, may further increase the imperative for community pharmacies to examine aspects of their current business model.

There is therefore a strong incentive for community pharmacy owners to identify alternatives to a volume fee per item business model and explore opportunities to deploy pharmacist's clinical expertise in providing additional revenue generating healthcare services. However, as experienced by the community pharmacies reviewed by the authors, pharmacy staff are currently committed to so many administrative and other non-clinical tasks that it may be difficult for pharmacists to see where they will find the time to develop new services. Employing new staff or hiring new premises is expensive, so identifying efficiency savings to free up existing resources may be the optimum way of funding business diversification.

The authors have identified the following internal processes that provide the greatest opportunities for community pharmacies to achieve savings through applying Lean:

- Core patient care services
- Services for high risk populations
- Distribution services
- Procurement
- Storage
- Inventory levels
- Information and communication
- Education, Training and Research

24 ESRI 2012, *Delivery of Pharmaceuticals in Ireland – Getting a Bigger Bang for the Buck, www.esri.ie/UserFiles/publications/RS24.pdf*

25 ESRI 2012, *Delivery of Pharmaceuticals in Ireland – Getting a Bigger Bang for the Buck, www.esri.ie/UserFiles/publications/RS24.pdf*

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5.2 ACTIONS AT AN INDIVIDUAL COMMUNITY PHARMACY LEVEL

The authors recommend that community pharmacists who plan to review their scope to achieve efficiency savings and increase added value start by applying the 50 point Lean Pharmacy - Self Assessment Tool (LEAP© - Self Assessment) that has been developed specifically for Irish community pharmacists.

Once the assessment is done, each process performed should be identified and the actual process mapped through observation. Both results metrics and process metrics should be identified and means of collecting these metrics should be put in place if this has not already occurred. Metrics that will help identify and prioritise process improvement opportunities include:

1) Number of scripts processed per day and trend analysis.
2) Number of scripts needing rework - phone calls, rewriting, emails, patient needing to return to GP/hospital.
3 Time spent on rework per category.
4) Variation from one month to the next: volume and type (complex vs. simple).
5) Seasonal variation (for example the Flu vaccine).
6) Ratio of scripts to pharmacists/technicians.
7) Double entries of patient information (paper based and computerised).
8) Retail (non-prescription) electronic point of sale (EPOS).
9) Time spent by pharmacists on value and non-value added activities - categorised and quantified.
10) Number of errors or adverse drug events.

The process should then should be analysed to highlight any areas where flow is not occurring, where non-value adding (waste) activities are taking place and to identify issues where there may be capacity constraints or resource utilisation problems. With the help of Lean experts, or by empowering the pharmacy staff, a future state operating process is defined. A roadmap of quick-wins and projects is then put in effect to transition from the existing current state to the planned future state.

5.3 LEAN PHARMACY SELF-ASSESSMENT TOOL (LEAP© - SELF ASSESSMENT) FOR IRISH COMMUNITY PHARMACIES

The self-assessment tool was developed in order to assist community pharmacists to identify key areas where initial process improvement efforts may need to focus in order to resolve the largest problem or worst bottlenecks. If in applying this tool, a community pharmacy scores less than 30 "yes" responses, then it is likely to benefit from implementing Lean. Less than 20 "yes" responses would indicate that there may be an urgent case to review internal processes in order to ensure future viability. For more information about implementing Lean in a community pharmacy setting, contact the authors of this report.

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1. Have you identified the core services and products you want to provide, and services and products which you do not want to provide?
2. Do you measure the profitability of each of these core services at least quarterly?
3. Do you know the percentage of your business that is prescription filling, and of this, what percentage is for chronic needs vs. acute needs?
4. Do you know the percentage of your business that is retail, and of this, what percentage is non-medical related?
5. Do you know the population demographics of your area or customer base? (ages, medical cards, disadvantaged, chronically ill & reasons, in residential care, etc.)
6. Do you maintain an accurate database of your customers?
7. Does your customer database indicate historic volume of sales by customer?
8. Does your customer database indicate long term or chronic illnesses of patients?
9. Do you have e-mail addresses for all your patients?
10. Do you contact patients to remind them that a prescription is due to run out?
11. Do you contact customers via email, sms, post or other means to promote services or special offers?
12. Can customers contact one of your pharmacists outside opening hours?
13. Do you have an active website?
14. Do you conduct regular customer satisfaction surveys which allow customers to tell you if you are providing the right products and services, at the right quality and for the right price?
15. Do you suggest the use of generics to your customers where they are available?

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16. Do you track your average transaction sales value?

17. Do you know how many different prescription drugs you stock?

18. Do you complete a regular sales and value analysis on each of your prescription drugs to identify which are the highest volume and which are providing the best profitability?

19. Do you complete a regular sales and value analysis on each of your non-prescription items to identify which are the highest volume and which are providing the best profitability?

20. Do you track trends of drugs being prescribed by each individual doctor in your area?

21. Do you know how many Days-On-Hand (DOH) of inventory (number of days before you will run out of stock) you are carrying at the end of each month in total and individually for each item you stock?

22. Is your total Days-On-Hand of inventory trending down?

23. Do you identify your worst performing products based on DOH or profitability each month and take corrective actions?

24. Do you regularly track the value of drugs you dispose of each month (out of date, damaged, etc.) and is this number, as a percentage of sales, decreasing?

25. Are re-stocking orders completed by someone who is NOT a qualified pharmacist?

26. Is there a defined minimum inventory level and re-order quantity for each item you stock?

27. Do you place orders with your suppliers electronically?

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28. Have you eliminated the need to do physical stock counts other than for annual accounting requirements?

29. Do you have bar code scanning capability and do you use it?

30. Do you know the variation that exists in numbers of scripts filled during periods of the day, during the week, seasonally?

31. Do your pharmacists meet face-to-face at least monthly with the GPs, clinics, or specialists in your area?

32. Do all of your employees know the overall sales performance each month?

33. Do all your staff know how much is spent on each of the key cost drivers of your business each month?

34. Do you know how many scripts each day require extra work (phone call to a GP or hospital, illegible handwriting, wrong script form, emails, no stock available)?

35. Do you know how far a pharmacist must walk to complete one average prescription, and therefore how much walking he/she does in a day?

36. Are drugs stored on your shelves based on frequency of use and NOT pharmacologically or alphabetically?

37. Do you know how much time each day each of your qualified pharmacists spends on activities other than filling prescriptions and advising patients?

38. Do you know how often your pharmacy makes an error? (Incorrect medication, incorrect directions, incorrect labels, etc.)

39. Do you know how much time is spent per month in back-office support? (HSE form processing, accounts, scheduling, paying bills, etc.)

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40. Do you know the average time it takes to fill a prescription (from the time a customer presents to the time that receipt and product is handed to customer) and do you measure this regularly?

41. Do you know the average wait time for a customer to have a prescription filled and do you measure this regularly?

42. Do you have job descriptions outlining all aspects and duties of each job in your pharmacy?

43. Do you have defined standard operating procedures for each process within your pharmacy?

44. If one of your staff is unexpectedly absent for the day, is it clear who will do what?

45. Is there a work schedule for all staff, showing planned holidays visibly on display to staff?

46. Is there a visual display within your pharmacy showing who is trained to do which jobs, and is there a training plan in place to fill gaps?

47. Are some of your staff faster or better than others, and if so, have you discovered why and shared the reasons with others?

48. Do your staff regularly provide improvement ideas which can make their jobs easier?

49. Does your monthly schedule allocate time for staff to implement improvements to their processes?

50. Do you meet with the other pharmacies in your area at least once a quarter?

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6. Next Steps

This preliminary report has highlighted some significant opportunities to achieve population health and cost-efficiency gains by applying the Lean methodology to the Irish community pharmacy sector.

There are two primary categories of audience for the recommendations in this report. Policymakers, regulators, funders and representative bodies (specifically the Department of Health and Children, the Pharmaceutical Society of Ireland and the Health Service Executive, Irish Pharmacy Union and the Hospital Pharmacists Association of Ireland) are the first category as they have the capacity to shape the health systems environment in which Irish community pharmacy operates.

The second audience are community pharmacists themselves, who can review and improve their own business processes.

The next steps recommended for each audience are as follows:

Next steps for policymakers, regulators, funders and representative bodies

- review the recommendations in this preliminary report and provide feedback to the authors to aid the development of a final report.
- commission a similar report focused on implementing Lean in Irish hospital pharmacies.
- provide funding to train Irish pharmacists in applying Lean and to support up to five pilot Lean pharmacy projects.

Next steps for community pharmacists

- contact Leading Edge Group on 021-4835863 or at info@leanscm.com to volunteer for the report review group and/or online forum that the authors are establishing to help develop these preliminary findings into a final report.
- use the custom-developed Lean Pharmacy Self Assessment Tool (LEAP© - Self Assessment) to identify the scope for improving processes in your pharmacy.
- register for training programmes in Lean (see www.leadingedgescm.com)
- contact Leading Edge Group to discuss the potential for implementing Lean in your pharmacy.

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Valuing Potential Efficiency Gains

This report makes a case for a thorough health economic analysis to be conducted on a number of key proposals relating to adding value in the Irish community pharmacy sector. A number of initial, indicative calculations by the authors, based on applying some conservative assumptions to their findings from the pharmacies they examined, illustrate the potential for achieving significant efficiency gains nationally. These indicative figures have been derived as described below.

1) Improved management of stock in pharmacies

The authors estimate that this efficiency gain has the potential to generate one off cash savings of over €114m to Irish community pharmacies and on-going savings of €17m p.a., assuming:

- An average pharmacy carries €100,000 of stock.
- There are up to twice daily deliveries of new stock.
- Allowances are made for variation in mix and demand.

Applying these assumptions the authors estimate that this level of stock could potentially be cut to one third of current levels. Such a cut in stock levels would:

- Produce a one off benefit of €67,000 per pharmacy (2/3 of €100,000) and an annual saving (based on a 15% inventory carrying cost) of €10,050 per pharmacy.
- If applied to 1,700 community pharmacies, produce a national one off benefit of €114m (1,700x€67,000) and a national annual saving of €17m (1,700x€10,050).

2) Efficiency gains from significantly reducing / eliminating need to rework scripts

These gains have been estimated by the authors to be potentially worth in the region of €13m nationally each year, assuming:

- An average pharmacy currently spends four hours of pharmacist time per week deciphering and reworking scripts (i.e. 208 hours of pharmacist time per pharmacy per year).
- Average hourly cost of pharmacist time is €37 (inclusive of Employers PPSI, superannuation benefits, healthcare costs etc.).
- 1,700 community pharmacies in Ireland.

Applying these assumptions:

- Cost of reworking scripts per pharmacy is €7,696 (208x€37).
- Total national cost of this rework is €13,083,200 (1,700x€7,696).

These same gains could also be expressed in terms of adding 170 pharmacists to the national pharmacy workforce, assuming:

- 10% of the time of one full time pharmacist per pharmacy per week is spent deciphering and reworking scripts.

Total pharmacist time that could be freed up nationally is therefore 170 pharmacists (1,700x1x10%).

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3) Significantly reducing the time pharmacy technicians spend completing HSE paperwork.

The authors estimate that this efficiency gain could potentially be worth in the region of €9m nationally each year, assuming:

- An average pharmacy currently spends seven hours of pharmacy technician time per week completing HSE related paperwork (i.e. 364 hours per year of pharmacy technician time per pharmacy).
- Average hourly cost of pharmacy technician time is €15(inclusive of Employers PPSI, superannuation benefits, healthcare costs etc.).
- 1,700 community pharmacies in Ireland.

Applying these assumptions:

- Cost to a community pharmacy of HSE paperwork completion is €5,460 (364x€15).
- Total national cost to community pharmacies of this paperwork is €9,282,000 (1,700x€5,460).

These gains could also be expressed in terms of adding about 300 pharmacy technicians to the national pharmacy workforce, assuming:

- In an average community pharmacy, 17.5% of the time of one pharmacy technician is spent completing HSE paperwork.

Total pharmacy technician time that could freed up nationally is therefore 297.5 pharmacy technicians (1,700x1x17.5%).

Based on the above calculations, the authors estimate that if the key recommendations in this report were immediately implemented at a health systems level and in all community pharmacies simultaneously, the potential cash and cost savings to Irish community pharmacies could exceed €300m over five years. Irish community pharmacists would benefit from initial cash and cost savings of €150m in 2013, followed by on-going efficiency savings of almost €40m a year in each subsequent year:

- Improved management of stock in pharmacies could generate one off cash savings of over €114m to Irish community pharmacies and on-going cost savings of €17m p.a.
- Eliminating or significantly reducing the need for pharmacists to rework scripts could save Irish community pharmacies in the region of €13m p.a., freeing up pharmacist time equivalent to adding 170 pharmacists to the national pharmacy workforce
- Significantly reducing the time pharmacy technicians spend completing HSE paperwork could save Irish community pharmacies up to €9m p.a., freeing up pharmacy technician time equivalent to adding almost 300 pharmacy technicians to the national pharmacy workforce

The Irish State would also benefit from significant savings if pharmacist and pharmacy technician time liberated by the above measures is dedicated to providing additional health services that relieve pressure on the wider health system. Health screening, minor ailments, medicines management reviews and immunisation are potential areas in which an increased role for pharmacists would be likely to generate health gain while relieving pressure elsewhere in the system. These savings will be additional to the significant cost savings to the Irish Government, community pharmacists and the wider community that are anticipated to accrue through increased adoption of generic medications as an alternative to branded medications.

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Further Contact

To discuss this report with Joe Aherne CEO of the Leading Edge Group, contact Leading Edge Group, Charter House, Cobh, Cork on 021-4855863 or via e-mail at jaherne@leadingedge.ie.

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