

The Pharmaceutical Society of Ireland - The Pharmacy Regulator

Baseline Study
of
Community Pharmacy Practice in Ireland

Final Report

27th January 2011

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GLOSSARY

Abbreviation	Full Description
BNF	British National Formulary
CE	Continuing Education
CPCE	Community Pharmacy Contractual Framework (England and Wales)
CPD	Continuing Professional Development
CPhA	Canadian Pharmacists Association
DPS	Drugs Payment Scheme
GMS	General Medical Services
HBC	Horwath Bastow Charleton
HSE	Health Service Executive
ICCPE	Irish Centre for Continuing Pharmaceutical Education
IMB	Irish Medicines Board
IMO	Irish Medical Organisation
IPU	Irish Pharmacy Union
LPC	Local Pharmaceutical Committee (UK)
LTI	Long-Term Illness Scheme
MUR	Medicine Use Review
NHS	National Health Service (UK)
NICE	National Institute for Health and Clinical Excellence (UK)
OTC	Over-the-Counter Medication
PCO	Primary Care Organisation (UK)
POM	Prescription-Only Medicine
PSI	Pharmaceutical Society of Ireland
RCSI	Royal College of Surgeons in Ireland
RPSGB	Royal Pharmaceutical Society of Great Britain
SOP	Standard Operating Procedure
TCD	Trinity College Dublin
UCC	University College Cork
UCD	University College Dublin
UCLan	University of Central Lancashire

EXECUTIVE SUMMARY

1. The Pharmaceutical Society of Ireland (PSI) commissioned Horwath Bastow Charleton (HBC) in late 2009 to conduct a study to provide an understanding of the nature and type of pharmacy services currently being delivered in Ireland, and to review and report on the international profile of the standards of pharmacy service and care delivery.
2. The first phase of the study was intended to focus on the provision of core and extended pharmacy services in Ireland, providing baseline information for the PSI to enable it to understand the nature and scope of pharmacy provision nationally, to identify strengths and weaknesses in the sector, and to develop future policy to improve and implement change for pharmacy provision in Ireland.
3. The second phase was designed to be an international review study, examining pharmacy provision and regulation in other EU countries, Australia, Canada, New Zealand and other countries as identified, seeking to identify and analyse the nature and scope of pharmacy provision, best practice, policies and practice in relation to performance management, and how pharmacy provision fits within the wider health and social care sector in each comparator country.
4. It was agreed with the Steering Group and PSI to carry out the data collection in two ways:
 - **A census survey** of all community pharmacies (that is, 100% of the population) collecting structured data on pharmacy activity, staffing, infrastructure, etc;
 - **A follow-up interview** with approximately 40 community pharmacies across the country, examining more qualitative issues in relation to the future development of pharmacy services, areas in which pharmacists would like to see change, inter-professional relationships, CPD, and so on.
5. The total response rate (457 surveys) is 28% (not including incomplete submissions), which gives us a good margin over the agreed target of 20% necessary to have confidence in the results.
6. The main findings relating to the **profile of the pharmacists** completing the survey (Section 2 of our report) are as follows:
 - more than 83% of respondents held the role of Supervising Pharmacist or both Supervising and Superintendent Pharmacist;
 - 45% of respondents were the pharmacy owner, and just over 26% were the manager;
 - 59% responded that they had been working in the pharmacy for more than five years;
 - the average (mean) hours worked by respondents in a typical week was 42.6, with the most common response (mode) being 40 hours per week;
 - 51.4% of respondents were female and 46.4% were male, with just over 2% failing to answer the question;
 - almost 39% of respondents were aged under 35, with 35% being aged between 35 and 44;
 - profile of pharmacists and pharmacies completing survey is representative of profile of the PSI's register;
 - the average length of time registered as a pharmacist was more than 15 years, with the most common response being 10 years – responses ranged from 2 to 53 years;
 - 37% of respondents undertook their degree at TCD, 43% at UCD, and the remainder at other Irish, UK or international colleges;
 - 99.8% of respondents reported that they had practised in community pharmacy, 23.4% indicated they had undertaken hospital pharmacy, 5.8% had worked in industry, and another 4.5% in research.
7. The main findings relating to the **services provided by pharmacists** completing the survey (Section 3 of our report) are as follows:
 - 26.5% of respondents had prescription dispensing numbers in excess of 5,000 per month;
 - GMS prescriptions represent the largest numbers for pharmacies' dispensing activity;
 - 32.7% of respondents provide services to residential care settings;

- The top three services not currently provided, but which pharmacists would like to provide in future, consist of Lung Capacity Screening, Sexual Health, and Structured Medicine Use Reviews;
 - Pharmacists spend most of their professional time during normal working hours on dispensing prescription medicines, counselling prescription patients, counselling non-prescription patients, and giving advice about minor illness;
 - Pharmacists spend most of their professional time outside normal working hours on CPD activities, attending health-related meetings and audit and practice research;
 - The appetite for providing enhanced pharmacy services in future was mixed. Overall, the majority of those we spoke to were keen to provide enhanced services such as health promotion programmes (e.g. weight loss or smoking cessation), and screening, diagnostic and monitoring services like blood pressure measurement, blood sugar testing for diabetes, cholesterol levels, and Warfarin levels;
 - However, there are many who believe that the key skills of pharmacists remain with medicines expertise and core dispensing of prescription and OTC medication;
 - The main barrier to providing enhanced pharmacy services was identified as being money. If pharmacies had a different income model, the interviewees suggested, one that generated income for all the services provided, then they could pay for more qualified staff, which in turn would free up the time of the supervising pharmacist and others to develop and run these enhanced services;
 - Other potential barriers included opposition by local GPs and other healthcare providers to the extension of diagnostic or treatment services to pharmacy, and the availability of specific, validated training in clinical procedures.
8. The main findings relating to the **use of information technology** by the pharmacists completing the survey (Section 4 of our report) are as follows:
- The vast majority of pharmacists were entirely happy with their current IT infrastructure;
 - Some expected that significant changes would be required to their current systems, but, for many, any changes to accommodate new services would be relatively minor – add-ons or upgrades rather than complete new systems;
 - Many pharmacists stated that they would like their IT system to support interventions in relation to supply of non-prescription medicines, referrals, provision of specific advice and other professional and clinical interventions not currently regularly recorded;
 - Many pharmacists felt that access to at least some patient data held by GPs and others would be helpful to their practice.
9. The main findings relating to the **inter-professional relationships** between the pharmacists completing the survey and other healthcare professionals (Section 5 of our report) are as follows:
- The majority of pharmacists were either satisfied (32.2%) or very satisfied (28.2%) with the relationship with local doctors;
 - 94.6% of those who responded said they did not have engagement with local multi-professional groups;
 - 91.6% of pharmacists indicated they had no engagement with patient support groups;
 - Most pharmacists' main relationship is with the local GPs, and for the majority of pharmacists whom we interviewed, this relationship is very good. In general, interviewees felt their interactions with their GPs were cordial, that the relationship involved mutual respect, that the communication was good, and that they could work together for patients' benefit.
10. The main findings relating to the **workforce** (Section 6 of our report) are as follows:
- On average, there were 2 pharmacists reported as working in each pharmacy (the maximum reported number of pharmacists was 5);
 - The average number of pharmaceutical assistants was 0.7 per pharmacy, with 1 being the most common answer;
 - The average number of pharmacy technicians was 1.4 per pharmacy;

- The average number of counter staff was 3 per pharmacy, and other staff averaged 1.3 per pharmacy;
- When asked what, if anything, they would change about the workforce in the pharmacy, most pharmacists responded that they would take on more staff, in an ideal (i.e. affordable) situation. For most, they would like to take on more qualified pharmacists, usually a full-time second pharmacist for single-pharmacist pharmacies;
- Almost all interviewees identified that they would like a better ratio of pharmacists to other staff, with the likelihood that this could provide potential improvements in services to patients, such as more time to spend counselling, and the ability to develop new services;
- Pharmacists were also very enthusiastic about the benefits arising from working alongside another professional pharmacist: almost everyone felt that this improved or would improve their own professional practice by challenging them and highlighting and filling in gaps in their own knowledge.

11. The main findings relating to continuing professional development/continuing education (Section 7 of our report) are as follows:

- A significant majority of pharmacists undertake formal and informal CPD/CE activities: 76.1% list attendance at ICCPE lectures and 90.8% state that they read professional journals, while 66.7% said that their CPD/CE activities included addressing learning opportunities in their everyday practice;
- Fewer than half of pharmacies pay for membership of ICCPE, or provide in-house training and development;
- Over 60% of pharmacists responding to the survey stated that enablers to better uptake of CPD/CE would include availability closer to their pharmacy, greater frequency/more convenient times, an enhanced range of topics, or online/technology-based learning;
- The most commonly-identified barrier to CPD/CE for 83.9% of pharmacists was lack of time;
- Amongst pharmacists whom we interviewed, there was quite a varied opinion on the quality of the CPD and CE activities provided by the ICCPE; some pharmacists were quite happy with the content and the range of topics covered, while others rated the quality of the content as low and were unhappy with the information presented and how it was delivered;
- Many of those interviewed undertake their own CPD and CE activities, often using online resources. Several suggested that the ICCPE should expand into online CPD and CE provision to address the issues surrounding access and time;
- There was near-universal agreement that future service development, especially into screening and diagnostic services, would require specific CPD and CE resources to support this.

12. The main findings relating to premises and setting (Section 8 of our report) are as follows:

- Just over half of the respondents were in single-outlet pharmacies (52%), with small group or chain pharmacies representing 26.3% of the responses and large group or chain pharmacies representing 21.7%;
- The average length of time that pharmacies in the survey were established was 32.8 years, with a maximum of 161 years and a minimum of 0.08 years;
- On average, older patients made up 60% of respondents' patient profiles, with families with young children representing 26.7%, younger patients (12-30) making up 16.2%, and patients in residential care 5.4%. Pharmacists indicated that repeat or regular patients make up 78% on average of the pharmacy patient profile;
- In terms of future service provision, many respondents felt that their premises were adequate, especially with the consultation area in place. Others felt that further expansion or improvement would be necessary, especially in relation to specific aspects such as sterile conditions for certain diagnostic or monitoring procedures. The existing consultation areas would be too small in some pharmacies to accommodate equipment for some screening and diagnostic procedures.

13. Other main findings relating to strategic and overarching themes within community pharmacy (Section 9 of our report) include the following:

- Many respondents felt that the pharmacist is currently under-utilised and that there is potential to expand the role of pharmacy in healthcare services to patients. Screening and diagnostic services, medicine use reviews, minor ailment schemes, vaccinations, etc, are suggested as ways for the pharmacist to contribute more to patient care;
 - Related to this is the perception that pharmacy is under-valued and under-appreciated in the current healthcare structure;
 - There were many comments describing the sense that the regulatory environment has become very pressurised and many perceive the regulations as excessive and unnecessary. This is exacerbated by the increasing burden of administration relating to reimbursement for patient services from the State. Some are concerned that the paperwork requirements are taking from the time for patient care;
 - Many of the comments from pharmacists referred to a time of intense pressure on pharmacy and pharmacists. Financial pressure and the difficulties in the relationship with the State feature strongly. There is uncertainty among many pharmacists as to how things will develop, making it difficult for them to plan and have stability;
 - Several respondents indicated a desire to see closer integration of pharmacy into the primary healthcare structure, working more closely with GPs and other healthcare providers in a multi-disciplinary team set-up;
 - There was a very wide range of opinion in relation to the PSI's current role and activities, and some unhappiness expressed with how the PSI has taken up its role as regulator.
- 14.** Some of the key strategic issues to emerge from this research (Section 10 of our report) have included the following:
- A key factor that emerged in relation to pharmacists' opinions on how pharmacy should develop was the common perception that there is no national vision for pharmacy and how it could and should fit into the wider healthcare delivery system. This is something which the PSI could be seen to address by continuing to work closely with the HSE and Department of Health and Children;
 - It would be worthwhile to examine ways to address the appetite for the provision of enhanced services, especially screening and diagnostic services, given the substantial body of positive responses to the "Would Like to Provide" questions for these services;
 - Further examination of the issue of medicines use reviews and pharmacist prescribing schemes may be merited, given their prominence in both the survey (80% would like to provide MURs) and the interviews, where both of these issues were key themes in what pharmacists want to see in community pharmacy in the future;
 - When looking at the development of further services, it would be helpful to take into account the influencing factors identified in our analysis and to focus on ways to encourage the provision of enhanced pharmacy services by those who are currently under-represented in the provision of, or appetite to provide, such services;
 - The PSI might consider looking at how it can support pharmacists in developing new services. Potential mechanisms include the development of standards, the design of specific training programmes, and credentialing and privileging of "specialist" pharmacists or pharmacies to ensure that enhanced services are delivered according to specified standards;
 - Some of the data contained in this report has been superseded by the imminent development of, for example, mandatory CPD requirements and the establishment of the Institute of Pharmacy which will manage the new CPD system and also support the development of pharmacy practice; readers will therefore note that some of the data reported herein is now historical, and the PSI will no doubt wish to consider our findings as part of the implementation of these new arrangements.
- 15.** We recommend that there would be considerable merit for the PSI to repeat this survey (both quantitative and qualitative) in 2015, to track any changes which have occurred in the intervening 4 years, so that trends can be identified, changes in practice and perception tracked, and the impact of interventions or initiatives assessed.

1 INTRODUCTION

1.1 BACKGROUND

The Pharmaceutical Society of Ireland (PSI) commissioned Horwath Bastow Charleton (HBC) in late 2009 to conduct a study to provide an understanding of the nature and type of pharmacy services currently being delivered in Ireland, and to review and report on the international profile of the standards of pharmacy service and care delivery. HBC was assisted in this project by Webstar Health, a specialist pharmacy consultancy in the UK, and by senior academic pharmacists in the University of Central Lancashire (UCLan).

The first phase of the study was intended to focus on the provision of core and extended pharmacy services in Ireland, providing baseline information for the PSI to enable it to understand the nature and scope of pharmacy provision nationally, to identify strengths and weaknesses in the sector, and to develop future policy to improve and implement change for pharmacy provision in Ireland.

The second phase was designed to be an international review study, examining pharmacy provision and regulation in other EU countries, Australia, Canada, New Zealand and other countries as identified, seeking to identify and analyse the nature and scope of pharmacy provision, best practice, policies and practice in relation to performance management, and how pharmacy provision fits within the wider health and social care sector in each comparator country.

1.2 TERMS OF REFERENCE

The PSI required the preparation of a survey questionnaire to be issued to all pharmacies. The objective of the survey was to collect information on the core/basis and extended/additional pharmacy services in Ireland, including but not limited to the following:

- Pharmacy and staff profiles;
- Education and continuing education activities undertaken by registered pharmacists and other staff;
- Prescription medicines-related activities, including but not limited to:
 - Residential Home Supply;
 - Monitored Dosage System use and supply;
 - Methadone dispensing;
 - Fertility treatment dispensing;
- Non-prescription medicines related activities;
- Medication review processes;
- Type and nature of additional pharmacy services provided e.g. delivery services;
- Barriers identified to the provision of additional pharmacy services;
- Information facilities provided;
- Health Screening Services including but not limited to:
 - Weight management clinics;
 - Point of care testing e.g. diabetes, cholesterol, pregnancy;
 - Harm minimisation services e.g. smoking cessation;
 - Alternative or complementary medicines.

The second phase (international comparative review, report and analysis) was intended to assess available robust information for other countries on the parameters identified above.

During the course of the project, we had an ongoing and very productive process of engagement with the PSI and the Steering Group established to oversee the study. This resulted in certain agreed changes being made to the approach and the timescales, all of which are reflected in this final report.

1.3 METHOD OF APPROACH

It was agreed with the Steering Group and PSI to carry out the data collection in two ways:

- **A census survey** of all community pharmacies (that is, 100% of the population) collecting structured data on pharmacy activity, staffing, infrastructure, etc;
- **A follow-up interview** with approximately 40 community pharmacies across the country, examining more qualitative issues in relation to the future development of pharmacy services, areas in which pharmacists would like to see change, inter-professional relationships, CPD, and so on.

The census survey was designed to be administered by a mix of a web-based survey and a paper-based version; pharmacies were encouraged to complete the survey online if they had the capability to do so, but had the option to complete the paper version if not.

We engaged expert input from Dr John Newell, a biostatistician at NUI Galway, in order to ensure validity and accuracy of the statistical aspects of the research.

Follow-up interviews were conducted in the majority of instances by phone, with a small number being undertaken in face-to-face interviews.

The survey data was collated using SPSS, and the qualitative interview data by NVivo qualitative analysis software, with the overall information (facts, findings, analysis) compiled into this Emerging Findings report for the consideration of the Steering Group.

1.4 QUANTITATIVE SURVEY

1.4.1 Background

Following an extensive preparatory period which involved significant engagement with the Steering Group, the quantitative survey commenced in late June 2010, with an initial deadline of 16 July 2010. Emails were issued to pharmacists inviting them to participate using individual tokens (passwords) to access the online survey. Paper versions were issued to those who could not be contacted by email and those who requested hard copies. A total of 146 paper surveys were issued at this stage. The paper version of the survey is attached as Appendix 1.

1.4.2 Response Rate

The total response rate (457 surveys) is 28% (not including incomplete submissions), which gives us a good margin over the agreed target of 20% necessary to have confidence in the results.

The geographic breakdown in late July indicated that some counties were under-represented. It was decided to target the counties with the lowest response rates, i.e. those with lower than 15% response rates, and to send out paper versions to those pharmacies in each of the relevant counties (Carlow, Cavan, Laois, Limerick, Louth, Roscommon, Sligo, and Westmeath) who had not already completed the survey.

A total of 220 paper surveys were issued to the targeted counties, improving the response rate considerably in most of the target areas: all counties now have a response rate of 15% or higher and only two counties (Longford and Roscommon) fall below a 20% response rate.

1.5 QUALITATIVE INTERVIEWS

The project interviewed community pharmacists to gain more insights about the issues covered in the survey. It was anticipated that it would be possible to reach data saturation (i.e. no new themes emerging) with participation from approximately 40 pharmacists. We conducted 40 interviews and are confident that we have captured the full range of opinion

from pharmacists, with the latter interviews clearly covering similar themes to those discussed in earlier consultations.

Recruitment: Pharmacists who completed the survey were asked if they would be happy to undertake a follow-up interview. A final question was included in the survey, both online and paper versions (text below).

We plan to interview approximately 30 pharmacists following this survey, in order to explore emerging issues in more detail. If you would be happy for an interviewer to contact you with more information about the interview, please put your name and preferred telephone/fax contact number here. This personal information will not be reported with the survey data.

[Fields for name and telephone/fax number]

If you do not hear from us by [put appropriate date here], then thank you for your interest but an interview will no longer be necessary.

Approximately 90 pharmacists had agreed to be contacted in this way, giving us ample opportunity to reach our target interview figures.

Volunteers were followed up by phone and interviews arranged. Participants were sent information sheets and returned consent forms by fax or email; alternatively, they verbally consented to participate at the outset of the interview.

A semi-structured interview topic guide was prepared (attached as Appendix 2). Most interviews were conducted along this basic structure, sometimes altering the order in which sections were discussed, following the lead of the interviewee, sometimes encouraging interviewees to expand on certain areas or omitting irrelevant questions if appropriate to the specific pharmacist being interviewed.

We conducted a small number of pilot interviews, set up as a teleconference so that one of the UCLan team could listen in and debrief with the interviewer. One question – which related to payment for technological data transfer – was dropped as it did not make sense in the context of the interview.

The recordings were passed to our secretarial team for verbatim transcription. The HBC/UCLan team checked and anonymised the transcripts. Each transcript has an anonymised participant code. Each recording will be stored securely until the end of the project and then erased.

We used a framework approach to analysis that was heavily informed by the domains we identified and the questions we asked.

1.6 INTERNATIONAL LITERATURE REVIEW

1.6.1 Scope of the International Literature Review

The terms of reference for the Baseline Study issued by the PSI required us to compare the results of the survey with past work in pharmacy in countries with similar contexts. These countries were originally identified as Australia, Canada, Great Britain, New Zealand and South Africa. This element of the literature review was rescheduled to an earlier part of the project in order to inform the development of the online survey of pharmacists.

1.6.2 Framework Development

Discussion between the members of the review team, drawing on their experience of similar surveys in pharmacy in England, resulted in the implementation of a framework within which we could describe the common elements of the papers that were included. The domains are:

- premises;
- workforce;
- services;
- CPD/education;
- inter-professional relations; and
- technology.

This framework also reflected the content of the PSI scoping documents, and the first draft of the pharmacy survey.

1.6.3 Strategy for Finding Comparator Papers

We recognised that the outputs for similar pharmacy projects were as likely to be reports lodged on organisational websites as peer-reviewed publications. We took a pragmatic approach to the review that would explore both types of publication.

We used a broad search term – ‘community pharmacy services survey’ – in two major internet search engines – Google UK and Bing UK – and then examined the summary of each item on the first ten pages of results for each engine. If the summary looked relevant, we followed the link and examined each paper. Inclusion criteria were:

- published since the year 2000;
- English language;
- community pharmacy focus;
- survey or interview methodology;
- community pharmacists and/or commissioners of services as respondents.

Patient surveys about community pharmacy were not included.

We also searched the International Journal of Pharmacy Practice and International Journal of Clinical Pharmacy (formerly Pharmacy World and Science) online archives (2003-2010) using the term ‘community pharmacy services’¹.

We approached professional organisations and selected pharmacy schools by email in Australia, Canada, New Zealand, South Africa and the US². Responses resulted in the identification of two further publications of interest, a reference to a document we had already found, and a response from New Zealand that they too would be publishing a review of enhanced services next year.

Nineteen relevant outputs were identified. We found that the majority of publications were represented in the search results of both engines. A summary of the included outputs is below:

- 6 reports and 13 peer-reviewed publications (some of which could be linked back to an underpinning report);
- Outputs from different countries as anticipated;
 - Australia (6), Canada (2), England/Wales (2), Other Europe (3), USA (6)

¹ Second search strategy, truncated from ‘community pharmacy services survey’ as this only retrieved 20 items, none of which were relevant to the search.

² American Association of Colleges of Pharmacy; Australian College of Pharmacy Practice and Management; Pharmaceutical Society of Australia; Canadian Pharmacists Association; Pharmaceutical Society of New Zealand; Pharmaceutical Society of South Africa.

- Some outputs covered a number of domains – others were more focused (see table overleaf in Section 1.8).

1.7 STRUCTURE OF THE REMAINDER OF THIS REPORT

The report is structured along the key themes or domains identified during the project as the main areas of interest both from the perspective of the PSI and the Steering Group and from the international research findings.

We introduce the survey findings by looking at the key statistics relating to the profile of the pharmacists who responded to the questionnaire. We then examine the seven domains as follows:

- Services;
- Premises;
- Technology;
- Workforce;
- Continuing Professional Development and Continuing Education;
- Inter-professional Relationships;
- Overall Themes from Survey and Interviews.

The last category arose during the course of our research and represents the views in relation to overarching themes expressed in the opinion questions in the survey and during the course of the interviews. A key element relates to the organisations impacting on pharmacy practice in Ireland: the PSI, the IPU, the HSE, the Department of Health and Children, and so on.

Within each domain, we have presented the findings from the quantitative questionnaire and the qualitative interviews, and any relevant illustrative material from international research.

These findings then lead us to our Conclusions and Recommendations to the PSI in respect of the research.

1.8 SUMMARY OF OUTPUTS RETRIEVED AND THE DOMAINS IN WHICH THEY HAVE USEFUL COMPARATOR INFORMATION

Table 1: Outputs from International Review

Output	Premises	Workforce	Services	CPD/education	Inter-professional	Technology
ACT Pharmacy Guild of Australia	X	X	X			
Berbatis et al. 2003 (AUS)	X	X	X	X	X	X
Berbatis et al. 2007 (AUS)	X	X	X	X	X	X
Blenkinsopp et al. 2007 (UK)	X	X	X	X	X	X
Bradley et al. 2006 (UK)			X			
Doucette et al. 2006 (USA)	X	X	X			X
Feletto et al. 2010 (AUS)	X	X	X	X	X	X
Gadkari et al. 2009 (USA)	X	X	X			
Hansen et al. 2006 (USA)			X			
Hughes et al. 2010 (Europe)	X	X	X	X		
Management Committee, CPhA 2008 (Canada)	X	X	X	X	X	X
McKesson 2008 (Canada)	X	X	X		X	
Peacock et al. 2007 (USA)	X	X	X	X	X	
Radford et al. 2009 (USA)			X			
Roberts et al. 2006a (AUS)	X	X	X	X	X	X
Roberts et al. 2006b (AUS)	X	X	X	X	X	X
Skrepnek et al. 2007 (USA)	X	X				
Westerling et al. 2010 (Finland)		X				X
Zardain et al. 2010 (Spain)		X	X	X	X	X

These papers are explored in more detail, including a summary of methods and response, in Appendix 3.

2 PHARMACIST PROFILES FROM SURVEY

2.1 INTRODUCTION

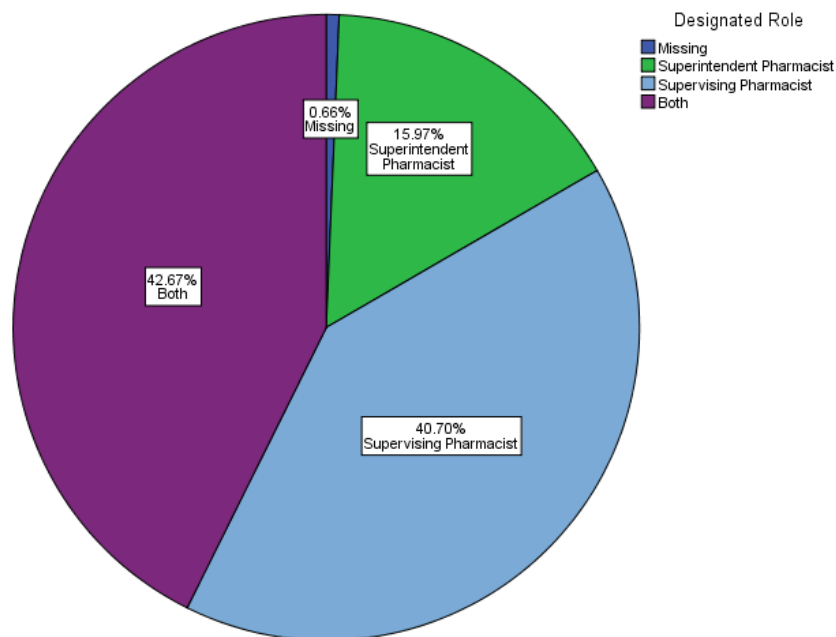
One questionnaire was completed per pharmacy, and we requested that this be completed by the Supervising Pharmacist where possible, or by the Superintendent Pharmacist if needs be. The following sections outline the profile of the pharmacists completing the survey.

2.2 ANALYSIS OF DATA

2.2.1 Designated Role

The vast majority (more than 83%) of respondents held the role of Supervising Pharmacist or both Supervising and Superintendent Pharmacist. Those who were Superintendent but not Supervising Pharmacists comprised nearly 16% of responses, with a very small number who did not specify their role.

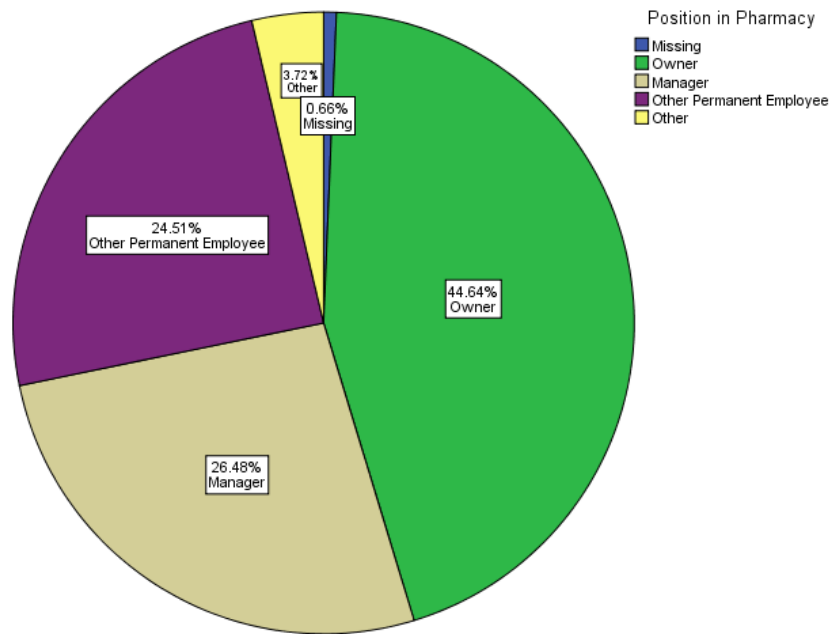
Figure 1: Designated Role



2.2.2 Position in Pharmacy

When looking at the position in the pharmacy of the respondents, we found that nearly half (45%) of them were the pharmacy owner, just over 26% were the manager, and just under 25% were another permanent employee, with nearly 4% categorising themselves as "Other".

Figure 2: Position in Pharmacy

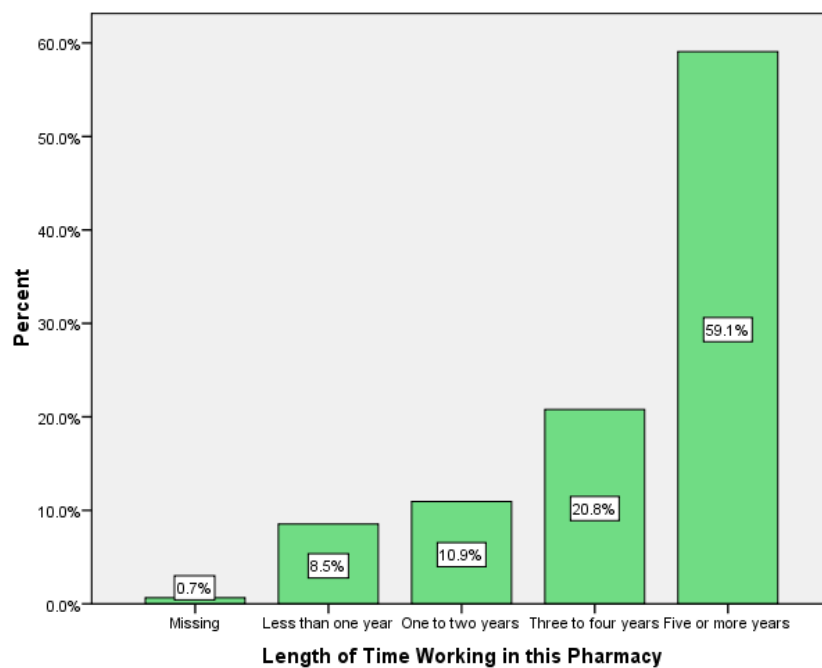


Those ticking the “Other” category expanded on this: several were both owners and managers, many were part-owners, directors, or partners in the pharmacy, and some were managers of one aspect of the pharmacy but not the overall business manager.

2.2.3 Length of Time Working in the Pharmacy

We asked the responding pharmacists to indicate how long they had been working in this particular pharmacy. Well over half (59%) responded that they had been working in the pharmacy for more than five years, with the next largest response (21%) indicating that they had worked for between three and four years in that pharmacy.

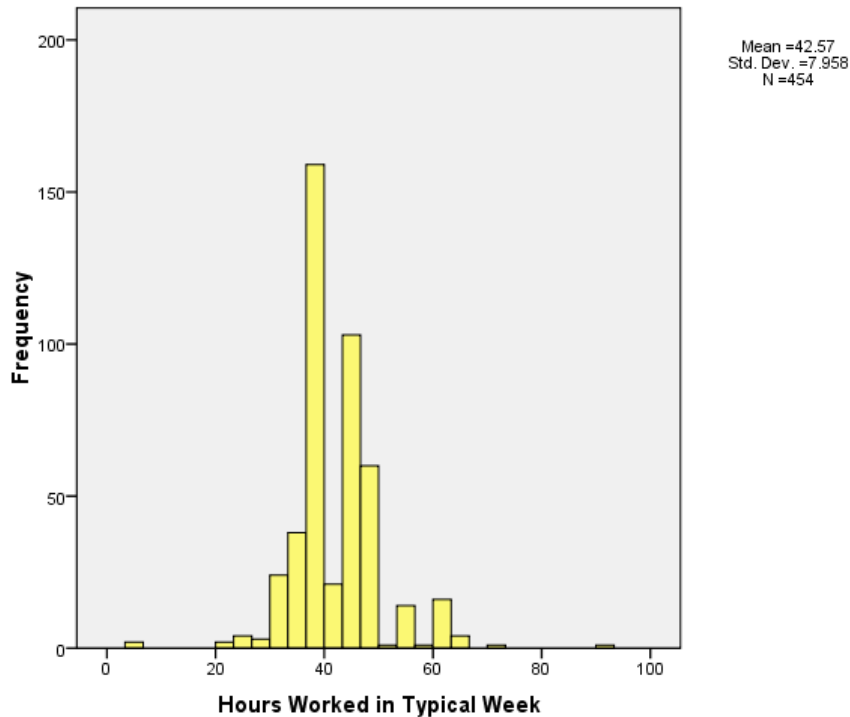
Figure 3: Length of Time Working in this Pharmacy



2.2.4 Hours Worked in a Typical Week

Pharmacists were asked to outline their typical working hours on a weekly basis. The average (mean) hours in a typical week for the respondents was 42.6, with the most common response (mode) being 40 hours per week. The range was 4-90 hours. The following graph shows the distribution of responses to this question.

Figure 4: Hours Worked in a Typical Week



2.2.5 Other Pharmacy-Related Activity

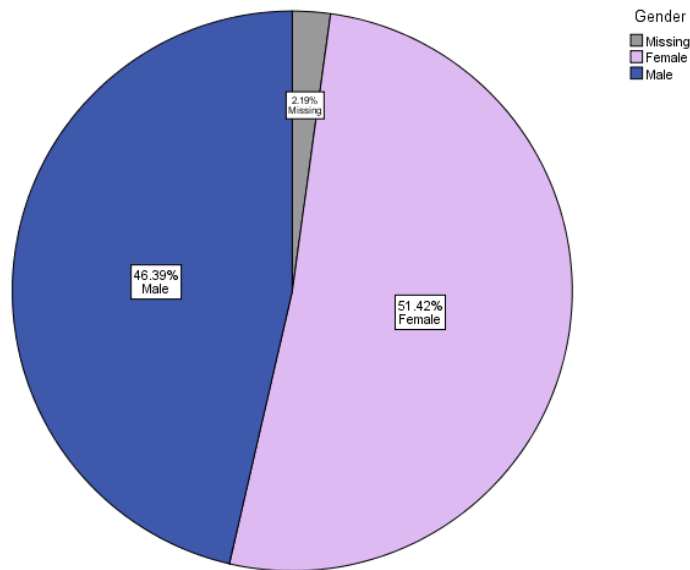
We asked participants to indicate if they undertook pharmacy-related activity other than their work in the pharmacy in question. More than 77% of those who responded to this question stated that they did not undertake such activity, with 22.6% indicating that they did so.

In expanding on what work they do outside their own pharmacy, many worked in other pharmacies as a locum or providing cover for another pharmacy within the group or chain, both regularly and ad hoc. Many were involved in the CPD/CE aspect, developing, reviewing, and/or delivering modules for the ICCPE, IPU, and others. Others were involved in the PSI and/or IPU activities, and some mentioned contributing articles to pharmacy publications such as the IPU magazine.

2.2.6 Gender

The following graph shows the gender breakdown of the respondents: while a little over 2% did not answer the question, 51.4% were female and 46.4% were male.

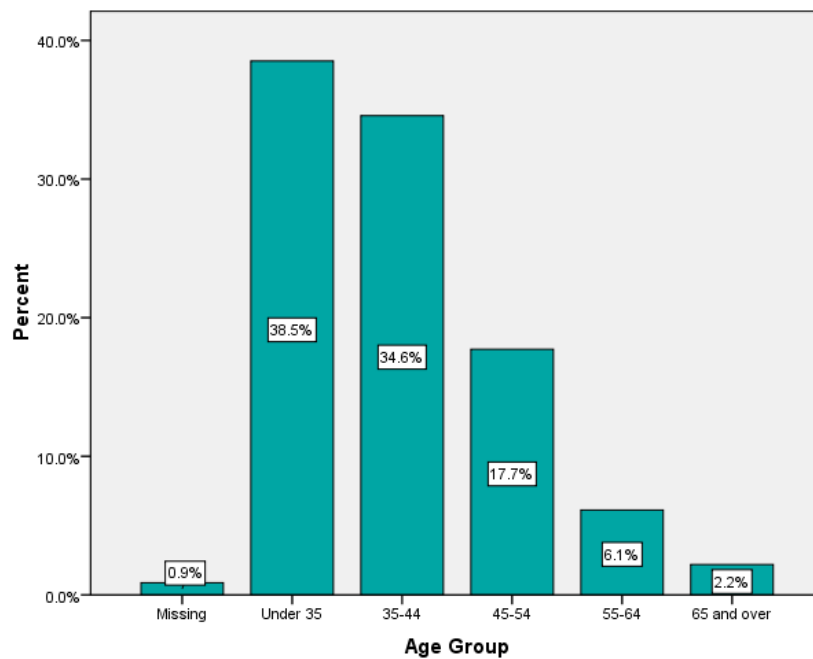
Figure 5: Gender



2.2.7 Age Group

Participants were asked to indicate their age group. The following graph illustrates the responses. The biggest category represented was those under 35 (almost 39%), with the second-biggest group being those between 35 and 44 (35%).

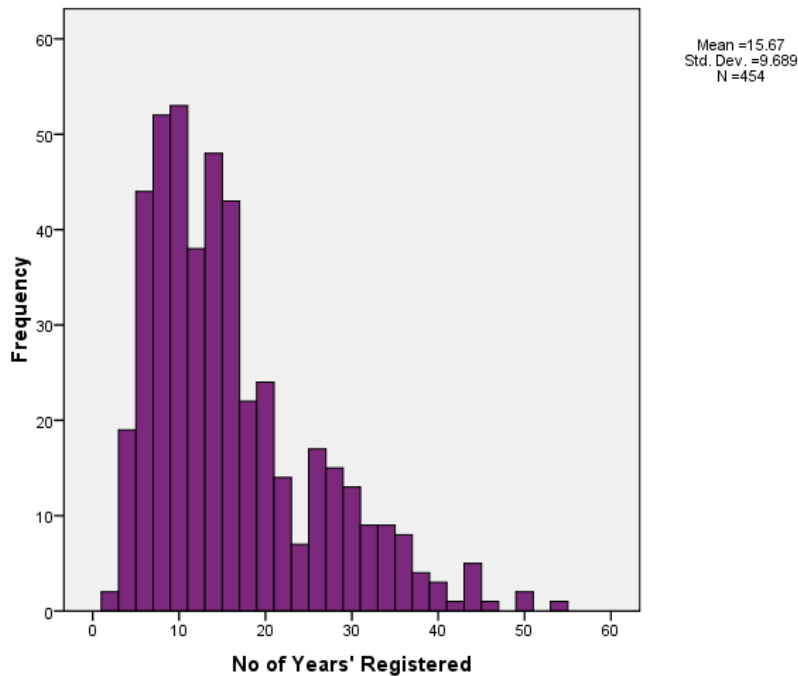
Figure 6: Age Group



2.2.8 Number of Years Registered

We asked the respondents to indicate how many years they had been registered as a pharmacist. The average (mean) was more than 15 years, with the most common response being 10 years. The minimum was 2 years and the longest time that a survey respondent had been registered was 53 years. The following histogram shows the distribution:

Figure 7: No. of Years' Registered



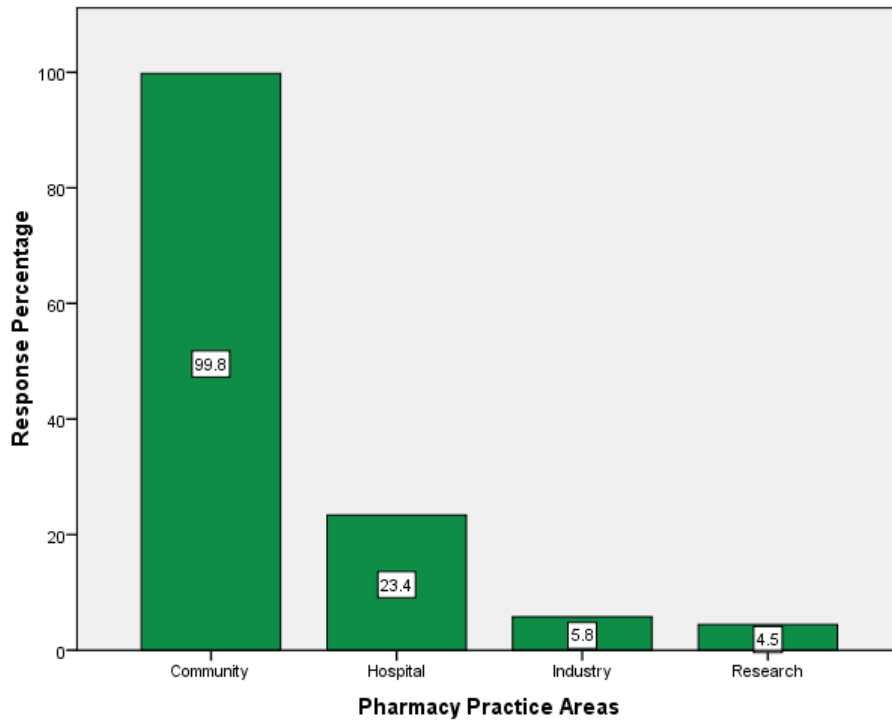
2.2.9 Institution where Pharmacy Degree Undertaken

When asked which institution awarded the respondents their primary pharmacy degree; of those who responded, 37% undertook their degree at TCD, 43% at UCD, 5% at the former College of Pharmacy in Shrewsbury Road, and 0.2% (1 respondent) at UCC. The others received their degrees from institutions outside Ireland, with 5.5% stating that their degree was from a Northern Irish school of pharmacy, 38% from other UK schools of pharmacy, a little over 5% from other EU institutions, and 2% from outside the EU.

2.2.10 Areas of Pharmacy Practice

Respondents were asked to tick all of the relevant areas of pharmacy in which they had practised. Unsurprisingly, all (except one), 99.8%, included community pharmacy, 23.4% indicated they had undertaken hospital pharmacy, 5.8% had worked in industry, and another 4.5% in research. (Note that the percentages do not add up to 100% because respondents could choose more than one option.) The graph below illustrates the responses.

Figure 8: Pharmacy Practice Areas



2.2.11 Representative Nature of Survey Responses

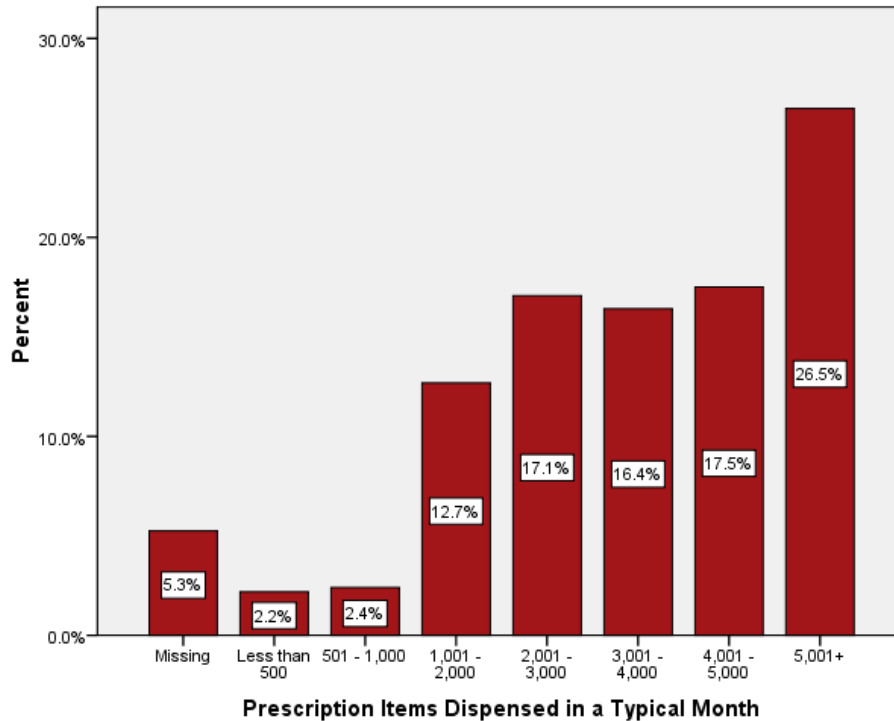
The PSI compared the profile of the survey respondents with the profile according to the PSI's register (in terms of age, geographic distribution, etc) and they are closely matched. This gives confidence that the respondents comprise a representative sample of community pharmacies and community pharmacists and consequently that their responses can be taken to represent the views of the full population of community pharmacy.

3 SERVICES

3.1 PHARMACY ACTIVITY

In order to gauge typical core pharmacy activity, we asked pharmacists to indicate how many prescriptions they dispensed in a typical month. More than a quarter, 26.5%, had prescription dispensing numbers in excess of 5,000 per month, as shown in the graph below:

Figure 9: Prescription Items Dispensed in Typical Month



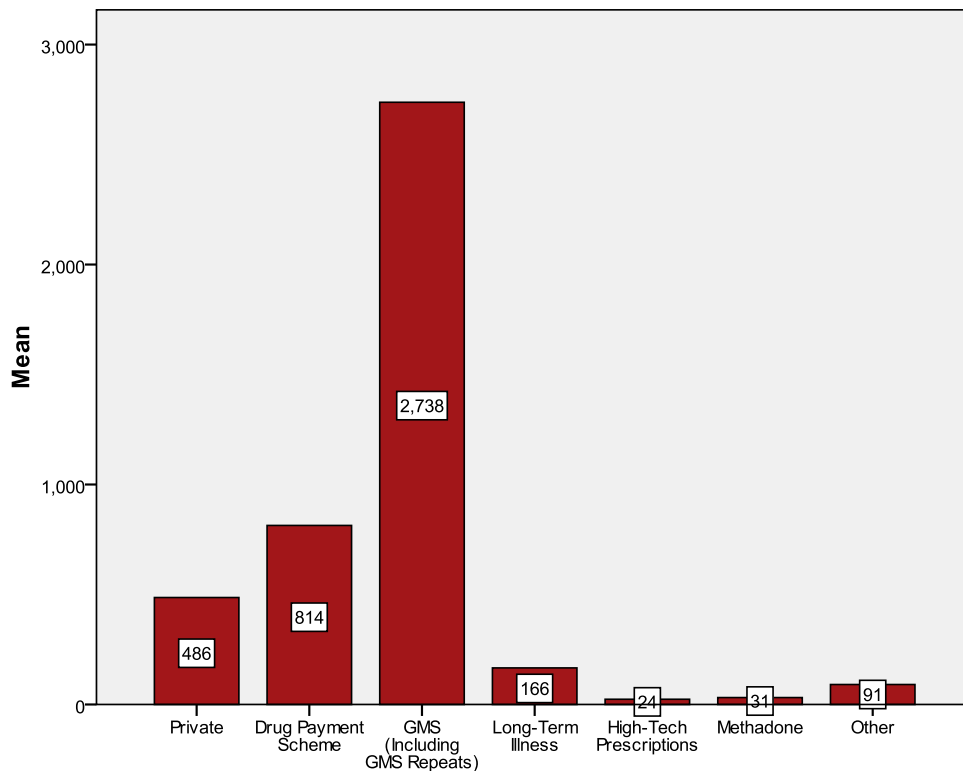
International Comparison Notes:

In Ireland, Germany and Switzerland there was a significant positive relationship between pharmacists' Behavioural Pharmaceutical Care Scale (BPCS) scores and the total number of dispensed items per day (Hughes et al, 2010).

Other work in US non-urban locations in 2005, however, found an association between providing drug therapy services and lower workload per pharmacist (Gadkari 2009).

We then asked pharmacists to indicate the breakdown of their prescription dispensing activity by giving the figures for a typical month for each of a number of categories, including private, DPS, GMS, LTI, high-tech, and so on. The following graph shows the mean number of prescriptions within each category. We can see from the chart that GMS prescriptions represent the largest numbers for pharmacies' dispensing activity.

Figure 10: Average Prescriptions Dispensed in Certain Categories



The responses relating to the “Other” prescription category included veterinary prescriptions, those issued under schemes like the hardship scheme or for EU nationals, psychiatric prescriptions, hospital emergency prescriptions, and dental prescriptions.

3.2 RESIDENTIAL CARE SETTINGS

We asked respondents to tell us whether they provided services to residential care settings. Of those who responded to the question, 32.7% did provide services to settings of this kind.

International Comparison Note:

The comparable rate in England for the provision of services to the broad, self-defined category of residential care settings was 18.4% in 2006 (Bradley et al 2006).

Participants were then asked to expand on the types of care settings and the types of services provided to such settings. Nursing homes represented the most common type of care setting served, with other residential care homes (such as residential units for people with intellectual disability) the next biggest category. No respondent indicated that they provided services to prisons, with only a handful offering services to homeless hostels and other care settings (3 and 4 respondents respectively). The average number of nursing homes served by those who provide pharmacy services to such settings was 2.4; this may be skewed by the maximum but by no means typical figure of 49.

Similarly, when asked to indicate the numbers of patients served by the pharmacy within residential care settings, the highest numbers relate to nursing home patients. The average number of nursing home patients to whom services are offered is 63; most commonly pharmacies serve 20 patients per nursing home. The mean average is again influenced by the high maximum figure of 1,245. The average number of patients in other residential care settings is 19; the two pharmacies who gave details about their services to homeless hostels

indicated respective patient figures of 41 and 50; and “other care settings” averaged 18 patients.

In terms of the services provided, respondents indicated that they dispensed prescriptions to patients in residential care settings as the most common service, followed by the provision of advice, then monitored dosage systems, and medication reviews.

3.3 PROVISION OF ENHANCED PHARMACY SERVICES

A key element of the Baseline Study was to examine the current service offering within pharmacies across the country, with a particular emphasis on the extent of the provision of enhanced pharmacy services. We defined enhanced pharmacy services within the questionnaire as follows: “An enhanced pharmacy service refers to a service implemented in pharmacies that is additional to or not routinely provided with prescribed or non-prescribed medicines. The service is often characterised by facilities and/or devices dedicated to the service and staff who are competent or formally trained and for which a private fee may or may not be charged.”

The following table outlines the numbers of respondents and the percentage they represent of those who responded to the question for each of a range of enhanced pharmacy services.

Table 2: Enhanced Pharmacy Services

	Provide currently		If not currently provided, would like to provide in future		If not currently provided, would not like to provide in future	
	No.	%	No.	%	No.	%
Disposal of Unwanted Medicines	426	94.5%	22	4.9%	3	0.7%
Monitored Dosage Systems	399	90.7%	25	5.7%	16	3.6%
Home Delivery Services	224	54.9%	85	20.8%	99	24.3%
Supervised Methadone Service	140	36.1% ^a	74	19.1%	174	44.8%
Needle Exchange	10	2.7% ^d	128	35.1%	227	62.2%
Fertility Treatment Dispensing Services	240	60.5%	127	32.0%	30	7.6%
Veterinary Pharmacy Services	104	26.5%	126	32.1%	162	41.3%
Advice and Supply to Residential Care Homes	120	29.6% ^c	222	54.8%	63	15.6%
Palliative Care	201	48.6%	193	46.6%	20	4.8%
Structured Medicine Use Reviews	59	14.3% ^d	331	80.0%	24	5.8%
Structured Smoking Cessation Services	76	17.7% ^e	337	78.4%	17	4.0%
Nutrition / Exercise	96	22.9%	293	69.9%	30	7.2%
Obesity / Weight Management	168	39.1% ^f	238	55.3%	24	5.6%
Sexual Health	21	5.2%	329	81.0%	56	13.8%
Blood Pressure Screening	208	47.5%	201	45.9%	29	6.6%
Lipid/Cholesterol Screening	47	11.1%	324	76.4%	53	12.5%
Diabetes Screening	72	17.0%	307	72.6%	44	10.4%
Weight/Height/BMI Assessment	246	56.8%	163	37.6%	24	5.5%
Lung Capacity Screening	14	3.3%	343	81.9%	62	14.8%
Osteoporosis Screening	8	1.9% ^g	327	79.0%	79	19.1%
Pregnancy Testing	12	2.9%	285	68.8%	117	28.3%
PSA (Prostate-Specific Antigen) Screening	0	0.0%	326	79.3%	85	20.7%

International Comparison Notes:

- ^a The comparable figure for methadone in: England is 31.1% (Bradley et al. 2006).
- ^b Needle exchange service provision in England is 15.7% (Bradley et al. 2006).
- ^c The residential care homes services figure for England is 18.4% (Bradley et al. 2006).
- ^d The figure for medicines use reviews (MUR) in England, which may differ from the service in Ireland, is 1.4% (Bradley et al. 2006).
- ^e Figures for smoking cessation services are 35.8% for England and 19% for Australia (Bradley et al. 2006 and Berbatis et al. 2007 resp.). While it is our opinion that smoking offers the best comparison, the studies were done at different times so this limits comparison somewhat.
- ^f The comparable figure for obesity/weight management services in Australia is 8.7% (Berbatis et al. 2007).
- ^g The osteoporosis screening figure for Australia is 6.6% (Berbatis et al. 2007).

It is interesting to note that the first two services, disposal of unwanted medicines and monitored dosage systems, at 95% and 91% respectively, are so widely provided as to make them effectively core services in Irish pharmacies. Monitored dosage systems were noted in the qualitative interviews as having increased in prominence in recent years (see Section 3.8 below).

Participants were also asked to indicate any services not mentioned that they currently provide in their pharmacies, and to suggest additional services they would like to provide. Some of the services being provided currently include inhaler technique for asthmatic patients, stoma care, measurement for compression hosiery, and food allergy testing. Services that pharmacists would like to see in place include vaccinations, INR blood testing for Warfarin patients, and pharmacist prescribing.

3.4 EXAMINING THE FACTORS RELATING TO THE PROVISION OF ENHANCED SERVICES

3.4.1 Introduction

Arising from the qualitative interviews, we identified three of the diagnostic services above, blood pressure screening, cholesterol screening, and diabetes screening as representative of the types of services many perceive as potential enhanced pharmacy services. We have undertaken further analysis on the potential influences on the provision or appetite to provide such services in terms of variables such as the age of the pharmacist, the location (city versus small town, etc), and the mix of prescription types (i.e. the percentage of GMS patients). The analysis has been undertaken on variables created by combining the responses to the question regarding whether pharmacists currently provide or would like to provide one or more of the three diagnostic services concerned, and was conducted by Dr John Newell, a biostatistician in NUI Galway. A summary of his findings follows; the full analysis is contained in Appendix 4.

3.4.2 Analysis

Data were provided from a sample of 457 pharmacies in Ireland where interest was in identifying those explanatory variables (of the eight provided) that were useful predictors of whether a pharmacy already provides enhanced services or are willing to do so.

Initially, an analysis of the usefulness of each explanatory variable separately was performed (using the Chi square test or two sample t-test as appropriate). Pharmacy Location, Pharmacy Type, and % GMS Prescription Percentage were identified as potentially useful predictors of provision of enhanced services. Pharmacy Location, Pharmacy Type, and

Pharmacist's Age were identified as useful predictors of willingness to provide enhanced services.

Further analysis was undertaken using Logistic Regression and Classification Tree methodologies to explore the relationships further. In the former approach, the odds of a pharmacy providing or being willing to provide enhanced services is modelled as a function of the explanatory variables where the main aim is to identify the minimally useful subset of explanatory variables. Initially, a full model (i.e. including all explanatory variables and their interactions) were fitted. Variable selection procedures were then used to identify which variables can be dropped from the model as deemed unnecessary.

The second approach considered involved fitting Classification Trees to uncover structure in the sample provided that may be reflective of real effects in the population of pharmacies of interest. Tree-based procedures should be interpreted with care, however, as they are data driven approaches and all results uncovered should be considered as exploratory. Trees were fit and pruned using recursive partitioning, chi square automatic interaction detection and conditional trees approaches

3.4.3 *Current Provision of Sample Enhanced Services – Predictors*

When considering factors that are likely to predict whether a pharmacy, in the population of interest, provides enhanced services or not, logistic regression identified that **Pharmacy Type is an important predictor**. Pharmacies with 6 or more outlets were twice as likely to provide enhanced services compared to single-outlet pharmacies, with little difference between pharmacies with 2-5 outlets and single pharmacies.

The **Location of the pharmacy is an important predictor** also: pharmacies in mid-sized towns were identified as being half as likely to provide enhanced services compared to pharmacies in cities.

There was also a suggestion, based on the use of Classification Trees, that **percentage of GMS Prescriptions may also be a useful predictor**, where a pharmacy with less than 26% of GMS Prescriptions is more likely to provide enhanced services.

3.4.4 *Willingness to Provide Sample Enhanced Services – Predictors*

Logistic Regression identified that **younger pharmacists (44 and younger) are more likely to be willing to provide enhanced services** compared to older pharmacists, **as are pharmacies that are part of 2-5 outlets**. Classification Trees suggested that information relating to the **percentage GMS prescriptions a pharmacy has is important also**, with willingness to provide enhanced services increasing with increasing percentage but only in the large and small pharmacies.

3.5 INTERNATIONAL FINDINGS RELATING TO THE DEVELOPMENT OF PHARMACY SERVICES

Through the results sections of the report (commencing at Section 3.8.3), international studies in related fields will be presented as a series of 'international vignettes'. It is recognised that direct comparison is limited between initiatives in countries that differ in terms of pharmacy and health services infrastructure, and payment systems. These vignettes will illustrate relevant and complementary issues that have been explored in other pharmacy contexts.

3.6 TIME SPENT ON PHARMACY ACTIVITIES

We asked respondents to identify how much time they spend in a typical week on a range of pharmacy activities. The activity taking the most time in a typical week was dispensing prescription medicines, identified by 81.2% of respondents as taking most of the time on most days. Other key activities in terms of the time typically spent being 'most or some of the time on most days' were counselling prescription patients (94%); counselling non-prescription

patients (89%), and giving advice about minor illness (90%). Significant time is also spent on stock management and administration duties.

The activities with less impact on time for pharmacies included attending health-related meetings; CPD activities; audit and practice research; and adverse drug reaction reporting/follow-up.

“Other” activities taking up time were stated as paperwork, house calls/home delivery, visiting local GPs, communicating with and advising nursing homes, and dealing with ad hoc queries from patients when out and about.

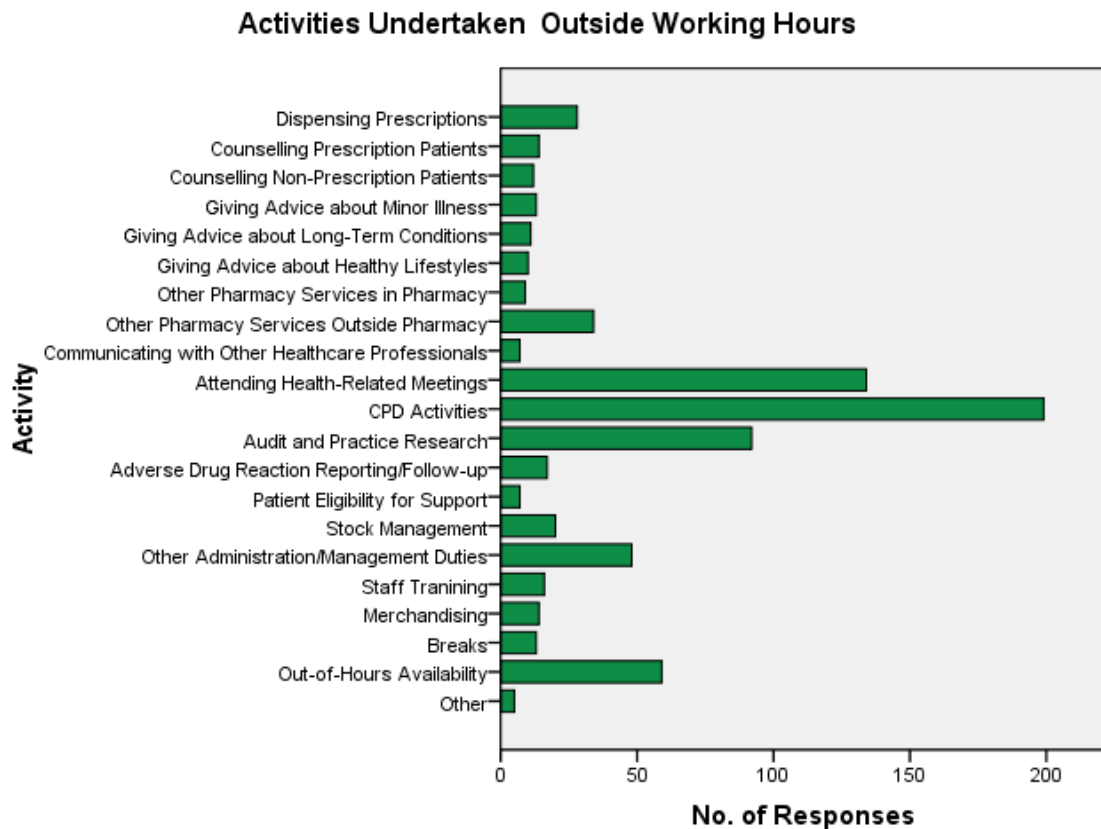
The following table illustrates the responses to this question, showing the number and percentage of responses in each category.

Table 3: Time Spent on Pharmacy Activities

Activity	Most of the time on most days		Some of the time on most days		Some of the time on some days		Little time on few days		Never	
	No.	%	No.	%	No.	%	No.	%	No.	%
Dispensing Prescriptions	366	81.2%	82	18.2%	3	.7%	0	.0%	0	.0%
Counselling Prescription Patients	152	33.6%	273	60.3%	21	4.6%	6	1.3%	1	.2%
Counselling Non-Prescription Patients	94	20.8%	307	68.1%	44	9.8%	5	1.1%	1	.2%
Giving Advice about Minor Illness	89	19.8%	315	70.0%	37	8.2%	9	2.0%	0	.0%
Giving Advice about Long-Term Conditions	42	9.4%	196	43.9%	157	35.2%	51	11.4%	0	.0%
Giving Advice about Healthy Lifestyles	34	7.6%	129	29.0%	176	39.6%	98	22.0%	8	1.8%
Other Pharmacy Services in Pharmacy	7	1.6%	62	14.3%	116	26.8%	181	41.8%	67	15.5%
Other Pharmacy Services Outside Pharmacy	6	1.5%	24	6.0%	45	11.3%	104	26.1%	220	55.1%
Communicating with Other Healthcare Professionals	23	5.2%	154	34.7%	160	36.0%	97	21.8%	10	2.3%
Attending Health-Related Meetings	1	.3%	7	2.0%	72	21.1%	159	46.5%	103	30.1%
CPD Activities	1	.3%	23	7.7%	124	41.5%	142	47.5%	9	3.0%
Audit and Practice Research	3	.8%	25	6.6%	129	34.3%	188	50.0%	31	8.2%
Adverse Drug Reaction Reporting/Follow-up	11	2.6%	31	7.2%	80	18.6%	259	60.1%	50	11.6%
Patient Eligibility for Support	18	4.1%	85	19.3%	160	36.3%	154	34.9%	24	5.4%
Stock Management	96	21.5%	248	55.6%	79	17.7%	23	5.2%	0	.0%
Other Administration/ Management Duties	90	21.4%	232	55.2%	73	17.4%	21	5.0%	4	1.0%
Staff Training	17	3.9%	80	18.4%	209	48.0%	118	27.1%	11	2.5%
Merchandising	13	3.1%	50	11.7%	134	31.5%	155	36.4%	74	17.4%
Breaks	53	12.4%	107	25.1%	60	14.1%	118	27.6%	89	20.8%
Out-of-Hours Availability	34	8.6%	26	6.5%	56	14.1%	125	31.5%	156	39.3%
Other	4	12.5%	2	6.3%	5	15.6%	3	9.4%	18	56.3%

Respondents were also asked to indicate which activities took up their time outside normal working hours. The main category identified in this regard was CPD activities, along with attending health-related meetings and audit and practice research. The graph below illustrates these responses:

Figure 11: Activities Undertaken Outside Working Hours



3.7 WRITTEN/NON-VERBAL INFORMATION

We asked participants to tell us what written or non-verbal information the pharmacy offered to patients; the vast majority of the respondents indicated that leaflets and referral to websites and/or patient support groups constituted the bulk of the non-verbal information offered.

3.8 QUALITATIVE INTERVIEWS – SERVICES

3.8.1 Change – Past

We started each interview with questions to the pharmacist as to their perception of how pharmacy or their individual practice had changed in the preceding years. There was mixed response to this. **Many suggested that in some ways little had changed, particularly when it came to core dispensing services.** For some, this was evidence that Ireland lags behind other countries when it comes to the development of enhanced services.

“The basic dispensing and looking after the customer hasn’t changed from my experience as a pharmacist. What I am doing now I always did with the patient.”

“I feel that it’s sort of been stuck in a situation that things have not changed in the last number of years.”

Many pharmacists mentioned an **overall increase in the workload in the pharmacy**, arising from an increase in administrative duties (see below) in respect of the requirements of the Pharmacy Act and the reimbursement from the HSE and from the **increase in the range and**

complexity of medicines now being prescribed. The need to keep up with the developments in medicines takes more time now.

“The developments in medicine – as the number and complexity in medicine grows, so I suppose the complex nature of the job increases.”

Several commented on the **increasing level of paperwork**, both in terms of the provisions and requirements of the Pharmacy Act, and the complex reimbursement processes for the various schemes operated by the State. For many pharmacists, this aspect of the job is taking increasing time and resources, which they would prefer to spend counselling patients or developing pharmacy services.

Linked to the increasingly complex range of medicines, pharmacists also noted the marked **increase in the demand for monitored dosage systems** or blister packing, which they provide to patients who need such aids to compliance – mostly elderly or chronically ill patients. Several commented that this had represented a significant increase in time and resources in recent years.

Interviewees mentioned that they are doing **more patient counselling than previously**, again increasing the time spent on dispensing prescriptions to patients. Coupled with the new codeine regulations requiring pharmacists to counsel patients requesting codeine-based products, this results in considerably more time spent at the counter with patients.

The overall pressure on pharmacists in terms of workload is perceived to be greater now than in previous years. This is exacerbated by **the worries many have in relation to the survival of the pharmacy as a business in the current economic climate**. Reductions in fee income and increases in workload mean that many state that they are concerned about the viability of the business aspect of the pharmacy.

3.8.2 Change – Future

We asked pharmacists to describe the changes they would like to see in the future. While much of this response overlapped with, and will be covered in the sections regarding the later questions in respect of services the pharmacist themselves would like to provide, and those they believe should be considered by the pharmacy profession overall, there were some aspects of this question that related to a more general image of what pharmacy should look like in Ireland in future. Many responses were, obviously, the converse of the preceding question: if people felt that the burden of paperwork and regulatory requirements was excessive, then their view of what should change in the future was for these to be reduced; similarly if they feel that pharmacy service is underdeveloped in Ireland, they would like to see progress in this area in the coming years.

3.8.3 Lack of Recognition for Pharmacy

One key issue that pervades almost every interview is the feeling among pharmacists that **their role, skills, knowledge, and practice are underestimated, undervalued, and under-recognised in the current healthcare delivery structure**. Many are concerned at the exclusion of pharmacies from the formation of primary healthcare teams. Pharmacists are angry that their work is measured solely in terms of numbers and types of prescriptions dispensed rather than the quality of their patient interactions or counselling. This relates to several stakeholders: pharmacists feel that the remuneration model is flawed because it fails to recognise areas that pharmacists could and should be contributing to delivering patient care and saving the health system money; many also feel that the PSI looks only at technical aspects of pharmacy practice and does not take into account the patient-centred nature of many pharmacies' activities. Patients, too, can take for granted the easy access to free health and medicines advice.

There is concern among many of the interviewees that **there appears to be no overall plan for how pharmacy should be developed and where it should fit within the delivery of healthcare services to patients**. Many commented that the HSE did not have a clear vision

of where pharmacy should sit within the structure of services, and that without such a vision, the future development of the profession would not be coherent or meaningful. As further explored below, pharmacists feel that there are many ways in which they could contribute to improved patient health, while saving the health system money and resources at the same time, but that this potential was being overlooked and undervalued.

“There is a blockage of mind set within the HSE ... Traditionally we were just seen as dispensers; in their mindset we will always be dispensers.”

“I suppose I’d like to see the things that we do that aren’t recognised being recognised more, in the sense that a lot of what we do isn’t recognised by, say, the people who are providing them, say even things like that. We’re paid sometimes for ridiculous things and then we’re not paid for the things we spend an awful lot of time on, so I would like to see those kinds of things being recognised more.”

“Anything we do is done in isolation; nobody takes any notice of it, it’s not considered as part of any plan.”

International Vignette:

Changes in the community pharmacy contractual framework (CPCF) in England and Wales since 2005 – Enhanced Services (Blenkinsopp et al. 2007)

The evaluation of the new community pharmacy contract explored the growth in commissioning and provision of community pharmacy services. The new CPCF provided a mechanism of paying pharmacists for services other than dispensing. Beyond ‘essential services’, there were tiers of enhanced and advanced services. The main ‘advanced service’, funded centrally with a national specification, was medicines use review (MUR). There was also a suite of enhanced services that could be commissioned, specified and remunerated locally according to the needs of the population – and the aspirations of pharmacists. The evaluation showed that commissioning of cognitive pharmacy services such as repeat dispensing, medication reviews (different from MUR in scope) and management programmes for specific long-term conditions increased sharply after implementation of CPCF in 2005. Other services such as care homes advice and minor ailments showed more modest increases. The evaluation also found that, post-CPCF, only 13% of pharmacies were not providing any enhanced services, and that 43% were providing 3 or more enhanced services.

3.8.4 Current and Future Service Provision

Most pharmacists felt that the work that they are currently doing was of a high standard. The majority are delivering core dispensing and OTC medicine services, along with the retail front-of-shop activities common to most community pharmacies. Some were doing certain enhanced services like smoking cessation, weight management, blood pressure monitoring, etc. A few were doing more advanced blood testing screening and diagnostic services.

The appetite for providing enhanced pharmacy services in future was mixed. Overall, the majority of those we spoke to were keen to provide enhanced services such as health promotion programmes (e.g. weight loss or smoking cessation), and screening, diagnostic and monitoring services like blood pressure measurement, blood sugar testing for diabetes, cholesterol levels, and Warfarin levels. However, there are many who believe that the key skills of pharmacists remain with medicines expertise and core dispensing of prescription and OTC medication. While the former see the expansion into screening, monitoring, and diagnostic testing as a natural extension of the pharmacy practice, the latter group were concerned that such innovations might dilute or devalue the core of pharmacy as a profession, and that promoting such services did a disservice to the existing practice of pharmacy.

“I would do all of those services, blood pressure testing, cholesterol testing, diabetes, blood sugars, all that sort of thing. I’d be very interested in it.”

“I would expect pharmacy services to develop into the future with the new consultation rooms to allow us to, we do already measure blood pressure and BMI, we could do things like cholesterol/glucose testing, INRs for people who are on Warfarin, you know; vaccinations and so on.”

“Any expansion is belittling what is done by pharmacists. The core of pharmacy should be brought up to a much higher level before any type of expansion can even be considered, let alone started.”

"I would prefer to be an expert in that area than to have all the vaccinations and blood pressure taking and the blood testing. My wish would be to develop my core profession."

Almost every pharmacist we interviewed, however, was agreed that pharmacy in Ireland could and should expand into two key areas:

- **medicines use reviews (MURs);**
- **minor ailment schemes:**
 - limited pharmacy prescribing;
 - change of status for several medicines from prescription-only to pharmacist-supervised sale.

Medicines Use Reviews (MURs)

The development of formalised medicines use reviews was mooted by nearly every interviewee. These MURs would, the pharmacists believed, benefit patients, doctors, pharmacists, and the State. By formally reviewing, in collaboration with the GP and/or hospital prescribers, the full range of medicines being prescribed for an individual patient, the pharmacist could, consultees believe, identify overlaps or contra-indications for some medicines, potentially changing, reducing, or reconfiguring the medicines to produce the same or better outcomes for the patient, possibly with fewer side-effects. The obvious benefit to patients aside, MURs would also enable physicians to manage the conditions more effectively, potentially save the State significant amounts of expenditure on medicines, reduce interactions and increase effectiveness – thereby reducing, for example, presentations to hospital or lengths of stay in hospital, and utilise the medicines knowledge and expertise of the pharmacists themselves: as discussed above, something many feel is under-appreciated and under-used in everyday dispensing practice.

It should be noted that the Houses of the Oireachtas Joint Committee on Health and Children's *Report on Primary Medical Care in the Community*³ (February 2010) recommended the introduction of MURs by pharmacies, and the same committee's April 2007 report on *Adverse Side-Effects of Pharmaceuticals*⁴ also endorsed pharmacist MURs.

In a related vein, pharmacists are keen to address the issue of **compliance** among patients, that is, patients not taking their prescribed medicines correctly or even at all. Pharmacists can identify compliance issues with their patients, especially by dint of the simple observation of how often prescriptions are being refilled – if this is less often than the doctor indicated, then the patient may be taking less medication less often than prescribed, with consequently less effective outcomes, further prescriptions (possibly of increased or stronger medication) to try to control the condition, and so on. As with MURs, pharmacists believe that addressing compliance problems helps the patient, the doctor, and the State. Pharmacists commented that it is frequently in the pharmacy that a patient mentions problems with medication, such as side-effects, that may be discouraging the correct use. Those interviewed believed that this presents an opportunity to discuss the importance of compliance with the patient, potentially leading into a full MUR to assess whether some problems could be resolved by tweaking the medication or mix of medications.

International Vignette:

Medication Therapy Management – Profession-wide consensus in the US (Hansen et al, 2006)

Pharmacists in the US have developed a definition of 'medication therapy management' that comprises 9 components. In this survey of pharmacists in North Carolina in 2005, the percentage of pharmacists delivering some/all of these components was as shown in the table below:

³ Houses of the Oireachtas Joint Committee on Health and Children, Report on Primary Medical Care in the Community, February 2010

⁴ Houses of the Oireachtas Joint Committee on Health and Children, Report on Adverse Side Effects of Pharmaceuticals, April 2007

Table 4: Medication Therapy Management Delivery in N Carolina

Component	% of pharmacies providing service (n=262)	Number of patients per week per pharmacy Median (Inter-quartile range) (n=110)
Providing verbal education and training designed to enhance patient understanding and appropriate use of his/her medication	39	14 (5-49)
Co-ordinating and integrating MTM services within the broader health care management services being provided to the patient	37	N/A
Performing a comprehensive medication review to identify, resolve and prevent medication-related problems, including adverse drug events	31	5 (1-35)
Providing information, support and resources designed to enhance patient adherence with his/her therapeutic regimen	26	10 (1-42)
Selecting, initiating, modifying, or administering medication therapy	19	6 (1-21)
Performing or obtaining necessary assessments of the patient's health status	15	3 (1-14)
Formulating a medication treatment plan	11	2 (1-7)
Monitoring and evaluating the patient's response to therapy, including safety and effectiveness	11	35 (5-70)
Documenting the care delivered and communicating essential information to the patient's other primary care providers	10	3 (1-25)
Providing comprehensive services encompassing aspects of all the above	31	25 (5-140)

Minor Ailment Schemes: Pharmacist Prescribing/Change of Status of Prescription Medicines

Most of those interviewed believed that the current structure and legal framework regarding prescription medicines was too restrictive, and that pharmacist prescribing should be developed in the coming years as part of a minor ailment treatment scheme. In the meantime, many suggested that a simpler route for some medicines would be to downgrade them from prescription-only to be sold under the supervision of a pharmacist. Several suggested looking at medicines such as those available in UK pharmacies, e.g. Diflucan, or the morning-after pill.

Interviewees suggested that such schemes could be of benefit to patients, in affording them cheaper and more convenient access to treatment for minor ailments; could address the strain on GP services becoming evident in recent years; and could again save the HSE expenditure on A&E visits and treatment of complications arising from minor untreated ailments. This type of scheme would also, they felt, address the perceived under-utilisation of pharmacist skills and qualifications, and provide more professional satisfaction for pharmacists.

The *Report on Primary Medical Care in the Community* (mentioned above) from the Oireachtas Joint Committee on Health and Children was also favourable to pharmacist involvement in Minor Illness Schemes.

International Vignette:**Pharmacist Prescribing (Canada) (Management Committee CPhA, 2008)**

In Alberta, Canada, since 1st April 2007, pharmacist prescribing has been legally facilitated and encompasses:

- Adapting prescriptions (altering dosage, formulation or regimen)
- Therapeutic substitution
- Extending a prescription to ensure continuity of care
- Emergency prescribing
- Additional prescribing authorisation (initial access prescribing and managing ongoing drug therapy).

Pharmacists must be on a special provincial register and complete an orientation programme. The application for authorisation includes documentation of the pharmacist's education, training, practice, experience and collaborative relationships.

3.8.5 *Payment for Enhanced Pharmacy Services*

We posed the question to the interviewees as to who should be paying for such expanded services as screening or minor ailment treatment. The majority suggested that the current mixed model as applying to GP visits and prescriptions should apply: that is, the HSE should fund such services if supplied to GMS patients or those on specific schemes (e.g. for monitoring of long-term conditions) and that private patients should pay for services themselves, and/or that private health insurers should cover such costs on behalf of their customers.

This was not a universal viewpoint, however; many felt that the State should cover the cost for all patients, depending on the service, given that the benefits such as early diagnosis for many conditions actually achieve long-term savings in expenditure for the health services down the line. Others were critical of the free model, indicating that patients should pay even a nominal amount towards all primary healthcare services, because of the perceived devaluing of services provided at no cost to the patient.

3.8.6 *Motivations*

Pharmacists were asked what their main motivations were for providing or wishing to provide improved or enhanced services. Most stated that their primary motivation was to **provide an improved service to patients** by increasing access to certain services, by improving outcomes and quality of life by means of MURs, and reducing cost to patients. They also mentioned **saving the State money** through the introduction of MURs and minor ailment/pharmacist prescribing schemes. Interviewees also suggested that providing new services could act as a **marketing tool to attract new patients** to the pharmacy, and that if there was a remuneration scheme in place or if patients were to be charged for the services, they could **represent new revenue streams for the business**.

3.8.7 *Barriers to the Development of Expanded Pharmacy Services*

We asked pharmacists what stood in the way of expanding pharmacy services into new areas. Some, as mentioned above, didn't believe that pharmacy *should* significantly move away from its current dispensing core function, other than perhaps into MURs and the ability to dispense more medicines than at present as discussed previously.

Where pharmacists were keen to see changes, especially in the screening and diagnostic fields, they identified three key barriers:

- **Staff:** not enough qualified staff to take on new services;
- **Time:** too little time to devote to setting up or running such services;
- **Money:** they did not have the financial resources to develop new pharmacy services.

In effect, one can distil these three issues into one: money. If pharmacies had a different income model, the interviewees suggested, one that generated income for all the services provided, then they could pay for more qualified staff, which in turn would free up the time of the supervising pharmacist and others to develop and run these enhanced services.

There were, of course, other barriers identified. Many of those we interviewed mentioned **opposition by local GPs and other healthcare providers to the extension of diagnostic or treatment services to pharmacy**. Some indicated that this opposition was motivated by financial concerns: if patients can access tests, monitoring, minor ailment treatments, and so on in pharmacies, this will impact on fee income for GPs. Others mentioned the lack of confidence in, or understanding of, the qualifications of pharmacists by other medical professionals, and a consequent reluctance to “hand over” services previously the domain solely of doctors to the pharmacy profession.

“I approached the local doctor and he wasn’t at all keen on it and I didn’t want to tread on his toes.”
“Some doctors aren’t too happy with pharmacists providing services that were traditionally theirs.”
“There would be a danger that other professions would see it as treading on their toes. And given the fact that in the current environment doctors can influence patient’s choice of pharmacy, that can tend to frighten patients or pharmacies off expending their services for fear that they would antagonise the local doctor who would take their existing bread and butter away from them.”

Some were concerned about the **clinical requirements for conducting, for example, blood tests**. Training in aseptic procedures, appropriate sterile environments, sharps handling and disposal, the necessity to install sinks in consultation rooms, and similar concerns were raised in this regard.

The **availability of specific, validated training in such procedures** was also flagged as something that might stand in the way of expanding services. More on this issue is discussed in Section 7: CPD and CE.

Another barrier to the future development of services was the **conflict perceived at times between the business and clinical aspects of community pharmacy**, i.e. the difficulties in reconciling the delivery of services to patients with the commercial demands of maintaining a profitable business. Decisions that might improve patient care sometimes have to take a back seat to the economic necessities.

“Sales become the imperative when pharmacists are looking at the bottom line, and that’s something that causes huge conflict with one’s ability to deliver quality pharmaceutical care.”
“I just feel I am running around dealing more with the business than I am with the patient.”
“The pressures of managing a business: all these things take time...if you are the shop owner, you know, you’re running the business and it’s very hard to have staffing levels to do all those kind of thing because you don’t see your pound’s worth coming in straight away so it’s very hard to value the benefit to your business at the moment.”

**International Vignette:
Barriers and facilitators to providing enhanced pharmacy services in Australia
(Bebatis et al. 2007)**

The major barriers identified by Australian pharmacists in 2002 were lack of time and shortage of pharmacists. The major facilitators were dedicated study time, accreditation, closed counselling areas and access to patient notes.

3.8.8 Enablers

We asked pharmacists to consider the question in the other way: what would enable them to develop new or improved pharmacy services? Again, the core issues came back to **money, time, and workforce**. If income was greater and more stable, if pharmacists had more time, and if they could employ more qualified staff, they could develop new services.

Other issues that were mentioned included the **actual demand for such services** among their catchment of patients. Those who have a high proportion of GMS patients were sceptical that they would come to a pharmacy for a service that they already access free of charge at their GP. This would be especially relevant in the event that the services being provided in the pharmacy were being charged for, albeit at a rate lower than a private patient would pay a GP. Pharmacists did feel, however, that if there were sufficient demand for enhanced services among their patient profile, they would consider developing them in response.

Pharmacists noted that the **current legislation and regulations regarding the licensing of medicines** would need to change to facilitate pharmacist prescribing and/or the change in status of medicines from prescription-only to pharmacist-supervised.

In order to achieve real benefits from the development of MURs, pharmacists believe that **a formal structure would need to be implemented in conjunction with GPs and other healthcare providers to ensure that the recommendations arising from a medicines use review are implemented** and the outcomes measured so that the benefits can be assessed. HSE support would be required to make such developments work in practice, according to many.

**International Vignette:
Barriers and Facilitators (England/Wales) (Blenkinsopp et al. 2007)**

The three most often cited barriers to delivering the new community pharmacy contract were lack of time, lack of funding and lack of skilled support staff. The three most often cited facilitators were general support, training sessions and 'very little'. In focus groups within the evaluation, the pharmacists spoke of a lack of ownership of the contract: they felt that it had been decided by the negotiators and large multiples, rather than individual pharmacists. This lack of ownership resulted in low motivation. There was also a feeling that the initial information about the contract had been too simplistic, and that the detail had been emerging over time, which was unsettling and increasingly onerous. The evaluation summary of the facilitators and barriers is reflected in the table.

Table 5: Facilitators and Barriers to New Community Pharmacy Contract in UK

Facilitators	Barriers
Increased patient contact as a motivator for many pharmacists	Feelings of lack of ownership of CPCF among employees and, among owners, of details of the contract which emerged after contractors had voted for it
PCO level resources to engage and support local pharmacies to implement change	Increased workload of pharmacists
Pre-existing positive relationship between PCO and LPC and mechanism for discussing local development	Insufficient people resource capacity (pharmacy support staff)
Motivation and drive of individual pharmacists	Opportunity cost of increased record keeping
Support and resources for implementation from employing companies	Little or no existing relationship between some pharmacies and GP practices
Installing consultation facilities in the pharmacy	GP perception that changes as a result of CPCF increased rather than decreased their workload
Pre-existing positive relationship between the pharmacy and the local practice/s	Lack of public awareness of the new contract

3.8.9 Role for the PSI and/or Other Organisations

Interviewees were asked to consider whether the PSI and/or other organisations could play a role in the development of new or improved pharmacy services. (Further comment appears at Section 9.3 below.) It is worth noting some of the suggestions about what could be done at a wider level to support pharmacists in developing pharmacy services, including the following:

- *The PSI's role in enforcing and maintaining high standards for pharmacy should contribute to developing new services both by ensuring that pharmacies are delivering services in a safe and professional manner and by improving the reputation of pharmacy as a professional service;*
- *The PSI should promote pharmacy to the HSE and others as a profession and push for more recognition and integration of pharmacy in terms of the wider healthcare agenda;*
- *HSE should develop a clear vision for how pharmacy can contribute to the delivery of healthcare services to the population and how it can be integrated into the existing and future healthcare structures.*

International Vignettes:***Organisational change in the implementation of cognitive pharmacy services (Australia) (Roberts et al, 2006)***

This conceptual review of the literature concluded that – whilst characteristics of individual pharmacists would affect the implementation of cognitive services – internal, external and business/financial organisational factors (such as pharmacy design, utilisation of support staff, and use of technology internally and relationships with patients, prescribers and payers externally) needed further attention for effective incorporation into implementation processes. “New cognitive services should no longer be presented in the absence of a clear framework for how the service should be implemented”.

Hallmarks of a model of innovative pharmacy practice (Canada) (Management Committee CPhA, 2008)

Four indicators have been proposed as hallmarks of a model of innovative practice: sustainable, scalable, consistent, and supported.

4 INFORMATION TECHNOLOGY

4.1 TECHNOLOGY – QUANTITATIVE RESEARCH FINDINGS

We asked participants to indicate what activities were supported by their computer system in the pharmacy. We asked whether the system they used had a feature relating to a range of activities, whether they made use of this feature, and whether they would like to do more of this by computer. The following table indicates the responses:

Table 6: Computer System Features and Use

Computer System Features and Use	Have Feature in System	Use Feature	Would Like to Do More
	Number	Number	Number
Medicines Supplied	340	333	11
Allergies Noted	311	323	34
Interventions/Communications with Healthcare Professionals	215	215	175
Non-Prescription Items	129	95	235
Drug Interactions	301	306	34
Adverse Drug Reactions	248	241	103
Adverse Incidents	111	112	255
Pharmaceutical Care Needs	207	229	126
Referrals to Other Healthcare Professionals	70	85	265
Disability Support Given	92	96	241
Advice on Minor Illnesses	40	36	305
Healthy Lifestyle Interventions	30	20	305
Patient Disease State	191	120	195
General Comments	255	300	61
Non-Clinical Incident Reporting	73	79	233
Ordering Stock	296	324	16
Providing Information to Patients	179	180	182
CPD/Educational Activities	36	42	295
Decision Support	114	133	232
Supporting Professional Services	119	135	228
Professional Networking	42	47	285
Other	1	3	13

Respondents were asked to indicate whether they recorded clinical information on paper, to which 37.6% said yes and 62.4% no. The types of information recorded included prescriptions, details on patients with complex medication regimes or those subject to significant changes, incident reporting, logs of phone calls and communications with other healthcare professionals, additional notes regarding patients that can't be logged on the computer, clinical interventions and dispensing errors, and daily audits.

We asked pharmacies how many computers (i.e. PCs or laptops) were in the pharmacy; the average (mean) was 1.9, with the most common response being 2 and the maximum being 8.

When asked to indicate which supplier the pharmacy's computer system was from, the two main responses were Helix Health (49%) and McLernon's (41.3%), with Ocuco at 9%.

The vast majority of the computer systems (96.5%) are Windows-based.

Most pharmacy staff (78.6%) have access to relevant internet resources. Of those resources, the most popular is medicines.ie, with the IPU, PSI, HSE, and IMB websites also commonly accessed, as illustrated in the following table (the percentages add up to more than 100% because each respondent could select more than one option).

Table 7: Internet Resources Used Most

Internet Resources Used Most		
	Number	Percent of Cases
PSI	202	46.9%
IMB	153	35.5%
Medicines.ie	331	76.8%
HSE	188	43.6%
IPU	270	62.6%
Patient Support Groups	108	25.1%
Other Internet Resources	105	24.4%
Total	1357	314.8%

Other internet resources used include Google, poitigeir.com, UK sites such as patient.co.uk, NHS, and RPSGB, PubMed, NICE, and BNF online.

We asked participants to indicate whether the pharmacy had an email address (66.5% did) and whether patients used this (only 17.1% said they did). We also asked if the pharmacy had a website, which 29.7% of respondents said they did.

International Comparison Notes:

The presence of having a pharmacy website was 11.1% in Australia for 2002 (Berbatis et al., 2003).

One-third of the pharmacists in England and Wales were using Internet information to advise the public (Blenkinsopp et al., 2007).

4.2 TECHNOLOGY – QUALITATIVE RESEARCH FINDINGS

4.2.1 Current and Future IT Infrastructure

We asked the interviewees whether they were satisfied with their current IT set-up and whether they anticipated requiring changes to support current or future service provision. By far the **vast majority of pharmacists we spoke to were entirely happy with their current IT infrastructure**. Some expected that significant changes would be required to their current systems but, **for many, any changes to accommodate new services would be relatively minor** – add-ons or upgrades rather than complete new systems.

4.2.2 Data Transfer between Healthcare Professionals and Pharmacists

Pharmacists were asked whether they would like to see links with data held about their patients by other healthcare professionals. This question was interpreted differently by different pharmacists and overlapped somewhat with aspects relating to the interprofessional relationships with GPs and other healthcare professionals.

In terms of the general principle, leaving aside the obvious concerns expressed in relation to data protection considerations and patient confidentiality, many pharmacists did feel that access to at least some patient data held by GPs and others would be helpful to their practice. Several commented that at a minimum, knowing the disease state and full diagnosis

of the patient would be very helpful in interpreting the prescriptions for that individual. Some mentioned the potential usefulness of knowing the latest test results for the condition (e.g. the latest blood pressure reading for someone on medication for high BP) so that they would know how well the medication was working. Full hospital discharge notes would also be helpful, many said.

We also asked about information going the other way, i.e. from pharmacists to GPs and other healthcare professionals. Many mentioned compliance concerns as something they would like to share: if patients are not filling their prescriptions as they should, pharmacists feel that GPs should know as otherwise they may assume that a failure to control the condition requires a change in the medication rather than realising that it results from the patient not taking the original medication correctly. Pharmacists also mentioned passing on the information as to the full range of medications prescribed for a patient to hospital staff.

Most pharmacists mentioned that such information is often exchanged on an informal basis in any case – if they have a query regarding the prescription and they need the diagnosis, then they ring the GP. Similarly, if the hospital rings asking for information on a patient's medication regime, they give the information out. Formalising this exchange would be welcomed by many, even in simple ways like using email to get around the difficulties in accessing the information in a timely fashion if the doctor or other healthcare professional is unavailable at the time.

Some pharmacists suggested that a swipe card of some description might be a useful development, to keep a record of medications prescribed and dispensed, possibly including other details such as the diagnosis. This would help to maintain the information flow between pharmacists and prescribers, and would also address the problems that arise when patients use different pharmacies to obtain their medicines.

International Vignette:

***Perceptions of the development of community pharmacy IT systems (Finland)
(Westerling et al, 2010)***

This study compared the perceptions of owner pharmacists and frontline pharmacists regarding important features of IT systems. "The features related to the pharmacy's internal processes, such as financial management, sales and marketing management and stock holding, were ranked significantly higher by the managers, while the personnel prioritized the features supporting pharmaceutical service provision and personnel management. The managers and personnel shared their opinion on the importance of features supporting drug information and patient counselling, medication safety and inter-professional collaboration." They conclude that managers and 'staff' pharmacists have different needs of pharmacy IT systems and that both should be involved in their design.

5 INTER-PROFESSIONAL RELATIONSHIPS

5.1 INTER-PROFESSIONAL RELATIONSHIPS – QUANTITATIVE FINDINGS

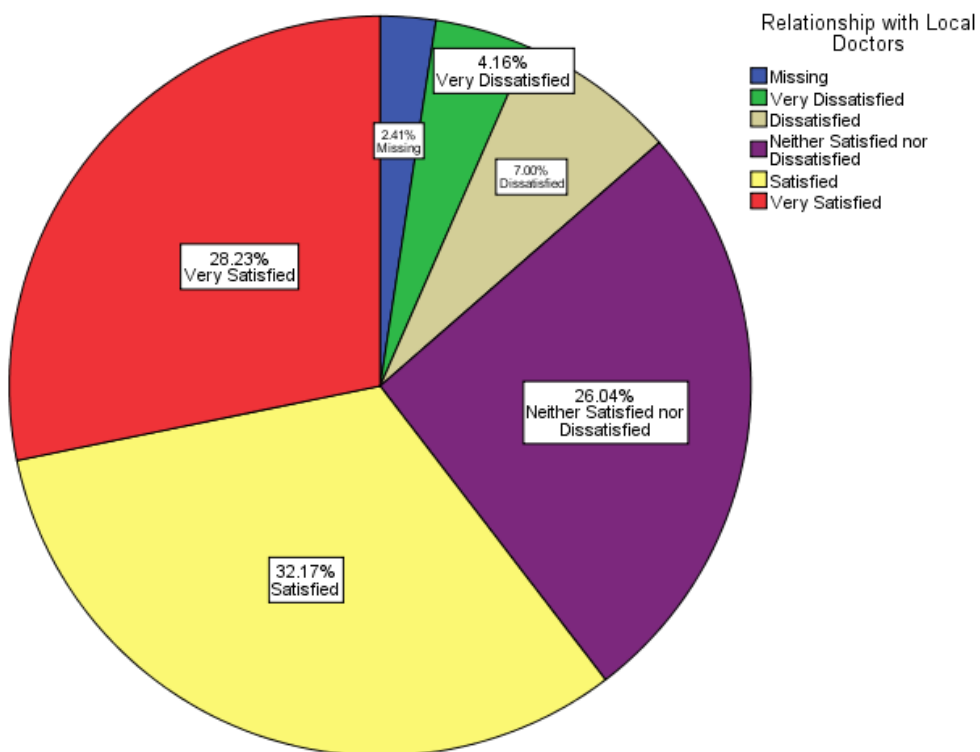
5.1.1 Referral Procedures

Participants were asked whether they had referral procedures in place for following up on the outcomes of diagnostic screening services, to which 63% said they did have such services in place (of the 53% of those who answered the question).

5.1.2 Relationship with Local Doctors

We asked respondents to rate their satisfaction with the relationship with local doctors. The majority were either satisfied (32.2%) or very satisfied (28.2%) with the relationship, with just over a quarter (26%) saying they were neither satisfied nor dissatisfied, 7% dissatisfied, and 4.2% very dissatisfied. The graph below illustrates this:

Figure 12: Satisfaction with Local Doctor Relationship



When asked if they had regular meetings with local doctors, a significant majority (87.6%) said they did not have such meetings.

We asked pharmacists to indicate what other healthcare professionals they interacted with on a regular basis regarding patients' medication and other issues, and the following table shows the responses. Most indicated they had contact with hospital doctors, practice nurses, and hospital pharmacists, while few had interacted with nurse prescribers or opticians.

Table 8: Interaction with Health Professionals

Interaction with Health Professionals		
Health Professionals	No.	Percent of Cases
None	26	5.8%
Consultant/Hospital Doctor	307	69.0%
Practice Nurse	302	67.9%
Nurse Prescriber	35	7.9%
Other Nurse	154	34.6%
Other Community Pharmacist	241	54.2%
Hospital Pharmacist	284	63.8%
Dentist	186	41.8%
Optician	37	8.3%
Social Worker	62	13.9%
Other Healthcare Professional	24	5.4%
Total	1658	372.6%

We asked about engagement with local multi-professional groups and patient support groups, the majority had not had engagement with either. 94.6% of those who responded said they did not have engagement with local multi-professional groups, and the vast majority of respondents (91.6%) indicated they had no engagement with patient support groups. Of those who did, examples of multi-professional groups engaged with include local primary care teams and practitioners, palliative care teams, and prescribing advisory roles. Examples of patient support groups engaged with include Aware, Irish Cancer Society, Irish Heart Foundation, Diabetes Foundation of Ireland, Asthma Society of Ireland, Arthritis Society, local groups such as elderly care and hospice support groups, Migraine Association, and Suicide Prevention.

International Comparison Note:

A European study showed 9.1% response for engagement with local multi-professional groups in Ireland in 2006, the lowest in the range across Europe which went up to 34.7% in Belgium (Hughes et al. 2010).

5.2 INTER-PROFESSIONAL RELATIONSHIPS – QUALITATIVE FINDINGS

5.2.1 Relationship with GPs and Other Healthcare Professionals

We asked participants to describe their professional relationship with GPs and other healthcare professionals. Most pharmacists' main relationship is with the local GPs, and for the majority, this relationship is very good. In general, interviewees felt their interactions with their GPs were cordial, that the relationship involved mutual respect, that the communication was good, and that they could work together for patients' benefit. One suggested that this contrasted with her previous experience in the UK.

A few mentioned difficulties with local GPs, with issues such as feeling that the GP didn't respect their role, or that queries from the pharmacist were regarded as criticisms of the GP's decisions.

In terms of other healthcare professionals, this was a less significant feature for most pharmacists. They did suggest that their relationships with hospital pharmacists were good, if less involved than that with GPs, and that their only difficulties with hospital pharmacists or

doctors was the difficulty in accessing them: the former outside working hours and the latter at all times. Several mentioned trying to chase up queries with hospital staff for weeks at a time with little success in getting phone calls returned, etc.

International Vignette:

Changes in the community pharmacy contractual framework (CPCF) in England and Wales since 2005 – Inter-professional working (Blenkinsopp et al. 2007)

In the year following the implementation of the new CPCF, only 18% of community pharmacists said that it had increased their involvement with GPs.

5.2.2 Factors in and Barriers to Successful Inter-professional Relationships

Interviewees were asked what factors they would consider important to the development of good relationships with other healthcare professionals. The main themes emerging in this area are as follows:

- Mutual respect;
- Communication;
- Trust;
- Acknowledgement, understanding, and recognition of each others' roles.

Conversely, the barriers that can hamper the development of successful professional relationships included the following:

- Lack of time;
- Lack of understanding of or respect for the pharmacist's role;
- Personality clashes;
- Potential conflict between pharmacy enhanced service development and current GP practices.

International Vignette:

Collaborative Practice Agreements (USA) (Peacock et al, 2007)

In this national survey of US pharmacists, 34% of those responding reported that at least one of their patient care services were provided under a 'collaborative practice agreement': a collaborative practice agreement exists between one or more physicians and pharmacists, wherein qualified pharmacists working within the context of a defined protocol are permitted to assume professional responsibility for performing patient assessments; ordering drug therapy-related laboratory tests; administering drugs; and selecting, initiating, monitoring, continuing, and adjusting drug regimens. The most common agreements were for immunisations (58%), diabetes management (24%), and blood pressure monitoring (16%). The American College of Clinical Pharmacy has stated that collaborative practice is dependent upon "(1) a collaborative practice environment; (2) access to patients; (3) access to medical records; (4) knowledge, skills, and ability; (5) documentation of activities; and (6) compensation for their activities".

5.2.3 What Can Pharmacists Do?

We asked what pharmacists could do to promote good relationships with healthcare professionals. Some suggested that building up a relationship over time by means of good communication, including communication over and above the absolute necessities of prescription queries, was helpful. However, some suggested that maintaining only professional communication about patients was key to not encroaching too much on GP time or becoming an annoyance. Several mentioned that pharmacists could and should personally introduce themselves to local GPs so that they could put a face to a name and not restrict contact solely to phone and fax. There were also suggestions such as sending out information to GPs about developments in medicines: new medicines or new information about existing products.

**International Vignette:
Inter-professional factors and provision of Enhanced Pharmacy services (Australia)
(Berbatis et al, 2007)**

Half of the Australian pharmacists in this national survey agreed that they had no time to meet with GPs and other health professionals, and that this was a barrier to providing enhanced services. A similar number agreed that GPs did not recognise pharmacists' enhanced service skills. The majority disagreed, however, that providing such services would damage relationships with local GPs.

5.2.4 Role for PSI/Other Organisations

When asked what role the PSI or other organisations could play in fostering good professional relationships between pharmacists and other healthcare professionals. While many did not see any wider context to their relationship with local GPs, believing it to be something based on individual interactions, some did have some suggestions as to what could be done on a national level to promote better pharmacist-doctor relationships, including the following:

- *Joint CPD and CE activities with doctors on appropriate topics, to bring the professions together;*
- *The PSI should work together with the IMO and other doctors' organisations to develop a greater appreciation of the role and qualifications of pharmacists and how they can support doctors;*
- *The PSI should continue its emphasis on professionalising pharmacy and improving standards to maintain the message that pharmacy is a high-quality healthcare service;*
- *The HSE should develop – as mentioned previously – a clear vision for pharmacy and how it fits within the healthcare system: without recognition at a national level, pharmacists feel it is difficult to promote themselves at a local level;*
- *Integration of pharmacies into primary healthcare teams, both to bring pharmacists into formal arrangements with doctors and other healthcare professionals for the delivery of services, and to achieve the recognition mentioned above in the eyes of those professionals.*

6 WORKFORCE

6.1 PHARMACISTS

6.1.1 Number of Pharmacists

We asked respondents how many pharmacists were working in the pharmacy. The average was 2, with a maximum of 5. It should be noted that this is not always indicative of full-time pharmacists and that many have indicated two pharmacists who may cover for each other and not work alongside each other on a day-to-day basis for much of the working day.

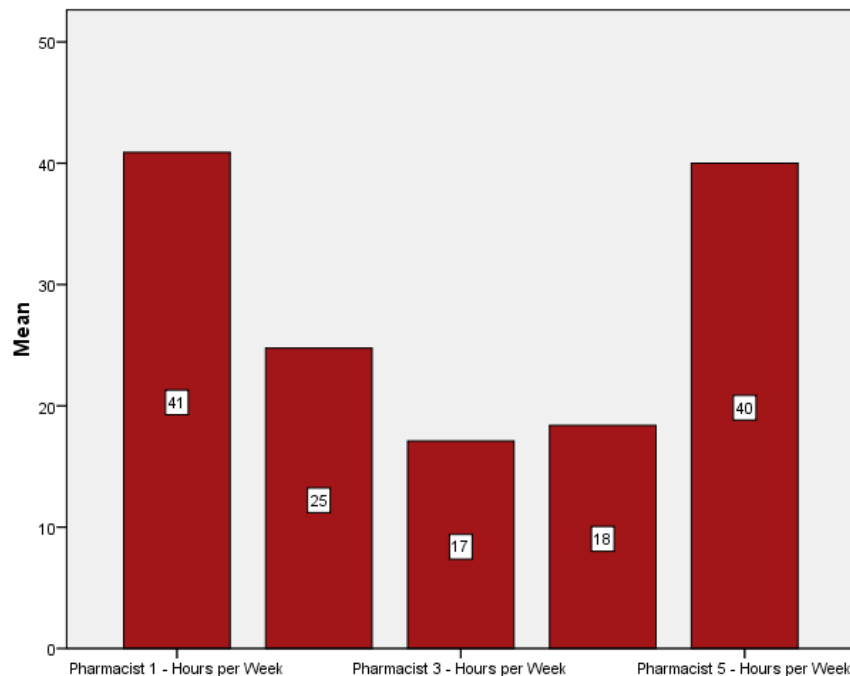
International Comparison Note:

In England and Ireland, provision of Pharmaceutical Care was more extensive when a higher number of pharmacists were employed (Hughes et al. 2010)

6.1.2 Hours Worked in a Typical Week

Respondents were asked to outline the typical weekly hours for each pharmacist in the pharmacy, the graph of which is shown below. It can be seen that the first pharmacist is generally full-time, with hours around 40-41 per week, while the hours for the second and subsequent pharmacists (apart from the sole example of the pharmacy with 5) indicating that they are part-time and often covering for opening hours when the first pharmacist is not working.

Figure 13: Hours Worked in Typical Week by Pharmacists



6.1.3 Role

Participants were asked to outline the role for each pharmacist in the pharmacy, the table of which is shown overleaf.

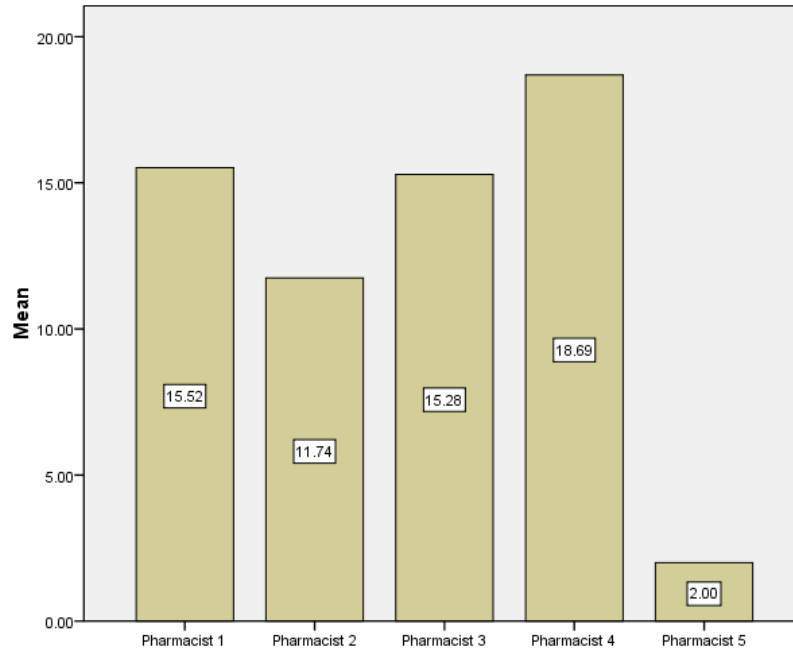
Table 9: Role of Each Pharmacist in Pharmacy

Position	Supervising Pharmacist		Superintendent Pharmacist		Both		Employee		Locum	
	Number	%	Number	%	Number	%	Number	%	Number	%
Pharmacist 1 - Position	175	40.3%	32	7.4%	195	44.9%	25	5.8%	7	1.6%
Pharmacist 2 - Position	18	5.2%	27	7.8%	11	3.2%	227	65.8%	62	18.0%
Pharmacist 3 - Position	5	5.2%	8	8.2%	5	5.2%	54	55.7%	25	25.8%
Pharmacist 4 - Position	2	11.8%	1	5.9%	1	5.9%	9	52.9%	4	23.5%
Pharmacist 5 – Position	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%

6.1.4 Length of Time Qualified

We asked respondents to indicate how long each of the pharmacists was qualified, with the averages for each pharmacist outline in the graph below:

Figure 14: Length of Time Qualified



6.2 OTHER STAFF

6.2.1 Numbers of Other Staff

Participants were asked to outline the numbers and categories of non-pharmacist staff in the pharmacy, as illustrated in the table below. The average number of pharmaceutical assistants was 0.7, with 1 being the most common answer; pharmacy technicians averaged 1.4 per pharmacy; counter staff 3; and other staff 1.3.

Table 10: Numbers of Other Staff in Pharmacy

Numbers of Other Staff					
	Pharmaceutical Assistants	Pharmacy Interns	Pharmacy Technicians	Counter Staff	Other Staff
Number who responded	235	165	335	418	140
Missing answers	222	292	122	39	317
Mean	.72	.36	1.40	3.03	1.30
Median	1.00	.00	1.00	3.00	1.00
Mode	1	0	1	2	1
Minimum	0	0	0	0	0
Maximum	5	3	5	12	10

International Comparison Note:

England, Northern Ireland and Ireland achieved higher scores on the validation of filled prescriptions when higher numbers of dispensing staff were employed (Hughes et al. 2010).

6.2.2 Hours Worked by Other Staff

We asked pharmacists to indicate the typical total working hours of the non-pharmacist staff per week. The table below illustrates the responses:

Table 11: Hours Worked by Other Staff

Hours Worked by Other Staff					
	Pharmaceutical Assistants - Total Hours	Pharmacy Interns - Total Hours	Pharmacy Technicians - Total Hours	Counter Staff - Total Hours	Other Staff - Total Hours
Number who responded	154	85	392	114	293
Missing	303	372	65	343	164
Mean	24.47	27.31	51.35	84.28	36.66
Median	23.00	39.00	40.00	70.00	25.00
Mode	0	40	40	40	40
Minimum	0	0	0	0	0
Maximum	80	150	162	480	360

International Vignette:
Factors associated with the provision of pharmacy services beyond dispensing (USA) (Doucette et al. 2006)

In the US National Pharmacist Workforce study of 2004, four factors were associated with the provision of pharmacy services beyond dispensing were the number of pharmacists on duty; innovativeness (a 3-point self-perception subscale comprising reputation as an innovator among peers, promotion of new services, and providing leadership in services); being an independent pharmacy, and being a supermarket pharmacy. As most new services were being provided by between 10% and 20% of pharmacies, the authors concluded that nationally they were still in the 'early adopter' stage of innovation.

6.3 QUALITATIVE FINDINGS – WORKFORCE

We asked participants what, if anything, they would change about the workforce in the pharmacy. Most responded that they would take on more staff, in an ideal (i.e. affordable) situation. For most, they would like to take on more qualified pharmacists, usually a full-time second pharmacist for single-pharmacist pharmacies. A few felt that their staffing was fine the way it was; most of these already had more than one qualified pharmacist working in the pharmacy.

International Vignette:
Job Satisfaction (England/Wales) (Blenkinsopp et al. 2007)

The three aspects of their job that English/Welsh pharmacists felt most satisfied about after the new contract were "colleagues and fellow workers", "patient contact" and "amount of responsibility I am given". The three aspects they felt least satisfied about were "respect received from GPs", "remuneration" and "my role since the new contract".

The new contract received a mixed response overall among pharmacists regarding their future: "A substantial minority of pharmacists felt their job was less satisfying than before

the new contract (30%) and that they were now less likely to stay in community pharmacy (26%). Overall 17% said they were more satisfied and 19% that they were more likely to stay in community pharmacy”.

Following up from this, we asked whether they would like a better ratio of pharmacists to other staff; almost everyone agreed that they would like this. We asked them to outline the benefits of this: from a workload point of view people were agreed that reducing the workload on the – usually single – current pharmacist would be welcome. Interviewees also highlighted the potential improvements in services to patients: more time to spend counselling, for example. As mentioned above, time and staffing restrictions were the most significant barriers to service development, so taking on more pharmacists would mean the ability to develop new services.

Pharmacists were also very enthusiastic about the benefits arising from working alongside another professional pharmacist: almost everyone felt that this improved or would improve their own professional practice by challenging them and highlighting and filling in gaps in their own knowledge. They also felt that being able to confer with a professional colleague on queries or doubts they might have would again improve the service to patients and maintain high levels of patient safety.

Most of those interviewed believed that their current staffing levels did not reflect what would be needed to expand or improve the services in their pharmacy.

***International Vignettes:
Psychosocial determinants of implementing pharmaceutical care (Spain) (Zardain et al. 2009)***

This study found that 11.8% of Spanish community pharmacists had implemented pharmaceutical care within their practice, and were in the action or maintenance stage of this particular behaviour change. As the stage of change of other pharmacists moved from pre-contemplation to action, scores relating to attitude, social influence of others and self-efficacy increased. The factors positively associated with the probability of implementation of pharmaceutical care among Spanish pharmacists were “having undertaken appropriate training, self-efficacy, having assistant pharmacists, and positive attitude”.

We asked about the way in which work was delegated to the non-pharmacist staff in the pharmacy. Most pharmacists stated that they delegated as much as possible within the regulatory constraints to their dispensary staff (technicians) and counter staff. Prescription preparation, stock control, paperwork as appropriate, ordering, etc. are all routinely delegated in most of the pharmacies concerned. Some pharmacists did not delegate aspects of paperwork that they would prefer to keep confidential from the point of view of being the business owner; a few in larger chains found that they were less busy than other pharmacies in the dispensary and so the need to delegate didn't arise as much.

When asked why some pharmacists might not delegate as much as possible, most suggested that there was no particular reason why as much work as possible should not be given to the non-pharmacist staff. Some discussed the issue of trying to control everything and not believing that others could perform the tasks as well as themselves. Others mentioned that staff training might not have been up to date and therefore the staff were not yet capable of taking on certain tasks.

***International Vignette:
Changes in the community pharmacy contractual framework (CPCF) in England and Wales since 2005 – Workforce (Blenkinsopp et al. 2007)***

Two-thirds of pharmacists reported delegating more work to non-pharmacist staff since implementation of CPCF, such as more input into running the core business (e.g. ordering stock, developing standard operating procedures, and accuracy checking of prescriptions) and clerical tasks associated with enhanced services (e.g. filing, completing initial patient information). One-quarter reported more delegation to other pharmacists.

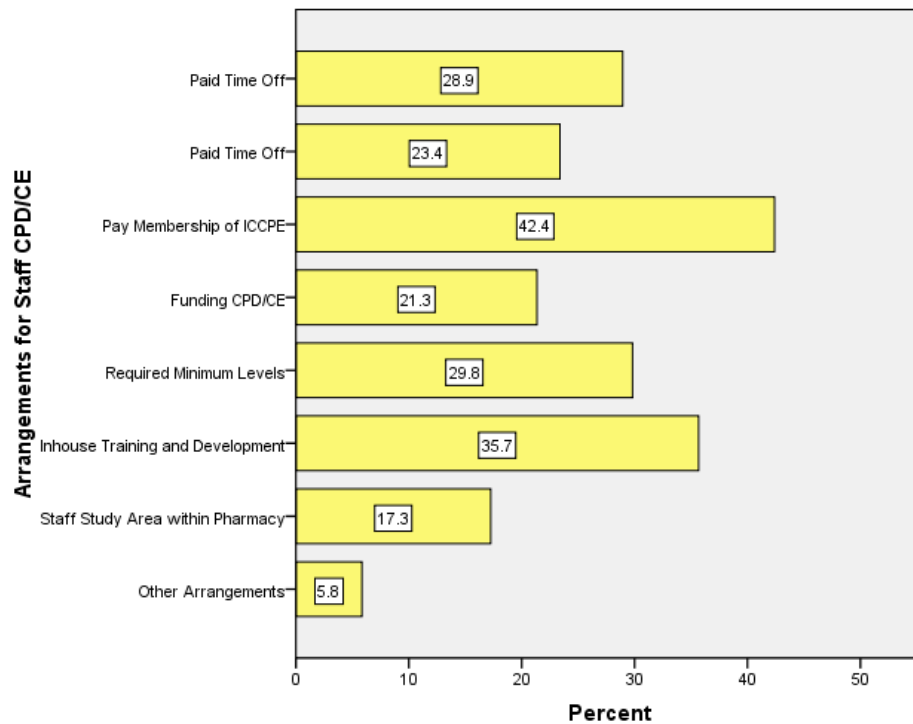
7 CONTINUING PROFESSIONAL DEVELOPMENT/CONTINUING EDUCATION

7.1 CDP/CE – QUANTITATIVE FINDINGS

7.1.1 Staff CPD/CE

We asked respondents to indicate what arrangements were in place for staff in the pharmacy to undertake CPD and CE activities. The graph below illustrates the responses.

Figure 15: Arrangements for Staff CPD/CE



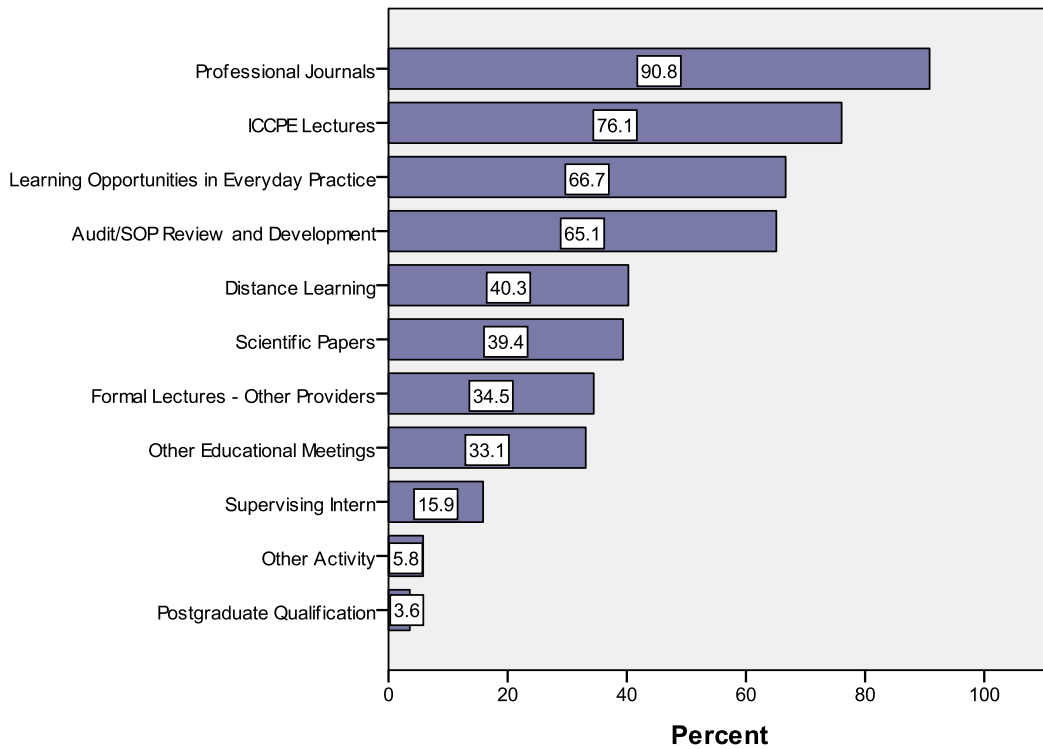
Other arrangements included several responses to the effect that no arrangements are in place; others mention providing updates on developments in pharmacy and having reference material in the pharmacy for staff. Those who have minimum CPD/CE requirements outlined them most commonly having a minimum number of hours per year to simply being expected or encouraged to undertake CPD activities in general.

International Comparison Note:
 A recent European study shows participation in CPD in Ireland at 78.9% in 2006, with a range across Europe from 25% in Iceland to 97.9% in Portugal.

7.1.2 CPD/CE Activities Undertaken

Participants were asked which types of CPD and CE activities they undertook. The following graph outlines the results, ordered according to which had the most responses:

Figure 16: CPD/CE Activities Undertaken



International Comparison Note:

In a recent European study, Ireland had 14% postgraduate qualification response in a range across Europe from 2.7% in Malta to 71.9% in Switzerland (Hughes et al. 2010).

“Other” activities undertaken include training and supervising pharmacy technicians and delivering CPD/CE modules for the ICCPE and others.

Postgraduate qualifications commonly included the MSc in Community Pharmacy from TCD, along with diplomas and certificates in community pharmacy from TCD and Queens University Belfast, and the Masters in Health Management from RCSI.

7.1.3 Enablers and Barriers

Respondents were asked what would enable them to undertake more CPD and CE, and what prevents them doing as much CPD/CE as they would like to undertake, selecting several options from a range offered. The following tables indicate the responses.

Table 12: CPD Enablers

CPD Enablers	Number	Percentage
Availability Closer to Pharmacy	266	60.2%
Greater Frequency/More Convenient Times	321	72.6%
Enhanced Range of Topics	287	64.9%
Online/Technology-Based Learning	288	65.2%
More Locum Cover	128	29.0%
Staffing Rosters	97	21.9%
Workplace Activities	166	37.6%
Interprofessional Learning Opportunities	196	44.3%
Other Enablers	31	7.0%
Total	1780	402.7%

“Other” enablers mentioned include financial issues – mainly reimbursement for locum cover or other subvention to facilitate attendance – and training during working hours (also mentioned is the need to be more family-friendly).

Table 13: CPD Barriers

CPD Barriers	Number	Percentage
Lack of Time	370	83.9%
Difficulties with Cover	151	34.2%
Distance	201	45.6%
Inconvenient Times	229	51.9%
Insufficient Range	140	31.7%
Lack of Information	65	14.7%
Other Barriers	51	11.6%
Total	1207	273.7%

“Other” barriers outlined include time – related to the comment above – the long working hours and family pressures in respect of evening lectures, financial aspects of paying for cover and the costs of lectures, and the quality of the material delivered.

International Vignette:
Changes in the community pharmacy contractual framework (CPCF) in England and Wales since 2005 – CPD (Blenkinsopp et al. 2007)

The barriers to undertaking CPD most often reported were lack of time and fatigue. Pharmacists were asked which topics they would like to cover for CPD and the results (in descending order of popularity) were: clinical topics; research/audit; clinical governance; health promotion/public health; structuring the consultation; IT; management; communicating with patients and carers; training/supervision; communication with other health professionals; and time management.

The recommendations of the contract evaluation report included the following about CPD and reflective practice:

- Use CPD facilitators to provide support for reflective practice and practice development;
- Provide tools for reflective practice to underpin reflection on current ways of working and possible ways of changing;

- Secure, with other stakeholders, a practice development programme for community pharmacy;
- Support the development of workload analysis and management tools for community pharmacy.

7.2 CPD/CE – QUALITATIVE FINDINGS

7.2.1 *Opinion on Current CPD and CE Availability*

Interviewees were asked if they felt that the current CPD and CE activities available to them were equipping them for their current and future practice.

There was mixed response to this. There was quite a varied opinion on the quality of the CPD and CE activities provided by the ICCPE; some pharmacists were quite happy with the content and the range of topics covered, while others rated the quality of the content as low and were unhappy with the information presented and how it was delivered.

Many pharmacists were dissatisfied with the timing of the ICCPE lectures. Most suggested that the end of a working day is a difficult time to attend lectures, especially when for many this includes a significant commute to the venue. Interviewees suggested that full-day weekend or even weekday courses would be preferable to attending a number of late-evening sessions.

“The way they’re scheduled is really difficult to attend. They seem to be like, just from a practical point of view you can’t say, like, every Monday I can do this, you know: it might be a Monday one week and then a Wednesday four weeks later and a Thursday three weeks later all in different venues in different places, and that aspect of it is really irritating.”

Many of those interviewed undertake their own CPD and CE activities, often using online resources. Several suggested that the ICCPE should expand into online CPD and CE provision to address the issues surrounding access to and time to undertake the current schedule of activities.

7.2.2 *Impact of Development of Services on CPD and CE*

There was near-universal agreement that future service development, especially into screening and diagnostic services, would require specific CPD and CE resources to support this. From specialised training courses in the delivery of new services, both for pharmacists and other pharmacy staff, to the validation of skills and assessment of competence to provide such services, interviewees all feel that new service developments will require to be underpinned by training and development.

It was suggested that the PSI could play a role – as the body responsible for the standards within pharmacy – in relation to verifying and maintaining standards of competence for new specialist services. Many pharmacists said that they would like to see a certification or validation process for new services, so that only those who have completed the accredited training courses can deliver them. This was especially mooted in respect of pharmacist prescribing, which was recognised as something that would require very close monitoring of qualifications and standards.

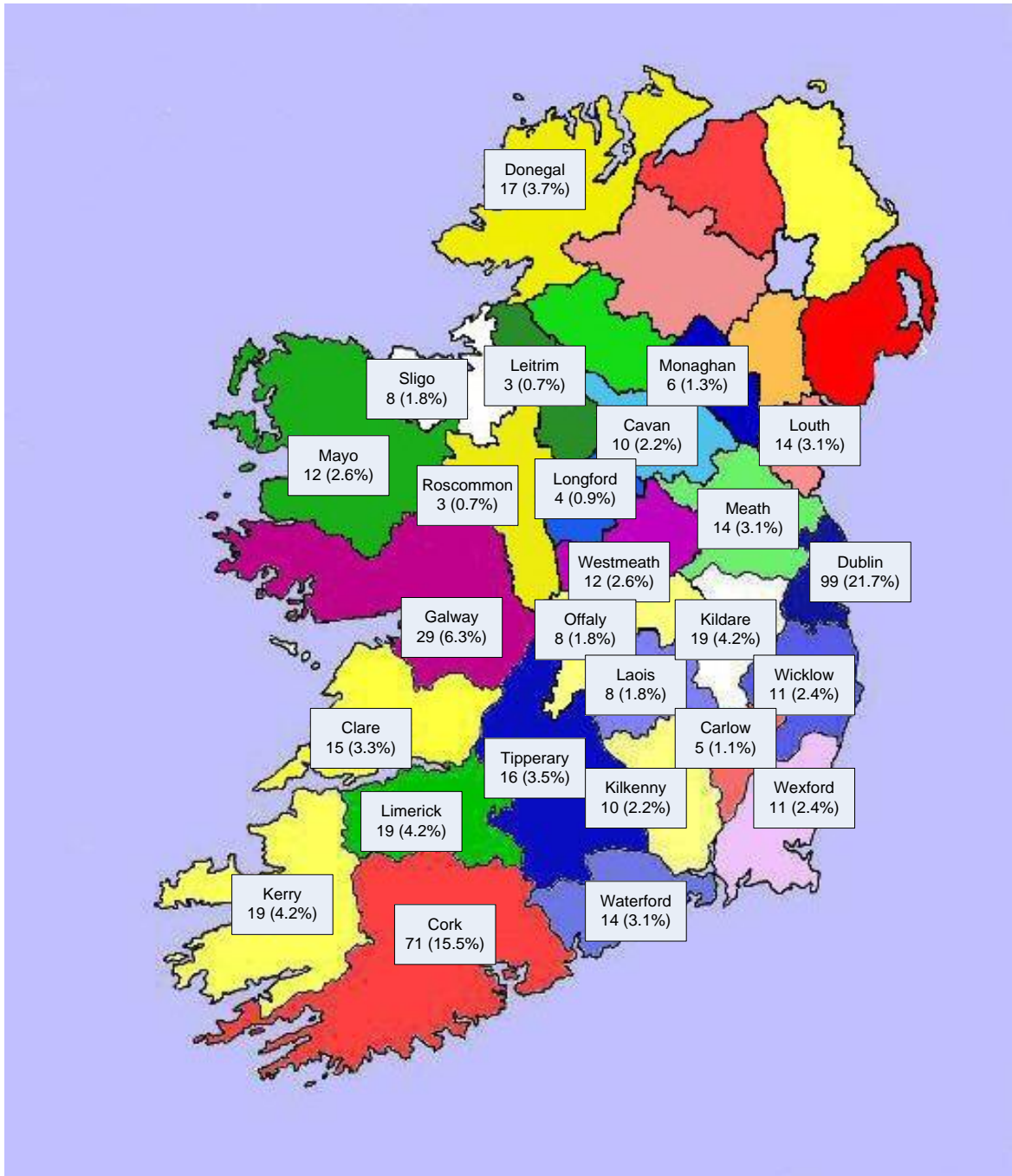
8 PREMISES/SETTING

8.1 SETTING

8.1.1 County

The following map indicates the number of responses from each county:

Figure 17: Responses by County



8.1.2 Type of Pharmacy

We asked respondents to categorise the pharmacy according to whether it was a single outlet or part of a small or big chain or group. Just over half were single-outlet pharmacies (52%), with small group or chain pharmacies representing 26.3% of the responses and large group or chain pharmacies representing 21.7%.

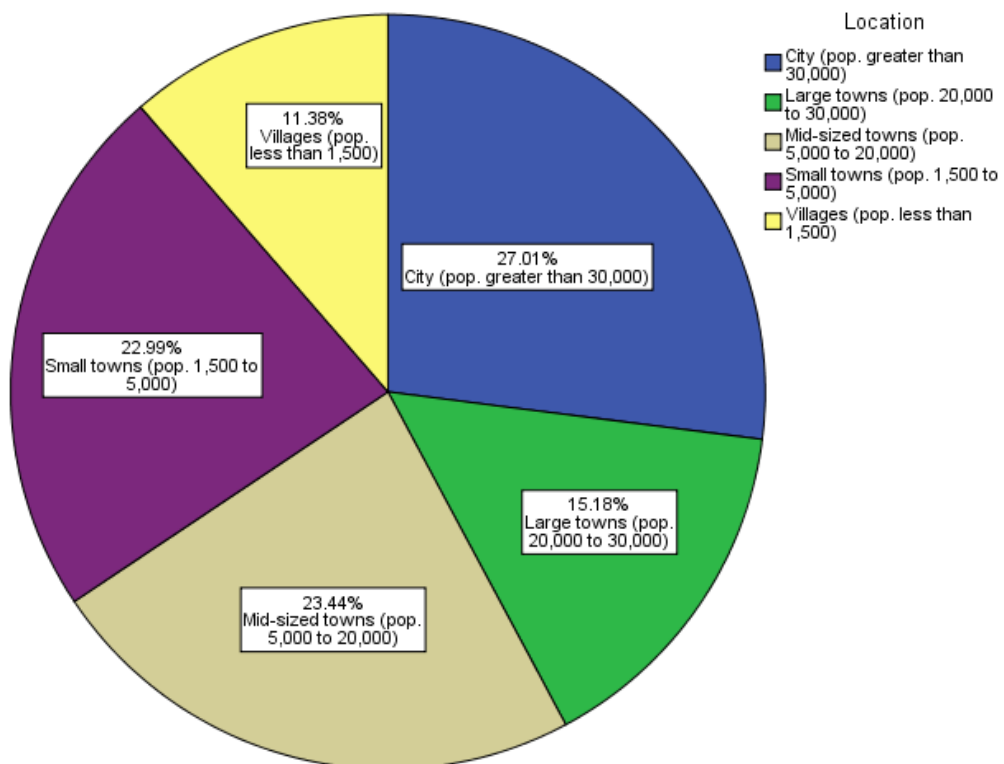
International Comparison Note:

A recent European study (Hughes et al. 2010, but data from 2006) showed slightly more responses from independent pharmacies for Ireland 64.4/15.3/20.0, and was in the middle of a range from Sweden 0/0/100 and Iceland 20/10/70 through to Denmark and Portugal 100/0/0.

8.1.3 Location

Participants were asked to indicate whether the pharmacy was in a city, large town, mid-sized town, small town, or village. City pharmacies were more common, with 27% of the responses, followed by mid-sized and small towns (almost even at 23.4% and 23% respectively), and then large towns (15.2%) and villages (11.4%). The following pie chart illustrates the split:

Figure 18: Location



International Comparison Note:

Work in the US in 2005 showed a positive association between providing cognitive services and a more rural location (Gadkari 2009).

8.1.4 Physical Setting

We asked where the pharmacy was located in terms of its setting, i.e. high streets, shopping centre, housing estate, small parade of shops, etc. Most (44.4%) were on a high street, with a neighbourhood parade of shops the next most common setting (28.5%). Shopping centres accounted for 16.1%, with “Other” at 7.4% and housing estates at 3.6% being the least common settings.

8.1.5 Proximity to Healthcare Services

Respondents were asked how far the pharmacy was from a range of other healthcare services. The table below illustrates the responses:

Table 14: Proximity to Healthcare Services

Proximity to Healthcare Services	<500m		501m to 1km		>1km	
	Number	%	Number	%	Number	%
Acute Hospital	24	5.6%	64	15.0%	339	79.4%
Private Urgent Care Centre	27	7.6%	39	11.0%	289	81.4%
GP Surgery	305	68.4%	107	24.0%	34	7.6%
HSE Health Centre	80	20.8%	124	32.2%	181	47.0%
HSE Primary Care Centre	31	9.3%	54	16.1%	250	74.6%

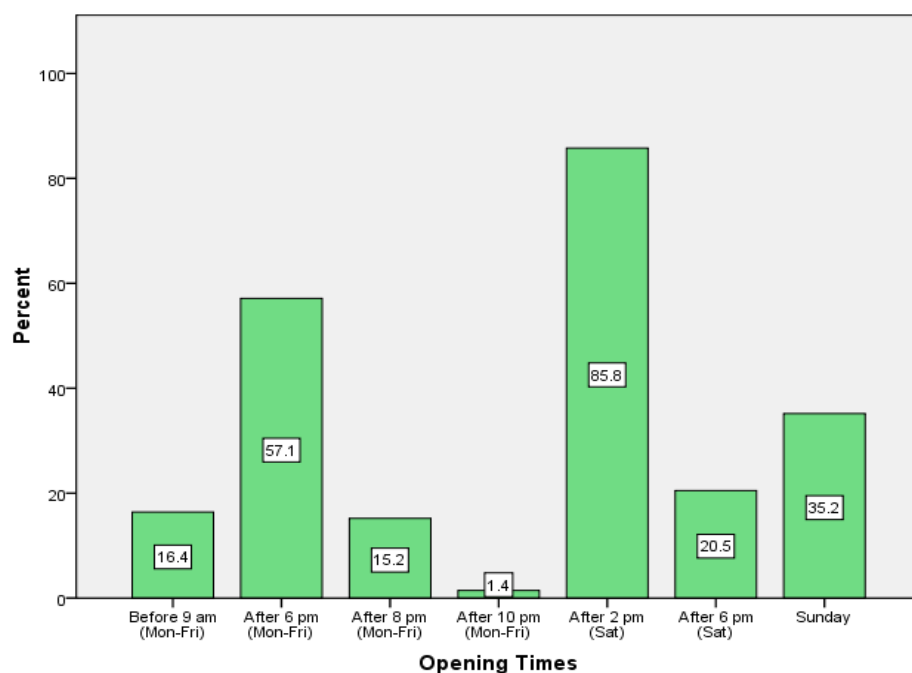
8.1.6 Length of Time Pharmacy Established

The average length of time that pharmacies in the survey were established was 32.8 years, with a maximum of 161 years and a minimum of 0.08 years.

8.1.7 Opening Hours

We asked respondents about their opening hours, beyond the normal business hours. The following graph illustrates the extent of extended pharmacy opening hours:

Figure 19: Opening Hours



8.2 PATIENT PROFILE

Pharmacists were asked to outline what percentage various different groups of patients comprised their patient profile. On average, older patients made up 60% of respondents' patient profiles, with families with young children representing 26.7%, younger patients (12-30) making up 16.2%, and patients in residential care 5.4%. Pharmacists indicated that repeat or regular patients make up 78% on average of the pharmacy patient profile.

8.3 CONSULTATION ROOM

8.3.1 *Consultation Room Installed*

We asked respondents whether they had the consultation room installed (notably now a legal requirement but this was not yet the case at the time of the survey). 73% of those who responded stated that their consultation room was in place at the time.

International Comparison Note:

A recent European study showed an Ireland response of 55.8% in 2006, in a pan-Europe range from 18.8% in Belgium to 85.8% in Portugal (Hughes et al. 2010).

8.3.2 *Number of Consultations*

According to the respondents, on average 9 consultations take place per week in the consultation room.

8.3.3 *Other Practitioners*

We asked if pharmacists allowed other healthcare practitioners to use the pharmacy premises for their services. Most did not (82.8%), with 17.2% stating that they did allow such practitioners to use the pharmacy. Examples of other healthcare professionals and activities using pharmacy premises include chiropodists/podiatrists, opticians, audiologists and hearing-aid fitting, nurses performing screening activities, wig clinics, and nutritionists/dieticians.

**International Vignette:
Flexibility and the implementation of services (Australia) (Feletto et al. 2010)**

This paper categorised community pharmacies in Australia as follows:

Table 15: Types of Community Pharmacies in Australia

Pharmacy Type	Features
Classic community pharmacy	Small in physical size Service provision not the emphasis, and often outsourced Viability depends upon the dispensary
Retail destination pharmacy	Larger size with a wide range of health and non-health products Service provision was not a strategic focus Retail efficiencies and focused use of technology
Health care solution pharmacy	Professional service provision was a focus Differentiating themselves from other models of pharmacy through services, often to ward off competition More staff employed to increase capacity, and complex training programmes High use of technology Teamwork focus, with a committed pharmacy owner
Networked pharmacy	Small co-operative groups of pharmacies Broad range of products and services, and cost-sharing Service provision was a focus, sometimes strategically split across the pharmacies to create capacity and respond to local need Use of technology very important to maintain control

The authors concluded that this pharmacy 'mix' was suggestive of a market undergoing relatively rapid evolution. It emphasised the impact in local environments of business changes i.e. the introduction of a price-focused pharmacy in an area might stimulate neighbouring pharmacies to concentrate on services: "Change in the local environment was seen to have a direct impact on effecting change in the philosophical standpoint of the owner and business model used." They also concluded that 'health care solution pharmacies' were best placed to integrate services.

8.4 QUALITATIVE INTERVIEWS – PREMISES

8.4.1 Catchment

We asked interviewees to describe their catchment area and to outline whether it represented an area with disadvantage or affluence. **Most commented that there was a mix in the area**; some had quite high affluence; others had more than 90% GMS patients, indicating a significant level of disadvantage in the area.

Several noted that they had recently seen a **change in the economic circumstances of their patient profile**, with an increase in GMS patients resulting from the impact of the recession on household incomes.

8.4.2 Changes to Premises

Pharmacists were asked if they would like to make changes to their premises in future, especially in light of potentially developing new pharmacy services. All the pharmacists either had recently installed or were in the process of installing the required consultation areas; many had undergone complete refits within the previous five years and were consequently not planning any further changes.

In terms of future service provision, many felt that their premises were adequate, especially with the consultation area in place. Others felt that further expansion or improvement would be necessary, especially in relation to specific aspects such as sterile conditions for certain diagnostic or monitoring procedures. The existing consultation areas would be too small in some pharmacies to accommodate machinery for some screening and diagnostic procedures.

9 OVERALL THEMES FROM SURVEY AND INTERVIEWS

9.1 INTRODUCTION

We found that some of the questions and responses in both the survey and the interviews related more broadly to pharmacy in general and/or the organisations involved rather than specific to the aspects covered by the domains in the previous sections.

9.2 OPINIONS OF PHARMACISTS ON CURRENT AND FUTURE PRACTICE – SURVEY

9.2.1 Background

We asked pharmacists who completed the survey to indicate their opinion on current pharmacy practice in Ireland and how they would like to see it develop into the future. A number of key themes emerged from the responses.

9.2.2 Development of the Pharmacy Role

One key issue that is clear from the responses to this free-text question is the role of the pharmacist and how that could and should be expanded. Many respondents felt that the pharmacist is currently under-utilised and that there is potential to expand the role of pharmacy in healthcare services to patients. Screening and diagnostic services, medicine use reviews, minor ailment schemes, vaccinations and similar services are suggested as ways for the pharmacist to contribute more to patient care. Several commented on how these kinds of services are well-developed in the UK and that Ireland was “behind” other countries in the development of such enhanced services.

Related to this is the perception that pharmacy is under-valued and under-appreciated in the current healthcare structure. There were comments that the HSE regarded pharmacies as “*vending machines*” for medicine dispensing and were unwilling to view them in any other way.

“Pharmacy presently not valued by government.”
“Presently limited and primarily viewed as a dispensing practice with less recognition of our health professional knowledge.”
“Underutilised; not regarded highly by the HSE.”

Several mentioned the wish to see pharmacist prescribing and/or the movement of several medicines from prescription-only to OTC status.

“Would like to see more pharmacist prescribing for minor ailments.”
“I would like to see the movement of more POM to P medicines as in the UK, but I think pharmacists need to have appropriate training and perhaps accreditation to provide these products.”

The issue of remuneration – the current structure and potential future changes – is important in relation to the development of new services, with comments to the effect that without adequate additional income, such services cannot be developed in community pharmacies. Time is also mentioned as a barrier to developing such services.

“I am concerned that low remuneration levels in the future will restrict the development of improved professional practice.” *“I would love to provide other services in-shop but due to time and money constraints, couldn’t see that happening.”*

9.2.3 Concerns about Regulation and Administration

There were many comments describing the sense that the regulatory environment has become very pressurised and many perceive the regulations as excessive and unnecessary. This is exacerbated by the increasing burden of administration relating to reimbursement for patient services from the State. Some are concerned that the paperwork requirements are taking from the time for patient care.

“Drowned by a flood of bureaucracy and form filling.”

“More emphasis on patient care rather than more guidelines and paperwork and having the pharmacist so tied up completing forms and paperwork that they have little or no time to talk to patients.”

9.2.4 Feeling Under Pressure

Many of the comments in response to this question referred to a time of intense pressure on pharmacy and pharmacists. Financial pressure and the difficulties in the relationship with the State feature strongly. There is uncertainty among many pharmacists as to how things will develop, making it difficult for them to plan and have stability.

“I view it as a difficult environment at the moment financially.”

“We are holding on by a thread.”

“Undergoing a very difficult period with cutbacks and regulations.”

“Under attack from the government.”

“Difficult to commit to providing additional services/changing shop to accommodate these services when HSE payments issue is still unresolved/uncertain.”

9.2.5 Integration with Primary Healthcare Provision

There were several responses with a desire to see closer integration of pharmacy into the primary healthcare structure, working more closely with GPs and other healthcare providers in a multi-disciplinary team set-up.

“Collaboration with fellow healthcare professional under a primary care umbrella.”

“We are an underutilised resource within the healthcare group.”

“I would like to see more involvement of pharmacists in primary care teams.”

I would like to see pharmacists educated and become part of a multi-disciplinary team.”

9.3 PSI AND OTHER ORGANISATIONS –THEMES FROM QUALITATIVE INTERVIEWS

When we asked pharmacists to discuss the potential role of the PSI and other organisations in respect of specific areas such as supporting service development or inter-professional relationships, this opened discussion in some cases on the overall perceptions about the current and future role for the PSI and other organisations.

There was a very wide range of opinion in relation to the PSI’s current role and activities. For example, when we asked what the PSI could do to support pharmacists in developing new services, many interviewees questioned whether the PSI had any role in this regard, given its status as the industry regulator. Some questioned whether there might be a fundamental conflict of interest in having one organisation setting and enforcing standards on one hand and developing and promoting the sector on the other. Many felt that the current role of the PSI as regulator effectively took it out of any supportive role it might have played in the past.

“I am confused as to how the PSI is considering how they are going to help us expand our services because at this stage now I consider it a regulator and nothing else.”

“I don’t think that the Pharmaceutical Society has any input into expanding our professional roles. I think they are regulatory and they are there to control what’s going on and ensure that the rules are kept.”

Several were unhappy with how the PSI has taken up its role as regulator, and the pace of change in relation to the Pharmacy Act and the new regulatory environment. Many referred to being bombarded with one new requirement after another and to feeling that the administrative burden has increased significantly in recent years. It was suggested that the PSI appeared to be concerned with details rather than the “big picture” in relation to the

practice of pharmacy. Some referred to the fact that there are aspects of pharmacy practice in terms of providing a high-quality service to patients that cannot be measured.

“I personally think the PSI are putting huge pressure on us at a time where we’re getting pressure from every other side anyway. That if they kind of aided us rather than pressurised us to get where we want to go I think we would actually get there a lot faster.”

“However, in my opinion following rules and regulations may make you a professional but it does not make you good at your job. I feel that they are missing out on what the art of pharmacy actually is.”

However, this view was not universal. Many believe that the enforcing of standards was long overdue and that the pharmacy sector overall is benefiting from the increase in standards and enforcement, ensuring that everyone is meeting the professional standards necessary to maintain a high quality service to patients. Some were supportive of the overall aims of the PSI’s programme of activities even if they did not agree with every aspect of the PSI’s actions over the past few years.

“I think the guidelines that they are bringing in at the moment with regard to codeine and putting in consultation areas, I think that’s a very positive thing. A lot of pharmacists might not be thinking that but I do think it’s a good thing, I think it’s a great thing and you know because the inspections are coming along I think that you have to have everything right which is a good thing.”

The IPU was broadly supported as an organisation promoting the interests of pharmacists; however, many characterised it as being too focused on the financial aspects rather than the professional development of pharmacy and pharmacists.

A few pharmacists suggested that there was room within pharmacy for a third organisation dedicated to the development of pharmacy as a profession; perhaps in conjunction with the academic institutions.

“There is room for the three pharmaceutical colleges in Ireland to create a society which will embrace professionalism while at the same time allowing room for innovation.”

10 CONCLUSIONS AND RECOMMENDATIONS

10.1 OVERALL CONCLUSIONS

This Baseline Study has sought to provide an understanding of the nature and type of community pharmacy services currently being delivered in Ireland, and to compare current practice in Ireland with relevant aspects of community pharmacy in other developed countries.

We have produced a comprehensive set of findings across a series of domains, each of which has been detailed in the preceding sections of this report. One significant aspect which proved to be difficult to achieve during the study was the production of like-for-like comparisons between Ireland and other countries, given the lack of commonality between healthcare systems, the absence of common definitions, and the differing legislative and regulatory regimes. Whilst we have been able to produce a series of relevant vignettes and other research findings within this report which do provide interesting comparisons between community pharmacy in Ireland and that in other countries, it may be that the PSI will wish to commission additional comparative research on specific topics as a result of our findings.

Notwithstanding the issues surrounding comparative international research, some of the key strategic issues to emerge from this research have included the following:

- A key factor that emerged in relation to pharmacists' opinions on how pharmacy should develop was the common perception that there is no national vision for pharmacy and how it could and should fit into the wider healthcare delivery system. This is something which the PSI could be seen to address by continuing to work closely with the HSE and Department of Health and Children. There is a strong sense within community pharmacy that the various bodies act in isolation and that there isn't a coherent strategy.
- It would be worthwhile to examine ways to address the appetite for the provision of enhanced services, especially screening and diagnostic services, given the substantial body of positive responses to the "Would Like to Provide" questions for these services, where pharmacists have indicated that they don't currently provide them but would like to offer them to patients.
- Further examination of the issue of medicines use reviews and pharmacist prescribing schemes may be merited, given their prominence in both the survey (80% would like to provide MURs) and the interviews, where both of these issues were key themes in what pharmacists want to see in community pharmacy in the future.
- When looking at the development of further services, it would be helpful to take into account the influencing factors, such as the age of the supervising pharmacist and the location of the pharmacy in terms of city, small town, etc., identified by Dr John Newell's analysis and to focus on ways to encourage those who are under-represented to be able to provide such services.
- The PSI might consider looking at how it can support pharmacists in developing new services. Potential mechanisms include the development of standards, the design of specific training programmes, and accreditation for "specialist" pharmacists to ensure that enhanced services are delivered according to specified standards.
- Some of the data contained in this report has been superseded by the imminent development of, for example, mandatory CPD requirements and the establishment of the Institute of Pharmacy (see Section 10.2 below); readers will therefore note that some of the data reported herein is now historical, and the PSI will no doubt wish to consider our findings as part of the implementation of these new arrangements.

10.2 THE CHANGING CONTEXT FOR THE PSI

As noted above, the PSI has been actively pursuing the strategic development of several areas of its responsibilities since this Baseline Study was initiated, with the result that some of the findings reported herein have been superseded by events external to this project.

Central to this has been the matter of Continuing Professional Development (CPD). A core function of the PSI includes the requirement to promote and ensure a high standard of education and training for persons seeking to become pharmacists, and that those persons and pharmacists obtain appropriate experience. The PSI must also ensure that pharmacists undertake appropriate CPD, including the acquisition of specialisation. One of the PSI's main duties is the accreditation of education regimes for pharmacists, both prior to and post-registration. A further key duty is the requirement to take suitable action to improve the profession of pharmacy.

The PSI recently commissioned studies to review the 5 year programme of education and training required to qualify as a pharmacist and the associated accreditation system (in August 2008) and to review international CPD models to determine an appropriate system of CPD for pharmacists in Ireland (in January 2009). The final reports were approved by the PSI Council at its June 2010 meeting.

The PSI now wishes to proceed with the implementation of the recommendations arising from these two studies, in order to ensure a competency based approach to development that extends across both pre-registration and ongoing registration systems. With regard to the latter, the CPD review recommends the establishment of "an Institute overseeing the management and delivery of CPD, funding and supporting appropriate provision and ensuring outcomes are generated by providers and assessing the practice standards of pharmacists".

The Institute will also be required to contribute to the PSI's core duty of taking suitable action to improve the profession of pharmacy and the development of pharmacy practice in Ireland in line with international evidence and experience, and evolving healthcare needs, and to progress the *Pharmacy Ireland 2020* initiative of the PSI Council.

In order to manage the implementation and on-going management of the CPD programme allied with the development of pharmacy services, the PSI has recently commenced a procurement exercise to appoint an external body to take responsibility for the establishment of this Institute. It is also intended that the contract will include the appointment of an Institute Executive Director to manage the Institute overall, and a Director of Pharmacy Practice Development to oversee the development of pharmacy services.

This very recent development is not reflected in the findings of the Baseline Study, nor indeed would respondents to the quantitative survey or qualitative interview participants have been aware of the conclusions and recommendations arising from the two reviews of education and training and of international CPD models.

10.3 RECOMMENDATIONS

As this is a Baseline Study, we have deliberately kept our recommendations to a minimum, confining them to the process of surveying the community pharmacy sector in future years, moving forward from this 2010 baseline.

In essence, what we have produced is a snapshot of the pharmacy sector as it currently stands in 2010. This report does not attempt to identify trends, as that would require the production of data within common data sets over a period of time, and the measurement and analysis of any identified changes. However, we recommend that there would be considerable merit for the PSI to repeat this survey (both quantitative and qualitative) in

2015, to track any changes which have occurred in the intervening four years so that trends can be identified, changes in practice and perception tracked, and the impact of interventions or initiatives assessed.

More immediately, the PSI may wish to commission further work on some or all of the key themes which have emerged from the Baseline Study, possibly including the topics set out in Section 10.1 above. Additionally, the PSI and Steering Group may wish to consider whether some of the international comparisons provided in this report via the vignettes are worthy of further exploration in the future.

APPENDIX 1 QUANTITATIVE SURVEY



BASELINE STUDY OF COMMUNITY PHARMACIES

The Pharmaceutical Society of Ireland have commissioned this survey of community pharmacies in order to establish a baseline in respect of community pharmacy in Ireland and to build upon the information gathered to further develop the pharmacy sector in the future.

Horwath Bastow Charleton is undertaking this survey on behalf of PSI.

Responses to this survey will be anonymised and collated for the purposes of reporting and no identifiers will be passed to the PSI in respect of individual survey responses.

Please return the survey by post before the **16th of July 2010** to:

Vanya Sargent
Horwath Bastow Charleton
Marine House
Clanwilliam Court
Dublin 2

This survey is also available in online format. Should you wish to complete the survey online, please contact Vanya Sargent in Horwath Bastow Charleton to obtain the link to the survey and your unique password to access it:

vanya.sargent@hbc.ie

01 448 2253 or 01 676 0951

About you

1. **What is your designated role? [Please tick one]**

- Superintendent Pharmacist*
- Supervising Pharmacist*
- Both*

2. **How would you best describe your position in this pharmacy? [Please tick one]**

- Owner*
- Manager*
- Other Permanent employee*
- Other, please describe: _____*

3. **How long have you worked in this pharmacy? (please tick one)**

- Less than one year*
- One to two years*
- Three to four years*
- Five or more years*

4. **How many hours do you work in this community pharmacy in a typical week?**

_____ (*number*)

5. **Do you do any pharmacy-related activity other than that which relates to this pharmacy?**

- Yes*
- No*

5a. **If Yes, please give details:**

_____ (*free text*)

6. **Are you:**

- Male*
- Female*

7. **Which age group are you in?**

- Under 35*
- 35-44*
- 45-54*
- 55-64*
- 65 and over*

8. **Which year did you register as a pharmacist?**

_____ (*year*)

9. Where did you complete your pharmacy degree (or equivalent qualification)?

- UCC
- RCSI
- TCD
- UCD
- Northern Ireland School of Pharmacy
- Other UK School of Pharmacy (Eng, Scot, Wales)
- Other EU School of Pharmacy
- School of Pharmacy outside the EU
- Other (please specify) _____

10. What areas of pharmacy have you practised in since qualifying? [Tick all that apply]

- Community
- Hospital
- Industry
- Research
- Other (please specify) _____

Services

11. How many prescription items are dispensed in the pharmacy in a typical month? [Please tick one]

- Less than 500
- 501 – 1000
- 1,001 – 2,000
- 2,001 – 3,000
- 3,001 – 4,000
- 4,001 – 5,000
- 5,001 +

12. How many items in each of the following categories are dispensed in a typical month?

Category	Number of Items Dispensed
Private	_____
DPS	_____
GMS (inc. GMS repeats)	_____
Long-term illness	_____
High-tech prescriptions	_____
Methadone	_____
Other (please specify type of prescription)	_____

13. Does this pharmacy provide services to patients in residential care settings?

- Yes No

13a. If Yes, then please tell us about the settings this pharmacy serves.

	Number of units served	Number of patients in these settings	Dispense prescriptions (tick)	Provide monitored dosage devices (tick)	Provide advice to institution (tick)	Review medication for individual patients (tick)
Nursing homes (older patients)	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other residential care homes (e.g. for intellectual disability)	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prisons	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Homeless hostels	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other care settings (please specify)	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	_____				
_____	_____	_____				

14. Do you provide any of the following enhanced services? For each service listed, please tell us whether you provide them now, or whether you would like to provide these services in future. [Tick all that apply]

[An enhanced pharmacy service refers to a service implemented in pharmacies that is additional to or not routinely provided with prescribed or non-prescribed medicines. The service is often characterised by facilities and/or devices dedicated to the service and staff who are competent or formally trained and for which a private fee may or may not be charged.]

Services	Provide currently	If not provided currently, would like to provide in future	If not provided currently, would not like to provide in future
<i>Disposal of unwanted medicines</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Monitored dosage systems (not care homes)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Home delivery service</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Supervised methadone service</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Needle exchange</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Fertility Treatment Dispensing Services</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Veterinary Pharmacy Services</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Advice and supply to residential care homes</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Palliative care</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Structured Medicine Use Reviews</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. Do you provide any of the following health promotion services? For each service listed, please tell us whether you provide them now, or whether you would like to provide these services in future. [Tick all that apply]

Health Promotion Services	Provide currently	If not provided currently, would like to provide in future	If not provided currently, would not like to provide in future
<i>Structured smoking cessation services</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Nutrition / exercise</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Obesity / Weight management</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Sexual health</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. Do you provide any of the following health screening services? For each service listed, please tell us whether you provide them now, or whether you would like to provide these services in future. [Tick all that apply]

Health Screening Services	Provide currently	If not provided currently, would like to provide in future	If not provided currently, would not like to provide in future
<i>Blood pressure screening</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Lipid / Cholesterol screening</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Diabetes screening</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Weight / Height / BMI screening</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Lung capacity screening</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Osteoporosis screening</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Pregnancy testing</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>PSA (Prostate Specific Antigen) screening</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. Do you currently provide or wish to provide any other enhanced services not mentioned above? If so, please give details of these services

Other Enhanced Services	Provide currently	If not provided currently, would like to provide in future
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>

18. Please estimate the time that you (the pharmacist) spend on these activities during a typical week and indicate whether they take up time outside your normal working hours.

Activity	Tick one of the categories below					Tick if it happens outside normal working hours
	Most of the time on most days	Some of the time on most days	Some of the time on some days	Little time on few days	Never	
Dispensing prescriptions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Counselling prescription patients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Counselling non-prescription patients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Giving advice about minor illness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Giving advice about long-term conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Giving advice about healthy lifestyles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Providing other pharmacy services in the pharmacy e.g. medicine use reviews	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Providing other pharmacy services outside the pharmacy , e.g. advice to care homes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communicating with other healthcare professionals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attending health related meetings e.g. HSE, patient support group, inter-professional meetings, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Undertaking CPD / training / ICCPE activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Audit (e.g. developing and reviewing SOPs) and Practice Research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adverse drug reaction reporting/ follow up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Helping patients with their eligibility for state support with medicine costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stock management e.g. ordering / sourcing and checking of medicinal products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other administration/management duties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Staff training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Merchandising	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Activity	Tick one of the categories below					Tick if it happens outside normal working hours
	Most of the time on most days	Some of the time on most days	Some of the time on some days	Little time on few days	Never	
Breaks (e.g. lunch)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Out-of-hours availability to patients (e.g. phone calls)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19. What forms of written or non-verbal information/ counselling (e.g. direction to websites or support groups, providing leaflets, etc.) does the pharmacy offer to patients?

_____ (free text)

Technology

20. Which pharmacy activities are supported by a specific feature on your computer system, and do you use this feature to record activity? [Tick all that apply]

Categories	My computer system has a feature that supports this	I use this feature on my computer system	I would like to do more of this by computer
Medicines supplied	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Allergies noted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interventions and communications with other healthcare professionals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non- prescription items purchased	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug interactions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adverse drug reactions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adverse incidents (e.g. Prescribing or dispensing errors)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmaceutical care needs (e.g. medication must be supplied in MDS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Referrals to other healthcare professionals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Disability support given (e.g. Non-child resistant containers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advice on minor illnesses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Healthy lifestyle interventions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient disease state	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
General comments on patients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-clinical reporting of incidents in the pharmacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ordering stock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Providing information about medicines and health to patients (e.g. printing out information)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CPD/educational activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Decision support (e.g. access to scientific papers, online reference sources)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Supporting professional services (e.g. record-keeping, audit)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Professional networking (e.g. pharmacy discussion groups)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21. Do you record any clinical information on paper?

- Yes No

21a.If yes, please describe what information is held this way.

_____ (free text)

22. How many PC/laptop computers do you have in the pharmacy that are used for clinical pharmacy activities?

_____ (number)

23. Please tell us which computer supplier system you use:

- Helix Health*
- McLernons*
- Ocuco*
- Other (please specify) _____*

24. Is the system based on Windows?

- Yes No

25. Do the pharmacy's professional staff have access to relevant healthcare resources on the internet from the pharmacy computer system?

- Yes No

26. Which internet resources do you use most? [Tick all that apply]

- PSI*
- IMB*
- Medicines.ie (IPHA)*
- HSE*
- IPU*
- Patient support groups*
- Other (please specify) _____*

27. Does the pharmacy have a dedicated pharmacy email address for professional pharmacy business which all pharmacists can access if necessary?

- Yes No

28. Do patients ever email the pharmacy at this address?

- Yes No

29. Does the pharmacy have a website?

- Yes No

Interprofessional Relationships

30. If you offer screening services, do you have referral procedures to other healthcare professionals in place, where appropriate?

- Yes No

31. Please indicate how satisfied you are with your professional relationship with local doctors for the purpose of providing patient care.

Circle a number where 1 is very dissatisfied and 5 is very satisfied

1 2 3 4 5

32. Do you participate in meetings with any local GP practice(s) or other doctors' groups?

- Yes No

33. Other than GPs, which professionals do you regularly communicate with about a patient's medication and other issues such as blood tests, screening and other health-related issues? [Tick all that apply]

- None
- Consultant (or other hospital doctor)
- Practice nurse
- Nurse prescribers
- Other nurses
- Other community pharmacists
- Hospital pharmacist
- Dentist
- Optician
- Social worker
- Other (please specify) _____

Workforce

34. How many pharmacists work in this pharmacy?

_____ (number)

35. Please tell us about the pharmacists that work in this pharmacy.

Pharmacist (complete one line for each pharmacist that works at this pharmacy)	Number of hours worked in a typical week in this pharmacy	Year qualified	Designation of the pharmacist (tick*)			
			Superintendent pharmacist	Supervising pharmacist	Employee	Locum
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

* If pharmacist is both Supervising and Superintendent Pharmacist, tick both applicable boxes

36. Thinking about a typical week in your pharmacy, please tell us how many of the following members of staff work in the pharmacy (or pharmacy part of the business), including full-time and part-time staff:

Staff role	Number of individuals in the category	Total number of hours employed (week)
Example	2 persons	65.5 (35.5 for one / 30 for the other) hrs
Pharmaceutical assistants	persons	hrs
Pharmacy Interns	persons	hrs
Pharmacy technicians/ Trainee Technicians	persons	hrs
Counter assistants	persons	hrs
Other staff (relevant to the pharmacy service)	persons	hrs

37. Do you or your pharmacists have any additional pharmacy qualifications or a speciality in a particular field within healthcare?

Area in which you/they hold qualification(s) / specialise	Qualification(s) or specialities e.g. Certificate, Diploma, MSc, PhD, other...	Do you/they use this in your/their work?	
		Yes	No
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

Education/CPD (incorporating CE)

CPD is defined as a systematic, ongoing, cyclical process of self-directed learning and continuous quality improvement which allows pharmacists to learn and develop to meet their own personal and professional needs, the needs of the health service and the needs of patients. CE is defined as structured formal learning experiences and activities that pharmacists undertake following registration to improve knowledge, skills and competencies. Quality-assured CE is a component of the learning experiences required in a CPD system.

38. What arrangements have been put in place by the pharmacy owner and/or Superintendent Pharmacist to ensure all pharmacists employed maintain appropriate experience in the practice of pharmacy and undertake CPD (incorporating CE)?

- Allowing paid time off for CPD (incorporating CE) activities
- Allowing unpaid time off for CPD (incorporating CE) activities
- Paying for staff membership of ICCPE
- Funding CPD (incorporating CE) activities
- Requiring pharmacists to undertake minimum levels of CPD (incorporating CE) (give details below)
- Providing inhouse training and development activities
- Providing a staff study area within the pharmacy
- Other (please specify) _____

38a. If you have minimum CPD (incorporating CE) requirements for your pharmacists, please give details of these requirements below:

_____ (free text)

This section refers to the pharmacist completing the questionnaire.

39. What type/s of CPD (incorporating CE) activity have you done in the last year? [Tick all that apply]

- Addressing learning opportunities in my everyday practice
- Attending ICCPE lectures
- Attending formal lectures by other providers
- Attending other educational meetings
- Reading professional journals
- Reading scientific papers
- Engaging in distance learning
- I am working towards a postgraduate qualification: Qualification type _____
 Institution _____
- Supervising pharmacy intern
- Audit (e.g. developing and reviewing SOPs)
- Other (please specify) _____

40. Are you recording your CPD (incorporating CE) activity in a portfolio or similar?

- Yes
- No

41. For what purposes have you undertaken CPD (incorporating CE)?

- Personal professional development
- To deliver a specific service in the pharmacy
- Development of pharmacy staff
- Developing interprofessional relationships
- Other (please specify) _____

42. What would help you to engage in more CPD (incorporating CE)?

- Availability of CPD (incorporating CE) activities closer to pharmacy location
- Greater frequency and a more convenient range of times for CPD (incorporating CE) activities
- Availability of an enhanced range of topics that meet practice needs
- More access to online or technology-based learning methods for CPD (incorporating CE)
- Greater availability of locum cover
- Different staffing rosters in the pharmacy to free up time
- Understanding what workplace activities can constitute appropriate CPD (incorporating CE)
- More opportunities to engage in interprofessional learning with other healthcare professionals
- Other (please specify) _____

43. What stops you engaging in as much CPD (incorporating CE) as you would like to?

- Lack of time
- Difficulty arranging locum or in-house cover
- Distance from CPD (incorporating CE) activities
- Inconvenient times for CPD (incorporating CE) activities
- Insufficient range of CPD (incorporating CE) activities for my needs and wants
- Lack of information on what CPD (incorporating CE) activities are available
- Other (please specify) _____

Premises / setting

44. County

- | | | | | | |
|-----------|--------------------------|-----------|--------------------------|----------|--------------------------|
| Donegal | <input type="checkbox"/> | Leitrim | <input type="checkbox"/> | Longford | <input type="checkbox"/> |
| Cavan | <input type="checkbox"/> | Sligo | <input type="checkbox"/> | Offaly | <input type="checkbox"/> |
| Monaghan | <input type="checkbox"/> | Roscommon | <input type="checkbox"/> | Carlow | <input type="checkbox"/> |
| Clare | <input type="checkbox"/> | Mayo | <input type="checkbox"/> | Laois | <input type="checkbox"/> |
| Limerick | <input type="checkbox"/> | Galway | <input type="checkbox"/> | Kilkenny | <input type="checkbox"/> |
| Kerry | <input type="checkbox"/> | Louth | <input type="checkbox"/> | Wicklow | <input type="checkbox"/> |
| Cork | <input type="checkbox"/> | Meath | <input type="checkbox"/> | Wexford | <input type="checkbox"/> |
| Tipperary | <input type="checkbox"/> | Kildare | <input type="checkbox"/> | Dublin | <input type="checkbox"/> |
| Waterford | <input type="checkbox"/> | Westmeath | <input type="checkbox"/> | | |

45. Type of pharmacy (Please tick one)

- Single outlet
- Group or Chain ownership with 2-5 outlets
- Group or Chain ownership with 6 or more outlets

46. Location (Please tick one)

- City (pop greater than 30,000)
- Large towns (pop. 20,000 – 30,000)
- Mid-sized towns (pop. 5,000 – 20,000)
- Small towns (pop. 1,500 – 5,000)
- Villages (pop less than 1,500)

47. Setting (Please tick one)

- Town high street
- Shopping centre
- Housing estate
- Among local neighbourhood shops (a small parade)
- Other (please specify) _____

48. How close is your pharmacy to the following healthcare services?

Service	Proximity		
	>500m	501m – 1km	>1km
Acute hospital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Private urgent care centre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GP surgery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HSE health centre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HSE primary care centre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

49. How long has the pharmacy been established?

_____ Years

50. Please tell us if the pharmacy ever opens: [Please tick all that apply]

- Before 9am (Mon – Fri)
- After 6pm (Mon – Fri)
- After 8pm (Mon – Fri)
- After 10pm (Mon – Fri)
- After 2pm (Sat)
- After 6pm (Sat)
- On a Sunday

51. Please provide a breakdown of your pharmacy’s patient profile. [Does not need to add up to 100%]

Category	Approximate percentage of patients
Older patients (over 60)	_____ %
Families with children under 12	_____ %
Younger patients (over 12, under 30)	_____ %
Patients living in Residential Care settings (e.g. Nursing Homes)	_____ %

52. Please indicate what percentage of your patients are regular/repeat patients.

_____ %

53. Is there a consultation/counselling area in the pharmacy where you can talk to patients in private?

- Yes No

53a. If yes, how many patient consultations take place in this area in a typical week?

_____ (number)

54. Do you allow any other practitioners to run clinics or services from your pharmacy?

- Yes No

54a. If yes, please give details of the practitioner and the services provided

_____ (free text)

55. Do you have any involvement in local multi-professional group/s?

- Yes No

55a. If yes, please give details of which group/s

_____ (free text)

56. Do you have any professional engagement with patient support group/s?

- Yes No

56a. If yes, please give details of the group/s and types of engagement

Support Group	Engagement			
	Direct patients to support group	Direct patients to group website	Provide information supplied by group	Provide professional pharmacy advice to group
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

57. How do you view pharmacy practice in Ireland currently and how would you like to see pharmacy practice develop in the future?

58. Thank you for your time in completing this survey. We would welcome any additional comments you may have in relation to the questionnaire.



Follow-up interviews

We plan to interview approximately 30 pharmacists following this survey, in order to explore emerging issues in more detail. Please indicate if you would be happy for an interviewer from Horwath Bastow Charleton to contact you with more information about the interview:

- Yes
- No

If yes, please put your name and preferred telephone/fax contact number here. This personal information will not be reported with the survey data.

If you do not hear from us by 31st August 2010, then thank you for your interest but an interview will no longer be necessary.

THANK YOU FOR YOUR TIME IN COMPLETING THIS QUESTIONNAIRE

Please return the survey by post by 16th July 2010 to:

Vanya Sargent
Horwath Bastow Charleton
Marine House
Clanwilliam Court
Dublin 2

APPENDIX 2

QUALITATIVE INTERVIEW INFORMATION SHEET, CONSENT FORM, AND QUESTIONS

INFORMATION SHEET

You are being invited to take part in an interview for this project, following on from your completion of the PSI questionnaire. Please read the following information carefully before deciding whether to participate or not. If you have any questions before you can decide, please contact us. Our details are given at the bottom of this sheet.

What is this project about?

The PSI is undertaking a study to review and provide an understanding of the nature and type of pharmacy services currently being delivered in Ireland.

The project aims to provide baseline information to assist the PSI to:

- understand the nature and scope of pharmacy practice in Ireland
- identify the strengths and weaknesses in the current provision of pharmacy services
- identify areas of best practice
- support the development of pharmacy practice in Ireland

Over 400 pharmacists have already completed the PSI questionnaire, and the results are currently being prepared. The aim of this second phase is to discuss these issues in more detail with community pharmacists. We have been asked by the PSI to explore pharmacists' perceptions and experiences of current pharmacy practice, and their ideas for future services. We would like to explore issues such as successes and barriers in service provision, and your thoughts about the resources that you have (including your premises and staff), and that you might like to have.

Why have I been asked?

We are asking a sample of community pharmacists who responded to the PSI survey to take part in this part of the project. We are aiming to recruit pharmacists from both urban and rural areas to participate.

What would I need to do?

We would like to do one telephone interview with you that will take 20-30 minutes. We would like to focus on the services provided in the pharmacy and the supporting aspects such as premises, workforce, and technology, along with some discussion about CPD (incorporating CE) and interprofessional relationships.

If you agree to take part, you should complete the consent form with this sheet and return it to the evaluation team by fax to 01 662 5105 or by post to HBC, Marine House, Clanwilliam Court, Dublin 2. Then one of the team will telephone you to make an appointment for the interview that suits you.

We will ask you if we can record the interview on a digital sound recorder. This means that we do not have to take lots of notes during the interview, and can concentrate on the discussion, but you can opt not to be recorded or ask at any time for the recording to stop.

Please note that no identifying information will be passed to the PSI in respect of individual pharmacies. All information about individual pharmacies and pharmacists will be kept confidential, and any quotes used in the resultant documentation will be fully anonymised.

CONSENT FORM
PSI Baseline Study of Pharmacy Practice 2010: Follow-up Interview

If you would be willing to take part in this interview, please complete the form below and return it to us by fax to 01 662 5105, by post to HBC, Marine House, Clanwilliam Court, Dublin 2, or by scanning and emailing to vanya.sargent@hbc.ie. Please keep a copy for your records

****Please initial all the grey boxes in the grid, and complete the box below with your contact details, today's date, and signature****

1.	I confirm that I have read and understood the information given to me about this interview, and have had the opportunity to ask questions.		
2.	I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.		
3.	I understand that the interview will be recorded on digital audio, and that the recording will be kept securely until the end of the evaluation. I can ask for the recording to stop at any time, during which time field notes will be taken.		
4.	I understand that all information about me will be kept confidential, and that any quotes used in reports or papers will be anonymised.		
5.	I agree to take part in this interview.		

<p>Preferred Contact Telephone Number:</p> <p>Best day(s) / time(s) to call this number:</p> <p>Name: _____ Date: _____ Your Signature: _____ (please print)</p>
--

For Office Use:

- I confirm that I have fully explained the purpose of the project and what is involved to

- I have checked that the interviewee has a copy of this form together with the information sheet

Interviewer's signature: **Date:**

Interviewer's Name:

Participant Number:

QUALITATIVE INTERVIEW QUESTIONS

Introductory comments from the interviewer will include thanks for their contribution in terms of the quantitative survey.

Opening

Has the work that you do changed in the last [5 years]? *If so, how?*

How would you like it to change in the future?

Services

How do you feel about the services that you currently provide in your pharmacy?

- *Which services work well? Which work less well?*

Are there services that you would like to offer in the future?

- *What are your main reasons for considering these services?*

What types of services should pharmacy as a profession concentrate on in the future?

- *Who should pay for them?*

What do you feel are the barriers to providing more services?

What would enable you to provide more services?

How can pharmacists be supported by PSI and others in expansion or improvement of services?

Premises

Could you describe the catchment area where the pharmacy is situated?

- *e.g. on a range from 1 to 10, disadvantaged to affluent*

Do you plan, or would you like, to make changes to the premises in the future?

- *Will future services need changes to premises?*
- *What kind of changes do you think will be needed?*

Technology

How do you feel about the IT resources within your pharmacy?

Do you see the need for any changes in the IT capability of your pharmacy in order to support the services that you provide / would like to provide?

- *What links would you like to see with data that other professionals hold about your patients?*

- *What information would you like to share with other professionals about your patients?*

Staffing

What would you change about the staffing in your pharmacy, if you could?

Would you like to have a better ratio of pharmacists to other staff?

- *From a workload point of view*
- *From a professional interaction point of view*

Does the current staffing in your pharmacy reflect what is needed to allow for the development of professional services?

- *Which activities are delegated to other staff by the pharmacists?*
- *Could more activities be delegated to other staff?*
- *What are the barriers to pharmacists delegating appropriate activities to other staff?*

Education / CPD

Do you feel equipped for current and future practice with the CPD (incorporating CE) activities available to you?

- *Are there any implications for CPD (incorporating CE) from the future service trends you mention above?*

Interprofessional Issues

How would you describe your professional relationship with local GPs and other healthcare professionals (*prompt list to be included for interviewer, e.g., hospital pharmacists; public health nurses, etc.*)?

- *What factors make for a successful professional relationship?*
- *What barriers prevent a successful professional relationship/working together for patients' benefit?*
- *How can pharmacists support this?*
- *How can pharmacists be supported by PSI and others to do this?*

Closing

Is there anything else that you would like to say about pharmacy services in Ireland?

APPENDIX 3

FRAMEWORK FROM INTERNATIONAL LITERATURE REVIEW

FRAMEWORK FOR PSI SCOPING EXERCISE

Author / Citation of paper or report	Methods / Notes	Insights: Premises	Insights: Workforce	Insights: Services	Insights: Education	Insights: Interprofessional	Insights: Technology
<ul style="list-style-type: none"> • Author/s • Year • Country • Title • Contact 	[including Sample / Respondents and Administration medium]						
Pharmacy Guild of Australia, Australian Capital Territory (ACT) Branch 2005 "Australia ACT Community Pharmacy Survey" ann.dalton@guild.org.au	All community pharmacies in the ACT (57, 100%) Survey	Opening hours Includes economic data	Languages spoken F/T, P/T, qualified	Covers a wide variety of services, health care and other			

Author / Citation of paper or report	Methods / Notes	Insights: Premises	Insights: Workforce	Insights: Services	Insights: Education	Insights: Interprofessional	Insights: Technology
CG Berbatis, VB Sunderland, CR Mills and M Bulsara June 2003	Self-completion Questionnaire Reported over 81% completion rate	Gave some info on type of pharmacy and location.	Demographics of responding pharmacists.	Provision of enhanced services related to some characteristics of pharmacies. Listed barriers to service provision.	Reported levels of 'continuing pharmacy education'	Gave info on communications with other professionals, e.g. referral rates	Gave info on provision and use of technology e.g. internet
Australia National Pharmacy database project School of Pharmacy, Curtin University of Science and Technology of Western Australia berbatis@git.com.au	Pharmacies across Australia stratified to reflect adequate numbers of remote and rural pharmacies			Gave some clinical outcome info, e.g., refused Rx for errors, fraud etc.			

Author / Citation of paper or report	Methods / Notes	Insights: Premises	Insights: Workforce	Insights: Services	Insights: Education	Insights: Interprofessional	Insights: Technology
Berbatis, Sunderland, Joyce, Bulsara, Mills 2007 Australia Enhanced pharmacy services, barriers and facilitators in Australia's community pharmacies: Australia's National Pharmacy Database Project IJPP 2007, 15: 185–191. berbatis@git.com.au	Survey of 1131 Australian community pharmacies (stratified representative sample) asking about uptake of 27 enhanced services. Work based on previous 2002 survey.	Lists predictors for providing enhanced services. Variables looked at: Shop location, hours open, size, inclusion of a forward pharmacy area, inclusion of an enclosed counselling area, inclusion of an unenclosed counselling area, management structure, number of customers, relative patient consultation time and turnover.	Study looked at barriers and facilitators to providing enhanced services. Variables: group membership (membership of a marketing or banner group of pharmacies)	Most services seem to be paid for by the client – little public funding. Defines an enhanced service: “An enhanced pharmacy service (EPS) refers to a service implemented in pharmacies that is additional to or not routinely provided with prescribed or non-prescribed medicines. The service is often characterised by facilities and/or devices dedicated to the service and staff who are competent or formally trained and for which a private fee may be charged.	Variables: Quality Care Pharmacy Program (QCCP) status (accreditation of pharmacies), participation in ‘continuing pharmacy education’	Barrier to provision of enhanced services: cannot meet with GPs and other local HCPs.	Facilitator to provision of enhanced services: access to patient notes (AA – I presume technology is involved in this).

Author / Citation of paper or report	Methods / Notes	Insights: Premises	Insights: Workforce	Insights: Services	Insights: Education	Insights: Interprofessional	Insights: Technology
Blenkinsopp, Bond, Celino, Inch, Gray 2007 UK National evaluation of the new community pharmacy contract Pharmacy Practice Research Trust	Self-completion survey and telephone survey of all community pharmacies in 31 PCOs in England and Wales Does not report response rate – total sample was 1080 pharmacies	Three-quarters of pharmacies had a consultation area	One-third of pharmacists were self-employed and 2/3 employed One in five supervising pharmacists were locums One in three were planning staff changes in the next year Delegation to pharmacy staff	Enhanced services being provided by 87% of pharmacies (40% of which were providing 3 or more ES)	Training needs most often expressed were clinical, research/audit, and clinical governance Most pharmacists (83%) were recording CPD activities	Low satisfaction with respect from GPs	Staff in 60% of pharmacies have access to the Internet One-third used Internet information to advise the public

Author / Citation of paper or report	Methods / Notes	Insights: Premises	Insights: Workforce	Insights: Services	Insights: Education	Insights: Interprofessional	Insights: Technology
Bradley, Elvey, Ashcroft & Noyce 2006 UK Commissioning services and the new community pharmacy contract: (3) Uptake of enhanced services The Pharmaceutical Journal 277: 224-6 Fay.bradley@manches-ter.ac.uk	Self-completion postal survey for all PCTs in England. 74% response rate			Looked at the extent to which enhanced services were commissioned by PCTs. ES commissioned by most PCTs were supervised administration (88%), Needle/syringe exchange (85%), and stop-smoking (77%). The most widespread service across pharmacies was stop-smoking (2118 pharmacies participating (36%))			
Doucette, Kreling, Schommer, Gaither, Mott, Pederson Evaluation of community pharmacy service mix: evidence from the 2004 National Pharmacist Workforce Study. J Am Pharm Assoc. 2006; 46:348-355 William-doucette@uiowa.edu	To describe mix of services offered and factors associated with offering them. Analysis of 2004 workforce survey in US. Survey of 1847 pharmacies, 611 responses.	Types of pharmacy (independent, supermarket and mass merchandiser (inc. Chains)).	Number of pharmacists on duty Numbers of other staff Rx volume	Provides list of services offered.			Presence of automated dispensing system 'adequacy of resources'

Author / Citation of paper or report	Methods / Notes	Insights: Premises	Insights: Workforce	Insights: Services	Insights: Education	Insights: Interprofessional	Insights: Technology
Feletto E, Wilson LK, Roberts AS, Benrimoj SI. 2010 Australia Flexibility in community pharmacy: a qualitative study of business models and cognitive services Pharmacy World and Science 32: 130-8 elle@pharm.usyd.edu.au	57 semi-structured interviews with community pharmacy owners, managers and support staff in 30 pharmacies across Australia.	Types of pharmacy business: corporate banner groups; retail destinations; health care solution; classic community pharmacy; networked pharmacy.	Attitude of the pharmacy owners – giving clear strategic direction influenced the provision of cognitive services in health care solution pharmacies Owners choose a position most in line with the perceived source of viability Successful service provision involved changing the role of staff members e.g. employment of specialised personnel	Health care solution pharmacies were more likely to provide cognitive services	Successful service provision was reinforced through appropriate training	Health care solution pharmacies employed a range of specialised personnel e.g. nurses and naturopaths	Technology was used to create efficiencies in retail destination pharmacies Technology more important in networked pharmacies than other types to develop sophisticated monitoring systems

Author / Citation of paper or report	Methods / Notes	Insights: Premises	Insights: Workforce	Insights: Services	Insights: Education	Insights: Interprofessional	Insights: Technology
Abhijit S. Gadkari, MS; David A. Mott, PhD; David H. Kreling, PhD ; and Joseph K. Bonnarens, PhD 2009 USA Pharmacy Characteristics Associated With the Provision of Drug Therapy Services in Nonmetropolitan Community Pharmacies The Journal of Rural Health 25(3): 290-5 asgadkari@wisc.edu	Survey (2005) sent to manager/owner of all 279 non- metropolitan community pharmacy sites in Wisconsin. Qs on 7 drug therapy services(DTS) (6 disease state management programs& medication therapy management) Descriptive statistics were calculated for variables describing the pharmacy sites and how DTS were provided. 44% response rate	location in a more rural area significantly positively related to provision of any DTS.	Higher service orientation and lower workload per pharmacist significantly positively related to provision of any DTS.	31% of the respondent pharmacies offered MTMS and 31% offered DSM programs			

Author / Citation of paper or report	Methods / Notes	Insights: Premises	Insights: Workforce	Insights: Services	Insights: Education	Insights: Interprofessional	Insights: Technology
Hansen, Roth, Brouwer, Herndon, Christensen 2006 USA Medication therapy management services in North Carolina community pharmacies: Current practice patterns and projected demand J Am Pharm Assoc 46: 700-6 rahansen@unc.edu	Cross-sectional web-based survey 262/1593 (16%) community pharmacists in NC, USA			Number of pharmacists providing cognitive services			
Hughes CM, Hawwa AF, Scullin C, Anderson C, Bernsten CB, Bjornsdottir I, et al. 2005/6 (Published 2010) Provision of pharmaceutical care by community pharmacists: a comparison across Europe. Pharmacy World and Science. 2010; 32: 472-87. Europe (including Ireland). j.mcelnay@qub.ac.uk	Survey of community pharmacists in 13 European countries conducted in 2005/6. Adapted version of the validated Behavioural Pharmaceutical Care Scale BPCS used. Response rates varied from 10.1% in Germany to 70.9% in Sweden. Irish pharmacists participated.	Location of pharmacy Prevalence of Consultation area (55.8% in Ireland) Items dispensed – higher turnover associated with higher BPCS scores	Higher number of pharmacist and dispensing staff linked to higher BPCS scores	Services linked to domains within the BPCS – sometimes difficult to link them to specific services – much broader in outlook Significant association between providing at least one health service and BPCS scores			

Author / Citation of paper or report	Methods / Notes	Insights: Premises	Insights: Workforce	Insights: Services	Insights: Education	Insights: Interprofessional	Insights: Technology
McKesson Canada Community Pharmacy in Canada 2007: Executive Summary February 2008 Michelle.iliescu@rci.ro gers.com	Survey – detail not provided in the summary.	Gives average sales data, prescription volume Describes types of pharmacies: franchise, independent, banner, chain, supermarket, mass merchandiser.	Gives info on consistency of pharmacist over three years	Lists top specialist services provided, and type of pharmacy most likely to provide		Gives info on collaboration with physicians	

Author / Citation of paper or report	Methods / Notes	Insights: Premises	Insights: Workforce	Insights: Services	Insights: Education	Insights: Interprofessional	Insights: Technology
Management Committee - Canadian Pharmacists' Association. 2008 Innovative Pharmacy Practices Volume I - Moving Forward: Pharmacy Human Resources for the Future. Canada hmohr@pharmacists.ca NB – Volume II has more detailed description of innovative practices.	Three streams of work: Literature search; Key informant interviews; General appeal for input. Conducted in 2006/7.		Addressing resource and workload issues: Developing an innovative practice necessitates new workload, staffing and coverage arrangements to ensure consistent service. This is particularly true at the introduction of a new service, when staffing levels may be low, and economies of scale are not yet realized. In some cases, projects are victims of their own success and this situation results in an inability to provide the services for the demands required.	Many quotes about innovative practice and qualitative descriptions.	Continuing education and training for pharmacists: Since innovative pharmacy practice involves taking on new functions and responsibilities, obtaining skilled pharmacists and, where appropriate, pharmacy technicians, requires well-planned educational and training sessions for these personnel.	<i>Having physicians and other health professionals recognize the capabilities and the value of pharmacy services:</i> <i>This was an initial hurdle for most of the innovative practices that involved closer working relationships with other health care professionals. It was a barrier that was overcome, but it required effective communication with other professionals to demonstrate the capacity of the pharmacist and the benefits of an expanded role for the pharmacist.</i>	Accessing patient medical records, laboratory results and information: A number of the innovative projects concentrated on improved access to patient medical records through automation and other convenient forms of access.

Author / Citation of paper or report	Methods / Notes	Insights: Premises	Insights: Workforce	Insights: Services	Insights: Education	Insights: Interprofessional	Insights: Technology
Peacock, Kidd, Rahman 2007 USA Patient care services in independent community pharmacies: a descriptive report. J AM Pharm Assoc; 47:762-767 gpeacock@su.edu	Survey of independent community pharmacies on types of patient care services that can be offered: "value-added services that go beyond the role of traditional medicine dispensing". Sample 4000, (182 received), of members of National Community Pharmacists' Association (across US). The survey is provided.	Local population size Some limited information on consultation areas	Gives info on Rx volume, also 'pharmacy' and 'prescription' sales data. FTE staff data	Gives range of 'patient care' services provided (and how much they charged, if they did). Also asks about who provides the service - % outside contractors used	Qualifications held by staff	Discusses use of outside contractors to deliver services (e.g. immunisations)	
Radford, Richardson, Mason, Rutledge 2009 USA The key role of sole community pharmacists in their local healthcare delivery systems The North Carolina Rural Health Research and Policy Analysis Center	401/1148 (46%) sole community pharmacists (only retail provider in their community) Semi-structured telephone interview			42% offered one or more clinical services to patients: BP checks (12.9%) Diabetes counselling and glucose checks (12.4%) and others			

Author / Citation of paper or report	Methods / Notes	Insights: Premises	Insights: Workforce	Insights: Services	Insights: Education	Insights: Interprofessional	Insights: Technology
Alison S Roberts, SI Benrimoj, Timothy F Chen, Kylie A Williams and Parisa Aslani 2005 (pub 2006) 2006a Australia Implementing cognitive services in community pharmacy: a review of models and frameworks for change IJPP 14: 105-13 Alison@pharm.usyd.edu.au	'Narrative' review of conceptual & empirical literature "to investigate models and frameworks for the implementation of cognitive pharmaceutical services (CPS) in community pharmacy" emphasises complexity & organisational factors (see above article, also Roberts) Identifies range of components of models, both individual & organisational	+ives: creation of consulting areas; Emphasis on importance of organisational factors rather than individual, skills, knowledge & attitude	+ives: ongoing support; Barriers: Lack of confidence/self-efficacy	+ives: collaborative service design; proactive recruitment and identification of patients; planned and agreed follow-up; documentation system; payment for the service, by patients or third-party payers. Importance of business aspects	+ives: Inclusion of 'pseudo-patron' in training programme (seems = to simulated patient/mystery shopper)	Importance of relationship with GPs	+ives: use of new technology

Author / Citation of paper or report	Methods / Notes	Insights: Premises	Insights: Workforce	Insights: Services	Insights: Education	Insights: Interprofessional	Insights: Technology
Alison S Roberts, SI (Charlie) Benrimoj, Timothy F Chen, Kylie A Williams and Parisa Aslani 2005 (pub 2006) 2006b Australia Implementing cognitive services in community pharmacy: a review of facilitators used in practice change IJPP 14: 163-70 Alison@pharm.usyd.edu.au	As above, narrative review of conceptual & empirical lit, to identify facilitators to practice change. Range of potential facilitators identified, as outlined right, and including: advertising; demand; revenue generation; access to patient information; proven benefits; legislation;	favourable pharmacy atmosphere; “entrepreneurial orientation (EO)” as predictor & evaluative tool “(based on five dimensions: proactiveness, innovativeness, risk taking, autonomy, and competitive aggressiveness)” (Doucette and Jambulingam, 1999) Practice orientation (service orientated versus profit-driven)	knowledge and experience manpower; communication skills; autonomy; external support different priorities owners/employees qualified support personnel, workload confidence	Definition: “Cognitive pharmaceutical services can be defined as professional services provided by pharmacists, who use their skills and knowledge to take an active role in patient health, through effective interaction with both patients and other health professionals”	training and education	improved pharmacist and physician attitudes and relationships	computers

Author / Citation of paper or report	Methods / Notes	Insights: Premises	Insights: Workforce	Insights: Services	Insights: Education	Insights: Interprofessional	Insights: Technology
Skrepnek, Armstrong, Malone, Abarca, Murphy, Grizzle, Rehfeld, Woosley 2006 Workload and availability of technology in Metropolitan Community Pharmacies. Journal of the American Pharmacists' Association. 2006; 46:154-160. USA skrepnek@pharmacy.arizona.edu	Self-completion postal survey of metropolitan pharmacies across the US 755/3000 (25%) surveys returned	Rx volume Type of pharmacy	Work patterns of staff				

Author / Citation of paper or report	Methods / Notes	Insights: Premises	Insights: Workforce	Insights: Services	Insights: Education	Insights: Interprofessional	Insights: Technology
<p>Westerling AM, Hynninen JT, Haikala VE, Airaksinen MS</p> <p>2010 Finland</p> <p>Opinion comparison concerning future information technology in Finnish community pharmacies</p> <p>Pharmacy World and Science online first, September 2010</p> <p>Anna.westerling@salm et.fi</p>	<p>National cross-sectional survey of 308 pharmacy owners and 373 staff pharmacists</p>		<p>Pharmacy owners and staff pharmacists had different ideas about the future of IT and both should be involved in consultations</p> <p>Frontline pharmacists emphasise features supporting pharmaceutical care and cognitive services</p> <p>Managers prioritised features for financial management, sales and stock holding</p>				

Author / Citation of paper or report	Methods / Notes	Insights: Premises	Insights: Workforce	Insights: Services	Insights: Education	Insights: Interprofessional	Insights: Technology
Zardain E, del Valle MO, Loza MI, Garcia E, Lana A, Markham WA, Lopez ML	Exploration of the implementation of pharmaceutical care PC in Spain.		Most pharmacists were in the pre-contemplation stage for PC i.e. they did not plan to take on the new role.		Training was positively associated with PC implementation, and was the best predictor found of PC being implemented under multivariate analysis.	Pharmacists in the maintenance stage identified the need for good communication between pharmacists and doctors.	Pharmacists in pre-contemplation or contemplation stages cited a need for software to support PC
2010 Spain	Underpinned by Prochaska and Di Clemente's stages of change model, using the ASE (Attitude, Social influence and self-Efficacy) Model.		Only 11.8% were in the active or maintenance stage.				
Psychosocial and behavioural determinants of the implementation of Pharmaceutical Care in Spain			Only a further 6% of pharmacists were prepared to take on the role.		Odds ratio of undertaking PC was 14 times higher in the group receiving training.		
Pharmacy World and Science 31: 174-82	Survey of 1,977 Spanish pharmacists (10% of total)		Higher self-efficacy scores were positively associated with PC implementation.				
lopez@uniovi.es			Having assistant pharmacists slightly increased the likelihood of implementing PC.				NB – Many respondents cited a need for more support from their professional organisations to implement PC.

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APPENDIX 4

DETAILED STATISTICAL ANALYSIS OF PREDICTORS FOR THE PROVISION OF ENHANCED SERVICES

Identifying Significant Predictors of whether a Pharmacy Provides Enhanced Services or Would Like to

Dr. John Newell
Dec 19th 2010.

Summary

Data were provided from a sample of 457 Pharmacies in Ireland where interest was in identifying those explanatory variables (of the eight provided) that were useful predictors of whether a Pharmacy already provides Enhanced Services or are willing to do so.

Initially an analysis of the usefulness of each explanatory variable separately was performed (using the Chi square test or two sample t-test as appropriate). Pharmacy Location, Type and % GMS Prescription Percentage were identified as potentially useful predictors of provision of Enhanced Services. Location and Pharmacy Type and Pharmacists Age were identified as useful predictors of willingness to provide enhanced services.

When considering factors that are likely to predict whether a Pharmacy, in the population of interest, provides Enhanced Services or Not Logistic Regression identified that Pharmacy Type is an important predictor with Pharmacies with 6 or more outlets twice as likely to provide enhanced services compared to Single Pharmacies with little difference between Pharmacies with 2-5 outlets and Single Pharmacies. The Location of the Pharmacy is an important predictor also where Pharmacies in Midsized towns were identified as being half as likely to provide enhanced services compared to Pharmacies in Cities. There was also a suggestion, based on using Classification Trees, that percentage of GMS Prescriptions may also be a useful predictor where a Pharmacy with less than 26% of GMS Prescriptions is more likely to Provide Enhanced Services.

Logistic Regression identified that Younger Pharmacists (44 and younger) are more likely to be willing to provide enhanced services compared to older Pharmacists as are Pharmacies that are part of 2-5 outlets. Classification Trees suggested that information relating to the percentage GMS prescriptions a Pharmacy has is important also with willingness to provide enhanced services increasing with increasing percentage but only in the large and small pharmacies.

Introduction

Data were provided from 457 pharmacies. There were two response variables;

1. Whether the Pharmacy Provides Enhanced Services
2. Whether a Pharmacy Would Like to Provide Enhanced Services.

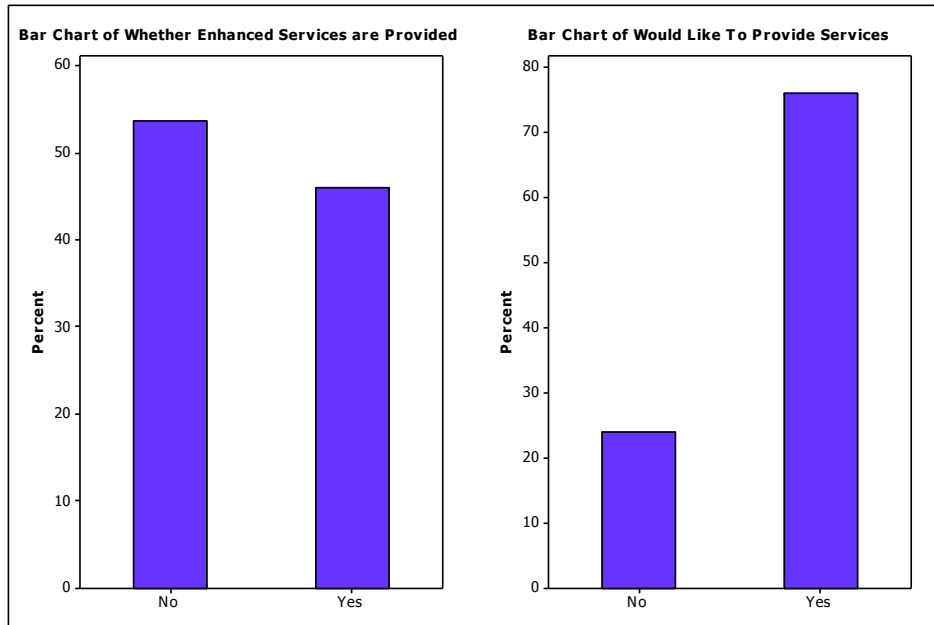
Both responses were binary categorical variables (coded as Yes or No). Complete data were available for each response. Bar charts of the counts and percentages for each response variable are given in Figure 1 and Box 1 below.

Box 1.

Tally for Discrete Variables: Provide Enhanced, Would Like To Pr					
Provide Enhanced Services	Count	Percent	Would Like To Provide Services	Count	Percent
No	246	53.83	No	110	24.07
Yes	211	46.17	Yes	347	75.93
N=	457		N=	457	

Of the 457 Pharmacies in the study, 46% do provide enhanced services while 76% would like to.

Figure 1.



The explanatory variables (i.e. variables that might be useful predictors of the response variables) are as follows:

Care YN: Does this pharmacy provide services to patients in residential care settings?

- Yes No

Total Prescriptions:

How many prescription items are dispensed in the pharmacy in a typical month? [Please tick one]

- Less than 500
- 501 – 1000
- 1,001 – 2,000
- 2,001 – 3,000
- 3,001 – 4,000
- 4,001 – 5,000
- 5,001 +

Age: Which age group are you in?

- Under 35
- 35-44
- 45-54
- 55-64
- 65 and over

Number of Pharmacists: How many pharmacists work in this pharmacy?

_____ (number)

Percentage of GMS Prescr:

_____ (%)

PharType: Type of pharmacy (Please tick one)

- Single outlet
- Group or Chain ownership with 2-5 outlets
- Group or Chain ownership with 6 or more outlets

N= 457			
Tally for Discrete Variables: Locatn			
	Locatn	Count	Percent
	Villages (pop. less than 1,500)	51	11.16
	Small towns (pop. 1,500 to 5,000)	103	22.54
	Mid-sized towns (pop. 5,000 to 20,000)	105	22.98
	Large towns (pop. 20,000 to 30,000)	68	14.88
	City (pop. greater than 30,000)	121	26.48
	*	9	1.97
		N=	457

Summary statistics for the continuous explanatory variables are displayed in Box 3, where again missing data are represented by an asterisk. Note that 15% (i.e.68/454) of the data were missing for the Total Prescriptions variable.

Box 3.

Descriptive Statistics: Total Prescripti, Percentage of GM, Number of Pharma							
Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1
Total Prescriptions	389	68	4266	127	2510	100	2404
Percentage of GMS Prescr	389	68	62.513	0.804	15.850	12.460	53.210
Number of Pharmacists	454	3	2.0738	0.0346	0.7381	1.0000	2.0000
Variable	Median	Q3	Maximum				
Total Prescriptions	3958	5635	16320				
Percentage of GMS Prescr	65.730	74.290	100.000				
Number of Pharmacists	2.0000	2.0000	5.0000				

As the variable representing the Number of Pharmacists is discrete a tally of the frequency is displayed also (Box 4). Note that several of the Pharmacies listed ½ time positions.

Box 4.

Tally for Discrete Variables: Number of Pharmacists		
Number of Pharmacists	Count	Percent
1.0	87	19.16
1.5	3	0.66
2.0	260	57.27
2.5	2	0.44
3.0	84	18.50
4.0	17	3.74
5.0	1	0.22
N=	454	
*=	3	

Initially an analysis of the relationship between each explanatory variable separately and the responses was performed to identify which of the explanatory variables might be useful predictors of whether a Pharmacy already provides enhanced services or indeed whether a Pharmacy is willing to provide such a service in the future. The results are presented separately by response variable.

1. Provide Enhanced Services

Analysing the relationship between each Explanatory individually and the Response variables.

Bar charts and tables of the frequency (and %) of each categorical explanatory variable against the response variables are given in the appendix. For ease of interpretation the table of the frequencies of those Providing Services to Patients in Residential Care settings is also given in Box 5 below.

Box 5.

Tabulated statistics: CareYN, Provide Enhanced Services			
Rows: CareYN	Columns: Provide Enhanced Services		
	No	Yes	All
*	12 52.17	11 47.83	23 100.00
No	157 53.77	135 46.23	292 100.00
Yes	77 54.23	65 45.77	142 100.00
All	246 53.83	211 46.17	457 100.00
Cell Contents:	Count % of Row		

There were comparable proportions (approximately 46% highlighted in bold) providing enhanced services for pharmacies that do and do not provide care in residential settings.

The Chi-squared test was used in order to identify those variables where there was evidence that the difference in the sample proportions reported might be large enough to represent an actual difference in the population of pharmacists from which the sample was taken. The only variables identified as exhibiting a difference in sample proportions that may be reflective of a real effect in the population were the Type of Pharmacy ($p < 0.001$) and the Location of the Pharmacy ($p = 0.03$).

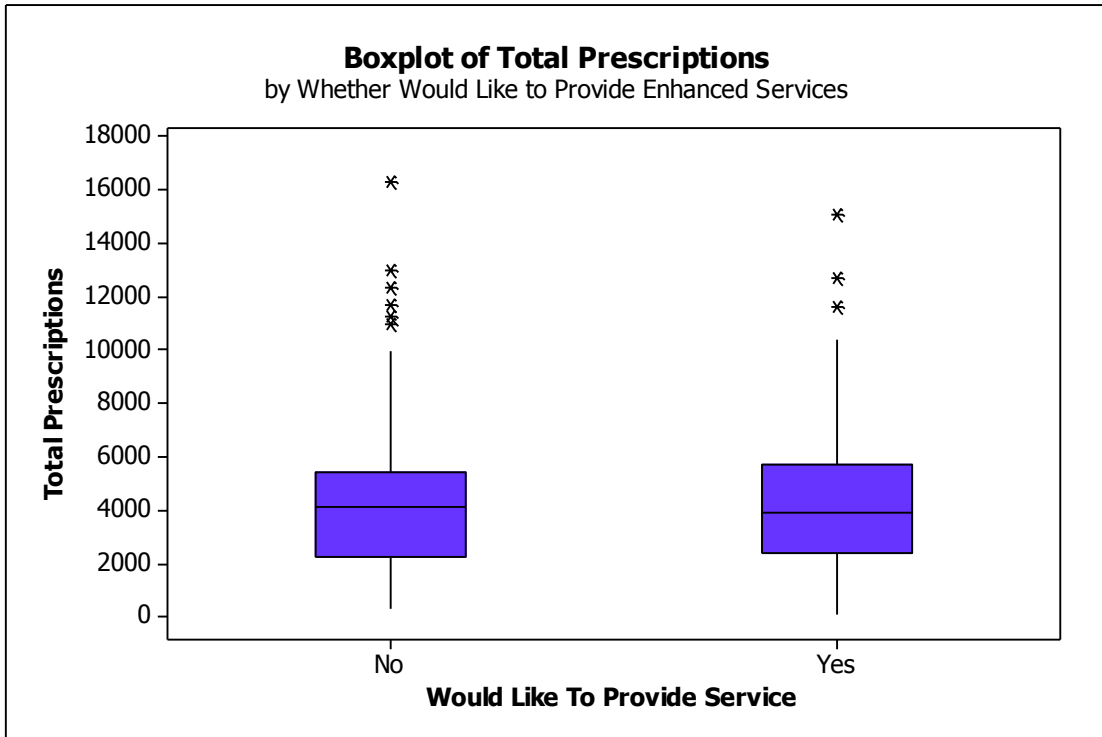
The significant association identified for the Type of Pharmacy was due to the fact that the sample proportion Providing Enhanced Services was comparable for both Single (41%) and Group or Chain Ownership with 2 Pharmacies (42%) but was considerably higher (64%) for Group or Chain Ownership with 6 Pharmacies.

The significant association identified for Pharmacy Location was due to the fact that the sample proportions Providing Enhanced Services increased with increasing Location size i.e. from 39% in Village Pharmacies to 56% in City Pharmacies.

As the p-value was greater than 0.05 for all other categorical explanatory variable the data are consistent with there being no association between these variables and whether a Pharmacy is Providing Enhanced Services in the population of interest and any difference noted in the sample proportions is likely to be due to sample variation alone.

Boxplots and summary statistics of the sample distribution of the continuous explanatory variables, namely number of Pharmacists employed and the % of GMS Prescriptions by whether Enhanced Services are Provided are given in Figure 2.

Figure 2.



The distribution of Total Prescriptions looks comparable for Pharmacies that do and do not provided enhanced services. Although the sample mean was slightly higher for those providing enhanced services a two sample t-test did not provide any evidence of a difference in the mean Total Prescriptions ($p=0.264$) in the population suggesting that Total Prescriptions is unlikely to be a useful predictor of whether enhanced services are provided or not.

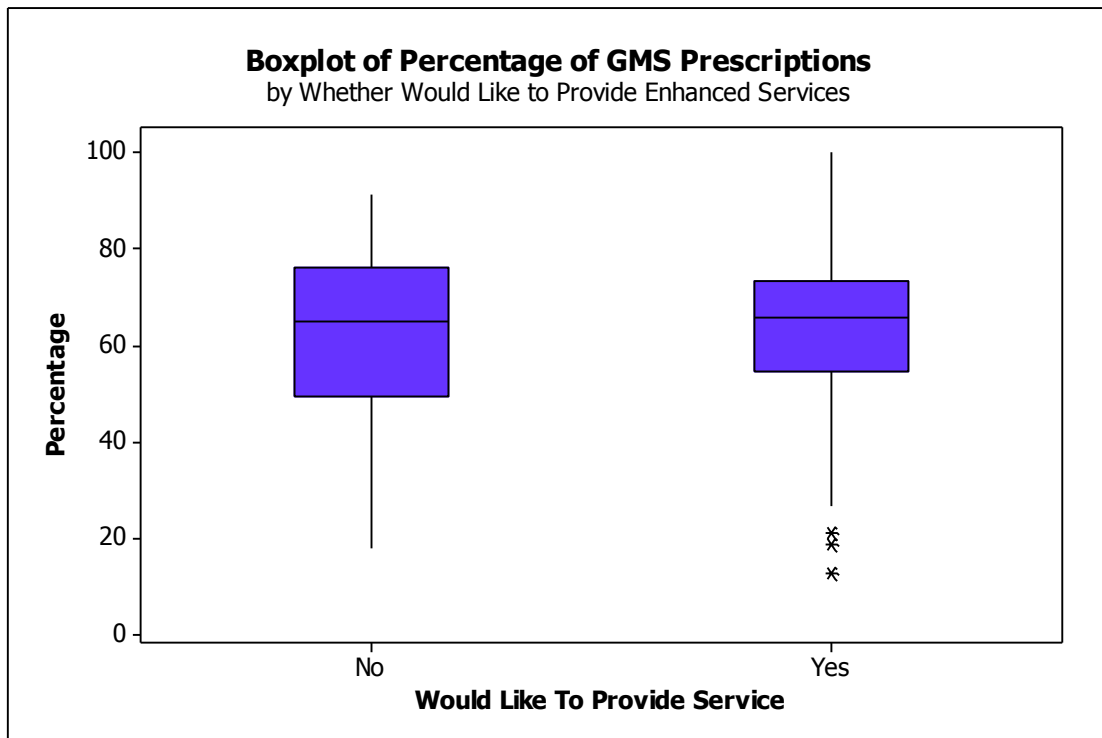
Box 6.

Descriptive Statistics: Total Prescriptions									
Variable	Provide Enhanced Services	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Q3
	Yes	182	29	4418	189	2552	100	2780	16320

Variable	Provide Enhanced Services	Median	Q3	Maximum
	Yes	4015	5828	16320

Although the overall distribution of the Percentage of GSM Prescriptions looks comparable for Pharmacies that do and do not provided enhanced services (Figure 3). The summary statistics identify a 5% smaller percentage in GSM Prescriptions in Pharmacies providing Enhanced Services (Box 7). One the basis of a two sample t-test this difference was identified as significant ($p=0.01$) and it is estimated the likely difference in the population is somewhere between 1 and 7 percent. This suggests that GSM prescriptions may be a useful predictor of whether a Pharmacy provides enhanced services or not.

Figure 3.



Box 7.

Descriptive Statistics: Percentage of GMS Prescriptions							
Variable	Provide	N	N*	Mean	SE Mean	StDev	Minimum
	Enhanced Services						
Percentage of GMS Prescr	No	207	39	64.494	0.952	13.696	26.490
	Yes	182	29	60.26	1.32	17.76	12.46

Variable	Provide	Q1	Median	Q3	Maximum
	Enhanced Services				
Percentage of GMS Prescr	No	55.300	66.800	74.800	93.030
	Yes	50.67	62.81	73.35	100.00

Analysing the relationship between the Explanatory variables collectively and the Response variables.

The next step in the analysis is to model the relationship between the explanatory variables collectively as there may be useful predictive information when considering the variables collectively and indeed when variables interact with each other.

As the response variables are binary the two approaches considered are Logistic Regression and Classification Trees. The former approach is presented first. In this approach the odds of a Pharmacy providing enhanced services is modelled as a function of the explanatory variables where the main aim is to identify the minimally useful subset of explanatory variables. Initially a full model (i.e. including all explanatory variables and their interactions) were fitted. Variable selection procedures were then used to identify which variables can be dropped from the model as deemed unnecessary.

Output from all models fitted are included in the appendix. The final (i.e. most useful) model, based on Backwards elimination variable selection, is given in Box 8.

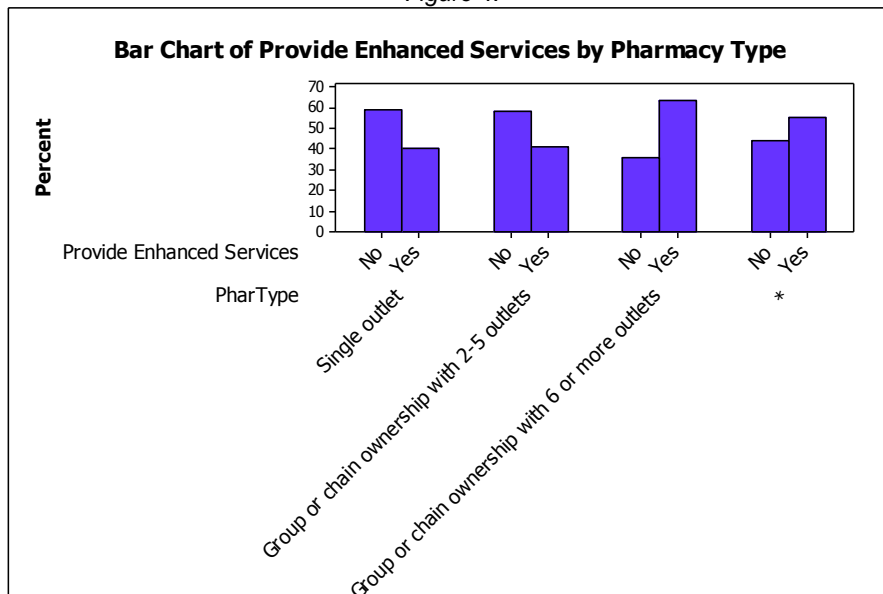
Box 8.

Predictor	P	Odds Ratio	95% CI	
			Lower	Upper
Constant	0.956			
PharType (Single as Baseline)				
Group or chain ownership with 2-5 outlets	0.897	0.97	0.61	1.53
Group or chain ownership with 6 or more outlets	0.001	2.41	1.43	4.04
Location (City as Baseline)				
Large towns (pop. 20,000 to 30,000)	0.924	1.03	0.56	1.90
Mid-sized towns (pop. 5,000 to 20,000)	0.021	0.53	0.30	0.91
Small towns (pop. 1,500 to 5,000)	0.084	0.61	0.35	1.07
Villages (pop. less than 1,500)	0.124	0.58	0.29	1.16

Two variables were identified as significantly useful predictors from the complete set of explanatory variables available in this analysis. These variables were Pharmacy Type and Location.

From the output displayed in Box 8, Pharmacies with 6 or more are 2.45 times more likely to provide enhanced services compared to Single pharmacies with no difference identified in the odds for Pharmacies with 2 or more compared to Single Pharmacies. A bar chart of the percentages providing enhanced services by Pharmacy (Figure 4) highlights this result where comparably higher proportions do not provide enhanced services in Single and Chains with 2-5 outlets while in Chains with 6 or more a higher the proportion do provide enhanced services.

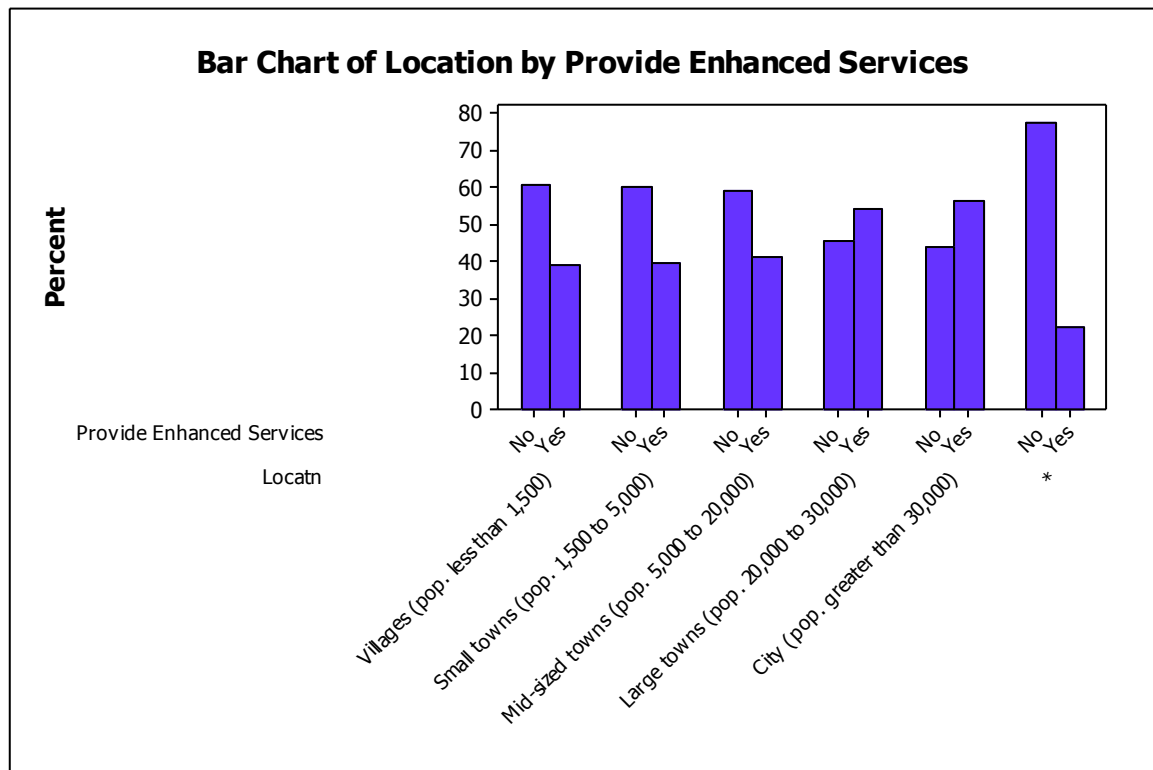
Figure 4.



When considering Location, using Cities as a baseline for comparison, Pharmacies in Midsized towns were identified as being half as likely (i.e. and Odds Ratio of 0.5) to provide enhanced services compared to Pharmacies in Cities with no other level of this variable identified as differing from Cities.

A plot of this Location by Enhanced Services provision (Figure 5) helps understand what this finding may represent. A higher proportion of Pharmacies located in a City offered enhanced services while in all other locations pharmacies tended not to provide enhanced services.

Figure 5.



The level representing Small Towns was close to being significant ($p=0.08$) however. The reason that only the Mid Sized Towns category was identified as significant when compared to Cities is probably due to sample size (Box 9) as there were nearly double the amount of Pharmacies in Mid and Small Towns compared to Villages.

Box 9.

Tabulated statistics: Locatn, Provide Enhanced Services

Rows: Locatn Columns: Provide Enhanced Services

	No	Yes	All
Villages (pop. less than 1,500)	31	20	51
Small towns (pop. 1,500 to 5,000)	62	41	103
Mid-sized towns (pop. 5,000 to 20,000)	62	43	105
Large towns (pop. 20,000 to 30,000)	31	37	68
City (pop. greater than 30,000)	53	68	121
*	7	2	9
All	246	211	457

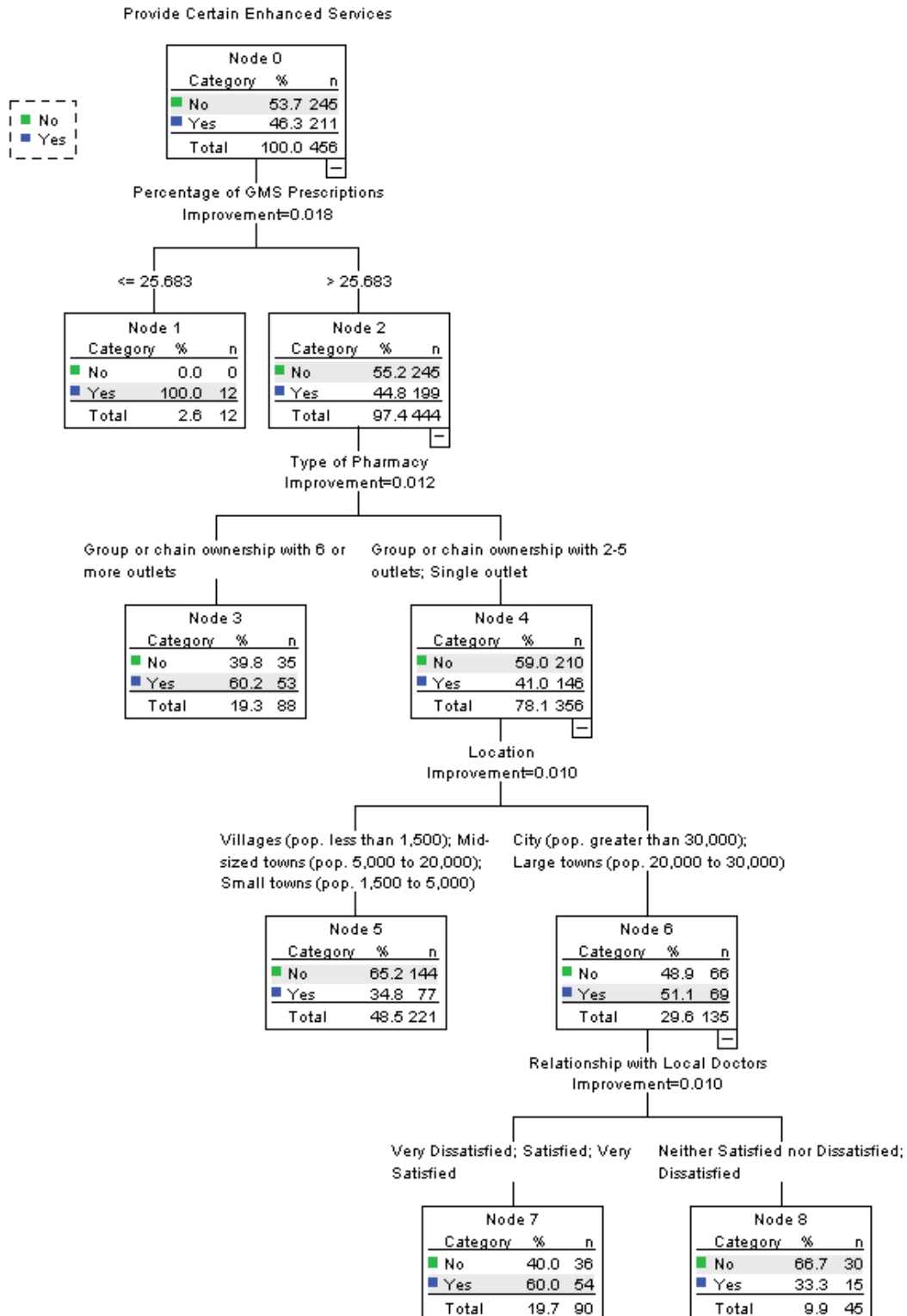
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Despite the univariate analysis suggesting that the percentage of GMS prescriptions may be a useful predictor, this variable was not significant in the model already containing Pharmacy Type and Location. This suggests that the information provided by the GMS prescriptions variable is already contained in the information provided by Pharmacy Type and Location and is therefore redundant once information on these variables is available. The reason for this is that it is likely that the GMS prescriptions variable is likely to be correlated with both Pharmacy Type and Location.

The second approach considered involved fitting Classification Trees to uncover structure in the sample provided that may be reflective of real effects in the population of pharmacies of interest. Tree based procedures should be interpreted with care however as they are data driven approaches and all results uncovered should be considered as exploratory.

Trees were fit and pruned using Recursive Partitioning, Chi Square Automatic Interaction Detection and Conditional Trees approaches and the best tree, in terms of minimum misclassification error, is presented in Figure 6.

Figure 6.



The tree identified Percent GMS Prescriptions as the most useful variable when categorising it as a binary variable with a cut-point of above and below 26%. The reason behind this split is clear when looking at the predicted categories at the terminal node for those pharmacies with $\leq 26\%$ GMS Prescriptions; all provided enhanced services! Of those with $>26\%$ GMS Prescriptions the next most useful variable was Pharmacy Type with Group of 6+ deemed different from all other Types and no other information was needed for this cohort. For Group Pharmacies with 2 to 5 or Single Pharmacies Location was identified as a useful predictor with relationship with local doctors a useful predictor for pharmacies from larger locations. The predicted proportions of those that are and are not providing enhanced services are given at each terminal node so that a comparison can be made between Pharmacy characteristics. For example the pathway leading to lowest proportion providing enhanced services is Node 8 where 80% of pharmacies following this pathway did not provide enhanced services. These pharmacies had higher GMS prescriptions, smaller pharmacies in large towns or cities with poor relationships with local doctors.

2. Willing to Provide Enhanced Services

The second response variable of interest is whether a Pharmacy would like to provide enhanced services. Once again the initial analysis presented is one that considers each explanatory variable separately in order to identify potentially useful predictors.

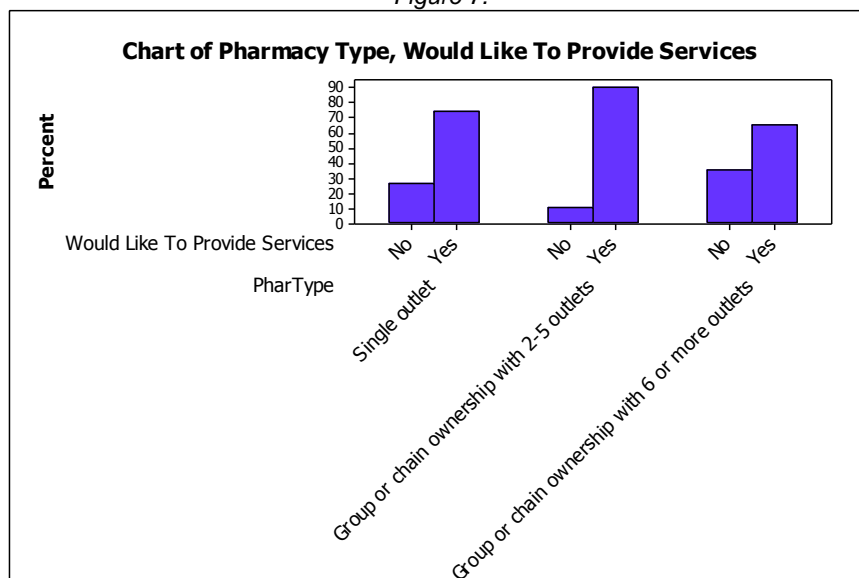
Analysing the relationship between each Explanatory individually and the Response variables.

Two of the categorical explanatory variables were identified as potentially useful significant predictors, namely Type of Pharmacy ($p < 0.001$) and Age Group ($p = 0.02$) of the Pharmacists who filled out the survey. Neither of the two continuous explanatory (i.e. Total Prescriptions and Percentage of GMS Prescriptions) were identified as useful predictors as there was no evidence of a difference in the mean for each between those Pharmacies that would like to provide enhanced services and those Pharmacies that don't ($p = 0.20$ and $p = 0.23$ respectively).

For brevity only results relating to Type of Pharmacy and Age are presented here while all other tables of each categorical explanatory variable and summary statistics for the two continuous explanatory variables are given in the appendix.

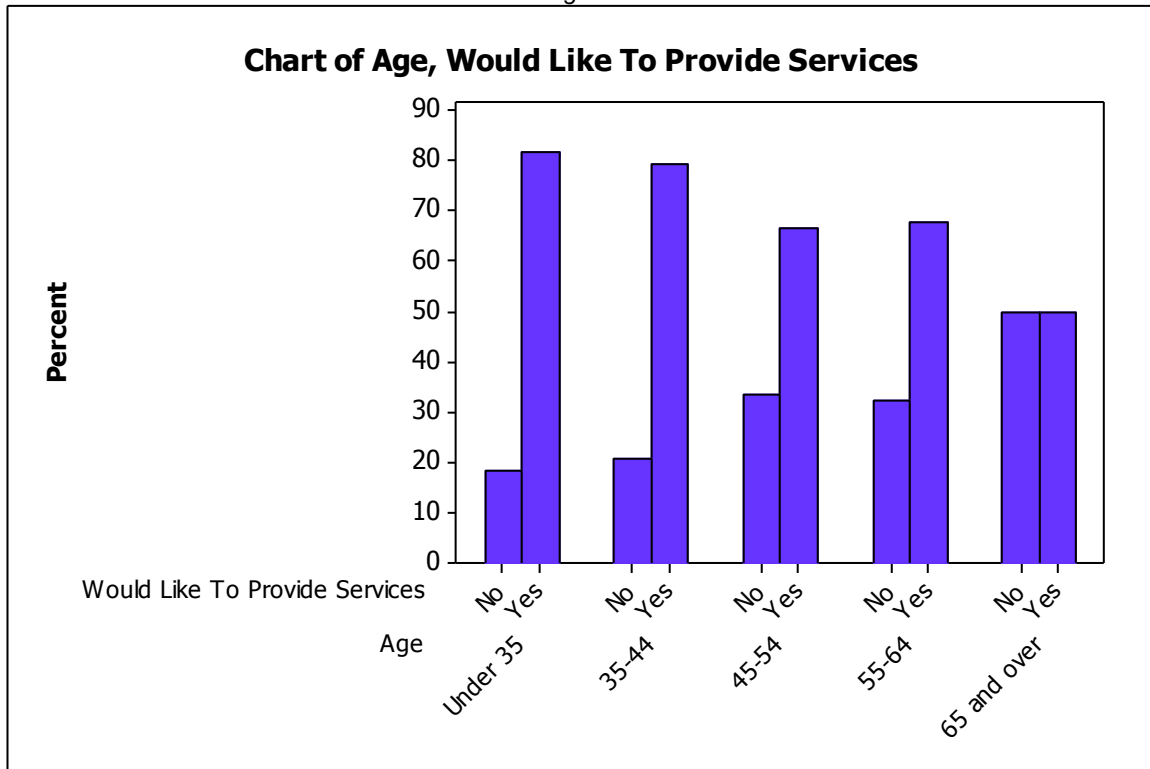
The majority of the Pharmacists would like to provide more enhanced services however the proportions within Pharmacy Type differs with the largest proportion evident in the Group Pharmacies with 2-5 outlets (Figure 7).

Figure 7.



There is evidence that the younger pharmacists, namely those in the Under 35 and 35-44 age groups are more willing to provide enhanced services compared to older pharmacists (Figure 8).

Figure 8.



Logistic regression models were fitted initially including all explanatory variables and two and three way interactions. Terms were dropped from the model sequentially based on model diagnostics and goodness of fit measures until the model retaining only terms that were significant was identified. This model is displayed in Box 10.

Box 10.

Predictor	P	Odds Ratio	95% CI	
			Lower	Upper
Constant	0.000			
PharType (Single as Baseline)				
Group or chain ownership with 2-5 outlets	0.004	2.68	1.36	5.29
Group or chain ownership with 6 or more outlets	0.015	0.50	0.28	0.87
Age (Under 35 as Baseline)				
35-44	0.286	0.73	0.41	1.31
45-54	0.003	0.37	0.19	0.71
55-64	0.054	0.40	0.16	1.02
65 and over	0.010	0.17	0.04	0.65

The Odds Ratios (and corresponding p-values) suggest that Group Pharmacies with 2-5 outlets are nearly 3 times (i.e. 2.68) more likely while Group Pharmacies with 6 or more outlets are about half as likely (Odds Ratio of 0.50) to want to Provide Enhanced Services compared to Single Pharmacies in the population of Pharmacies of interest.

There was a clear age effect where the older pharmacists were much less willing to provide enhanced services compared to those under 44. In particular there was no significant difference between those younger than 35 and aged 35-44 in terms of being willing to provide enhanced services but those aged 45-54 were significantly less likely (Odds Ratio=0.37) as were those 55-64 (Odds Ratio 0.40) and those aged 65 and over (Odds Ratio 0.17) compared to the young pharmacists.

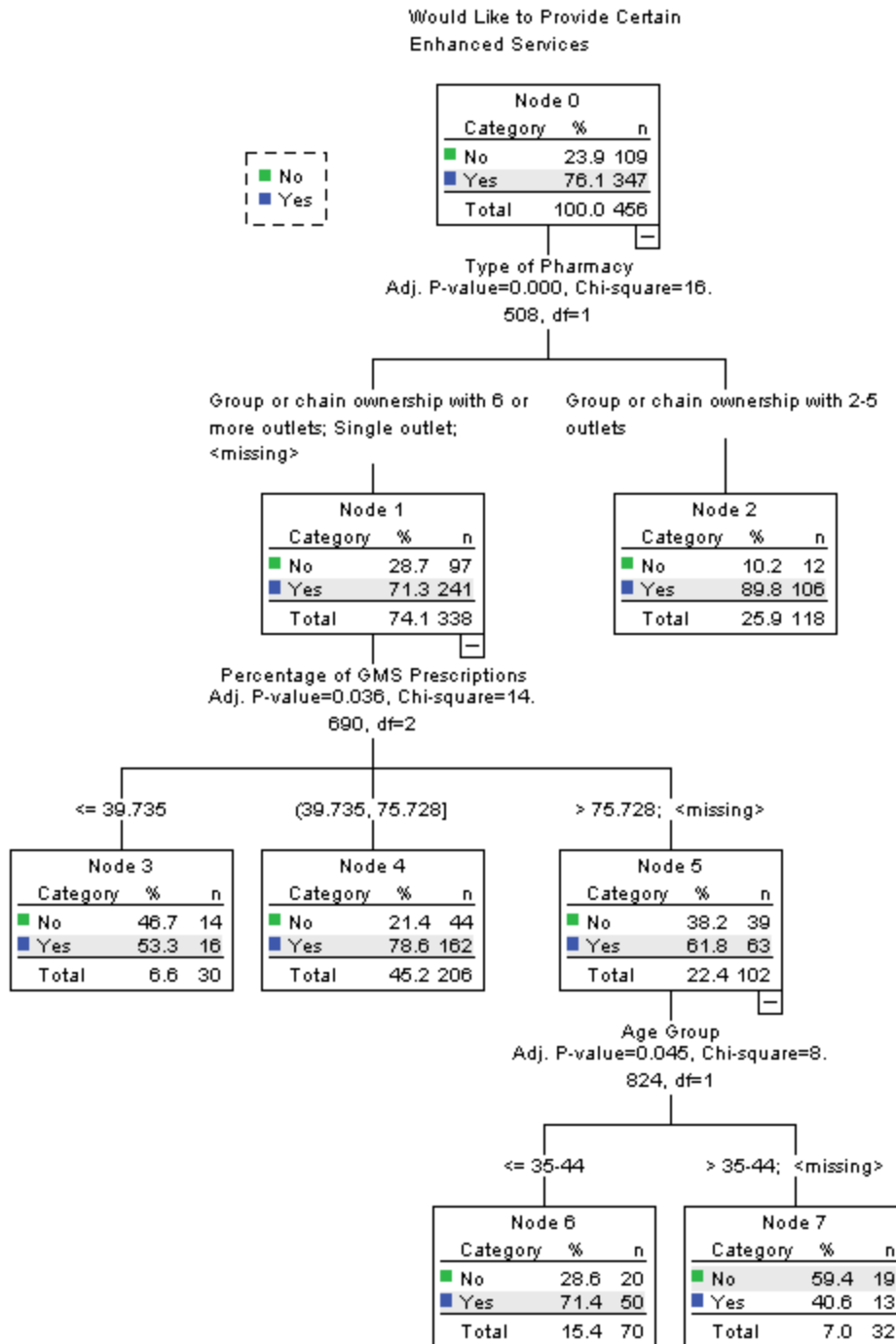
These results suggest that whether a Pharmacies is part of a group of 2-5 units and contains younger pharmacists are good predictors of willingness to provide enhanced services.

The Tree based approach identified the same predictors as the Logistic Model but did identify Percentage of GMS Prescriptions, with a three way split (<40%, 40-76%, >76%), as being a useful predictor. The Group Pharmacies of 2-5 outlets were again identified as having a high proportion willing to provide enhanced services (90%).

As the Percentage of GMS Prescriptions increased so too did the willingness to provide enhanced services.

The same effect of Age Groups was evident (i.e. younger versus older) however Age was only identified as being a useful predictor in Single or Group Pharmacies of 6 with either having greater than 76% GMS Prescriptions.

Figure 9.



Conclusion

When considering factors that are likely to predict whether a Pharmacy, in the population of interest, provides Enhanced Services or Not the Pharmacy Type is an important predictor with Pharmacies with 6 or more outlets than twice as likely to provide enhanced services compared to Single Pharmacies with little difference between Pharmacies with 2-5 outlets and Single Pharmacies. The Location of the Pharmacy is an important predictor also where Pharmacies in Midsized towns were identified as being half as likely to provide enhanced services compared to Pharmacies in Cities. There was also a suggestion that a Pharmacy with less than 26% of GMS Prescriptions is more likely to Provide Enhanced Services.

Younger Pharmacists (44 and younger) are more likely to be willing to provide enhanced services compared to older Pharmacists as are Pharmacies that are part of 2-5 outlets. There was a suggestion that information relating to the percentage GMS prescriptions a Pharmacy has is important also with willingness to provide enhanced services increasing with increasing percentage but only in the large and small pharmacies.

Appendix:

Tabulated statistics: CareYN, Provide Enhanced Services

Rows: CareYN Columns: Provide Enhanced Services

	No	Yes	All
*	12 52.17	11 47.83	23 100.00
No	157 53.77	135 46.23	292 100.00
Yes	77 54.23	65 45.77	142 100.00
All	246 53.83	211 46.17	457 100.00

Cell Contents: Count
 % of Row

Tabulated statistics: Age, Provide Enhanced Services

Rows: Age Columns: Provide Enhanced Services

	No	Yes	All
Under 35	91 51.70	85 48.30	176 100.00
35-44	84 53.16	74 46.84	158 100.00
45-54	49 60.49	32 39.51	81 100.00
55-64	15 53.57	13 46.43	28 100.00
65 and over	6 60.00	4 40.00	10 100.00
*	1 25.00	3 75.00	4 100.00
All	246 53.83	211 46.17	457 100.00

Cell Contents: Count
 % of Row

Tabulated statistics: DrSatis_1, Provide Enhanced Services

Rows: DrSatis_1 Columns: Provide Enhanced Services

	No	Yes	All
Very Dissatisfied	11 57.89	8 42.11	19 100.00
Dissatisfied	19 59.38	13 40.63	32 100.00
Neither Satisfied nor Dissatisf	65 54.62	54 45.38	119 100.00
Satisfied	74 50.34	73 49.66	147 100.00
Very Satisfied	68 52.71	61 47.29	129 100.00
*	9 81.82	2 18.18	11 100.00
All	246 53.83	211 46.17	457 100.00

Cell Contents: Count
% of Row

Tabulated statistics: Number of Pharmacists, Provide Enhanced Services

Rows: Number of Pharmacists Columns: Provide Enhanced Services

	No	Yes	All
1.0	51 58.6	36 41.4	87 100.0
1.5	3 100.0	0 0.0	3 100.0
2.0	136 52.3	124 47.7	260 100.0
2.5	0 0.0	2 100.0	2 100.0
3.0	43 51.2	41 48.8	84 100.0
4.0	10 58.8	7 41.2	17 100.0
5.0	1 100.0	0 0.0	1 100.0
Missing	2 *	1 *	* *

All	244	210	454
	53.7	46.3	100.0
Cell Contents:	Count % of Row		

Tabulated statistics: PharType, Provide Enhanced Services

Rows: PharType Columns: Provide Enhanced Services

	No	Yes	All
Single outlet	138 59.23	95 40.77	233 100.00
Group or chain ownership with 2	69 58.47	49 41.53	118 100.00
Group or chain ownership with 6	35 36.08	62 63.92	97 100.00
*	4 44.44	5 55.56	9 100.00
All	246 53.83	211 46.17	457 100.00
Cell Contents:	Count % of Row		

Tabulated statistics: Locatn, Provide Enhanced Services

Rows: Locatn Columns: Provide Enhanced Services

	No	Yes	All
Villages (pop. less than 1,500)	31 60.78	20 39.22	51 100.00
Small towns (pop. 1,500 to 5,00	62 60.19	41 39.81	103 100.00
Mid-sized towns (pop. 5,000 to	62 59.05	43 40.95	105 100.00
Large towns (pop. 20,000 to 30,	31 45.59	37 54.41	68 100.00
City (pop. greater than 30,000)	53 43.80	68 56.20	121 100.00
*	7 77.78	2 22.22	9 100.00
All	246 53.83	211 46.17	457 100.00

Cell Contents: Count
 % of Row

Would Like to Provide:

Tabulated statistics: CareYN, Would Like To Provide Services

Rows: CareYN Columns: Would Like To Provide Services

	No	Yes	All
*	6 26.09	17 73.91	23 100.00
No	72 24.66	220 75.34	292 100.00
Yes	32 22.54	110 77.46	142 100.00
All	110 24.07	347 75.93	457 100.00

Cell Contents: Count
 % of Row

Tabulated statistics: Age, Would Like To Provide Services

Rows: Age Columns: Would Like To Provide Services

	No	Yes	All
Under 35	32 18.18	144 81.82	176 100.00
35-44	33 20.89	125 79.11	158 100.00
45-54	27 33.33	54 66.67	81 100.00
55-64	9 32.14	19 67.86	28 100.00
65 and over	5 50.00	5 50.00	10 100.00
*	4 100.00	0 0.00	4 100.00
All	110 24.07	347 75.93	457 100.00

Cell Contents: Count
 % of Row

Tabulated statistics: DrSatis_1, Would Like To Provide Services

Rows: DrSatis_1 Columns: Would Like To Provide Services

	No	Yes	All
Very Dissatisfied	5 26.32	14 73.68	19 100.00
Dissatisfied	7 21.88	25 78.13	32 100.00
Neither Satisfied nor Dissatisf	33 27.73	86 72.27	119 100.00
Satisfied	31 21.09	116 78.91	147 100.00
Very Satisfied	28 21.71	101 78.29	129 100.00
*	6 54.55	5 45.45	11 100.00
All	110 24.07	347 75.93	457 100.00

Cell Contents: Count
% of Row

Tabulated statistics: PharType, Would Like To Provide Services

Rows: PharType Columns: Would Like To Provide Services

	No	Yes	All
Single outlet	61 26.18	172 73.82	233 100.00
Group or chain ownership with 2	12 10.17	106 89.83	118 100.00
Group or chain ownership with 6	34 35.05	63 64.95	97 100.00
*	3 33.33	6 66.67	9 100.00
All	110 24.07	347 75.93	457 100.00

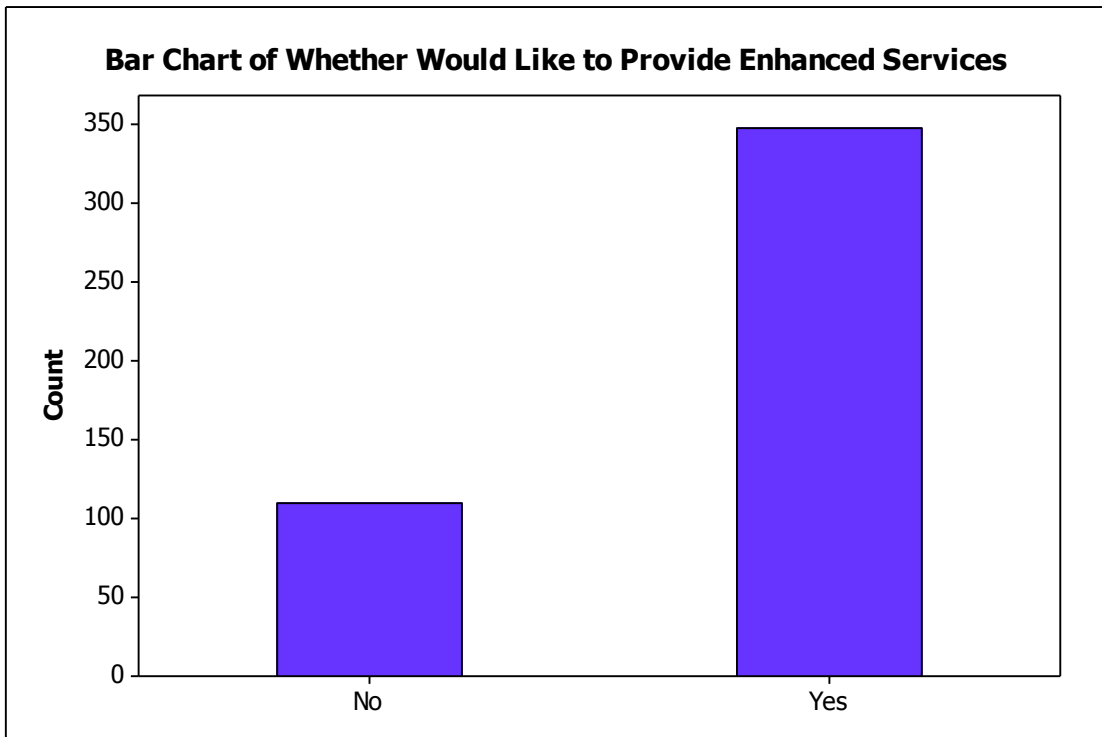
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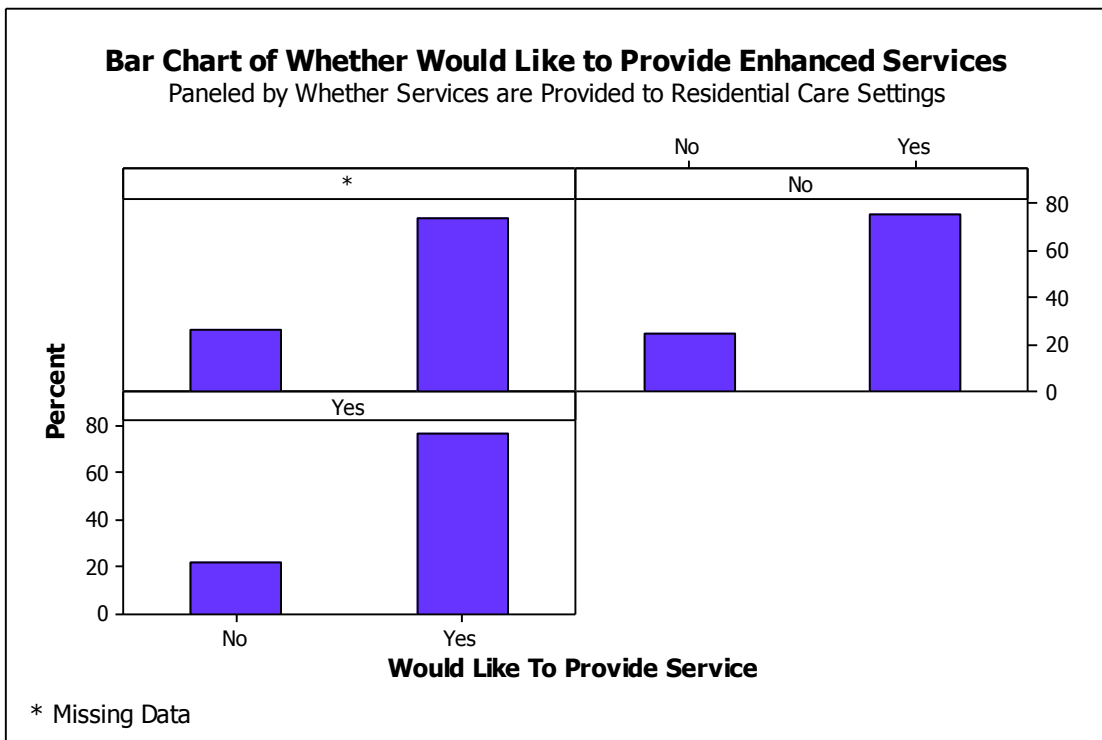
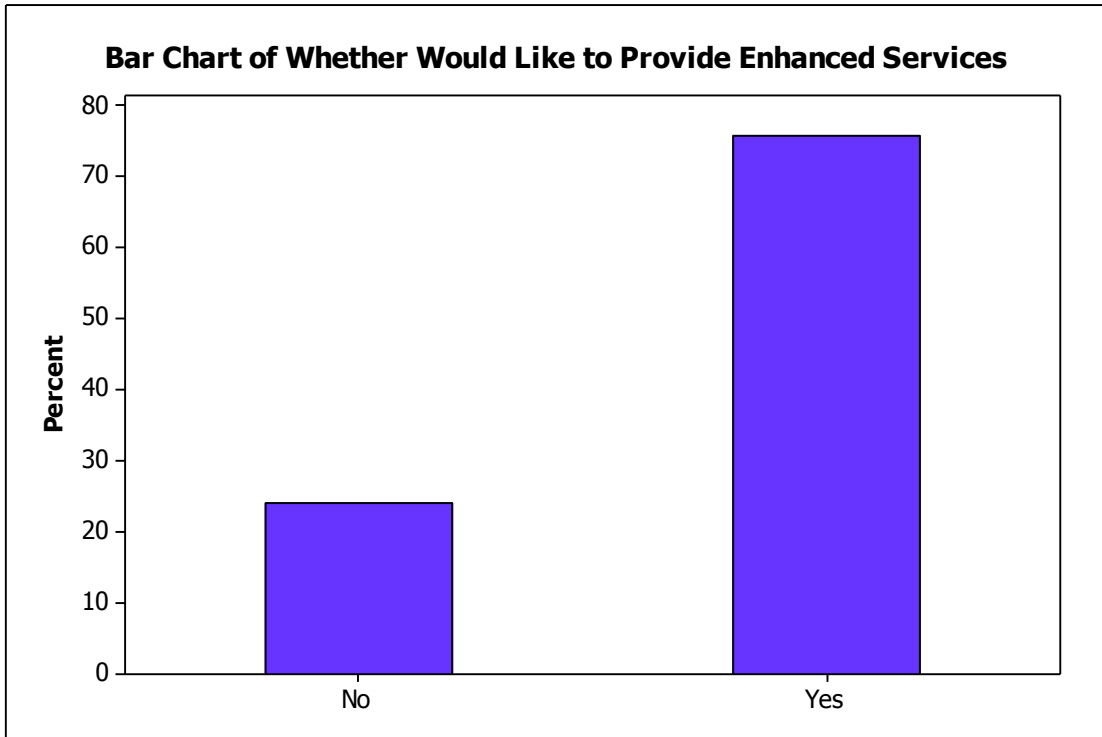
Tabulated statistics: Locatn, Would Like To Provide Services

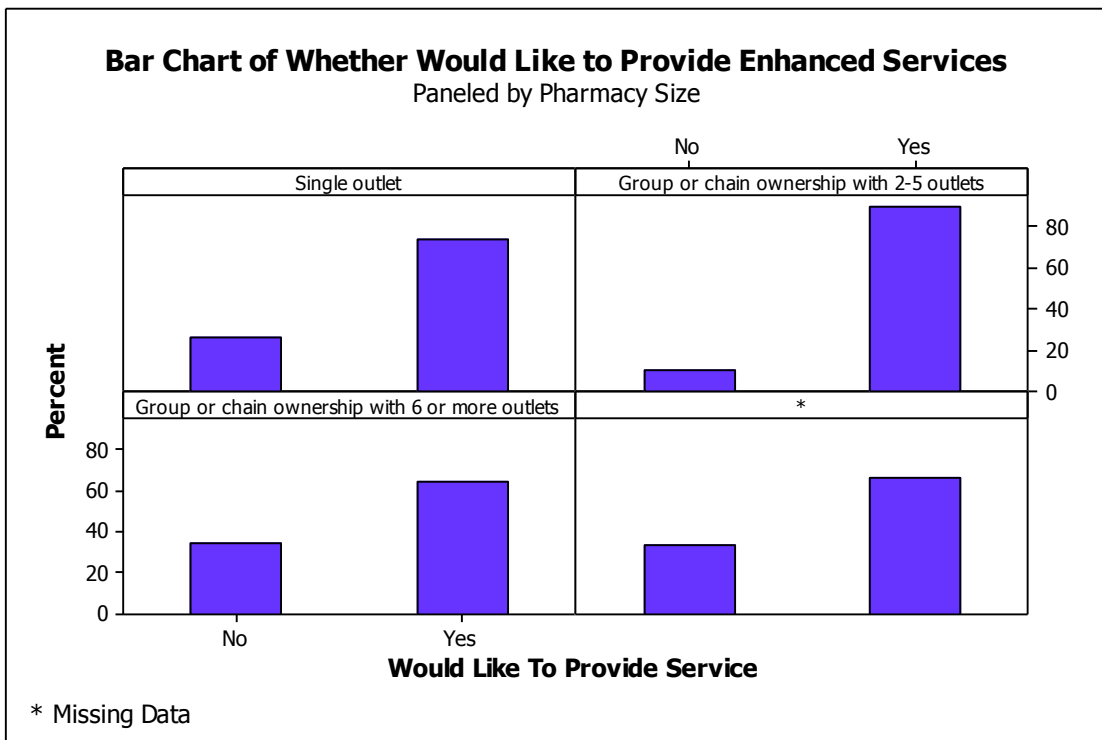
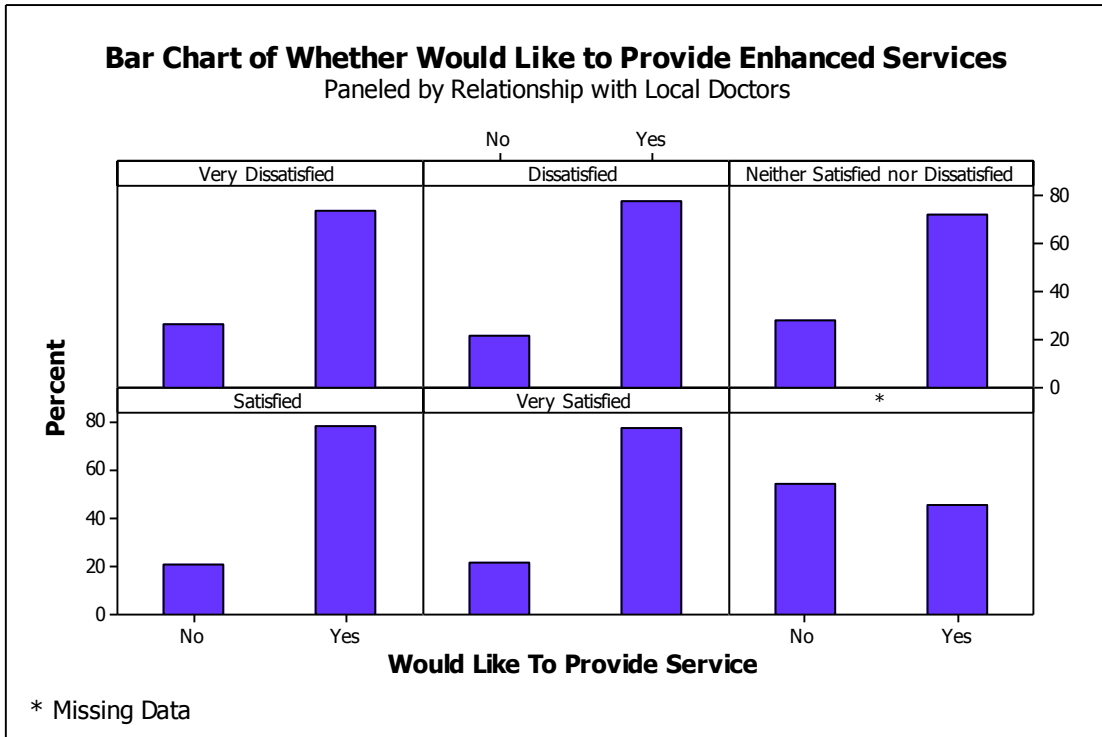
Rows: Locatn Columns: Would Like To Provide Services

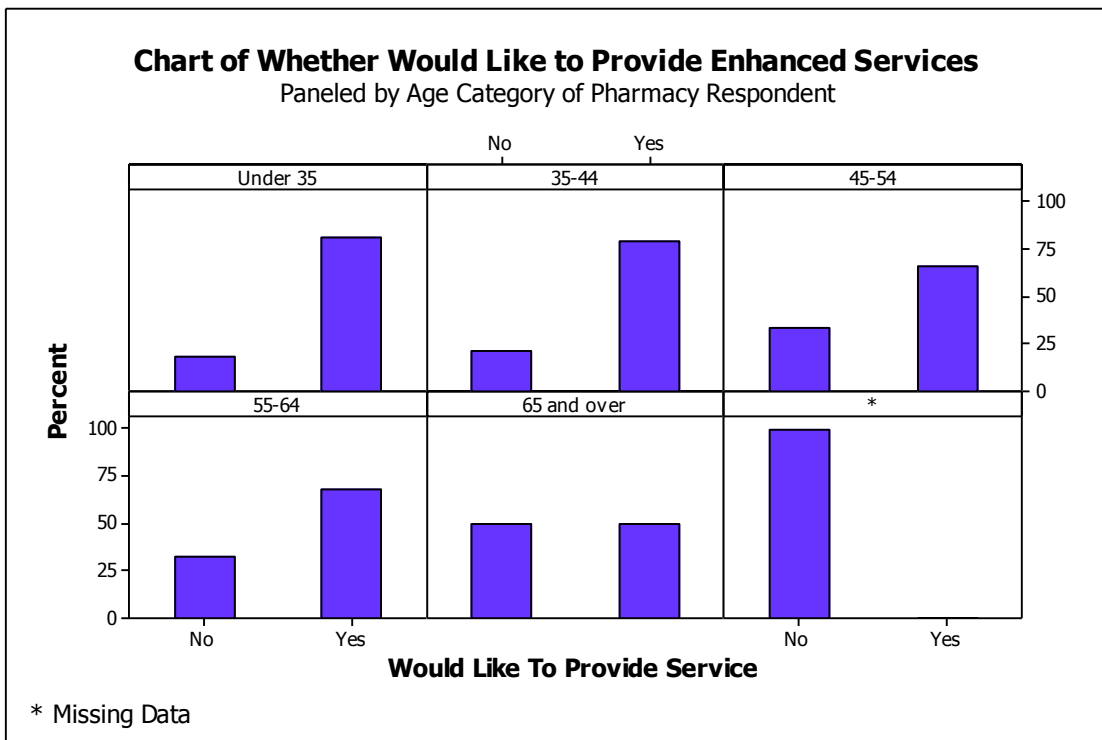
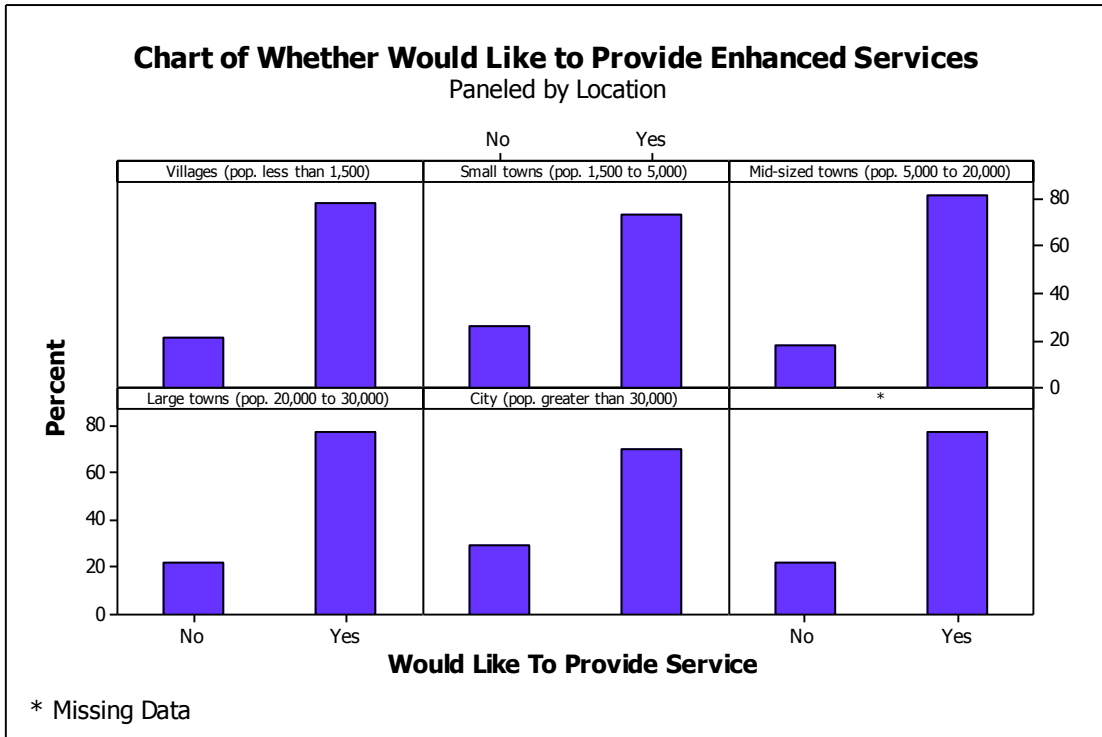
	No	Yes	All
Villages (pop. less than 1,500)	11 21.57	40 78.43	51 100.00
Small towns (pop. 1,500 to 5,00)	27 26.21	76 73.79	103 100.00
Mid-sized towns (pop. 5,000 to	19 18.10	86 81.90	105 100.00
Large towns (pop. 20,000 to 30,	15 22.06	53 77.94	68 100.00
City (pop. greater than 30,000)	36 29.75	85 70.25	121 100.00
*	2 22.22	7 77.78	9 100.00
All	110 24.07	347 75.93	457 100.00

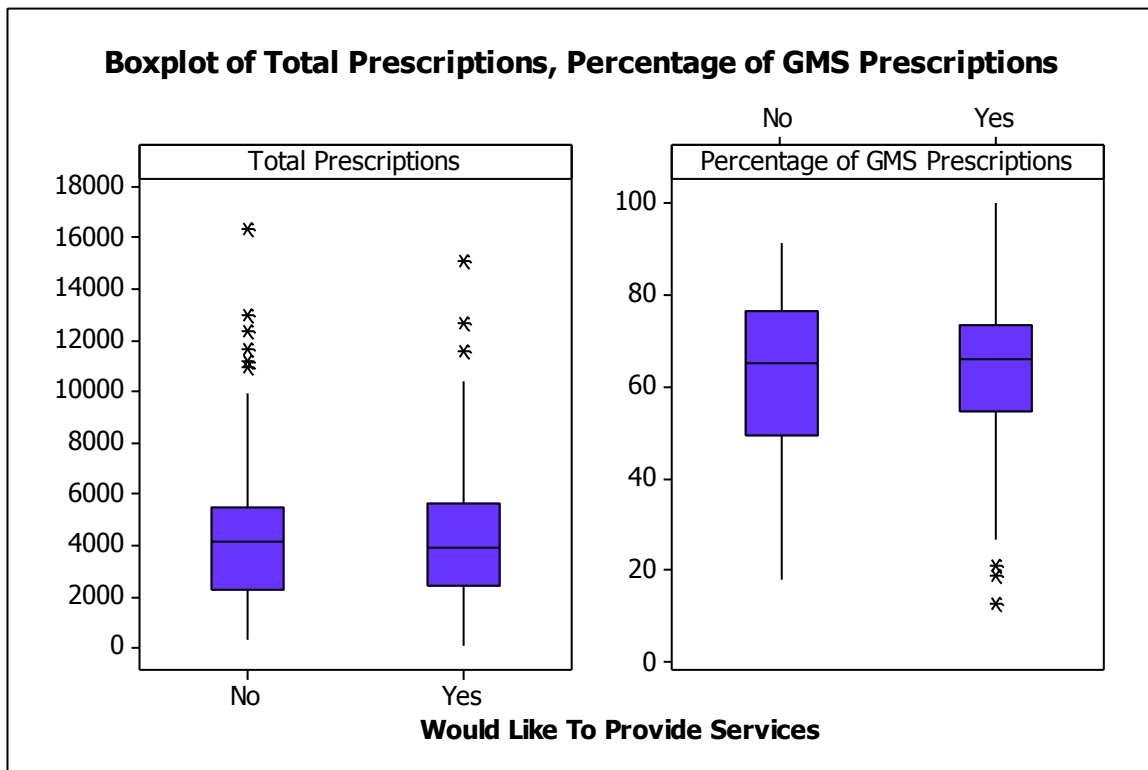
Cell Contents: Count
% of Row











Two-Sample T-Test and CI: Total Prescriptions, Would Like To Provide Services

Two-sample T for Total Prescriptions

Would Like
To Provide

Services	N	Mean	StDev	SE Mean
No	88	4615	3083	329
Yes	301	4164	2313	133

Difference = μ (No) - μ (Yes)

Estimate for difference: 452

95% CI for difference: (-251, 1154)

T-Test of difference = 0 (vs not =): T-Value = 1.27 P-Value = 0.205 DF = 117

Two-Sample T-Test and CI: Percentage of GMS Prescr, Would Like To Provide Se

Two-sample T for Percentage of GMS Prescriptions

Would Like
To Provide

Services	N	Mean	StDev	SE Mean
No	88	60.4	19.6	2.1
Yes	301	63.1	14.6	0.84

Difference = μ (No) - μ (Yes)

Estimate for difference: -2.70

95% CI for difference: (-7.16, 1.75)

T-Test of difference = 0 (vs not =): T-Value = -1.20 P-Value = 0.232 DF = 116

APPENDIX 5

MEMBERS OF STEERING GROUP

Project Steering Group

Name	Job Title
Mr. Paul Fahey (chair)	Vice-President, Council of the Pharmaceutical Society of Ireland Superintendent Pharmacist, Fahey's Pharmacy, Tullamore, Co Offaly
Dr. Catriona Bradley	Boots Pharmacy Services Research and Development (Ireland) Ireland Adjunct Lecturer in Practice of Pharmacy, School of Pharmacy and Pharmaceutical Sciences, Trinity College Dublin
Dr. Mark Ledwidge	Lecturer in Pharmacy Practice, School of Pharmacy, UCC
Dr. Martin Henman	Senior Lecturer in Pharmacy Practice, The School of Pharmacy and Pharmaceutical Sciences, Trinity College, Dublin
Mr. Brendan Kerr	Head of Professional Services, Pharmaceutical Society of Northern Ireland
Dr. Paul Gallagher	Senior lecturer in Pharmacy Practice, School of Pharmacy, RCSI
Dr. Laura Sahn	Lecturer in Clinical Pharmacy, School of Pharmacy, UCC
Mr. Michael O'Shea	Chief Executive Officer, Irish Heart Foundation
Dr. Jean Holohan	Chief Executive Officer, Asthma Society of Ireland
Ms. Mairéad Lyons	Head of Services, Irish Cancer Society