

Department of Public Health & Primary Care
Trinity College Dublin

A National Survey of Chronic Disease Management by Practice Nurses in Ireland

Catherine Darker, Lucy Whiston, Siobhan Jordan, Róisín Doogue,
Claire Collins, Kieran Ryan, Brendan O'Shea.



Trinity
College
Dublin

The University of Dublin

THE ADELAIDE



HEALTH FOUNDATION



Irish Practice Nurses Association



Acknowledgements

This report reflects a partnership between the Adelaide Health Foundation (AHF) based within the Department of Public Health and Primary Care, Trinity College Dublin, the Irish College of General Practitioners (ICGP) and the Irish Practice Nurses Association (IPNA). The AHF wishes formally and gratefully to acknowledge the positive and supportive attitude of both the ICGP and the IPNA in the production of this report. Their inputs and insights strengthens the report and we hope that it will serve to enhance their roles as advocates of better patient care.

We wish to thank the practice nurses who generously gave of their time to complete and return the questionnaire. Without them this research would not have been possible.

Professor Ian M Graham FRCPI, FESC, FTCD

Chair, Adelaide Health Policy Initiative

Sub-editing: Deirdre Handy

Design: Janine Handy

A photograph of a nurse in a white uniform administering an injection into a patient's arm. The patient is a young woman with dark hair, looking down at her arm. The nurse is leaning over her, holding the patient's arm with one hand and the syringe with the other. The background is softly blurred, showing what appears to be a window with blinds. The entire image has a warm, orange-toned overlay.

A National Survey of Chronic Disease Management by Practice Nurses in Ireland

Catherine Darker, Lucy Whiston, Siobhan Jordan, Róisín Doogue,
Claire Collins, Kieran Ryan, Brendan O'Shea.

Foreword

Health challenges are changing. Over one-third of the Irish population report having a chronic illness, such as, heart disease, respiratory disease, cancer and diabetes. The proportion reporting a chronic illness increases with age. More than half of our over 50s are currently living with two or more chronic diseases and this figure is likely to rise dramatically by the end of this decade. With conditions being diagnosed earlier and the Irish population ageing, the prevalence of various illnesses has increased, their character has changed, and patients with multiple coexisting conditions are common. Chronic diseases are therefore major factors in the continuous growth of healthcare spending, along with the longer life expectancy of the population.

In Ireland, primary care reform is a national imperative. National healthcare systems with strong primary care infrastructures have healthier populations, fewer health-related inequalities and lower overall costs for healthcare. In the World Health Organization's 2008 World Health Report, all countries were encouraged to orient their healthcare systems toward strengthening primary care. Healthcare reforms are unlikely to improve overall population health, equalise distribution of healthcare resources or reduce costs unless they address both the systemic and clinical characteristics of primary care.

To achieve effective primary healthcare at the systemic level, several evidence-based goals must be met. These include the equitable distribution of resources, progressive and universal financing, low or no copayments and comprehensive coverage. The key components of primary care at the clinical level include access to and use of first-contact care, patient-focused (rather than disease-focused) care over time for defined populations, services that are comprehensive and timely, and coordination of care when patients need services elsewhere.

Meeting the complex needs of patients with chronic diseases is the single greatest challenge facing our healthcare system today. Over the past two decades, intervention studies have begun to clarify the advantages to chronically ill patients of care by a team, and the particular team roles and functions associated with better outcomes. Practice nurses represent a core part of the multi-disciplinary team providing patient centred care in Irish primary care. Many successful chronic disease interventions reported in the literature involve a nurse in the treatment of a chronic disease. Critical care functions provided by practice nurses have been shown repeatedly to improve professionals' adherence to guidelines and patients' satisfaction, clinical and health status, and use of health services.

Ms. Siobhan Jordan, Chairperson, Irish Practice Nurses Association

Research Group

Dr Catherine Darker, Adelaide Assistant Professor in Health Services Research,
Trinity College Dublin

Ms. Lucy Whiston, Adelaide Research Assistant, Trinity College Dublin

Ms. Siobhan Jordan, Chairperson, Irish Practice Nurses Association

Ms. Róisín Doogue, Chairperson of Education Committee, Irish Practice Nurses Association

Dr Claire Collins, Director of Research, Irish College of General Practitioners

Mr Kieran Ryan, Chief Executive Officer, Irish College of General Practitioners

Dr Brendan O'Shea, Clinical Lecturer in Primary Care, Trinity College Dublin

Table of Contents

List of Tables	7
List of Figures	8
Summary	9
Introduction	11
Section One: Rationale, Aims And Objectives	12
1.1 Rationale	
1.2 Aim of Research	
Section Two: Method	14
2.1 Design	
2.2 Sampling	
2.3 Survey Instrument	
2.4 Procedure	
2.5 Analysis	
Section Three: Results	16
3.1 Response rate	
3.2 Respondents' profile	
3.2.1 Age of respondents	
3.2.2 Gender of respondents	
3.2.3 Practice location	
3.2.4 Service description	
3.2.5 Training involvement	
3.3 Perception of chronic disease management	
3.4 Access	
3.5 Evidence of managed care	
3.6 Resources	
3.7 Information technology	
3.8 Barriers to effective chronic disease management	
3.9 Future development of chronic disease management	
Section Four: Discussion	41
References	44
Appendix: Survey Instrument	45

List of Tables

- Table 1: Comparison between hospital consultants', GP's and PNs' perceptions of chronic disease management in the Irish healthcare system.
- Table 2: Practice nurses', hospital consultants', and GPs' perceptions of how often their private patients experience difficulties in accessing services and paying for medical costs.
- Table 3: Practice nurses', hospital consultants', and GPs' perceptions of how often their public patients experience difficulties in accessing services and paying for medical costs.
- Table 4: Practice nurses' opinions of content and timeliness of reports from hospital specialists for private and public patients.
- Table 5: Percentage of practice nurses who reported out of hour's services for patients.
- Table 6: Practice nurses, hospital consultants and GPs perceptions of effective local access to services for both private and public patients.
- Table 7: Use of evidence-based treatment guidelines for various chronic conditions.
- Table 8: Frequency of use of strategies to improve care for patients with diabetes.
- Table 9: Percentage of practices with healthcare providers in addition to respondent and GPs.
- Table 10: Strength of agreement on levels of resources for chronic disease management.
- Table 11: Severity of problems relating to shortages of practice nurses colleagues and time spent on coordination of care.
- Table 12: The use of technology within services.
- Table 13: The ease with which practice nurses can generate patient information using their current medical records system.
- Table 14: Tasks that are routinely performed within the practice.
- Table 15: Perceived importance of barriers to effective management of chronic diseases within your service.
- Table 16: Rating of resources in terms of importance in the development of chronic disease management within the service.
- Table 17: Opinions of practice nurses regarding shared care between general practice and hospitals.
- Table 18: Opinion of shared care by practice nurses, hospital consultants and GPs currently involved in shared care.

List of Figures

- Figure 1: Practice Nurses' perception of Chronic Disease Management in the Irish healthcare system.
- Figure 2: Percentage of practice nurses who provide patients on multiple medications with a written list of their medications.
- Figure 3: Percentage of practice nurses who provide chronic disease patients with written instructions for their care at home.
- Figure 4: Percentage of practice nurses who have completed a full audit cycle for 1 or more chronic disease in the past 5 years.
- Figure 5: Percentage of practice nurses who use patient medical records in their service.
- Figure 6: Percentage of practice nurses whose practices communicate with patients through email.
- Figure 7: Percentage of practice nurses whose practices communicate with patients through text.

Summary

- This study provides a baseline of the provision of chronic disease management (CDM) in 2014 in Irish primary care from the perspective of practice nurses (PNs). The response rate was 73%.
- It allows comparisons with previously published views of general practitioners and hospital consultants.
- 81% of PNs indicated that there are some good things in our health system, but significant changes are needed to make CDM work better.
- PNs are acutely aware of the financial difficulties and access difficulties that both private and public patients may experience within the Irish healthcare system. The majority of PNs report that both private and public patients experience difficulties in paying for medications or other out-of-pocket expenses; may experience long waiting times to see a hospital based specialist and delays in accessing specialist diagnostic tests.
- The majority of PNs reported that both public and private patients have effective local access to physiotherapist, dietician and chiropodist services. The majority also report that private patients have effective access to psychologist services and that public patients have effective access to social work services.
- Overall use of evidence-based guidelines was high, with the majority of PNs reporting using guidelines for the treatment of respiratory disease, diabetes, hypertension and depression. However, only one-third of PNs reported using guidelines for the treatment of ADHD.
- Half of the PNs reported having completed a full clinical audit cycle in the last five years.
- The majority of PNs use a register to identify and track care for patients with diabetes, and assist patients in setting and attaining self-management goals. However, there is room to increase the use of flow sheets to track critical elements of diabetic care and to develop a system to remind patients about routine visits.
- Nearly all PNs indicated that their service provides an out-of-hours service to their patients, with the majority indicating that they provide a cooperative service.
- 80% of PNs either agreed or strongly agreed about putting more time and energy into CDM.
- Over 71% of PNs either agreed or strongly agreed that primary care teams would enhance CDM in their practice.

- Echoing the two previous stakeholder reports of GPs and Hospital Consultants, the majority of PNs were willing to share the CDM workload with their local hospital.
- Two-thirds of PNs favoured CDM delivered in a GP setting by a nurse, under the supervision of a GP, whereas the minority (16%) were in support of CDM delivered in a GP setting by a nurse with no supervision.
- The amount of time PNs or their colleagues spend on administration was considered a major problem. The coordination of care for patients was not considered as a problem.
- Like the previous GP report, the majority of PNs indicated that they routinely use electronic patient medical records in their practice. PNs report that it is easy to list individual patients medications, and to generate a list of patients by lab result or by diagnosis.
- PNs perceive an increased workload and lack of time, plus a lack of appropriate funding as the biggest barriers to effective CDM. Poor communication between hospital teams and GPs was also cited as a significant barrier. PNs also cited patient not attending for scheduled appointments as a barrier to effective CDM.
- PNs indicate targeted funding for GPs as in the NHS model and increased PN time for GP led clinics as the two main resources in terms of importance in the development of chronic disease management within primary care.

Introduction

Chronic non-communicable diseases account for 86% of deaths in the WHO European Region¹. They include heart disease, stroke, hypertension, diabetes, kidney disease, cancers, respiratory and liver diseases. The human cost cannot be overstated, but they also place an unsustainable financial burden on health budgets. Current projections indicate that the burden of chronic conditions is expected to increase dramatically in Ireland over the next number of years². By 2020 it is anticipated that the number of adults in Ireland with chronic conditions will increase by around 40% and that relatively more of the burden of these conditions will be borne by older adults. Meeting the complex needs of patients with chronic diseases is therefore the single greatest challenge facing our healthcare system today.

Healthcare and health services are undergoing a transformation. The Programme for Government entitled ‘Towards Recovery, Programme for a National Government 2011-2016’³ has committed to ending the “unfair, unequal and inefficient two-tier health system” by introducing universal health insurance (UHI). UHI as outlined in “Future Health – A Strategic Framework for the Reform of the Health Service 2012-2015”⁴ is a mechanism to transform the Irish health system to a single-tiered health system characterised by a mandatory universal health insurance (UHI), equity of access to healthcare services determined by need rather than ability to pay, risk equalisation, chronic disease management in the community and a system of hospital funding whereby money follows the patient (MFTP).

A requirement that arises when a country or large system is on the precipice of huge change is to establish the readiness of that system to deliver the changes within the current context. Consideration must also be given to the projected demographic changes within the country. Chronic diseases, such as heart disease, chronic respiratory disease and diabetes, are categorised by the World Health Organization as diseases of long duration and generally slow progression⁵. Chronic diseases cause significant morbidity and mortality, and result in poorer quality of life for many people². It has been estimated that 70% of the global disease burden in 2030 will be due to chronic diseases, with an increasing number of individuals having multiple chronic conditions in their lifetime⁶.

The Chronic Care Model (CCM)⁷ is an organising framework for improving chronic disease management and an excellent tool for improving care at both the individual and population level. The model is based on the understanding that improvement in care requires an approach that incorporates patient, provider, and system level interventions. CCM comprises six components: 1) health system — organisation of health care (providing leadership for securing resources and removing barriers to care), 2) self-management support (i.e. facilitating skills-based learning and patient empowerment), 3) decision support (i.e. providing guidance for implementing evidence-based care), 4) delivery system design (i.e. coordinating care processes), 5) clinical information systems (i.e. tracking progress through reporting outcomes to patients and providers), and 6) community resources and

policies (i.e. sustaining care by using community-based resources and public health policy). The sum of these CCM component parts is purported to create more effective healthcare delivery systems that institute mechanisms for decision support, link health care systems to community resources and policies, deliver comprehensive self-management support services for patients, and operate and manage patient centred clinical information systems. Practice nurses (PNs) working within Ireland, and other healthcare providers, are ideally suited for implementation of the CCM.

We believe that in this context, it is most important to understand the beliefs, experiences and attitudes of front line clinical staff, most particularly nursing staff, general practitioners (GPs) and secondary care hospital consultants (HCs), and patients themselves. This study is therefore timely. It includes a representative survey of front line practice nurses working within Irish communities, who are deeply familiar with the challenges faced by their patients, and who have valuable insights that must be made known and understood by policy makers, administrators, political leaders and patients.

Section One: Rationale, Aims and Objectives

1.1 Rationale

The Irish healthcare system is undergoing significant change - consequent on new thinking, new policy directions and a realisation that, in an era where resources are contracting severely and disease patterns are changing, there needs to be a new approach to healthcare and increased research support to inform the choices we as a society are making. The new Programme for Government³ outlines a thorough transformation of the Irish health system from a two-tier service reliant on taxation to a universal healthcare system with compulsory health insurance. Concurrently, Ireland has a rapidly ageing population⁸. Over the next 30 years the number of patients over the age of 65 is estimated to almost triple and the number of people with chronic diseases will increase in tandem. It has been estimated that 10% of patients in Ireland consume over 60% of health resources². Recent research conducted by this project team with Irish GPs indicates that the majority of GPs report that significant changes are needed in our health system to make chronic disease management (CDM) work better^{9,10}. The Chronic Care Model (CCM)⁷ is a systematic approach to coordinating health care across levels (individual, organisational, local and national). Evidence indicates that this model of 'person centred care,' with coordination across care settings and providers is more effective than single disease models or uncoordinated interventions¹¹. Many countries are engaged in transition to the CCM¹². This study refers throughout to the CCM as the standard model of service design and service delivery.

The study seeks to ascertain the opinions of front line practice nurses regarding critical elements of CDM and the CCM. These observations are important in planning services and resource allocations in the years ahead, should care be transferred from the secondary and tertiary sectors into primary care as per the proposed healthcare reforms. It is also an opportunity to compare the opinions of PNs, with GPs and HCs.

1.2 Aim of Research

The aim of this research is to survey PNs working within Ireland to identify what elements of the CCM are currently in place. This will provide a baseline measure of CDM, using an internationally agreed set of parameters, and be of significant benefit benchmarking against ongoing healthcare reforms.

Objectives

To conduct a survey to deliver a baseline measure of CDM.

To identify strengths and weaknesses of CDM in Irish general practice from PNs' perspectives.

To inform the wider profession and policy makers.

To examine which elements of the CCM are in place.

Section Two: Method

2.1 Design

This study utilised a cross-sectional design using a survey questionnaire posted to practice nurses who are members of the Irish Practice Nurses Association (IPNA).

2.2 Sampling

The IPNA has a total of 636 members. A total of 476 (75%) PNs who are members of the IPNA have indicated their willingness to receive research invitations.

* Please note that not all practice nurses in Ireland are members of the IPNA. There are in total approximately 1700 Practice Nurses in Ireland¹³.

2.3 Survey instrument

The questionnaire was based on and similar to the questionnaire used in the GP survey¹⁰ and the HC survey¹⁴ to allow for comparisons. The questionnaire was developed by combining relevant questions from two international questionnaires on chronic disease management. First, the Use of Chronic Care Model Elements Survey⁷ and secondly, questions from A Survey Of Primary Care Physicians In Eleven Countries¹⁵. This resulted in a thirty-one item questionnaire which covered topics such as respondents' perception of CDM, access to care for patients, evidence of managed care within the practices, resources available to the GP, the use of information technology within the practices, respondents' perceptions of the barriers to effective CDM, future development of CDM and demographic details (see Appendix). The questionnaire was piloted for comprehension and ease of completion before dissemination as the final study instrument.

2.4 Procedure

The postal questionnaire was conducted in three separate waves at one-month intervals, to secure a good response rate. The sample was circulated in January, February and March 2014 with a questionnaire accompanied by a stamped addressed envelope for ease of return and a cover letter outlining the purpose of the study and assuring respondents of total confidentiality within the research team. A unique identifying number (UIN) ensured the anonymity of the respondent. Respondents who had completed and returned the questionnaire in a previous wave were checked off the database using their UIN to ensure that they did not receive another questionnaire in a subsequent wave.

2.5 Analyses

Descriptive statistics were used to describe the percentage of respondents who indicated their choice of items within the survey. Linear regression analyses, analyses of variance, t-tests and chi-square analyses were conducted as appropriate. Comparisons are made between responses from PNs, GPs and HCs. Analyses were performed in SPSS version 19.

Section Three: Results

3.1 Response rate

In January 2014 the first postal questionnaire wave was sent to 469 practice nurses.

A total of 240 completed questionnaires were returned within the first postal round (51.1% response rate – Wave 1). The non-responders were sent a follow-up reminder letter and the survey questionnaire again in February 2014 (Wave 2). A total of 66 completed questionnaires were returned (14.0% response rate – Wave 2). In March 2014 a third and final reminder letter and an additional questionnaire was sent to all non-responders. This resulted in an additional 35 completed questionnaires being returned (7.4% response rate – Wave 3).

Across the three postal waves 341 completed questionnaires were received, resulting in an overall response rate of 73%.

3.2 Respondents' profile

This section outlines the age and sex of respondents as well as the location, size and training involvement of their practice.

3.2.1 Age of respondents

In total 23 (6.7%) PNs indicated that their age was less than 35 years. A further 171 (50.1%) indicated that their age was between 35-49 years and 140 (41.4%) PNs indicated that their age was between 50-64 years. Four (1.2%) indicated that their age was 65 years or older.

Three (0.9%) PNs did not indicate their age.

3.2.2 Gender of respondents

340 (99.7%) PNs were female and one (0.3%) was male.

3.2.3 Practice location

A total of 56 (16.4%) PNs indicated that their practice is city centre based. Another 64 (18.8%) indicated that their practice is located within a city suburb and 163 (47.8%) PNs indicated that their practice is located within a small town. The remaining 56 (16.4%) indicated that their practice is located within a rural setting.

Two (0.6%) PNs did not indicate the location of their practice.

3.2.4 Service description

Overall 78 (22.9%) PNs indicated that they are working within a single-handed practice. A further 95 (27.9%) indicated that they are working within practices with two GPs. The final 164 (48.1%) PNs indicated that they are working in a practice with three or more GPs.

Four (1.2%) PNs did not indicate the size of the practice that they work within.

3.2.5 Training involvement

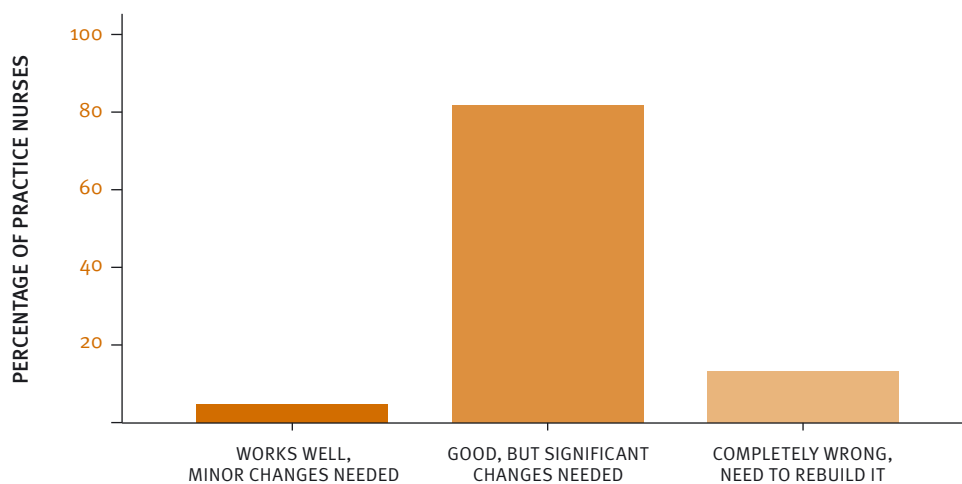
In total 205 (60.1%) PNs reported that the practice in which they are working is involved in medical or nursing training. From those who indicated involvement in training, undergraduate training was indicated by 108 (57.8%) PNs and postgraduate training was reported by 124 (66.2%) PNs.

3.3 Perception of chronic disease management

This section examines PNs' perception of chronic disease management within the Irish healthcare system.

Which of the following statements come closest to expressing your overall view of Chronic Disease Management (CDM) in our healthcare system?

Figure 1: Practice Nurses' perception of Chronic Disease Management in the Irish healthcare system (n=307).



Overall view of CDM in our healthcare system?

A total of 307 (90.0%) Practice Nurses answered this question. Missing data = 34 (10.0%)

Fifteen (4.9%) PNs indicated that on the whole, the healthcare system works well, and only minor changes are necessary to make CDM work better. A total of 251 (81.4%) PNs indicated that there are some good things in our health system, but significant changes are needed to make CDM work better. The remaining 41 (13.4%) indicated that our healthcare system has so much wrong with it that we need to completely rebuild it for CDM. The age of the PN and the size or location of the service in which they practice had no impact on the respondent's perception of CDM.

Table 1: Comparison between Hospital Consultants', GPs' and PNs' perceptions of chronic disease management in the Irish healthcare system.

	Hospital Consultants (N=221/227; 97.4%)	General Practitioners (N=368/380; 96.8%)	Practice Nurses (N=307/341; 90.0%)
On the whole the health care system works pretty well and only minor changes are necessary to make it work better	10 (4.5%)	21 (5.7%)	15 (4.9%)
There are some good things in our health system, but fundamental changes are needed to make it work better	180 (81.4%)	240 (65.2%)	251 (81.8%)
Our health care system has so much wrong with it that we need to completely rebuild it	31 (14%)	107 (29.1%)	41 (13.4%)

When compared with the views of HCs and GPs there is an overarching consensus that change on some level, either fundamental or complete, is required to facilitate the healthcare system to work more effectively in the delivery of CDM (Table 1). The majority of all three service providers surveyed, 180 (81.4%) HCs, 240 (65.2%) GPs and 251 (81.8%) PNs support the need for fundamental change.

3.4 Access

This section outlines PNs' perception of the ease of access that their patients, private and public, experience when attempting to access healthcare services and specialist providers and ease of paying for healthcare costs. It also reports on the types of out-of-hours services respondents provide for their patients.

How often do your private patients experience the following?

Table 2: Practice Nurses', Hospital Consultants', and GPs' perceptions of how often their private patients experience difficulties in accessing services and paying for medical costs.

	Responder	Often	Sometimes	Rarely	Never
Do your private patients have difficulty paying for medications or other out-of-pocket costs?	PN (N=324; 95.0%)	119 (36.7%)	176 (54.3%)	27 (8.3%)	2 (0.6%)
	HC (N=205; 90.3%)	35 (17.1%)	133 (64.9%)	31 (15.1%)	6 (2.9%)
	GP (N=373; 98%)	151 (40%)	178 (48%)	43 (12%)	1 (0.3%)
Have your private patients experienced long waiting times to see a hospital based specialist?	PN (N=327; 95.9%)	105 (32.1%)	126 (38.5%)	91 (27.8%)	5 (1.5%)
	HC (N=210; 92.5%)	25 (11.9%)	81 (38.6%)	88 (41.9%)	16 (7.6%)
	GP (N=376; 99%)	132 (35%)	129 (34%)	98 (26%)	17 (5%)
Have your private patients had difficulty getting specialised diagnostic tests (e.g., CT imaging)?	PN (N= 327; 95.9%)	69 (21.1%)	144 (44.0%)	105 (32.1%)	9 (2.8%)
	HC (N=209; 92.1%)	23 (11%)	86 (41.1%)	81 (38.1%)	19 (9.1%)
	GP (N=376; 99%)	120 (32%)	135 (36%)	106 (28%)	15 (4%)
Have your private patients experienced long waiting times to receive treatment after diagnosis?	PN (N=325; 95.3%)	50 (15.4%)	142 (43.7%)	126 (38.8%)	7 (2.2%)
	HC (N=210; 92.5%)	13 (6.2%)	62 (29.5%)	108 (51.4%)	27 (12.9%)
	GP (N=376; 99%)	76 (20%)	148 (40%)	133 (35%)	19 (5%)

A total of 295 (90.1%) PNs reported perceiving that their private patients experience difficulties in paying for medications or other out-of-pocket expenses. 231 (70.6%) PNs indicated believing that their private patients often or sometimes experience long waiting times to see a hospital based specialist, and 213 (65.1%) PNs reported delays in accessing specialist diagnostic tests. In addition, 192 (59.1%) PNs feel that their private patients often or sometimes experience long waiting times to receive treatment after a diagnosis.

PNs who are in favour of a greater amount of change in CDM in Ireland are more likely to perceive that their private patients have difficulty paying for medication or other out of pocket medical costs and are more likely to report believing their private patients experience long waiting times to see hospital consultants. Younger PNs were more likely to believe that their private patients experience long waiting times to see a hospital consultant.

There is broad consensus between PNs, HCs and GPs. As illustrated in Table 2, there is a broad agreement that private patients can experience difficulties paying for medications, accessing services and diagnostics and experience long waiting times to receive treatment after diagnosis.

How often do your public patients experience the following?

Table 3: Practice Nurses', Hospital Consultants', and GPs' perceptions of how often their public patients experience difficulties in accessing services and paying for medical costs.

	Responder	Often	Sometimes	Rarely	Never
Have your public patients had difficulty paying for medications or other out-of-pocket costs?	PN (N=329; 96.5%)	121 (36.8%)	111 (33.7%)	84 (25.5%)	13 (4.0%)
	HC (N=215; 94.7%)	76 (35.3%)	76 (35.3%)	48 (22.3%)	15 (7%)
	GP (N=368; 96%)	87 (24%)	92 (25%)	123 (33%)	66 (18%)
Have your public patients experienced long waiting times to see a Hospital Consultant?	PN (334; 97.9%)	297 (88.9%)	35 (10.5%)	2 (0.6%)	0 (0.0%)
	HC (N=217; 95.6%)	151 (69.6%)	58 (26.7%)	8 (3.7%)	0 (0.0%)
	GP (N=369; 97%)	342 (93%)	25 (7%)	1 (0.3%)	1 (0.3%)
Have your public patients had difficulty getting specialised diagnostic tests (e.g., CT imaging)?	PN (N=334, 97.9%)	220 (65.9%)	98 (29.3%)	15 (4.5%)	1 (0.3%)
	HC (N=216; 95.2%)	116 (53.7%)	70 (32.4%)	24 (11.1%)	6 (2.8%)
	GP (N=369; 97%)	326 (88%)	34 (9%)	6 (2%)	3 (1%)
Have your public patients experienced long waiting times to receive treatment after diagnosis?	PN (N=334, 97.9%)	203 (60.8%)	106 (31.7%)	25 (7.5%)	0 (0.0%)
	HC (N=215; 94.7%)	86 (40%)	86 (40%)	37 (17.2%)	6 (2.8%)
	GP (N=368; 96%)	253 (69%)	93 (25%)	20 (5%)	2 (1%)

The majority of PNs perceive that their public patients experience difficulty paying for medications or other out-of-pocket costs. Most also believe their public patients experience long waiting times to see a hospital consultant, to access specialised diagnostic tests and to receive treatment after diagnosis.

Practice nurses who feel there is a need for a greater amount of change to CDM in Ireland were more likely to report feeling that their public patients experience long waiting times to see hospital consultants. Opinion of CDM change, age, size or location of practice was not related to any other factor of accessing or paying for healthcare.

It is evident from Table 3 that similarities emerged between PNs, HCs and GPs when they were asked about their public patients accessing and paying for care. All three clinical disciplines believe their public patients experience difficulties paying for medication and medical costs as well as experiencing delays in accessing hospital consultants, diagnostics and treatment.

When practice nurse' reports of public patients' experience was compared with private patient experience statistically significant differences emerged. PNs were more likely to report private patients experiencing difficulties paying for medication or other medical costs. PNs were more likely to report public patients experiencing difficulties accessing hospital specialists, specialist diagnostics and treatment after diagnosis.

When patients are seen by a hospital specialist, how often does the following occur?

Table 4: Practice Nurses' opinions of content and timeliness of reports from Hospital Consultants for private and public patients.

	Patient Status	Always	Often	Sometimes	Rarely	Never
A report is available from the specialist with all relevant information	Private (N=339; 99.4%)	121 (35.7%)	145 (42.8%)	63 (18.6%)	10 (2.9%)	0 (0.0%)
	Public (N=338; 99.1%)	70 (20.7%)	134 (39.6%)	106 (31.4%)	28 (8.3%)	0 (0.0%)
The information received is timely and available when needed	Private (N=337; 98.8%)	69 (20.5%)	132 (39.2%)	115 (34.1%)	19 (5.6%)	2 (0.6%)
	Public (N=338; 99.1%)	32 (9.5%)	82 (24.3%)	156 (46.2%)	63 (18.6%)	5 (1.5%)

As illustrated in Table 4, when a private patient is seen by a hospital specialist PNs report that relevant information is generally provided and is done so timely and is available when needed. A total of 266 (78.5%) PNs reported relevant information being provided for private patients always or often and 201 (59.7%) PNs stated that this was done timely and was available when needed always or often for private patients. When a public patient is seen by a hospital specialist 204 (60.3%) PNs reported relevant information is provided always or often. This information is provided timely or is available when needed always or often according to 114 (33.8%) PNs and sometimes according to 156 (46.2%) PNs.

When the provision of information for public and private patients was compared, statistically significant differences emerged. Relevant information is more likely to be provided for private patients. Information is more likely to be provided timely and to be available when needed, for private patients.

What out-of-hours service does your practice provide for your patients?

Table 5: Percentage of Practice Nurses who reported out of hours services for patients (N= 339, 99.4%).

Out of hours service	Yes
Cooperative	232 (68.4%)
Local rota	103 (30.4%)
Deputising services	23 (6.8%)
None (other than A&E)	3 (0.9%)

A total of 336 (99.2%) PNs reported that their practice provided some form of out-of-hours service. This was most often reported to be provided through a co-operative (68.4%, n=232) (Table 5). Thirteen (3.8%) PNs reported that their practice provided some combination of two of the above options for patients for out-of-hours services. Size or location of the practice had no impact on the out of hours services provided.

Outside of your service, do your patients have effective local access to the following?

Table 6: Practice Nurses, Hospital Consultants and GPs perceptions of effective local access to services for both private and public patients.

	Responder	Yes (Private patients)	Yes (public patients)
Physiotherapist	PN (N=340, 99.7%)	302 (88.8%)	247 (72.6%)
	HC	152 (70%)	134 (61.8%)
	GP	350 (93%)	238 (63%)
Occupational Therapist	PN (N=340, 99.7%)	132 (38.8%)	152 (44.7%)
	HC	86 (39.8%)	114 (52.8%)
	GP	139 (37%)	156 (41%)
Speech and Language Therapist	PN (N=340, 99.7%)	142 (41.8%)	132 (38.8%)
	HC	76 (35.2%)	104 (48.1%)
	GP	151 (40%)	141 (37%)
Psychologist	PN (N=340, 99.7%)	195 (57.4%)	129 (37.9%)
	HC	59 (27.4%)	46 (21.4%)
	GP	219 (58%)	92 (24%)
Dietician	PN (N=340, 99.7%)	222 (65.3%)	202 (59.4%)
	HC	110 (51.2%)	123 (57.2%)
	GP	245 (65%)	189 (51%)
Social Worker	PN (N=340, 99.7%)	130 (38.2%)	178 (52.4%)
	HC	50 (23.3%)	101 (47%)
	GP	143 (38%)	197 (52%)
Chiropodist*	PN (N=340, 99.7%)	266 (78.2%)	198 (58.2%)
	HC	-	-
	GP	-	-

* Not asked in hospital consultant or general practitioner arm surveys.

The majority of PNs reported that both public and private patients have effective local access to physiotherapist, dietician and chiropodist services (Table 6). The majority also reported that private patients have effective access to psychologist services and that public patients have effective access to social work services. Neither the age of the PN, their opinion of CDM, the size of location of service had any impact on effective local access to services.

There is a general consensus between PN reports and those of HCs and GPs. Most HCs and GPs also reported effective local access to physiotherapist and dietician services. Ineffective local access was reported by the majority of HCs and GPs for occupational therapist, speech and language therapist, psychologist and social work services; although psychologist services were deemed marginally better for private patients by PNs and GPs, also perceived social worker services as marginally better for public patients.

3.5 Evidence of managed care

This section examines the use of evidence based treatment guidelines and strategies for managing common conditions, such as providing patients with a written list of their prescription medication or written instructions for chronic disease care at home. It also describes the frequency of routine clinical audit completions.

In your Practice, do you routinely use written evidence-based treatment guidelines to treat the following conditions? (diabetes, depression, asthma/COPD, hypertension, ADHD)

Table 7: Use of evidence-based treatment guidelines for various chronic conditions.

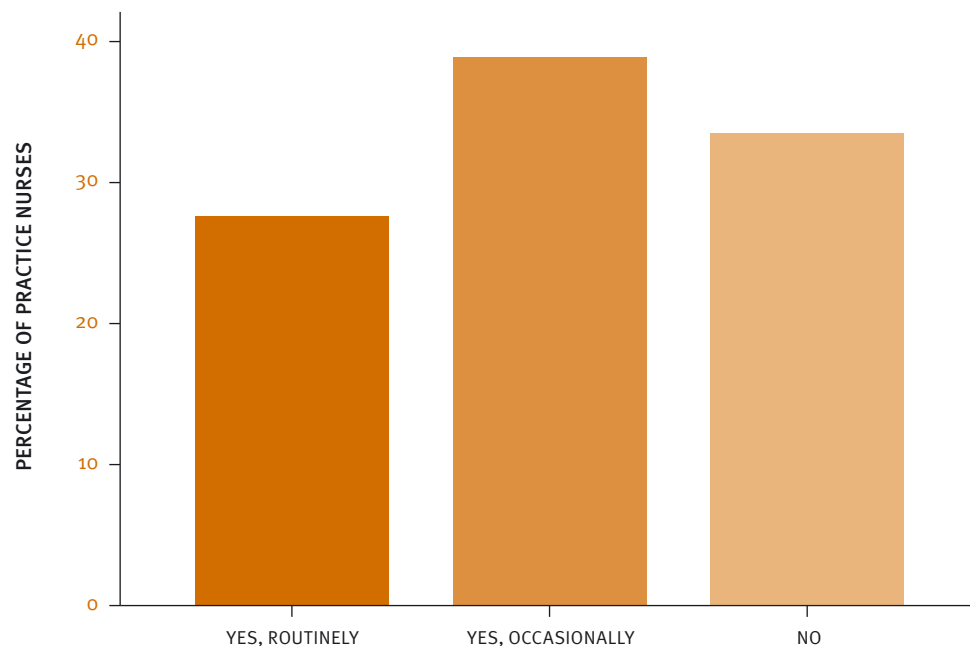
Chronic illness	Yes, routinely use guidelines	No, do not routinely use guidelines	No guidelines available
Diabetes (N=336)	291 (86.6%)	41 (12.2%)	4 (1.2%)
Depression (N=315)	173 (54.9%)	121 (38.4%)	21 (6.7%)
Asthma or COPD (N= 333)	264 (79.3%)	61 (18.3%)	8 (2.4%)
Hypertension (N=333)	284 (85.3%)	45 (13.5%)	4 (1.2%)
ADHD (N= 306)	120 (39.2%)	131 (42.8%)	55 (18.0%)

Utilisation of evidence-based treatment guidelines was reported by 291 (86.6%) PNs for diabetes, 264 (79.3%) PNs for asthma or COPD and 284 (85.3%) PNs for hypertension, as shown in Table 7. A total of 55 (18.0%) PNs reported that there were no guidelines available for ADHD.

Those in larger practices with a greater number of GPs were more likely to report using guidelines for diabetes. PNs who indicated believing there is a need for a greater amount of change to CDM were more likely to report not using guidelines for ADHD. PNs who were in practices involved in medical training were more likely to report use of guidelines for diabetes, depression, asthma and hypertension.

Do you provide your patients who take multiple medications (e.g., 5 or more) with a written list of their medications?

Figure 2: Percentage of Practice Nurses who provide patients on multiple medications with a written list of their medications (n=337).



Do you provide your patients who take multiple medications with a written list of their medications?

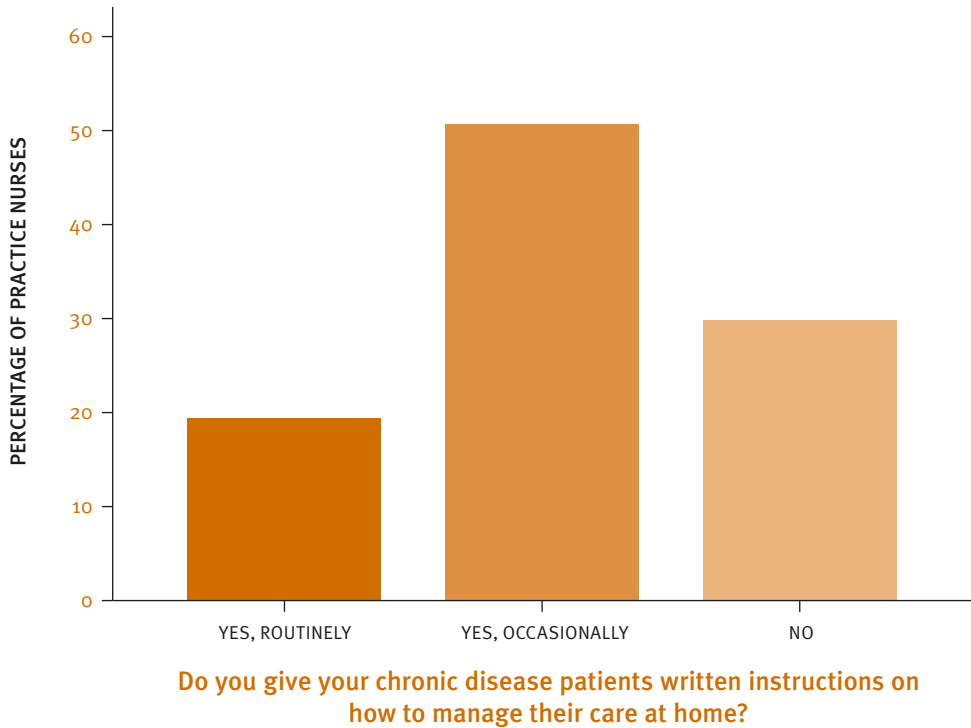
A total of 337 (98.8%) Practice Nurses answered this question. Missing data = 4 (1.2%)

Routine provision of a written list of medications was reported by 93 (27.6%) PNs and occasional provision of a written list was indicated by 131 (38.9%) PNs. The remainder (33.5%, n=113) do not provide patients with a written list of their medications.

Location of the practice is linked with the provision of a written list of medications. Those in a small town or rural location were more likely to report routinely or occasionally providing written lists. Neither age of the practice nurse, their opinion of CDM within the Irish healthcare system nor the practice size nor practice involvement in education/training had any impact on whether a written list of medications was provided.

Do you give your patients with chronic diseases written instructions about how to manage their own care at home?

Figure 3: Percentage of Practice Nurses who provide chronic disease patients with written instructions for their care at home (n=339).



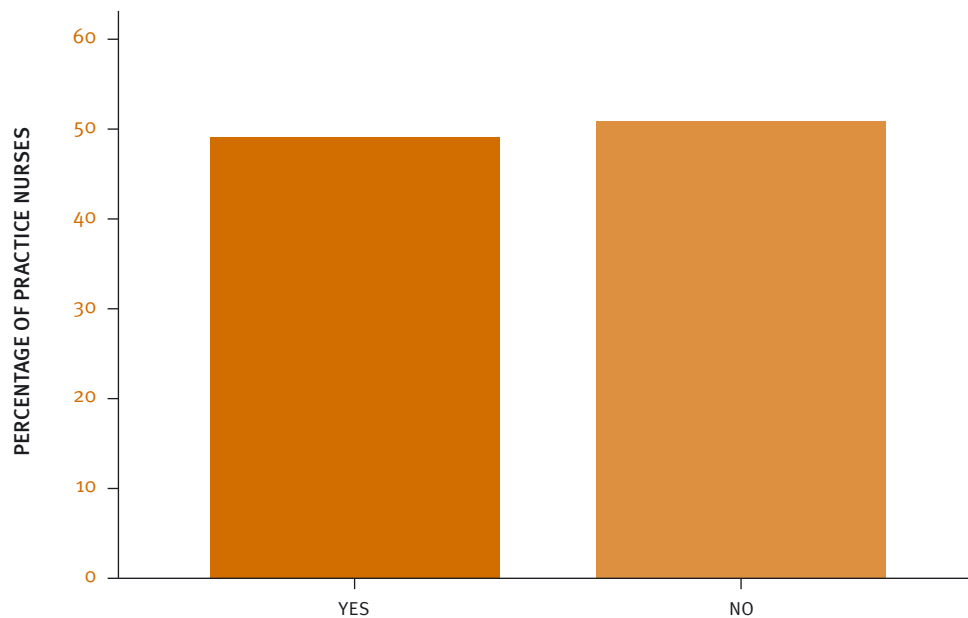
A total of 339 (99.4%) Practice Nurses answered this question. Missing data = 2 (0.6%)

Routine provision of written instructions for chronic disease care at home was reported by 66 (19.5%) PNs. Occasional provision was indicated by 172 (50.7%) PNs. The remaining 101 (29.8%) PNs reported not providing written instructions for care.

PNs who favour a greater amount of change in CDM are less likely to provide a written list of care to chronic disease patients. Age of the practice nurse, practice size, location and practice involvement in training had no impact on the provision of written instructions for care.

Have you completed a full Audit Cycle within the last 5 years on 1 or more chronic diseases?

Figure 4: Percentage of Practice Nurses who have completed a full audit cycle for 1 or more chronic disease in the past 5 years (n=334).



Have you completed a full audit cycle for 1 or more chronic diseases in the last 5 years?

A total of 334 (97.9%) Practice Nurses answered this question. Missing data = 7(2.1%)

Of the 334 PNs who responded to this question 164 (49.1%) indicated that they had completed a full audit cycle within the last 5 years on 1 or more chronic disease.

If the practice in which the practice nurse worked was engaged in medical or nursing training, an audit cycle was more likely to have been completed. In total, 118 (58.4%) PNs whose practices were involved in training had completed an audit cycle. In practices who were not involved in training 46 (35.1%) PNs reported completing an audit cycle. Neither age, opinion of CDM, nor the size or location of the practice in which the practice nurse worked had any impact on reported audit activity.

How often do you currently use the following approaches to improving care for patients with diabetes?

Table 8: Frequency of use of strategies to improve care for patients with diabetes.

Strategy	Never	Rarely	Occasionally	Usually	Always
Use a register to identify/track care (N=334; 97.9%)	36 (10.8)	30 (9.0%)	74 (22.2%)	83 (24.9%)	111 (33.2%)
Use a tracking system to remind patients about visits (N=331; 97.1%)	63 (19.0%)	54 (16.3%)	61 (18.4%)	72 (21.8%)	81 (24.5%)
Follow up patients between visits (N=334; 97.9%)	38 (11.4%)	47 (14.1%)	118 (35.3%)	78 (23.4%)	53 (15.9%)
Use published team guidelines as the basis for management (N=331; 97.1%)	24 (7.3%)	23 (6.9%)	39 (11.8%)	120 (36.3%)	125 (37.8%)
Involve office staff in reminding patients in need of follow-up or other services (N=328; 96.2%)	46 (14.0%)	43 (13.1%)	85 (25.9%)	96 (29.3%)	58 (17.7%)
Assist patients in setting and attaining self-management goals (N=334; 97.9%)	10 (3.0%)	14 (4.2%)	60 (18.0%)	149 (44.6%)	101 (30.3%)
Refer patients within the practice for education about their condition (N=330; 96.8%)	51 (15.5%)	33 (10.0%)	49 (14.8%)	99 (30.0%)	98 (29.7%)
Refer patients outside the practice for education about their condition (N=331; 97.1%)	15 (4.5%)	34 (10.3%)	117 (35.3%)	102 (30.8%)	63 (19.0%)
Use flow sheets to track critical elements of care (N=330; 96.8%)	148 (44.8%)	72 (21.8%)	51 (15.5%)	31 (9.4%)	28 (8.5%)

Published team guidelines are the most commonly used approach to improving care for patients with diabetes with 125 (37.8%) PNs reporting always using published team guidelines. Assisting patients in setting and attaining self-management goals is another commonly used approach to improve patient diabetes care with 149 (44.6%) PNs reporting they usually employ this approach. Following up with patients between visits and referring patients outside of the practice for education are approaches occasionally employed to improve diabetes care. The use of a tracking system to remind patients about visits was indicated to be used rarely by 54 (16.3%) PNs and 148 (44.8%) PNs reported never employing flow sheets to track patients care as illustrated in Table 8.

The more GPs in a practice the more likely PNs were to report using a register to identify and track care and to refer patients for education within the practice. PNs who were of the opinion that the Irish healthcare system needs to be completely rebuilt were less likely to report employing the use of published guidelines, were less likely to use practice staff to remind patients of visits and were less likely to report referring patients for education within the practice. PNs from practices that are engaged in medical or nursing training were more likely to report the use of a patient register, a tracking system, published guidelines, follow up with patients between visits and to assist patients with goal setting and attainment. Age and location of the practice had no impact on the utilisation of approaches to improve patient care for those with diabetes.

3.6 Resources

This section examines the types of healthcare providers and other resources that each practice has available to them for the provision of CDM. It also outlines the severity of problems relating to shortages of hospital consultant colleagues within their main areas and time spent on coordination of care.

Does your practice include any healthcare providers other than doctors?

Table 9: Percentage of practices with healthcare providers in addition to respondent and GPs (N=341; 100.0%).

Healthcare Provider	Yes
Receptionist	329 (96.5%)
Other Practice Nurse	197 (57.8%)
Practice Manager	192 (56.3%)
Administrator	118 (34.6%)
Dietician	91 (26.8%)
Counsellor	68 (19.9%)
Chiropodist	64 (18.8%)
Other e.g. Psychiatrist, Physiotherapist	59 (17.3%)
Psychologist	37 (10.9%)

PNs were asked what other healthcare providers were included in their practice aside from themselves and GPs. As presented in Table 9, receptionists, practice managers, GPs and additional practice nurses are included in the majority of practices. Dieticians, chiropodists, counsellors and administrators are also present in some practices.

Strength of agreement on levels of resources for Chronic Disease Management

Table 10: Strength of agreement on levels of resources for chronic disease management.

	Responder	Strongly disagree	Disagree	Neither	Agree	Strongly agree
I am happy with CDM as it is	PN (N=335; 98.2%)	64 (19.1%)	170 (50.7%)	68 (20.3%)	28 (8.4%)	5 (1.5%)
	HC(N=215; 94.7%)	51 (23.7%)	112 (52.1%)	36 (16.7%)	14 (6.5%)	2 (0.9%)
	GP(N=370; 97%)	108 (29%)	158 (43%)	69 (19%)	22 (6%)	13 (3%)
I want to put more time and energy into CDM	PN (N=337; 98.8%)	11 (3.3%)	14 (4.2%)	42 (12.5%)	179 (53.1%)	91 (27.0%)
	HC (N=211; 93%)	6 (2.8%)	22 (10.4%)	53 (25.1%)	90 (42.7%)	40 (19%)
	GP (N=372; 98%)	14 (4%)	35 (9%)	87 (23%)	173 (47%)	63 (17%)
PCT* will enhance CDM in my service	PN (N=335; 98.2%)	14 (4.2%)	17 (5.1%)	65 (19.4%)	145 (43.3%)	94 (28.1%)
	HC (N=220; 96.9%)	8 (3.6%)	31 (14.1%)	49 (22.3%)	91 (41.4%)	41 (18.6%)
	GP (N=369; 97%)	31 (8%)	65 (18%)	110 (30%)	115 (31%)	48 (13%)
My hospital should put more time and energy into CDM	PN (N=334; 97.9%)	14 (4.2%)	35 (10.5%)	82 (24.6%)	138 (41.3%)	65 (19.5%)
	HC(N=220; 96.9%)	6 (2.7%)	22 (10%)	54 (24.5%)	86 (39.1%)	52 (23.6%)
	GP(N=372; 98%)	23 (6%)	56 (15%)	102 (28%)	139 (37%)	52 (14%)
I am willing to share the CDM workload with my local hospital**	PN (N=330; 96.8%)	11 (3.3%)	11 (3.3%)	25 (7.6%)	184 (55.8%)	99 (30.0%)
	HC(N=221; 97.4%)	5 (2.3%)	9 (4.1%)	28 (12.7%)	95 (43%)	84 (38%)
	GP(N=374; 98%)	11 (3%)	25 (7%)	50 (13%)	202 (54%)	86 (23%)
CDM should take place largely at a GP practice level and delivered by GPs	PN (N=335; 98.2%)	17 (5.1%)	57 (17.0%)	90 (26.9%)	128 (38.2%)	43 (12.6%)
	HC (N=220; 96.9%)	10 (4.5%)	42 (19.1%)	68 (30.9%)	78 (35.4%)	22 (10%)
	GP(N=373; 98%)	18 (5%)	36 (10%)	76 (20%)	159 (42%)	84 (23%)
CDM should take place largely at GP practice level by nurses, under GP supervision	PN (N=336; 98.5%)	15 (4.5%)	28 (8.3%)	60 (17.9%)	163 (48.5%)	70 (20.8%)
	HC(N=217; 95.6%)	31 (14.3%)	60 (27.6%)	65 (30%)	48 (22.1%)	13 (6%)
	GP(N=373; 98%)	19 (5%)	55 (15%)	103 (28%)	139 (37%)	57 (15%)
CDM should take place largely at GP practice level by nurses working independently of GPs	PN (N=332; 97.4%)	85 (25.6%)	108 (32.5%)	83 (25.0%)	34 (10.2%)	22 (6.6%)
	HC(N=218; 96%)	94 (43.1%)	78 (35.8%)	31 (14.2%)	9 (4.1%)	6 (2.8%)
	GP(N=372; 98%)	137 (37%)	155 (42%)	56 (15%)	15 (4%)	9 (2%)

* PCT = primary care team

** = the corresponding statement in the HC survey read: 'I am willing to share the CDM workload with my local GP'.

As shown in Table 10, 234 (69.8%) PNs disagree or strongly disagreed with the statement 'I am happy with CDM as it is'. Overall, PNs agreed with most statements. The majority of PNs, 270 (80.1%), either agreed or strongly agreed about putting more time and energy into CDM. A total of 239 (71.4%) PNs either agreed or strongly agreed that Primary Care Teams (PCTs) would enhance CDM in their practice. A total of 203 (60.8%) PNs reported that hospitals should put more time and energy into CDM and 283 (85.8%) were willing to share the CDM workload with their local hospital. When asked about where and by whom CDM should be delivered, 233 (69.3%) favoured CDM delivered in a GP setting by a nurse under the supervision of a GP. CDM delivered in a GP setting by a GP was supported by 171 (50.8%) PNs and 56 (16.8%) were in support of CDM delivered in a GP setting by a nurse with no supervision.

There is broad agreement between PNs, HCs and GPs with regard to their perception of CDM. All groups wish to put more time and energy into CDM with PNs being most supportive of this. Practice Nurses and Hospital Consultants are more positive than GPs about the potential of

the PCT for the delivery of CDM. There is consensus between the groups that hospitals should put more time and energy into CDM. All groups indicate their willingness to share the CDM workload between primary and secondary care services. GPs were more likely than PNs and HCs to indicate that CDM should take place at GP practice level and delivered by GPs. PNs were more likely than GPs and HCs to indicate that CDM should take place at GP practice level by nurses under GP supervision. Very few respondents wish to see CDM delivered by PNs working independently of GPs.

How much of a problem, if any, are the following?

Table 11: Severity of problems relating to shortages of Practice Nurse colleagues and time spent on coordination of care.

	Responder	Major problem	Minor problem	Not a problem
Amount of time you or your staff spends on administration	PN (N=328; 96.2%)	150 (45.7%)	135 (41.2%)	43 (13.1%)
	HC (N=221; 97.4%)	146 (66.1%)	63 (28.5%)	12 (5.4%)
	GP (N=375; 98%)	245 (65%)	102 (27%)	28 (7%)
Amount of time you spend coordinating care for your patients	PN (N=323; 94.7%)	87 (26.9%)	153 (47.4%)	83 (25.7%)
	HC (N=222; 97.8%)	118 (53.2%)	82 (36.9%)	22 (9.9%)
	GP (N=375; 98%)	212 (56%)	127 (34%)	36 (10%)
Shortage of Specialist colleagues/GP colleagues in your main centre of practice	PN (N= 307; 90.0%)	42 (13.7%)	104 (33.9%)	161 (52.4%)
	HC (N=220; 96.9%)	103 (46.8%)	63 (28.6%)	54 (24.5%)
	GP (N=362; 95%)	51 (14%)	122 (34%)	189 (52%)

The amount of time which PNs or their colleagues spend on administration is a major problem and the amount of time spent coordinating care for patients is a minor problem, as depicted in Table 11. Shortage of GP colleagues is not a major problem as indicated by 161 (52.4%) PNs.

The greater the number of GPs in a practice the less likely PNs were to report problems with a shortage of GP colleagues. PNs in practices with a greater number of GPs were more likely to indicate problems with the amount of time spent on administration. Age, location of the practice or involvement in medical or nursing training had no impact on these results.

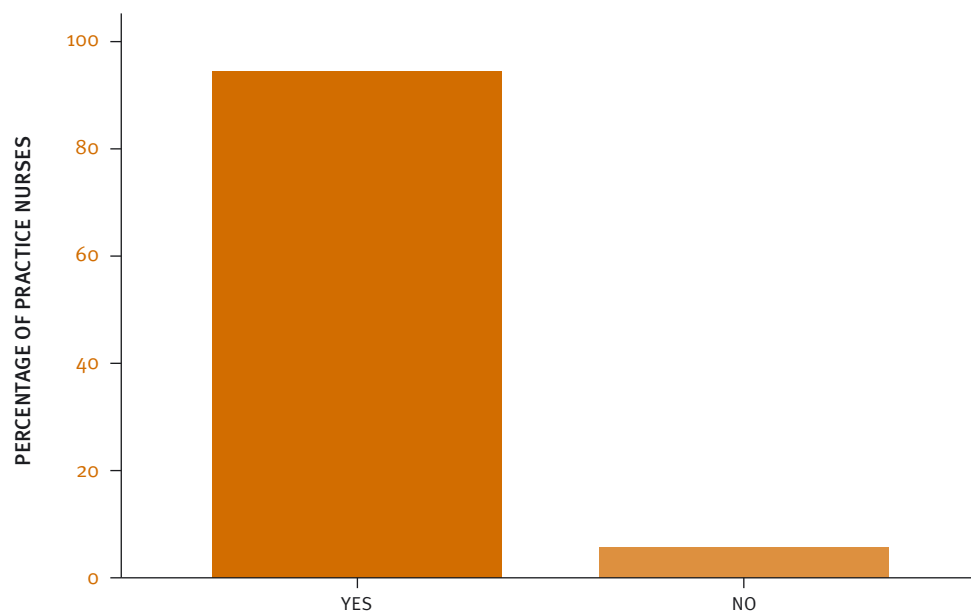
There is consensus between PNs, HCs and GP colleagues that the amount of time they or their staff spends on administration and the amount of time they spend coordinating care for patients is a problem. However, PNs are more likely to perceive administration and coordinating care to be a minor and not a major problem. HCs are more likely to perceive a shortage of hospital consultant colleagues in their main centre of practice as being a major problem.

3.7 Information technology

This section illustrates the number of PNs who use electronic patient medical records within their service. It highlights the scope in which information technology systems are used to communicate with patients through email and text message. It describes the ease with which respondents can generate patient information and perform tasks using their current IT system.

Do you routinely use electronic patient medical records in your service?

Figure 5: Percentage of practice nurses who use electronic patient medical records in their service (n=339).



Do you use electronic patient medical records in your practice?

A total of 339 (99.4%) Practice Nurses answered this question. Missing data = 2(0.6%)

A total of 320 (94.4%) PNs indicated that they routinely use electronic patient medical records in their practice. Similarly a total of 310 (82%) GP respondents indicated that they use electronic patient medical records in their practice. This contrasts with the use of electronic patient medical records by HCs, of whom a total of 81 (37%) indicated that they routinely use electronic patient medical records in their service. The location or involvement in training of the PNs practice or their opinion on CDM had no impact on the reported use of electronic patient medical records.

Do you use any of the following technologies in your practice?

Table 12: The use of technology within services.

	Responder	Yes, used routinely	Yes, used occasionally	No
Electronic access to your patients' laboratory test results	PN (N=338; 99.1%)	319 (94.4%)	3 (0.9%)	16 (4.7%)
	HC (N=222; 97.8%)	190 (85.6%)	25 (11.3%)	7 (3.2%)
	GP (N=378; 99%)	272 (72%)	11 (3%)	95 (25%)
Electronic ordering of laboratory tests	PN (N=329; 96.5%)	78 (23.7%)	13 (4.0%)	238 (72.3%)
	HC (N=217; 95.6%)	68 (31.3%)	23 (10.6%)	126 (58.1%)
	GP (N=373; 98%)	85 (23%)	6 (2%)	282 (75%)
Electronic entry of clinical notes, including medical history and follow-up	PN (N=339; 99.4%)	305 (90.0%)	15 (4.4%)	19 (5.6%)
	HC (N=221; 97.4%)	35 (15.8%)	30 (13.6%)	156 (70.6%)
	GP (N=378; 99%)	292 (77%)	13 (3%)	73 (20%)
Electronic prescribing of medication	PN (N=339; 99.4%)	315 (92.9%)	8 (2.3%)	16 (4.7%)
	HC (N=220; 96.9%)	14 (6.4%)	11 (5%)	195 (88.6%)
	GP (N=377; 99%)	311 (83%)	8 (2%)	58 (15%)
Electronic alerts or prompts about ADRs* or drug interaction	PN (N=334; 97.9%)	258 (77.2%)	27 (8.1%)	49 (14.7%)
	HC (N=219; 96.5%)	11 (5%)	23 (10.5%)	185 (84.5%)
	GP (N=376; 98%)	240 (64%)	35 (9%)	101 (27%)

*ADRs=Adverse Drug Reactions

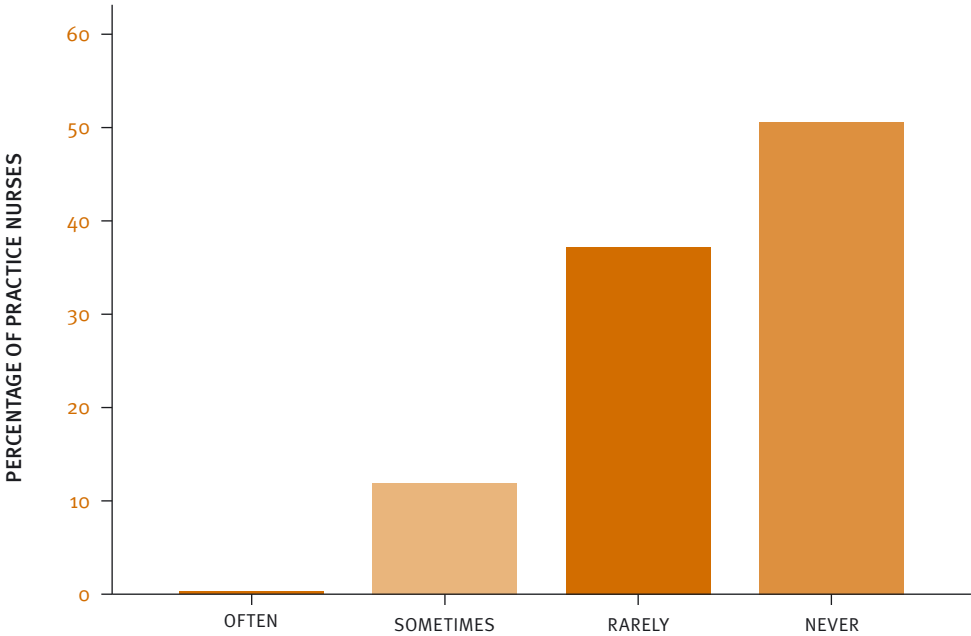
The majority of PNs reported having electronic access to their patients' lab test results, electronic prescription of medication, electronic entry of clinical notes and electronic alerts about drug interactions. However, the majority of HCs and GPs reported not having electronic access to ordering tests as shown in Table 12.

Practice nurses working in practices with a greater number of GPs are more likely to report use of electronic prescribing of medication, electronic clinical notes, electronic ordering of laboratory tests and electronic access to laboratory test results. Older PNs were less likely to report using electronic prescribing of medication, electronic clinical notes and electronic alerts.

PNs, HCs and GPs reported being able to access patients' laboratory test results electronically. More HCs report not having electronic entry of clinical notes, electronic prescribing of medication or electronic alerts or prompts about adverse drug reactions or drug interactions when compared to PNs and GPs.

How often does your service communicate with patients by email?

Figure 6: Percentage of Practice Nurses whose practices communicate with patients through email (n=336).



How often does your practice communicate with patients by email?

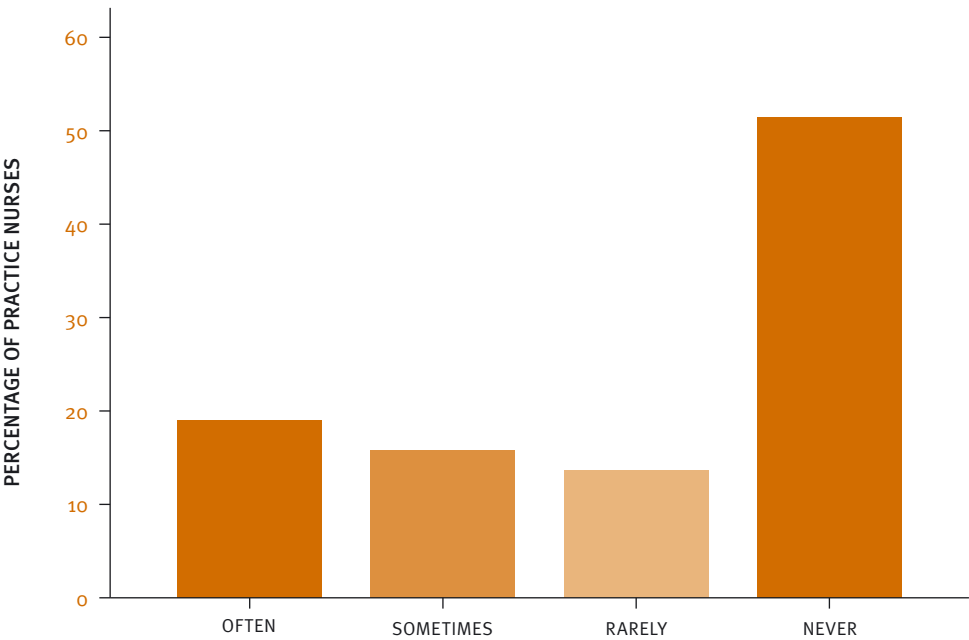
A total of 336 (98.5%) Practice Nurses answered this question. Missing data = 5(1.5%)

Only 1 (0.1%) practice nurse reported that the practice often communicates with patients by email. In total 40 (11.9%) PNs indicated that their practices sometimes communicate with patients by email and 125 (37.2%) stated that their practices rarely did so. The remaining 170 (50.6%) reported that their practices never communicates with patients by email.

Neither the age nor view of CDM in the Irish healthcare system nor the location, size or training involvement of the practice in which the practice nurse worked had any relationship with the frequency of email communication with patients.

How often does your service communicate with patients by SMS text?

Figure 7: Percentage of Practice Nurses whose practices communicate with patients through text (n=336).



How often does your practice communicate with patients by text?

A total of 336 (98.5%) Practice Nurses answered this question. Missing data = 5(1.5%)

A total of 64 (19.0%) PNs reported that their practices often communicate with patients by text. A further 53 (15.8%) PNs indicated that their practices sometimes communicate with patients by text and 46 (13.7%) reported that their practices rarely did so. The remaining 173 (51.5%) indicated that their practices never communicate with patients by text.

The more GPs in a practice the more likely the practice nurse was to report use of text message to communicate with patients. PNs working in practices with involvement in medical or nursing training were more likely to report use of text message to communicate with patients. Neither the age nor view of CDM in the Irish healthcare system nor the location of the practice in which the practice nurse worked had any relationship with the use of text message communication with patients.

With the patient medical records system you currently have, how easy would it be to generate the following information about your patients?

Table 13: The ease with which Practice Nurses can generate patient information using their current medical records system.

	Easy	Somewhat Difficult	Difficult	Cannot generate	Is it computerised?	
					No	Yes
List individual patients' medications (N=326; 95.6%)	309 (94.8%)	13 (4.0%)	1 (0.3%)	3 (0.9%)	6 (2.3%)	252 (97.7%)
Patients due or overdue for a service (e.g. scope >3 months) (N=321; 94.1%)	214 (66.7%)	72 (22.4%)	23 (7.2%)	12 (3.5%)	16 (6.3%)	238 (93.7%)
List of patients by lab result (e.g. HbA1C) (N=320; 93.8%)	229 (71.6%)	47 (14.7%)	22 (6.9%)	22 (6.9%)	19 (7.5%)	233 (92.5%)
List of patients by diagnosis (e.g. HTN) (N=318; 93.3%)	214 (67.3%)	71 (22.3%)	22 (6.5%)	11 (3.2%)	19 (7.5%)	233 (92.5%)

The majority of PNs indicated that their practices are computerised and it is possible to generate information in relation to their patients. A total of 309 (94.8%) PNs reported finding it easy to generate a list of individual patients' medications; 214 (66.7%) PNs indicated it was easy to determine which patients were due or overdue for a service and 229 (71.6%) PNs reported it was easy to create a list of patients by laboratory result, and 214 (67.3%) by diagnosis (Table 13).

Neither the age of the PNs, nor opinion of CDM at present nor the location, size or involvement in training of their practices had any role to play in the ability to generate a list of patients by diagnosis or by lab result or a list of patients who are due or overdue for a service, or to generate a list of all medications for a patient.

Are the following tasks routinely performed within your practice?

Table 14: Tasks that are routinely performed within the practice.

	Yes, using a computer system	Yes, using a manual system	No
Patients are sent reminder notices (e.g., for routine check-ups) (N=330; 96.8%)	101 (30.6%)	100 (30.3%)	129 (39.1%)
All laboratory tests are tracked until results reach clinicians (N=325; 95.3%)	181 (55.7%)	66 (20.3%)	78 (24.0%)
You receive an alert or prompt to provide patients with test results (N=327; 95.9%)	82 (25.1%)	50 (15.3%)	195 (59.6%)
You receive a reminder for guideline based interventions (N=326; 95.6%)	40 (12.3%)	25 (7.7%)	261 (80.1%)

As shown in Table 14, in the majority of cases patients are sent a reminder notice, mostly through a manual system within the practice. Laboratory tests are generally tracked until they reach the clinician. However, receiving an alert to provide patients with test results or a reminder to use guideline based interventions are not routinely performed in the practices.

Neither the age nor opinion of CDM of the practice nurse nor the location, size or involvement in training of the practices had any effect on the PNs ability routinely to perform any of the tasks listed.

3.8 Barriers to effective chronic disease management

This section outlines the importance of perceived barriers to the effective delivery of chronic disease management within General Practice.

Please rate the following in terms of your perceived importance as being barriers to the effective management of chronic diseases in your service

Table 15: Perceived importance of barriers to effective management of chronic diseases within your service.

	Responder	Extremely important	Important	Not important
Lack of appropriate funding	PN (N=331; 97.1%)	261 (78.9%)	61 (18.4%)	9 (2.7%)
	HC (N=224; 98.7%)	111 (49.6%)	108 (48.2%)	5 (2.2%)
	GP (N=378; 98%)	286 (76%)	59 (15%)	33 (9%)
Increased workload/lack of time	PN (N=333; 97.7%)	281 (84.4%)	44 (13.2%)	8 (2.4%)
	HC (N=224; 98.7%)	103 (46%)	114 (50.8%)	7 (3.1%)
	GP (N=379; 99%)	310 (82%)	51 (13%)	18 (5%)
Poor communication between hospital teams and General Practitioners	PN (N=333; 97.7%)	212 (63.6%)	115 (34.5%)	6 (1.8%)
	HC (N=225; 99.1%)	60 (26.7%)	153 (68%)	12 (5.3%)
	GP (N=379; 99%)	206 (55%)	107 (28%)	66 (17%)
Lack of ongoing access to Hospital Consultants for advice	PN (N=332; 97.4%)	237 (71.4%)	90 (27.1%)	5 (1.5%)
	HC (N=222; 97.8%)	39 (17.6%)	156 (70.3%)	27 (12.2%)
	GP (N=379; 99%)	217 (57%)	107 (28%)	55 (15%)
Lack of skills and education/ knowledge gaps	PN (N=331; 97.1%)	174 (52.6%)	130 (39.3%)	27 (8.2%)
	HC (N=223; 98.2%)	35 (15.7%)	164 (73.5%)	24 (10.8%)
	GP (N=377; 97%)	91 (24%)	132 (35%)	154 (41%)
Poor communication between Practice Nurse and GP*	PN (N=325; 95.3%)	84 (25.9%)	102 (31.4%)	139 (42.8%)
Patients not attending scheduled appointments*	PN (N=334; 97.9%)	176 (52.7%)	142 (42.5%)	16 (4.8%)

* Question not asked in HC or GP surveys.

Table 15 illustrates perceived barriers to effective chronic disease management. A total of 261 (78.9%) PNs reported lack of appropriate funding and 281 (84.4%) PNs reported increased workload and lack of time as barriers to effective management of chronic diseases. Poor communication between hospital teams and GPs was cited as a barrier by 212 (63.6%) PNs; 237 (71.4%) PNs cited lack of ongoing access to hospital consultants for advice and 176 (52.7%) PNs cited patients not attending for scheduled appointments as barriers to effective CDM.

Practice nurses working within larger practices with a greater number of GPs were more likely to report poor communication between the PN and GP, poor communication between hospital teams and GPs and lack of appropriate funding as important barriers to effective CDM. Older PNs were also more likely to report patients not attending appointments, poor communication between the hospital team and GP and a lack of funding as important barriers to effective CDM. Neither location nor practice involvement in medical training nor practice nurse opinion of CDM in the Irish healthcare system had any impact on perceived barriers to effective CDM.

Some difference is evident in how the respondents view the extent of poor communication between hospitals and general practice as a barrier. PNs and GPs are more than twice as likely as HCs to view this as an extremely important barrier to good care, although the majority of HCs perceive this as an important barrier. Similar differences are evident in terms of the extreme importance or importance of the issue of access to HCs for advice.

3.9 Future development of chronic disease management

This section examines PNs' perceptions of the importance of resources for the development of CDM and their opinion on shared care initiatives between PNs, GP s and hospitals.

Please rate the following resources in terms of their importance allowing you further to develop CDM in your practice?

Table 16: Rating of resources in terms of importance in the development of chronic disease management within the service.

	Responder	Extremely important	Important	Not important
Specific payments for patients with a major chronic disease	PN (N=335; 98.2%)	284 (84.8%)	44 (13.1%)	7 (2.1%)
	HC (N=218; 96%)	46 (21.1%)	151 (69.2%)	21 (9.6%)
	GP (N=374; 95%)	292 (78%)	49 (13%)	33 (9%)
GP led CDM clinics	PN (N=326; 95.6%)	153 (46.9%)	153 (46.9%)	20 (6.1%)
	HC (N=221; 97.4%)	40 (18.1%)	154 (69.7%)	27 (12.2%)
	GP (N=370; 96%)	199 (54%)	110 (30%)	61 (16%)
Specialist nurse led clinics in the community	PN (N=334; 97.9%)	266 (79.6%)	61 (18.3%)	7 (2.1%)
	HC (N=222; 97.8%)	38 (17.1%)	165 (74.3%)	19 (8.6%)
	GP (N=374; 97%)	184 (49%)	108 (30%)	82 (21%)
Targeted funding for GPs as in the NHS model	PN (N=328; 96.2%)	282 (86.0%)	42 (12.8%)	4 (1.2%)
	HC (N=216; 95.2%)	29 (13.4%)	155 (71.8%)	32 (14.8%)
	GP (N=365; 96%)	244 (68%)	75 (20%)	46 (12%)
Increased practice nurse time for GP led clinics	PN (N=335; 98.2%)	282 (84.2%)	51 (15.2%)	2 (0.6%)
	HC (N=219; 96.5%)	24 (11%)	166 (75.8%)	29 (13.2%)
	GP (N=372; 96%)	232 (62%)	102 (28%)	38 (10%)

The majority of PNs indicated that specific payments for patients with a major chronic disease, targeted funding as in the NHS model and more dedicated practice nurse time were extremely important to develop CDM further in their practice. Nurse led clinics in the community were ranked as extremely important by 266 (79.6%) PNs and 153 (46.9%) stated that GP led CDM clinics were extremely important for the expansion of CDM in their practice (Table 16).

Neither location of the practice nor practice nurse view of CDM in the Irish healthcare system had any impact on importance of factors for the expansion of CDM within the PN's practice. Older PNs were more likely to report increased dedicated practice nurse time and nurse led community CDM clinics as important for the development of CDM. PNs in practices with more GPs were more likely to perceive special payments for CDM, and increased nurse time for CDM as important. PNs working in practices engaged in medical or nurse training were more likely to rank special payments for CDM, targeted funding for CDM and increased nurse time as important for CDM development.

Nurses were asked to state their perception with regard to Shared Care of chronic disease between their practice and hospitals

Table 17: Opinions of practice nurses regarding shared care between general practice and hospitals.

	Responder	Yes
Would you support a shared care initiative in CDM between your service and local hospital/GP?	PN (N=337; 98.8%)	333 (98.8%)
	HC (N=227; 100%)	221 (97.4%)
	GP (N=376; 97%)	367 (98%)
Do you think there is a place for shared care in CDM between General Practice and the Hospital?	PN (N=336; 98.5%)	330 (98.2%)
	HC (N=225; 99.1%)	217 (96.4%)
	GP (N=372; 96%)	258 (69%)
Do you think a shared care initiative between GP and the hospital could be run by nurses?	PN (N=334; 97.9%)	292 (87.4%)
	HC(N=222; 97.8%)	131 (59%)
	GP (N=378; 98%)	373 (99%)
Are you currently involved in any shared care of chronic disease?	PN (N=335; 98.2%)	179 (53.4%)
	HC (N=226; 99.6%)	101 (44.7%)
	GP (N=376; 97%)	168 (45%)

Overall, 179 (52.5%) PNs reported being currently involved in shared care for chronic diseases. When asked about options for shared care 330 (98.2%) PNs believe that there is a place for shared care in CDM between GPs and hospitals. A total of 333 (98.8%) PNs were in favour of shared care between the practices in which they work and their local hospital and 292 (87.4%) were in support of shared care being run by nurses between their practice and the local hospital (Table 17).

Demographic parameters played no role in the willingness of PNs to having a shared care initiative, seeing a shared care initiative between their service and the local hospital, having a shared care initiative run by nurses, or being involved in a shared care initiative currently. PNs working in practices with a greater number of GPs were more likely to support shared care between their practice and the local hospital.

Similar proportions of HCs and PNs believe there is a place for shared care in CDM between general practice and hospitals. PNs, HCs and GPs are equally supportive of a shared care initiative in CDM. PNs and GPs are both supportive of shared care run by nurses. HCs are less inclined to see a shared care initiative between GP and hospitals being run by nurses than PNs and GPs, with both groups being strongly supportive of this option. A particularly strong consensus exists across all three stakeholders regarding shared care for chronic diseases between the hospital and general practice.

If you are currently involved in Shared Care for CDM, is it working?

Table 18: Opinion of shared care by practice nurses, hospital consultants and GPs currently involved in shared care.

	Responder	Yes
If you are currently involved in Shared Care with General Practitioners, is it working?	PN (N=166/179; 93%)	139 (83.7%)
	HC (N=90)	61 (67.8%)
	GP (N=168)	125 (74%)

Of those PNs who indicated that they are currently involved in shared care, a total of 139 (83.7%) perceive it to be working.

Age of the practice nurse and size or involvement in medical or nursing training by the practice in which the PN is working have no impact on the PNs opinion about the effectiveness of shared care for CDM. PNs who feel less change is needed to CDM as it currently operates in the Irish healthcare system were more likely to be happy with the shared care arrangement in which they are currently working. PNs working in practices located in a city or small town were more likely to indicate that they were satisfied with how their current shared care arrangements are operating.

HCs were less likely to perceive shared cared as working when compared with PNs and GPs.

Section Four: Discussion

Successfully addressing the needs of individuals with complex co-morbidities is the single greatest challenge of the Irish healthcare system. It is a huge problem, and it can only be addressed through a variety of different and evolving solutions, devised in a collaborative manner, over the next several decades. Effective solutions will need to be scientifically rigorous, paying close attention to objective outcomes of care, and garnering the experience of key stakeholders in the delivery and development of CDM services.

Effective CDM requires complex, collaborative responses, with coordinated input from a range of health professionals, as well as access to information, drugs and equipment, and patient empowerment, extending well beyond medical care and into the social care setting. This is in contrast with most healthcare today, which is frequently reactive, structured around acute, episodic illness, in processes which often reflect single disease modelling by professionals who think and work in silos, and who are not infrequently competitive with each other.

PNs represent a particular and growing discipline within nursing. In primary care, PNs have a large and expanding role. They work closely with patients and GPs, and they will have an even greater role in the years ahead. Given their intimate involvement with CDM, it is necessary that their insights, concerns and expectations be incorporated into whatever models of service delivery we are devising and testing. Their interest in CDM is reflected in their high response rate of 73% to this survey.

The age profile of this sample mirrors that of GPs, in that 40% are middle aged. This has work force implications in terms of replacement. It may also partially reflect curtailed recruitment of younger nursing colleagues during the last 5 years of fiscal contraction, which has impacted on recruitment into primary care. Given the Government's policy and service reforms under UHI⁴, and on-going pressing needs in primary care, both general practice and the broader discipline of nursing might give some thought to the career path into general practice nursing. It may be necessary to include more time in general practice during the undergraduate nursing curriculum than is presently the case, in order to ensure that nurses in training understand and see general practice nursing as an important, emerging and positive part of the nursing discipline, and also, more practically, so that nursing students can avail of the particular type of clinical experience that is to be found in frontline primary care, especially in dealing with undifferentiated illness and CDM in the community setting.

It is evident from the responses in this study that general practice nurses positively view CDM as an important and useful part of their role. It is encouraging to note that almost half of the respondents indicated their participation in clinical audit, and it is desirable that this baseline moves closer to 100% in the coming years. Participation in clinical audit would further improve care to patients, and is an important aspect of good CDM management, and on this basis the inclusion of audit as a requirement for maintaining professional registration may be acceptable to PNs. It is evident from responses that PNs deliver their care using electronic

medical records, which facilitates their ability to conduct audit. Their experience in using information technology, together with that of GPs, can be viewed as a practical system based solution to improve standards of care. Furthermore, it is also evident that most respondents provide care with reference to guidelines.

These features of care are important in the context of the Chronic Care Model (CCM), which is a useful and universal paradigm by which the process of care in any system can be benchmarked. Thought should be given to ensuring that PNs have adequate and effective input to the General Practice Information Technology Group¹⁶ (GPIT) a group run by the Irish College of General Practitioners and the Health Service Executive which has been successful in guiding, developing and driving the computerisation of general practice during the last decade. Other features of the CCM which are evident to a lesser extent among the respondents include the routine use of medication lists (almost 3 out of 4 respondents indicate inconsistency in this) and the provision of written information to patients on managing their conditions (only 1 in 5 respondents do so routinely).

Practice nurses responding to this survey clearly see CDM delivered in general practice, on a near patient basis, and primarily by PNs themselves, working in the context of clinical overview provided by GPs. This preferred approach strongly suggests a confidence in the nursing discipline, and in the community setting. A recent study on CDM in Irish general practice indicated that among patients attending general practice with two or more co morbidities, the average number of GP visits for each patient was 9.2 per year, while the average number of practice nurse visits was 1.6 per year¹⁷. This baseline figure of rates of attendance by patients with multimorbidities to GPs and PNs in primary care are important as ongoing reforms of healthcare services are encouraging patients to receive treatment in the community and not in hospital services. It is worthwhile noting that while GPs, PNs and HCs indicate enthusiasm regarding putting more time into CDM, enthusiasm appears highest among PNs.

The majority of PNs (81.4%) along with GPs and HCs believe that fundamental change to the healthcare system is necessary to improve care. This shift to a primary care led healthcare service is the key transformation necessary in the short and medium term. In the longer term, robust models directed at prevention and earlier detection of illness in the community must be devised and in Ireland, and it is vital that PNs will be involved in this. The realisation of a strong primary care service will involve recruitment, training and employment of more PNs, and the introduction of an additional grade in general practice (eg The General Practice Orderly) to take up tasks which can be delegated from nursing, enabling GPs and PNs to work to the higher end of their skillset. In this way, the increased capacity necessary to support individuals in the community who have complex healthcare challenges can be met.

Focusing on particular aspects of responses, it is interesting to note that both HCs and PNs perceive public patients as experiencing difficulties paying for out of pocket expenses, including medications, to a greater extent than GPs. Over two thirds of both HCs and PNs now report this to be the case, as opposed to less than half of GPs. This may reflect that the GP survey was conducted before the introduction of a prescription charge on medical card prescriptions, and the apparent discrepancy in fact may reflect an increasing level of difficulty for patients in this regard. Concern regarding the care provided to public patients is further reflected in the evident discrepancies in the timeliness of communications from HCs between public and private patients, where PNs were twice as likely to indicate delay in reports relating to care of public patients compared to private patients.

A difference is evident in the extent to which all three professional stakeholders view the importance of poor communication between hospitals and general practice as a barrier to CDM. PNs and GPs are more than twice as likely as HCs to view this as an extremely important barrier to good care. The difference is even greater regarding the issue of access to consultants for advice. An important recommendation here would be the provision of secure e-mail between GPs, PNs and consultants as a standard, the development of which is under trial ('Healthmail') by GPIT.

The size of the practice in which the practice nurse was working is correlated positively with the likelihood of audit, teaching and use of guidelines. It correlated negatively however with perceived satisfaction of communication between GP and PN. These correlations support the need for observing objective standards of markers of good care and in the support and encouragement of diversity in practice.

References

1. Busse R, Blümel M, Scheller-Kreinsen D, Zentner A. Tackling Chronic Disease in Europe. 2010; Available from: http://www.euro.who.int/__data/assets/pdf_file/0008/96632/E93736.pdf
2. Balanda KP, Barron S, Fahy L, McLaughlin A. Making chronic conditions count: Hypertension, stroke, coronary heart disease, diabetes. A systematic approach to estimating and forecasting population prevalence in Ireland. Dublin: Institute of Public Health in Ireland; 2010.
3. Department of the Taoiseach. Towards Recovery: Programme for a National Government 2011-2016 [Internet]. 2011. Available from: http://www.taoiseach.gov.ie/eng/Taoiseach_and_Government/Programme_for_Government/
4. Department of Health. Future Health. A Strategic Framework for Reform of the Health Service 2012-2015 [Internet]. 2012 [cited 2012 Dec 18]. Available from: http://www.dohc.ie/publications/Future_Health.html
5. World Health Organization. Noncommunicable Diseases Country Profiles 2011 [Internet]. Geneva; 2011. Available from: http://whqlibdoc.who.int/publications/2011/9789241502283_eng.pdf
6. Samb B, Desai N, Nishtar S, Mendis S, Bekedam H, Wright A, et al. Prevention and management of chronic disease: a litmus test for health-systems strengthening in low-income and middle-income countries. *Lancet*. 2010 Nov 20;376(9754):1785–97.
7. Wagner EH, Austin BT, Von Korff M. Improving outcomes in chronic illness. *Manag Care Q*. 1996;4(2):12–25.
8. Layte R, Barry M, Bennett K, Brick A, Morgenroth E, Normand C, et al. Projecting the impact of demographic change on the demand for and delivery of health care in Ireland. Dublin: Economic and Social Institute; 2009.
9. Darker C, Martin C, O'Dowd T, O'Kelly F, O'Shea B. Chronic disease management in general practice: results from a national study. *Ir Med J*. 2012 Apr;105(4):102–5.
10. Darker C, Martin C, O'Dowd T, O'Kelly F, O'Kelly M, O'Shea B. A national survey of chronic disease management in Irish general practice. 2011 Jun.
11. World Health Organization. Preventing chronic diseases: a vital investment [Internet]. 2005 [cited 2011 Feb 15]. Available from: http://www.who.int/chp/chronic_disease_report/en/
12. WHO. Innovative Care for Chronic Conditions: Building Blocks for Action. Geneva; 2002.
13. Teljeur C, Tyrrell E, Kelly A, O'Dowd T, Thomas S. Getting a handle on the general practice workforce in Ireland. *Ir J Med Sci*. 2014 Jun;183(2):207–13.
14. Darker C, Bergin C, Walsh G, O'Shea B. A National Survey of Chronic Disease Management by Irish Hospital based Consultants [Internet]. Dublin: Trinity College Dublin; 2014. Available from: https://medicine.tcd.ie/public_health_primary_care/assets/pdf/CDM-Report-2014-FA.pdf
15. Commonwealth Fund. 2009 International survey of primary care doctors. [Internet]. 2009. Available from: <http://www.commonwealthfund.org/Content/Publications/In-the-Literature/2009/Nov/A-Survey-of-Primary-Care-Physicians.aspx>
16. GPIT, HSE, ICGP. The General Practice Information Technology (GPIT) Group. [Internet]. 2014. Available from: http://www.icgp.ie/go/courses/gpit_group
17. O'Shea B, Darker C, O'Kelly F. Chronic disease management in patients attending Irish General Practice training practices. *Ir Med J*. 2013 Aug;106(7):207–9.

Appendix: Survey Instrument

Department of Public Health & Primary Care, Trinity College Dublin

National Survey of Practice Nurses on Chronic Disease Management

1. Which of the following statements come closest to expressing your overall view of chronic disease management (CDM) in our healthcare system?

- ☐ On the whole, the healthcare system works pretty well, and only minor changes are necessary to make CDM work better.
- ☐ There are some good things in our health system, but significant changes are needed to make CDM work better.
- ☐ Our healthcare system has so much wrong with it that we need to completely rebuild it for CDM.

2a. How often do your fee paying patients experience the following?

	Often	Sometimes	Rarely	Never
a. Have difficulty paying for medications or other out-of-pocket costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Have difficulty getting specialised diagnostic tests (e.g., CT imaging)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Experience long waiting times to see a hospital based specialist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Experience long waiting times to receive treatment after diagnosis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2b. How often do your GMS entitled patients experience the following?

	Often	Sometimes	Rarely	Never
a. Have difficulty paying for medications or other out-of-pocket costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Have difficulty getting specialised diagnostic tests (e.g., CT imaging)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Experience long waiting times to see a hospital based specialist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Experience long waiting times to receive treatment after diagnosis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. What out of hours service does your practice utilise (tick all that apply)?

Local rota	<input type="checkbox"/>
Co-op	<input type="checkbox"/>
Deputising service	<input type="checkbox"/>
No Service (Excluding A&E)	<input type="checkbox"/>

4. Does your practice *routinely* use *written* evidence-based treatment guidelines to treat the following conditions? (e.g., ICGP, NICE, or SIGN Guidelines)

	Yes, Routinely use Guidelines	No, Do Not Routinely Use Guidelines	No Guidelines Available
a. Diabetes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Depression	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Asthma or COPD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Hypertension	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. ADHD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Do you provide patients taking multiple medications (e.g. 5 or more) with a *written* list of their medications?

☐ Yes, routinely ☐ Yes, occasionally ☐ No

6. Do you give your patients with chronic diseases *written* instructions about how to manage their own care at home?

☐ Yes, routinely ☐ Yes, occasionally ☐ No

7. Have you completed a full clinical Audit Cycle within the last 5 yrs on 1 or more chronic diseases?

☐ Yes ☐ No

8. In your own practice, other than doctors, does your practice include any other health care providers?

GP	<input type="checkbox"/>	Psychologist	<input type="checkbox"/>	Practice Manager	<input type="checkbox"/>
Receptionist	<input type="checkbox"/>	Dietitian	<input type="checkbox"/>	Counsellor	<input type="checkbox"/>
Administrator	<input type="checkbox"/>	Chiropodist	<input type="checkbox"/>	Other	<input type="checkbox"/>
Practice Nurse (other than yourself)	<input type="checkbox"/>				

9. Please rate the strength of your agreement with the following statements:

1= Strongly disagree 2=Disagree 3=Neither agree/disagree 4=Agree 5=Strongly agree

I am happy with CDM as it is	1	2	3	4	5
I want to put more time and energy into CDM here in the practice	1	2	3	4	5
Primary care teams will enhance the way chronic disease is managed in my practice	1	2	3	4	5
My local hospital should put more time and energy into CDM	1	2	3	4	5
I am willing to share the CDM workload with my local hospital	1	2	3	4	5
CDM should take place largely at a practice level and delivered largely by GPs	1	2	3	4	5
CDM should take place largely at a practice level by nurses, under GP supervision	1	2	3	4	5
CDM should take place largely at a practice level by nurses working independently of GPs	1	2	3	4	5
CDM should take place largely in the hospital, delivered by specialist led teams	1	2	3	4	5
CDM should take place largely in the community, by specialist led teams	1	2	3	4	5

10. Is your practice functioning as part of a primary care team? ☐ Yes ☐ No

11. Outside of your practice, do your patients have effective local access to the following? (tick if yes, leave blank if no)

	Private patients	GMS patients
Physiotherapist	<input type="checkbox"/>	<input type="checkbox"/>
Occupational therapist	<input type="checkbox"/>	<input type="checkbox"/>
Speech and language therapist	<input type="checkbox"/>	<input type="checkbox"/>
Chiropodist	<input type="checkbox"/>	<input type="checkbox"/>
Psychologist	<input type="checkbox"/>	<input type="checkbox"/>
Dietician	<input type="checkbox"/>	<input type="checkbox"/>
Social worker	<input type="checkbox"/>	<input type="checkbox"/>

12a. When patients from your practice have been seen by a hospital specialist, privately, how often do the following occur?

	Always	Often	Sometimes	Rarely	Never
A report is available from the specialist with <i>all relevant</i> information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The information received is timely; and available when needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12b. When patients from your practice have been seen by a hospital specialist, publicly, how often do the following occur?

	Always	Often	Sometimes	Rarely	Never
A report is available from the specialist with <i>all relevant</i> information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The information received is timely; and available when needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13a. Do you use electronic patient medical records in your practice?

☐ Yes ☐ No

13b. If yes, which system? _____

14. Do you use any of the following technologies in your practice?

	Yes, used routinely	Yes, used occasionally	No
a. Electronic ordering of laboratory tests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Electronic access to your patients' laboratory test results	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Electronic alerts or prompts about ADRs or drug interaction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Electronic entry of clinical notes, including medical history and follow-up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Electronic prescribing of medication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. How often does your practice communicate with patients by email?

☐ Often ☐ Sometimes ☐ Rarely ☐ Never

16. How often does your practice communicate with patients by SMS Text ?

☐ Often ☐ Sometimes ☐ Rarely ☐ Never

17. With the patient medical records system you *currently* have, how easy would it be for you to generate the following information about patients?

	Ease/Difficulty				Is Process Computerised?	
	Easy	Somewhat Difficult	Difficult	Cannot Generate	Yes	No
a. List of patients by diagnosis (e.g. HTN)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. List of patients by lab result (e.g., HbA1C)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Patients due or overdue for (e.g. Flu Vaccine)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. List of all medications of a patient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. Are the following tasks *routinely* performed in your office practice?

	Yes, using a computerised System	Yes, using a manual System	No
a. Patients are sent reminder notices (e.g., flu vaccine or BP)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. All laboratory tests ordered are tracked until results reach clinicians	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. You receive an alert or prompt to provide patients with test results	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. You receive a reminder for guideline-based interventions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19. How much of a problem, if any, are the following?

	Major Problem	Minor Problem	Not a Problem	Not Applicable
a. Shortage of GPs where you practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Amount of time you or your staff spends on administration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Amount of time you spend coordinating care for your patients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20. How often do you currently use the following approaches to improving care for patients with diabetes? (circle)

1=Never, 2=Rarely, 3=Occasionally, 4=Usually, 5=Always

Use a register to identify and/or track care of your patients	2	3	4	5	
Use a tracking system to remind patients about needed visits	1	2	3	4	5
Follow up patients between visits by telephone (you or staff)	1	2	3	4	5
Use published practice guidelines as the basis for your management	2	3	4	5	
Involve office staff in reminding patients in need of follow-up or other services	1	2	3	4	5
Assist patients in setting and attaining self-management goals	1	2	3	4	5
Refer patients to someone within your practice for education about their diabetes	1	2	3	4	5
Refer patients to someone outside your practice for education about their diabetes	1	2	3	4	5
Use flow sheets to track critical elements of care	1	2	3	4	5

21. Please rate the following in terms of your perceived importance as being barriers to the effective management of chronic diseases in your practice: (circle)

1=Not important, 2=A little important, 3=Important, 4=Very important, 5=Extremely important

a. Lack of appropriate funding	1	2	3	4	5
b. Lack of skills and education / knowledge gaps	1	2	3	4	5
c. Poor communication between hospital teams and general practitioners	1	2	3	4	5
d. Increased workload / lack of time	1	2	3	4	5
e. Lack of ongoing access to specialists for advice	1	2	3	4	5
f. Poor communication between you and the GP(s) in your practice	1	2	3	4	5
g. Patients' not attending for scheduled appointments	1	2	3	4	5

22. Please rate the following resources in terms of importance that would allow you to further develop CDM in your practice?

1=Not important, 2=A little important, 3=Important, 4=Very important, 5=Extremely important

a. GP led CDM clinics	1	2	3	4	5
b. Specialist nurse led clinics	1	2	3	4	5
c. Increased practice nurse time for clinics	1	2	3	4	5
d. Targeted funding as in the NHS model	1	2	3	4	5
e. Specific payments for patients with a major chronic disease	1	2	3	4	5

(E.g. COPD, CVD, Diabetes)

23. With regard to Shared Care of chronic disease between general practice and the hospital:

- | | | |
|--|------------------------------|-----------------------------|
| a. Do you think there is a place for shared care in CDM between General Practice and the hospital? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Would you support a shared care initiative in CDM between your practice & your local hospital? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. Do you think a shared care initiative between GP & hospital could be run by nurses? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| d. Are you currently involved in any shared care of a chronic disease? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

24. If you are currently involved in shared care, is it working?

- ☐ Yes ☐ No ☐ Not applicable

PRACTICE PROFILE & DEMOGRAPHIC DATA

25. Where is your practice located?

- ☐ City ☐ Suburban ☐ Small town ☐ Rural

26. Your Age Category:

- ☐ Under 35 ☐ 35-49 ☐ 50-64 ☐ 65 or older

27. Your Sex:

- ☐ Female ☐ Male

28. Which of the following describes your practice?

- ☐ A single handed doctor practice
☐ A two doctor practice
☐ A three or more doctor practice

29. Is your practice part of an integrated provider system (e.g. Centric, Touchstone etc.)?

- ☐ Yes ☐ No

30. About what percentage of your patients are in each of the following categories?
Total can add to more than 100%.

_____ % Full Medical Card _____ % Doctor Only card
_____ % Private fee paying _____ % Other (please specify)

31. Is your practice part of an integrated provider system (e.g. Centric, Touchstone etc.)?

- ☐ Yes ☐ No

If yes, are you involved in ☐ Undergraduate ☐ Post-graduate

THANK YOU FOR YOUR TIME & CO-OPERATION

