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Title	Out of pocket or out of control: A qualitative analysis of healthcare professional stakeholder involvement in pharmaceutical policy change in Ireland
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Publication date	2020-02-28
Original Citation	O'Brien, G. L., Sinnott, S.-J., O'Flynn, B., Walshe, V., Mulcahy, M. and Byrne, S. (2020) 'Out of pocket or out of control: A qualitative analysis of healthcare professional stakeholder involvement in pharmaceutical policy change in Ireland', Health Policy, 124(4), pp.411-418. https://doi.org/10.1016/j.healthpol.2020.02.011
Type of publication	Article (peer-reviewed)
Link to publisher's version	http://www.sciencedirect.com/science/article/pii/S0168851020300464 - 10.1016/j.healthpol.2020.02.011
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Download date	2026-11-15 01:21:58
Item downloaded from	https://hdl.handle.net/10468/9724

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Out of Pocket or Out of Control: A Qualitative Analysis of Healthcare Professional Stakeholder Involvement in Pharmaceutical Policy Change in Ireland

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Running head: Qualitative Analysis of Healthcare Professional Stakeholder Involvement in Pharmaceutical Policy Change

Keywords: Health Insurance; Co-Payment; Public Health; Health Policy; Community Pharmacy; Primary Care.

Word count (excluding the title page, summary, references, tables, and figures): 4,237

Number of figures: 1

Number of tables: 3

Compliance with Ethical Standards

Funding

This research project was funded by Irish Research Council (GOIPG/2016/635). The funders had no part in the design of the analysis; the collection, analysis, and interpretation of the data; the writing of the report; or the decision to submit the article for publication.

Disclosure

The authors have no conflicts of interest to declare.

Ethical Approval

Ethical approval was sought from and granted by the Clinical Research Committee of the Cork Teaching Hospitals prior to study commencement.

Informed Consent

Written and verbal consent was sought and obtained from each participant.

Data Availability Statement

The dataset used and analysed during the study is available from the corresponding author upon reasonable request.

Author Contributions

Gary O'Brien (GOB), Sarah-Jo Sinnott (SJS), Stephen Byrne (SB), Bridget O'Flynn (BOF), Valerie Walshe (VW), and Mark Mulcahy (MM): GOB, SJS and SB conceived the study idea. GOB, SJS and SB decided on sampling techniques. SB and GOB sought and gained ethical approval. GOB and BOF carried out data collection. GOB analysed and interpreted the data. BOF carried out verification of data analysis. GOB wrote the final manuscript; SJS, BOF, MM, VW and SB revised the manuscript. All authors read and approved the final manuscript.

Acknowledgements

The authors would like to sincerely thank the experienced healthcare professionals who gave up their time to partake in this study in order to share their expert knowledge and experiences on the GMS co-payment system.

Abstract

Background: Mandatory co-payments attached to prescription medicines on the Irish public health insurance [General Medical Services (GMS)] scheme have undergone multiple iterations since their introduction in October 2010. To date, whilst patients' opinions on said co-payments have been evaluated, the perspectives of community pharmacists and general practitioners (GPs) have not.

Objective: To explore the involvement and perceptions of community pharmacists and GPs on this pharmaceutical policy change.

Methods: A qualitative study using purposive sampling alongside snowballing recruitment was used. Nineteen interviews were conducted in a Southern region of Ireland. Data were analysed using the Framework Approach.

Results: Three major themes emerged: 1) the withered tax-collecting pharmacist; 2) concerns and prescribing patterns of physicians; and 3) the co-payment system – impact and sustainability. Both community pharmacists and GPs accepted the theoretical concept of a co-payment on the GMS scheme as it prevents moral hazard. However, there were multiple references to the burden that the current method of co-payment collection places on community pharmacists in terms of direct financial loss and reductions in workplace productivity. GPs independently suggested that a co-payment system may inhibit moral hazard by GMS patients in the utilisation of GP services. It was unclear to participants what evidence is guiding the GMS co-payment fee changes.

Conclusion: Interviewees accepted the rationale for the co-payment system, but reform is warranted.

Keywords: General Medical Services; Co-Payment; Framework Analysis; Health Policy; Community Pharmacy; Primary Care.

Abbreviations/Explanations

ACE – Angiotensin Converting Enzyme

COREQ - Consolidated Criteria for Reporting Qualitative Research

DoH – Department of Health

FEMPI - Financial Emergency Measures in the Public Interest

GMS - General Medical Services

GP - General Practitioner/Physician

HCP - Healthcare Professional

HSE - Health Service Executive

IT – Information Technology

LTI – Long Term Illness

NHS – National Health Service

PCRS - Primary Care Reimbursement Services

PRN medicines - *Pro re nata* (as required) medicines

Sinn Féin - An Irish left-wing Irish republican political party

Taoiseach – Irish Prime Minister

UK – United Kingdom

WHO – World Health Organisation

Introduction

According to the World Health Organisation (WHO), a co-payment (user charge or user fee) is defined as "money people are required to pay at the point of using health services covered by a third party such as the Government, a health insurance fund or a private insurance company".[1] These out-of-pocket fees are paid by the insured patient on many health services such as outpatient visits, dental care, and inpatient care and prescription medicines. There are many documented advantages in having a co-payment attached to prescription medicines; cost containment, moral hazard prevention and revenue generation.[2] Disadvantages include lower rates of drug treatment, worse adherence among existing users, more frequent discontinuation of therapy and increased patient financial responsibility.[3, 4] Co-payments are a common feature of Western health care systems.[1]

The General Medical Services (GMS) scheme in Ireland is a tax funded, means tested, public health insurance scheme.[5] It provides many health benefits including inpatient and outpatient care, General Practitioner (GP) services and prescription medicines to those who meet the eligibility criteria,[6] all free at the point of access. Currently, 33% (1,565,049) of the Irish population receive healthcare on this scheme.[7] Patients who avail of health coverage on the GMS scheme are known as medical card holders. In October 2010, in an attempt to counteract rising Government expenditure amid a severe economic downturn post 2008, and to reduce medicine wastage, the Department of Health (DoH) introduced a €0.50 co-payment per prescription item, capped at €10 monthly, for the first time for publically insured (GMS) patients.[8] Since then, the GMS prescription medicine co-payment, also known as the GMS levy, has undergone numerous iterations in both monetary value per prescription medicine and in monthly cap fee (capped after the first 10 prescription medicines per month for each of the GMS co-payment iterations). Indeed, this levy is a form of taxation. Figure 1 below reveals a timeline of all recent GMS co-payment changes where in March 2017; the introduction of different co-payments for separate age groups was first introduced on this scheme.

In the Irish context, patients were mostly accepting of the initial €0.50 co-payment with some reservations concerning an increased price and the way in which generated revenue would be used by Government.[8] This aligns with international patient perspective where most patients accept paying toward medication in principle.[9-11] Contemporary quantitative analysis on the GMS co-payment increases (Figure 1) has demonstrated that the €0.50 co-payment was associated with reductions in adherence ranging from −2.1% to −8.3% for essential medicines and reductions in adherence of −2% to −9.5% for less-essential medicines.[12] The €1.50 co-payment generally resulted in smaller reductions in adherence to essential medicines with anti-depressant medications being the exception with a decrease of −10.0% after the co-payment increase.[12] For publicly insured families with children, a detrimental effect on health was not found from small co-payments (€0.50, €1.50 and €2.50) on prescription items.[13]

The objective of the study was to retrieve insight into the engagement and opinions of experienced Healthcare Professionals (HCPs) on the GMS co-payment policy changes. Using the qualitative data collected from interviews, this manuscript aims to inform healthcare policymakers on this specific pharmaceutical policy as Ireland is currently in the process of attempting to deliver whole system reform and universal healthcare known as SláinteCare for all its citizens.[14] This study adds to the literature by investigating the stakeholder involvement of HCPs in co-payments attached exclusively to prescription medicines, which to date, has not been researched.

Figure 1 | Timeline review of recent GMS co-payment introductions and changes 2010-2018



Methods

Study design, setting and sampling

The sampling frame for this study was registered community pharmacists and GPs who had been consistently practising for at least six months prior to the first GMS co-payment introduction in October 2010 until data collection completion. Nineteen semi-structured interviews (thirteen community pharmacists, 6 GPs) were conducted between January 2018 and April 2019 where HCPs working in five different socioeconomic areas were interviewed in the province of Munster, Ireland (Table 1). Both community pharmacies and medical surgeries were classified into their respective socioeconomic classes via the Trutz Hasse Deprivation Index 2016 by electoral division.[15] HCPs from both independent and franchise pharmacies were included. Franchise pharmacies were defined those consist of several similar businesses which are corporately owned. All medical surgeries in this study were independently owned. Most interviews were conducted in an urban practice save for two marginally above average medical surgeries and one marginally above average community pharmacy which can be considered rural.[16] Varying socioeconomic and work place structures and locations were included to ensure that a broad range of thoughts and attitudes could be obtained from a range of social circumstances, age, gender, and work place practices. All interviewees declared they had no obvious bias to declare on this topic. This was asked to ensure that selection was not based on prior knowledge of interviewee involvement on this topic.

Interviewing was chosen as the preferred data collection method for many reasons. First, given that some of the interviewees owned their own pharmacy/medical surgery, the topic of work place practices, medicines, and money/financial loss can be considered a sensitive subject. Secondly, focus group dynamics can be unpredictable where more in depth coverage, with a lower risk of social desirability bias, is possible when interviewing an individual.[17]. Consent form and participant information letters are made available (see online appendices 1, 2). Participants were sampled using purposive and snowball-sampling methods.[17, 18] An initial ‘core set’ of potential participants were identified by the research team through personal contact. These participants were then asked to suggest other individuals they believed could assist with the study. Participants were free to decline the invitation to partake but did this not happen. Once HCPs agreed to be interviewed, the interviewer explained who they were, clarified the aims and objectives of the study and assured participants of anonymity and data confidentiality. Participants were asked for verbal and written consent. The researchers sought to address reflexivity during all aspects of the study.

Table 1 | Distribution of practices by location and ownership status [15]

Practice Location	Independent	Franchise	Total
Affluent	2	1	3
Marginally above average	7	2	9
Marginally below average	2	0	2
Disadvantaged	2	2	4
Very Disadvantaged	1	0	1
Total	14	5	19

Data collection

Two very similar topic guides were developed in order to achieve structured feedback from participants (see online appendix 3). One topic guide was targeted at the community pharmacists whilst the other was used when interviewing GPs. Given that both topic guides were designed to have a strong resemblance, data from both community pharmacists and GPs were analysed together as one combined HCP data pool. Both topic guides drew on existing related literature[8, 12, 19-24] and the professional experience of the research team. The topic guides were initially piloted with two pharmacists and one GP and were amended as the interviews progressed to obtain current and topical feedback from participants. The decision was made to exclude the pilot interviews from the analysis. The pharmacist topic guide underwent four iterations whereas the GP topic guide under two iterations. Many themes were discussed with both pharmacist and GP participants where some of these are highlighted in Table 2. All interviews consisted of one interviewer and one interviewee and were recorded and transcribed verbatim using two methods of audio recording: a Dictaphone (Sony IC Recorder ICD-PX240) and a mobile phone device (Samsung Galaxy S6 SM-G920F). Interviews took place in the workplace office of the HCP being interviewed allowing for a quiet and confidential space. Interviews ranged in time from roughly 7 minutes to 30 minutes. A field diary was brought to each interview to record noteworthy observations.

The study did not have a target sample size; rather it aimed to recruit participants until data saturation of key themes emerged. During data collection, before considering further participation recruitment, preliminary data analysis was conducted to highlight when researchers were approaching data saturation. In addition, the Francis *et al.* method was intended to be used to determine data saturation.[25] This method involves identifying an initial analysis sample size and then defining a stopping criterion. The stopping criterion is a defined number of interviews that will take place in

which no new themes will emerge. It was agreed that data saturation had been reached after 16 interviews with no new themes emerging in the additional three interviews.

Table 2 | Themes discussed in interviews

Positive/negative aspects of co-payment?	What are your thoughts on the co-payment attached to prescription medicines?
Influence of co-payments on your practices and procedures?	Has the co-payment influenced your practice or procedures in the work place?
Co-payment retrieval?	How easy or difficult is it to retrieve the co-payment?
Patients' perception of co-payment?	How do you think patients perceive paying the co-payment?
Financial loss?	Have you suffered financial loss from patients not paying?
Medicine utilisation?	Do you think the co-payment has influenced patients' utilisation of medicines?
Impact of co-payments on GPs prescribing habits?	Has the co-payment changed the way you prescribe or influence the amount of prescriptions you issue?
Future status of co-payment/policy suggestions?	What do you think the future holds for the co-payment? Should it be increased/decreased/abolished?

Analysis

The framework method was used to identify themes emerging from the data obtained and was chosen because of its relevance in policy change and detailed format in comparison to regular thematic analysis.[17, 26] The framework method contained seven key stages that allowed for the categorisation and organisation of the large amounts of data to help develop underlying themes and emerging phenomena. These seven stages consisted of i) transcription ii) familiarisation with the interview iii) coding iv) developing a working analytical framework v) applying the analytical framework vi) charting data into the framework matrix and vii) data interpretation and mapping.[27, 28] The framework constructed throughout this process was continually amended and "tested for fit". Language was seldom altered in an attempt to retain original meaning and context. The analysis was interpretative recognising the interaction between the researcher and the data.

The data were managed through NVivo12 Plus, QSR International software.[29] Data analysis was conducted by GOB, a research pharmacist undertaking a clinical pharmacy PhD. Intercoder reliability was used at early stages of the project to ensure a high rate of intracoder reliability on subsequent manuscript data analysis. A sample of four random manuscripts were coded and indexed by BOF. At the time of data collection, BOF was an undergraduate pharmacy student. Both GOB and BOF discussed arising differences in this process to ameliorate the accuracy of the thematic framework and the application of the framework to subsequent transcripts. Some disagreements in coding arose. The most common reason for disagreement was redundant labels/codes describing for the same

phenomenon e.g., dissatisfaction with Government and anger towards the Irish Health Service Executive (HSE). Through discussion, these indexing discrepancies were resolved.[30] Both GOB and BOF had undertaken qualitative data analysis training courses prior to data collection.

Ethics

Ethical approval was sought from and granted by the Clinical Research Committee of the Cork Teaching Hospitals prior to study commencement. The consolidated criteria for reporting qualitative research (COREQ) statement guided study reporting[31] (see online appendix 4).

Results

Nineteen HCPs were interviewed in total each with varying experience (Table 3). The Framework approach produced three main themes where each are elaborated on below. In the reported analysis, participant pseudonyms were created to provide information about: practice ownership [Independent ('Indep') or Franchise ('Fran'); community pharmacist participant number ('CP1') or general practitioner participant number ('GP2').

Table 3 | Characteristics of interviewees

Sex	Male	13
	Female	6
Frequency of age groups (years)	35-39	3
	40-44	6
	45-49	4
	50-54	1
	55-59	2
	60-64	0
	65-69	3
Number of years practising	15-19	9
	20-24	5
	25-29	2
	30-34	0
	34-39	1
	40-44	2
Employment status	Full time	14
	Part time	5
Year received professional body number	Pre-1980	3
	1980-1984	1
	1984-1989	0
	1990-1994	3
	1995-1999	8
	2000-2004	4

The withered tax-collecting pharmacist

It was unanimously accepted that although the current co-payment system has advantages pertaining to cost containment and waste reduction, the pharmacist is just one party who suffers from its consequences "*I didn't study for five years in order to become an organ of revenue collection for the Government, it is outside the terms and conditions of my role and it's certainly outside the terms and conditions of my contract with the HSE to raise money for the revenue commissioners*" **IndepCP11**. Pharmacists can occasionally find themselves in "*dangerous situations"* **FranCP12** upon co-payment retrieval, and in scenarios whereby they must supply the medicine without retrieving the co-payment "*you're spending your time trying to look after the best interests of the patient and sometimes the best interests of the patient is I need you to take these medications so I'm going to have to sacrifice. My duty of care to you as a patient trumps my duty of care to the state to collect a tax for them. So therefore the net loser in that transaction is the pharmacist who essentially is now working for free*" **IndepCP11**.

Pharmacists also expressed a loss of workplace productivity by collecting the co-payment "*if it's simply that they're paying by credit card its taking up a minute, two minutes but you add that 100 times a*

day, your efficiency is gone down dramatically and that's time that's taken from something" **IndepCP05.** Pharmacists too experience patient disgruntlement at the point of transaction *"I think there is still a lack of understanding that it's a Government levy as opposed to a personal, pharmacist into-the-pocket levy. That is something that is still an area of confusion, even now"* **IndepCP02**. There was an emergent consensus that they should not bear the financial loss if a patient cannot/will not pay. When a pharmacist supplies a medicine to a patient who cannot/will not pay, the primary care reimbursement services (PCRS) still deduct this co-payment tax/levy from the pharmacist. In addition, as there is a maximum monthly co-payment cap for households, if family members are not recognised as one household unit on the electronic PCRS system, the pharmacists bear the financial deficit. As a result, pharmacists have reported large financial losses "*Tens of thousands of euro for reasons of non-payment, but also for reasons of families weren't linked properly on the PCRS database. Those are probably the two most common causes of a deficit in what I should have taken in, what the State deducted from me and what I was able to take in*" **IndepCP11**.

Pharmacists note that a proportion of GMS patients acknowledge the value of having the co-payment attached to their medicines "*…….. they think they're getting good value for money and that it's a good thing for the country…"* **FranCP13.** However the risk to patient safety which arises from having a co-payment system was recognised by community pharmacists: *"From the pharmacy perspective it has introduced extra administrative issues, …… therefore has caused a danger, in my view, to patient safety because if you are having to talk to Mrs. Murphy about a blasted prescription charge, when you really should be concentrating on the prescription and the dose and the interactions and all of this……."* **IndepCP05.**

The co-payment system – impact and sustainability

Before the introduction of the co-payment on the GMS, medication stockpiling and wastage was noted as a prominent feature by both pharmacists and GPs. *"I did a house call and I asked the lady, 'Oh, where do you keep your tablets?' In under the stairs I removed at least 10 Tesco® plastic shopping bags full of unused medication. They were stockpiled in the thing. … There was bags of them…..going back like 10 years……. There was like tens of thousands of tablets that she wasn't taking"* **IndepGP02***.* Medication waste seems to be ongoing but not at the level that it once straddled. "*unfortunately, we see it particularly again when patients pass away, the big black bag of unused medication, I don't believe the black bags have got any smaller since the October 2010, 'til January 2018"* **FranCP08.**

The consensus from interviewees is that the co-payment system influences medicine utilisation and adherence rates. *"The PRN stuff would be the first to go, so if there are items they genuinely don't need, they would be the ones that would first go"* **IndepCP04**. However, some pharmacists advocate "*the co-payment certainly has disimproved compliance for certain groups of people. So I think in terms of benefits to how people take their medicine, the people that come back regularly for medication, when there was no 2.50 levy or no 50 cent levy, would generally be compliant. There are people that now choose to come back regularly for certain items and not for others or they will take items, run them up and not take them the next month, so they'll alternate items, you know. So that certainly isn't*

beneficial when a patient has to make a decision as to whether their blood pressure is more important than their cholesterol. You don't feel your blood pressure being high. You don't feel your cholesterol level being high. They would be always the easier ones to drop" **FranCP13.** This is worrying as it means patients have to choose between which essential medications to take which poses a big threat to patient safety. This feature is also observed amongst patients without medical cards how much more they pay for medication *"……. It's the poor private paying patient…. They'll come to you and they'll say, 'Look, ok, that blood pressure tablet' and it might be for example an ACE inhibitor, 'what's the cheapest one I can get of that?"* **IndepGP02.**

Most HCPs agree that the co-payment system is a good tool to deter moral hazard but not to generate revenue *"If it was 50 cents like it had been initially, then there's an understanding of why it's there. Going to 2.50 in 2013 was the one that impacted most…… So, 2.50 would probably be the straw that breaks the camel's back in terms of the amount that patients are going to pay. Being at the 50 cent charge was the one to leave it at. We understood the policy behind it, you know. Trying to increase it up to generate revenue just doesn't make sense from a health point of view"* **FranCP13***.* In fact, HCPs recommend eligible patients with a long-term illness (LTI), as classified by the HSE, to switch to the LTI scheme where there is no co-payment on prescription medicines i.e. GMS co-payment (tax) avoidance "*we've been migrating them (eligible medical card patients) over to the LTI scheme*" **IndepCP02** and "*if you go online to the Diabetes Ireland website, they'll tell you, 'If you've a medical card, make sure you get a long-term illness'. So they're actually telling people to avoid the levy*" **IndepCP11**. However, some participants described the unfairness of this scheme which is not means tested "*Why should a long term illness patient, you can have a retired High Court judge, a retired Taoiseach who might have Type 2 diabetes availing of all those levies for their cardiovascular medicines, their statins, their aspirin all free of charge, not even a levy paid and somebody with mental health difficulties who could be in very poor social circumstances, on social welfare, having to pay €2. That is grossly unfair"* **IndepCP11**.

Both pharmacists and GPs want the system to remain in place "*if Sinn Féin* **(An Irish left-wing Irish republican political party)** *get into Government, they might promise to abolish it (the GMS co-payment) as a great stroke to the people, but I firmly believe that the people in the medical card system get an excellent service for nothing and that the co-payment is a very small little contribution to the exchequer and it's tiny in the overall scheme of things"* **IndepGP03.** Notwithstanding this perspective, it was interesting to note that some interviewees suggest that the co-payment system "s*hould be means tested"* in order to reduce health inequalities **IndepGP05.** As well as GPs who believe that "*GP unions should be involved in co-payment policy because it does affect the workload"* **IndepGP01**, pharmacists want to be heavily involved in the co-payment policy. They have many suggestions for co-payment policy improvement "*The fee should certainly be decreased down back to 50 cent, but with a greater emphasis then on exemptions so that there could be specific patients who shouldn't have to pay, a greater cohort of patients that shouldn't have to pay. So say for example, if a patient is diagnosed with cancer and is entitled to a medical card, then they should be getting the medical card and have it free of charge*" **FranCP13***.*

Concerns and prescribing patterns of physicians

GPs report that the co-payment has fine-tuned their prescribing habits "*has made me a little bit more conscious of what I prescribe for patients in that are they going to take it? Are they going to pay 2.50? Ok, it doesn't sound like a lot, but do you know, whatever it is, it's nearly €30 a year, whatever, per item and patients on a social welfare budget, that's an awful lot of money. So it makes me a little bit more conscious of it"* **IndepGP06**. In addition, the co-payment seems to create additional dialogue in the medical surgery "*Maybe I get into the conversation of what they need this month more so than I would have in the past*" **IndepGP05**. It appears that having a co-payment system on medicines may result in a more customised prescription for the patient.

An unforeseen concept that arose was the potential introduction of a co-payment system attached to GP surgery visits for medical card holders. Medical card holders currently avail of unlimited GP surgery visits free at the point of access. This was first alluded to by a pharmacist in the early stages of data collection phase "*…if the patient had a medical card and had to pay €5 to see the doctor or €10 to see the doctor, they'd see something then*…."**FranCP09.** When interviewing subsequently commenced with GPs, this idea was something that materialised through many indirect quotations where one GP summarised the opinion concisely "*I think we are heading towards free GP care and free medication which I don't necessarily agree with……GPs would be in favour of advocating for co-payment both for medication and attendance of surgery visits"* **IndepGP06.** As there is an ongoing general practice crisis with over 26 communities without a GP,[32] the potential introduction of a co-payment system attached to GP surgery visits for medical card holders could prevent unnecessary consultations thus maximising current GP performance.

Discussion

This exploratory study provides a range of insights into HCP views on GMS pharmaceutical policy change over the last decade. What was evident from this analysis is that all participants, in some manner, think the GMS prescription medicine co-payment system is a good idea. However, the pharmacist cohort state they do not want to be an "*organ of revenue collection*" for the GMS co-payment. This tends to result in various losses of productivity that are not remunerated. Indeed, this financial loss is much more than not being able to retrieve the levy. It is felt in the form of loss of staff productivity where administration workload and procedures have dramatically increased. In addition, it appears that the current information technology (IT) systems are not fit for purpose with respect to GMS co-payment retrieval. Financial losses suffered by pharmacists are also brought about by the absence of family unit linking on IT software systems in the pharmacy setting. For example, one family might pay the GMS co-payment cap of €20 for medicines per calendar month. However, because of poor IT systems communication, it not is recognised that the individuals in the family who form a family unit all fall under the GMS co-payment cap, therefore the PCRS will deduct the €20 co-payment cap for each individual instead of for the family unit per calendar month resulting in financial loss for the pharmacist. This is something which needs to be rectified by the PCRS. From the data, pharmacists would be happy to be removed from their current role in the co-

payment retrieval transaction. As the GMS co-payment is a tax, it could be argued that patients should deal directly with the tax collector/revenue commissioner regarding the payment of this levy as is done with other forms of taxation. Alternatively, pharmacists may be remunerated for co-payment collection, or at the very least, not financially penalised when they are unsuccessful at co-payment retrieval as is currently the case. The literature is sparse on this topic and further research is required.

Like in some Western European countries,[33, 34] publically insured patients in Ireland including those aged over 70, those under 6 years and carers avail of GP visits, free at the point of access.[13] An unexpected finding from this study was that GPs have suggested that a similar co-payment policy be attached to GMS patient-physician consultations that occur in their medical surgeries to prevent unnecessary overuse of this free saturated service.[32] This finding indicates that overburdened GPs are aware of the concept of moral hazard and are proposing potential solutions on how to handle increasing demand on healthcare services. More European countries are attempting to or already have put policies like this in place for publically insured patients.[34] For instance, patients aged 20 years or older on the public health insurance scheme in Sweden pay a co-payment of approximately €10 to a front desk receptionist per primary care physician visit.[35] Although subtleties exist across different Swedish regions, in general, the co-payment is seen as an income to the primary care centre, and this will be taken into account when distributing funds from the regional government to each care centre. In the Czech Republic, the evidence reveals no overall effect of doctor visit co-payments on the number of children's doctor visits.[36] However, before such a policy could be implemented in Ireland, the fee for this co-payment would have to be carefully selected. Some research has found that prescription medicine co-payment could potentially affect the number of doctor visits [37] especially higher co-payment fees which may reduce healthcare service utilisation mainly because of a demand reduction of poorer patients.[38] Thus, more in-depth investigation is required to determine the optimal co-payment fee per patient-physician consultation in primary care and how best this fee could be retrieved in practice.

It was unclear to participants what evidence is guiding these GMS co-payment fee changes. GMS co-payment changes are usually announced around general election time by contesting politicians or on national budget day by Government officials, unaccompanied by any solid evidence of what impact such increases or decreases can have. Previous iterations have yielded reductions in adherence to essential medicines, including anti-depressant medications with a large decrease of −10.0%.[12] Reduction in the use of essential medicines results in worsening patient adherence, leading to poorer health outcomes and increased usage of health services.[39-41]. This is a healthcare policy not a revenue generating exercise. If Ireland's ten-year Sláintecare plan for whole health system reform through political consensus is going to be implemented successfully, then healthcare policymakers need stakeholder buy-in to ameliorate existing pharmaceutical polices like this. In this study, both GP and pharmacy unions have expressed interest to be more involved in the policy formation stages, not the post-implementation stages. Sláintecare represents a unique opportunity for all key stakeholders including policymakers, HCPs and patients to collaborate and provide input into a healthcare system that works for all.

It appears that GMS co-payment policy is having a ripple effect on the LTI pharmaceutical policy. HCPs and others have recommended GMS patients with an "eligible" LTI, as classified by the HSE, to avoid paying the co-payment by switching to the non-means tested LTI scheme. Although the dispensing fees paid to community pharmacies for both GMS and LTI reimbursement schemes are equivalent,[7] this switching of schemes creates extra administrative burden elsewhere in the health system. It results in patients straddling two schemes at pharmacy level. Patients get their LTI related medicines free of charge while concomitantly using the GMS scheme to retrieve their non-LTI related medicines. This lead to discussion on the complexity of the whole medicine reimbursement system in Ireland and the associated co-payments where over 20 such schemes exist in the primary, secondary and tertiary care settings [7, 42] One HCP summarised the medicine reimbursement and the GMS co-payment system in Ireland quite nicely "*Even saying this out loud sounds absolutely ridiculous, you know, because if you landed from Mars and you said, 'I've got an idea for a tax(co-payment fee)', nobody would think that this was credible"* **IndepCP11**.

Limitations

This study is not without its limitations. Access to the total number of patients that each medical practice serves, and which proportion of those patients were GMS patients, was unattainable. Such information could have been useful in drawing conclusions between the socioeconomic differences of different patient groups. Recruitment of participants was conducted between January 2018 and April 2019. Arguably, the data collection could process could have been quicker but the primary researcher (GOB) was involved in multiple ongoing research projects at the time.

As mentioned in the methods section, an initial core set "convenience sample" was used for data collection. Concerns regarding selection bias in recruitment were mediated by the fact that the sample obtained was representative of the practising HCP population. Pilot interviews were excluded from the data analysis. Although valid interviews, the interviewers felt their interviewing techniques at this early stage may have influenced participants' responses. Securing interviews with GPs proved more difficult than with pharmacists which, resulted in disproportionate numbers between the groups. However, an approximately equal amount of pharmacist quotations and GP quotations are reported in the results section of this paper in an attempt to further minimise selection bias.

The main researcher is a research pharmacist and the second interviewer was a final year pharmacy student at the time of data collection, thus there was a possibility that participants gave socially desirable responses. This bias was difficult to eliminate as the research team felt that by disclosing the researchers' backgrounds to interviewees an element of professionalism could be introduced into the interviews. However given that participants were also HCPs practising much longer than both interviewers, it may be taken that the interviewers established a solid rapport with participants and socially desirable answers did not feature dominantly in the results.

From 1st April 2019, around the same time data collection had ceased, for people aged 70 years and over, the prescription charge decreased to €1.50 per GMS prescription item, up to a maximum of €15 per month per person or family.[43] For people aged under 70 years, the prescription charge

remained at €2.00, up to a maximum of €20 per month per person or family. Therefore, it is believed that this co-payment change did not affect the study results. Furthermore, in October 2019, the Department of Finance announced that a €0.50 reduction per GMS prescription item for all medical card holders will come into effect in July 2020.[44] This research was originally intended to be part of a mixed methods study where the overall aim was to determine the impact of altering prescription charges on patient adherence to medicines on the public GMS scheme in Ireland. The quantitative study planned to measure changes in adherence in essential and less-essential medicines[45, 46] pre and post GMS co-payment changes. However, access to national PCRS data [47] required for said analysis is only available to select research institutions.

Conclusion

The GMS co-payment has undergone many various iterations in recent times. Previous studies have examined its impact and sought to retrieve "the optimal co-payment" which prevents medicine wastage and acts as a revenue stream.[8, 12] However, this study too implies that there is no optimal co-payment fee considered by patients and by HCPs. GPs and pharmacists did seem to favour a lower amount. Perhaps healthcare policymakers should formally evaluate its value every few years to see if change is warranted. The Czech Republic lead by example in this field as they seem to monitor and update their co-payment system quite regularly. Indeed, this study comes at an important time as the Irish Healthcare system undergoes major political, economic and health policy reform under the Sláintecare policy.[14] Through political concord, the Irish Government are aiming to reorient the health system 'towards integrated primary and community care, consistent with the highest quality of patient safety in as short a time-frame as possible'.[48, 49] This study has provided a platform for experienced primary care HCPs to express their views and accounts of the Irish GMS co-payment system. For the most part, HCPs agree that there is merit to having a nominal charge attached to prescription medicines on the GMS scheme. However, participants have highlighted outstanding issues that need to be optimised to ameliorate primary healthcare practices and procedures.[50, 51] With respect to Lewin's basic change theory model of unfreezing, changing, and refreezing,[52] healthcare policymakers implementing the ten-year Sláintecare reform can bypass the unfreezing stage of this contemporary pharmaceutical policy. Both pharmacy and general practitioner representative bodies want to be involved to support evidence-based policy decisions.

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Electronic Supplementary Material (ESM) (see appendices below)

Appendix 1

Consent Form

A qualitative analysis of the healthcare professional stakeholder involvement in pharmaceutical policy change in Ireland

I _____ declare that information about this research project has been given to me and that I understand the purpose, methods, risk and benefits of participating in this study.

I am aware that participating is voluntary and that I can withdraw my participation at any time with no negative impact on my professional status.

I give permission for my responses in the interview to be audio-recorded and that anonymity will be ensured by disguising my identity.

I understand that disguised extracts from what I say may be quoted in the thesis and any subsequent publications.

I agree that I have received a copy of this Consent Form and a copy of the Information Letter.

I hereby give my informed consent to participate in the research study.

_____ _____

Participant Signature Date

Would you like a copy of the Interview Transcript? YES ☐ NO ☐

Would you like a copy of the findings after the study is completed? YES ☐ NO ☐

Email address: _____

Appendix 2

Participant information letter

A qualitative analysis of the healthcare professional stakeholder involvement in pharmaceutical policy change in Ireland

You are being invited to take part in a research project that is being conducted at the University College X.

Before you decide whether or not you wish to participate you should read the information provided below carefully, and you are free to discuss it with your family, friends or colleagues. You should clearly understand the risks and benefits of participating in this study so that you can make a decision that is right for you. Take time to ask questions – do not feel rushed or under any obligation to make a hasty judgment.

You have the right to withdraw your participation at any time (before, during and after the study) for whatever reason without having to justify your decision and with no negative impact for you. Your data will then be excluded from the study results.

Why is this study conducted?

Co-payment policies on the General Medical Services (GMS) scheme have existed since 2010 and have gone through multiple iterations, starting at €0.50 in October 2010 and reduced to €2 in January 2018. The involvement of the Healthcare Professionals (HCPs) such as General Practitioners (GPs) and Pharmacists in such pharmaceutical policy changes on the GMS scheme has not been evaluated. As part of his PhD, X wants to gather feedback on the perceptions and challenges experienced by HCPs resulting from the GMS co-payment changes. For example, are co-payment changes creating additional administrative burden for HCPs? Have altering co-payments influenced GPs' prescribing patterns? How have pharmacists handled the implementation of this policy? What happens if patients cannot afford these prescription medicine co-payments? This study seeks to retrieve qualitative data on HCP stakeholder involvement for all existing co-payment alterations in the Irish context.

Why have you been asked to participate?

You have been asked because you are a Healthcare Professional currently working in a GP practice or a community pharmacy in the Republic of Ireland.

What will your participation involve?

Your participation will involve a 30-minute (maximum) interview about matters relating to your experiences of the effects of the altering GMS prescription co-payments on patients. X, who is a

pharmacist, will ask questions as the session progress. A small amount of extra time will be allowed for explaining the aims of the study and your questions about the study.

Will your participation be kept confidential?

Yes, all information will be treated in a confidential manner and your participation is anonymous. The interview will be audio recorded so that it can be transcribed afterwards. Your name will not be recorded on any information which is collected about you. Instead you will be provided with a unique code. The only person with access to the code will be X. The results of the study will be included in X's PhD thesis but there will be no way of identifying you from these results. The results will be seen by X's supervisors, a second marker and an external examiner, again these will be anonymous. The thesis may be read by future students. The study may be presented at scientific conferences and/or published in an academic journal.

The audio recording will be erased once the interview has been transcribed. Transcripts will be stored in a protected manner for 5 years, after which they will be destroyed in line with University College X confidential waste destruction guidelines.

What are the possible benefits of participating?

Your contribution to this study will be used to reveal how HCPs have previously dealt and are currently dealing with these GMS co-payment policy changes since its inception in 2010. X hopes to publish such findings that may influence future healthcare policymaking decisions to the benefit of the HCP and patient.

Are there any risks of participation?

We do not think that participation in this study will have any negative effect on you.

Further information

Approval has been granted to do this study by the Clinical Research Ethics Committee of the Cork Teaching Hospitals.

If you would like a copy of the results, please let X know.

If you need any further information, do not hesitate to contact the primary researcher, X, by telephone X or by email to X or email the supervisor of the project, Professor Y by Y (Telephone:Y).

Thank you for taking the time to read this information sheet. If you agree to take part in the study, please sign the consent form overleaf.

Kind Regards,
X
Research Pharmacist, PhD student

Appendix 3

Pharmacist Topic Guide

Interviewing practising Irish primary healthcare professionals about their opinions, perceptions, challenges and experience of the GMS co-payment from inception to current day.

Before we start, I just want to check that you are still happy for this interview to be recorded and that you know we can stop at any time.

I would like to thank you for agreeing to participate in this interview and stress that everything said here today is completely confidential. Your name will not appear on any documents or recording discs and I personally will anonymise the transcript from this interview, and will ensure that no one else will be identifiable either.

These interviews are part of a study I am conducting for my PhD. The aim of the study is to gain an understanding of the perceptions and challenges experienced by healthcare professionals from the various GMS co-payment iterations since 2010.

There are no right or no wrong answers to these questions.
The interview will probably last between 10-30 minutes.
Does all that sound ok? Are you happy for me to record the interview?

Demographics

- Age?
- Address of Pharmacy? Independent or Franchise Pharmacy?
- Gender?
- Number of years practising in community Pharmacy?
- Full-time/Part-time?
- Year received pharmaceutical society of Ireland (PSI) number?
- Do you have any obvious biases to declare on this topic?

In Supplementary material ***Figure 1*** presented to you in the information leaflet, you can see the GMS co-payment has undergone various iterations since its initial introduction in 2010. As you have been practising throughout these changes, I am interested to learn about your experiences in considering these policy changes in your routine clinical practice.

Version 4

1) What are your own thoughts on the GMS co-payment attached to prescription medicines?

- Positive aspects/negative aspects?
- Do you know why it was initially brought in and its impact to date?
- Are you aware of the GMS co-payment exemptions for specific patient groups?

2) How have co-payments influenced your practice and procedures in the Pharmacy, if at all?

- Have they changed the way you and the Pharmacy staff work, if so, how?

3) How easy or difficult is it to retrieve co-payments from patients?

- What happens if a patient cannot pay? Do you supply the medicine anyway?
- Have you a procedure in place for patients who cannot pay?
- Have you encountered awkward situations when a patient cannot pay?
- Have you suffered financial loss because of patients not paying?

4) In your opinion, have co-payments presented an administrative burden to you/your practice?

- Have you noticed/recommended eligible patients to switch to the long-term illness (LTI) scheme to avoid paying the co-payment?

5) How do you think GMS patients perceive paying the co-payment attached to their prescription medicines?

- Do you think the co-payments are reasonably or unfairly priced for GMS patients?

6) Do you think co-payments have influenced patients' utilisation of medicines?

- Increase/decrease in patients picking up their medicines?
- Are there particular types of medicines affected more by the GMS co-payment changes?

7) Looking at ***Figure 1,*** would you have regarded any one of these GMS co-payment changes to be more influential or impactful than the others?

- Effect on patient picking up medication
- More difficult to retrieve the co-payment from the patient upon being increased?

8) Have you noticed any changes to the prescribing patterns of physicians since the introduction and changes in the GMS co-payment?

- Any issues/concerns arising from GPs concerning GMS co-payments?
- An increase in generic prescribing since the beginning of the co-payment?

9) What do you think the future holds for the GMS co-payment?

- Should the co-payment be increased, decreased or abolished?
- Do you think the previous GMS co-payment changes were evidence-based?
- How should Pharmacists/representative bodies be involved in this policy, if it all?

Have you anything else to say/add on this topic? Thank you for your time

General Practitioner (GP) Topic Guide

Interviewing practising Irish primary healthcare professionals about their opinions, perceptions and experience of the GMS co-payment from inception to current day

Before we start, I just want to check that you are still happy for this interview to be recorded and that you know we can stop at any time.

I would like to thank you for agreeing to participate in this interview and stress that everything said here today is completely confidential. Your name will not appear on any documents or recording discs and I personally will anonymise the transcript from this interview, and will ensure that no one else will be identifiable either.

There will not be any consequences to what you tell me and there will be no blame attributed to you or anyone else.

These interviews are part of my PhD There are no right or no wrong answers to these questions, just give as much detail as you can. It will probably last between 10-30 minutes. Does all that sound ok? Are you happy for me to record the interview?

Demographics

- Age?
- Address of GP practice? Independent or medical centre practice?
- Gender?
- Number of years practising as a GP?
- Full-time/Part-time?
- Year received Irish medical council (IMC) number?
- Do you have any obvious biases to declare on this topic?

In Supplementary material ***Figure 1*** presented to you in the information leaflet, you can see the GMS co-payment has undergone various iterations since its initial introduction in 2010. As you have been practising throughout these changes, please answer the following questions with respect to this.

Version 2

1) What are your own thoughts on the GMS prescription medicine co-payments?

- Positive aspects/negative aspects?
- Do you know why it was initially brought in and its impact to date?
- Are you aware of the GMS co-payment exemptions for specific patient groups? Which ones?

2) How have co-payments influenced your practice and procedures as a GP, if it all?

- Have they changed the way you prescribe, if so, how?
- Have they influenced the amount of prescriptions you issue, if so, how?
- What happens if you know a patient cannot pay? Do you still prescribe the medicine?
- Have you noticed/recommended eligible patients to switch to the long-term illness (LTI) scheme to avoid paying the GMS co-payment?

3) How do you think GMS patients perceive paying the co-payment attached to their prescription medicines?

- Do you think the co-payments are reasonably or unfairly priced for GMS patients?

4) In your opinion, are GMS co-payments effective at preventing patients from collecting medicines they actually do not require?

- Yes/no – Why?

5) In what way, if any, do you think co-payments have influenced patients' utilisation of medicines?

- An increase in patients asking you to prescribe/deprescribe certain medicines
- A decrease in patients asking you to prescribe/deprescribe certain medicines

6) In your opinion, are there particular types of medicines affected more by the GMS co-payment changes?

7) Looking at ***Figure 1,*** would you have regarded any one of these GMS co-payment changes to be more influential or impactful than the others?

- Effect of patient asking you to presecribe/deprescribe certain medicines
- Patient expressing concern to you on co-payment changes

8) Have you encountered any issues or concerns from patients concerning GMS co-payments that they may have experienced when collecting prescription medicines at their pharmacy?

9) Have you encountered any issues or concerns from pharmacists concerning GMS co-payments that they may have experienced when serving patients in the pharmacy?

10) What do you think the future holds for the GMS co-payment?

- Should it be increased, decreased or abolished?
- Do you think the previous GMS co-payment changes were evidence-based?
- What advice have you for policymakers on it? Should GP representative bodies be involved?

Have you anything else to say/add on this topic? Thank you for your time

Figure 1 | Timeline review of recent GMS co-payment introductions and changes 2010-2018



Appendix 4

COREQ Checklist

Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist [31]

Developed from:
Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

YOU MUST PROVIDE A RESPONSE FOR ALL ITEMS. ENTER N/A IF NOT APPLICABLE

No. Item	Guide questions/description	Reported on Page #
Domain 1: Research team and reflexivity		
Personal Characteristics		
1. Interviewer/facilitator	Which author/s conducted the interview or focus group?	GOB and BOF
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	GOB (BPharm, MPharm, PhD Student)
3. Occupation	What was their occupation at the time of the study?	PhD Student/Research Pharmacist
4. Gender	Was the researcher male or female?	Male
5. Experience and training	What experience or training did the researcher have?	Short Course in Qualitative Research Methods, Health Experience Research Group, May 2018, University of Oxford
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	No
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	Based on participant information letter provided
8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	Minor characteristics included in

		participant information letter provided
Domain 2: study design		
Theoretical framework		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Framework approach/ Framework analysis
Participant selection		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Purposive sampling followed by snowballing
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	Email, phone, face-to-face
12. Sample size	How many participants were in the study?	19
13. Non-participation	How many people refused to participate or dropped out? Reasons?	0
Setting		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	Respective interviewee's workplace
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	No
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	Healthcare professional practising before the introduction of the co-payment in 2010 to end of study date
Data collection		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	Questions were based on the topic guides used
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?	N/A
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Two methods of audio recording were used – Dictaphone and mobile phone devices

20. Field notes	Were field notes made during and/or after the interview or focus group?	Notes were added to a field diary immediately after the interview
21. Duration	What was the duration of the interviews or focus group?	7 - 30 minutes
22. Data saturation	Was data saturation discussed?	Yes (Francis method[25])
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	Optional if participants required – choice presented on the consent form
Domain 3: analysis and findings		
Data analysis		
24. Number of data coders	How many data coders coded the data?	One primary coder (GOB) where one co-author (BOF) performed data verification (inter-coder reliability)
25. Description of the coding tree	Did authors provide a description of the coding tree?	Yes
26. Derivation of themes	Were themes identified in advance or derived from the data?	Both deductive and inductive themes are presented
27. Software	What software, if applicable, was used to manage the data?	NVivo 12 Plus - QSR International
28. Participant checking	Did participants provide feedback on the findings?	No
Reporting		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	Yes
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Yes
31. Clarity of major themes	Were major themes clearly presented in the findings?	Yes
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Yes

Electronic Supplementary Material (ESM) (see appendices below)

Appendix 1

Consent Form

A qualitative analysis of the healthcare professional stakeholder involvement in pharmaceutical policy change in Ireland

I _____ declare that information about this research project has been given to me and that I understand the purpose, methods, risk and benefits of participating in this study.

I am aware that participating is voluntary and that I can withdraw my participation at any time with no negative impact on my professional status.

I give permission for my responses in the interview to be audio-recorded and that anonymity will be ensured by disguising my identity.

I understand that disguised extracts from what I say may be quoted in the thesis and any subsequent publications.

I agree that I have received a copy of this Consent Form and a copy of the Information Letter.

I hereby give my informed consent to participate in the research study.

_____ _____

Participant Signature Date

Would you like a copy of the Interview Transcript? YES ☐ NO ☐

Would you like a copy of the findings after the study is completed? YES ☐ NO ☐

Email address: _____

Appendix 2

Participant information letter

A qualitative analysis of the healthcare professional stakeholder involvement in pharmaceutical policy change in Ireland

You are being invited to take part in a research project that is being conducted at the University College X.

Before you decide whether or not you wish to participate you should read the information provided below carefully, and you are free to discuss it with your family, friends or colleagues. You should clearly understand the risks and benefits of participating in this study so that you can make a decision that is right for you. Take time to ask questions – do not feel rushed or under any obligation to make a hasty judgment.

You have the right to withdraw your participation at any time (before, during and after the study) for whatever reason without having to justify your decision and with no negative impact for you. Your data will then be excluded from the study results.

Why is this study conducted?

Co-payment policies on the General Medical Services (GMS) scheme have existed since 2010 and have gone through multiple iterations, starting at €0.50 in October 2010 and reduced to €2 in January 2018. The involvement of the Healthcare Professionals (HCPs) such as General Practitioners (GPs) and Pharmacists in such pharmaceutical policy changes on the GMS scheme has not been evaluated. As part of his PhD, X wants to gather feedback on the perceptions and challenges experienced by HCPs resulting from the GMS co-payment changes. For example, are co-payment changes creating additional administrative burden for HCPs? Have altering co-payments influenced GPs' prescribing patterns? How have pharmacists handled the implementation of this policy? What happens if patients cannot afford these prescription medicine co-payments? This study seeks to retrieve qualitative data on HCP stakeholder involvement for all existing co-payment alterations in the Irish context.

Why have you been asked to participate?

You have been asked because you are a Healthcare Professional currently working in a GP practice or a community pharmacy in the Republic of Ireland.

What will your participation involve?

Your participation will involve a 30-minute (maximum) interview about matters relating to your experiences of the effects of the altering GMS prescription co-payments on patients. X, who is a

pharmacist, will ask questions as the session progress. A small amount of extra time will be allowed for explaining the aims of the study and your questions about the study.

Will your participation be kept confidential?

Yes, all information will be treated in a confidential manner and your participation is anonymous. The interview will be audio recorded so that it can be transcribed afterwards. Your name will not be recorded on any information which is collected about you. Instead you will be provided with a unique code. The only person with access to the code will be X. The results of the study will be included in X's PhD thesis but there will be no way of identifying you from these results. The results will be seen by X's supervisors, a second marker and an external examiner, again these will be anonymous. The thesis may be read by future students. The study may be presented at scientific conferences and/or published in an academic journal.

The audio recording will be erased once the interview has been transcribed. Transcripts will be stored in a protected manner for 5 years, after which they will be destroyed in line with University College X confidential waste destruction guidelines.

What are the possible benefits of participating?

Your contribution to this study will be used to reveal how HCPs have previously dealt and are currently dealing with these GMS co-payment policy changes since its inception in 2010. X hopes to publish such findings that may influence future healthcare policymaking decisions to the benefit of the HCP and patient.

Are there any risks of participation?

We do not think that participation in this study will have any negative effect on you.

Further information

Approval has been granted to do this study by the Clinical Research Ethics Committee of the Cork Teaching Hospitals.

If you would like a copy of the results, please let X know.

If you need any further information, do not hesitate to contact the primary researcher, X, by telephone X or by email to X or email the supervisor of the project, Professor Y by Y (Telephone:Y).

Thank you for taking the time to read this information sheet. If you agree to take part in the study, please sign the consent form overleaf.

Kind Regards,
X
Research Pharmacist, PhD student

Appendix 3

Pharmacist Topic Guide

Interviewing practising Irish primary healthcare professionals about their opinions, perceptions, challenges and experience of the GMS co-payment from inception to current day.

Before we start, I just want to check that you are still happy for this interview to be recorded and that you know we can stop at any time.

I would like to thank you for agreeing to participate in this interview and stress that everything said here today is completely confidential. Your name will not appear on any documents or recording discs and I personally will anonymise the transcript from this interview, and will ensure that no one else will be identifiable either.

These interviews are part of a study I am conducting for my PhD. The aim of the study is to gain an understanding of the perceptions and challenges experienced by healthcare professionals from the various GMS co-payment iterations since 2010.

There are no right or no wrong answers to these questions.
The interview will probably last between 10-30 minutes.
Does all that sound ok? Are you happy for me to record the interview?

Demographics

- Age?
- Address of Pharmacy? Independent or Franchise Pharmacy?
- Gender?
- Number of years practising in community Pharmacy?
- Full-time/Part-time?
- Year received pharmaceutical society of Ireland (PSI) number?
- Do you have any obvious biases to declare on this topic?

In Supplementary material ***Figure 1*** presented to you in the information leaflet, you can see the GMS co-payment has undergone various iterations since its initial introduction in 2010. As you have been practising throughout these changes, I am interested to learn about your experiences in considering these policy changes in your routine clinical practice.

Version 4

1) What are your own thoughts on the GMS co-payment attached to prescription medicines?

- Positive aspects/negative aspects?
- Do you know why it was initially brought in and its impact to date?
- Are you aware of the GMS co-payment exemptions for specific patient groups?

2) How have co-payments influenced your practice and procedures in the Pharmacy, if at all?

- Have they changed the way you and the Pharmacy staff work, if so, how?

3) How easy or difficult is it to retrieve co-payments from patients?

- What happens if a patient cannot pay? Do you supply the medicine anyway?
- Have you a procedure in place for patients who cannot pay?
- Have you encountered awkward situations when a patient cannot pay?
- Have you suffered financial loss because of patients not paying?

4) In your opinion, have co-payments presented an administrative burden to you/your practice?

- Have you noticed/recommended eligible patients to switch to the long-term illness (LTI) scheme to avoid paying the co-payment?

5) How do you think GMS patients perceive paying the co-payment attached to their prescription medicines?

- Do you think the co-payments are reasonably or unfairly priced for GMS patients?

6) Do you think co-payments have influenced patients' utilisation of medicines?

- Increase/decrease in patients picking up their medicines?
- Are there particular types of medicines affected more by the GMS co-payment changes?

7) Looking at ***Figure 1,*** would you have regarded any one of these GMS co-payment changes to be more influential or impactful than the others?

- Effect on patient picking up medication
- More difficult to retrieve the co-payment from the patient upon being increased?

8) Have you noticed any changes to the prescribing patterns of physicians since the introduction and changes in the GMS co-payment?

- Any issues/concerns arising from GPs concerning GMS co-payments?
- An increase in generic prescribing since the beginning of the co-payment?

9) What do you think the future holds for the GMS co-payment?

- Should the co-payment be increased, decreased or abolished?
- Do you think the previous GMS co-payment changes were evidence-based?
- How should Pharmacists/representative bodies be involved in this policy, if it all?

Have you anything else to say/add on this topic? Thank you for your time

General Practitioner (GP) Topic Guide

Interviewing practising Irish primary healthcare professionals about their opinions, perceptions and experience of the GMS co-payment from inception to current day

Before we start, I just want to check that you are still happy for this interview to be recorded and that you know we can stop at any time.

I would like to thank you for agreeing to participate in this interview and stress that everything said here today is completely confidential. Your name will not appear on any documents or recording discs and I personally will anonymise the transcript from this interview, and will ensure that no one else will be identifiable either.

There will not be any consequences to what you tell me and there will be no blame attributed to you or anyone else.

These interviews are part of my PhD There are no right or no wrong answers to these questions, just give as much detail as you can. It will probably last between 10-30 minutes.
Does all that sound ok? Are you happy for me to record the interview?

Demographics

- Age?
- Address of GP practice? Independent or medical centre practice?
- Gender?
- Number of years practising as a GP?
- Full-time/Part-time?
- Year received Irish medical council (IMC) number?
- Do you have any obvious biases to declare on this topic?

In Supplementary material ***Figure 1*** presented to you in the information leaflet, you can see the GMS co-payment has undergone various iterations since its initial introduction in 2010. As you have been practising throughout these changes, please answer the following questions with respect to this.

Version 2

1) What are your own thoughts on the GMS prescription medicine co-payments?

- Positive aspects/negative aspects?
- Do you know why it was initially brought in and its impact to date?
- Are you aware of the GMS co-payment exemptions for specific patient groups? Which ones?

2) How have co-payments influenced your practice and procedures as a GP, if it all?

- Have they changed the way you prescribe, if so, how?
- Have they influenced the amount of prescriptions you issue, if so, how?
- What happens if you know a patient cannot pay? Do you still prescribe the medicine?
- Have you noticed/recommended eligible patients to switch to the long-term illness (LTI) scheme to avoid paying the GMS co-payment?

3) How do you think GMS patients perceive paying the co-payment attached to their prescription medicines?

- Do you think the co-payments are reasonably or unfairly priced for GMS patients?

4) In your opinion, are GMS co-payments effective at preventing patients from collecting medicines they actually do not require?

- Yes/no – Why?

5) In what way, if any, do you think co-payments have influenced patients' utilisation of medicines?

- An increase in patients asking you to prescribe/deprescribe certain medicines
- A decrease in patients asking you to prescribe/deprescribe certain medicines

6) In your opinion, are there particular types of medicines affected more by the GMS co-payment changes?

7) Looking at ***Figure 1,*** would you have regarded any one of these GMS co-payment changes to be more influential or impactful than the others?

- Effect of patient asking you to presecribe/deprescribe certain medicines
- Patient expressing concern to you on co-payment changes

8) Have you encountered any issues or concerns from patients concerning GMS co-payments that they may have experienced when collecting prescription medicines at their pharmacy?

9) Have you encountered any issues or concerns from pharmacists concerning GMS co-payments that they may have experienced when serving patients in the pharmacy?

10) What do you think the future holds for the GMS co-payment?

- Should it be increased, decreased or abolished?
- Do you think the previous GMS co-payment changes were evidence-based?
- What advice have you for policymakers on it? Should GP representative bodies be involved?

Have you anything else to say/add on this topic? Thank you for your time

Figure 1 | Timeline review of recent GMS co-payment introductions and changes 2010-2018



Appendix 4

COREQ Checklist

Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist [1]

Developed from:
Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

YOU MUST PROVIDE A RESPONSE FOR ALL ITEMS. ENTER N/A IF NOT APPLICABLE

No. Item	Guide questions/description	Reported on Page #
Domain 1: Research team and reflexivity		
Personal Characteristics		
1. Interviewer/facilitator	Which author/s conducted the interview or focus group?	GOB and BOF
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	GOB (BPharm, MPharm, PhD Student)
3. Occupation	What was their occupation at the time of the study?	PhD Student/Research Pharmacist
4. Gender	Was the researcher male or female?	Male
5. Experience and training	What experience or training did the researcher have?	Short Course in Qualitative Research Methods, Health Experience Research Group, May 2018, University of Oxford
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	No
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	Based on participant information letter provided
8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	Minor characteristics included in

		participant information letter provided
Domain 2: study design		
Theoretical framework		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Framework approach/ Framework analysis
Participant selection		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Purposive sampling followed by snowballing
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	Email, phone, face-to-face
12. Sample size	How many participants were in the study?	19
13. Non-participation	How many people refused to participate or dropped out? Reasons?	0
Setting		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	Respective interviewee's workplace
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	No
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	Healthcare professional practising before the introduction of the co-payment in 2010 to end of study date
Data collection		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	Questions were based on the topic guides used
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?	N/A
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Two methods of audio recording were used – Dictaphone and mobile phone devices

20. Field notes	Were field notes made during and/or after the interview or focus group?	Notes were added to a field diary immediately after the interview
21. Duration	What was the duration of the interviews or focus group?	7 - 30 minutes
22. Data saturation	Was data saturation discussed?	Yes (Francis method[2])
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	Optional if participants required – choice presented on the consent form
Domain 3: analysis and findings		
Data analysis		
24. Number of data coders	How many data coders coded the data?	One primary coder (GOB) where one co-author (BOF) performed data verification (inter-coder reliability)
25. Description of the coding tree	Did authors provide a description of the coding tree?	Yes
26. Derivation of themes	Were themes identified in advance or derived from the data?	Both deductive and inductive themes are presented
27. Software	What software, if applicable, was used to manage the data?	NVivo 12 Plus - QSR International
28. Participant checking	Did participants provide feedback on the findings?	No
Reporting		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	Yes
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Yes
31. Clarity of major themes	Were major themes clearly presented in the findings?	Yes
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Yes

1 Tong A, Sainsbury P, Craig J (2007) Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. Int J Qual Health Care 19 (6): 349-357 DOI 10.1093/intqhc/mzm042

2 Francis JJ, Johnston M, Robertson C, Glidewell L, Entwistle V, Eccles MP, Grimshaw JM (2010) What is an adequate sample size? Operationalising data saturation for theory-based interview studies. Psychol Health 25 DOI 10.1080/08870440903194015

Key Points:

Co-payments can result in cost containment, moral hazard prevention and revenue generation.

Community pharmacists have reported reductions in workplace productivity and direct financial loss.

General Practitioners want a co-payment policy attached to publically insured patient-physician consultations.