

Evaluation of General Practice Pharmacists' Role by Key Stakeholders in England & Australia

Introduction

General Practice Pharmacists (GPPs) are progressively becoming a part of multidisciplinary clinical teams in National Health Services (NHS) in England and Medicare in Australia^{1,2}. General practices in both England and Australia have been under immense pressure due to factors including an aging population, increasing patient numbers with multiple morbidities requiring complex medical care, transferring responsibility from secondary to primary care, and increasing expectations from the public^{3,4}. This has resulted in high workload for both GPs and nurses. This does not match with the proportional growth in either government funding or GPs and nurses workforce⁵, leaving a massive imbalance between resources and demands for an efficient general practice framework.

There is a crisis in the pharmacist's workforce as well however it is opposite to what GPs are facing, with the Centre of workforce intelligence in England estimating an expected excess of more than 11,000-19,000 pharmacists by 2040⁶. Traditionally pharmacist has been considered as "Dispensing Pharmacist" supplying and compounding medications and delivering locally commissioned services, a setting where clinical expertise of pharmacist has never been utilized up to its full potential, and it has been hard for pharmacists to get recognition for their clinical roles by other healthcare professionals and patients⁷. Figures given by the centre of workforce intelligence⁶ opened the discussion on how to use the pharmacist workforce efficiently in NHS future framework. NHS alliance in a report, published in 2015, called "Making time in general practice". In this report the data was presented to recruit clinical pharmacists into general practice as GPPs to bridge the gap between workforce and demands in primary healthcare, describing pharmacists as rescuing general practice⁸. In 2015, the NHS England commissioned a pilot for GPP, providing £31 million to fund pharmacists' integration into general practices⁹. This funding was later increased to £122 million in 2017 to support an extra 1500 GPPs by 2020¹⁰.

In Australia, a lot of work has been done at the organizational level to support GPP integration in the past 10 years^{11,12,13}. This working collaboration between GPs and pharmacists became stronger with the introduction of a direct referral by GPs for Home Medication Reviews Service (HMRS) in Australia¹¹. In 2015, the Australian Medical Association (AMA) after consultation with the "Pharmaceutical Society of Australia" (PSA) released a proposal to make clinical pharmacists a vital component of the future general practice by establishing a supportive funding program called "Pharmacist in General Practice Incentive Programme" (PGIPP)¹². Despite receiving support from professional societies^{13,14}, a recent report published by the "Royal Australian College of General Practitioners" (RACGP) observed that only 13% of the respondents GPs stated that their practices employ GPPs to help with the workload, while the figure for nurses was 92%¹⁵. This report reflects that in Australia, the GPPs role is yet to be established and the need to evaluate the impact of GPPs in an Australian context.

In this context, this study aims to evaluate key stakeholders' perceptions about GPP's role in England and Australia. It is vital to compare as England and Australia have the first and second ranking according to a review of healthcare systems conducted by Commonwealth funds¹⁶ and so far, no comparative study has been conducted between two countries on the role of GPP.

The research has been conducted on the role of a GPP, however, studies are scarce on gap analysis and comparison among different countries including England and Australia. Both countries have a well-established healthcare system, however, they are at a different level of integrating clinical pharmacists into general practices. This study explores the perceptions of key stakeholders in both countries and provides policy recommendations and a way forward.

Figure 1:

Figure 1 highlights the integration of GPP into a multidisciplinary clinical team in a general practice framework.

Methods

Design & Participants

In this general inductive study, semi-structured interviews were conducted with the key stakeholders in England & Australia. The GPP role in England and Australia is still new. There is ongoing research to analyze its impact on respective healthcare systems. As the main aim of this study is to explore views and perceptions of key stakeholders about GPPs' role, hence it was decided to undertake an interviews technique that can unearth rich contextual data about GPP's roles by giving an ideal opportunity to engage in a dialogue with participants in a comfortable environment, guided by flexible interview protocols and complemented by follow up questions, analysis, and comments. It allows participants to share their views about GPPs' role in their words¹⁷.

The conceptually driven approach of purposive sampling was implemented to recruit main participants, based on their respective expertise and experiences with a deep understanding of the GPP role¹⁸. It was decided to recruit a total of 10 participants for this study, 5 each from England and Australia, though this figure was changed later due to participant's responses and availability. These groups were GPs, Nurses, GPPs, organizational lead, and academics with experience of working along and conducting research on GPPs. As it was a comparative study between England and Australia, so it was made sure that participants are working in the same set of environments in both countries. This was followed by the preparation of a semi-structured interview guide to perform interviews.

Development of Semi-Structured Interview Guide

To ensure the methodological approach, authenticity, and rigorous data collection five-step procedure was adopted during the development of a semi-structured interview guide¹⁹. The study was approved by the University of Huddersfield Ethics Committee (Reference number: SAS-SREIC 14.5.19-3). The principal researcher has experience working as a GPP since 2016. The pilot interviews were conducted in England and Australia. As a result of those interviews, the interview guide was further reviewed and amended following the completion of pilot interviews. Once the interview guide was finalized, proposed participants were contacted via email and Twitter. The principal researcher sent an email to all participants with a participant information sheet, consent letter, and an interview guide. Participants were informed that they can withdraw from the project anytime whenever they like. The 3 different methods of data

collection were used including face-to-face, telephone and online video interviews. In England, face-to-face and telephone interviews were conducted while in Australia, telephone, or video interviews on skype were undertaken.

The apparent assumption that face-to-face interviews are superior to telephone or on skype, may stem from a legitimate concern that lack of visual cues could lead to data loss or distortion. If these losses occurred, data analysis and interpretation might be affected, harming the quality of research findings. Yet, there is little evidence that data loss or distortion occurs, or that interpretation or quality of findings is compromised when inter-view data are collected by telephone. In fact, telephones may allow respondents to disclose sensitive information more freely, and telephone the conversation has been reported to contain several features that render it particularly suitable for research interviews²⁰. Similarly, video interviews should also be considered as viable and cost-effective option as it provides real-time communication with both audio and video like a traditional interview²¹.

There were difficulties in recruiting participants from Australia due to time differences and a lack of participants with the required experience in dealing with the issues related to GPPs. The principal researcher also visited Australia during November 2019 and contacted few healthcare professionals regarding the study. Finally, the principal researcher was able to recruit seven participants from Australia. Out of these, 3 participants in Australia (GP, Nurse, and one GPP) agreed to provide a written response to the interview guide. Ideally, an interview would have been a preferred choice, but due to time restrictions, we agreed to proceed with a written response.

In England, 21 individuals were contacted, out of which seven agreed to participate in the study. The table 1 and 2 provide a detailed breakdown of participants from both countries. The first pilot interview was conducted with the clinical pharmacist in Australia on 02/06/2019 while the final interview was conducted with the organizational lead in Australia on 29/10/2019. The estimated time for each interview was 30-45 minutes.

Data Analysis

All interviews were transcribed verbatim, and the data analysis was performed by utilizing full transcripts, which were read repeatedly for data familiarization. Generated codes and associated data led to potential themes by using a 6-phase approach²² of inductive thematic analysis, as it is less time-consuming and has a flexible approach with no pre-determined theory or framework used to analyse data²³. The inductive thematic analysis was performed by using Nvivo12 software. Compiled results were reviewed using CASP tool^{24,25} to ensure that generated themes and sub-themes were clearly defined. The initial review was performed by the principal author of this study, another review was performed by the main supervisor.

Figure 2:

Figure 2 reflects the key stakeholders and generated themes from the analysed data.

Results

In total 42 participants from England and Australia were contacted out of which 14 showed their interest to participate in study.

Table 1 & 2

Major themes that emerged during this study are presented below.

General Practice Pharmacist Bridging Gaps in Multidisciplinary Clinical Team

All participants from England and Australia acknowledged the fact that there were gaps in the healthcare system, endorsing the integration of GPPs into a multi-disciplinary clinical team. Writing a prescription was referred to as the most important intervention in general practice where GPPs' clinical expertise could be vital in providing safe and effective use of medicines.

Though some reservations have been raised, in general, participants agreed that the expertise of the pharmacist regarding medicines can be used to facilitate the workflow of general practice and support for all clinicians. There are differences in England and Australia in terms of available opportunities. England is running the NHS pilot scheme under which pharmacist integration into medical practices is being facilitated financially. Australia seems to be in very much initial phase, where Home Medication Review Service (HMRS) is being considered as the leading team-based service which involves pharmacists.

“I think putting pharmacists into GP practice has a lot of benefits because then patients experience holistic care, especially if you got pharmacists, nurse and GPs”. (A2)

“within that episodic care that the GPs provides, there's a gap in more overarching expertise into decisions about medications and monitoring that would be- could be fulfilled by having a resource of a clinical pharmacist in practice”. (OL2)

“I think there's always a gap in healthcare system to be honest, but with the clinical pharmacists, I think every GP practice needs to have them because they do cover a broad range of topics in the practice itself, and they're more of a support for every clinician, any GP practices they don't have pharmacist, they're kind losing out.” (N2)

Expectations & Reservations by Key Stakeholders

The main reservations highlighted in participants' views were lack of training, job description, medico-legal issues, role overlapping with nurses and patients' acceptance as an alternative to GP or nurses. The views of participants from both England and Australia reflected a non-structured initial phase of clinical pharmacist's integration into general practice. The role was not very organized, and the major barriers were a mismatch of expectations, lack of working collaboration, and the availability of funding.

“I didn't have any great massive expectations. It was more like, see how the things work out in the end. Initially it was very unstructured,

in retrospect, unfortunate, may be and I wish we'd been able to structure it a bit better" (GP1).

Views of England's participants reflect the initial phase of GPP as a professional who could join the organization in a management role performing optimization and audits, but with time it was realized that in addition to management, the pharmacist could be a beneficial addition to the clinical multi-disciplinary team as well. While views from Australian participants reflect the aspect of variance in expectations mainly keeping GPs as the focal point but emphasized that GPP is a new role and needs time to allow the pharmacist to develop a professional relationship within the organization specially with GPs and to work around their expectations. In participants' views, some GPs are proactive to create this trust, and some are slow to build this bond. This can lead to miscommunication and a mismatch between expectations and performances.

"Yeah. So, I think they were used as sort of a bit of a lower level at work forms. Whereas actually what we're realising now is that they...they have all of those skills that actually probably placed it at more of an advanced level". (OL1).

The professional expertise and experience of GPP were also appreciated as a contributing factor in developing strong working collaboration. England's GPP reflected an element of mismatch of expectations while Australian GPP said that her expectations were fairly matched with no initial reservations at both ends, mainly because she knew what surgery was looking for.

"Some GPs had over expectations with the impression that as pharmacist we should be able to do anything or everything, but some GPs were very cautious" (GPP1)

No, the expectations were fairly well matched. They wanted someone who could champion the prescribing and that was the area of my PhD. So, it was fairly well matched, and the principal GP and I had fairly similar interests and skills, so we were able to work at programmes together which were then discussed with the broader team. (GPP2)

General Practice Pharmacists' Skillset, Job Description & Training

Our results show that there is no specific job description set by any regulatory organization for GPPs. Every organization has a job description based on its population and practice demands. Medicines management skill is the one that all stakeholders viewed as the major strength of a GPP role. It is a broad-spectrum role as clinical pharmacist that includes dealing with medication queries from patients, interaction with community pharmacy, advice on polypharmacy, managing repeat prescriptions and reconciling patients' medications in accordance with hospital discharge notes and relative clinical letters²⁶.

“Well, I think that's probably one of the biggest advantages of the role which is this safer medication and that's the area of the pharmacist”. (N1)

“I think that's essential, and I don't think it's just the clinical knowledge, I think it's also being able to see what patients are doing and support patients to manage their medications”. (GPP2)

Organizational leads from both Australia and England believed that, with the skills and expertise pharmacists have, the patient-facing role would eventually be an integral part of the GPP job description. The nurses believed, GPPs were ideal to conduct medication reviews however they did show their concerns on GPP's lack of clinical skills and experience for patient facing clinics. Hence, nurses suggested that GPPs should shadow GPs and experienced nurses, especially in the initial phase.

“I think medication reviews and all the other reviews, home visits where it's a few minutes; they're really good at that right at the beginning. But face to face it needed time to build up. So, I think what they will benefit from like other pharmacists is maybe to sit in with the nurse a little bit” (N2).

Participants also emphasized the need for making strong rapport with patients along with consultation skills and documentation to ensure competency in this patient-facing role.

Yeah, it's not just the clinical knowledge, though, it's also that ability to build that rapport and get that information and how do you synthesise that information. (GPP2).

Prescribing annotation which enables a GPP to prescribe medications as a Non-Medical Prescriber (NMP) in England^{27,28}, is the main difference in job description of GPPs in England and Australia.

While GPPs have been working as NMPs In England for the past few years, only GPs can prescribe in Australia. Although it has been discussed by keeping NHS England as a model, it is evident from participants' views that it is not something that will happen in near future, as GPs are not very keen to agree on awarding prescribing annotation to pharmacists in Australia.

“No, they just think it's a GP role, they wouldn't support it”. (GPP2)

GPs in England also showed reservations on prescribing role of GPPs, recommending close monitoring, supervision, and having strict protocols to ensure safe prescribing practices.

“it’s ironic isn’t it because as doctors we don’t receive much training, I’m prescribing yet we’re...we’re, you know, giving free reign to a prescriber when a pharmacist will know a lot more about premedical terms you know how stuff works. So, I think it will be gradual under supervision and then expand their role”. (GP2)

Pharmacists from both countries emphasised the importance of strict protocols for prescribing to avoid scenarios related to any medico-legal issues and to avoid the cases, where patients can get prescriptions without being supervised by the doctors.

“My reservations would include patients wanting to bypass the GP and ‘just get a script’. There would need to be strict protocols in place.” (GPP3)

“I think as long as pharmacists are prescribing within their competence and there’s no pressure on them to prescribe outside of their competence is fine” (GPP1).

All stakeholders did back up the plans to improve the training framework that needs to be implemented by healthcare organizations, professional bodies, and universities. England’s participants endorsed the idea of improving clinical skills of GPPs by developing relevant training programmes and modules by working closely with universities and 'also by integrating GPP role training at pre-registration level. Australian participants had similar views, and, in their opinion, only highly skilled professionals should join this role with well-developed clinical, patient-facing, and inter-professional skills.

“I do think it needs to be a highly skilled pharmacists going into the role. I don't think it's an entry-level position”. (GPP2)

Working Collaboration

The participants from both England & Australia reflected a strong working collaboration, which has improved the scope of practice as clinicians. This collaboration would be stronger with having an in-house GPP, employed and funded directly by the surgery in comparison with a GPP working in practices on behalf of specific healthcare organizations.

“GP acceptance, trust and understanding of the capabilities of the pharmacist in GP role plays a big part in how this collaboration works. (GPP3)

“My experience as one of the practice principals and directly involved in the GP pharmacist role has been overwhelmingly positive”. (GP3)

All nurse participants gave positive views about working with GPPs as part of the multi-disciplinary team. They feel it has improved their scope of practice as they have an additional source of reference in the form of pharmacist whom they can look forward to as expertise in medicines.

“As nurses, we don’t deal a lot with medications but as we grow in our career and become prescribers, I feel that we need clinical pharmacists more than even doctors, to be honest” (N2)

Participants from both countries acknowledged the risk of role overlapping between pharmacists and nurses. GPPs highlighted the importance of expertise in medicine-related issues as their strong points to show the value and support they can provide to nurses.

So yeah, there’s definitely an overlapping. I think...I think it’s always when it comes to medications side I think when it’s polypharmacy, when there’s comorbidities, there’s, you know, those kinds of areas I think is where it really differentiates and even management of medication side as well is our strong point. (GPP1)

“I am very specific that I don't want to do any roles that are already being filled by the practice nurse. So, we've got that differentiation, that's not been an issue because I'm very aware of it” (GPP2)

Key Performance Indicators (KPIs)

KPIs were found to be linked with the participants’ expectations and perceptions and were mainly evaluated against GPP’s professional development and performance.

The England’s’ participants believe it is difficult to pinpoint any specific KPI and the main ones include the time and money related to the cost-effectiveness, quality of pharmacist’s work i.e., the level of professional skills shown by the GPPs, data for clinical audits and patients’ satisfaction surveys.

I suppose the indicators are a bit difficult to measure one...because a lot of it is about patient satisfaction, about whether the right skill mix has been used for the right consultation. (OL1)

“I think one of the key ones would be timing, medication reviews. Safety so safety auctioning alerts and things that you get. Ensure we’re on top of any medication compliance orders” (GP2)

In Australia, the main KPIs suggested by participants have been the numbers and compliance of home medication review service (HMRS). Organizational Lead also pointed out quantitative aspects like patient encounters with the pharmacist, clinical meetings, presentations done by the pharmacist and overall satisfaction gradient given as feedback from GPs, patients, and other team members.

“The key performance indicators to analyse GP pharmacist role should include patient outcomes, clarity of medications, GP-pharmacist care plans, healthy at home- keeping patients at home and minimising risks for patients”. (N3)

Patient Feedback

Although this study did not involve a direct interaction with patients, but all participants did provide their views based on the feedback they had received from patients about GPPs. This study has shown some initial concerns by patients as they were not used to see the pharmacists in the general practice. Participant views reflect positive feedback as patients have started to realise the beneficial impact of GPPs. The participants mentioned the importance to understand individual patients’ needs and they did view GPPs in the ideal position as they have more time to contact with patients in comparison to only 10-15 minutes appointment with the GPs.

“Patients were not happy because they wanted to see a GP. But then slowly, slowly because they’ve started to see what I’ve been able to do. In the beginning I used to get a lot, oh, I wanted to see a GP, but now because a lot of them know me, they’re okay” (GPP1)

“Most of the feedback from the patients is via the GPs or via patients contacting me again and it's been overwhelmingly positive”. (GPP2)

“Listen to patient stories and develop a plan with all their needs. I think pharmacist with more consultation time may be able to do that, but again it depends how well is their working relationship with the patients” (A1)

Government Funding for General Practice Pharmacists’ Role

The financial support for this role was one of the main challenges mentioned by the participants. All participants strongly supported the idea of improved funding to broaden the roles, GPPs are performing. GPs in England have stated that they would continue with the GPP role once the funding is no more available from the government. However, it will need a review

on the roles to make sure that task delegation is appropriate with all healthcare professionals fitting in nicely in the general practice framework and there is no overlapping in the roles.

“So yeah, we’d continue with it yeah, because it’s embedded, it’s part of our team” (GP2)

England’s participants raised interesting point of a possible grand model of care and funding that could be changed in future depending on how the government decides to delegate services to other sectors in primary care especially community pharmacy and the results of the national evaluation.

“NHS has not been able to recruit the number of GPs, the target number of GPs that they wanted to recruit by 2020, so there is the potential that more money will come to GP practises to recruit pharmacists. But again, whether they're able to find the right pharmacists with the right skill set who can deliver the patient care and achieve patient outcomes; that may vary” (A1)

On the other hand, the Australian organizational lead showed concerns about the sustainability of the GPPs’ role if healthcare organizations stop funding for GPPs. The Australian participants emphasized the need for a change in funding structure so that pharmacists could claim for the services they provide like the “Medicare Benefits Scheme” for doctors. Australian healthcare financial structure, as mentioned by GPP2, is based on rewarding GPs for the offered services, instead of other healthcare professionals. It results in role limitation or willingness of job delegation. Home Medication Review Service (HMRS) model is an example where general practices are using the funding for HMRS to employ a pharmacist in practice. She also mentioned the issues raised by the Pharmacy Guild of Australia as a conflict of interest, as they do not support the idea of GPPs performing HMRS.

“My only reservation for this role and future is how it will be funded beyond its current pilot programme” (GP3)

The main hurdle is really to sort of try to get some sort of funding mechanism because we really need to make sure there is dedicated funding for pharmacists to provide that service. (A2)

“I don't think it's going to change substantially in the next couple of years, but where I'd like to see it is if there was a funding stream pharmacists could access the same sort of funding that doctors do, which is called our MBS, our Medicare Benefits Scheme, so that we could actually bill for the services that we provide. (GPP2)

The Future Role and Research

All participants believed that this role has greatly evolved and with the broad skillset GPPs have, they would become an integral part of the multi-disciplinary team in future. In England prescribing annotation gives an extra dimension to this role. In Australia, GPP role is evolving but at slower pace. New roles are getting integrated into the job description, however; available funding is the main barrier.

I feel we are still in the early stages of seeing how the role can evolve and an important part of this is improving the understanding about what services the pharmacist can provide. (N3)

Participants also emphasized the need to develop and recruit highly skilled pharmacists for this role. England's participants raised an interesting point of a possible grand model of care and funding, depending on how the government decides to delegate services to other sectors in primary care especially community pharmacy.

The participants from both England and Australia endorsed the need for future qualitative and quantitative research. This was needed at a national scale to evaluate the scope of the GPP role, implementation of services, as well as to design future training.

“So, there is a need. Whether pharmacists can fulfil the need or not, that's the question which needs to be answered. And that's why I believe that the national evaluation will be critical, will be very, very, very critical in determining the future of GP pharmacist workforce” (A1)

Australian participants stated that there is a need to conduct further research on barriers and facilitators. The study needs to focus on GPP's role specification, inter-professional working collaboration, and evaluation of GPP's role in patient care and general practice framework.

Discussion

This study shows the gaps as well as differences in England and Australia about expectations and perceptions of GPPs' role. Up to this date, no comparative study has been undertaken to compare the dynamics of GPP role in England with the one in Australia. This study would provide policy insight into this and will provide future recommendations. Although, the study has some limitations, which, however the points gathered are vital to provide future discussion points.

All participants in our study, while acknowledging widening gaps in the general practice framework²⁹, endorsed the idea of GPPs integration into a multidisciplinary clinical team, calling it a no-brainer. It is apparent that opportunity is present for GPPs but there are few barriers. Main ones include working collaboration, organizational support, GPPs' skillset, government funding and patients' acceptance. It is vital for pharmacists as a healthcare professional to bring a change in their culture. Globally, there is a change in trend of how the primary care services have been designed to counter the workforce crisis of GP. There are ever increasing opportunities for pharmacists to make their mark in healthcare sector by presenting

themselves as the missing link which can bind the workforce together. But for this, pharmacists need to come out of their comfort zone of dispensing culture and equip themselves with required clinical knowledge and consultation skills to leave a positive mark and earn the confidence of the GPs.

Working Relationship getting stronger

This study reflects that the success of GPPs' role depends on a strong working relationship with both clinical and non-clinical staff of the organization. The relationship between GPs and pharmacists in primary healthcare has been traditionally strained due to hierarchy and jurisdictional tension³⁰, but our study shows that GPP role has brought a new dimension to this relationship by developing a robust, trustworthy, and respectful relationship as part of a multidisciplinary team.

Similarly, not much work has been published on the impact of GPP on current nurses' role in general practice. This study has addressed the concerns raised by nurses that GPPs were stepping on their shoes and taking on the roles that already been performed by them³¹. Our findings reflect the positive impact GPP-Nurse professional relationship can bring by improving each other's scope of practice³². The nurses can always help GPPs in learning clinical skills while GPPs can be a source of reference for all medication-related queries as medicine expert. In Australia, despite the support from local healthcare organizations³³, our study reflects the struggle of GPPs to strengthen the working relationship due to lack of initial support and guidance by organizations. It highlights the importance of required support in the form of robust working collaboration and consultation work that needs to be done when a GPP joins an organization³⁴.

Professional expertise and continuous professional development

The GPPs professional expertise is the focal point while discussing the job specifications. Our study reflects a major change in expectations from GPP role. The results emphasized that no two practices can be the same so the role of GPPs should be flexible to meet the needs and expectations of that specific practice and in accordance with the demands of the local community. Not much work has been conducted on aspects like challenges being faced by GPPs at the initial phase of this role. An important message that emerged from our study is that the GPPs should not be pressurized to perform duties out of their scope of practice. Ideally, it should neither be crossing the line that could create medico-legal issues nor to fear taking actions within their scope of practice due to limiting factors like role overlapping or indemnity insurance. For GPPs to be successful, they need to be visible, communicate well, be flexible and be innovative³⁵. Medicine management is the main strength of GPP role as medicine expert³⁶, although our findings show that organizations are looking at increased patient facing role from GPPs. This also highlights the importance of GPPs to equip themselves with essential clinical skills and the need for mentorship by GPs or nurses especially in the early stages³⁷. This study also shows a shift in GPP role i.e., from sole medicine management to patient-facing role as an advanced practitioner, equipped with advanced clinical skills. It is vital that GPPs should perform well within their expertise by avoiding the takeover approach and any

possibility to expand their roles should be done together with a mutual understanding with the GPs and nurses.

Prescribing annotation:

Prescribing annotation is the main difference in GPP role between England & Australia. The prescribing annotation for GPP is also being highly valued by patients and organizations^{38,39}, though both countries need to review their policy on prescribing annotation. GPPs have the pathway to work as Non-Medical Prescribers (NMPs) in England within their competency^{28,40}. Though in England, most GPPs are acting as NMP, however taking on prescribing roles in surgery is a challenging task and a lack of protocol creates unclarity about the boundaries.

In comparison at present, only GPs can prescribe in Australia and are not willing to award this role to GPP⁴¹. The organizations are looking at prescribing model of NHS England for independent and supplementary prescribing and a similar model could be implemented in Australia. Australia should take a proactive approach towards awarding prescribing qualification to pharmacists, as with defined protocols and closed supervision. However, it will take effort and consultation to develop the trust among GPs and governing bodies to commence this exercise

Comparing training pathways for GPP:

There have been questions raised about GPPs' professional competency to take this role⁴². Our study suggests specific training modules, both clinical and non-clinical, to be designed and implemented. Universities can re-structure the training by adding clinical perspectives into the modules to improve pharmacists' clinical skills at the undergraduate pharmacy level^{43,44}. In addition, integration of pre-registration training for pharmacists in general practice can enhance GPP's communication and clinical skills. Australian participants believe that HMRS accreditation could be taken as initial competency threshold for GPP roles as it equips them with essential clinical and communication skills⁴⁵. England lacks a training structure to prepare clinical pharmacists before they take on the GPP role. England can take a lead from Australia who requires pharmacists to complete highly skilled clinical course to get accreditation for HMRS. Similar design for such training or accreditation course in England would be helpful to improve clinical pharmacist skills and to perform at a high level, especially with improvement in clinical knowledge and patient facing roles

Key performance Indicators (KPIs)

Present literature reflects the difficulty to list down a generic model of KPIs for GPPs roles, due to the variance in organizational and population demands^{46,47}. Number of GP's hours saved by a GPP has been highlighted as the main marker for GPP performance⁴⁸. Our study suggests that this approach would underestimate the overall impact of GPP, and it is vital to document both clinical and non-clinical outcomes to measure the value provided by the GPPs. Both qualitative and quantitative KPIs have been enlisted by participants to highlight the overall impact of GPP, main one includes reduced GP workload gauged by their free hours, number and quality of medication reviews, reduced medication wastage, clinical audits, and patient

satisfaction surveys. Also, it is suggested by our participants to perform studies on KPIs at national level to have a much clear picture on impact of GPP role as studies conducting at smaller scale or individual organizations can be misleading.

Patients' acceptance

The patients' acceptance was one of the main barriers especially at initial stage, as traditionally patients know pharmacists in dispensing role^{49,49}. The findings in this study reflect an improved GPP-patient relationship as GPPs can develop a strong bond with patients by addressing patient's individual needs. It is vital to understand that patients would only endorse GPP as an alternative to GPs or nurses if pharmacists have an excellent level of communications and clinical skills³⁷.

Will organizations recruit "General Practice Pharmacists" without government funding?

Participants have mentioned government funding as the main barrier, especially in Australia. The Flexible funding model⁵⁰ and "Pharmacists in General Practice Incentive Programme" (PGPIP) funding model³⁴ have been suggested to broaden the GPP roles in Australia⁵¹. Our findings show that surgeries are using limited HMRS funding for GPPs. It has restricted the scope of GPP role and there are serious reservations if surgeries would recruit GPPs without funding. It also creates friction within organizations who might prefer this role to be performed by accredited community pharmacists, as highlighted by Australian participants. This study reflects the efforts of the Australian pharmaceutical society and other healthcare organizations to improve government funding. However, participants believe that although GPPs' scope of practice is getting broader, it is still moving at a slow pace because of limited funding and not much would change in next 5 years. In England, most organizations are still using available government funding for GPPs. Although the positive feedback from participants reflects the cost-effective impact of GPPs, however whether it is enough to convince GPs and organizations to recruit GPPs from their own budget, remains a question to answer.

Like England and Australia, global research has shown that clinical pharmacist integration into multi-disciplinary settings is gaining recognition across the major healthcare systems in the world including Canada⁵² and USA^{55,57}. In Canadian healthcare models, the inclusion of pharmacists in Family Health Teams (FHTs) reflects a substantial improvement in medication use and health by focusing on direct patient care activities, managing medication-related queries, and by being a source of drug information to physicians⁵³. It was supported by 2 major research programmes; Seniors Medication Assessment Research Trial (SMART) and the Integrating Family Medicine and Pharmacy to Advance Primary Care Therapeutics (IMPACT) which made significant contributions to evidence-based policy decisions⁵⁴. Similarly in America, primary care providers report a high degree of satisfaction with clinical pharmacist's services with a considerable positive impact on patient care⁵⁶. There is growing evidence in American healthcare systems demonstrating the improved patient outcomes when clinical pharmacists are also working as educators, consultants, and clinicians as part of multidisciplinary healthcare professional teams⁵⁸.

Conclusion

Clinical pharmacists must come out of their comfort zone of traditional dispensing culture and equip themselves with advanced clinical skills. Both England and Australia need a generic training structure to facilitate initial integration. England can take a lead from HMRS accreditation in Australia and can develop a similar training as a minimum requirement for the GPP role. Availability of pre-registration in surgeries is a positive step to provide initial training in England, something Australian healthcare can take the lead from, for future education and training. Moreover, both countries need to review their policies on prescribing annotation. In England, the lack of strict protocols and supervision can create medico-legal issues. On the other hand, Australia should take a proactive approach toward awarding the prescribing qualification. Australia needs to perform further research on a similar designed pilot scheme at the national level that can facilitate GPPs roles in primary care, backed up with an improved funding structure from the government. It is important to highlight the factors that can facilitate GPPs' integration into general practice. The main ones include GPP's clinical knowledge as a medicine expert, diverse GPPs' role dimension which can help them to adapt to organizational demands, and prescribing qualification in England which have enhanced the value of GPP.

Limitations

This research has few limitations, described below:

Small sample size due to low response especially from Australia. As mentioned earlier, the GPP role in Australia is in the initial phase and the number of available professionals who have experience of working as GPP or with GPP is small. Attempts were made to contact a large pool of those professionals from Australia; however, it was challenging to recruit participants. Factors like time difference between England and Australia made it difficult to arrange a suitable time for interviews.

The different modes of interviews, as well as some written responses, were also included in the analysis. This is because there were not a sufficient number of responses available.

It is vital to acknowledge these limitations while synthesizing the results or conclusions, however the study offer valid points to improve the role of GPP in both countries. It also guides to undertake future policy and practice research in this area. It is important to understand that the GPP role is evolving and any qualitative input, especially when there is a lack of comparative data between countries for this role, would be highly beneficial.

Notes

Funding

No funding was provided by any organization for this study.

Competing Interest

The authors have declared no competing interests.

List of Abbreviations

FHTs: Family Health Teams

GP: General Practitioner

General Practice Pharmacist: GPP

HMRS: Homer Medication Review Service (Australia)

IMPACT: Integrating Family Medicine and Pharmacy to Advance Primary Care Therapeutics

KPI: Key performance indicators

NHS: National Health Services

NMP: Non-Medical Prescribing

PGPIP: Pharmacist in General Practice Incentive Program

PSA: Pharmaceutical Society of Australia

RACGP: Royal Australian College of General Practitioners

SMART: Seniors Medication Assessment Research Trial

References

1. Stokes-Lampard H, Openshaw D. General practice at the heart of the NHS: now and in the future. *British journal of general practice* 2018;68(672):308-309.
2. Royal Australian College of General Practitioner. General practice career guide [Online]. RACGP; 2019. Available from: <https://www.racgp.org.au/FSDEDEV/media/documents/Education/Students/A%20career%20in%20general%20practice/RACGP-General-practice-career-guide.PDF>
3. Baird B, Charles A, Honeyman M, Maguire D, Dias P. Understanding pressures in general practice [Online]. London: The King's Fund; 2016. Available from: https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/Understanding-GP-pressures-Kings-Fund-May-2016.pdf
4. Deloitte Access Economics. General Practitioner workforce report 2019 [Online]. Canberra: Deloitte; 2019. Available from: <https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economics-general-practitioners-workforce-2019-021219.pdf>

5. Avery AJ. Pharmacists working in general practice: can they help tackle the current workload crisis? *The British journal of general practice: the journal of the Royal College of General Practitioners* 2017;67(662):390-391.
6. *The Pharmaceutical Journal*, PJ, 4/11 April 2015, Vol 294, No 7856/7;294(7856/7):DOI:10.1211/PJ.2015.20068267.
7. Jerome Ng, Jeff Harrison, Key performance indicators for clinical pharmacy services in New Zealand public hospitals: stakeholder perspectives, *Journal of Pharmaceutical Health Services Research*, Volume 1, Issue 2, June 2010, Pages 75–84, <https://doi.org/10.1111/j.1759-8893.2010.00001.x>
8. 3. Clay H, Stern R. MAKING TIME IN GENERAL PRACTICE [Internet]. Primary Care Foundation & NHS Alliance; 2015. Available from: https://www.primarycarefoundation.co.uk/images/PrimaryCareFoundation/Downloading_Reports/PCF_Press_Releases/Making-Time-in_General_Practice_FULL_REPORT_28_10_15.pdf
9. NHS England. More than 400 pharmacists to be recruited to GP surgeries by next year [Online]. England.nhs.uk. 2015. Available from: <https://www.england.nhs.uk/2015/11/pharmacists-recruited/>
10. NHS England. General Practice Forward View [Online]. 2016. Available from: <https://www.england.nhs.uk/wp-content/uploads/2016/04/gpfv.pdf>
11. Tan ECK, Stewart K, Elliott RA, George J. Integration of pharmacists into general practice clinics in Australia: the views of general practitioners and pharmacists: Pharmacist integration into general practice. *International Journal of Pharmacy Practice* 2014;22(1):28-3
12. Australian Medical Association. GENERAL PRACTICE PHARMACISTS – IMPROVING PATIENT CARE [Online]. 2015. Available from: https://ama.com.au/sites/default/files/documents/Pharmacists_in_General_Practice_Proposal.pdf.
13. Deloitte Access Economics. Analysis of non-dispensing pharmacists in general practice clinics [Online]. Deloitte; 2015. Available from: <https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economics-analysis-non-dispensing-pharmacists-general-practice-clinics-010415.pdf>
14. United General Practice Australia. General practice supports pharmacists as part of GP-led teams [Online]. 2015. Available from: <https://www.racgp.org.au/download/Documents/UGPA/Media%20releases/General-practice-supports-pharmacists-as-part-of-GP-led-teams.PDF>
15. The Royal Australian College of General Practitioners. *General Practice: Health of the Nation 2019*. East Melbourne, Vic: RACGP, 2019.
16. Schneider, E., Sarnak, D., Squires, D., Shah, A. and Doty, M., 2017. *Mirror, Mirror 2017: International Comparison Reflects Flaws and Opportunities for Better U.S. Health Care*. [Online] The Commonwealth Fund. Available

- from: https://www.commonwealthfund.org/sites/default/files/documents/___media_files_publications_fund_report_2017_jul_schneider_mirror_mirror_2017.pdf
17. DeJonckheere M, Vaughn LM. Semistructured interviewing in primary care research: a balance of relationship and rigour. *Family Medicine and Community Health* 2019;**7**:e000057. doi: 10.1136/fmch-2018-000057
 18. Farrugia B. WASP (write a scientific paper): sampling in qualitative research. *Early Hum Dev.* 2019;**133**:69–71. doi:10.1016/j.earlhumdev.2019.03.016
 19. Kallio H , Pietilä A-M , Johnson M , et al. Systematic methodological review: developing a framework for a qualitative semi-structured interview guide. *J Adv Nurs* 2016;**72**:2954–65.doi:10.1111/jan.13031.
 20. Novick G. Is there a bias against telephone interviews in qualitative research? *Res Nurs Health.* 2008;**31**(4):391–8.
 21. Nehls, K., Smith, B. D., & Schneider, H. A. (2015). Video-Conferencing Interviews in Qualitative Research. In S. Hai-Jew (Ed.), *Enhancing Qualitative and Mixed Methods Research with Technology* (pp. 140-157). IGI Global. <http://doi:10.4018/978-1-4666-6493-7.ch006>
 22. Braun, V. and Clarke, V., 2006. Using thematic analysis in psychology. *Qualitative research in psychology*, **3**(2), pp.77-101"
 23. Chapman AL, Hadfield M and Chapman CJ. Qualitative research in healthcare: an introduction to grounded theory using thematic analysis. *J R Coll Physicians Edinb* 2015; **45**: 201–205.
 24. Birks, Melanie. 2014. "Quality in Qualitative Research." In *Qualitative Methodology*, edited by Jane Mills and Melanie Birks, 221–222–235. London: Sage
 25. Critical Appraisal Skills Programme. CASP qualitative checklist, <https://casp-uk.net/wp-content/uploads/2018/01/CASP-Qualitative-Checklist-2018.pdf> (accessed 14 February 2020)
 26. The Pharmaceutical Journal, PJ, May 2016, Vol 296, No 7889;296(7889):DOI:10.1211/PJ.2016.20201042
 27. Cope L.C., Abuzour A.S., Tully M. Nonmedical prescribing: Where are we now? *Ther. Adv. Drug Saf.* 2016;**7**:165–172. doi: 10.1177/2042098616646726
 28. Royal Pharmaceutical Society. A Competency Framework for all Prescribers [Online]. 2016. Available from: <https://www.rpharms.com/Portals/0/RPS%20document%20library/Open%20access/Professional%20standards/Prescribing%20competency%20framework/prescribing-competency-framework.pdf?ver=2019-02-13-163215-030>.
 29. Beech J, Bottery S, Charlesworth A, Evans H, Gershlick B, Hemmings N et al. Closing the gap: Key areas for action on the health and care workforce. [Online]. 2019. Available from: <https://www.kingsfund.org.uk/sites/default/files/2019-06/closing-the-gap-full-report-2019.pdf>.
 30. Bradley F, Ashcroft D, Crossley N. Negotiating inter-professional interaction: playing the general practitioner-pharmacist game. *Sociology of Health & Illness.* 2018;**40**(3):426-444.

31. Nabhani-Gebara S, Fletcher S, Shamim A, May L, Butt N, Chagger S, et al. General practice pharmacists in England: Integration, mediation and professional dynamics. *Research in social & administrative pharmacy : RSAP* 2019.
32. John C. WORKING TOGETHER TO HELP PATIENTS MAKE THE MOST OF MEDICINES [Online]. Royal Pharmaceutical Society; 2015. Available from: <https://www.rpharms.com/Portals/0/RPS%20document%20library/Open%20access/Hub/rps-make-the-most-of-medicines-web.pdf>
33. Sake F, Wong K, Bartlett DJ, Saini B. Integrated primary care insomnia management in Australia. *Research in Social and Administrative Pharmacy* 2018;14(2):170-179.
34. Polasek TM, Rowland A, Wiese MD, Sorich MJ. Pharmacists in Australian general practice: an opportunity for expertise in precision medicine. *Therapeutic Advances in Drug Safety* 2015;6(5):186-188.
35. Anderson C, Zhan K, Boyd M, Mann C. The role of pharmacists in general practice: A realist review. *Research in Social and Administrative Pharmacy* 2019;15(4):338-345.
36. Benson H, Lucas C, Kmet W, Benrimoj SI, Williams K. Pharmacists in general practice: a focus on drug-related problems. *International Journal of Clinical Pharmacy* 2018;40(3):566-572.
37. Mann C, Anderson C, Avery A, Waring J, Boyd M. Clinical pharmacists in general practice: pilot scheme evaluation. The University of Nottingham 2018. <https://www.nottingham.ac.uk/pharmacy/documents/generalpracticeyearfwdrev/clinical-pharmacists-in-general-practice-pilot-scheme-full-report.pdf>
38. Gerard, Karen, PhD,MSc, BA(Hons), Tinelli, Michela, PhD, MSc,PharmD, MRPharmS, Latter, Sue, PhD, BSc(Hons),RN, PGDipHV, Blenkinsopp, Alison, OBE, PhD,BPharm, MRPharmS, Smith, Alesha, PhD,MSc, BSc. Valuing the Extended Role of Prescribing Pharmacist in General Practice: Results from a Discrete Choice Experiment. *Value in Health* 2012;15(5):699-707.
39. Stone MC, Williams HC. Clinical pharmacists in general practice: value for patients and the practice of a new role. *The British journal of general practice: the journal of the Royal College of General Practitioners* 2015;65(634):262-263.
40. General Pharmaceutical Council. In practice: Guidance for pharmacist prescribers [Online]. 2020. Available from: <https://www.pharmacyregulation.org/sites/default/files/document/in-practice-guidance-for-pharmacist-prescribers-february-2020.pdf>
41. Australian Medical Association. Patient Safety Paramount in Medication Prescriptions [Online]. 2008. Available from: <https://ama.com.au/media/patient-safety-paramount-medication-prescriptions>.
42. Barnes E, Ashraf I, Din A. New roles for clinical pharmacists in general practice. *Prescriber* 2017;28(4):26-29.
43. Girvin B, Wilson D. Clinical skills training for pharmacists in general practice. *Prescriber* 2018;29(12):19-25.
44. Donovan G, Brown A, Von Hatten E, Armstrong C, Hardisty J. Introducing pharmacy students to the structure and function of general practice through undergraduate placements. *Currents in Pharmacy Teaching and Learning* 2019;11(10):1055-1064.

45. Deeks LS, Kosari S, Naunton M. Clinical pharmacists in general practice. *The British journal of general practice : the journal of the Royal College of General Practitioners* 2018;68(672):320.
46. Karampatakis G, Ryan K, Patel N, Lau W, Stretch G. How do pharmacists in English general practices identify their impact? An exploratory qualitative study of measurement problems. *BMC Health Services Research*. 2019;19(1).
47. Karampatakis GD, Ryan K, Patel N, Stretch G. Capturing pharmacists' impact in general practice: an e-Delphi study to attempt to reach consensus amongst experts about what activities to record. *BMC family practice* 2019 Sep 9;20(1):126.
48. Deeks LS, Kosari S, Boom K, Peterson GM, Maina A, Sharma R, et al. The Role of Pharmacists in General Practice in Asthma Management: A Pilot Study. *Pharmacy (Basel, Switzerland)* 2018;6(4):114.
49. Bajorek B, LeMay K, Gunn K, Armour C. The potential role for a pharmacist in a multidisciplinary general practitioner super clinic. *Australasian medical journal* 2015;8(2):52-63.
50. Freeman C, Rigby D, Aloizos J, Williams I. The practice pharmacist: a natural fit in the general practice team. *Australian prescriber* 2016;39(6):211.
51. Baker S, Lee YP, Hattingh HL. An evaluation of the role of practice pharmacists in Australia: a mixed methods study. *International journal of clinical pharmacy* 2019;41(2):504-515.
52. *International Journal of Pharmacy Practice*, Volume 28, Issue 1, February 2020, Pages 75–83, <https://doi.org/10.1111/ijpp.12577>
53. Gillespie, U.; Dolovich, L.; Dahrouge, S. Activities performed by pharmacists integrated in family health teams: Results from a web-based survey. *Can. Pharm. J.* **2017**, 150, 407–416.
54. Dolovich L. Ontario Pharmacists Practicing in Family Health Teams and the Patient-Centered Medical Home. *Annals of Pharmacotherapy*. 2012;46(4_suppl):33S-39S. doi:10.1345/aph.1Q804
55. Manolakis PL, Skelton JB. Pharmacists' contributions to primary care in the US: collaborating to address unmet patient care needs. *Am J Pharm Educ*. 2010;74(10):Article S7
56. Truong H, Kroehl ME, Lewis C, et al. Clinical pharmacists in primary care: Provider satisfaction and perceived impact on quality of care provided. *SAGE Open Medicine*. January 2017. doi:10.1177/2050312117713911
57. Moreno, G.; Lonowski, S.; Fu, J.; Chon, J.S.; Whitemire, N.; Vasquez, C.; Skootsky, S.A.; Bell, D.S.; Maranon, R.; Mangione, C.M. Physician experiences with clinical pharmacists in primary care teams. *J. Am. Pharm. Assoc. JAPhA* **2017**, 57, 686–691
58. Armor BL, Britton ML, Dennis VC, Letassy NA. A Review of Pharmacist Contributions to Diabetes Care in the United States. *Journal of Pharmacy Practice*. 2010;23(3):250-264. doi:10.1177/0897190009336668

