BMJ Open

Qualitative Insights into Health System Integration: Pioneering Model for Community Pharmacy and Primary Care

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2024-086285
Article Type:	Original research
Date Submitted by the Author:	10-Mar-2024
Complete List of Authors:	Piquer-Martinez, Celia; University of Granada Faculty of Pharmacy, Pharmaceutical Care Research Group Urionagüena, Amaia; University of the Basque Country Faculty of Pharmacy, Pharmacy Practice Research Group Benrimoj, Shalom; University of Granada Faculty of Pharmacy, Pharmaceutical Care Research Group Calvo, Begoña; University of the Basque Country Faculty of Pharmacy, Pharmacy Practice Research Group García-Cárdenas, Victoria; University of Granada Faculty of Pharmacy, Pharmaceutical Care Research Group Amador-Fernandez, Noelia; University of Technology Sydney Graduate School of Health Gastelurrutia, Miguel; University of Granada Faculty of Pharmacy, Pharmaceutical Care Research Group Martinez Martinez, Fernando; Universidad de Granada
Keywords:	Primary Health Care, Pharmacists, QUALITATIVE RESEARCH

I, the Submitting Author has the right to grant and does grant on behalf of all authors of the Work (as defined in the below author licence), an exclusive licence and/or a non-exclusive licence for contributions from authors who are: i) UK Crown employees; ii) where BMJ has agreed a CC-BY licence shall apply, and/or iii) in accordance with the terms applicable for US Federal Government officers or employees acting as part of their official duties; on a worldwide, perpetual, irrevocable, royalty-free basis to BMJ Publishing Group Ltd ("BMJ") its licensees and where the relevant Journal is co-owned by BMJ to the co-owners of the Journal, to publish the Work in this journal and any other BMJ products and to exploit all rights, as set out in our licence.

The Submitting Author accepts and understands that any supply made under these terms is made by BMJ to the Submitting Author unless you are acting as an employee on behalf of your employer or a postgraduate student of an affiliated institution which is paying any applicable article publishing charge ("APC") for Open Access articles. Where the Submitting Author wishes to make the Work available on an Open Access basis (and intends to pay the relevant APC), the terms of reuse of such Open Access shall be governed by a Creative Commons licence – details of these licences and which Creative Commons licence will apply to this Work are set out in our licence referred to above.

Other than as permitted in any relevant BMJ Author's Self Archiving Policies, I confirm this Work has not been accepted for publication elsewhere, is not being considered for publication elsewhere and does not duplicate material already published. I confirm all authors consent to publication of this Work and authorise the granting of this licence.

Qualitative Insights into Health System Integration: Pioneering Model for Community Pharmacy and Primary Care

ABSTRACT

Objectives: To explore the opinions and perceptions of key stakeholders on the integration between community pharmacy and primary care, within the Valencian Autonomous Community. Specific objectives include identifying strategic interventions to facilitate this integration. Additionally, the manuscript discusses the formulation of a novel model for the integration of community pharmacy and primary care.

Design: Qualitative, with data from five virtual focus groups and 12 semi-structured interviews analyzed thematically using NVivo and interventions prioritized through a virtual nominal group technique.

Setting: Valencian Autonomous Community (Spain).

Participants: Focus groups involved community pharmacists and primary care stakeholders including general practitioners, primary care nurses, general practitioner pharmacists, social services managers, and administrators. Interviewees were government representatives and professionals from organizations. Selection was through snowball sampling and invitations by Official Colleges of Pharmacists.

Results: Five themes emerged, revealing the multifaceted nature of integrating community pharmacies and primary care. 'Integration' was identified as an ambitious target, anchored in collaboration and communication efforts. The role of community pharmacists was particularly noted for their direct patient interaction and trust, vital in fostering medication adherence. Barriers like role ambiguity and regulatory environment were highlighted. Seven interventions were identified to enable integration, with three of them prioritized: ‘Bidirectional Communication’, ‘Protocol Standardization’, and ‘Multidisciplinary Teams Strengthening’. These interventions, linked with prior components of health system integration, led to a pioneer integration model.

Conclusions: Recognizing stakeholder insights is essential in shaping workable, practical and adaptable models for integration. Tailoring these temporal models to stakeholders' immediate needs and strategic priorities may serve as effective starting points for integration. Support from professional bodies and proactive stakeholders’ engagement will optimize the integration success and its acceptance across health care levels.

Keywords: Integration; Healthcare system; Community Pharmacy; Primary Care; Qualitative Research.

Strengths and limitations

- Utilizes a participatory approach with stakeholders from primary care and community pharmacy, ensuring diverse insights and comprehensive representation.
- Employs iterative, multistage consultations, including focus groups and interviews, to gain nuanced understanding of the subject matter.
- Applies data triangulation and the nominal group technique to enhance the validity and relevance of the identified interventions.
- Conducts data collection exclusively online, increasing accessibility for participants while possibly limiting the depth of engagement.
- Provides an in-depth local health system analysis, though findings may not be widely generalizable due to regional specificity.

1. INTRODUCTION

In the evolving landscape of global health care, the concept of health system integration has become increasingly important.[1,2] Integration refers to unifying efforts across different areas of the health system, ensuring optimal resource and service allocation.[3,4] Integration is increasingly recognized as a pivotal response to the complex challenges facing contemporary health systems: intensified care demands, equity gaps, growing waiting lists and escalating health care costs, compounded by the growing prevalence of chronic, multimorbid, and polypharmacy patients.[5–8] These systemic issues, particularly impacting primary care and hospital settings, underscore the urgency of exploring innovative solutions beyond short-term strategies, like increasing medical staff or expanding hospital infrastructures.[9,10]

In Spain, the decentralization of health care systems to regional authorities permits the establishment of strategies tailored to local needs in health care management and organization.[11] The Valencian Autonomous Community, comprising the three provinces of Alicante, Valencia, and Castellon, exemplifies this decentralized approach with its health departments and areas, attempting to provide comprehensive health care. Health

care structures exist across three levels: the 'micro' level focusing on direct patient interactions, and primary care systems, the 'meso' level on organizational management within health services at a regional level, and the 'macro' level on overarching policies and regional health care directives.[12]

Across health care systems, community pharmacies and pharmacists play a crucial but commonly underestimated clinical and preventive role in primary care.[13,14] Despite their contribution to health care and public health initiatives, community pharmacies appear to be marginalized in the larger narrative of health system integration.[15,16] Traditionally viewed as retailers rather than health care establishments, their potential in community health remains largely untapped.[17] With their wide distribution, accessibility, and medication expertise, community pharmacists and pharmacies are uniquely positioned to alleviate the burden on primary care by offering services such as minor ailment management, medication adherence, and targeted health education amongst others.[18]

By gaining insights from stakeholders, this research aims to inform optimal strategies and policy-making by identifying barriers and facilitators of the integration process. The purposes of this qualitative study, building upon existing studies on health system integration, are:

- To explore the opinions and perceptions of key stakeholders regarding the integration between community pharmacies and primary care centers within the Valencian Autonomous Community.
- To identify strategic interventions to facilitate the integration of community pharmacies and primary care centers.

Additionally, this study discusses the formulation of a novel model for the integration of community pharmacy and primary care, based on the results obtained.

2. METHODS

Research Design and Approach

This study employed a qualitative descriptive approach, grounded in an interpretivist research paradigm.[19] The choice of this paradigm was driven by the need to understand the subjective meanings and interpretations of stakeholders regarding the integration of community pharmacy and primary care settings.

Research Team and Reflexivity

The study was conducted by pharmacy practice researchers, with no prior relationship to the participants. Reflexivity was maintained throughout the research process, with the team regularly reflecting on their assumptions and the potential influence of their backgrounds on the research findings.

Context and setting

The fieldwork was conducted online via Zoom with stakeholders within the Valencian Autonomous Community of Spain. This virtual setting allowed for a broader inclusion of participants across the three provinces - Alicante, Castellon, and Valencia - overcoming geographical and logistical barriers.[20,21]

Sampling Strategy

Participants were purposively selected to represent a broad spectrum of stakeholders due to their direct involvement and understanding of the health care settings, organizational, and management matters. These stakeholders are pivotal as they possess first-hand knowledge of patient care dynamics, operational challenges, and potential opportunities for system improvement. They were identified and selected by key agents within each Official College of Pharmacists, guided by health system organizational charts. This process was enhanced by snowball sampling, encouraging initial participants to recommend additional participants. Each participant was formally invited to the study with an invitation letter by email.

Data Collection Method and Process

Semi-structured interviews and focus groups were used for generating ideas and data collection.[20] Focus groups were employed at the micro level to facilitate in-depth discussions. This method was chosen to capture a detailed understanding of the real-world context of health care delivery, directly from those involved in its day-to-day operations. For the meso and macro levels, individual semi-structured interviews were chosen to engage organizational leaders and policymakers. This method allows for targeted, confidential discussions, crucial for understanding complex organizational structures, policy-making processes, and strategic planning. These interviews were essential for exploring the nuanced aspects of health systems management and policy implications at higher organizational levels.

At the micro level, between October and November 2023, five focus groups were conducted—one with participants from Castellon, two from Valencia, and two from Alicante—comprising six to nine health care stakeholders each, with a total of 40 professionals. This included: nine community pharmacists (CP), 11 general medical practitioners (GP), six primary care nurses (PCN), six general practitioner pharmacists (GPP), three social services managers (SSM), and five administrators (A). Sessions spanned one to one-and-a-half hours, moderated by a researcher.

At the meso and macro levels, from October to December, 2023, 12 individual semi-structured interviews were conducted by a researcher to delve into organizational and policy dimensions, incorporating policymakers and representatives from professional organizations.

Triangulation of data sources was employed to enhance the credibility of findings. Data were transcribed verbatim, managed using NVivo software, and coded for anonymity. For qualitative analysis, thematic analysis was chosen for its effectiveness in understanding the patterns within the data set, proceeding through Braun and Clarke's six-phase methodology.[22,23]

Following the qualitative content analysis in February 2024, a modified virtual nominal group technique was initiated.[24] Through this process, interventions identified during the semi-structure interviews and focus groups were ranked by importance and feasibility, with each intervention assigned a feasibility score from 1 to 10, with 10 indicating the most feasible and 1 the least. For importance, interventions were scored from 1 to 7 by each participant, where 7 indicated the most important and 1 the least. The voting proceeded sequentially. The interventions from focus groups and interviews were discussed by seven participants in the nominal group representing various organizational levels—one at the macro level, one at the meso level, and five at the micro level. Consensus was sought on the key actionable ideas, drawing on the combined wisdom of the group.[25] This methodological approach was instrumental in selecting practical interventions, optimizing that each intervention's score reflected its perceived value and implementation potential. The linkage between the interventions and the components of theoretical models of integration allowed the development of a temporal integration model to be included in a research protocol aimed at integrating community pharmacy and primary care (Figure 1). Results were reported in accordance with the Consolidated criteria for Reporting Qualitative research checklist.[19,26]

3. RESULTS

Focus Groups and Semi-structured interviews

Five themes emerged from the analysis of focus groups and semi-structured interviews reflecting the convergence of ideas and concepts across the data. The recurrence of these themes made it logical to merge them, allowing for the findings to be reported in a cohesive and unified manner. This logical consolidation was driven by the observation that the same themes kept surfacing, indicating a shared understanding and relevance across different data sets.

Theme 1 — Conceptualization of integration

Overall, all participants considered the term integration as an ambitious result of a lengthy and gradual process. Emphasis was often placed on related concepts such as communication, coordination, and collaboration, which were sometimes conflated with the broader concept of integration.

"One might better describe [integration] as communication, which I believe is the main deficiency we face." (GP3_Focus Group 4)

"Integration should be the final objective, but it starts with smaller steps like enhancing communication and collaboration" (FAP_Focus Group 1).

Theme 2 — Perception of community pharmacies and pharmacist

Community pharmacies and pharmacists were recognized as accessible, professional, and closely connected to patients, with significant yet underexploited potential. Pharmacists were deemed crucial in ensuring medication adherence and early detection of social health issues, such as depression, and loneliness.

"The pharmacist is a health care professional who should be integrated into the health system, as they are highly qualified individuals with direct patient contact. You do not need to make an appointment to see and consult a pharmacist for unexpected situations." (Interviewee_06)

"We can see whether a prescription has been filled or not, but you [community pharmacist] have a more direct contact and can thus detect whether it's actually been taken, making compliance paramount." (GP_Focus Group 2)

Theme 3 — Barriers to effective integration

The analysis identified two subthemes: Firstly, cultural barriers were challenges rooted in the attitudes, beliefs, and practices of health care professionals which can impede integration. Secondly, other barriers which were linked to the current laws and regulations that can obstruct the integration process (Table I).

Cultural Barrier	Example quotation
Competency clashes and fear of professional encroachment	*"...sometimes we see [CPs and GPs] each other not as rivals, but you have your field and I have mine and it seems that there is some back and forth sometimes that I don't understand." (GP3_FG4)*
Patient Stewardship Conflicts	*"...the patient tells us things they don't tell the doctor and the doctor thinks they don't tell the pharmacist, and often these are the focus of arguments and disputes among us" (SI_08)*
	"...the patient at home mainly sees the nursing staff, who attend to dressings, abrasions, ulcers, and so on, not the pharmacist or the doctor" (SI_13)
Interprofessional Knowledge Deficits	*"There are doctors who when they spend some time in a pharmacy are really amazed at the work being done there, and we also often don't know all their clinical practice [CPs] and the work they do meetings and such, and this must end" (SI_08)*
Bureaucratic Barriers	*"Health Centers have a schedule, we need to be able to document things."(FC2_GF1)*
	"...we have a lot of bureaucratic workloads, and that is difficult to navigate" (SI_11)
Variability in Professional Engagement and Commitment	*"There will be those who don't pose a problem and others who do because of the economic interest that may come from prescribing or selling a drug or a more expensive product, but it mostly depends on the personal integrity of the person behind the pharmacy counter." (GP2_FG4)*
	"...we all know that not everyone works the same way and doesn't have the motivation that some of us do" (GPP_FG2)
Other Barriers	**Example quotation**
Private nature of community pharmacy	*"It must be taken into account that community pharmacies are private establishments with a profit motive. And we work in a public health system. Integration would have to be seen from the perspective of private enterprise integration with public enterprise." (SSM_FG1)*
Challenges in adapting existing technological systems	*"A big problem are the different programs we work with. When we talk about more communication, the integration of all these programs I see it as very complex." (GPP_FG1)*
Clinical data privacy	*"...sharing the clinical history, I know that one of the main barriers is the Data Protection Law" (CP_FG2)*

Prescription legalities	*"...we cannot prescribe [CP] and we can get a substantial fine because of this, so we go to the OTC, (...) it's not that you try to do business, what you try is to minimize risks, give fewer tablets" (CP1_FG4)*
Pharmacy market evolution	*"...the technological revolution and the digital revolution open up the possibilities for virtual operators to occupy part of the market share that CPs currently have" (SI_02)*
	"...we are very afraid of any kind of dispensation via Globo, Amazon, etc., that is, we are handling medications. Poor management of these medications can lead to a very serious situation." (SI_03)
Health policy leadership	*"Health planning is short-term, that means that whoever governs, governs for 4 years, so things as necessary as home care, where members of the different health roles could act, they are not going to do it, why, because the investment is always stopgap, we are going to put in more Health Centers, more hospitals, more resources." (SI_09)*
Pharmaceutical regulatory flexibility	*"...our sector is always subject to regulatory rigidity that prevents everything we are going to do from being addressed in an agile way." (SI_11)*
Abbreviations: FG: Focus Group; SI: Semi-structured interview; GP: General practitioner; CP: Community pharmacist; SSM: Social Service Manager.	

Table I. Cultural and other barriers for integration of community pharmacy and primary care.

Theme 4 — Level and intensity of integration

The integration of community pharmacy and primary care centers spans multiple layers, from local actions (micro-level) to broad political collaboration (macro-level). Participants recommended a gradual approach, starting with small-scale pilot projects to test and validate practices, then scaling up to wider areas. Cross-disciplinary leadership, professional associations, and patient groups were seen as pivotal for driving normative changes and ensuring the sustainability and effectiveness of the initiatives. Various challenges and outcomes of integration were suggested during focus groups and semi-structured interviews (Figure 2).

"We need an effort from professional associations and administrations to really plan the future health care we want, where community pharmacy is integrated into the National Health System." (Interviewee_01)

"It's crucial to start with small results, small pilots, showing that what you propose works." (SSM_Focus Group 4)

Theme 5 — Interventions identified for integration

Seven specific interventions that could initiate integration of community pharmacy and primary care centers were identified. These are presented in Table II.

Intervention	Concept
1. Implementation of a bidirectional communication channel	Establish effective communication methods to enable the exchange of information and feedback between community pharmacists and primary care professionals.
2. Protocol standardization	Create shared decision-making algorithms for various health procedures, such as hypertension, asthma or diabetes, facilitating the sharing of screenings, management and monitoring among health care professionals.
3. Community engagement and health education initiatives	Foster consensus-driven initiatives between patients and health care professionals to tackle a variety of health topics, on healthy behaviors including diet, alcohol consumption, smoking, physical activity; therapeutic adherence; and the importance of self-care.
4. Participation in health campaigns	Coordinate health campaigns between community pharmacy and primary care to develop clear and cohesive messages that strengthen health campaigns for health prevention and promotion.
5. Therapeutic management from community pharmacy	Establish collaborations for enhanced care. This includes dose adjustments, medication renewals with doctor's approval, and local dispensing to minimize hospital visits, aiming to improve care continuity and medication management, pending legislative updates for contractual integration.
6. Access to pharmacotherapeutic history from community pharmacy	Enable community pharmacist to access patients' medication histories for proactive pharmaceutical care. They could incorporate biopsychosocial information, OTC drugs or private prescriptions that may interact with prescribed treatments
7. Collaboration for Multidisciplinary Team Strengthening	Facilitate activities aimed at joint education and time-sharing among health professionals to promote mutual understanding, trust building, and consensus achievement. This includes regular meetings and collaborative clinical sessions, conferences involving pharmacists, physicians, and scientific societies, workplace visits, and the creation of integration maps detailing the health centers and community pharmacies in the area.

Table II. Interventions for integration of community pharmacy and primary care.

Nominal Group

These seven pre-identified interventions were critically examined for their importance and feasibility in a nominal group session. Despite considerations for consolidation, the participants reached a consensus to maintain all seven interventions as distinct entities. A priority matrix was developed from the voting outcomes, revealing consensus among diverse participant profiles. The 'Implementation of a Bidirectional Communication Channel' emerged as the top intervention for its importance and feasibility. Additionally, 'Protocol Standardization' and the 'Health Professional Collaboration for Multidisciplinary Team Strengthening' were highlighted as short-term integration priorities (Figure 3).

4. DISCUSSION

This work has uncovered five central themes, reflecting the complexity of the concept of integration, the perception of community pharmacy, and the barriers to effective integration with primary health care. It also addresses the impact of integration and identifies specific interventions to facilitate this process. The study emphasized that integration should be a gradual process with different stages, aligning with other studies.[27–29] Integration remains as an ambiguous concept, being confused with other terms such as communication or coordination.[30] Clearer definitions are necessary to demarcate integration from these related but distinct concepts.

Community pharmacy were perceived by participants as a reliable and patient-focused aspect within the health care sector, garnering trust through their patient-centered services. However, this recognition is juxtaposed with an array of cultural and other barriers that challenge their full integration into the broader health system.[31] Cultural barriers manifest as conflicts over competency, where fear of professional encroachment creates silos and hinders collaborative efforts.[32] This tension is exacerbated by discrepancies in stewardship of patient care, leading to discordant patient-provider interactions. Interprofessional knowledge deficits further complicate the landscape, as misunderstandings of roles and expertise prevent cohesive health care delivery. Bureaucratic barriers contribute to this complexity, creating red tape that stifles innovation and agility within and between practice settings. Structured communication, cross-training, and team-building exercises, including face-to-face interactions, may be

essential in dismantling these barriers, fostering trust, and cultivating a shared mission among health care providers.[33]

In parallel, other barriers such as the private nature of community pharmacy, challenges in technological harmonization, and restrictive prescription practices call for an evolution of policies and regulatory frameworks.[7,34,35] This evolution would create pathways for integration, allowing for fluid data exchange while safeguarding patient privacy. A proactive review of health policy leadership and regulatory flexibility is required to navigate the shifting terrains of the pharmacy market.[36] Through such strategic policy amendments and embracing digital innovations, community pharmacy can better align with public health objectives and emerging market dynamics, ensuring their pivotal role in health care delivery remains both robust and relevant.[32]

In the selection and prioritization process led by the nominal group, interventions such as 'Implementation of a Bidirectional Communication Channel', 'Protocol Standardization', and the 'Health Professional Collaboration for Multidisciplinary Team Strengthening' were marked as initial priorities for integration. This prioritization allows for the commencement of the integration process and the possibility of adopting additional strategies to progress integration efforts past the initial phase. 'Therapeutic Management from Community Pharmacy' is acknowledged as a pivotal yet challenging strategy due to its requirements for significant investment or extensive structural and cultural modifications. 'Access to Pharmacotherapeutic History from Community Pharmacy' emerged as the least feasible and impactful strategy, potentially owing to stringent legal barriers and the sensitive confidential nature of data.[37] Additionally, 'Participation in Health Campaigns' and 'Community Engagement and Health Education Initiatives' were identified as strategies that are quite feasible to implement shortly but were seen as having a lower impact, possibly because participants felt these actions are already being undertaken currently in ad hoc manner.

To enhance the understanding of integration within health systems, various definitions, types, theories, models, and frameworks have been proposed, yet no consensus or universal model has been reached due to diverse perspectives and contexts.[29,38,39] To streamline the selection and analysis, eleven critical components have been identified in the scientific literature as foundational to integration.[40] Tailoring complex theoretical frameworks to individual health system contexts may not be viable and pragmatic rather more success may be in creating adaptable, temporal models based on stakeholders' immediate needs and feedback, phased over time into more complex frameworks. These

temporal models, grounded in strategic interventions, prioritized by stakeholders, could be acceptable and workable starting points and approach to integration. As these models take effect, they aim to gradually reinforce the eleven integration components.

Development of the first Temporal Model for Integration of Community Pharmacy and Primary Care

Starting from a situation of non-integration, certain components such as basic communication or a semblance of mutual trust may sporadically occur between primary care health professionals and community pharmacists. These are typically the products of voluntary actions and thus lack the systematic approach requisite for integration. However, the construction of the first temporal model, informed by the nominal group's selected interventions, marks the beginning of a structured integration process. This pioneer model introduces an initial presence of specific components at a low intensity, including enhanced 'Communication' through the creation of a communication channel that streamlines stakeholders interactions; 'Roles' clarification, with stakeholders engaging in shared meetings and clinical sessions, to gain a clearer understanding of each other's roles in patient care; 'Context', 'Culture' and 'Shared Vision, Values, Goals and Trust' emerging from strengthened collaboration among multidisciplinary teams and standardized health protocols to align overarching objectives; Progress in 'Stakeholder Management' as all involved work towards building relationships and synchronizing efforts, primarily by standardizing protocols. Lastly, 'Co-location' which it is underscored by the activities or meetings that take place within health care centers involving community pharmacists.

Nevertheless, certain components may not come to materialize in the initial temporal model due to factors like system preparedness or stakeholder hesitancy.[10] These components, such as the need for 'Adequate Funding', 'Technological Connectivity', 'Governance' structures, and 'Community Engagement', will likely require further development and are envisioned for future iterations of models when the health system and professionals are fully prepared to embrace them (Figure 4).

The progress and number of temporal models will be determined by pilot results and continued research, underscoring the importance of flexible strategies that accommodate the dynamic nature of health care and stakeholder insights. Further investigation will be crucial for evaluating these models' efficacy and their impact on health system integration.

Strengths and limitations

The strength of this study lies in its participatory approach, incorporating a wide range of voices directly involved in the community pharmacy and primary care. Additionally, the use of data triangulation and the nominal group method to prioritize interventions enhances the reliability of the findings. Nonetheless, it is crucial to acknowledge the study's limitations. A notable limitation is the region-specific focus which, while providing an in-depth analysis of a particular health system, may not be generalizable to other contexts due to differences in health structures, cultures, and legislations. Moreover, the data collection conducted exclusively online could influence the nature and depth of discussions, though it also allowed for broader participant inclusion.[21]

While employing purposive sampling and snowball techniques, the participants' opinions may not reflect the entire spectrum of existing perspectives. This limitation can impact the applicability of the results, given that the identified interventions might not fully address the challenges perceived by those not included in the study.

Despite these limitations, the study increases the understanding of community pharmacy and primary care integration. It has identified key interventions that, if implemented, could significantly improve the coordination and quality of health care. Furthermore, the study provides a foundation for future research and for the development of health policies aimed at more effectively integrating community pharmacy within the primary care system, which is crucial for addressing the increasing demand for health services and the management of chronic diseases and polypharmacy.

6. CONCLUSIONS

This study highlights the integration of community pharmacies and primary care as a complex but achievable goal. It emphasizes the importance of clear communication and the need for a well-planned, gradual approach to implementation. The seven key interventions proposed open the possibility for developing step-by-step integration models that meet stakeholder. The success of these interventions depends on changes in laws and overcoming cultural obstacles with careful consideration. This adaptable and proactive strategy is essential for policy makers and health managers as the health care landscape continues to change and as we engage with stakeholders. Ongoing assessment

is essential to understand the impact of these temporary models on the integration of the health system.

Funding statement: This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests: None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication: Not applicable.

Ethics approval: This study was conducted with human participants and received approval from the Andalusian Biomedical Research Ethics Committee (code: INT_VAL23) and the Ethics Committee on Human Research (CEIH) of the University of Granada (number: 3652/CEIH/2023). Prior to participation, individuals provided signed informed consent. To ensure confidentiality and data security, all information was anonymized and securely stored, accessible solely to the research team.

7. REFERENCES

1. Schünemann HJ, Reinap M, Piggott T, et al. The ecosystem of health decision making: from fragmentation to synergy. *Lancet Public Health*. 2022;7(4):e378-e390. doi:10.1016/S2468-2667(22)00057-3
2. Armitage GD, Systems H, Health A, et al. Health systems integration: state of the evidence. *Int J Integr Care*. 2009;9(2). doi:10.5334/ijic.316
3. Bazzoli GJ, Shortell SM, Dubbs N, et al. A taxonomy of health networks and systems: bringing order out of chaos. *Health Serv Res*. 1999;33(6):1683-1717.
4. Sandhu S, Sharma A, Cholera R, et al. Integrated Health and Social Care in the United States: A Decade of Policy Progress. *Int J Integr Care*. 2021;21(4):9. doi:10.5334/ijic.5687
5. Gröne O, Garcia-Barbero M. Integrated care: a position paper of the WHO European Office for Integrated Health Care Services. *Int J Integr Care*. 2001;1:e21.

6. Johar M, Jones G, Keane MP, et al. Discrimination in a universal health system: explaining socioeconomic waiting time gaps. *J Health Econ*. 2013;32(1):181-194. doi:10.1016/j.jhealeco.2012.09.004

7. Gadenz SD, Basso J, de Oliviera PRBP, et al. Telehealth to support referral management in a universal health system: a before-and-after study. *BMC Health Serv Res*. 2021;21(1):1012. doi:10.1186/s12913-021-07028-5

8. Woolf R, Locke A, Potts C. Pharmacist prescribing within an integrated health system in Washington. Am J Health Syst Pharm. 2016;73(18):1416-1624. doi:10.2146/ajhp150846

9. Kreindler SA, Struthers A, Metge CJ, et al. Pushing for partnership: physician engagement and resistance in primary care renewal. *J Health Organ Manag*. 2019;33(2):126-140. doi:10.1108/JHOM-05-2018-0141

10. Tonge A. The role and relevance of public private partnerships in English healthcare. *Health Manag Forum*. 2021;34(4):229-233. doi:10.1177/08404704211004623

11. Spanish Government. [Interterritorial Council of the National Health System. Introduction and Legal Framework]. Published 2023. https://www.sanidad.gob.es/organizacion/consejoInterterri/introduccion.htm

12. Sawatzky R, Kwon J-Y, Barclay R, et al. Implications of response shift for micro-, meso-, and macro-level healthcare decision-making using results of patient-reported outcome measures. Qual Life Res. 2021;30(12):3343-3357. doi:10.1007/s11136-021-02766-9

13. Williams S, Brad L, Jones D, et al. Pharmacy professionals are part of the solution to reduce GPs' workload. *BMJ*. 2021;373:n1176. doi:10.1136/bmj.n1176

14. Trankle SA, Usherwood T, Abbott P, et al. Integrating health care in Australia: a qualitative evaluation. *BMC Health Serv Res*. 2019;19(1):954. doi:10.1186/s12913-019-4780-z

15. Stewart F, Caldwell G, Cassells K, et al. Building capacity in primary care: the implementation of a novel "Pharmacy First" scheme for the management of UTI, impetigo and COPD exacerbation. *Prim Health Care Res Dev*. 2018;19(6):531-541. doi:10.1017/S1463423617000925

16. Schommer JC, Olson AW, Isetts BJ. Transforming community-based pharmacy practice through financially sustainable centers for health and personal care. *J Am*

Pharm Assoc (2003). 2019;59(3):306-309. doi:10.1016/j.japh.2018.10.009

17. Nørgaard JD, Sporrong SK. Views on the role of community pharmacy in local communities: a case study of stakeholders' attitudes. *Pharm Pract (Granada)*. 2019;17(2):1419. doi:10.18549/PharmPract.2019.2.1419

18. Bader L, Kusynová Z, Duggan C. FIP Perspectives: Realising global patient safety goals requires an integrated approach with pharmacy at the core. *Res Social Adm Pharm*. 2019;15(7):815-817. doi:10.1016/j.sapharm.2019.02.012

19. O'Brien BC, Harris IB, Beckman TJ, et al. Standards for reporting qualitative research: a synthesis of recommendations. *Acad Med*. 2014;89(9):1245-1251. doi:10.1097/ACM.0000000000000388

20. Halliday M, Mill D, Johnson J, et al. Let's talk virtual! Online focus group facilitation for the modern researcher. *Res Social Adm Pharm*. 2021;17(12):2145-2150. doi:10.1016/j.sapharm.2021.02.003

21. Rupert DJ, Poehlman JA, Hayes JJ, et al. Virtual Versus In-Person Focus Groups: Comparison of Costs, Recruitment, and Participant Logistics. *J Med Internet Res*. 2017;19(3):e80. doi:10.2196/jmir.6980

22. Kiger ME, Varpio L. Thematic analysis of qualitative data: AMEE Guide No. 131. *Med Teach*. 2020;42(8):846-854. doi:10.1080/0142159X.2020.1755030

23. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77-101. doi:10.1191/1478088706qp063oa

24. Eddings SK, Brown LL, Godin S. Qualitative Findings of a Nominal Group Process to Identify Critical Factors in New LIC Implementation. *J Med Educ Curric Dev*. 2023;10:23821205231217896. doi:10.1177/23821205231217894

25. McMillan SS, King M, Tully MP. How to use the nominal group and Delphi techniques. *Int J Clin Pharm*. 2016;38(3):655-662. doi:10.1007/s11096-016-0257-x

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

27. Ahgren B, Axelsson R. Evaluating integrated health care: a model for measurement. *Int J Integr Care*. 2005;5(3):1-9. doi:10.5334/ijic.134

28. McVicar KL, Ivanitskaya L V., Bradley DW, et al. Primary Care and Public Health Collaboration Reports: A Qualitative Review of Integration Aims, Participants, and Success Determinants. *Popul Health Manag*. 2019;22(5):422-

461 432. doi:10.1089/pop.2018.0160

462 29. Singer SJ, Kerrissey M, Friedberg M, et al. A Comprehensive Theory of
463 Integration. *Med Care Res Rev*. 2020;77(2):196-207.
464 doi:10.1177/1077558718767000

465 30. Hindi AMK, Schafheutle EI, Jacobs S. Community pharmacy integration within
466 the primary care pathway for people with long-term conditions: a focus group
467 study of patients', pharmacists' and GPs' experiences and expectations. *BMC*
468 *Fam Pract*. 2019;20(1):26. doi:10.1186/s12875-019-0912-0

469 31. Tan KB, Earn Lee C. Integration of Primary Care with Hospital Services for
470 Sustainable Universal Health Coverage in Singapore. *Health Syst Reform*.
471 2019;5(1):18-23. doi:10.1080/23288604.2018.1543830

472 32. Bradley F, Elvey R, Ashcroft DM, et al. The challenge of integrating community
473 pharmacists into the primary health care team: a case study of local
474 pharmaceutical services (LPS) pilots and interprofessional collaboration. *J*
475 *Interprof Care*. 2008;22(4):387-398. doi:10.1080/13561820802137005

476 33. Jesson JK, Wilson KA. One-stop health centers: what co-location means for
477 pharmacy. *Health Place*. 2003;9(3):253-261. doi:10.1016/s1353-8292(02)00057-
478 6

479 34. Shroff ZC, Bigdeli M, Meessen B. From Scheme to System (Part 2): Findings
480 from Ten Countries on the Policy Evolution of Results-Based Financing in
481 Health Systems. *Health Syst Reform*. 2017;3(2):137-147.
482 doi:10.1080/23288604.2017.1304190

483 35. Huang Y, Xu D, Tsuei SH-T, et al. Understanding Impacts of Online Dual
484 Practice on Health System Performance: A Qualitative Study in China. *Health*
485 *Syst Reform*. 2023;9(1):2215552. doi:10.1080/23288604.2023.2215552

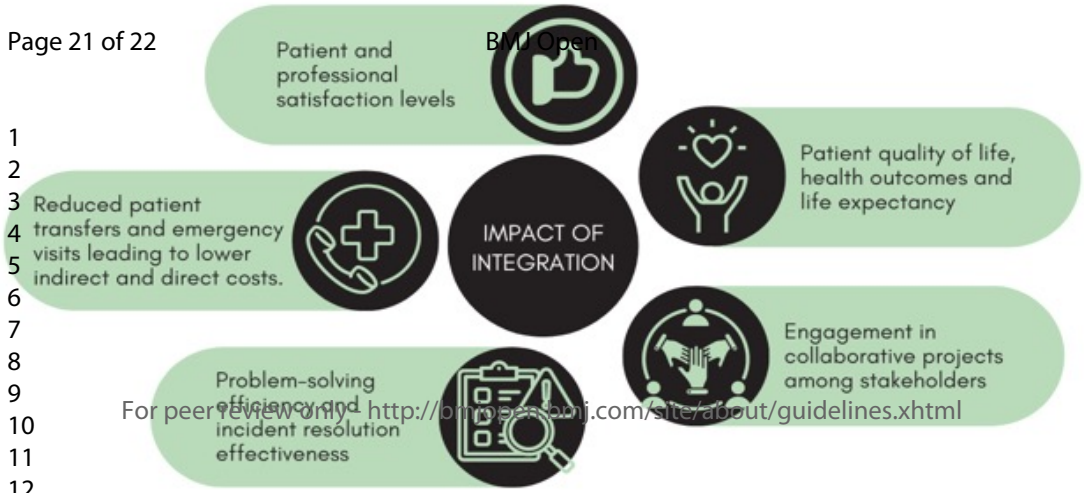
486 36. Bodolica V, Spraggon M, Tofan G. A structuration framework for bridging the
487 macro-micro divide in health-care governance. Health Expect. 2016;19(4):790-
488 804. doi:10.1111/hex.12375

489 37. Lake JD, Rosenberg-Yunger ZRS, Dainty KN, et al. Understanding perceptions
490 of involving community pharmacy within an integrated care model: a qualitative
491 study. *BMC Health Serv Res*. 2020;20(1):396. doi:10.1186/s12913-020-05237-y

492 38. Piquer-Martinez C, Urionagüena A, Benrimoj SI, et al. Integration of community
493 pharmacy in primary health care: The challenge. *Res Social Adm Pharm*.
494 2022;18(8):3444-3447. doi:10.1016/j.sapharm.2021.12.005

39. Urionagüena A, Piquer-Martinez C, Gastelurrutia MÁ, et al. Community pharmacy and primary health care - Types of integration and their applicability: A narrative review. *Res Soc Adm Pharm*. 2023;19(3):414-431. doi:10.1016/j.sapharm.2022.10.007

40. Piquer-Martinez C, Urionagüena A, Benrimoj SI, et al. Theories, models and frameworks for health systems integration. A scoping review. *Health Policy*. 2024;141:104997. doi:10.1016/j.healthpol.2024.104997



1. Implementation of a Bidirectional Communication Channel

2. Protocol Standardization

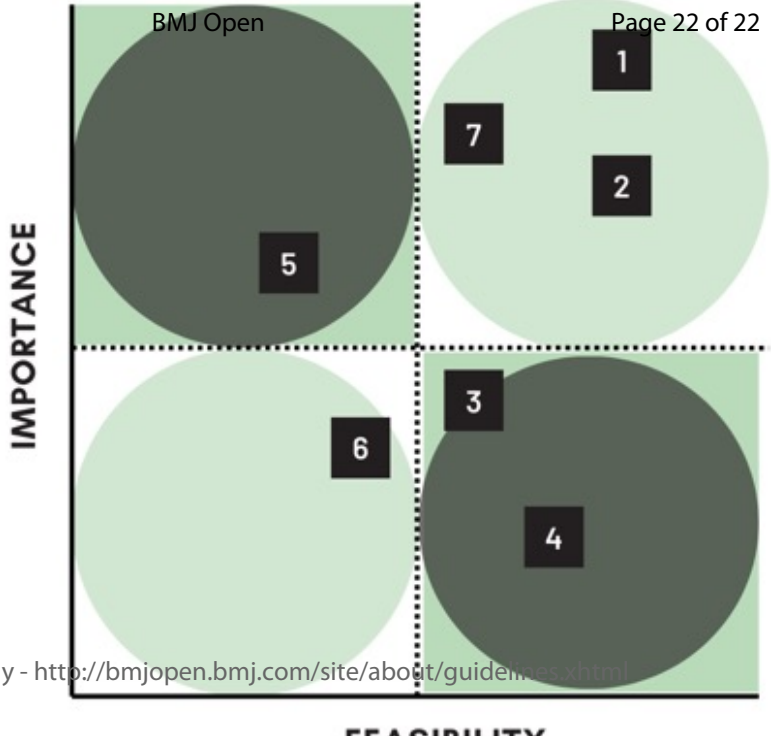
3. Community Engagement and Health Education Initiatives

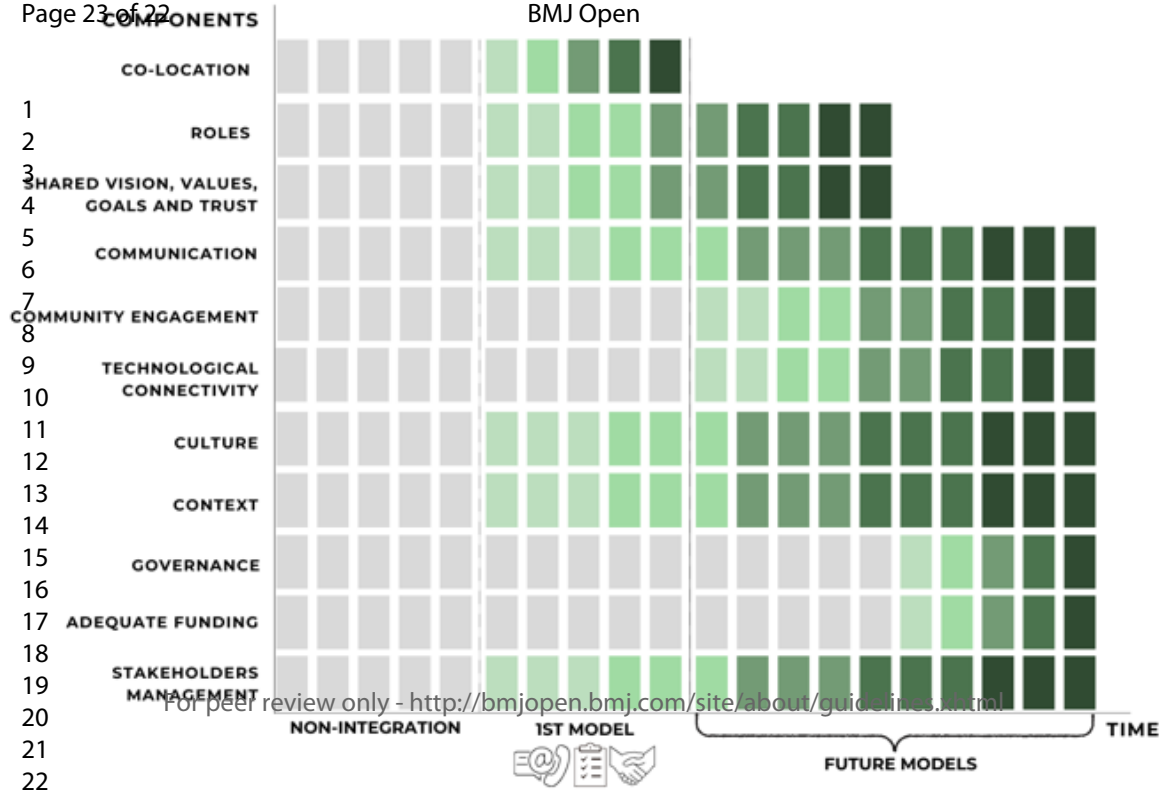
4. Participation in Health Campaigns

5. Therapeutic Management from Community Pharmacy

6. Access to Pharmacotherapeutic History from Community Pharmacy

7. Health Professional Collaboration for Multidisciplinary Team Strengthening





BMJ Open

Strategic interventions and a novel model for the integration of community pharmacy and primary care in Spain: Qualitative insights

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2024-086285.R1
Article Type:	Original research
Date Submitted by the Author:	07-Oct-2024
Complete List of Authors:	Piquer-Martinez, Celia; University of Granada Faculty of Pharmacy, Pharmaceutical Care Research Group Urionagüena, Amaia; University of the Basque Country Faculty of Pharmacy, Pharmacy Practice Research Group Benrimoj, Shalom; University of Granada Faculty of Pharmacy, Pharmaceutical Care Research Group Calvo, Begoña; University of the Basque Country Faculty of Pharmacy, Pharmacy Practice Research Group García-Cárdenas, Victoria; University of Granada Faculty of Pharmacy, Pharmaceutical Care Research Group; University of Granada Faculty of Pharmacy, Pharmacy and Pharmaceutical Technology Department, Social and Legal Pharmacy Section Amador-Fernandez, Noelia; University of Technology Sydney Graduate School of Health Gastelurrutia, Miguel; University of Granada Faculty of Pharmacy, Pharmaceutical Care Research Group; University of the Basque Country Faculty of Pharmacy, Pharmacy Practice Research Group Martinez Martinez, Fernando; University of Granada Faculty of Pharmacy, Pharmaceutical Care Research Group
Primary Subject Heading:	Qualitative research
Secondary Subject Heading:	Global health, Public health, Communication
Keywords:	Primary Health Care, Pharmacists, QUALITATIVE RESEARCH, Delivery of Health Care, Integrated

I, the Submitting Author has the right to grant and does grant on behalf of all authors of the Work (as defined in the below author licence), an exclusive licence and/or a non-exclusive licence for contributions from authors who are: i) UK Crown employees; ii) where BMJ has agreed a CC-BY licence shall apply, and/or iii) in accordance with the terms applicable for US Federal Government officers or employees acting as part of their official duties; on a worldwide, perpetual, irrevocable, royalty-free basis to BMJ Publishing Group Ltd ("BMJ") its licensees and where the relevant Journal is co-owned by BMJ to the co-owners of the Journal, to publish the Work in this journal and any other BMJ products and to exploit all rights, as set out in our licence.

The Submitting Author accepts and understands that any supply made under these terms is made by BMJ to the Submitting Author unless you are acting as an employee on behalf of your employer or a postgraduate student of an affiliated institution which is paying any applicable article publishing charge ("APC") for Open Access articles. Where the Submitting Author wishes to make the Work available on an Open Access basis (and intends to pay the relevant APC), the terms of reuse of such Open Access shall be governed by a Creative Commons licence – details of these licences and which Creative Commons licence will apply to this Work are set out in our licence referred to above.

Other than as permitted in any relevant BMJ Author's Self Archiving Policies, I confirm this Work has not been accepted for publication elsewhere, is not being considered for publication elsewhere and does not duplicate material already published. I confirm all authors consent to publication of this Work and authorise the granting of this licence.

TITLE: Strategic interventions and a novel model for the integration of community pharmacy and primary care in Spain: Qualitative insights.

Authorship: *Celia Piquer-Martinez[1]; Amaia Urionagüena[2]; Shalom I. Benrimoj[1]; Begoña Calvo[2]; Victoria Garcia-Cardenas[3]; Noelia Amador-Fernandez[4]; Miguel Angel Gastelurrutia [1,2]; Fernando Martinez-Martinez[1]*

[1] Pharmaceutical Care Research Group, Faculty of Pharmacy, University of Granada, Granada, Spain.
[2] Pharmacy Practice Research Group, Faculty of Pharmacy, University of the Basque Country, UPV/EHU, Vitoria-Gasteiz, Spain.
[3] Pharmacy and Pharmaceutical Technology Department, Social and Legal Pharmacy Section, Faculty of Pharmacy, University of Granada, Granada, Spain.
[4] Graduate School of Health, University of Technology Sydney, Sydney, Australia.

Email Addresses
Celia Piquer-Martinez: celiapiquer@correo.ugr.es
Amaia Urionagüena: amaia.urionaguena@ehu.eus
Shalom I. Benrimoj: Shalom.Benrimoj@gmail.com
Begoña Calvo: b.calvo@ehu.eus
Victoria García-Cardenas: Mavigc@gmail.com
Noelia Amador-Fernandez: noelia.amadorfernandez@uts.edu.au
Miguel Angel Gastelurrutia: magastelu@farmanorte.org
Fernando Martinez-Martinez: femartin@ugr.es

Orcid Numbers
Celia Piquer-Martinez: https://orcid.org/0000-0003-4965-1464
Amaia Urionagüena: https://orcid.org/0000-0001-8620-4167
Shalom I. Benrimoj: http://orcid.org/0000-0001-9768-7838
Victoria García-Cardenas: https://orcid.org/0000-0003-3770-4557
Noelia Amador-Fernandez: https://orcid.org/0000-0002-6491-1984
Miguel Angel Gastelurrutia: https://orcid.org/0000-0003-1019-0234
Fernando Martinez-Martinez: https://orcid.org/0000-0002-2747-6960

Corresponding Author
Celia Piquer-Martinez
Pharmaceutical Care Research Group, University of Granada Faculty of Pharmacy,
Campus de Cartuja s/n, Granada, 18071,
Email address: celiapiquer@correo.ugr.es
Phone number: +34 958243827

ABSTRACT

Objectives: To explore the opinions and perceptions of key stakeholders on the integration between community pharmacy and primary care, within the Valencian Autonomous Community. Specific objectives include identifying strategic interventions to facilitate this integration. Additionally, the manuscript discusses the formulation of a novel model for the integration of community pharmacy and primary care.

Design: Qualitative, with data from five virtual focus groups and 12 semi-structured interviews analyzed thematically using NVivo and interventions prioritized through a virtual nominal group technique.

Setting: Valencian Autonomous Community (Spain).

Participants: Focus groups involved community pharmacists and primary care stakeholders including general practitioners, primary care nurses, general practitioner pharmacists, social services managers, and administrators. Interviewees were government representatives and professionals from organizations. Selection was through snowball sampling and invitations by Official Colleges of Pharmacists.

Results: Five themes emerged, revealing the multifaceted nature of integrating community pharmacies and primary care. 'Integration' was identified as an ambitious target, anchored in collaboration and communication efforts. The role of community pharmacists was particularly noted for their direct patient interaction and trust, vital in fostering medication adherence. Barriers like role ambiguity and regulatory environment were highlighted. Seven interventions were identified to enable integration, with three of them prioritized: ‘Bidirectional Communication’, ‘Protocol Standardization’, and ‘Multidisciplinary Teams Strengthening’. These interventions, linked with prior components of health system integration, led to a pioneer integration model.

Conclusions: Recognizing stakeholder insights is essential in shaping workable, practical and adaptable models for integration. Tailoring these temporal models to stakeholders' immediate needs and strategic priorities may serve as effective starting points for integration. Support from professional bodies and proactive stakeholders’ engagement will optimize the integration success and its acceptance across health care levels.

Keywords: Integration; Healthcare system; Community Pharmacy; Primary Care; Qualitative Research.

Strengths and limitations

- Utilized a participatory approach with stakeholders from primary care and community pharmacy, ensuring diverse insights and comprehensive representation.
- The study's data collection was conducted exclusively online, which, while increasing accessibility, may have limited the depth of engagement in discussions.
- The findings are specific to the Valencian Autonomous Community, which may limit their generalizability to other health systems.
- The purposive and snowball sampling strategies, while effective in engaging relevant stakeholders, might not have captured the complete spectrum of perspectives within the broader community.
- The virtual nominal group technique, while valuable for building consensus, was constrained by the relatively small number of participants involved.

1. INTRODUCTION

In the evolving landscape of global health care, the concept of health system integration has become increasingly important.[1,2] Integration refers to unifying efforts across different areas of the health system, ensuring optimal resource and service allocation.[3,4] Integration is increasingly recognized as a pivotal response to the complex challenges facing contemporary health systems: intensified care demands, equity gaps, growing waiting lists and escalating health care costs, compounded by the growing prevalence of chronic, multimorbid, and polypharmacy patients.[5–8] These systemic issues, particularly impacting primary care and hospital settings, underscore the urgency of exploring innovative solutions beyond short-term strategies, like increasing medical staff or expanding hospital infrastructures.[9,10]

In Spain, the decentralization of health care systems to regional authorities permits the establishment of strategies tailored to local needs in health care management and organization.[11] The Valencian Autonomous Community, comprising the three provinces of Alicante, Valencia, and Castellon, exemplifies this decentralized approach with its health departments and areas, attempting to provide comprehensive health care. Health care structures exist across three levels: the 'micro' level focusing on direct patient interactions, and primary care systems, the 'meso' level on organizational management

within health services at a regional level, and the 'macro' level on overarching policies and regional health care directives.[12]

Across health care systems, community pharmacies and pharmacists play a crucial but commonly underestimated clinical and preventive role in primary care.[13,14] Despite their contribution to health care and public health initiatives, community pharmacies appear to be marginalized in the larger narrative of health system integration.[15,16] Traditionally viewed as retailers rather than health care establishments, their potential in community health remains largely untapped.[17] With their wide distribution, accessibility, and medication expertise, community pharmacists and pharmacies are uniquely positioned to alleviate the burden on primary care by offering services such as minor ailment management, medication adherence, and targeted health education amongst others.[18]

However, despite this potential, current efforts in the literature tend to focus on improving communication, coordination and cooperation between general practice and community pharmacy, rather than on achieving full integration.[19] The literature has predominantly focused on improving collaboration, yet the steps required to establish an integrated system remain unclear.[20,21] This study aims to address that gap by exploring strategic interventions to facilitate the integration of community pharmacies and primary care centers.

By gaining insights from stakeholders, this research aims to inform optimal strategies and policy-making by identifying barriers and facilitators of the integration process. The purposes of this qualitative study, building upon existing studies on health system integration, are:

- To explore the opinions and perceptions of key stakeholders regarding the integration between community pharmacies and primary care centers within the Valencian Autonomous Community.
- To identify strategic interventions to facilitate the integration of community pharmacies and primary care centers.

Additionally, this study discusses the formulation of a novel model for the integration of community pharmacy and primary care, based on the results obtained.

2. METHODS

Research Design and Approach

This study employed a qualitative descriptive approach, grounded in an interpretivist research paradigm.[22] The choice of this paradigm was driven by the need to understand the subjective meanings and interpretations of stakeholders regarding the integration of community pharmacy and primary care settings.

Research Team and Reflexivity

The study was conducted by pharmacy practice researchers, with no prior relationship to the participants. Reflexivity was maintained throughout the research process, with the team regularly reflecting on their assumptions and the potential influence of their backgrounds on the research findings.

Context and setting

The fieldwork was conducted online via Zoom with stakeholders within the Valencian Autonomous Community of Spain. This virtual setting allowed for a broader inclusion of participants across the three provinces - Alicante, Castellon, and Valencia - overcoming geographical and logistical barriers.[23,24]

Sampling Strategy

Participants were purposively selected to represent a broad spectrum of stakeholders due to their direct involvement and understanding of the health care settings, organizational, and management matters. These stakeholders are pivotal as they possess first-hand knowledge of patient care dynamics, operational challenges, and potential opportunities for system improvement. They were identified and selected by key agents within each Official College of Pharmacists, guided by health system organizational charts. This process was enhanced by snowball sampling, encouraging initial participants to recommend additional participants. Each participant was formally invited to the study with an invitation letter by email.

Data Collection Method and Process

Semi-structured interviews (SI) and focus groups (FG) were used for generating ideas and data collection.[23] FG were employed at the micro level to facilitate in-depth discussions. This method was chosen to capture a detailed understanding of the real-world context of health care delivery, directly from those involved in its day-to-day operations. For the meso and macro levels, individual SI were chosen to engage organizational

leaders and policymakers. This method allows for targeted, confidential discussions, crucial for understanding complex organizational structures, policy-making processes, and strategic planning. These interviews were essential for exploring the nuanced aspects of health systems management and policy implications at higher organizational levels. The interview topic guide, which provided a consistent structure for both FG and SI, can be found in the supplemental material (see online supplementary file 1).

At the micro level, between October and November 2023, five FG were conducted—one with participants from Castellon, two from Valencia, and two from Alicante—comprising six to nine health care stakeholders each, with a total of 40 professionals. This included: nine community pharmacists (CP), 11 general medical practitioners (GP), six primary care nurses (PCN), six general practitioner pharmacists (GPP), three social services managers (SSM), and five administrators (A). Sessions spanned one to one-and-a-half hours, moderated by a researcher.

At the meso and macro levels, from October to December 2023, 12 individual SI were conducted by a researcher to delve into organizational and policy dimensions, incorporating policymakers and representatives from professional organizations. The interviews had an average duration of 31 minutes.

Triangulation of data sources was employed to enhance the credibility of findings. Data were transcribed verbatim, managed using NVivo software, and coded for anonymity. For qualitative analysis, thematic analysis was chosen for its effectiveness in understanding the patterns within the data set, proceeding through Braun and Clarke's six-phase methodology.[25,26]

Following the qualitative content analysis in February 2024, a modified virtual nominal group technique was initiated. Through this process, interventions identified during the SI and FG were ranked by importance and feasibility, with each intervention assigned a feasibility score from 1 to 10, with 10 indicating the most feasible and 1 the least. For importance, interventions were scored from 1 to 7 by each participant, where 7 indicated the most important and 1 the least. The same participants from the FG and SI were involved in the nominal group discussions. They were given the opportunity to suggest changes or add new interventions, but none were proposed, and all interventions were confirmed without modification. This adaptation is justified by the prior qualitative phase and the involvement of the same participants, ensuring the ideas were thoroughly explored and validated. Supported by relevant literature, this approach also triangulated the findings.[27] The voting proceeded sequentially. The interventions were discussed by

seven participants in the nominal group representing various organizational levels—one at the macro level, one at the meso level, and five at the micro level. Consensus was sought on the key actionable ideas, drawing on the combined wisdom of the group.[28] This methodological approach was instrumental in selecting practical interventions, optimizing that each intervention's score reflected its perceived value and implementation potential. The linkage between the interventions and the components of theoretical models of integration allowed the development of a temporal integration model to be included in a research protocol aimed at integrating community pharmacy and primary care (Figure 1). Results were reported in accordance with the Consolidated criteria for Reporting Qualitative research checklist (see online supplementary material file 1).[22,29]

Figure 1. Flowchart of Qualitative Process: *This figure outlines the stages and methods employed in the qualitative data collection process.*

3. RESULTS

FG and SI

Five themes emerged from the analysis of FG and SI reflecting the convergence of ideas and concepts across the data. The recurrence of these themes made it logical to merge them, allowing for the findings to be reported in a cohesive manner. This logical consolidation was driven by the observation that the same themes kept surfacing, indicating a shared understanding and relevance across different data sets.

Theme 1 — Conceptualization of integration

Overall, all participants considered the term integration as an ambitious result of a lengthy and gradual process. Emphasis was often placed on related concepts such as communication, coordination, and collaboration, which were sometimes conflated with the broader concept of integration.

"One might better describe [integration] as communication, which I believe is the main deficiency we face." (GP3_FG4).

"Integration should be the final objective, but it starts with smaller steps like enhancing communication and collaboration." (GPP_FG1).

Theme 2 — Perception of community pharmacies and pharmacist

Community pharmacies and pharmacists were recognized as accessible, professional, and closely connected to patients, with significant yet underexploited potential. Pharmacists were deemed crucial in ensuring medication adherence and early detection of social health issues, such as depression, and loneliness.

"The pharmacist is a health care professional who should be integrated into the health system, as they are highly qualified individuals with direct patient contact. You do not need to make an appointment to see and consult a pharmacist for unexpected situations." (SI_06, President of a Regional Patients Association).

"We can see whether a prescription has been filled or not, but you [community pharmacist] have a more direct contact and can thus detect whether it's actually been taken, making compliance paramount." (GP_FG2).

Theme 3 — Barriers to effective integration

The analysis identified two primary types of barriers: **cultural barriers**, related to the attitudes, beliefs, and practices of healthcare professionals, and **systemic barriers**, tied to laws and regulations that obstruct the integration process.

One cultural barrier is **competency clashes and the fear of professional encroachment**. *"...sometimes we see [CPs and GPs] each other not as rivals but you have your field and I have mine, and it seems that there is some back and forth sometimes that I don't understand"* (GP3_FG4). This sentiment reflects the territorial separation between healthcare fields, limiting integration.

Another challenge is **patient stewardship conflicts**, where professionals disagree over who "owns" the patient's care. "*...the patient tells us things they don't tell the doctor, and the doctor thinks they don't tell the pharmacist, and often these are the focus of arguments and disputes among us*" (SI_08, President of the Official College of Pharmacists). Additionally, another participant stated, *"...the patient at home mainly sees the nursing staff who attend to dressings, abrasions, ulcers and so on, not the pharmacist or the doctor"* (SI_13, Senior Health Official from the Valencian regional government), which exemplifies the conflicting perspectives on patient care responsibilities.

A third cultural barrier involves **interprofessional knowledge deficits**, where there is a lack of understanding of each other's roles. As one participant remarked, *"There are*

doctors who, when they spend some time in a pharmacy, are really amazed at the work being done there, and we also often don't know all their clinical practice [CPs], and the work they do—meetings and such—and this must end" (SI_08, President of the Official College of Pharmacists). These knowledge gaps contribute to the friction and lack of integration between professionals.

Bureaucratic barriers were identified as a significant issue: *"Health Centers have a schedule we need to be able to document things"* (CP2_FG1). Another participant added, *"...we have a lot of bureaucratic workloads, and that is difficult to navigate"* (SI_11, Representative of the Pharmacist Colleges Council of the Valencian Community).

In addition, **variability in professional engagement** was highlighted, where levels of commitment to integration can differ. "*There will be those who don't pose a problem and others who do because of the economic interest that may come from prescribing or selling a drug or a more expensive product, but it mostly depends on the personal integrity of the person behind the pharmacy counter"* (GP2_FG4). Another participant echoed this: *"...we all know that not everyone works the same way and doesn't have the motivation that some of us do"* (GPP_FG2).

Moreover, **the private nature of community pharmacy** creates a divide between the public and private sectors. *"It must be taken into account that community pharmacies are private establishments with a profit motive. And we work in a public health system. Integration would have to be seen from the perspective of private enterprise integration with public enterprise"* (SSM_FG1).

Technological challenges also emerged, particularly related to the adaptation of different systems and ensuring data privacy. *"A big problem is the different programs we work with. When we talk about more communication, the integration of all these programs... I see it as very complex"* (GPP_FG1). **Clinical data privacy** was also highlighted as a major issue: *"Sharing the clinical history is one of the main barriers, especially because of the Data Protection Law"* (CP_FG2). The complexities of data sharing between healthcare providers create significant hurdles in achieving effective integration.

Legal restrictions on prescribing were another significant barrier, preventing pharmacists from fully participating in patient care: *"...we cannot prescribe [CP], and we risk substantial fines if we overstep these boundaries, so we stick to recommending over-the-counter drugs to minimize risks"* (CP1_FG4).

The **evolving pharmacy market** creates barriers to integration, as pharmacists risk being sidelined if they do not adapt: *"...the technological revolution and the digital revolution open up the possibilities for virtual operators to occupy part of the market share that CPs currently have" (SI_02, Health Economist); "...we are very afraid of any kind of dispensation via Globo, Amazon, etc., that is, we are handling medications. Poor management of these medications can lead to a very serious situation." (SI_03, President of the National Patients Association).*

Lastly, **health policy leadership** and the need for **pharmaceutical regulatory flexibility** were seen as vital to successful integration: *"Health planning is short-term, that means that whoever governs, governs for 4 years, so things as necessary as home care, where members of the different health roles could act, they are not going to do it, why, because the investment is always stopgap."* (SI_09, Representative of the Valencian Community Nursing Council); *"...our sector is always subject to regulatory rigidity that prevents everything we are going to do from being addressed in an agile way." (SI_11, Representative of the Pharmacist Colleges Council of the Valencian Community)*

Theme 4 — Level and intensity of integration

The integration of community pharmacy and primary care centers spans multiple layers, from local actions (micro-level) to broad political collaboration (macro-level). Participants recommended a gradual approach, starting with small-scale pilot projects to test and validate practices, then scaling up to wider areas. Cross-disciplinary leadership, professional associations, and patient groups were seen as pivotal for driving normative changes and ensuring the sustainability and effectiveness of the initiatives. Various challenges and outcomes of integration were suggested during FG and SI (Figure 2).

"We need an effort from professional associations and administrations to really plan the future health care we want, where community pharmacy is integrated into the National Health System." (SI_01, President of a Pharmaceutical Distribution Company)

"It's crucial to start with small results, small pilots, showing that what you propose works." (SSM_FG4)

***Figure 2. Impact of Integration**: This figure illustrates the effects of integrating community pharmacy and primary care, as suggested by participants in FG and SI.*

Theme 5 — Interventions identified for integration

Seven specific interventions that could initiate integration of community pharmacy and primary care centers were identified. These are presented in Table I.

Table I. Interventions for integration of community pharmacy and primary care.

Intervention	Concept
1. Implementation of a bidirectional communication channel	Establish effective communication methods to enable the exchange of information and feedback between community pharmacists and primary care professionals.
2. Protocol standardization	Create shared decision-making algorithms for various health procedures, such as hypertension, asthma or diabetes, facilitating the sharing of screenings, management and monitoring among health care professionals.
3. Community engagement and health education initiatives	Foster consensus-driven initiatives between patients and health care professionals to tackle a variety of health topics, on healthy behaviors including diet, alcohol consumption, smoking, physical activity; therapeutic adherence; and the importance of self-care.
4. Participation in health campaigns	Coordinate health campaigns between community pharmacy and primary care to develop clear and cohesive messages that strengthen health campaigns for health prevention and promotion.
5. Therapeutic management from community pharmacy	Establish collaborations for enhanced care. This includes dose adjustments, medication renewals with doctor's approval, and local dispensing to minimize hospital visits, aiming to improve care continuity and medication management, pending legislative updates for contractual integration.
6. Access to pharmacotherapeutic history from community pharmacy	Enable community pharmacist to access patients' medication histories for proactive pharmaceutical care. They could incorporate biopsychosocial information, over-the-counter drugs or private prescriptions that may interact with prescribed treatments

7. Collaboration for Multidisciplinary Team Strengthening	Facilitate activities aimed at joint education and time-sharing among health professionals to promote mutual understanding, trust building, and consensus achievement. This includes regular meetings and collaborative clinical sessions, conferences involving pharmacists, physicians, and scientific societies, workplace visits, and the creation of integration maps detailing the health centers and community pharmacies in the area.

Nominal Group

These seven pre-identified interventions were critically examined for their importance and feasibility in a nominal group session. Despite considerations for consolidation, the participants reached a consensus to maintain all seven interventions as distinct entities. A priority matrix was developed from the voting outcomes, revealing consensus among diverse participant profiles. The 'Implementation of a Bidirectional Communication Channel' emerged as the top intervention for its importance and feasibility. Additionally, 'Protocol Standardization' and the 'Health Professional Collaboration for Multidisciplinary Team Strengthening' were highlighted as short-term integration priorities (Figure 3).

Figure 3. Feasibility and Importance Matrix of Community Pharmacy and Primary Care Integration Interventions: *This figure illustrates the results of the nominal group voting process, showing the prioritization of interventions based on their feasibility and importance, as proposed during the FG and SI.*

4. DISCUSSION

This work has uncovered five central themes, reflecting the complexity of integration, the perception of community pharmacy, and the barriers to effective integration with primary health care. It also addresses the impact of integration and identifies specific interventions to facilitate this process. The study emphasized that integration should be a gradual process with different stages, aligning with theories such as Complex Adaptive Systems theory,[30] which highlights adaptability and stakeholder interaction in nonlinear processes, and the Integration Degree Theory, which advocates for a phased approach starting with foundational elements.[31,32] Integration remains as an ambiguous concept, being confused with other terms such as communication or coordination.[33] Clearer definitions are necessary to demarcate integration from these related but distinct concepts.

Community pharmacy was perceived by participants as a reliable and patient-focused aspect within the health care sector, garnering trust through their patient-centered services. However, this recognition is juxtaposed with an array of cultural and other barriers that challenge their full integration into the broader health system.[34] Cultural barriers manifest as conflicts over competency, where fear of professional encroachment creates silos and hinders collaborative efforts.[35] This tension is exacerbated by discrepancies in stewardship of patient care, leading to discordant patient-provider interactions. Interprofessional knowledge deficits further complicate the landscape, as misunderstandings of roles and expertise prevent cohesive health care delivery. Bureaucratic barriers contribute to this complexity, creating red tape that stifles innovation and agility within and between practice settings. Structured communication, cross-training, and team-building exercises, including face-to-face interactions, may be essential in dismantling these barriers, fostering trust, and cultivating a shared mission among health care providers.[36]

In parallel, other barriers such as the private nature of community pharmacy, challenges in technological harmonization, and restrictive prescription practices call for an evolution of policies and regulatory frameworks.[7,37,38] This evolution would create pathways for integration, allowing for fluid data exchange while safeguarding patient privacy. A proactive review of health policy leadership and regulatory flexibility is required to navigate the shifting terrains of the pharmacy market.[39] Through such strategic policy amendments and embracing digital innovations, community pharmacy can better align with public health objectives and emerging market dynamics, ensuring their pivotal role in health care delivery remains both robust and relevant.[35]

In the selection and prioritization process led by the nominal group, interventions such as 'Implementation of a Bidirectional Communication Channel', 'Protocol Standardization', and the 'Health Professional Collaboration for Multidisciplinary Team Strengthening' were marked as initial priorities for integration. This prioritization allows for the commencement of the integration process and the possibility of adopting additional strategies to progress integration efforts past the initial phase. 'Therapeutic Management from Community Pharmacy' is acknowledged as a pivotal yet challenging strategy due to its requirements for significant investment or extensive structural and cultural modifications. 'Access to Pharmacotherapeutic History from Community Pharmacy' emerged as the least feasible and impactful strategy, potentially owing to stringent legal barriers and the sensitive confidential nature of data.[40] Additionally, 'Participation in

Health Campaigns' and 'Community Engagement and Health Education Initiatives' were seen as more feasible but with less immediate impact, possibly due to current legal restrictions or ongoing health initiatives already being undertaken.

To enhance the understanding of integration within health systems, various definitions, types, theories, models, and frameworks have been proposed, yet no consensus or universal model has been reached due to diverse perspectives and contexts.[32,41,42] To streamline the selection and analysis, eleven critical components have been identified in the scientific literature as foundational to integration.[43] These include communication, role clarification, stakeholder management, technological connectivity, governance structures, and community engagement, among others. Incorporating these components into the temporal model ensures that the interventions are not only aligned with stakeholder priorities but are also grounded in established integration frameworks, providing a comprehensive approach to progressive health system integration. Tailoring complex theoretical frameworks to individual health system contexts may not be viable and pragmatic rather more success may be in creating adaptable, temporal models based on stakeholders' immediate needs and feedback, phased over time into more complex frameworks. These temporal models, grounded in strategic interventions, prioritized by stakeholders, could be acceptable and workable starting points and approach to integration. As these models take effect, they aim to gradually reinforce the eleven integration components.

Development of a Temporal Model for Integration of Community Pharmacy and Primary Care

Starting from a baseline of non-integration, certain components such as basic communication or a semblance of mutual trust may sporadically occur between primary care health professionals and community pharmacists. These are typically the products of voluntary actions and thus lack the systematic approach requisite for integration. However, the construction of a temporal model, informed by the nominal group's selected interventions, marks the beginning of a structured integration process. This pioneer model introduces an initial presence of specific components at a low intensity, including enhanced ‘Communication’ through the creation of a communication channel that streamlines stakeholders interactions; ‘Roles’ clarification, with stakeholders engaging in shared meetings and clinical sessions, to gain a clearer understanding of each other's roles in patient care; ‘Context’, ‘Culture’ and ‘Shared Vision, Values, Goals and Trust’

emerging from strengthened collaboration among multidisciplinary teams and standardized health protocols to align overarching objectives; Progress in 'Stakeholder Management' as all involved work towards building relationships and synchronizing efforts, primarily by standardizing protocols. Lastly, 'Co-location' which it is underscored by the activities or meetings that take place within health care centers involving community pharmacists.

Although funding and governance structures are critical for long-term sustainability, they are not the primary focus in this model. These components, alongside technological connectivity and community engagement are anticipated to play a more central role in future iterations as the system becomes increasingly adaptive for more extensive integration efforts[10] (Figure 4).

Figure 4. Temporal Model for Integration of Community Pharmacy and Primary Care and its effect on Integration Components*: This figure presents the novel temporal model for integrating community pharmacy and primary care. It includes the selected interventions and anticipated outcomes on key integration components, as well as their expected progression over time.*

The progress and number of temporal models will be determined by pilot results and continued research, underscoring the importance of flexible strategies that accommodate the dynamic nature of health care and stakeholder insights. This temporal model serves as an initial framework, with the understanding that it will evolve and adapt as integration progresses. Further investigation will be crucial for evaluating these models' efficacy and their impact on health system integration.

Strengths and limitations

The strength of this study lies in its participatory approach, incorporating a wide range of voices directly involved in the community pharmacy and primary care. Additionally, the use of data triangulation and the nominal group method to prioritize interventions enhances the reliability of the findings. Nonetheless, it is crucial to acknowledge the study's limitations. A notable limitation is the region-specific focus which, while providing an in-depth analysis of a particular health system, may not be generalizable to other contexts due to differences in health structures, cultures, and legislations. Moreover, the data collection conducted exclusively online could influence the nature and depth of discussions, though it also allowed for broader participant inclusion.[24]

While employing purposive sampling and snowball techniques, the participants' opinions may not reflect the entire spectrum of existing perspectives. This limitation can impact the applicability of the results, given that the identified interventions might not fully address the challenges perceived by those not included in the study.

Despite these limitations, the study increases the understanding of community pharmacy and primary care integration. It has identified key interventions that, if implemented, could significantly improve the coordination and quality of health care. Furthermore, the study provides a foundation for future research and for the development of health policies aimed at more effectively integrating community pharmacy within the primary care system, which is crucial for addressing the increasing demand for health services and the management of chronic diseases and polypharmacy.

6. CONCLUSIONS

This study highlights the integration of community pharmacies and primary care as a complex but achievable goal. It emphasizes the importance of clear communication and the need for a well-planned, gradual approach to implementation. The seven key interventions proposed open the possibility for developing step-by-step integration models that meet stakeholder. The success of these interventions depends on changes in laws and overcoming cultural obstacles with careful consideration. This adaptable and proactive strategy is essential for policy makers and health managers as the health care landscape continues to change and as we engage with stakeholders. Ongoing assessment is essential to understand the impact of these temporary models on the integration of the health system.

Data availability statement: No data are available.

Funding statement: This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests: None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication: Not applicable.

Ethics approval: This study was conducted with human participants and received approval from the Andalusian Biomedical Research Ethics Committee (code: INT_VAL23) and the Ethics Committee on Human Research (CEIH) of the University of Granada (number: 3652/CEIH/2023). Prior to participation, individuals provided signed informed consent. To ensure confidentiality and data security, all information was anonymized and securely stored, accessible solely to the research team.

Acknowledgements: Special thanks to all participants who contributed their time and insights, as well as to the University of Granada, Spain (UGR), for their support. This work is part of Celia Piquer-Martinez's PhD in Social Pharmacy.

Contributors: SIB and MAG were responsible for the conceptualization and design of the guide for focus groups and semi-structured interviews. CP, VGC, and MAG carried out the focus groups and semi-structured interviews. Data analysis was conducted by CP and SIB, while CP, VGC, and SIB prepared the draft of the manuscript. AU, BC, MAG, NFA, and FMM provided critical revisions of the draft. All authors commented on and approved the final draft. FMM is the guarantor for the work and/or conduct of the study, had access to the data and controlled the decision to publish.

7. REFERENCES

1. Schünemann HJ, Reinap M, Piggott T, Laidmäe E, Köhler K, Põld M, et al. The ecosystem of health decision making: from fragmentation to synergy. Lancet Public Health. 2022 Apr;7(4):e378–90.
2. Armitage GD, Systems H, Health A, Calgary S, Suter E, Oelke ND, et al. Health systems integration: state of the evidence. Int J Integr Care. 2009 Apr 24;9(2).
3. Bazzoli GJ, Shortell SM, Dubbs N, Chan C, Kralovec P. A taxonomy of health networks and systems: bringing order out of chaos. Health Serv Res. 1999 Feb;33(6):1683–717.
4. Sandhu S, Sharma A, Cholera R, Bettger JP. Integrated Health and Social Care in the United States: A Decade of Policy Progress. Int J Integr Care. 2021 Apr 24;21(4):9.
5. Gröne O, Garcia-Barbero M. Integrated care: a position paper of the WHO European Office for Integrated Health Care Services. Int J Integr Care. 2001;1:e21.

6. Johar M, Jones G, Keane MP, Savage E, Stavrunova O. Discrimination in a universal health system: explaining socioeconomic waiting time gaps. J Health Econ. 2013 Jan;32(1):181–94.
7. Gadenz SD, Basso J, de Oliviera PRBP, Sperling S, Zuanazzi MVD, Oliveira GG, et al. Telehealth to support referral management in a universal health system: a before-and-after study. BMC Health Serv Res. 2021 Sep;21(1):1012.
8. Woolf R, Locke A, Potts C. Pharmacist prescribing within an integrated health system in Washington. Am J Health Syst Pharm. 2016 Sep;73(18):1416–624.
9. Kreindler SA, Struthers A, Metge CJ, Charette C, Harlos K, Beaudin P, et al. Pushing for partnership: physician engagement and resistance in primary care renewal. J Health Organ Manag. 2019 Mar;33(2):126–40.
10. Tonge A. The role and relevance of public private partnerships in English healthcare. Healthc Manage Forum. 2021 Jul;34(4):229–33.
11. Spanish Government. [Interterritorial Council of the National Health System. Introduction and Legal Framework] [Internet]. 2023. Available from: https://www.sanidad.gob.es/organizacion/consejoInterterri/introduccion.htm
12. Sawatzky R, Kwon JY, Barclay R, Chauhan C, Frank L, van den Hout WB, et al. Implications of response shift for micro-, meso-, and macro-level healthcare decision-making using results of patient-reported outcome measures. Qual Life Res. 2021 Dec;30(12):3343–57.
13. Williams S, Brad L, Jones D, Hayes J. Pharmacy professionals are part of the solution to reduce GPs' workload. Vol. 373, BMJ (Clinical research ed.). England; 2021. p. n1176.
14. Trankle SA, Usherwood T, Abbott P, Roberts M, Crampton M, Girgis CM, et al. Integrating health care in Australia: a qualitative evaluation. BMC Health Serv Res. 2019 Dec 11;19(1):954.
15. Stewart F, Caldwell G, Cassells K, Burton J, Watson A. Building capacity in primary care: the implementation of a novel "Pharmacy First" scheme for the management of UTI, impetigo and COPD exacerbation. Prim Health Care Res Dev. 2018 Nov;19(6):531–41.
16. Schommer JC, Olson AW, Isetts BJ. Transforming community-based pharmacy practice through financially sustainable centers for health and personal care. J Am Pharm Assoc (2003). 2019;59(3):306–9.
17. Nørgaard JD, Sporrong SK. Views on the role of community pharmacy in local communities: a case study of stakeholders' attitudes. Pharm Pract (Granada). 2019;17(2):1419.
18. Bader L, Kusynová Z, Duggan C. FIP Perspectives: Realising global patient safety goals requires an integrated approach with pharmacy at the core. Res Social Adm Pharm. 2019 Jul;15(7):815–7.
19. McVicar KL, Ivanitskaya L V., Bradley DW, Montero JT. Primary Care and Public Health Collaboration Reports: A Qualitative Review of Integration Aims, Participants, and Success Determinants. Popul Health Manag [Internet]. 2019 Apr 24;22(5):422–32. Available from: https://www.liebertpub.com/doi/10.1089/pop.2018.0160
20. Tonge A. The role and relevance of public private partnerships in English healthcare. Healthc Manage Forum. 2021 Jul;34(4):229–33.
21. Ryan K, Patel N, Lau WM, Abu-Elmagd H, Stretch G, Pinney H. Pharmacists in general practice: a qualitative interview case study of stakeholders' experiences in a West London GP federation. BMC Health Serv Res [Internet]. 2018 Apr

24;18(1):234. Available from: https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-018-3056-3

22. O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. Standards for reporting qualitative research: a synthesis of recommendations. Acad Med. 2014 Sep;89(9):1245–51.
23. Halliday M, Mill D, Johnson J, Lee K. Let's talk virtual! Online focus group facilitation for the modern researcher. Res Social Adm Pharm. 2021 Dec;17(12):2145–50.
24. Rupert DJ, Poehlman JA, Hayes JJ, Ray SE, Moultrie RR. Virtual Versus In-Person Focus Groups: Comparison of Costs, Recruitment, and Participant Logistics. J Med Internet Res. 2017 Mar;19(3):e80.
25. Kiger ME, Varpio L. Thematic analysis of qualitative data: AMEE Guide No. 131. Med Teach. 2020 Aug;42(8):846–54.
26. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006;3(2):77–101.
27. Eddings SK, Brown LL, Godin S. Qualitative Findings of a Nominal Group Process to Identify Critical Factors in New LIC Implementation. J Med Educ Curric Dev. 2023;10:23821205231217896.
28. McMillan SS, King M, Tully MP. How to use the nominal group and Delphi techniques. Int J Clin Pharm. 2016 Jun;38(3):655–62.
29. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. Int J Qual Health Care. 2007 Dec;19(6):349–57.
30. Ratnapalan S, Lang D. Health Care Organizations as Complex Adaptive Systems. Health Care Manager. 2020;39(1):18–23.
31. Ahgren B, Axelsson R. Evaluating integrated health care: a model for measurement. Int J Integr Care. 2005;5(3):1–9.
32. Singer SJ, Kerrissey M, Friedberg M, Phillips R. A Comprehensive Theory of Integration. Medical Care Research and Review. 2020;77(2):196–207.
33. Hindi AMK, Schafheutle EI, Jacobs S. Community pharmacy integration within the primary care pathway for people with long-term conditions: a focus group study of patients', pharmacists' and GPs' experiences and expectations. BMC Fam Pract. 2019 Feb;20(1):26.
34. Tan KB, Earn Lee C. Integration of Primary Care with Hospital Services for Sustainable Universal Health Coverage in Singapore. Health Syst Reform. 2019;5(1):18–23.
35. Bradley F, Elvey R, Ashcroft DM, Hassell K, Kendall J, Sibbald B, et al. The challenge of integrating community pharmacists into the primary health care eam: a case study of local pharmaceutical services (LPS) pilots and interprofessional collaboration. J Interprof Care. 2008 Aug;22(4):387–98.
36. Jesson JK, Wilson KA. One-stop health centres: what co-location means for pharmacy. Health Place. 2003 Sep;9(3):253–61.
37. Shroff ZC, Bigdeli M, Meessen B. From Scheme to System (Part 2): Findings from Ten Countries on the Policy Evolution of Results-Based Financing in Health Systems. Health Syst Reform. 2017 Apr;3(2):137–47.
38. Huang Y, Xu D, Tsuei SHT, Fu H, Yip W. Understanding Impacts of Online Dual Practice on Health System Performance: A Qualitative Study in China. Health Syst Reform. 2023 Dec;9(1):2215552.

39. Bodolica V, Spraggon M, Tofan G. A structuration framework for bridging the macro-micro divide in health-care governance. Health Expect. 2016 Aug;19(4):790–804.
40. Lake JD, Rosenberg-Yunger ZRS, Dainty KN, Rolf von den Baumen T, Everall AC, Guilcher SJT. Understanding perceptions of involving community pharmacy within an integrated care model: a qualitative study. BMC Health Serv Res. 2020 May;20(1):396.
41. Piquer-Martinez C, Urionagüena A, Benrimoj SI, Calvo B, Martinez-Martinez F, Fernandez-Llimos F, et al. Integration of community pharmacy in primary health care: The challenge. Res Social Adm Pharm. 2022 Aug;18(8):3444–7.
42. Urionagüena A, Piquer-Martinez C, Gastelurrutia MÁ, Benrimoj SI, Garcia-Cardenas V, Fernandez-Llimos F, et al. Community pharmacy and primary health care - Types of integration and their applicability: A narrative review. Research in Social and Administrative Pharmacy. 2023 Apr 24;19(3):414–31.
43. Piquer-Martinez C, Urionagüena A, Benrimoj SI, Calvo B, Dineen-Griffin S, Garcia-Cardenas V, et al. Theories, models and frameworks for health systems integration. A scoping review. Health Policy. 2024 Jan;141:104997.

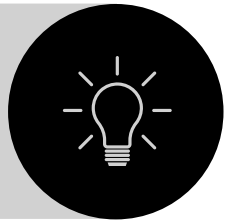
Figure 1. Flowchart of Qualitative Process: *This figure outlines the stages and methods employed in the qualitative data collection process.*

Figure 2. Impact of Integration*: This figure illustrates the effects of integrating community pharmacy and primary care, as suggested by participants in FG and SI.*

Figure 3. Feasibility and Importance Matrix of Community Pharmacy and Primary Care Integration Interventions: *This figure illustrates the results of the nominal group voting process, showing the prioritization of interventions based on their feasibility and importance, as proposed during the FG and SI.*

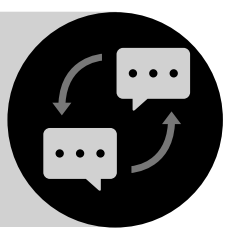
Figure 4. Temporal Model for Integration of Community Pharmacy and Primary Care and its effect on Integration Components*: This figure presents the novel temporal model for integrating community pharmacy and primary care. It includes the selected interventions and anticipated outcomes on key integration components, as well as their expected progression over time.*

GENERATING IDEAS BY FOCUS GROUPS & INTERVIEWS

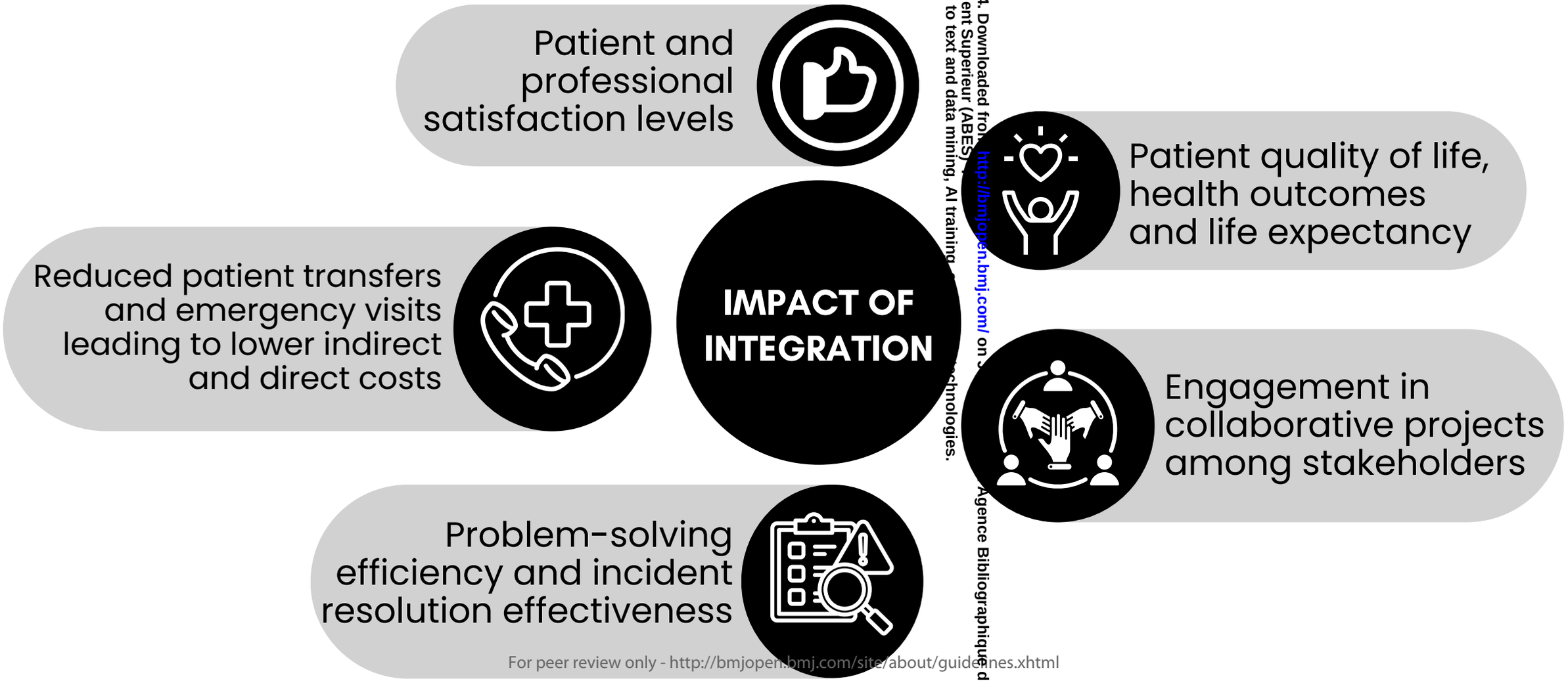


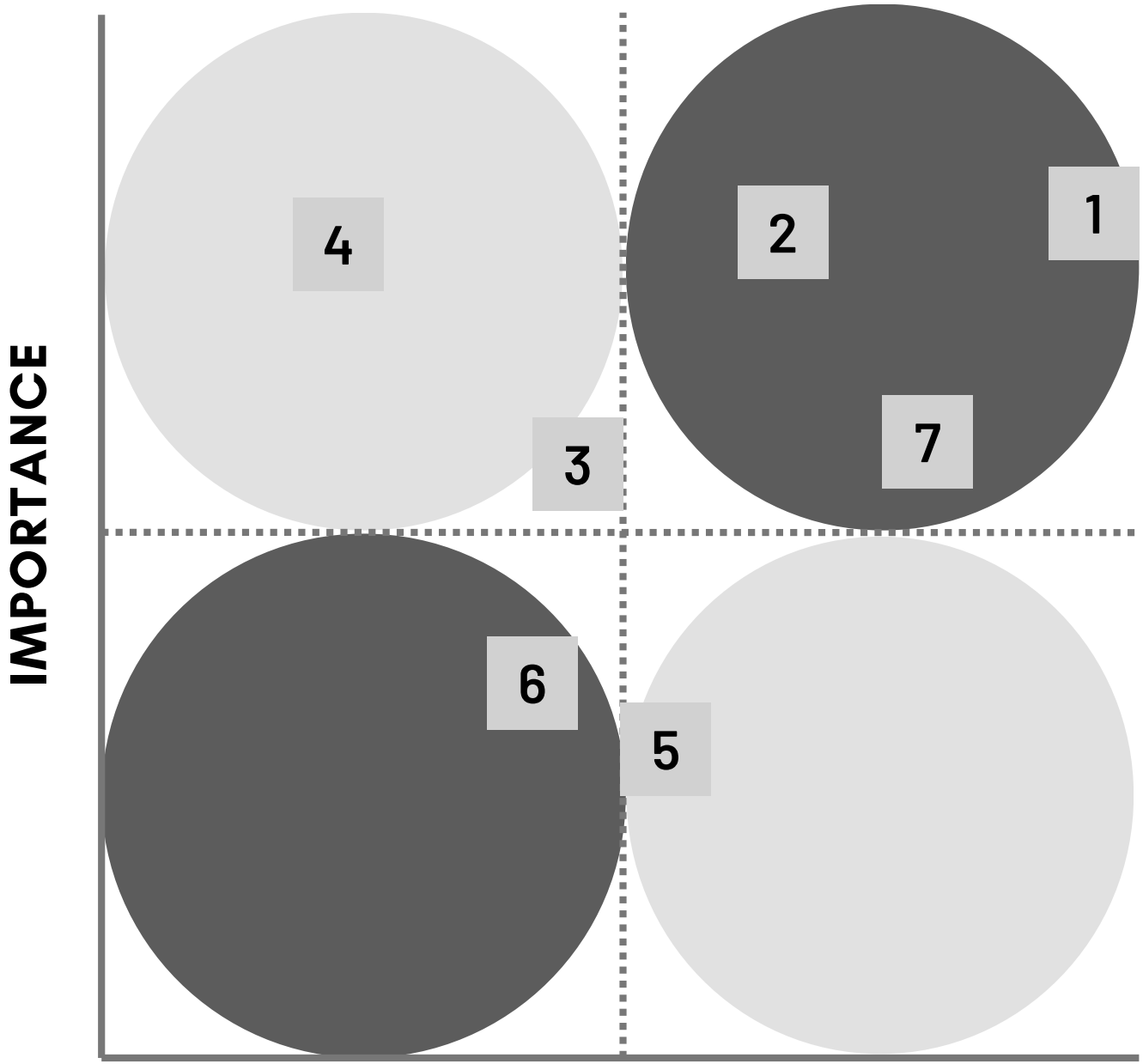
QUALITATIVE ANALYSIS

DISCUSSING & RANKING IDEAS BY NOMINAL GROUP



SELECTION OF INTERVENTIONS FOR PROTOCOL





1. Implementation of a bidirectional communication channel

2. Protocol standardization

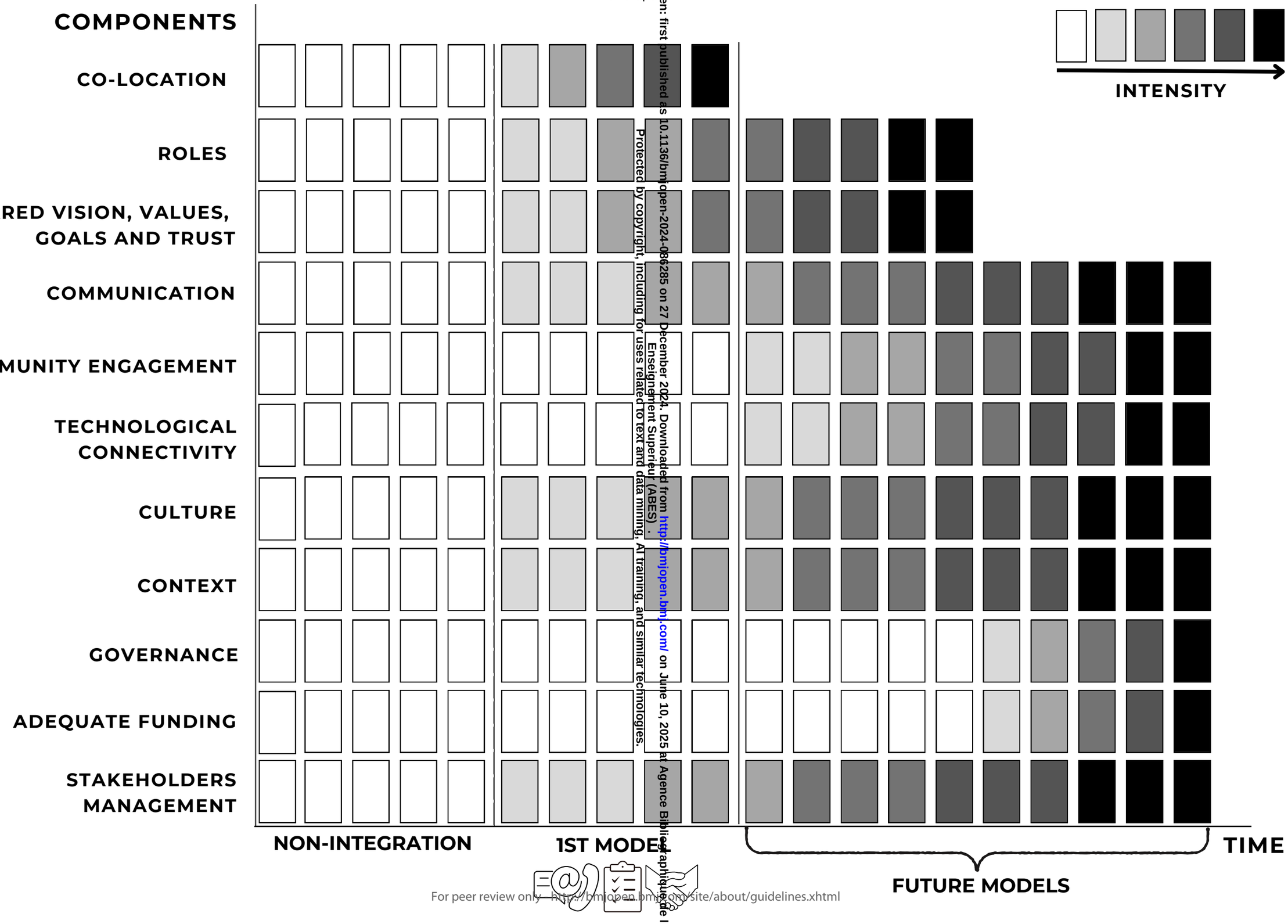
3. Community engagement and health education initiatives

4. Participation in health campaigns

5. Therapeutic management from CP

6. Access to pharmacotherapeutic history from CP

7. Collaboration for multidisciplinary team strengthening



Supplemental Material

Standards for Reporting Qualitative Research (SRQR)*

http://www.equator-network.org/reporting-guidelines/srqr/

Title and abstract

	Page,line no(s)
Title - Concise description of the nature and topic of the study identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	Manuscript. Page 1, line 1-2.
Abstract - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	Manuscript. Page 2, line 1-33.

Introduction

Problem formulation - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	Manuscript. Page 3, line 16 – page 4, line 16.
Purpose or research question - Purpose of the study and specific objectives or questions	Manuscript. Page 4, line 16 - line 29

Methods

Qualitative approach and research paradigm - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**	Manuscript. Page 4, line 32 – page 5, line 4
Researcher characteristics and reflexivity - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	Manuscript. Page 5, lines 6 – 10.
Context - Setting/site and salient contextual factors; rationale**	Manuscript. Page 5, lines 12 – 16.
Sampling strategy - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**	Manuscript. Page 5, lines 18 – 27.
Ethical issues pertaining to human subjects - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	Manuscript. Page 17, lines 4 – 9.

Data collection methods - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	Manuscript. Page 5, line 29 – page 7, line 13.

Data collection instruments and technologies - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	Manuscript. Page 5, line 29 – page 7, line 13.
Units of study - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	Manuscript. Page 5, line 29 – page 7, line 13.
Data processing - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	Manuscript. Page 5, line 29 – page 7, line 13.
Data analysis - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	Manuscript. Page 5, line 29 – page 7, line 13.
Techniques to enhance trustworthiness - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**	Manuscript. Page 5, line 29 – page 7, line 13.

Results/findings

Synthesis and interpretation - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	Manuscript. Page 7, line 16 – page 12, line 16.
Links to empirical data - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	Manuscript. Page 7, line 16 – page 12, line 16.

Discussion

Integration with prior work, implications, transferability, and contribution(s) to the field - short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	Manuscript. Page 12, line 17 – page 15, line 23.
Limitations - Trustworthiness and limitations of findings	Manuscript. Page 15, line 25 – page 16, line 11.

Other

Conflicts of interest - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	Page 16, line 31
Funding - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	Page 16, lines 28-29

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.
**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.
Reference: O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014 DOI: 10.1097/ACM.0000000000000388

Focus Group Interview Script (Micro Level)

1. Attitude and Organization:

From your point of view:
- Can you describe how your health care center operates?
- How is it organized?
- What are the health objectives, if any, and who defines them?
- What are the health care center's priorities?
- Are there internal activities developed at the health care center?
- How do you view the community pharmacy? Opinions on the establishment, the activities it performs, and its external image.
- Do you currently have any contact with the community pharmacy / health care center?

2. Integration:

The patient is between health centers and community pharmacies; in fact, we share the same patients:
- Do you think there should be closer communication between community pharmacy professionals and health center staff?
- In this regard, would an integration of community pharmacies with health care centers be possible?
- What do you understand by the concept of "integration" of community pharmacies with health care centers?

3. Interventions and Strategies:

If we decide to work on bringing the two groups closer together (integration / cooperation / coordination / collaboration), we would have to design an action protocol.

- In general terms, what would this protocol consist of?
- Do you have experiences of collaboration with the community pharmacy / health care centers?
- Some possible actions have been identified in the literature / previous groups:
  - Implementation of an interprofessional communication program, preferably bidirectional.
  - Participation in meetings or clinical sessions at health care enters.
  - Sharing of action protocols. For example, referral to the doctor from the pharmacy, or actions like blood pressure measurement in the pharmacy, etc.
  - Reinforcement of messages sent from the health care center and the community pharmacy. For instance, attempting to make them common or shared objectives.
  - Other joint activities such as health campaigns.
- How could we achieve greater mutual knowledge, more interprofessional trust, and more coordinated activities?

4. Outcomes:

- What can be expected from the interventions and/or activities that are implemented?
- What could be the barriers and their causes?
- What red lines should not be crossed and what basic objectives should be achieved?

5. Stakeholders:

- Who do you think should primarily participate in the development of an integration protocol, if it is carried out?
- If there is a list, which would be the most critical/important of all?

Semi-Structured Interview Script (Meso and Macro levels)

1. Regarding Community Pharmacy:

- From your position, do you have any relationship with Community Pharmacy? What kind?
- What is your opinion of community pharmacists and Community Pharmacies?
- Pharmacists claim they are clinical, social, and digital. Beyond dispensing medications, what role do you think Community Pharmacy plays? And what do you believe should be their professional role?
- Do you think community pharmacists are considered, in practice, part of the Valencian health system?
- Why do you think Community Pharmacies feel that, for instance, during the pandemic, they were not involved, or at least, not as much as they would have liked?
- Community pharmacists advocate for providing clinical services such as therapeutic adherence, pharmaceutical indications, pharmacotherapeutic follow-up... From your perspective, what is your opinion on this movement seeking new professional roles?

2. Integration:

- As you know, we are carrying out a project to integrate community pharmacy into the Valencian health system, focusing more specifically on primary care.
- From your point of view, do you think a closer relationship between the pharmaceutical organization and the Valencian Health Service would be beneficial? Or do you believe it is better to maintain the current situation, which we could call separation, fragmentation or absolute autonomy of both groups? Why?
- In what sense would that closer relationship be beneficial? For what purpose?
- In what area do you think that closer relationship could be useful?
- What would be the advantages of a closer relationship in structural aspects (such as access to clinical history; bidirectional communication tools, etc.) or professional activities (joint activities such as attendance at clinical sessions, or shared objectives)?

3. Interventions and Strategies

- If an approach between community pharmacy and primary care were proposed, what joint activities should be considered? What stakeholders would be key in designing an action/research protocol?
- During the literature review, some themes have emerged that seem necessary to reconsider/evaluate, such as:
    - The development of an electronic communication tool between community pharmacy and health care centers that would be bidirectional.
    - The possibility that community pharmacists could change pharmaceutical forms (capsules to tablets...)
    - The possibility that community pharmacists could access the pharmacotherapeutic record to be able to focus pharmaceutical indications in the most correct way.
    - The possibility that Community Pharmacy could register tests performed in the pharmacy in the patient's history.
    - The need to somehow remunerate the health services offered from the Community Pharmacies (public-private problem).
- What do you think of all this? Do you believe these would be interesting changes to make? How could such changes be approached? What actions do you think would be necessary?