

# Interprofessional collaboration in primary health care: a review of facilitators and barriers perceived by involved actors

I. Supper<sup>1</sup>, O. Catala<sup>2</sup>, M. Lustman<sup>3</sup>, C. Chemla<sup>4</sup>, Y. Bourgueil<sup>5</sup>, L. Letrilliart<sup>1</sup>

<sup>1</sup>Department of General Practice, University of Lyon 1, Lyon, France

<sup>2</sup>Department of Pharmacy, University of Lyon 1, Lyon, France

<sup>3</sup>Department of Sociology, University of Lilles, Lilles, France

<sup>4</sup>Department of Psychology, University of Lyon 2, Lyon, France

<sup>5</sup>Institute for Research and Information in Health Economics, IRDES, Paris, France

Address correspondence to Irène Supper, E-mail: irenesupper@hotmail.com

## ABSTRACT

**Background** The epidemiological transition calls for redefining the roles of the various professionals involved in primary health care towards greater collaboration. We aimed to identify facilitators of, and barriers to, interprofessional collaboration in primary health care as perceived by the actors involved, other than nurses.

**Methods** Systematic review using synthetic thematic analysis of qualitative research. Articles were retrieved from Medline, Web of science, Psychinfo and The Cochrane library up to July 2013. Quality and relevance of the studies were assessed according to the Dixon-Woods criteria. The following stakeholders were targeted: general practitioners, pharmacists, mental health workers, midwives, physiotherapists, social workers and receptionists.

**Results** Forty-four articles were included. The principal facilitator of interprofessional collaboration in primary care was the different actors' common interest in collaboration, perceiving opportunities to improve quality of care and to develop new professional fields. The main barriers were the challenges of definition and awareness of one another's roles and competences, shared information, confidentiality and responsibility, team building and interprofessional training, long-term funding and joint monitoring.

**Conclusions** Interprofessional organization and training based on appropriate models should support collaboration development. The active participation of the patient is required to go beyond professional boundaries and hierarchies. Multidisciplinary research projects are recommended.

**Keywords** cooperative behaviour, interprofessional relations, patient care team, primary health care/organization and administration, qualitative research

## Introduction

The globally ageing population, the epidemiological transition from acute to chronic diseases, the need to reduce hospital stays and the worldwide relative shortage of physicians and allied health professionals all contribute to changing patterns of healthcare needs and demands.<sup>1,2</sup> Consequently, the optimal distribution of, and collaboration between, healthcare professionals is a major challenge. In a context of limited resources, different healthcare systems have been experimenting with interprofessional collaboration in primary care to improve professional effectiveness and quality of practice among professionals.<sup>1</sup> Interprofessional collaboration in

primary care can be defined as an integrative cooperation of different health professionals, blending complementary competences and skills, making possible the best use of resources.<sup>3</sup>

**I. Supper**, PhD student and fellow in Primary Care

**O. Catala**, Associate Professor of Pharmacy

**M. Lustman**, Senior lecturer in Sociology

**C. Chemla**, PhD student in Psychology

**Y. Bourgueil**, Director of the Institute for Research and Information in Health Economics, IRDES

**L. Letrilliart**, Professor of General Practice

Its primary requirements are providing benefits to patients and meeting users' expectations. Quantitative findings regarding collaboration between general practitioners (GPs) and advanced nurses suggest that appropriately trained or specialized nurses can produce high-quality care, while making room for currently unmet needs.<sup>4–6</sup> The findings of qualitative reviews have brought into question the routine implementation of advanced roles, formerly undertaken by GPs, among nurses, specifically in the UK, Australia and Canada. In particular, concerns have been underlined about the knowledge base and training of nurses, as well as continuity of care.<sup>7–10</sup>

Collaboration with groups of health professionals other than nurses remains relatively unexplored.<sup>5</sup> Due to the large volume of work published on collaboration with nurses, we focused on the other actors within the primary care team. Pharmacist-provided direct patient care has been quantitatively assessed as effective on safety and patient-based outcomes, including medication adherence, patient knowledge and health-related quality of life.<sup>11</sup> In addition, pharmacist–physician quality circles in ambulatory care are cost-effective.<sup>12,13</sup> Counseling in primary care can be associated with significantly greater clinical effectiveness in short-term mental health outcomes compared with usual care<sup>14–16</sup> and cause a significant reduction in the number of consultations, prescriptions and referrals to specialist care.<sup>17</sup>

It is likely that professionals' beliefs and values are determining factors for collaboration, as it is a complex process beyond the efficacy of some experimentation. It is therefore necessary to better understand actors' perceptions before implementing shared roles and responsibilities between professional groups. Informed by the experience of nurse–GP collaboration,<sup>18</sup> our aim was to identify factors facilitating or impeding interprofessional collaboration involving other primary care professionals through a systematic qualitative review.

## Methods

We conducted a systematic review of qualitative studies in primary care, based on thematic synthesis.<sup>19</sup> The criteria for inclusion were qualitative studies published as research articles, concerning interprofessional collaboration between health professionals in primary care, available in English or French. We excluded any study unrelated to interprofessional relationships, conducted in settings other than primary care, concerning education in collaboration and quantitative research articles. We deliberately excluded studies focused on the collaboration between GPs and nurses or healthcare assistants.

### Literature search

The following databases were systematically searched, up to July 2013: Medline, Cochrane library, Web of science and

PsychINFO. The search query in Medline is provided in Supplementary data, Appendix S1. We complemented this bibliographic search by reference chaining. Studies were screened by title and abstract according to the inclusion and exclusion criteria. These criteria were assessed independently by two of the authors (I.S. and L.L.), based on consensus. The selection process is reported according to the ENTREQ standard.<sup>20</sup>

### Quality appraisal and data extraction

The quality of the studies was appraised according to the National Health Service criteria for reporting qualitative studies, as adapted by Dixon-Woods.<sup>21</sup> One point was awarded for each of the five criteria, namely aims and objectives, research design, reproducibility of findings, sufficient data and appropriate analysis. Since there is little empirical evidence on which to base decisions for exclusion, we did not exclude any study but instead integrated an assessment of the quality of the study into the review findings.

The data on study characteristics and results were manually extracted. They included the name of the first author, year, country, study design, type of participants, sample size and the context of the study (routine or experimental collaboration). We examined the context of the studies as a potential influence on the proposed solutions. The content of the articles, based on the 'results' section, but also on the abstract or the 'conclusion' in the study report, was analysed inductively, without any *a priori* 'framework'. Two of the authors (I.S. and L.L.) conducted an axial coding of the data to identify conceptual and structural analytical themes.

## Results

In total, 44 articles were included in the review (Supplementary data, Figure S1). The list of included studies is provided in Supplementary data, Appendix S2. The professionals involved in the studies of collaboration with GPs were primarily pharmacists (20 articles) and mental health professionals (11); other professionals were midwives (3), physiotherapists (2), receptionists (2), social workers (3) and multidisciplinary teams (3). (Table 1). Only six studies were published before 2002. Only 23 articles investigated the perceptions of more than one professional group involved in the collaboration process, and only 13 explored the perceptions of patients.

### Pharmacists

Pharmacists working in a separate practice experimented with roles in filtering, diagnosis, prescription and medication

**Table 1** Included articles

<i>Author, year</i>	<i>Country</i>	<i>Study design</i>	<i>Included participants</i>	<i>Sample size</i>	<i>Quality appraisal</i>
<b>Pharmacists</b>					
Freeman [1] 2012	AU	I, FG	GPs, pharmacists, healthcare consumers, practice managers	58	5
Hatah [2] 2012	NZ	I	GPs	18	5
Lauffenburger[3] 2012	USA	FG	GPs, patients	36	5
Rubio-Valera [4] 2012	ES	I	GPs, pharmacists	37	5
Tarn [5] 2012	USA	FG	GPs, pharmacists, patients	72	4
Dey [6] 2011	AU	I	GPs, pharmacists	25	5
Bryant <sup>a</sup> [7] 2010	NZ	I	Pharmacists	20	3
Kolodziejak <sup>a</sup> [8] 2010	CA	FG	Pharmacists, patients, staff	NS	4
Lamberts [9]2010	NL	I, FG	Patients	42	5
McGrath [10] 2010	USA	FG	GPs	23	4
Snyder [11] 2010	USA	I	Pharmacists	10	5
Loch-Neckel [12] 2009	BR	I	GPs, nurses, dentists	15	3
Pottie <sup>a</sup> [13] 2009	CA	Reports	Pharmacists	7	5
Denneboom <sup>a</sup> [14] 2008	NL	Q, I	GPs, pharmacists	16	5
Pottie <sup>a</sup> [15] 2008	CA	FG, I	GPs	12	5
Hughes [16] 2003	GB	FG	GPs, pharmacists	53	5
Porteous [17] 2003	GB	I, FG, Q	GPs, pharmacists, patients, opinion leaders, computing experts	37	2
Edmunds <sup>a</sup> [18] 2001	GB	I	GPs, pharmacists, project managers, local, medical and pharmaceutical committee	85	5
Kocken [19] 1999	NL	Q	GPs, pharmacists	NS	2
Hassell [20] 1997	GB	I	Patients, community pharmacy staff	NS	3
<b>Mental health professionals</b>					
Franx <sup>a</sup> [21] 2012	NL	I	GPs, psychologists, social workers, nurses, physiotherapists, psychiatrists, managers	NS	5
Peters <sup>a</sup> [22] 2011	GB	I	Patients, nurse therapists, supervisors	52	5
Mitchell [23] 2009	AU	FG	Non-medical service providers	41	4
Bambling [24] 2007	AU	I	GPs, mental health staff, participants from community organizations	74	3
England <sup>a</sup> [25] 2007	GB	I, FG	Primary care mental health workers, patients, members of primary care teams	66	5
Chew-Graham <sup>a</sup> [26] 2007	GB	I	GP referrers, community mental health psychiatrists and team leaders	52	5
Richards [27] 2006	GB	I, FG	Patients, professionals	46	5
Lockhart [28] 2006	AU	I	GPs and mental health workers	45	4
Lester [29] 2005	GB	FG	Health professionals, patients	92	5
Gask [30] 2005	USA	I	Primary care workers, specialist medical and nursing staff, managers, key informants	45	5
Bower <sup>a</sup> [31] 2004	GB	I	Managers and clinicians	46	5
<b>Midwives</b>					
McKenna <sup>a</sup> [32] 2009	GB	I	Healthcare managers (Directors of nursing, chief nurse, Directors of primary care)	26	2
Lipp [33] 2008	GB	I	Midwives and similar	12	5
Lavender [34] 2003	GB	FG	Midwives	126	5
<b>Physiotherapists</b>					
Holdsworth <sup>a</sup> [35] 2008	GB	Q	Physiotherapists, GPs	161	5
Clemence [36] 2003	GB	I	Physiotherapists, GPs, patients	22	5

*Continued*

Table 1 Continued

Author, year	Country	Study design	Included participants	Sample size	Quality appraisal
Receptionists					
Ward [37] 2011	GB	PO, I	Receptionists	28	5
Eisner [38] 1999	GB	I	Receptionists	20	2
Social workers					
Keefe [39] 2009	USA	FG	GPs, nurses	25	5
Kharicha [40] 2005	GB	I	Social work team managers, social workers, GPs	69	4
Holtom [41] 2001	GB	I	Managers, GPs, social workers	NS	2
Multidisciplinary					
Chan [42] 2010	AU	Q	GPs, dieticians, diabetic educators, exercise physiologists, podiatrists, psychologists, physiotherapists	74	3
Byles <sup>a</sup> [43] 2002	AU	I	Nurses, a social worker, an occupational therapists and a psychologist	18	5
Robertson [44] 1999	GB	FG	GPs, health visitor, social worker, a psychiatric project worker	5	1

I, Interview; FG, Focus group; PO, Participant observation; Q, Questionnaire; NS, not specified; AU, Australia; NZ, New Zealand; USA, United States of America; ES, Spain; CA, Canada; NL, The Netherlands; BR, Brasil; GB, Great Britain.

<sup>a</sup>Experimentation, numbers in brackets refer to included studies presented in Supplementary data, Appendix S2.

management, beyond their traditional dispensing role (Table 2). Medication management encompassed group discussion, medication review or treatment adaptation. They followed up patients with chronic conditions, including asthma or diabetes, delivering patient education or monitoring treatment adherence. Three experiments integrated pharmacists into primary care practices, working alongside GPs. Instead of prescribing drugs, their new roles involved taking charge of patient education and medication management.

### Facilitators

According to the health professionals interviewed, the process of team building, especially the definition of each professional mandate, should be guided by a professional pharmacist, based on principles of both a bottom-up approach and a clear acknowledged leadership. Knowledge of each other's role was a prerequisite for trustworthiness. The effectiveness of collaboration procedures had to be apparent to the actors. Adaptation of facilities and remunerations of health professionals involved was needed for good communication. Intensive multidisciplinary training at both undergraduate and postgraduate level was required to favour future collaboration.

### Barriers

A lack of mandate for pharmacists' evolving roles appeared at a logistical level (time, financial support) and at the team level (relationship building). The possible conflicts of interest of pharmacists could induce a lack of legitimacy, increased by a

'public-private' conflict with GPs in Spain. Pharmacists' medico-legal responsibility placed limits on the extension of their roles to diagnosis and prescription. Both the lack of clinical information and possible threats to confidentiality were raised. A lack of training or skills was an issue for some pharmacists.

### Mental health providers

Some pilot projects have considered the extended roles of primary care mental health workers (including psychologists, nurse therapists and mental health workers) from a disease-centred point of view. These professionals were responsible for following up patients with common mental health problems, long-term conditions or serious mental illness. Only a few projects had a global, patient-centred approach (Table 3).

### Facilitators

A flexible model for collaborative care, built in a horizontal way and adapted to multiple stakeholders' perspectives and to the specific setting, received greater support from the team. Implementation needed coherence in patient management and active participation of actors, with the support of regular and structured meetings and coordination by a local project manager. The team members expected to reach an agreement and to be regularly trained on each other's roles.

### Barriers

Overt attitudinal barriers linked to concepts specific to the team members were cited, including normal versus pathological

**Table 2** Collaboration with pharmacists

<i>Author</i>	<i>Collaboration field</i>	<i>Facilitators</i>	<i>Barriers</i>
Outside primary healthcare teams			
Diagnostic management and drug prescribing			
Hughes [16]	Extended prescribing rights and involvement in services	Multidisciplinary training	Limited access and implicit hierarchy with respect to GPs Lack of awareness of pharmacists roles 'Shopkeeper' image
Edmunds [18]	Prescribing and care schemes including adherence supervision	Professionals perceiving the benefits of collaboration Remuneration	Encroachment of diagnostic or prescribing responsibility with GPs Lack of patient clinical information Variable clinical skills Threat to confidentiality Top-down approach while building the project
Hassell [20]	First contact: pharmaceutical consultation	Professionals perceiving the benefits of collaboration	
Hatah [2]	Screening, monitoring, prescribing, medication review	Perceived benefits	Fragmented patient care Workloads for GPs and pharmacists Limited benefits for patients perceived by GPs
Medication management and patient education			
Dey [6]	Asthma management	Ensuring feedback about the patient's state Face-to-face communication with GPs	GPs' primary responsibility and lack of time GPs' lack of communication and negative attitudes
Bryant [7]	Clinical medication reviews	Both professions considering global benefits	Lack of payment for pharmacists and GPs
Lamberts [9]	Introduction of chronic medication for T2DM	Patients' need for concordant information and to discuss drug-related issues Pharmacists' expertise, service and kindness	No mandate No legitimacy particularly from the business perspective No adequacy: concerns about lack of skills and confidence Internet GPs' primary responsibility and lack of time Patients' preference for relationships with nurse practitioners Pharmacists perceived mainly as distributors of medicine First contact with the pharmacy technician rather than the pharmacist Commercial image
Lauffenburger [3]	Medication therapy management	Comprehensive care Integration of the pharmacist in the team, including face-to-face communication with GPs	No reimbursement model based on the team Access to clinical information

*Continued*

Table 2 Continued

<i>Author</i>	<i>Collaboration field</i>	<i>Facilitators</i>	<i>Barriers</i>
McGrath[10]	Medication therapy management	Demonstrated added value of the pharmacist Training/preparation of the pharmacist	Lack of payment for medication management by pharmacists and for care coordination for GPs. Time needed to create a trusting relationship
Snyder [11]	Medication therapy management and disease state management	Pharmacist as relationship initiator Face-to-face visits discussing professional roles Trustworthiness through consistent contributions to care by pharmacists	GPs' perceived primary responsibility
Denneboom [14]	Treatment reviews	Perceived benefits of treatment reviews by both GPs and pharmacists	Difficult relationships with GPs Lack of time Opposite patients' demand and specialists' prescriptions
Porteous [17]	Electronic transfer of prescription-related information	A collaborative information sharing tool Enhanced professional role in prescription management for pharmacists	GPs' and patients' concerns about the confidentiality of medical records
Kocken [19]	Medication discussion groups	Awareness of one another's role	Limited access to GPs
Tarn [5]	Medication management	Pharmacists perceived as medication experts by patients	Lack of time for communication between GPs and pharmacists Patients' concerns about confidentiality
Integrated in primary healthcare teams Medication management and patient education			
Freeman [1]	Clinical services	Training of the pharmacist Defined scope of practice, adapted legislation Support of GPs and administration	Logistical issues such as remuneration and space GPs' reluctance
Kolodziejak [8]	Clinical services	Using a stepwise guide for integration of the pharmacist into a primary healthcare team	Limited experience of team establishment No awareness of the role of the pharmacists
Loch-Neckel [12]	Pharmaceutical services associated to medication	Professionals perceiving the benefits Availability of pharmacists	Lack of previous experience or education of the team with the pharmacist's contribution
Pottie [15]	Medication assessments, drug information, academic detailing and office system enhancements	Professionals perceiving the benefits for patients and for the practice Liaison role with community pharmacies	Forensic implications Time to learn about pharmacists' role and skills Lack of space in family practice teams
Pottie [13]	Medication assessments, drug information, academic detailing and office system enhancements	Support of the mentoring pharmacist Liaison role between the family practice and the community pharmacist	Time for integration Separate practices
Rubio-Valera [4]	Clinical services	Perception of usefulness by GPs Manager's interest and continuous support Shared objectives with GPs	Professionals' negative attitude Geographical distance and unadapted legislation

Numbers in brackets refer to included studies presented in Supplementary data, Appendix S2.

**Table 3** Collaboration with mental health professionals

<i>Author</i>	<i>Collaboration field</i>	<i>Facilitators</i>	<i>Barriers</i>
Franx [21]	Stepped-care model for depression	The stepped-care model Structured team meetings Positive reaction of patients to stepped care	Differing views of depression care Lack of resources Poor information systems
Peters [22]	Patients with long-term conditions	Training and supervision: access, time, funding	Adjustments to a new qualitative role Complexity of psychological or social cases
Mitchell [23]	Role of non-medical service providers	Perceived benefits	Opposite position to the putative role of specialist mental health services
Bambling [24]	Providing mental health services in a rural area	A case management system Funding for shared-care management	Differing organizational contexts and priorities Lack of appropriate staffing
England [25]	Primary care mental health workers	Strategies including multiple stakeholder perspectives	Professional isolation Tension around ownership of the role
Chew-Graham [26]	Community mental health teams	Agreement on clearly predefined roles	No process of decision-making
Richards [27]	Treatment of depression	Providing evidence of benefits from collaborative care Experienced case managers	Selection and training of skilled mental health workers Lack of physical space, time, resources GPs' anxiety of losing the delivery of care for depressed patients
Lockhart [28]	Community mental health workers		Contradictory definitions involving professional roles and mental health
Lester [29]	People with serious mental illness	Patients' view on primary care as the corner stone of their physical and mental health care	Patients' preference about continuity of care and listening skills rather than specific mental health knowledge
Gask [30]	Integrated care	Care manager Space and time for communication Developing shared mental models	Lack of financial support Medical versus personal responsibility of care Lack of gatekeeper controlled system
Bower [31]	Primary care mental health workers: client work, practice teamwork and networking	Training and supervision for the new health provider but also for the rest of the team Flexible schemes	Disagreement on expectations about primary care mental health workers Multiple professionals involved rather than relational continuity

Numbers in brackets refer to included studies presented in Supplementary data, Appendix S2.

patients, informal versus formal communication, physician versus patient responsibility or holistic client-focused versus illness-focused care model. Not only were care functions expected from mental healthcare workers, but also the functions of teaching and supporting the team. All professionals were worried about the ownership of their role, due to their attachment to maintaining continuous relationships with patients and to the lack of clear rules for choosing the right professional to be consulted. In addition, covert barriers, including financial, geographical and time constraints, were cited.

### Other health providers

See Table 4.

## Discussion

### Main finding of this study

This review has identified conceptual and structural facilitators and barriers, either common to various professions or specific to some of them. Pharmacists, mental health workers and a few other actors involved in primary care show a common interest in interprofessional collaboration. They perceive opportunities to improve quality of care for their patients as well as their own quality of working life, and to develop new professional skills. An uneven number of studies involving pharmacists and, to a lesser extent, mental health professionals reflects the identity, autonomy and research capacity of their respective professions. Collaboration with

**Table 4** Collaboration with other allied health professionals

<i>Author</i>	<i>Collaboration field</i>	<i>Facilitators</i>	<i>Barriers</i>
Midwives McKenna [32]	Diversification of midwifery roles	Appropriate infrastructure to support and evaluate new roles Perceived benefits for patients by professionals	Lack of administrative support Long-term secure funding
Lipp [33]	Medical abortion	Common women-centred care approach Confidentiality Proximity	Statutory obligations
Lavender [34]	Maternity care	Professionals' perceived benefits for patients Common 'philosophy of normality'	GP as a gatekeeper before midwives Womens' preference for a doctor
Physiotherapists Holdsworth [35]	Management of musculoskeletal care	Professionals' perceived benefits for patients	Physiotherapists' lack of experience or training Insufficient public awareness of physiotherapy for self-referral Physiotherapists' responsibility of prescribing
Clemence [36]	Self-referral	Professionals' perceived benefits	Resource implications (time, clerical support and capital investment)
Social workers Keefe [39]	Care for elderly	On-site and full-time social worker Benefits perceived by professionals Team awareness of the skills and training of social workers	Time required for case discussion Lack of space
Kharicha [40]	Care for elderly	Professionals' perceived benefits Awareness of the various roles	Different decision-making processes between professionals Hierarchy between GPs and social workers Lack of common office or risk of over-referral otherwise
Holtom [41]	Management of social exclusion	Shared computer system Social worker as 'liaison care manager' in the practice Global funding Joint performance monitoring of health and social care outcomes Leadership skills at the local level	Inconsistency between GPs' and social workers' lists Differing priorities Lack of mutual knowledge and respect Lack of co-location for some tasks
Receptionists Ward [37]	Orientation	GPs' perceived benefits	Emotional workload
Eisner [38]	Triage and management of patient emotion	Recognition of their role	Unequal status as employee
Multidisciplinary teams Chan [42]	Chronic care	Team consultations with the patient Empowerment of the patient	No face-to-face interactions between professionals Poor understanding of roles and capabilities of the various professionals
Byles [43]	Care for elderly	Professionals' perceived benefits	Power relations and tendency towards boundary maintenance
Robertson [44]	Mental health		Lack of communication Different expectations and agendas between professionals

Numbers in brackets refer to included studies presented in Supplementary data, Appendix S2.



midwives, physiotherapists or receptionists has been studied far less.

Nurses' extended roles have already been implemented in many collaborative projects, especially in the UK. Regarding practice nurses, targeting cost containments rather than quality improvement or establishing subordination rather than complementarity limit their satisfaction and consequently their adherence to collaborative practices.<sup>7,16</sup> Substitution of doctors by nurse practitioners is constrained by difficulties in acquiring the new skills needed to address multidimensional consultations. The concept of extended roles may also apply to other primary care professionals, who usually practice with more autonomy. Broadening collaboration towards a multi-professional approach creates a need for specific joint long-term funding, training and evaluation at a team level. This approach leads to a shift from subordination to complementarity and from cost containment to meeting patients' previously unmet needs.

### What is already known on this topic

#### Facilitators

Conceptual facilitating factors were positive attitudes and views on the interest and perceived benefits of collaborating. On the one hand, collaboration with nurses, mental health providers or social workers is partly driven by increasing primary care needs for chronic conditions, mental health or care for elderly. On the other hand, pharmacists can expect to develop more clinical activities through collaboration, since their dispensing role can be taken over via the Internet, by automatic systems or assistants.<sup>22</sup> Primary care professionals were particularly interested in enhancing their professional role. According to members of teams involved in improving chronic illness care, the perceived effectiveness of team working is a prerequisite for collaboration and is associated with a greater number and depth of changes made to improve that care.<sup>23</sup> However, the actors interviewed in the articles we reviewed did not discuss the risks associated with the redistribution of roles. Indeed, this redistribution can be associated with changes in the identity of the actors, possibly leading to the assimilation of one profession by another. Professional reflexivity can be helpful to ensure these changes are implemented fairly.<sup>22</sup>

Structural facilitating factors are shared facilities and organization. Among them, shared communication tools should be developed and adapted to the different professions involved, including social workers and receptionists. Indeed, the use of connected electronic health records, especially with a specific messaging system, can improve team communication<sup>24</sup> and consequently reduce the frequency of adverse events.<sup>25</sup> In the early stages of collaboration, time should be dedicated to communication, training, building shared views and overcoming

prejudices, to save time later on. A shared location, with a meeting space, and dedicated to collaboration, is needed. Appropriate management of the team is required, respecting an agreed team organization and statutory requirements.<sup>26</sup> It is also essential to provide global long-term funding and to monitor and assess team performance. According to our findings, some form of leadership is expected at local level rather than at central administrative level. A complementary top-down and bottom-up process for developing team capacity would be valued by the actors.

#### Barriers

Perceived hierarchy is the main conceptual barrier hindering collaboration. It reflects the asymmetry of the possible gains accessible through collaboration. Professionals with a higher status or autonomy, like GPs or private nurses, have fewer constraints and appear more inclined to share the decision-making process.<sup>13</sup> To promote their integration into a primary care team, pharmacists are occasionally required to financially compensate GPs in return for permission to extend their professional field in this direction.<sup>27</sup> Focusing on patients' needs and views can prevent professionals from establishing power relationships and protecting their jurisdiction, as already demonstrated with nurses and GPs.<sup>8</sup> The current feminization of the medical profession may present an opportunity to empower all team members, as women are more often inclined to a shared leadership.<sup>28</sup>

Other conceptual barriers are derived mainly from a lack of definition, awareness and recognition of the role of each professional. In particular, the extent of the roles in a team is imprecise and dependent on the level of trust and integration of the professionals into this team.<sup>29</sup> As it is possible that different professionals will practice at the same stage of the patient's pathway, role superposition and replication of patient care are critical issues for professionals. Health service research targeting interprofessional team organization therefore needs to be further developed, especially with physiotherapists and midwives. Responsibilities with forensic implications represent a threat for non-physicians, when switching from an advisory role to an active clinical role in diagnosis or prescription. Data confidentiality is a matter of concern for all actors, especially GPs and patients. The risk is perceived as significant when medical data are shared with pharmacists, their assistants or social workers. As already highlighted,<sup>22</sup> a conflict of interest can exist for the clinical pharmacists between their roles of drug prescribing and dispensing. This conflict of interest could be limited if the pharmacist works within a practice shared with GPs, independently of a community pharmacy, which implies new remuneration features.<sup>12</sup> Other types of cooperation with pharmacists, such as medication management,

are less problematic in this regard.<sup>12</sup> Patients are strongly attached to personal continuity of care centred on their GP, as already reported regarding the collaboration between nurses and GPs.<sup>7</sup> The right balance between management continuity (ensuring continual availability of qualified professionals) and personal continuity (ongoing contact with the same professional) can be reached through information systems and team building.<sup>30,31</sup> Differing concepts, on perceptions and priorities for patient care, can impede collaboration between advanced nurses and physicians,<sup>5</sup> or between mental health and social care workers and primary care physicians.<sup>32</sup> The traditional biomedical view of physicians frequently collides with the more psychosocial approach of mental health and social workers; therefore, the presence of a psychologist during relevant consultations may bridge these views.<sup>33</sup> Promoting a wellness rather than a sickness system may ultimately reconcile the primary care actors around patient expectations.<sup>8</sup>

### What this study adds

A theoretical transition framework from traditional to optimal collaboration is provided in Supplementary data, Figure S2. Various models of collaboration, based on evolving perceptions of the primary care actors, may support the transition process.<sup>34</sup> The earliest models were limited to conceptual frameworks and did not consider outcomes assessment.<sup>35</sup> More practical models have subsequently been developed with the objective of providing comprehensive evaluative frameworks for partnership. For example, Bodenheimer's interprofessional chronic care model includes six components for assessment: self-management support, clinical information systems, delivery system redesign, decision support, healthcare organization and community resources.<sup>36</sup> Butt's model on partnership effectiveness can be evaluated using two external process measurement tools: the Partnership Self-Assessment Tool and the Team Climate Inventory.<sup>37</sup> Apart from specific models, indicators have been validated for collaboration between GPs and nurses.<sup>38</sup> Indicators of collaboration between GPs and pharmacists have been developed, especially on joint care activities, access to physicians, monitoring drug therapy and providing patient education.<sup>39,40</sup> Interprofessional structure, process and outcomes indicators for more than two professions remain to be further extended in primary care, to bridge the gap between theoretical models and process, and patient outcomes.<sup>41</sup>

Only a few coordination models have been designed. The chronic care model defines the relationships between the professionals of a multidisciplinary team in primary care as well as with secondary care providers, and also includes patients as partners. A 'stepped-care' model, developed in mental health

care, attributes professional interventions according to patient illness severity. Patients' conceptions about interprofessional collaboration were investigated in less than one-third of the reviewed studies. Although disease management programs are usually based on integrated care, they are usually disease-centred rather than driven by patient needs.<sup>32</sup> However, the primary care system should take into account patients' expectations on care organization.<sup>32,35</sup> A global, bio-psycho-social perspective should be adopted for research as well as for implementation.<sup>42</sup>

Changing perceptions of health professionals and building awareness of each other's roles is a long-term process, which may be facilitated by multidisciplinary training at pre- and postgraduate levels.<sup>43</sup>

### Limitations of this study

The literature on interprofessional collaboration is difficult to retrieve as there are no keywords both sensitive and specific to this subject. The reviewed studies were not excluded on the basis of a quality appraisal, because even studies with some methodological flaws provided valuable information.<sup>21</sup> Moreover, there is no gold standard for quality appraisal of qualitative research.<sup>20</sup> Collaboration levels varied from informal to formal among the different healthcare services. Formal experimentation usually included professionals willing to participate, particularly GPs, who might not be representative of all professionals concerned. In addition, the researchers may have adopted perspectives influenced by their profession. This review itself brings together the various perspectives of the authors, as GPs, pharmacist and psychologist. Finally, the organizational framework underpinning skill-mix changes in the various professions, especially between enhancement, substitution, delegation and innovation, was rarely referred to in the articles.<sup>44</sup> However, these different organizational processes can be associated together and presumably share similar facilitators and barriers. Experimentation has mainly been implemented in the UK or the USA, based on capitation or on managed care. The central leadership of previously grouped professionals favours efficient collaboration. Since in these countries primary care has been organized around formalized primary care teams, some structural barriers have already been overcome and their importance may be underestimated in this review. The applicability to healthcare services based on fee-for-service or to low- or mid-income countries deserves to be explored with different management types and new coordinating roles.<sup>45</sup>

Interprofessional organization and training based on appropriate models should support the development of efficient collaborative care, provided that outcomes are appropriately

assessed. Both the implementation of and research on collaboration in primary care should integrate the views of patients as well as of all professionals involved and should be conducted by interprofessional teams.

## Supplementary data

Supplementary data are available at *PUBMED* online.

## Funding

The language editing has been funded by the Department of General Practice, University of Lyon 1.

## References

- World Health Organisation (WHO). *The World Health Report 2008 - Primary Health Care: Now More Than Ever* [Internet]. Geneva, Switzerland: World Health Organisation (WHO), 2008. <http://www.who.int/whr/2008/en/> (13 February 2014, date last accessed).
- Uddin S, Hossain L, Kelaher M. Effect of physician collaboration network on hospitalization cost and readmission rate. *Eur J Public Health* 2012;**22**(5):629–33.
- Samuelson M, Tedeschi P, Aarendonk D *et al.* Improving interprofessional collaboration in primary care: position paper of the European Forum for Primary Care. *Qual Prim Care* 2012;**20**(4):303–12.
- Laurant M, Reeves D, Hermens R *et al.* Substitution of doctors by nurses in primary care. *Cochrane Database Syst Rev* 2004;**4**:CD001271.
- Buchan J, Calman L. Skill-mix and policy change in the health workforce: nurses in advanced roles. In: *Health Working Papers no.17*. Paris, France: OECD 2005.
- Mousques J, Bourgueil Y, Le Fur P *et al.* Effect of a French experiment of team work between general practitioners and nurses on efficacy and cost of type 2 diabetes patients care. *Health Policy* 2010;**98**(2–3):131–43.
- Rashid C. Benefits and limitations of nurses taking on aspects of the clinical role of doctors in primary care: integrative literature review. *J Adv Nurs* 2010;**66**(8):1658–70.
- Price K, Patterson E, Hegney D. Being strategic: utilising consumer views to better promote an expanded role for nurses in Australian general practice. *Collegian* 2006;**13**(4):16–21.
- DiCenso A, Bryant-Lukosius D, Martin-Misener R *et al.* Factors enabling advanced practice nursing role integration in Canada. *Nurs Leadersh Tor Ont* 2010;**23**(Spec no 2010):211–38.
- Laurant MG, Hermens RP, Braspenning JC *et al.* An overview of patients' preference for, and satisfaction with, care provided by general practitioners and nurse practitioners. *J Clin Nurs* 2008;**17**(20):2690–8.
- Chisholm-Burns MA, Kim Lee J, Spivey CA *et al.* US pharmacists' effect as team members on patient care: systematic review and meta-analyses. *Med Care* 2010;**48**(10):923–33.
- Michot P, Catala O, Supper I *et al.* Coopération entre médecins généralistes et pharmaciens?: une revue systématique de la littérature. [Cooperation between general practitioners and pharmacists: a systematic review.] *Santé Publique* 2013;**25**(3):331–41.
- Florentinus SR, van Hulten R, Kramer M *et al.* Which pharmacists contribute to high-level pharmacotherapy audit meetings with general practitioners? *Ann Pharmacother*. 2006;**40**(9):1640–6.
- Bower P, Knowles S, Coventry PA *et al.* Counselling for mental health and psychosocial problems in primary care. *Cochrane Database Syst Rev* 1996;**7**(9):CD001025.
- Winefield HR, Turnbull DA, Seiboth C *et al.* Evaluating a program of psychological interventions in primary health care: consumer distress, disability and service usage. *Aust N Z J Public Health* 2007;**31**(3):264–9.
- Chomienne M-H, Grenier J, Gaboury I *et al.* Family doctors and psychologists working together: doctors' and patients' perspectives. *J Eval Clin Pr* 2011;**17**(2):282–7.
- Harkness EF, Bower PJ. On-site mental health workers delivering psychological therapy and psychosocial interventions to patients in primary care: effects on the professional practice of primary care providers. *Cochrane Database Syst Rev* 2009;**21**(1):CD000532.
- Schadewaldt V, McInnes E, Hiller JE *et al.* Views and experiences of nurse practitioners and medical practitioners with collaborative practice in primary health care – an integrative review. *BMC Fam Pract* 2013;**14**(1):132.
- Barnett-Page E, Thomas J. Methods for the synthesis of qualitative research: a critical review. *BMC Med Res Methodol* 2009;**9**(1):59.
- Tong A, Flemming K, McInnes E *et al.* Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ. *BMC Med Res Methodol* 2012;**12**:181.
- Dixon-Woods M, Cavers D, Agarwal S *et al.* Conducting a critical interpretive synthesis of the literature on access to healthcare by vulnerable groups. *BMC Med Res Methodol* 2006;**6**:35.
- Wiedenmayer K, Summers RS, Mackie CA *et al.* *Developing Pharmacy Practice - A Focus on Patient Care* [Internet]. World Health Organisation and International Pharmaceutical Association, 2006. [http://www.who.int/medicines/publications/WHO\\_PSM\\_PAR\\_2006.5.pdf](http://www.who.int/medicines/publications/WHO_PSM_PAR_2006.5.pdf) (10 July 2013, date last accessed).
- Shortell SM, Marsteller JA, Lin M *et al.* The role of perceived team effectiveness in improving chronic illness care. *Med Care* 2004;**42**(11):1040–8.
- Denomme LB, Terry AL, Brown JB *et al.* Primary health care teams' experience of electronic medical record use after adoption. *Fam Med* 2011;**43**(9):638–42.
- Zwart DLM, Steerneman AHM, van Rensen ELJ *et al.* Feasibility of centre-based incident reporting in primary healthcare: the SPIEGEL study. *BMJ Qual Saf* 2011;**20**(2):121–7.
- Xyrichis A, Lowton K. What fosters or prevents interprofessional teamworking in primary and community care? A literature review. *Int J Nurs Stud* 2008;**45**(1):140–53.
- Abbott A. *The System of Professions: An Essay on the Division of Expert Labor*. Chicago, IL: University of Chicago Press, 1988.
- Eagly AH, Johannesen-Schmidt MC, van Engen ML. Transformational, transactional, and laissez-faire leadership styles: a meta-analysis comparing women and men. *Psychol Bull* 2003;**129**(4):569–91.
- Groenewegen PP. Trust and the sociology of the professions. *Eur J Public Health* 2006;**16**(1):3–4.

- 30 Haggerty JL. Continuity of care: a multidisciplinary review. *BMJ* 2003;**327**(7425):1219–21.
- 31 Burt J, Barclay S, Marshall N *et al*. Continuity within primary palliative care: an audit of general practice out-of-hours co-operatives. *J Public Health Oxf Engl* 2004;**26**(3):275–6.
- 32 Van Dijk-de Vries A, Moser A, Mertens V-C *et al*. The ideal of biopsychosocial chronic care: how to make it real? A qualitative study among Dutch stakeholders. *BMC Fam Pract* 2012;**13**:14.
- 33 Solano L, Pirrotta E, Ingravalle V *et al*. The family physician and the psychologist in the office together: a response to fragmentation. *Ment Health Fam Med* 2009;**6**(2):91–8.
- 34 Van Royen P, Rees CE, Groenewegen P. Patient-centred interprofessional collaboration in primary care: challenges for clinical, educational and health services research. *Eur J Gen Pract* 2014;**1**:1–6.
- 35 D'Amour D, Ferrada-Videla M, San Martin Rodriguez L *et al*. The conceptual basis for interprofessional collaboration: core concepts and theoretical frameworks. *J Interprof Care* 2005;**19**(Suppl. 1):116–31.
- 36 Bodenheimer T, Wagner EH, Grumbach K. Improving primary care for patients with chronic illness. *JAMA* 2002;**288**(14):1775–9.
- 37 Butt G, Markle-Reid M, Browne G. Interprofessional partnerships in chronic illness care: a conceptual model for measuring partnership effectiveness. *Int J Integr Care* 2008;**8**:e08.
- 38 Dougherty MB, Larson E. A review of instruments measuring nurse-physician collaboration. *J Nurs Adm* 2005;**35**(5):244–53.
- 39 Brock KA, Doucette WR. Collaborative working relationships between pharmacists and physicians: an exploratory study. *J Am Pharm Assoc* 2004;**44**(3):358–65.
- 40 McDonough RP, Doucette WR. Developing collaborative relationships between pharmacists and physicians. *J Am Pharm Assoc* 2001;**41**(5):682–92.
- 41 Gort M, Broekhuis M, Regts G. How teams use indicators for quality improvement – a multiple-case study on the use of multiple indicators in multidisciplinary breast cancer teams. *Soc Sci Med* 2013;**96**:69–77.
- 42 Sidani S, Fox M. Patient-centered care: clarification of its specific elements to facilitate interprofessional care. *J Interprof Care* 2013;**28**(2):134–41.
- 43 Thistlethwaite J. Interprofessional education: a review of context, learning and the research agenda. *Med Educ* 2012;**46**(1):58–70.
- 44 Sibbald B, Shen J, McBride A. Changing the skill-mix of the health care workforce. *J Health Serv Res Policy* 2004;**9**(Suppl. 1):28–38.
- 45 Fulton BD, Scheffler RM, Sparkes SP *et al*. Health workforce skill mix and task shifting in low income countries: a review of recent evidence. *Hum Resour Health* 2011;**9**(1):1.