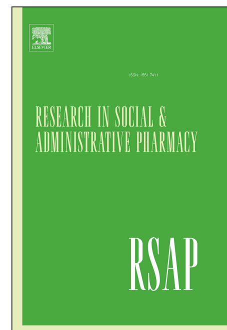
Accepted Manuscript



"My pharmacist": Creating and maintaining relationship between physicians and pharmacists in primary care settings

Kathryn Mercer, Elena Neiterman, Lisa Guirguis, Catherine Burns, Kelly Grindrod

PII: S1551-7411(19)30067-1

DOI: https://doi.org/10.1016/j.sapharm.2019.03.144

Reference: RSAP 1244

To appear in: *Research in Social & Administrative Pharmacy*

Received Date: 28 January 2019

Revised Date: 15 March 2019

Accepted Date: 27 March 2019

Please cite this article as: Mercer K, Neiterman E, Guirguis L, Burns C, Grindrod K, "My pharmacist": Creating and maintaining relationship between physicians and pharmacists in primary care settings, *Research in Social & Administrative Pharmacy* (2019), doi: https://doi.org/10.1016/j.sapharm.2019.03.144.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

The final publication is available at Elsevier via https://doi.org/10.1016/j.sapharm.2019.03.144. © 2019. This manuscript version is made available under the CC-BY-NC-ND 4.0 license http://creativecommons.org/licenses/by-nc-nd/4.0/

ACCEPTED MANUSCRIPT

Original Research

"My Pharmacist": Creating and Maintaining Relationship between Physicians and Pharmacists in Primary Care Settings.

Authors: Mercer Kathryn[1], Neiterman Elena[2], Guirguis Lisa[3], Burns Catherine[4], Grindrod Kelly[1*]

[1] School of Pharmacy, University of Waterloo, Ontario, Canada

[2] School of Public Health and Health Systems, University of Waterloo, Ontario, Canada

[3] Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta, Alberta, Canada

[4] Systems Design Engineering, Faculty of Engineering, University of Waterloo, Ontario, Canada

Word Count:

Abstract: 223

Text: 4519

References: 934

*Corresponding author:

Kelly Grindrod

200 University Ave West

Waterloo ON, N2L 3G1

Phone: 519-888-4567 ext. 21358

Email: kgrindrod@uwaterloo.ca

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

Background
Pharmacists and physicians are being increasingly encouraged to adopt a collaborative approach to patient care, and delivery of health services. Strong collaboration between pharmacists and physicians is known to improve patient safety, however pharmacists have expressed difficulty in developing interprofessional working relationships. There is not a significant body of knowledge around how relationships influence how and when pharmacists and physicians communicate about patient care.

Objectives
This paper examines how pharmacists and primary care physicians communicate with each other, specifically when they have or do not have an established relationship

Methods
Thematic analysis of data from semi-structured interviews with nine primary care physicians and 25 pharmacists, we examined how pharmacists and physicians talk about their roles and responsibilities in primary care and how they build relationships with each other.

Results
We found that both groups of professionals communicated with each other in relation to the perceived scope of their practice and roles. Three emerging themes emerged in the data focusing on (1) the different ways physicians communicate with pharmacists; (2) insights into barriers discussed by pharmacists; and (3) how relationships shape collaboration and interactions. Pharmacists were also responsible for initiating the relationship as they relied on it more than the physicians. The presence or absence of a personal connection dramatically impacts how comfortable healthcare professionals are with collaboration around care.

Conclusion
The findings support and extend the existing literature on pharmacist-physician collaboration, as it relates to trust, relationship, and role. The importance of strong communication is noted, as is the necessity of improving ways to build relationships to ensure strong interprofessional collaboration.

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

Introduction

Communication between healthcare professionals on a healthcare team is foundational to patient care; however, often the only communication occurring is through fax, or other non-collaborative tools. Physician and pharmacists share a similar training history, as well as shared values and norms, but each profession has unique sub-cultures and characteristics.[1,2] There is strong research on the benefits of pharmacist-physician collaboration, such as enhanced quality of care, increased patient engagement, improved patient safety, as well as staff satisfaction and retention, and greater staff perceptions of empowerment and recognition all of which fall under the practice of interprofessional collaboration.[3–6] Strong working relationships between physicians and pharmacists are foundational to providing good patient care.[7–9] The implication of robust communication between physicians and pharmacists is an important foundation upon which to base interprofessional trust.

The ways in which pharmacist-physician relationships influence communication have not been widely explored. Existing research emphasizes the community pharmacist's roles of drug dispensing, medication therapy management, chronic disease management, and patient education.[10,11] The degree of collaboration between individual physicians and pharmacists varies greatly, and is dependent on a number of influential factors such as shared values, relationships, role definition, and trust.[3,12] For patients, an effective collaboration by their healthcare team can lead to improved coordination with healthcare professionals (HCPs), increased opportunity to participate in decision-making, improved satisfaction and better use of resources.[13–16] Challenges to collaboration are the lack of compensation for teamwork, limited time, and the necessity to coordinate care across many different practitioners.[2]

Traditionally, community pharmacists and physicians have worked in separate locations with little face-to-face contact. Team-based primary care, also known as the medical home or family health team, is one of the models for providing more integrated community health care, where the physician works in a co-located setting with other HCPs such as nurse practitioners, nurses, and pharmacists.[17] Notably, the pharmacist role is not typically affiliated with a separate drug dispensary. These expanded roles for pharmacists improve patient outcomes and reduce

29 healthcare spending..[18,19] As new models emerge, more research is needed to understand the
30 influence of co-location on collaboration.

31 Our paper begins to address the gap in understanding of how pharmacists and physicians
32 describe their relationships, both in team-based and traditional settings. Analyzing qualitative
33 semi-structured interviews with 9 physicians and 25 pharmacists who are and are not co-located,
34 we examined (a) how and when physicians and pharmacists communicate, (b) how and if
35 pharmacists and physicians discuss personal relationships, (c) what are the barriers to
36 communication between them, and (d) how and if co-location changes their relationship.

37 **Methods**

38 ***Study Design***

39 This research is based on thematic qualitative analysis of semi-structured interviews. The
40 investigators were gathering the subjective experiences of pharmacists and physicians to better
41 understand the meaning they attach to their experiences interacting with each other. This paper is
42 part of a larger study of how physicians, pharmacists, and patients understand and communicate
43 patient-focused medication information to each other.[anon] We chose a qualitative Focused
44 Ethnographic approach to capture experiences in the socio-cultural context in which participants
45 interact with each other.[20] Focused ethnography is an evolving method used primarily in
46 practice-based disciplines to, as Hall describes, "…capture specific cultural perspectives and to
47 make practical use of that understanding."[21] Focused ethnography most commonly uses
48 purposive sampling techniques and allows for a holistic exploration of a research question that
49 may adapt as the research occurs.[20]

50 Ethics approval was received from the University of Waterloo, University of Alberta, Wilfrid
51 Laurier University, Université Laval, University of Toronto, and Dalhousie University. A
52 qualitative methodological approach of semi-structured interviews, talk-alouds, and observations
53 was carried out with nine primary care physicians (PCP) and 25 pharmacists across Canada,
54 allowing for open sharing of views on how medication-related decisions are made and
55 communicated both across professions and to patients.

56 ***Participants & data collection***

ACCEPTED MANUSCRIPT

57 Recruitment was conducted through advertisement in public venues (e.g., libraries, community
58 centers) and posting on social media sites (Facebook, Twitter), and through snowball sampling
59 from previous and existing contacts of the research team, professional outreach, and suggestions
60 from participants resulting in a convenience sample. Participants were included if they were: (1)
61 a licensed and practicing pharmacist or physician; (2) spoke English or French; (3) lived and
62 worked in Nova Scotia, Quebec, Ontario, or Alberta. Participants were recruited to include a
63 range of perspectives, experiences, years of practice, and geographical location, with our sample
64 providing a good balance of team and independence practice pharmacists and physicians (Table
65 1). Identified participants fell into two categories (1) team-based, where pharmacists and
66 physicians were co-located and practicing together; (2) independent practice, which may include
67 both clinics as well as corporate practices, where they were not co-located but may work closely
68 depending on environmental factors including size of community and established working
69 relationships. Participants were diverse and included different years in practice, age, and gender.
70 All participants were provided with a letter of information and gave their consent to voluntarily
71 take part in the study.

72 In total, three research assistants conducted and audio recorded the interviews. Initial interviews
73 were jointly conducted to train student research assistants in semi-structured interviewing
74 techniques, and regular meetings were scheduled to compare notes, go over interviews and
75 discuss emerging results. Field notes were recorded during and after the interviews.

76 ***Data Analysis***

77 Although the interviews primarily explored how physicians and pharmacists make medication
78 related decisions, insights into how relationships influence the ways in which physicians and
79 pharmacists communicate emerged. Analysis was largely inductive, and used a modified form of
80 constant comparative analysis the data was analyzed until theoretical saturation was reached. [22–
81 24] The majority of the analysis came from the interview transcripts with some triangulation
82 coming from talk-alouds, observations, and field notes. Initially the coding was done in two parts
83 – first with a small group analyzing the interviews using "free" unstructured coding and largely
84 descriptive codes, and then, during a two-day meeting, the Framework Method was used to bring
85 together the larger research team comprised of engineers (2), clinicians (3), healthcare

ACCEPTED MANUSCRIPT

86 researchers (5), business and communication researcher (1), patients (2), and a patient navigator
87 (2) to develop the codes used for the analysis of the two prior papers.[25,26] From the initial
88 analysis two papers emerged, one about patient medication decision-making, and another on
89 pharmacists and physician decision-making.[(27,28)] After these two papers were completed, the
90 authors determined the value of further analyzing the interviews to specifically. Initial re-
91 analysis of the data was completed by KM, who listened again to the interviews, coded the data,
92 and defined preliminary themes. Next the authors completed a secondary analysis of the
93 collected interview data (KG,LG,CB,KG), who participated in all phases of the original coding
94 and analysis, and one member who was brought in as a final coder (EN). Data were stored,
95 organized, and reported using QSR NVIVO 11 Software (QSR International Pty Ltd. Version 11,
96 2017).

97 In what follows, we examine the process of how personal relationships between pharmacists and
98 physicians impact how they discuss collaboration and professional interaction. Comparing the
99 accounts of physicians, and pharmacists allows us to explore the interactions, what was and was
100 not said, and how each professional understands the role of the other. Multiple triangulation of
101 the data was achieved through a multi-disciplinary team of researchers interpreting the results,
102 multiple coders, and by conducting interviews across Canada in a variety of different settings.[29]

103 **Results**

104 In total, 34 semi-structured interviews were conducted with physicians and pharmacists across
105 Canada using an interview guide (see Appendix 1). The interviews were conducted at a place of
106 the participants choosing, most commonly their place of work, and took between 30 minutes and
107 one hour to complete, depending on participant availability. Table 1 summarizes individual and
108 contextual characteristics of pharmacists and physicians obtained from the demographic survey.
109 The participants represented both urban and rural environments from across Canada, specifically
110 in the provinces of Alberta, Ontario, Quebec, and Nova Scotia.

111 The results of this secondary analysis are presented in this paper. The secondary analysis resulted
112 in three new thematic areas, different from the original paper focused on understanding how
113 relationships and collaborations are discussed.[28] *"My pharmacist"* examines when physicians
114 discuss different ways they communicate with pharmacists they know, or provided specific

ACCEPTED MANUSCRIPT

115 examples of when they sought out a pharmacist with whom they had a relationship. *"Can't get*
116 *through to them"* gives data on barriers discussed by pharmacists, namely the different
117 perceptions of gatekeepers and modes of easy communication. Finally, *"It took a little bit of*
118 *time"* discusses when relationships have been built, positively or negatively, and how this shapes
119 collaboration and interactions.

120 ***"My pharmacist"***

121 During the interviews, physicians and pharmacists were asked how and when they
122 communicated with each other. All physician respondents spoke about pharmacists affirmatively,
123 but there was a marked difference in how physicians spoke about their communication with
124 pharmacists in general and those with whom they have a confident working relationship or
125 worked with as part of a team. The participating physicians attributed positive relationships with
126 pharmacists to being located close by, or to co-location as part of a team based clinic, and
127 separated pharmacists they knew from pharmacists they did not know:

128 *"I called the pharmacy because I wasn't sure how to prescribe some*
129 *medication… In fact, a pharmacist answered and I asked if [D] was there*
130 *because I know him, and I spoke to him." [Physician 1201, Team*
131 *Environment, Ontario]*

132 When responding to an interview question about what sort of interactions the physician has with
133 pharmacists, Physician 1207 stated, *"That's our pharmacist."* During Physician 1205's
134 interview when discussing if they worked together with pharmacists in patient care, 1205 replied
135 that *"… Individuals that I feel could benefit from a med reconciliation, I would refer them to B,*
136 *my pharmacist."* Physicians who spoke about 'their' pharmacist in this way of 'knowing them,'
137 thusly identified their pharmacist as smart and reliable.

138 For physicians who did not work in the same building, or very close to pharmacists, the level of
139 collaboration was markedly different.

140 *"My patients all have different pharmacies… I rarely speak to the same*
141 *pharmacists on a monthly basis, or a regular basis. It is not really a constant*

ACCEPTED MANUSCRIPT

142 *team work but rather sporadic interactions... We don't have direct contact to*
143 *create therapeutic plans" [Physician 1209, Team Environment, Quebec]*

144 Physician 1209 specifically mentioned that they do not want to 'waste' time establishing the
145 basics of a relationship when they do not know if they will ever speak to that pharmacist again.

146 In contrast, when physicians mentioned having a specific pharmacist they talk to, they often
147 described having trust or confidence in the pharmacist:

148 *"With the pharmacist we have in our department, for sure, we are very*
149 *spoiled… I have complete confidence in her skills… So, with my pharmacist,*
150 *everything works very well. And I have no problem with her making*
151 *suggestions." [Physician 1210, Team Environment, Quebec]*

152 Comparatively, the quote below demonstrates the other way of discussing interactions with
153 pharmacists, more common to physicians not actively working in collaborative environments.

154 *"I would message the front and ask them to call the pharmacy and confirm…*
155 *unless there's a bigger concern I'm happy for the secretaries to do it."*
156 *[Physician 1203, Team Environment, Ontario]*

157 For physicians who do wish to develop a relationship with a pharmacist, the evolving corporate
158 model of pharmacy can be a barrier to relationship building:

159 *[I know pharmacists at] maybe a half dozen pharmacies. For the other 28, I*
160 *don't know who I'm speaking to… [Pharmacist] is like the old-time, country,*
161 *family pharmacists. He knows his patients, and he's there all the time.*
162 *[Pharmacists at big chains] they just come and go, and you never know who's*
163 *there next. They don't know the patients… it's challenging. [Physician 1201,*
164 *Team Environment, Ontario]*

165 The above physician demonstrates their perception of the difference between pharmacists they
166 know and feel comfortable with versus ones they do not know. The idea that the unknown
167 pharmacist would also not know the shared patient is key to understanding the difficulties in
168 building trust without proper communication. As this physician pointed out, his trust in the

ACCEPTED MANUSCRIPT

169 pharmacist relies on the patient being familiar to the pharmacist. Physician 1205 noted that they
170 appreciated the respectfulness of the pharmacist they work with most often, and was clear that
171 part of that respect included the physician having the final say:

172 *"I found [B] to be extremely respectful, and oftentimes like I said at this stage*
173 *we're still in the "These are my suggestions," and I still have the okay or not*
174 *okay" [Physician 1205, Team Environment, Ontario]*

175 This physician's sense of it being unimportant for them to have an interaction with an unknown
176 pharmacist to clarify information directly contradicts Physician 1201, who feels 'spoiled' to have
177 full confidence in their pharmacist's skills.

178 As a counter to physicians who most often could identify a single pharmacist, the pharmacists
179 who are not co-located and by necessity interact with a wider group of physicians as such have to
180 navigate unfamiliar physicians as part of their profession. Instead of saying *my physician*, they
181 used phrases such as *the doctor, a physician,* or *our clinic*. The difference in the language used to
182 describe relationships between physicians and pharmacists also comes through in how both
183 pharmacists and physicians discuss interprofessional communication.

184 ***"Can't get through to them"***

185 Pharmacists identified that they can be more effective when they have a strong relationship with
186 the physician. However, it was very challenging for pharmacists to initiate a relationship with a
187 physician. Gatekeepers, often reception staff or nurses, were mentioned as barriers to direct
188 communication with physicians, especially in independent pharmacy settings:

189 *"[Family Doctors], you can't get through to them. There's the ward clerk who*
190 *won't let you through to the doctor. It's really difficult to get the doctor on the*
191 *phone unless they're calling you." [Pharmacist 1102, Independent Practice,*
192 *Ontario]*

193 This said, even in situations where there was a dedicated phone line, there were still barriers to
194 collaboration:

ACCEPTED MANUSCRIPT

195 *"Either it'll be the secretary running back and forth between me and the doctor, if they*
196 *say that the doctor can't come to the phone. In that case, they'll just ask me to fax it."*
197 *[Pharmacist 1105, Independent Practice, Ontario]*

198 The exception was in rural practice, where pharmacists were more likely to meet physicians
199 through small social networks, because there were fewer providers in town, or because the clinic
200 and pharmacy were closer together. During the interviews, it became clear that co-location
201 allows for the same type of informal networking and rapport building as rural environments.

202 Pharmacists who identified relationships with specific physicians outside of a co-located
203 environment were more likely to mention the ability to call a physician to discuss a patient:

204 *"If it's urgent, I will call them. I have most of the local doctor's cell phone*
205 *numbers. If I need to get a hold of them, I will get a hold of them."*
206 *[Pharmacist, 1101, Independent Practice, Ontario*]

207 This pharmacist goes on later to discuss how having a relationship with a physician eases the
208 process of communication: *"I have an arrangement with the doc to just call him if there's a*
209 *major issue and we fix it now."*

210 In contrast, every physician mentioned it was easy to contact a pharmacist if needed:

211 *"If the patient's in the office, I will call the pharmacist right then and there… I*
212 *will talk to the pharmacist and we'll try and resolve it." [Physician 1206,*
213 *Team Environment, Alberta]*

214 Most physicians interviewed agreed with the pharmacists that fax as the easiest way to
215 communicate. While the pharmacists saw fax as a way to have a record of the conversation, less
216 intrusive, or as an easier mode of communication for the physician, physicians said that they
217 preferred fax as a way to align patient care, rather than to seek out clarifications or collaborate.

218 *"I'll usually do a fax just because I feel like it's less intrusive, and so they can*
219 *potentially get back to me quicker without having to call, but if it's something*
220 *that I really want to know, then I might do both." [Pharmacist 1107,*
221 *Independent Practice, Nova Scotia]*

ACCEPTED MANUSCRIPT

222 The lack of easy communication outside of co-location settings was an issue for both physicians
223 and pharmacists. Physician 1201 ended their comment by stating that having direct conversations
224 with pharmacists would be more productive than *"…waiting for this stuff to sort itself out."*
225 Physicians in team-based environments described stronger relationships with community
226 pharmacists who were not co-located, suggesting when physicians work closely with pharmacists
227 they gain a better understanding of the role pharmacists have in health:

228 *"We know most of our pharmacists that are in the neighbourhood and we have*
229 *a good rapport with them, and we can phone them up, we've met them. We talk*
230 *to them because they're physically within walking distance" [Physician 1208,*
231 *Team Environment, Ontario]*

232 Having a good rapport with pharmacists based on physical walking distance also implies that the
233 physician has a strong community focus and that the physician and pharmacist are working
234 together to support patients, the community, and each other.

235 ***"It took a little bit of time"***

236 As the team-based model grows in popularity and is increasingly seen as an ideal way to care for
237 patients, there was a general feeling that collaborating with known colleagues was preferred,
238 though it takes time to develop the relationship.

239 *"It took a little bit of time for the doctors to feel comfortable with me, to be*
240 *able to realize what my skillset was" [Pharmacist 1118, Team Environment.*
241 *Ontario]*

242 Pharmacists noted a stronger sense of agency when working in co-located environments, feeling
243 more positive about the overall influence they have over care. Developing relationships between
244 practitioners was built around an awareness of role and ability.

245 *"I was the only pharmacist here so I had to essentially develop my own role, which is*
246 *great because I had a lot of autonomy. It was also challenging too because the*
247 *role was new and [the physicians] didn't necessarily know how to utilize the*

ACCEPTED MANUSCRIPT

248 *pharmacist role in a family health team." [Pharmacist 1118, Team*
249 *Environment, Ontario]*

250 But over time, the pharmacists became a central part of the team, relied upon in the daily
251 workflow.

252 *"I work with a team of family physicians. We are about 24 physicians. We*
253 *have a pharmacist. If ever [the pharmacist] is not there because there is a day*
254 *of the week she is not, then at that moment, if it isn't urgent, I'll wait until she*
255 *is back at work the next day." [Physician 1210, Team Environment, Quebec]*

256 Negotiating boundaries around care and role can be difficult. When pharmacists have not worked
257 in collaborative partnerships, even in team-based clinics, they identified difficulty articulating
258 the boundaries of their role and emphasized they only asserted themselves with physicians they
259 knew,

260 *"[Giving recommendations] is not so much with physicians outside of the*
261 *clinic where I work. It's specifically with the ones I collaborate with at the*
262 *community health center clinic." [Pharmacist 1124, Team Environment,*
263 *Ontario]*

264 When relationship building has been successful, the benefit of casual interactions becomes
265 apparent. During Pharmacist 1118's workflow talk-aloud, the process was interrupted by a
266 physician interrupting the think-aloud to say hello, seeing if the pharmacist was available to talk
267 about shared patients.

268 *"Physician: I just wanted to poke in and say Hi, but I will let you guys do your thing.*

269 *Pharmacist 1118: Yeah, no problem*

270 *Physician: [After you're done] we can go over to the café and maybe get some tea or*
271 *coffee or something."*

272 These informal interactions are only possible when there is a personal relationship between
273 practitioners. Later in the think-aloud Pharmacist 1118 discussed how personal relationships
274 positively influence their ability to do their jobs *"Again, because I work so closely with the*

ACCEPTED MANUSCRIPT

275 *doctors here, I can just send them a message saying, "Hey, can you do this blood work for me?""*
276 Interestingly, this played out in Pharmacist 1118's perception of the expanded scope of practice
277 as well:

278 *"I don't really need to practice under the expanded scope because I have such*
279 *a good relationship and such close contact that I don't necessarily need to*
280 *write a prescription or extend a prescription because I can just say, "Hey, can*
281 *you just do that for me?"" ." [Pharmacist 1118, Team Environment, Ontario]*

282 Physicians who did not work directly with pharmacists in co-located settings discussed that
283 while they did interact with pharmacists, in most cases those interactions were limited to
284 clarifications. The noted examples of collaboration between physicians and pharmacists only
285 occurred in situations when there was an established relationship where they either knew each
286 other personally or worked together in a collaborative health environment.

287 **Discussion**

288 The original purpose of gathering this data used for this analysis was to better understand the
289 decision-making process by physicians and pharmacists.[30] Our analysis identified that co-
290 location allows relationship building through familiarity and ease of access, both of which allow
291 the pharmacist to demonstrate their expertise. This qualitative exploration of how relationships,
292 trust, and communication are discussed often included mentions and clarifications of role, which
293 is reflective from past research into interprofessional collaboration and provides opportunity for
294 future study.[2,31]

295 During early analysis it emerged that as decisions were being made the influence of personal
296 relationships between physicians and pharmacists was present as a factor even when the intent of
297 the interviews was not to investigate these relationships explicitly. The question arose about how
298 this perception of relationship influences how and when collaboration occurs.

299 While this study did not measure trust, it is an established factor in building collaborative
300 relationships.[32] Pharmacists who have built established relationships with physicians have more
301 opportunities to demonstrate their clinical knowledge, which allows physicians to develop trust
302 in their abilities, as well as gaining a better understanding of a pharmacist's scope of practice.[31,33]

ACCEPTED MANUSCRIPT

303 As trust builds, our research agrees with what Zillich et al. discussed as being influential to
304 collaborative relationships: when pharmacists gain confidence to assert themselves as true
305 collaborators in care, there is a better understanding the pharmacist's scope of practice, and
306 physicians are more likely to initiate interactions and seek out pharmacist expertise.[33]

307 Closely linked to ideas around trust are perceptions of role boundaries, and ideas of who is the
308 ultimate authority on care. Brock et.al discuss how collaboration between pharmacists and
309 physicians is influenced by what types of exchange occurs between them.[32] The pharmacists and
310 physicians in this study often identify their role, or their scope of practice, both real and how it is
311 perceived, as influencers in the type of exchange that occurs between each group.[31,32] Each time
312 role, or scope of practice was discussed there was congruence around how physicians and
313 pharmacists perceived these, even when the perception was not tied to the actual scope of
314 practice.

315 Pharmacists discussed being respectful in how they challenged physicians on questions around
316 medication management, and physicians who discussed pharmacists positively also cited the idea
317 of being respectful as a positive driver of good relationships. Within the specific relationships
318 examined from the physician perspective, working in a co-located environment did not
319 necessarily result in stronger relationships with pharmacists, however through providing an
320 opportunity for better communication, it thusly increased collaboration.

321 Meaningful collaboration occurred when each practitioner actively sought the other out for more
322 than a back-and-forth interaction.[34] Research outside of health care, in marketing and sales,
323 supports that team cohesiveness is linked to effectiveness, even when it is not connected directly
324 to improved productivity.[35,36] Our results mirror this, in that when pharmacists and physicians
325 are co-located, or work closely together, the way in which they discuss collaboration shifts from
326 describing it in more tentative terms, to a more natural interaction. There is very little research
327 that compares how collaboration changes between practitioners who are directly in a co-located
328 practices or have an established relationship, versus collaborators who are external to the
329 practice.

330 Within the relationships discussed, it was clear that having a personal relationship with a specific
331 pharmacist resulted in a physician having more meaningful interactions with that pharmacist due

ACCEPTED MANUSCRIPT

332 to them having a clearer understanding of the pharmacist role in patient care, and feeling that
333 care is shared between them. Similar to Snyder et al.'s study, we found that generally
334 pharmacists were the primary initiator or relations, and described their process to building
335 relationships with physicians clearly.[31] The pharmacists who operated in co-located
336 environments or within 'walking distance' of a physician were more likely to described
337 successfully relationship building, and often describing that there were shared motivators, such
338 as improving patient care.[33] Still, physicians were the gatekeepers of the relationship.[37]

339 **Limitations**

340 This study reached saturation, however, there was a relatively low response rate for physicians,
341 with less than half the number of physicians responding than pharmacists. Our sample was a
342 convenience sample, and the participants who were willing to share their views may have had
343 different attitudes and experiences than pharmacists and physicians that were not interested in
344 the research. Our data was triangulated through the interviews and talk-alouds, and through
345 coding, saturation was reached. Future studies can include participants that identify as high
346 collaborators, as well as those who do not collaborate on a regular basis.

347 **Conclusions**

348 Strong pharmacist and physician working relationships not only influence how and when
349 collaboration happens but also influence the level to which collaboration occurs. The findings
350 from this study demonstrate that while physicians who have an established relationship with a
351 specific pharmacist hold positive perceptions around a pharmacist's role, this does not
352 necessarily transfer to other pharmacists as professionals. This analysis focused on identifying
353 the differences physicians and pharmacists discuss in communicating with known, versus
354 unknown colleagues, and understanding barriers to successful collaboration

355 Understanding of different working environments where each player feels able to best use their
356 skills and collaborate to improve patient care is important. Different environments support
357 nuanced approaches to collaborative care. The role relationships have in influencing how and
358 when interactions occur should be given consideration to best maximize potential for designing

ACCEPTED MANUSCRIPT

359 collaborative care teams. Carefully designing systems that support active collaboration as well
360 as ways of communicating is important to ensure strong interprofessional partnerships.

361 **Acknowledgments**

362 The authors would like to acknowledge Khrystine Waked (Pharm.D) for assistance with data
363 collection and management; Jessie Chin (PhD), Maman Joyce Dogba (MD, PhD), Lisa Dolovich
364 (PharmD), Line Guénette (PharmD, PhD), Laurie Jenkins (MBA), France Légaré (MD, PhD),
365 Annette McKinnon, Josephine McMurray (PhD) for their contributions to the overarching
366 research project; TelusHealth and the Canadian Institute for Health Research for grant support.

367

ACCEPTED MANUSCRIPT

ACCEPTED MANUSCRIPT

368 **References**

369 1. Austin Z, Gregory PAM, Martin JC. Negotiation of interprofessional culture shock:The
370 experiences of pharmacists who become physicians. *J Interprof Care*. 2007;21(1):83-93.
371 doi:10.1080/13561820600874817

372 2. Kelly D V, Bishop L, Young S, Hawboldt J, Phillips L, Keough TM. Pharmacist and
373 physician views on collaborative practice: Findings from the community pharmaceutical
374 care project. *Can Pharm J (Ott)*. 2013;146(4):218-226. doi:10.1177/1715163513492642

375 3. Morley L, Cashell A. Continuing Medical Education Collaboration in Health Care. *J Med*
376 *Imaging Radiat Sci*. 2017;48:207-216. doi:10.1016/j.jmir.2017.02.071

377 4. Leape LL, Cullen DJ, Clapp MD, et al. Pharmacist Participation on Physician Rounds and
378 Adverse Drug Events in the Intensive Care Unit. *JAMA*. 1999;282(3):267.
379 doi:10.1001/jama.282.3.267

380 5. Rixon S, Braaf S, Williams A, Liew D, Manias E. Pharmacists' Interprofessional
381 Communication About Medications in Specialty Hospital Settings. *Health Commun*.
382 2015;30(11):1065-1075. doi:10.1080/10410236.2014.919697

383 6. Bogden PE, Abbott RD, Williamson P, Onopa JK, Koontz LM. Comparing standard care
384 with a physician and pharmacist team approach for uncontrolled hypertension. *J Gen*
385 *Intern Med*. 1998;13(11):740-745. doi:10.1046/j.1525-1497.1998.00225.x

386 7. Grumbach K, Bodenheimer T. Can Health Care Teams Improve Primary Care Practice?
387 *JAMA*. 2004;291(10):1246. doi:10.1001/jama.291.10.1246

388 8. Rixon S, Braaf S, Williams A, Liew D, Manias E. Pharmacists' Interprofessional
389 Communication About Medications in Specialty Hospital Settings. *Health Commun*.
390 2015;30:1065-1075. doi:10.1080/10410236.2014.919697

391 9. Bridges DR, Davidson RA, Odegard PS, Maki I V, Tomkowiak J. Interprofessional
392 collaboration: three best practice models of interprofessional education. *Med Educ Online*.
393 2011;16. doi:10.3402/meo.v16i0.6035

394 10. Hughes CA, Guirguis LM, Wong T, Ng K, Ing L, Fisher K. Influence of pharmacy
395 practice on community pharmacists' integration of medication and lab value information
396 from electronic health records. *J Am Pharm Assoc*. 2011;51(5):591-598.
397 doi:10.1331/JAPhA.2011.10085

398 11. Lounsbery JL, Green CG, Bennett MS, Pedersen CA. Evaluation of pharmacists' barriers
399 to the implementation of medication therapy management services. *J Am Pharm Assoc*.
400 2009;49(1):51-58. doi:10.1331/JAPhA.2009.07158

401 12. Supper I, Catala O, Lustman M, Chemla C, Bourgueil Y, Letrilliart L. Interprofessional
402 collaboration in primary health care: a review of facilitators and barriers perceived by
403 involved actors. *J Public Health (Bangkok)*. 2014;37(4). doi:10.1093/pubmed/fdu102

404 13. Gregory PAM, Austin Z. Trust in interprofessional collaboration: Perspectives of
405 pharmacists and physicians. *Can Pharm J (Ott)*. 2016;149(4):236-245.
406 doi:10.1177/1715163516647749

407 14. Lin GA, Fagerlin A. Shared decision making: state of the science. *Circ Cardiovasc Qual*
408 *Outcomes*. 2014;7(2):328-334. doi:10.1161/CIRCOUTCOMES.113.000322

409 15. Lindhiem O, Bennett CB, Trentacosta CJ, Mclear C. Client preferences affect treatment
410 satisfaction, completion, and clinical outcome: A meta-analysis. *Clin Psychol Rev*.
411 2014;34:506-517. doi:10.1016/j.cpr.2014.06.002

412 16. Légaré F, Turcotte S, Stacey D, Ratté S, Kryworuchko J, Graham ID. Patients'
413 perceptions of sharing in decisions: a systematic review of interventions to enhance shared
414 decision making in routine clinical practice. *Patient*. 2012;5(1):1-19.
415 doi:10.2165/11592180-000000000-00000

416 17. Sia C, Tonniges TF, Osterhus E, Taba S. History of the Medical Home Concept.
417 *Pediatrics*. 2004;113(Supplement 4).

418 18. Rotta I, Salgado TM, Silva ML, Correr CJ, Fernandez-Llimos F. Effectiveness of clinical
419 pharmacy services: an overview of systematic reviews (2000–2010). *Int J Clin Pharm*.
420 2015;37(5):687-697. doi:10.1007/s11096-015-0137-9

ACCEPTED MANUSCRIPT

421 19. Marra C, Johnston K, Santschi V, Tsuyuki RT. Cost-effectiveness of pharmacist care for
422 managing hypertension in Canada. *Can Pharm J (Ott)*. 2017;150(3):184-197.
423 doi:10.1177/1715163517701109

424 20. Higginbottom GMA, Pillay JJ, Boadu NY. Guidance on Performing Focused
425 Ethnographies with an Emphasis on Healthcare Research. *Qual Rep*. 2013;18(9):1-6.
426 http://nsuworks.nova.edu/tqr/vol18/iss9/1. Accessed July 13, 2018.

427 21. Wall S. Focused Ethnography: A Methodological Adaptation for Social Research in
428 Emerging Contexts. *Forum Qual Soc Res*. 2015;16(1). http://www.qualitative-
429 research.net/index.php/fqs/article/view/2182/3728. Accessed January 6, 2019.

430 22. Ritchie J, Lewis J, McNaughton Nicholls C, Ormston R. *Qualitative Research Practice :*
431 *A Guide for Social Science Students and Researchers*.

432 23. Patton MQ. *Qualitative Research & Evaluation Methods : Integrating Theory and*
433 *Practice*. Fourth. Sage Publications Inc; 2015.

434 24. Silverman D. *Doing Qualitative Research*. Fifth. London: Sage Publications Inc; 2017.

435 25. Gale NK, Heath G, Cameron E, Rashid S, Redwood S. Using the framework method for
436 the analysis of qualitative data in multi-disciplinary health research. *BMC Med Res*
437 *Methodol*. 2013;13(1):117. doi:10.1186/1471-2288-13-117

438 26. Charmaz K. *Constructing Grounded Theory*. 2nd ed. London: Sage Publications Inc;
439 2014.

440 27. Mercer K, Guirguis L, Burns C, et al. Exploring the role of teams and technology in
441 patients' medication decision making. *J Am Pharm Assoc*. 2019;59:S35-S43.e1.
442 doi:10.1016/j.japh.2018.12.010

443 28. Mercer K, Burns C, Guirguis L, et al. Physician and Pharmacist Medication Decision-
444 Making in the Time of Electronic Health Records: Mixed-Methods Study. *JMIR Hum*
445 *Factors*. 2018;5(3):e24. doi:10.2196/humanfactors.9891

ACCEPTED MANUSCRIPT

446 29. Thurmond VA. The point of triangulation. *J Nurs Scholarsh*. 2001;33(3):253-258.
447 doi:10.1111/j.1547-5069.2001.00253.x

448 30. Mercer K, Guirguis L, Burns C, et al. What patients want: engaging into decision-making
449 with their health care team and the potential role played by Electronic Health Records. *J*
450 *Am Pharm Assoc*. 0(0). doi:10.1016/J.JAPH.2018.12.010

451 31. Snyder ME, Zillich AJ, Primack BA, et al. Exploring successful community pharmacist-
452 physician collaborative working relationships using mixed methods. *Res Soc Adm Pharm*.
453 2010;6:307-323. doi:10.1016/j.sapharm.2009.11.008

454 32. Brock KA, Doucette WR. Collaborative Working Relationships Between Pharmacists and
455 Physicians: An Exploratory Study. *J Am Pharm Assoc*. 2004;44(3):358-365.
456 doi:10.1331/154434504323063995

457 33. Zillich AJ, McDonough RP, Carter BL, Doucette WR. Influential Characteristics of
458 Physician/Pharmacist Collaborative Relationships. *Ann Pharmacother*. 2004;38(5):764-
459 770. doi:10.1345/aph.1D419

460 34. Yu CH, Ivers NM, Stacey D, et al. Impact of an interprofessional shared decision-making
461 and goal-setting decision aid for patients with diabetes on decisional conflict--study
462 protocol for a randomized controlled trial. *Trials*. 2015;16:286. doi:10.1186/s13063-015-
463 0797-8

464 35. Morgan R, Hunt S. The committment–trust theory of relationship marketing. *J Mark*.
465 1994;58(Jul):20-38. http://sdh.ba.ttu.edu/commitment-trust-jm94.pdf. Accessed May 17,
466 2018.

467 36. Crosby L, Evans K, Cowles D. Relationship quality in services selling: An interpersonal
468 influence perspective. *J Mark*. 1990;54(Jul):68-81.
469 https://archive.ama.org/archive/ResourceLibrary/JournalofMarketing/Pages/1990/54/3/91
470 02183039.aspx. Accessed May 17, 2018.

471 37. Bardet J-D, Vo T-H, Bedouch P, Allenet B. Physicians and community pharmacists
472 collaboration in primary care: A review of specific models. *Res Soc Adm Pharm*.

ACCEPTED MANUSCRIPT

473 2015;11(5):602-622. doi:10.1016/j.sapharm.2014.12.003

474

ACCEPTED MANUSCRIPT

Table 1. Participant demographics collected at the time of interview (n=34)[20]

	Family Physicians (N=9)	**Pharmacists (N=25)**
Total Participants	9	25
Team Environment	5	4
Independent Practice	4	21
Urban	9	18
Rural	0	7
Years in Practice	12.6	16.2
Average time in current practice (years)	9.9	7.1
Average Age (years)	43.4	39.8
25-35 years old	2	7
36-45 years old	4	12
46-55 years old	2	4
55+ years old	1	2
Gender		
Male	4	11
Female	5	14

ACCEPTED MANUSCRIPT