Pharmacist, Physicians, Patients and Insurers Perceptions of Pharmacist-Provided Quality Care for Minor Illnesses in Washington State, USA

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Abstract

Introduction There is an escalating need for health care in the USA which has led to health care reforms in an attempt to maximize existing financial and human resources to deliver improved health outcomes at an affordable cost. Demographic evidence points towards a rapidly ageing population and there is an upcoming increased shortage of primary care physicians. To lower cost, improve health outcomes and lower the gap of access to primary care, Washington State University, WSU, is conducting a project where the focus is on patients and the public, and how the pharmaceutical profession can contribute more effectively to the health of the population, and to a sustainable and more accessible health care system by training pharmacists to provide patient care services.

Aims Primary aim: To assess pharmacy personnel’s confidence in performing patient care services as well as their perception of the feasibility providing patient care services in a community pharmacy. Secondary aim: What is the knowledge, perception of and willingness for various stakeholders (physicians, patients, and insurers) to utilize pharmacist provided patient care services for minor illnesses and conditions?

Method A likert scale survey, with added open ended questions, was sent out to pharmacists with training in treatment of minor illnesses and conditions to assess their perceptions, opinions and beliefs of the minor illnesses and conditions services and project. Patients, physicians and insurers were interviewed to assess their opinions and beliefs on pharmacist provided patient care services targeted towards minor illnesses and conditions.

Results Pharmacists believed pharmacist provided care to be an integral part of primary care (~93%) but few of them believed they had sufficient time for the service (~39%). Pharmacists were generally confident in providing patient care after receiving training (~72%) and believed they had the knowledge to manage complex patient (~64%). Roughly half of the pharmacists (~52%) believed that the training they received changed the way the practice and they generally believed that patients would utilize the service (~71%). An overwhelming majority of pharmacists (~95%) argued that they should be reimbursed for the service but a slight minority believed that insurers (~32%) and physicians (~42%) have a positive view of pharmacist-provided patient care services. In general, few pharmacist argued that the marketing towards physicians (~20%) and patients (~39%) was successful. All of the stakeholders participating in the study shared concerns regarding the training of the pharmacists and the communication between pharmacists and each respective stakeholder.

Discussion Pharmacist provided patient care is perceived to be an integral part of primary care and many believe the benefits to be accessibility and lowering of cost. All stakeholders are concerned that the training is not adequate, which in turn might lower the quality of the service, in combination with pharmacists not feeling they have enough time to provide the service. Communication, reimbursement issues and marketing seems to be problems needing improvement for the continuous success of the project.

Conclusion Although the data not being statistically significant, there is evidence to support pharmacist provided patient care. For the minor illnesses and conditions services to be further successful, some improvements has to be made. More studies have to be done in order to further evaluate pharmacist provided-patient care services.

Keywords: Pharmacists, patient care, minor illnesses, conditions
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1 Introduction

1.1 Major challenges facing our healthcare systems
All healthcare systems are facing common issues in dealing with ageing populations (affecting both patients and workforces), in having to manage rising demand for care within constrained budgets, and in adapting to new treatments and new technologies (1). Pharmacies are the most accessible healthcare service, located at the heart of the communities they serve. Pharmacies need to demonstrate the benefits of the services they can deliver and persuade governments to remove legislative and funding barriers (2).

As such, three key issues – people (patients and workforces), systems (organizations and finance) and medicines and technologies lie at the heart of the challenges facing today’s health systems. Healthcare issues are complex and ever changing at every level, from individual patients to whole-country health systems. However, these three core issues offer a way of looking at the problems and of understanding how community pharmacies can play their part in improving health.

Like most developed countries, patients in USA have an escalating need for health care due to increased life span, more chronic illnesses for the elderly and therefore also a higher usage of medication (3). Consequently, many nations have implemented major health care reforms in an attempt to maximize existing financial and human resources to deliver improved health outcomes at an affordable cost (4).

No country is immune from these challenges and indeed the demographic evidence points to a rapidly ageing population, expanding annually, with associated increase in the burden of chronic illness (5). While national policy usually is focused on preventing illness, it is also focused on transitioning care such that there is a more effective and efficient use of acute and non-acute facilities (6).

Additionally, in any reform agenda, the deployment of the healthcare workforce is a vital consideration to positively exploit their inherent training and skills. Increasingly, traditional professional boundaries are being blurred through differentiation of practice and specialization. Complexity of practice also militates in favor of team work where patients and practitioners benefit from integrated practice (7).

1.2 Increase in aging population
In most Western countries, the average age of the population is steadily increasing. In addition, the number of people living to a very old age (85 years or older) is also increasing. This is of course positive, but also challenging for today’s health systems, where one of the biggest challenges is to promote active and healthy ageing among its population. This means moving the focus towards preventative and health-promoting measures. The world’s elderly population is constantly growing, and will continue to grow, at a rapid rate. It is estimated that about 8-9% of the world’s population is above 65 years of age, and this percentage is expected to rise to about 17% (1.6 billion) around year 2050. In the United States the population aged 65 and over is expected to double in the coming decades to over 80 million people, whilst the population aged 80 and above is expected to triple (5, 8).
This is coupled with the fact that the growth of the older population is outpacing the growth of the younger population and will continue to do so over the coming decades. A growing older population coupled with fertility rates below replacement levels poses additional challenges and burdens to health care.

A growing older population does not have to mean a healthier population. On the contrary, with the increase in the elderly population, one can also expect an increase in non-communicable and chronic diseases (e.g. heart disease, cancer, stroke, diabetes, dementia etc.). With this in mind one can also propose the question whether how many of these additional years of life is lived with good quality and good health.

According to the National Institute of Health, in the USA, it is difficult to describe how an increase in an older population affects the cost of health care in general. It is however well known that elderly are using health care services in much greater occurrence, especially when it comes to long-term care for e.g. chronic illnesses. Simultaneously the cost of health care per person is increasing among many regions in the world, which in turn poses the ultimate challenge for nations to impede this ever growing cost (8).

1.3 Health insurance
1.3.1 The insurance system

Since the global economic crisis began in 2008, all health systems have been facing huge financial challenges. Pharmacies have seen reimbursement prices for medicines cut back and many patients have been forced to make greater payments. Despite this, healthcare still takes up a large and, in many countries, growing share of overall Government spending. For politicians and the voting public, healthcare is still a top priority. Systems have to cope with rising expectations from service users. There is increased demand for greater access to health services in more convenient locations and a recognition that an increased number of services will need to be delivered in evenings and weekends, as well as during the normal working week. Many policy makers have set out a desire to provide more services from community or primary care settings rather than hospitals or clinics. This could be beneficial to pharmacies across the world. However, it can be difficult to change a system, and to convince payers that these changes actually will benefit both the patient and the healthcare system.

There have been several attempts at different types of public health insurances in the USA, without any success. These attempts have been opposed by the American Medical Association (AMA) and the Chamber of Commerce (9).

Instead of public health insurance, the employer-covered insurance grew strong, especially during the Second World War. Various unions chose to support the employer-covered insurance instead of public health insurance, seeing as that would face a lot less opposition and would be an easier goal to achieve (10).

However, both private and employer-covered insurance was an impossibility for most of the elderly, poor and unemployed. Eventually, this resulted in Lyndon B. Johnson signing Medicare and Medicaid in the 1960s (9). Medicare and Medicaid insured a lot more people, yet there were still a persistent pressure for a broader insurance policy which eventually culminated in “The Patient Protection and Affordable Care Act” (ACA) under the Obama administration, more commonly known as Obamacare. This passed the senate in December 2009 and the House in March 2010 (11).
1.3.2 Medicare, Medicaid and ACA

Early on Medicare was a system that gave families, of individuals enrolled in the military, health insurance. This was widened under the Johnson administration the year 1965 to cover all inhabitants of the age 65 and above and has continued to widen along the decades (11).

Medicaid was created, first and foremost, to cover those that could not afford the insurance by themselves. Each state can voluntarily participate in Medicaid, and those states that choose to participate have to decide which people are eligible for the insurance (11).

Before ACA, Medicare and Medicaid already covered a great deal of the population. However, after ACA proceeded into law, all but 28.2 million people were insured (12). ACA kept the general structure of Medicare, Medicaid and the employer-covered system whilst also widening the eligibility of Medicaid and decreasing the costs for Medicare (13). The result of these changes, the large increase in insured inhabitants, caused a dramatic increase in patients visiting the health care. This in turn led to longer physician waiting times (14).

Insurance companies have also, generally, lost a lot of money since the introduction of ACA. Before ACA the cost of insurance would heavily depend on earlier medical history and state of health. With the introduction of ACA this is now not allowed. Instead, with the insurance now being a mandate, the idea was that the insurance paid by the young would pay for the elderly's health care. However, instead of paying for the insurance many young people rather pay the relatively low penalty tax. This has resulted in the insurance companies being forced to pay for elderly's health care out of their own 'pockets' without any outlook for profit (15).

1.4 Shortage of physicians

As the physician waiting time has increased, the lack of physicians is simultaneously increasing as well. It is projected that around year 2030 there will be a shortage of between 40 800 and 104 200 physicians in the United States, where a shortage up to 43 000 can be expected at primary care. One of the reasons for the shortage is the constant increase of the elderly population. An increase in the elderly population will require the need for practicing physicians. Coupled with this is the fact that about 30% of all physicians today will retire in the coming decade, further reinforcing the problem. According to the Association of American Medical Colleges (AAMC) the best solution would be to create 3 000 additional residency positions annually over the course of five years, although this would require great federal support. Another solution would be a more team based driven health care, where every health care profession would be used to its fullest extent (physicians, nurses, pharmacists) (16, 17).

1.5 Pharmacists treating minor illnesses and conditions, with Washington State University (WSU)

Against this background, the project “Increase Access to Quality Patient Care in Community Pharmacies for Minor Illnesses in Washington State” at WSU is fundamentally about patients and the public and how the pharmaceutical profession can contribute more effectively to the health and wellbeing of the population, and to a sustainable and more accessible healthcare system as well. Most health systems are
actually “sickness systems” – they are set up to manage ill health as and when it is present. The shift towards promoting active and healthy ageing throughout life will require more effort and funding for long-term programs to raise the public’s awareness and change behaviors to ensure healthier lives (18). Pharmacies have a fantastic opportunity in this change process, to be at the heart of delivering these programs. Examples of illnesses and conditions that now can be treated at the pharmacies enrolled in the WSU project are allergic rhinitis, anaphylaxis, bites, bronchospasm, burns, headache, insulin refill, contraceptives and more (19). However, these services are not being reimbursed by for example insurance companies.

The project is also about how pharmacy will become an even more integrated actor and solution to the healthcare challenges facing USA and the Washington State, and making pharmacy the natural home for health.

This is – if successful - about new ways of working that will, on one hand, benefit patient care, and on the other, more fully utilize pharmacists’ skills, knowledge and accessibility, working collaboratively with other healthcare professionals and careers. Central to their role is their contribution to obtaining optimal outcomes from medicines and providing a sustainable approach to clinical care and cost-effectiveness while reducing avoidable adverse events and waste.

In response, health strategies are concentrating on driving structural reform and improvements in healthcare in order to provide high quality, reliable and safe healthcare to the population in the most effective, efficient and accessible way within the resources available (20).

National policies are often focused on keeping people healthy, and where illness occurs, policy is focused on treating patients in the most appropriate setting and building capacity for self-management. Policies also increasingly focuses on treating patients as close to their own home as possible via a multidisciplinary approach that utilizes the skills of a range of healthcare professionals working collaboratively to deliver optimal care to the patient. Care is to be integrated so that patients are kept safe and receive a quality service across all settings (21, 22).

Medicines are the most common healthcare intervention within the health system and both the use and complexity of medicines are increasing. Pharmacists are the healthcare professional with the widest knowledge of medicines and the potential complexities associated with the increasing use of medicines. Therefore, pharmacy as a profession has a critical role to play within the health system to ensure the rational use of medicines by maximizing the benefits and minimizing the potential for patient harm with regard to medicines (23, 24).

1.6 The evolving role of pharmacy
Pharmacies are also affected by all the key challenges of people, systems, medicines and technologies – dealing with an ageing population and recruiting appropriate staff; delivering accessible and cost effective services within constrained budgets; and adapting to the impact of new medicines and technologies. Pharmacies also face challenges specific to the sector, the most important being pharmacy location, developing services and changing legislation (23, 24).
The pharmacy profession represents a cohort of highly skilled individuals with a high level of clinical governance and regulatory standards. As a profession, it has changed and evolved in recent years, with community pharmacies providing patient consultation rooms, supporting health information campaigns and successfully delivering public health initiatives such as vaccination programs. Examples of minor ailments services reimbursed by a National Healthcare system are to be found in Scotland and and reimbursement for a number of pharmacy service are to be found in Australia (25, 26, 27). In hospitals, pharmacists have successfully contributed to antimicrobial stewardship and infectious disease care and emerging advanced practice in multidisciplinary teams, as well as providing a safe transition from one healthcare level to another (23, 24, 28). Now pharmacists are assessing patients and initiating treatment when appropriate.

Pharmacists, as experts in medicines, are a unique resource to the health system and patients, to support enhanced delivery of cost effective improvements to public health and therapeutic management in a variety of settings (29, 30, 31, 32, 33, 34, 35). Currently pharmacists in the USA can, outside of their traditional role, for example screen blood levels for certain conditions, administer vaccination for certain illnesses (hepatitis, influenza etc.), and screen for obesity in adults, screen for tobacco use for all adults and initiate cessation for tobacco users (36).

2 Aim

**Primary aim:** To assess pharmacy personnel’s confidence in performing patient care services as well as their perception of the feasibility providing patient care services in a community pharmacy, to include workflow and appropriate staff level support.

-Are pharmacists confident in performing patient care services and do they perceive this feasible, i.e. providing patient care service in a community pharmacy including workflow and appropriate staff level support?

**Secondary aim:** To assess various stakeholders’ (physicians, patients, insurers) knowledge, perceptions of and willingness to utilize community pharmacist provided patient care services for minor illnesses and conditions.

-What is the knowledge, perception of and willingness for various stakeholders (physicians, patients, insurers) to utilize pharmacist provided patient care services for minor illnesses and conditions?
3 Method
This study is an assessment of the perceptions of stakeholders in regards to the project “Increase Access to Quality Patient Care in Community Pharmacies for Minor Illnesses in Washington State” conducted by WSU and led by Clinical Assistant Professor Julie Akers. In this thesis, the perceptions and opinions of stakeholders will be evaluated when it comes to how the project is working and how the project has made an impact on the health care system.

3.1 Participants
The participants in this study were various stakeholders that can be divided into the categories pharmacists, physicians, patients and insurers. The pharmacists participating in this study have all been a part of the project “Increase Access to Quality Patient Care in Community Pharmacies for Minor Illnesses in Washington State”. The remaining stakeholders did not have to be part of the project, instead they will give their perceptions and opinions regarding its utilization and impact. The criteria for them to be able to participate were to identify with a category (physician, patient and insurer), be 18 years of age and of sound mental health.

The pharmacists were given a survey which was handed out on site at participating pharmacies, within Washington State, taking part in the project “Increase Access to Quality Patient Care in Community Pharmacies for Minor Illnesses in Washington State”. The collection of data spanned a course of several days, physically travelling to the pharmacies. The remaining stakeholders did not participate in a survey, but were instead interviewed either on site, via telephone, via fax or via email.

To be able to partake in either the survey or in the interviews, full consent had to be given. If criteria could not be reached and/or consent not be given participants were disregarded from the study.

3.2 Survey
The survey contained three sections. The first section contained a cover letter where information about the study and what it would mean for the participants to participate. The second section consisted of statements where the participants answered by using a five-point Likert scale. The structure of the Likert scale statements and answers kept the same logical order. The answers leaned from strong disagreement towards strong agreement where a low score on the scale would indicate strong disagreement, and vice versa. The third section contained open ended questions where participants were supposed to answer more at length and more detailed. The possible answers are graded as following: 1. Strongly disagree, 2. Disagree, 3. Neither agree or disagree, 4. Agree and 5. Strongly agree (appendix A).

Before the survey was sent out to any respondents, a pilot study was conducted to investigate if any misconceptions or errors could be found within it. Some of the suggested changes were added. The participants of the pilot study were part of the College of Pharmacy at WSU and were either pharmacists or administrative staff (37). The pilot study was sent out on site at WSU, and no reminders were given. The survey also had to be approved by the Institutional Review Board (IRB) at WSU.

3.3 Interviews
The remaining stakeholders (physicians, patients and insurers) were subjected to an interview that was tailored to them specifically. The interview questions were either open ended where the participants were supposed to answer at length and with detail or questions where they were supposed to agree or disagree with a statement. All of the answers to these questions could freely be expanded upon by the participants (appendix B and C).

Before these interviews were conducted every specifically tailored interview sheet was sent to the IRB at WSU as well. These interviews were not sent out as a pilot to anyone before being sent into the IRB.

### 3.4 Analysis

The survey answers were dichotomized (answers 1, 2 and 3 representing group 1 and answers 4 and 5 representing group 2) and analyzed with a two sample t-test, in Microsoft Excel 2013, to see if the answers received from the surveyed pharmacists are representative for all the pharmacists, trained for treating minor illnesses and conditions, or if the answers are a result of chance.

\[
t = \frac{m_A - m_B}{\sqrt{\frac{S_2}{n_A} + \frac{S_2}{n_B}}}
\]

In this formula \(m_A\) and \(m_B\) represents the means of two groups, \(n_A\) and \(n_B\) represents the size of the two respective groups and \(S_2\) is an estimator of the variance of the two groups. The t value is compared to a t-test table to see if the answers are statistically significant or not. This can also be done in Microsoft Excel, without the use of a t-test table. If the t-value exceeds the critical value of \(\pm 2,00\) it is deemed statistically significant.

A significance level of \(\alpha = 0,05\) was chosen, and the degrees of freedom was calculated with the following formula:

\[
df = n_A + n_B - 2
\]

In this formula \(df\) means degrees of freedom and \(n_A\) and \(n_B\) represents the size of the two respective groups.

An Anderson-Darling test was done to measure if the answers were normally distributed, and the following formula was used:

\[
AD = -N - \frac{2i-1}{N} \left( \ln(F(Y_i)) + \ln(1 - F(Y_{n+1-i})) \right)
\]

In this formula \(N\) represents the sample size, \(F(Y_i)\) represents the cumulative distribution function and \(Y_i\) represents the ordered data. If a p-value below the significance level \(\alpha = 0,05\) the data is not normally distributed.

The survey was validated after it was pilot tested. This type of validation is called Face Validity where a test is subjectively reviewed to see if it actually measures what it is supposed to measure.

The results from the open ended questions in the survey as well as the interviews were subject to a qualitative analysis. The answers were transcribed during the interviews,
directly after the statement was made. After the answers were transcribed they were read back to the respondents to ensure that the transcription was correct. The answers were later reviewed to identify relevant data within the participant’s answers.

3.5 Ethical aspects

Due to the fact that opinions, statements and perceptions are traceable to some degree all surveys and interviews were anonymous. Along with every survey came a cover letter explaining why the study was being conducted, that full consent had to be given and that the participants had the option to cancel their participation at any given point in time. The results from the surveys were later electronically transferred and the physical copies were destroyed. Before any interview was conducted the participants received information about the research being conducted, they had to give their full consent and had the option to cancel their participation at any point during the actual interview. No recording, video or audio, was taken during an interview.
4 Results
Initially there will be a short review of all the answers to the Likert scale survey questions handed out to pharmacists, taking part in the WSU project, in Washington State. Every question will be evaluated as it follows in the survey. Consequently, all the answers to the open ended questions following the Likert scale survey questions handed out to pharmacists will be presented. Thereafter, a general summary of answers to the interview questions asked to patients will be presented. Afterwards, the physicians’ answers to interview questions will be presented. There will be no answers to questions asked to insurers since no insurance company responded to any type of communication.

4.1 Pharmacists, Likert scale survey questions
In this study 68 pharmacist participated out of 134 pharmacists being invited to participate, resulting in a response rate of roughly 50%. Two of the surveys were not fully filled out and were excluded from the study.

4.1.1 Pharmacist provided care as integral part of primary health care
The majority of the respondents, 62 respondents (~93%), agreed or strongly agreed that pharmacist-provided care for minor illnesses and conditions is an effective and integral part of primary health care. 1 respondent (~1.5%) neither agreed or disagreed and 3 respondents (~4.5%) disagreed (figure 1). According to the t-test the answers are statistically significant, t(64) = -9.3, p = 0.002 but the answers are not normally distributed, p = 0.001.

![Figure 1. Diagram of the answers to the statement that pharmacist provided care for minor illness and conditions is an effective and integral part of primary health care.](image1.png)

4.1.2 Sufficient time to perform the minor illness and conditions services
The question regarding having sufficient time to perform the minor illness and conditions services when working at the pharmacy showed that 26 respondents (~39%) agreed or strongly agreed with the statement. 17 respondents (~26%) neither agreed or disagreed. On the other hand, 23 respondents (~35%) disagreed or strongly disagreed (figure 2). According to the t-test the answers are statistically significant, t(64) = -14, p = 0.001 but the answers are not normally distributed, p = 0.001.
Figure 2. Diagram of the answers regarding pharmacist having sufficient time to perform the minor illness and conditions services.

4.1.3 Confident in providing minor illness and conditions services after received training

When it comes to pharmacists’ feeling confident providing minor illness and conditions services after receiving online education and live skills training, 48 respondents (~73%) agreed or strongly agreed with the statement. On the other hand, 9 respondents (~14%) neither agreed or disagreed and 9 respondents (~14%) disagreed or strongly disagreed (figure 3). According to the t-test the answers are statistically significant, t(64) = -11, p = 0,001 but the answers are not normally distributed, p = 0,001.

Figure 3. Diagram showing the answers regarding pharmacists feeling confident providing minor illness and conditions services after receiving online education and live skills training.

4.1.4 Confident having sufficient training and knowledge to manage complex patients at the pharmacy

Regarding feeling confident having sufficient training and knowledge to manage complex patients with many problems in a pharmacy setting 42 respondents (~64%) agreed or
strongly agreed with the statement. 17 respondents (~26%) neither agreed or disagreed and 7 respondents (~11%) disagreed or strongly disagreed (figure 4). According to the t-test the answers are statistically significant, $t(64) = -12.5$, $p = 0.001$ but the answers are not normally distributed, $p = 0.001$.

**Figure 4. Answers regarding the statement being confident having sufficient training to manage complex patients in a pharmacy setting.**

### 4.1.5 The minor illness and conditions training given changing how pharmacists practice pharmacy

When answering the question if the minor illness and conditions training the pharmacists received changed how they practiced pharmacy on a regular basis 34 respondents (~52%) agreed or strongly agreed. 24 (36.36%) respondents neither agreed or disagreed and 8 respondents (~12%) disagreed or strongly disagreed (figure 5). According to the t-test the answers are statistically significant, $t(64) = -12$, $p = 0.001$ but the answers are not normally distributed, $p = 0.001$.

**Figure 5. Answers regarding the statement if the training received changed how pharmacists practice pharmacy on a regular basis.**
4.1.6 Belief if patients are willing to visit the pharmacy for minor illness and conditions services

Regarding the question where pharmacists were asked if they believed patients to be willing to visit the pharmacy for minor illness and conditions services, instead of going to primary care, a total of 40 respondents (~71%) agreed or strongly agreed. 14 respondents (~21%) neither agreed or disagreed and 12 respondents (~18%) disagreed or strongly (figure 6). According to the t-test the answers are statistically significant, t(64) = -13, p = 0.001 but the answers are not normally distributed, p = 0.001.

![Figure 6. Answers to the question if pharmacist believed patients were willing to visit the pharmacy for minor illness and condition services instead of going to primary care.](image)

4.1.7 Belief if pharmacists should be reimbursed by insurance companies for the minor illness and conditions services

When it comes to the question regarding if the pharmacists should be reimbursed for the minor illness and conditions services, by insurance companies, 63 respondents (~95%) agreed or strongly agreed that insurance companies should reimburse pharmacies for these services. 3 respondents (~5%) neither agreed or disagreed (figure 7). According to the t-test the answers are statistically significant, t(64) = -36, p = 0.001 but the answers are not normally distributed, p = 0.001.
4.1.8 Pharmacists’ beliefs about primary health care providers having a positive view of pharmacist-provided patient care services

Regarding the question if pharmacists believe that primary health care providers, in general, have a positive view of pharmacist-provided patient care services 28 respondents (~42%) agreed or strongly agreed. 27 respondents (~41%) neither agreed or disagreed and 11 respondents (~17%) disagreed (figure 8). According to the t-test the answers are statistically significant, t(64) = -14, p = 0.001 but the answers are not normally distributed, p = 0.001.

4.1.9 Pharmacist’s beliefs about insurance companies having a positive view of pharmacist-provided patient care services

When answering the question if pharmacists believe that insurance companies have a positive view of pharmacist-provided patient care services 21 respondents (~32%) agreed or strongly agreed, whereas 32 respondents (~48%) neither agreed or disagreed.
respondents (~20%) disagreed or strongly (figure 9). According to the t-test the answers are statistically significant, \( t(64) = -12, p = 0.001 \) but the answers are not normally distributed, \( p = 0.001 \).

**Figure 9. Answers to the question if pharmacists believe that insurance companies have a positive view of pharmacist-provided patient care services.**

### 4.1.10 Pharmacist’s beliefs regarding the marketing towards primary care providers

When it comes to the question regarding pharmacist’s believing that implementation of minor illness and conditions services have been successfully marketed to primary care providers 13 respondents (~20%) agreed or strongly agreed, while 23 respondents (~35%) neither agreed or disagreed. 30 respondents (~45%) disagreed or strongly disagreed (figure 10). According to the t-test the answers are statistically significant, \( t(64) = -13, p = 0.001 \) but the answers are not normally distributed, \( p = 0.001 \).

**Figure 10. Answers to the question regarding pharmacist’s beliefs around the implementation of minor illness and conditions services having been successfully marketed towards primary care providers.**

### 4.1.11 Pharmacist’s beliefs regarding the marketing towards patients
26 respondents (~39%) agreed or strongly agreed to the question about pharmacists believing that the implementation of minor illness and conditions services having been successfully marketed towards patients. 19 respondents (~29%) neither agreed or disagreed, whereas 21 respondents (~35%) disagreed or strongly disagreed (figure 11). According to the t-test the answers are statistically significant, t(64) = -14, p = 0.001 but the answers are not normally distributed, p = 0.001.

Figure 11. Answers to the question regarding pharmacist’s beliefs around the implementation of minor illness and conditions services having been successfully marketed towards patients.

4.2 Pharmacist, open ended questions
45 participants, out of the 66 pharmacists in the survey, answers were included. 21 participants answers were excluded due to some of the questions either not being fully answered or not answered at all.

4.2.1 What benefits does pharmacist-provided care provide patients?
Pharmacist had positive thoughts towards pharmacist-provided care to patients. The most common arguments towards these thoughts, pointed out by the pharmacists, were convenience and access. The pharmacists believed that the pharmacy is more accessible to the public than other healthcare providers. Consequently, they also argued that coming to the pharmacy for care would save patients time. Another common theme among the comments were that going to the pharmacy for pharmacist-provided care would save patients money. Other less common comments mentioned that pharmacists already have good relationships with patients, relationships that could become even better. The pharmacists also mentioned that they think they are very knowledgeable, and that this would benefit the patient. However, some pharmacists argued that they needed more education in order to provide these services.

4.2.2 What benefits does pharmacist-provided care provide the healthcare system?
Pharmacists believed that pharmacist-provided care mainly reduced the cost for the healthcare while simultaneously lowering the workload of the healthcare system. Other comments in relation to that statement were that the pharmacists argued that it would reduce the burden on primary care, giving providers more time to work on more complex and severe conditions/patients. Other common comments were that it would reduce the
waiting time at for example emergency care and urgent care and that pharmacists would, to the benefit for the patient, work to the top of their degree. Less common comments touched upon increasing vaccination rates and servicing patients who may otherwise not be seen by the health care.

4.2.3 What concerns do you have regarding pharmacist-provided patient care, if any?

The most common concerns amongst pharmacist were not having the time to perform the service and that they felt they needed more training. One respondent explained that it got intimidating at times when the pharmacy had a busy day. Not being reimbursed for the services, from e.g. insurance companies and that low-income residents have to cover the cost on their own, was another concern for some pharmacists. Other reoccurring concerns were that the pharmacists believed other health care providers might see them as less knowledgeable professionals and not take the service seriously, that pharmacists argued that they might overstep their bounds and not knowing when to refer the patient to other professionals rather than treating them at the pharmacy. Other comments were that pharmacists do not have access to patients’ medical records and that their scope of services they are allowed/can provide is limited. Less common concerns were not getting enough patients to utilize the service, that the restrictions to the service was either too much or not clear enough and that the CDTA, collaborative drug therapy agreement, was not deep enough. A few pharmacists had no concerns at all.

4.2.4 As pharmacist participation on patient-care teams grows, what do you see as key elements to create a sustainable health care model?

The most common answers from pharmacists, regarding key elements to create a sustainable health care model, was access to medical records, lab results etc. and that pharmacists required more training and development. Other common answers were that the communication between pharmacists and physicians as well as between pharmacists and patients has to improve, that the scope of practice has to increase and that the acceptance from other healthcare providers has to be established and that patients has to take more responsibility for their own health like self-care and preventive behaviors. Other comments were that the marketing of the service has to improve, and that pharmacists’ needs to be reimbursed for the service provided, for example from insurance companies. Other less common answers were that pharmacists require more ancillary staff trained for the service, that they need more time to perform the service, less cumbersome paperwork, that the pharmacists’ competence has to be better utilized in order to decrease healthcare costs and that pharmacists have to build better trust and relationships with patients.

4.2.5 Did you find the Clinical Community Pharmacist training useful prior to implementing patient-care services?

Pharmacists stated that they, for the most part, found both the online training and the live training useful prior to implementing patient care services. However, they favored the live training to some extent.

4.2.6 What additional training, if any, could have been provided to facilitate your ability to manage these patients?

The most common answer amongst the pharmacists were that no additional training was required. However, other very common answers stated the opposite. Instead, these pharmacists required more practice, training and resources. Some also wanted some way of refreshing and updating their knowledge regularly and more hands-on training from different, real, situations. Less common suggestions were to have the possibility to
contact a consulting physician, to have a diagnostic health professional teach the training classes, to implement fewer modules at a time and to receive some training on how to handle the documentation for the provided services and care.

4.2.7 Please list any other support you believe would make the project more successful

The pharmacists requested increased and wider marketing to both the healthcare system and to patients and added that they need more patients to become more confident performing the services. Some also requested additional training, especially for new pharmacists as well as ancillary staff, and more time to work with the patients, providing them the care they need. Being able to bill the insurance companies for the service was also requested. Cost is really an issue preventing the pharmacy provided services from being interesting to patients, according to the pharmacists. Other suggestions were less paperwork and computer work for one CDTA, access to medical records and tips on how other pharmacists have successfully implemented the service. A few pharmacists answered that no more support was needed and that the project was already great.

4.2.8 Describe what could have been done better or differently when this project was launched

For the most part pharmacists answered that nothing could have been done better. Other pharmacists answered that the marketing could have been done better, that the training sessions could have been split up into several smaller sessions and that the training could have been ongoing as the project went along, for example to be able to review all subjects on a weekly basis to keep a fresh memory of all disease states. One respondent suggested an increased scope of practice.

4.3 Patients, open ended questions

213 potential patients were approached for these interviews and 48 of these patients participated in the interview resulting in a response rate of ~23%.

4.3.1 Have you received any information about pharmacist-provided patient care services for minor illnesses and conditions?

For patients answering the question regarding them receiving any information about the minor illnesses and conditions services, an overwhelming majority of the respondents stated that they had not received any information at all. Very few stated that they had heard about it, however none of them had utilized the service.

4.3.2 Patients’ feelings towards pharmacist provided patient care

A slight majority of the respondents had positive thoughts towards pharmacist provided patient care stating that they felt it would be accessible and of low cost for them and for the society. They were also positive towards pharmacist provided patient care because they felt pharmacists were knowledgeable. A slight minority had negative thoughts towards pharmacist provided patient care with arguments like ‘lack of training and experience’. Some respondents were unsure, stating that the pharmacists would have to be properly trained.

4.3.3 Patients’ perceived benefits of pharmacist provided patient care

A large majority of the respondents stated that pharmacist provided patient care would be accessible and increase access to healthcare. They also declared that it would save money on many different levels (for the society as a whole, the healthcare system, the insurance companies and for the patients). Another common contention was that it would save patients time to visit the pharmacy to get treatment for minor illnesses and conditions
instead of going to the urgent care or emergency room. On the other hand, a minority of the respondents did not see any benefits at all, arguing that pharmacists were not knowledgeable enough or not having the clinical experience to perform the services. They also preferred to visit the urgent care or emergency room instead.

4.3.4 Patients’ concerns regarding pharmacist provided patient care

The majority of the respondents argued that the main concerns would be that pharmacists might lack the proper training and competence to provide the minor illnesses and conditions services. Consequently, they felt that this might lead to an incorrect diagnosis and continued the argument that the service would need clear limitations. A slight minority of the respondents also stated that pharmacists might not have adequate communication skills, feeling that there might be problems in communication between pharmacists and physicians as well as pharmacists between and patients. A minority of the respondents argued that the services would lack in certain areas, meaning they would avoid certain pharmacies in the state when it comes to pharmacist provided patient care. They also stated that they would rather utilize the traditional primary care providers instead. A minority of the respondents didn’t have any concerns at all.

4.3.5 Patients’ belief regarding utilization of pharmacist provided patient care

A slight majority of the respondents believed that they would utilize the pharmacist provided patient care services. A slight minority of these respondents, that believed they would utilize the service, argued that they would only utilize it for minor ailments due to pharmacists maybe not receiving enough training or if utilizing the urgent care or emergency room would require them to wait for a longer period of time. A slight minority of the respondents, however, felt they would not utilize the service. Common arguments for this statement was that they would rather utilize the traditional primary care providers instead, a lack of trust towards pharmacists was perceived. Furthermore, a small minority of the respondents were unsure about the training pharmacists received and were bothered that the insurance companies did not cover the pharmacist provided patient care services.

4.3.6 Patients’ belief regarding pharmacists provided patient care services offering convenience

Pharmacist provided patient care services would, according to the majority of the respondents, offer convenience over access to other healthcare providers. They argued that visiting the pharmacy for these services would save the time and money, and a few respondents continued with stating that they felt pharmacists were very knowledgeable. Other respondents felt that the pharmacy did not offer any convenience or were unsure if it offered any convenience over other ‘avenues of care’.

4.4 Physicians, open ended questions

118 physicians, from different primary care clinics, were asked to participate in the study, and 4 physicians did choose to participate. Three of the physicians were primary care givers at the Spokane Teaching Health Clinic (WSU) and one of the physicians was a clinical education director at WSU. This resulted in a response rate of ~3%.

4.4.1 Physicians’ opinions regarding benefits from pharmacist provided patient care

Physicians believed that pharmacist provided patient care would save them time. They also believed that it would provide patient safety, that pharmacists understood what
medications they were prescribing, were aware of interactions eventually resulting in less errors. They also argued that it would be accessible and cost effective. One physician thought a benefit was that everyone would be practicing at the top of their license and that pharmacist can be part of the healthcare team.

4.4.2 Physicians’ concerns regarding pharmacist provided patient care

The physicians suggested that the level of training might not be adequate to provide patient care services and were unsure if pharmacists would miss something important or not. One physician was unsure to trust a pharmacist with patients. Another physician was concerned that pharmacists might let emotions and beliefs get in the way of providing proper care. Two physicians, however, answered that if the scope of practice is clearly defined the minor illnesses would be appropriate for pharmacists to treat.

4.4.3 Physicians practicing in a setting where pharmacists are used in a non-dispensing function

All physicians answered that they were practicing or had practiced in a setting where pharmacists were used in a non-dispensing function.

4.4.4 If yes, has their interaction with and/or communication with pharmacists changed

Three physicians answered that their interaction and/or communication with pharmacists had changed after practicing in a setting where pharmacists were used in a non-dispensing function. They answered that it depends on the individual pharmacists, but in general they felt that their access to pharmacists had increased. One physician had worked with pharmacists in a non-dispensing function for a long time and because of that didn’t feel that his interaction with and/or communication with pharmacists had changed.

4.4.5 Physicians’ perceived challenges with co-managing patients with a pharmacist

All physicians argued that communication between the professions is important. One physician answered that it became problematic when communications broke down. Another physician answered that pharmacists were underutilized and that the healthcare needs to change how it views pharmacists’ skills. Lastly, one physician answered that maintaining documentation of patients and letting all healthcare professionals having access to this documentation would be important but challenging.

4.4.6 Physicians’ and key elements to create a sustainable health care with pharmacist participation on patient-care teams growing

Two physicians stated that pharmacists would need continuous education in patient care. Three physicians answered that communication would be key to create a sustainable health care and that this communication between professions would need to improve and would need to be easy as well as quick. Another answer, from two physicians, was that physicians has to remember to utilize pharmacists more. Two physicians also stated that the mutual respect between the professions had to be improved.

4.4.7 Physicians’ belief regarding what areas of patient care pharmacists can provide value

The physicians answered that pharmacists could provide value towards patient monitoring, adherence counseling, drug interactions and drug information. One physician agreed with the access to vaccinations, contraceptive medicines and that
pharmacist could solve easy afflictions. Another physician answered that pharmacists could provide value towards patients utilizing complimentary alternative medicines and non-prescription drugs. The same physician also stated that pharmacists could provide value towards patients with either anticoagulation therapy, diabetes or patients on HIV-medication.
5 Discussion

5.1 Method discussion

5.1.1 Likert scale survey

A Likert scale survey (with related open-ended questions) was chosen to quantitatively measure and assess trained pharmacy personnel, able to treat minor illnesses and conditions, opinions and beliefs regarding their confident in performing patient care services at community pharmacies in Washington State, USA, participating in a pharmacist provided patient care study, organized by the College of Pharmacy, WSU. It was also chosen to easily be able to calculate the statistical significance of the answers. The survey was distributed to the pharmacists at their respective pharmacies, no other pharmacy personnel was surveyed (38).

The intent of the study was to survey as many of the trained pharmacy personnel, within the minor illnesses and conditions program, as possible, but due to changes to the Likert scale survey only pharmacists were surveyed. Due to lack of time and logistical problems all pharmacists did not participate. The number of respondents might not be big, but on the other hand the total population of trained pharmacists is also not that numerous.

A Likert scale survey can give a good indication of the trained pharmacists perceptions, opinions and beliefs regarding the minor illnesses and conditions project. However, there are difficulties in measuring all their opinions and beliefs with a one to five Likert scale due to the respondents not being able to properly motivate their opinion. Because of this, a comment section to each scaled question was added. However, fully motivating an answer might also be ignored due to lack of time or it being perceived as taxing. Another possibility is that the survey was not constructed in an optimal way making it e.g. hard to understand what the researcher meant or wanted with a certain question (39).

There is a possibility that this has led to inaccurate results, or a wrongful interpretation of the results. Consequently, a pilot test was performed, and suggested changes added to the survey to make it easy to understand and to be consistent (40). The Likert scale is divided into 5 different possible answers, where the third answer was labeled “neither agree or disagree”. This was made so that if a respondent was unsure or wanted to hold a middle ground, the option was available.

The respondents did not have any chance to request help from the researcher if any questions or problems about the survey arose. This might have impacted the results negatively.

The Likert scale survey was supposed to be analyzed with a chi-squared test to measure the statistical difference between the different pharmacy personnel. Due to the rapid changes causing only pharmacists taking the survey a t-test was performed instead. A t-test is fairly robust in that it only requires small data samples and little data. However, a t-test assumes normal distribution and the answers from the Likert scale survey are not necessarily normally distributed (for example, see figures 7,6,3 and 1). This, in turn, has led to the dichotomized groups being of varying sizes. These sizes have been so large that there is an increased risk for a Type 1 error, rejecting a null hypothesis even though it is not false (41). This could mean that the statistical analysis of the Likert scale survey does not actually represent all of the pharmacists trained for treating minor illnesses and conditions. Because if this, the Anderson-Darling test was performed to measure if the data was normally distributed. Since all of the data was proven to not be normally distributed it is likely that a Type 1 error has occurred, and that the data is not statistically significant.
Consequently, one can therefore question some of the conclusions in this report. Further statistical analyzes could be done to improve the strength of this study, but this has not been done due to lack of time. However, that does not mean that the results in this report are of no value. On the contrary, the results are representative for the participants of the survey, which covers roughly 50% of the total population, and the conclusions could be applicable to them.

5.1.2 Open ended questions

Open ended interview questions were either handed out or asked to respondents in an effort for them to share their perceptions, opinions and regarding pharmacists provided patient care services, like minor illnesses and conditions. Pharmacists received the questions along with the Likert scale survey but patients, physicians and insurers was either contacted on site or via for example telephone calls or email. Open ended interview questions were chosen so respondents had the ability to motivate their answers.

The intent with the interviews was to gather perceptions and from physicians, patients and insurers regarding pharmacists treating people for minor illnesses and conditions. However due to the lack of time all stakeholders are not represented at all or to a very small extent. The goal was to reach saturation of the answers from the respondents, making the results valuable whilst not being numerous (42). However, one can always question if the answers from the various stakeholders really represent the general populations or not since there is no way to disprove the results being coincidental. This is especially true for physicians, since only four physicians chose to participate. Since very few physicians and no insurers participated in the interviews, the answers received can only be attributed to each individual and not the general population of the stakeholders. The conclusion is that the ways of getting in contact with each stakeholder were not optimal and that there is always a need to interview more respondents.

There is also a matter of researcher bias when it comes to interview questions. Even though a researcher considers himself/herself unbiased there is always a chance of certain factors that can influence and affect the results, for example gender, age, nationality/ethnicity, academic viewpoint etc (43).

The open-ended interview questions were transcribed on site, during the actual interviews. This was done to avoid recording or collecting any data that could be used to implicate or identify any respondents, consequently saving time due to the institutional review board approving the research project faster. However, transcribing during the interviews could have affected the results in a negative way because of interpretation errors from the researcher.

The open-ended interview questions were analyzed qualitatively.

5.2 Results discussion

5.2.1 Integral part of primary health care and benefits

An overwhelming number of pharmacists, felt pharmacists provided care for minor illnesses and conditions to be an effective and integral part of primary health care (figure 1). Pharmacists also answered that increased access and convenience, for the patients, was one of the benefits of pharmacist provided patient care as well as saving patients time and money. In regard to healthcare, pharmacists answered that reduced cost and lowered workload were the biggest benefits, giving providers more time to work on more complex issues and patients. This goes in line with the other studies regarding if pharmacist-provided patient care for minor illnesses and conditions is an effective and integral part of primary health care.
For example, one study from Australia (44) showed that pharmacists, being able to prescribe and treat, are strongly positive towards the increased scope of practice. This study also claims that patients were of an equal mindset. One aspect of the study was that increased access was one of the driving factors pharmacist provided patient care, and that increased access was valued amongst patients.

A study from Canada, regarding cost effectiveness and savings in relation to health care, showed that pharmacists prescribing for minor illnesses could save money, if one includes savings to the society as a whole, whilst simultaneously improving access to the health care system (45).

Another study from Washington State went through how an addition of pharmacists to the health care team, using a CDTA, affected the optimal medication outcomes and patient satisfaction. The study concluded that the addition of pharmacists had a positive effect on the medication outcomes as well as the patient satisfaction (46).

In comparison to what the pharmacists believed, some of the interviewed patients for this study also felt that increased access to care and lower cost, for the individual, for the insurance companies and for the society as a whole, were the major benefits. This is further supported by the studies from Canada and Australia respectively. The answers from the two stakeholders show that they share some opinions in this matter. However, some of the interviewed patients felt that pharmacists were not knowledgeable enough and that they did not have enough clinical experience. These respondents were negative towards pharmacists provided patient care in general. The negative experiences and opinions are hard to come by in other studies, however that does not mean they are not prevalent amongst patients.

What can be done to remedy this lack of trust, from some patients, is to build more, and better, relationships with patients and the public and this was mentioned by some pharmacists in this study. Another action to be taken is to further educate patients and the public about pharmacists’ scope of practice and their role in healthcare. This is supported, by studies from Canada and Pakistan, which show that the public does not have a clear understanding of what pharmacists can do (47, 48).

Two of the physicians’ answers were along the lines of the patients and pharmacists in this study regarding benefits. However, the other two physicians’ answers, albeit positive, were more along the lines of traditional pharmacy practice and not of the pharmacist provided patient care and according to a study from Canada this is not uncommon (49). There could be an issue of the healthcare not having a clear understanding of what pharmacists can do or not having the proper relationships with pharmacists to trust them with patient care, in which case the same solution, as for the patients, could remedy part of this issue.

5.2.2 Concerns about, and problems with, pharmacist provided patient care

Common concern amongst pharmacists in this study was that they felt they needed more training, both in regard to the initial training as well as ongoing training, and more time to perform the patient care service. These statements are further supported by the questions regarding confidence providing minor illnesses and conditions services after receiving training and confidence having sufficient training and knowledge to manage complex patients at the pharmacy. ~27% (figure 3) of pharmacists and ~36% (figure 4) of pharmacists’ answers, on each respective question, were neutral or negative. Although a majority of pharmacists felt they had the confidence in regard to these questions, a fairly large percentage felt they did not. The open-ended questions also pointed towards pharmacists wanting more training as well as more continuous training.
When comparing this to the interviewed patients and physicians there is a clear resemblance, the interviewed patients and physicians argued the same concern. Both stakeholders argued that the training might not have been enough and that the pharmacists might wrongfully diagnose a patient or not knowing when to refer a patient to the health care instead.

Training, including continuous training, is an integral part of a patient care service provided by pharmacists. One conclusion that can be drawn is that the training the pharmacists received was beneficial, which to some extent can be supported by the results in figure 5 where over 50% of the respondents answered that the training received changed the way the practice pharmacy. To improve the confidence of trained pharmacists, and the way they practice pharmacy, continuous training and courses to refresh their knowledge could be an option. Finding studies to support this claim is hard, however one study from Saudi Arabia, researching collaboration between primary care physicians and pharmacists, concluded that training programs and activities were needed to improve collaborative practice between physicians and pharmacists (50). Consequently, if the collaboration between pharmacists and physicians improve, both stakeholders can work together to help patients experience less concern.

Some pharmacists were concerned that they did not have the time to perform the services while other pharmacists felt that they did. This can be seen in figure 2 where the pharmacists’ answers are more or less evenly distributed between agreement and disagreement. This can be heavily dependent on a pharmacy more or less traffic, e.g. a pharmacy in an urban area contra a pharmacy in a rural area. If a pharmacy has a lot of traffic, finding time to perform the service might be difficult, which in turn can impact the quality of the service. One respondent explained that performing the service under high pressure was frightening.

One solution to this problem is to implement workflow changes. Implementing workflow changes to integrate a patient care service on a regular basis can to some extent remedy the problem. This is for example evident in Sweden, where there is a big mix of competencies at today’s pharmacies, for example pharmacists, prescriptionists, pharmacy technicians, pharmacy assistants and to some extent nurses (51). Another solution is to train more ancillary staff and delegate tasks to them when it is appropriate, if the degree of clinical assessment required is suitable for them. Changes like these are supported by a study from the USA, where these time management solutions were suggested as well (52). However, since there is no indication if these changes were implemented or if they were successful there is no way of knowing these changes are plausible, especially since the changes were not suggested for a minor illnesses and conditions service at community pharmacies. For example, giving ancillary staff more permission to perform this type of service might have an impact on the quality of the service. Physicians might also become even more concerned about patient safety. A counter argument would be that the pharmacists would be the final decision maker for an assessment. In any way, some of the pharmacists in this study requested more ancillary staff to the pharmacy so that they could have more time to perform the minor illnesses and conditions services.

Another concern shared by both patients and physicians was that they felt the pharmacists did not have adequate communication skills. The physicians also stated that they felt the communication, in general, between physicians and pharmacists needs to improve as well. In comparison, pharmacists only shared the belief, with the physicians, that communication between the professions has to improve and did not reflect whether they had poor communication skills or not. A study from the USA, where the researchers concluded that both professions wanted more direct communication with each other to narrow the communication gap, supports the claims of concern regarding a need for improvement of interprofessional communication (53).
One solution to the communications issue, in regard to the pharmacist provided patient care services, could be to have consulting physicians on board with the project. This would allow pharmacists to contact a physician if any problems during the assessment would arise. This would also, to some extent, remedy the issue where both physicians and patients were concerned the pharmacists would wrongfully diagnose a patient or not knowing when to refer a patient to the health care. Having a consulting physician to contact, when needed, was suggested by one of the pharmacists surveyed.

A second solution, sent out by the British Medical Association, BMA, and the National Pharmacy Association in Britain, NPA, in the form of a work book suggest that the responsibility to improve communication between physicians and pharmacists is two sided. For example, the work book suggests that clear and direct channels of communication are needed so that both professions are made aware of the decisions the other profession makes for a patient. Another example would be that when a pharmacist decides that a patient should visit a physician, they should explain the urgency of a visit whilst reassuring the patients that they are not in immediate danger (54).

When it comes to physicians’ and pharmacists’ opinions regarding what key elements are needed to create a sustainable health care with pharmacist participation on patient-care teams and the challenges that comes with co-managing patients, both professions reiterate the above-mentioned facts. However, both professions added that pharmacists need access to patients’ medical records etc. in order to be able to make good assessments. It is possible that giving pharmacists access to medical records etc. would improve the quality of the service. On study from the USA concluded that community pharmacists with access to medical records identified more medicine related problems and omissions in preventive care (55). This study, albeit not fully related to pharmacist provided patient care, can still be used, to some extent, to support the above-mentioned claim.

Despite all the concerns, a majority of pharmacists (~71%, figure 6) believed that patients would utilize the minor illnesses and conditions services. If compared to what many of the interviewed patients answered, that they would utilize the service for minor ailments, it shows to some extent that the service is attractive and would be utilized.

### 5.2.3 Key elements to create a sustainable health care model

A lot of the answers regarding what key elements are needed to create a sustainable health care model are similar to what has been previously discussed. However, pharmacists’ felt that they needed an increased scope of practice. They also felt that the health care, and providers in general, needed to accept pharmacists increased scope of practice more. This can be seen in figure 8, where the answers were split between positive and neutral/negative.

An increased scope of practice can definitely serve the public well, seeing as this would reduce the work load on health care even further. However, in comparison to the answers from physicians and patients, the earlier mentioned concerns migrate over to this as well. One study and one article show that although cost of and pressure on health care decreases while patients do benefit from changes like these, problems like communication between professions, lack of confidence and lack of support from the health care can have a negative effect on an expanded scope of practice for pharmacists (56, 57).

When comparing the pharmacists’ and physicians’ answers, regarding the physicians’ acceptance of pharmacists and pharmacist provided patient care, there is a distinction between the two stakeholders. The acceptance is good as long as the physicians believe that the pharmacists are properly trained, according to this study. However, both the
AMA and the American Academy of Family Practitioners, AAFP, acknowledges the more traditional roles for pharmacists whilst opposing any change where pharmacists would be able to prescribe (58). This indicates that there is, at least, numerous physicians that do not accept this change. One way to solve that issue is, once again, more and continuous training. This is supported by the previously mentioned study from Saudi Arabia (50).

5.2.4 Reimbursement and marketing

According to the pharmacists participating in this study, the reimbursement issue was important and ~77% (figure 7) of the respondents strongly agreed with the belief that pharmacists should be reimbursed by insurance companies for the minor illness and conditions services. However, reimbursement is not given. Instead patients have to pay out of pocket for the services, and when comparing the results from both the pharmacists and the patients, it is clear that in that case patients would rather visit the health care. This shows that the reimbursement issue is important for implementing pharmacist provided patient care, otherwise getting patients to utilize the service might be difficult. According to a study from the USA, reimbursement is one of the factors that is important to create a model that supports a new way of pharmacy practice (59). This supports the above mention conclusion.

Pharmacists also felt that the minor illnesses and conditions services needed to be marketed to a higher extent. According to this study ~80% (figure 10) of the respondents were neutral or disagreed with the question regarding marketing towards primary care providers, and ~64% (figure 11) were neutral or disagreed with the question regarding marketing towards patients. This is an indication that the service has to be marketed more. One comparison that can be made is that an overwhelming majority of the interviewed patients, in this study, answered that they had not heard of the minor illnesses and conditions services in Washington State. However, many patients answered that they would probably utilize the service in the future and were positive towards it. This is yet another indication that the service, and the value from pharmacist provided care, needs to be marketed further. According to an article in the Pharmaceutical Journal, successful marketing is key to get people to utilize a new service (60).

Examples of promotional methods are in-house materials, window displays, press releases, interviews in media, table top displays and electronic media (e.g. television, radio, social media and the Internet in general). Another way of promoting the services is to create and maintain good relationships with primary care providers, making them more aware and more prone to sending patients to the pharmacy for their patient care. This is supported by the above-mentioned article from the Pharmaceutical Journal, which also claims that identifying the needs of patients, primary care providers and the health care in general, one can advertise to meet these needs by promoting certain benefits of the service provided (61). The best result could probably be obtained when pharmacy and primary care in collaboration with Insurers market these services together. All stakeholders for care could promote this together as a unity.

When it came to the question regarding insurance companies having a positive view of pharmacist provided patient care services, the pharmacists were split. A majority of the respondents (~48%, figure 9), however, were neutral and answered that they neither agreed or disagreed. Getting reimbursements from insurance companies for pharmacists’ patient care services is obviously difficult, however if marketing towards insurers is not optimal this will result in getting reimbursements even harder. This problem is not unique, however, as one study from the USA also stated that although patients do benefit from new patient care services, new compensation models are required (62).
5.3 Conclusion

The statistical analysis of the results shows that they are presumably not significant, causing some of the conclusions being not entirely supported. However, the conclusions do have scientific support from other studies and research. Pharmacist provided patient care services are being developed and implemented in many nations and states, much to the benefit of the healthcare system and the patients, and the College of Pharmacy at WSU is part of this comprehensive development. To improve these services further, the training of pharmacists could be improved upon, ensuring pharmacists’ knowledge and skills and consequently reassuring the concerns from patients, physicians and pharmacists alike. To increase the utilization of pharmacist provided patient care services the marketing has to be expanded upon, with the aid of the healthcare system and insurance companies, clearly defining the roles of the healthcare and the pharmacists. Marketing pharmacy services needs to be about identifying the right people and persuading them to come into pharmacy outlets requesting these services. There is great importance in developing and maintaining long lasting relationships with patients and other partners, such as physicians, through the provision of high quality pharmacy-based clinical services, consequently also improving the communication between the professions. By developing pharmacy services that meet patients’ and healthcare needs and deliver on promises, pharmacists can build long lasting relationships that are the foundation of a successful professional practice and a new role for community pharmacy. Other prerequisites for success are that new services should be developed together with the healthcare system, the re-imbursement issue needs to be solved as Pharmacy becomes a more integrated actor within the healthcare system. This study indicates that further research is required to successfully implement reimbursed pharmacists provided care for minor illnesses and conditions.
5.4 Acknowledgement

I want to thank all the pharmacists, physicians and patients’ participating in this research, sharing their opinions and beliefs. I also want to thank the companies, involved in the minor illnesses and conditions services, for letting me use their pharmacies for interviews and letting me survey their pharmacists during working hours.

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### Appendix A

#### Scaled questions, pharmacists

Please use the following scale to answer the below questions:

1: Strongly disagree  
2: Disagree  
3: Neither agree or disagree  
4: Agree  
5: Strongly agree

| I believe pharmacist provided care for minor illness and conditions to be an effective and integral part of primary health care. |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Comment:..................................................................................................................................................................................
................................................................................................................................................................................................
........................................................................................................................................................................................................
................

| I have sufficient time to perform the minor illness and conditions services when working at the pharmacy. |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Comment:..................................................................................................................................................................................
................................................................................................................................................................................................
........................................................................................................................................................................................................
................

| I am confident providing minor illness and conditions services after the online education and live skills training I received. |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

Comment:..................................................................................................................................................................................
................................................................................................................................................................................................
........................................................................................................................................................................................................
................
I am confident I have sufficient training and knowledge to manage complex patients with many problems in your pharmacy practice (ex. Diabetes, hypertension, and hypercholesterolemia).

| 1 | 2 | 3 | 4 | 5 |

Comment:...................................................................................................................................................
..............................................................................................................................................................
..............................................................................................................................................................

The minor illness and conditions training I received changed how I practice pharmacy on a regular basis.

| 1 | 2 | 3 | 4 | 5 |

Comment:...................................................................................................................................................
..............................................................................................................................................................
..............................................................................................................................................................

I believe patients’ are willing to visit the pharmacy for minor illness and conditions services instead of going to primary care.

| 1 | 2 | 3 | 4 | 5 |

Comment:...................................................................................................................................................
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I believe pharmacists should be reimbursed as providers on medical insurance for the minor illness and conditions services.

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I believe primary health care providers, in general, have a positive view of pharmacist-provided patient care services.

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I believe health plans (insurance companies) have a positive view of pharmacist-provided patient care services.

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I believe implementation of minor illness and conditions services have been successfully marketed to primary care providers.

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I believe implementation of minor illness and conditions services have been successfully marketed to patients.
Open ended questions, pharmacists

Please answer the following questions regarding your beliefs on the role pharmacists have in providing care to patients. This may include ordering laboratory tests, medication therapy reviews, or offering primary care assessment and therapy initiation for minor illnesses and conditions.

1. What benefits does pharmacist-provided care provide patients?

2. What benefits does pharmacist-provided care provide the healthcare system?

3. What concerns do you have regarding pharmacist-provided patient-care, if any?

4. As pharmacist participation on patient-care teams grows, what do you see as key elements to create a sustainable health care model?

5. Did you find the Clinical Community Pharmacist training useful prior to implementing patient-care services?
   a. Online:
   b. Live:

6. What additional training, if any, could have been provided to facilitate your ability to manage these patients?

7. Please list any other support you believe would make the project more successful.

8. Describe what could have been done better or differently when this project launched.
Thank you for your responses.
Appendix B

Open ended questions, patients
A shortage of primary care providers has resulted in a decline in access to primary care in Washington State(1). Pharmacists’ scope of practice in Washington State includes ordering laboratory tests, conducting medication reviews and offering primary care treatment for minor illnesses and conditions including initiation of therapy, however these services have been underutilized in the healthcare system. Pharmacists are in a unique position to assist primary care providers manage patients with chronic conditions in the community setting (i.e. cardiovascular disease, diabetes) and allow providers more time with their more complex patients.

I want to hear about your thoughts/perspectives regarding pharmacist-provided patient care.

1. Have you received any information about pharmacist-provided patient care services for minor illnesses and conditions?
   a. If yes, can you tell me about your knowledge regarding the project?
   b. Has your view of the role pharmacists play in health care changed? If so, how?

2. Can you please tell me how you feel about pharmacists providing care to patients, which may include ordering lab tests, completing medication reviews, offering primary care treatment for minor illnesses and conditions?

3. As a patient, what benefits do you see from pharmacist-provided patient care?

4. What concerns do you have regarding pharmacist-provided patient care?

5. Do you believe you would utilize pharmacist-provided patient care for minor illness and conditions in the future?

6. Do you believe pharmacist-provide services offer convenience over other avenues of care?

If you have utilized the pharmacist-provided patient-care services for minor illnesses and conditions, please answer the following questions:

1. Was the pharmacist available at the time you requested care?

2. Do you believe the time for an appointment was reasonable?
3. Were you confident in the pharmacists knowledge and ability to assess your symptoms and provide treatment if necessary?

4. Did you feel the service was convenient for you as a customer/patient?

5. Are there other patient-care services you believe a pharmacist could provide? Can you provide examples?

References

Appendix C

Questions for physicians
A shortage of primary care providers has resulted in reduced access to primary care in Washington State(1). Pharmacists’ scope of practice in Washington State includes ordering laboratory tests, conducting medication reviews, and assessing and initiating therapy for minor illnesses and conditions utilizing collaborative drug therapy agreements, however these services are underutilized in the healthcare system. Pharmacists are in a unique position to assist primary care providers meet patient goal outcomes with chronic conditions in the community setting (i.e. cardiovascular disease, diabetes) and allow providers more time with their more complex patients.

I want to hear about your thoughts/perspectives regarding pharmacist-provided patient care.

1. In your opinion, what benefit does pharmacist-provided patient care provide you as a physician?

2. What concerns do you have regarding pharmacist-provided patient care?

3. Do you practice in a setting where pharmacists are used in a non-dispensing function? (Diabetes counseling, medication synchronization, disease-state management, assessing/treating minor illnesses and conditions, etc.).

   a. If yes, has your interaction with and/or communication with pharmacists changed as a result of these roles?

4. What challenges do you experience or foresee “co-managing” patients with a pharmacist?

5. As pharmacist participation on patient-care teams grows, what do you see as key elements to create a sustainable health care model?

6. Given community pharmacists are one of the most easily accessible providers of care, what areas of patient care do you believe pharmacists can provide value toward patient outcomes? Please give some examples.
## Appendix D

Pharmacists answers to survey questions.

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