

Improve requesting medication by mail from pharmacy services rate in KFMC using FOCUS-PDCA methodology: Project report

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Abstract: The purpose of this study was to describe current users of mail pharmacy services and to evaluate factors associated with the use of mail pharmacy services.

Retrospective study at King Fahd Medical City, Riyadh, KSA, for six months' period; Oct 1, 2021 to Apr 1, 2022. Data were collected from EPIC (Health Care Operation System) and electronic patient satisfaction survey. the Methodology has been adopted is FOCUS-PDCA Methodology .60 surveys were mailed to a randomly generated list of eligible patients. A total of 44 (73.1%) patients responded. The percentage of the satisfaction were statistically significant. In conclusion, mail pharmacy service users were satisfied with service by 100% in this study. Advancing age, presence of chronic diseases, increasing level of education, and increasing distance to the nearest pharmacy were positively associated with the use of mail pharmacies. Further research is needed to better understand patient-specific reasons for choosing mail pharmacies or community pharmacies.

Keywords: Mail pharmacy; Pharmaceutical Services; Pharmacists; Pharmacy, Patient satisfaction, surveys.

I. INTRODUCTION

Since the invention of mail-order pharmacies, the US has been able to provide its citizens with prescription drugs for almost a century. Although the use of mail-order pharmacies has remained relatively stable, the number of them has increased due to the expansion of health insurance plans and pharmacies.(1)

In 1981, the sales of prescription drugs through mail pharmacies was less than \$100 million, and in 1989, it reached \$2 billion. (2) By 2000, the total sales of mail-order medicines had increased to over \$13 billion. It accounts for over 10.6% of the country's prescription medicine spending.

(3) The use of mail pharmacies continued to increase throughout the 2000s. In 2009, it was estimated that the total spending on prescription drugs was \$51.5 billion. The increasing number of patients and the perception of them as convenient and cost-effective were some of the factors that led to the growth of the industry. (1,5,6,7)

Pharmacy benefit managers began to offer in-house mail pharmacies as the market for mail pharmacies changed. This resulted in increasing promotion of postal pharmacy services to both payers and patients. Many payers have expanded their mail-order programs as a result of pharmacy benefit managers' advertising of potential cost reductions when

prescription prescriptions are filled through mail pharmacies, while it is uncertain whether these programs cut total costs. (8)

Mail pharmacies' popularity grew until recently, when traditional brick-and-mortar pharmacists increased their efforts to reverse the trend. In 2010, 14.7 percent of prescriptions were filled through mail pharmacies, but by 2014, that number had dropped to 10.4 percent.(4) Research has reported high satisfaction rates among mail pharmacy consumers, but high satisfaction rates are also reported for community pharmacies, with some research suggesting preference with the local community pharmacies.(9-10) Mail pharmacy services continue to be an alternative to traditional pharmacies; however, the recent reductions in the percentage of prescriptions being filled through such pharmacies suggests the need to better explore factors affecting or associated with the use of mail pharmacy services.

The Department of Pharmaceutical Services in King Fahd Medical City aims to provide the best medical services to patients to improve the quality of health care they receive in harmony with the rest of the departments of King Fahd Medical City.

Based on this goal, the Pharmaceutical Services Department has established a medicines mail-delivery service inside and outside Riyadh, a service that allows King Fahd Medical City patients to request their medicines for free through a dedicated application to be sent to them via express mail, whether inside or outside Riyadh.

It was found that the utilization of this service is low for several reasons, and it was noted that few patients know about this service.

This research presents a working plan to improve patients' demand for the drug mail-delivery service and increase the percentage of patients who know this service. wherefore we conduct a Retrospective study at King Fahd Medical City, Riyadh, KSA, for six months' period; Oct 1, 2021 to Apr 1, 2022. Data were collected from EPIC (Health Care Operation System) and electronic patient satisfaction survey.

II. METHODS

Wherefore we conduct a Retrospective study at King Fahd Medical City, Riyadh, KSA, for six months' period; Oct 1, 2021 to Apr 1, 2022. Data were collected from EPIC (Health Care Operation System) and electronic patient satisfaction survey. the Methodology has been adopted is FOCUS-PDCA Methodology, it is a formal process of improvement that many organizations use in order to direct improvement efforts. In fact, FOCUS-PDCA is an acronym for a specific problem-solving method. FOCUS is an acronym for: F (find), O (Organize), C (Clarify), U (Understand), S (Select). PDCA is an acronym for: P (Plan), D (Do), C (Check), A (Act).

the survey included items pertaining to patients' overall satisfaction with the service and with individual components of the service (i.e., timeliness of information provided, quality and quantity of information provided, method of communication.

Satisfaction Questionnaire:

all patients received a multiple-choice satisfaction questionnaire to rate technical and relational aspects and the perceived usefulness of the service. The answers were articulated in yes or no scale to quantify the responses. In addition, respondents were given the opportunity to provide feedback in free text about what they liked and disliked about the process and to identify areas for improvement in the form of the following words:

1. Did you know that there is a free drug consignment service by express mail for residents inside and outside Riyadh?
2. How often do you use the medication consignment service?
3. What is your preferred method for requesting a medication consignment service?
4. What are the reasons that motivate you to use the medication consignment service?
5. Access and communication with the pharmacy by phone
6. Adequacy of services in terms of procedures and time, and meeting the needs of the patient
7. What are your suggestions to improve the pharmaceutical dispatch service?

III. RESULT

A total of 44 (73.1%) patients responded to the surveys.

The percentage of the satisfaction were statistically significant as seen in the following (table.1)

Table 1

Did you know that there is a free drug consignment service by express mail for residents inside and outside Riyadh?	66 % Yes 34% No Mean 1.3 SD 0.479
How often do you use the medication consignment service?	Daily = 3.7% Weekly = 11.1% Monthly = 77.78% Very rare = 7.4% Never = 0% Mean = 2.89 SD = 0.577
What is your preferred method for requesting a medication consignment service? 1. -Via ikfmc application 2. -Via Telemedicine 3. -Via going to pharmacy in person	1. 77.78% 2. 19% 3. 4% Mean = 1.26 SD = 0.526
What are the reasons that motivate you to use the medication consignment service?	Time saving = 22% Easy to use = 70% Fast arrival = 4% On time = 4% Mean = 1.89 SD = 0.641
Access and communication with the pharmacy by phone	Disagree = 7.4% Neutral = 51.9% Agree = 40.7% Mean = 2.3 SD = 0.620
Adequacy of services in terms of procedures and time, and meeting the needs of the patient	Disagree = 4% Neutral = 0% Agree = 96% Mean = 2.93 SD = 0.385
What are your suggestions to improve the pharmaceutical dispatch service?	Data

Other variables Among the mail pharmacy users, the average distance from the nearest pharmacy was approximately 8.5 miles, mean age 52 years, and average number of chronic diseases 1.07 compared with 5.5 miles, 44 years, and 1.67, respectively, among mail pharmacy nonusers. Differences between distance from nearest pharmacy ($P < 0.001$) and age ($P < 0.001$) both statistically significant. Chi-square analysis suggested that insurance coverage was not significantly associated with mail-order pharmacy use ($P = 0.49$).

IV. DISCUSSION

F (find)

The process that needs improvement is the mail-delivery service for medicines via express mail inside and outside Riyadh, a service provided by the Department of Pharmaceutical Services in King Fahd Medical City, where we noticed a problem, which is the lack of demand for medicines via express mail by patients, we discovered this problem through The data from EPIC which showed that the rate of requesting of medications was low in the first three months (Oct, Nov and Dec).

also The electronic patient satisfaction survey showed a low percentage of patients who know the service, as well as a low percentage of patients' satisfaction with the service in the first three months (Oct, Nov and Dec).

Brief Outline of Context and Problem

- *lack of participation in this service are represented in the lack of their knowledge of this service*
- *lack of knowledge of how to activate the service due to the lack of advertisements informing patients about the service and the absence of the necessary explanations to clarify the service and how to activate it.*

O (Organize)

The entity that can improve this process and solve the problem is the Department of Pharmaceutical Services in King Fahd Medical City and King Fahd Medical City's social media Department.

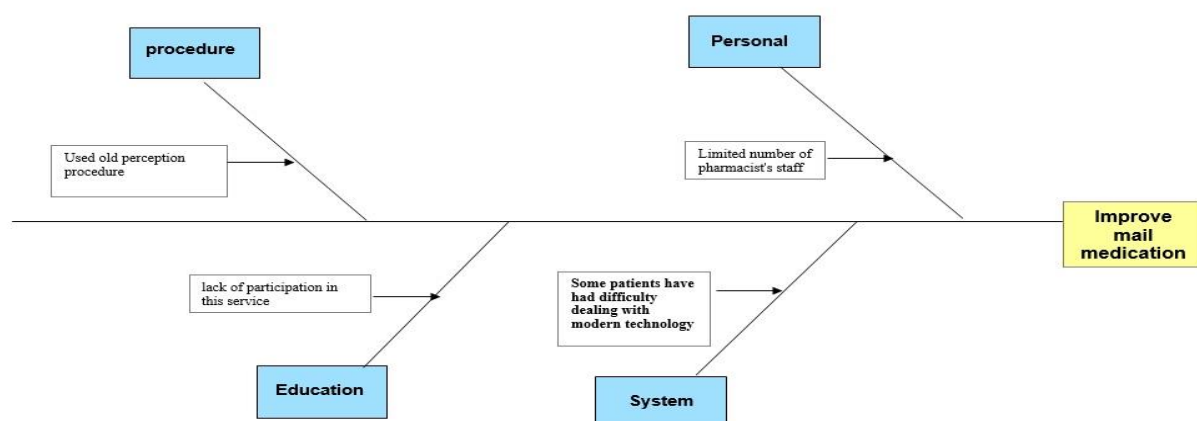
The employees who can contribute are the Pharmaceutical Services Department Manager (who is responsible for managing this entire process), the Pharmaceutical Services Department staff, the Software Engineer in the Pharmaceutical Services Department, and the King Fahd Medical City's social media team.

C (Clarify)

Department of Pharmaceutical Services in King Fahd Medical City work for provide the patients with the medications they need , in order to improve the quality of the medical services provided to them. The drug is distributed in several ways, including the medicines mail-delivery service via express mail inside and outside the city of Riyadh. In this service, medication is sent to patients based on the patient's request. Patients can order medications through this service in several ways, through the IKFMC application, by phone call, or by coming to the pharmacy and requesting the service. After ordering the medicines, medicines are sent by express mail inside or outside the city of Riyadh.

Patients' demand for the mail-delivery service was low, according to the study conducted in King Fahd Medical City. The study also showed that the percentage of patients who knew the medicine-delivery service by express mail was low, and also showed that the percentage of patients who were satisfied with the service was also low.

U (Understand)



It is necessary to know the percentage of people who use the medicines mail-delivery service.

As for the people who use this service, we must know how they attain this service, for example, through a billboard, or the doctor told them about the service.

Data was collected through the EPIC system which provided the number of those who use the medicines mail-delivery service. A shortage of beneficiaries was noted, For example, during the month of October, the number of requests was only 40 requests per day, while in normal circumstances, the number should be up to 100 requests per day.

An electronic patient satisfaction survey was also published in which patients of King Fahd Medical City participated in order to find out the extent of patients' satisfaction and their knowledge of the medicines mail-delivery service. In October, only 30% of patients knew of this service, and patients' satisfaction with the service was low.

The reasons for the patients' lack of participation in this service are represented in the lack of their knowledge of this service and the lack of their knowledge of how to activate the service due to the lack of advertisements informing patients about the service and the absence of the necessary explanations to clarify the service and how to activate it.

Measures must be taken to familiarize more patients with the medicines mail-delivery service, and to teach them how to use and request this service, as well as encourage them to request this service.

S (Select)

The proposed procedures that can inform patients about the medicines mail-delivery service and how to activate it and increase the proportion of beneficiaries are: hanging billboards display information about this service in the various corridors of King Fahd Medical City, distributing advertisement cards to patients within King Fahd Medical City, posting advertisements on social media of The King Fahd Medical City present information about this service and explains how to use it.

we can check the increase of users of the service and achievement the desired results by checking the number of service applicants through the EPIC system. the percentage of people who know about the service can be known through the electronic patient satisfaction survey, and their satisfaction with it can also be known through this survey.

P (Plan)

An action plan has been defined to achieve the required improvement with A timetable, and defining those responsible for plan implementation, and defining the tasks assigned to them. The tasks were as follows:

- Create expressive ads: During the month of December 2021, the Director of the Pharmaceutical Services Department communicated with the software engineer in the Pharmaceutical Services Department Requested from him creating high-quality advertising cards (designated for distribution to patients) and also creating billboards (dedicated to be hung within the corridors of the Medical City), and that these advertisements contain Pictures and text materials identifying the medicines mail-delivery service provided by the Pharmaceutical Services Department, and showing a simple explanation on how to benefit from this service.
- Hanging billboards in King Fahd Medical City: The director of the Pharmaceutical Services Department demand from his employees to hang billboards in the corridors of the Medical City, such as reception and waiting rooms. starting from mid-December 2021.
- Distribution of advertising cards to patients within the hospital: The Director of the Pharmaceutical Services Department requests the employees in the Pharmaceutical Services Department to distribute advertising cards to patients in many places such as hospital doors, waiting rooms, and various patient wards. starting from mid-December 2021.
- Advertisements about the medicines mail-delivery service in social media: The software engineer in the pharmaceutical services department creates ads dedicated to social media inform patients about the medicines mail-delivery service and provides explanations on how to benefit from this service, he performs this work during the month of December 2021, and then communicates with the social media team of the King Fahd Medical city to request posting advertisements about medicines mail-delivery service, advertisements are published starting from mid-December 2021.

D (Do)

The director of the pharmaceutical services department, the pharmaceutical services department staff, the software engineer and the social communication team of King Fahd Medical City, each of them carry out the tasks assigned to them efficiently and according to the schedule .

The Director of the Pharmaceutical Services Department supervises the progress of work, receives regular reports from each individual involved in this process, including a summary of the tasks he has accomplished, and verifies by himself that the tasks to be carried out correctly.

C (Check)

The following results were observed:

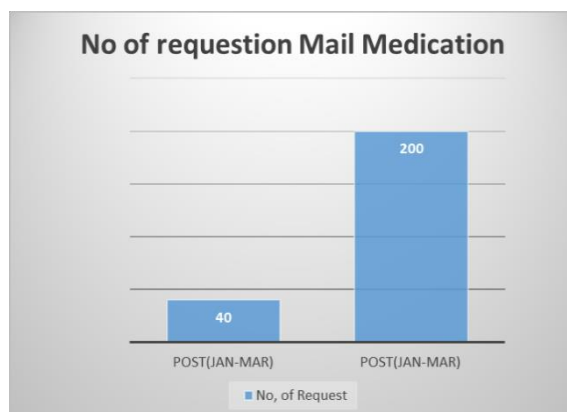
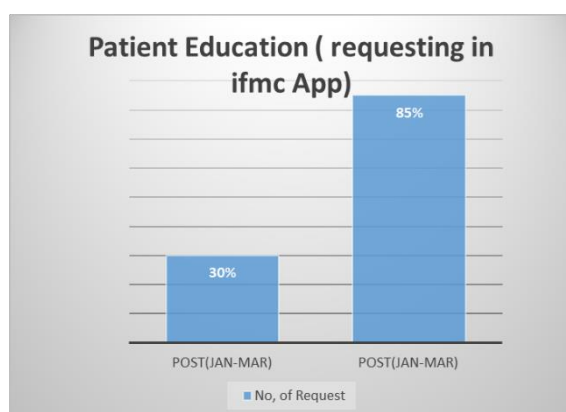
- The number of requests on the EPIC system: an increase in the number of requests to send medicine by express mail through the EPIC system was noticed, where the number of requests in the middle of January reached 70 requests per day, then 100 requests at the end of January, while the number reached 140 requests per day in the month February. This is a large, gradual increase in the number of requests, compared to 40 requests per day in October. so, we have positive results that indicate to the success of the action plan and its achievement of its objectives.
- Percentage of patients who know the service according to the electronic patient satisfaction survey: In view of the results of the questionnaire, it was noted that the percentage of participating patients who know the medicines mail-delivery service via express mail increases, as the percentage of patients who know this service reached 50% in January and reached 80% in February, this represents a significant improvement compared to 30% in October. While the percentage of patients' satisfaction with this service reached 95% in February, and this is greater than the percentage of satisfaction in October, which is 40%. so, we notice good results that indicate to the success of the plan and the achievement of its objectives.

A (Act)

We noticed the success of the plan that we drew, which included distributing advertisement cards to patients and hanging billboards in the corridors of King Fahd Medical City, as well as posting advertisements on social media. It has achieved its goals of increasing patients' knowledge of the medicines mail-delivery service via express mail, increasing their satisfaction with it, and increasing patients' demand for this service through the EPIC system.

these results are in line with the policy of the Department of Pharmaceutical Services in King Fahd Medical City, which is to improve medical services provided to patients.

this plan can be judged as successful and achieved its goals using patient education and satisfaction after implementation of our plan as a parameter, and we recommend continuing with application this plan, thus we always guarantee a high rate of utilization of the medicines mail-delivery service via express mail inside and outside the city of Riyadh, and thus also we always achieve a large percentage of patients who know this service and have high satisfaction with it.



V. LIMITATIONS / RECOMMENDATIONS

Some patients have had difficulty dealing with modern technology to request medicine we recommend continuing with the medicines mail-delivery service via express mail inside and outside the city of Riyadh

VI. LESSONS LEARNT

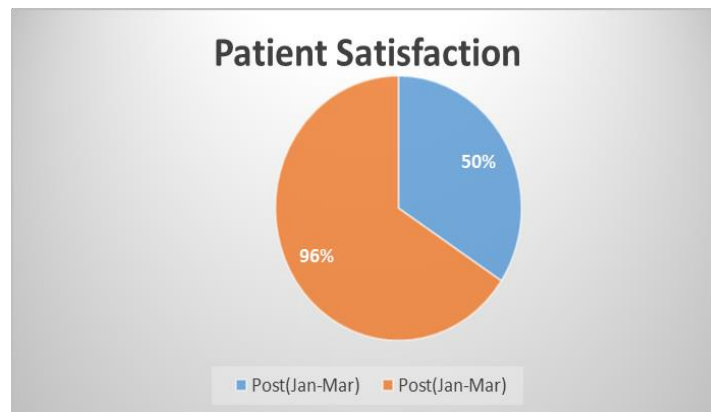
We always guarantee a high rate of utilization of the medicines mail-delivery service via express mail inside and outside the city of Riyadh, and thus also we always achieve a large percentage of patients who know this service and have high satisfaction with it.

VII. SUSTAINABILITY PLAN

- Continue education and training of the patients through posting advertisements on social media
- Continue data Collection-Measure to Manage.

VIII. CONCLUSION AND ACKNOWLEDGEMENTS

Patients' expectations play a significant role in their satisfaction with a service encounter. We found that patients do use prior experience, market-based referents, and ideal referent expectations when forming their satisfaction with their current service experience. However, the type of service determines the type of referent used by the patient. Tangible or measurable services, such as wait time or information leaflets, are compared with expectations based on prior experiences. Intangible service experiences, such as the personal interaction between pharmacist and patient, are compared with expectations based on ideal norms or a market-based referent. Therefore, if one wishes to measure the impact of cognitive services, surveys should use comparisons of current service encounters with ideal norms or with services provided by other pharmacies. I would like to thank the following people who have helped me undertake this research: My partner Ghadeer Al-Mutairi , for her enthusiasm for the project, for her support, encouragement and patience; The Pharmacy Department in FMC for accessing the information needed to our project and questionnaire surveys



IX. DECLARATIONS

Ethical Approval and Consent to participate

Not applicable (we are only using numbers of medication requesting in the system without patient personal information or medical record number also the survey conducted not involve any patient information) we are ensuring respect for all human subjects and protect their health and rights. Institutional Review Board review was not sought, as all of the changes being tested were evidence based. There was no control group and, therefore, no randomization.

Availability of data and materials:

Data were collected from EPIC (Health Care Operation System) Epic Systems Corporation www.epic.com and electronic patient satisfaction survey using www.questionpro.com/t/ATIPCZq8JL , The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests:

The authors declare that they have no competing interests

Funding:

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Authors' contributions:

Yasir, Ghadeer conceived of the presented idea. Yasir, Ghadeer developed the theory and performed the computations also verified the analytical methods. All authors discussed the results and contributed to the final manuscript.

REFERENCES

- [1] Horgan C, Goody B, Knapp D, Fitterman L. The role of mail service pharmacies. *Health Aff.* 1990;9(3):66e74.
- [2] Konnor D. Managed care systems: implications for mail service pharmacies. Presented at 34th Ohio Pharmaceutical Seminar, American Managed Care Pharmacy Association, Arlington, VA, April 1989.
- [3] IMS Health Reports. IMS Health reports 27 percent rise in U.S. mail order pharmaceutical sales. Westport, CT: IMS Health; August 16, 2000.
- [4] IMS Health. Channel distribution by U.S. dispensed prescriptions; April 6, 2010. Available at: <http://www.drugchannels.net/2010/04/chains-winbig-in-2009.html>. Accessed February 8, 2016.
- [5] Pharmacy Benefit Management Institute. Prescription drug benefit cost and plan design online report. 2011-2012 ed. Available at: http://0101.nccdn.net/1_5/0ee/2d8/3da/2011-2012_takeda_Prescription_Drug_Benefit_Cost.pdf. Accessed February 17, 2016.
- [6] Duru OK, Schmittiel JA, Dyer WT, et al. Mail-order pharmacy use and adherence to diabetes-related medications. *Am J Manag Care.* 2010;16(1):33.
- [7] Flynn EA, Barker KN, Carnahan BJ. National observational study of prescription dispensing accuracy and safety in 50 pharmacies. *J Am Pharm Assoc (1996).* 2003;43(2):191e200.
- [8] Khandelwal N, Duncan I, Rubinstein E, Ahmed T, Pegus C. Community pharmacy and mail order cost and utilization for 90-day maintenance medication prescriptions. *J Manag Care Pharm.* 2012;18(3):247e255.
- [9] Xu KT. Choice of and overall satisfaction with pharmacies among a community-dwelling elderly population. *Med Care.* 2002;40(12): 1283e1293.
- [10] J.D. Power 2016 U.S. Pharmacy Study. Available at : http://www.jdpower.com/sites/default/files/2016_pharmacy_study_ss.pdf. Accessed July 18, 2016.