

Pharmacy Value Added Services: Early Beginnings, Current Implementation, and Challenges from the Malaysian Experience

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ABSTRACT

Background: In a large natural experiment, Pharmacy Value Added Services (PVAS) was introduced by the Malaysian Pharmaceutical Services Division, Ministry of Health Malaysia to improve the delivery of pharmaceutical care to patients. PVAS in the Malaysian context and definition refers to a group of new innovative pharmacy services including Pharmacy Drive Through, Postal Medicine, Integrated Drug Dispensing System, and SMS and Collect. Despite the convenience and advantages of PVAS, patients' adoption rate is still low. **Objectives:** This article aims to discuss, explore, compare and report the beginnings, definitions, early implementations, types of services offered and the challenges faced by the implementers of these services to derive policy lessons, implications and recommendations. **Methods:** We utilize a comparative discussion to highlight the various PVAS globally in comparison with the Malaysian experience. A further literature review is used to explore, contrast and highlight the implementation as well as the challenges of PVAS adoption in Malaysia to derive policy lessons, implications and recommendations. **Results:** PVAS is still new in Malaysia and requires much more work to increase its reach to its intended audience. We suggest numerous methods to increase its adoption rate. Overall, we suggest that PVAS be a key focus for Malaysian community pharmacies so that pharmaceutical services in Malaysia can achieve parity with advanced countries.

Key words: Pharmacy Value Added Services, Pharmacy Practice, Implementation of services, Malaysia, new services adoption, community pharmacy.

Submission Date : 21-04-2016

Revision Date : 20-06-2016

Accepted Date : 15-07-2016

DOI: 10.5530/ijper.50.3.4

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INTRODUCTION

The Ministry of Health Malaysia (MOHM) aims to lead and work in partnership with the patients using its service to facilitate and support the Malaysian peoples' aspirations to fully realize their potential in health, appreciate health as a valuable asset, take individual responsibility and positive action for their health and to ensure a high quality health system that is customer oriented.¹ MOHM's desires to create a national

health system that can provide an equitable, affordable, efficient, technologically appropriate, environmentally adaptable and innovative health care that emphasizes professionalism, caring teamwork, respect for human dignity and stresses on community participation.¹

Summary of current knowledge and practices in Malaysia

MOHM is the single largest financier among all the sources of financing for healthcare



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services. Most of this expenditure is spent for curative care whereby curative care services provided by hospitals include in-patient, out-patient, day-care services with minimal home care services. The total health expenditure for Malaysia during 1997-2013 ranged from RM8,303 million in 1997 to RM44,748 million in 2013. The health spending as a share of Gross Domestic Product (GDP) for the same period ranged from 2.95 per cent to 4.53 per cent of GDP. Overall, the per capita spending on health ranged from RM630 (USD224) in 1997 to RM1,494 (USD474) in 2013. The Total General Government Health Expenditure (GGHE) as percentage of General Government Expenditure (GGE), increased from RM4,430 million in 1997 to RM23,254 million in 2013 or an increase from 4.91 per cent to 6.29 per cent over the time period. Total health expenditure is the sum of public and private health expenditures as a ratio of total population. It covers the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid designated for health but does not include provision of water and sanitation. In 2013, the public and private health spending was RM23,253 million and RM21,495 million respectively. This translates to a public: private share of 52%:48% and a similar pattern is noted throughout the time series from 1997 to 2013. During this period, both the public and private sector spending shows an upward trend but the public share of health spending remained higher than the private.² Pharmacists as it would seem have a tremendous opportunity to contribute to healthcare services in Malaysia.

In 2013, there were a total of 10,077 registered pharmacists in Malaysia, with 65% of them serving in MOHM, 3325 venturing in private sectors and a small number of 251 pharmacists working with Non-MOHM facilities like the universities. Working closely with the pharmacists, a figure of 4,002 out of the total 4,846 pharmacy assistants in this country serves in MOHM, with the remaining 844 attached with private or Non-MOHM settings. While there were 28,949 medical doctors in MOHM, only a small fistful of 6501 pharmacists serving in government which explained the pharmacists' heavy workload and imbalance pharmacist: population ratio of 1:2949.³ In 2016, of the 4133 Type A License holders, there are 3094 registered community pharmacists managing retail stores per se in Malaysia.⁴

In the recent survey, the National Survey on the Use of Medicines (NSUM) 2012 reported that 40% of Malaysian consumers were found to be using some form of pharmaceuticals, traditional health compounds and beauty products in daily life to manage their health and general well-being. Of these, 28.4% consumers suffered chronic

diseases that require long term medication. It was also found that the majority of Malaysian consumers obtained their medicines from clinics (85.9%), hospital (75.0%) and community pharmacies (72.2%).⁵ Thus, there is still a large vacuum of roles and services that can be provided by Malaysian pharmacist.

In response to that need, MOHM embarked upon a large nationwide natural experiment by launching a fully government funded and supported Pharmacy Value Added Services program under the auspices of the Pharmaceutical Services Division (PSD). Within the scope of pharmaceutical services, MOHM strives to improve patient oriented pharmaceutical care services to promote health, upgrade the dispensing system and to increase patients' satisfaction towards the services. In Malaysia, under the authority and supervision of the PSD, dispensing of medicines to patients in public healthcare facilities is the mainstay of registered pharmacists.

For of chronic diseases, prescriptions with multiple drugs usually requires more than a month's supply. In such cases of repeat prescriptions, partial drug supply will be supplied as outlined in the Quality Use of Medicines (QUM) pharmacy practice guidelines in public healthcare facilities.⁵ Subsequent refill supply is provided either by the conventional pharmacy counter or through the Pharmacy Appointment System in the following months until fully satisfied. The PSD under MOHM is actively offering Pharmacy Value Added Services (PVAS) through various types of Pharmacy Appointment System.⁶

Problems Specific to PVAS Adoption in Malaysia

However, it is noteworthy to understand the staggering scale of the number of outpatient prescriptions from hospitals and health clinics. Let us consider for a moment that these prescriptions were increasing steadily from 32 million in 2007 to 43.4 million in 2011 for a nation with a population of approximately 30 million inhabitants.¹ This increasing trend of workload is a tremendous strain on time and resources that is pushing the limits of public pharmaceutical services.

In MOHM's effort to mitigate the long waiting time and smoothen the dispensing process, creative innovations such as PVAS were created and put to test in numerous pilot projects in MOHM hospitals. However, despite the tremendous patient load and high investment of infrastructure and manpower, the chief problem is that PVAS adoption still remains very low. To understand PVAS more clearly, we must understand and contrast the pharmacy practice of VAS internationally to MOHM's PVAS system.

As far as we know of at the time of writing, studies that explore the public's knowledge and perspectives towards PVAS in Malaysia are rare. Thus, there is a large untapped reservoir of fruitful research waiting to be harvested by pharmacy researchers.

Objectives

This article aims to discuss, explore, compare and report the beginnings, definitions, early implementations, types of services offered and the current challenges faced by the implementers of these services in Malaysia and especially more so the important lessons in policy making that can be derived for future planning.

PHARMACY VALUE ADDED SERVICES FROM AN INTERNATIONAL PERSPECTIVE

Value added pharmaceutical products and services have been introduced internationally under many different forms and names. Several countries are offering various value added services which they designate as 'extended or improved pharmacy services' as a result of the changing roles and challenges faced by pharmacists. Some countries offer these services through government health facilities. For instance, Taipei Medical University's affiliated Shuang Ho Hospital (SHH) implemented the first Taiwanese drive-through pharmacy service in July 2011 by opening a four-lane driveway near the hospital building.⁷ It was found that the implementation of the SHH drive-through service generally increased the overall prescription refilling rate, online reservation usage and proportion of medications picked up in six months' period.

As for Australia's much vaunted pharmaceutical services, available services include; One-stop-shop, forward dispensing, "Rolls Royce service", e-prescribing, chronic illness card, prescription reminder systems, drive through, pick up and home delivery services. These services are just a few of the innovations generally provided by Australian community pharmacies.⁸ Furthermore, there is a growing trend to expect consumers to prefer home delivery service and drive-through service over face-to-face or going-to-pharmacy medicine pick-up in Australia.⁹ This is in stark contrast to the situation in Malaysia where most community pharmacies generally do not engage in such value added services and most patient-pharmacist interactions happen face-to-face over the counter in public facilities.

In the United States of America (U.S.A), outpatient drugs are also generally dispensed through both community and mail order pharmacies.¹⁰ Mail order pharmacy services historically existed primarily for delivery of

medication to rural or remote areas. It is included into pharmacy service as an option in benefit programs of private employers to save drug-program cost, facilitate administrative convenience and provide perceived increased drug benefits to employees without significantly raised health care costs.¹¹ MOHM too has initiated a mail dispensing system using thenational mail courier service to deliver drug parcels to patients' doorstep in order to curb long waiting time and to ease the hassles of parking problems in congested public health facilities.

Furthermore, U.S.A pharmaceutical services have pharmacy benefit managers through expanded services that routinely offer drug formulary development, specialty pharmaceutical distribution and mail-order prescription delivery options to clients to control prescription drug cost.¹² However, instead of widespread perception of lower prices via extended services and benefit managers versus community pharmacies, several studies have discovered the mixed and opposite findings. For example, Valluri *et al* found that mail order pharmacy increases drug utilization and drug product cost if the cost per unit is not reduced while Johnsrud *et al* noted that savings from lower unit pricing through mail-order did not reduce cost significantly for the plan sponsor.^(12,10) Instead, these studies find that some generic drug prices are higher through mail-order pharmacy. It is also found that the loss of co-payments in mail service benefit was greater than the savings on ingredient costs and dispensing fees even though mail service pharmacy is considered less expensive for patients overall.¹³

While the cost containment effect of extended services is still an on-going debate, some studies find that mail delivery pharmacy services provide evidence of improving patient's adherence to medication. In a recent study in USA, patients who received medications by mail had better adherence to anti-glycaemic,¹⁴ antihypertensive, lipid-lowering medications and better LDL-C control⁽¹⁵⁾ when compared to patients who obtained refills at community pharmacies.¹⁶ It is also found that patients who switched to mail order pharmacy had higher medication possession ratios and trended toward lower total and diabetes-related medical costs over time.¹⁷ Better patients' satisfaction was noticed for customers who use mail order pharmacy¹⁸ compared to traditional pharmacy with the highest satisfaction related to phone service, technical competence and turnaround time dimension¹⁹ Empirical evidence such as this may spur MOHM to further improve and innovate the PVAS currently on offering.

In recent years, a large number of new initiatives have been delivered by British community pharmacies on a walk-in basis. The community pharmacy Call to Action

(CTA) program run by the national commissioner of community pharmacy services of the National Health Service (NHS) England proposed to change the image of retail pharmacy to look like a healthcare facility and to allow pharmacists to operate with professional autonomy so to concentrate on the delivery of healthcare services. Recently, the Virtual Wards are an increasing feature of patient care in the community, a co-role played by pharmacists. The initiative has produced an alarming positive outcome of reducing patients' re-admission rate by more than 42% due to the delivery of pharmaceutical care by pharmacists.²⁰

Besides offering private travel clinics which provide travel vaccinations and holiday health advice, some United Kingdom (U.K.) community pharmacies extended their services to provide full sexual health screening as well as collecting prescription directly from surgery clinic on behalf of patients. The innovation of the click-and-collect technology with a "human" service gains popularity as it allows customers to order items remotely and then pick them up and receive any relevant advice at a time that suits them. On top of that, the Hub-and-Spoke dispensing models that provide robotized dispensing of repeat prescriptions at dispensing hubs for delivery to patients' homes and pharmacies offer the advantage of freeing dispensaries managed by trained, accredited checking technicians to dispense only acute prescriptions manually. To extend the pharmaceutical service further, the 24-hour automated prescription collection point with two dispensing robots helped the health center pharmacies to double its dispensing capacity and improve stock levels without the need for extending the premises or taking on more staff. Interestingly, the ATM-style prescription collection point which operates within the framework of a collection-and-delivery service has about 80 to 90 items for around 900 of the pharmacy's customers. The prescription scanning technology using personal identification number-protected transactions for eligible patients is another advanced technology in England which streamlines the prescription form collection and item loading processes. This service is highly recommended for routine or simple prescriptions that do not need any further pharmaceutical care input.²¹ Similarly, the U.K. pharmacist prescribing models, Supplementary Prescribing (SP) and Independent Prescribing (IP) models have shown improvements in patient outcomes by providing enhanced services via primary care and community settings.²² Finally, current trends for PVAS in the U.K include even major public health initiatives like alcoholism interventions based at community pharmacies.^{23,24}

THE MALAYSIAN DEFINITION AND IMPLEMENTATION OF PHARMACY VALUE ADDED SERVICES

PVAS in the Malaysian context can be literally defined as any pharmacy activities or practices introduced or initiated by pharmacists through innovation and creativity to facilitate refill of medications, to reduce waiting time and to increase patient convenience.¹ The most common PVAS in Malaysia are; 1. Integrated Drug Dispensing Systems (IDDS), 2. Pharmacy Drive Through (PDT), 3. Medicines by Post 1Malaysia (UMP 1Malaysia), 4. SMS and Collect (S&C), 5. Email and Collect (E&C), 6. Telephone and Collect (T&C), 7. Fax and Collect (F&C) and 8. Appointment Card Dispensing System (ACDS).^{6,25-27} Most government pharmacies offer at least one to two types of PVAS with larger hospitals and clinics offering more types of PVAS to patients. MOHM has engaged itself in a campaign of various promotions and advertisements regarding the provision of PVAS to introduce and promote these services to the public for the purpose of increasing its adoption.²⁸⁻³⁰ To increase accessibility to healthcare, 517 government health facilities actively provide various types of PVAS with 24% out of 1,407,018 repeat prescriptions utilized PVAS to obtain monthly partial supply of medications.⁽³¹⁾ Refill prescriptions are also known as partial supply prescriptions. These refer to prescriptions that still have subsequent refills of medications. In 2013, it is reported that an approximate total of 10,894,618 refill prescriptions was dispensed to patients in Malaysia. Out of this large number of refill prescriptions, about 1,002,621 prescriptions were dispensed via PVAS. Later in 2014, Pharmaceutical Services Divisions under MOHM reported that there were a total of 10,597,080 refill prescriptions from all states but only 1,493,600 prescriptions were dispensed via PVAS. In the state of Negeri Sembilan, Malaysia, the statistics showed that 48,803 out of 731,429 refill prescriptions were dispensed using PVAS in 2013. There were 665,197 refill prescriptions recorded in the year of 2014, and it is reported that 102,113 prescriptions (15%) were dispensed via PVAS. In other words, less than 7% of refill prescriptions utilizes PVAS. These numerical data were provided by PSD, MOHM through personal communication. These figures generally show a sad state of adoption despite the large investment in infrastructure and manpower to provide for these services to the public at large. This raises the question of 'Why is the rate of adoption so low?' and 'How can MOHM advocate PVAS adoption?'

The current state of Pharmacy Value Added Services in Malaysia

PVAS is still a new concept to many Malaysians who have not been exposed to these services but its importance cannot be understated. In fact, the adoption rate has been very low despite large monetary and manpower investments made by the government to encourage its adoption. Internationally, PVAS is provided by both private and public pharmacists.⁷⁻⁹ The case in Malaysia is unique where government facilities are the sole and pioneering providers of PVAS by a large degree. Thus, higher PVAS adoption rates is a key ingredient in the national key results area (KRA) for healthcare delivery towards Malaysia's drive for a modern and efficient healthcare system. In fact, efficient healthcare delivery is the 1st key performance indicator.³²

It is important to note that at this current stage not all government pharmacies provide all types of PVAS as the provision of these services is subject to their respective facilities. However, most public pharmacies offer at least two to three types of PVAS for local consumers. Published national guidelines or complete handbook about PVAS implementation, protocols and detail descriptions of various PVAS are still lacking and there is no documented research on the various aspects of PVAS in Malaysia.

Innovative Introduction of Pharmacy Value Added Services in Malaysia

According to MOHM's terminology, PVAS refers to a range of new services optimizing pharmaceutical healthcare delivery to end users by offering additional values and conveniences to patients to ensure the continuity of medicines supply, provide easy access to drugs, reduce waiting time, help to increase patients' compliance and to reduce patients' travelling cost.²⁵ PVAS concept was introduced by MOHM in 2003 with the Integrated Drug Dispensing System (IDDS) being the first ever PVAS offered at the public institutes.³³

Services under the umbrella of PVAS in MOHM as mentioned earlier (which we repeat for the sake of posterity) include Pharmacy Drive Through (PDT), Medicines by Post 1Malaysia (UMP 1Malaysia), Appointment Card Dispensing System (ACDS), Integrated Drug Dispensing System (IDDS), SMS and Collect (S&C), Email and Collect (E&C), Telephone and Collect (T&C) and Fax and Collect (F&C).^{25,28} By introducing the new delivery services, it is believed that the new methods will speed up drug collection time, alleviate queuing trouble, provides creative alternative channels to deliver drugs to the patient's doorstep and ease the stressful parking experience in busy hospitals. At present, PVAS is focused, monitored

and implemented in many government general hospitals and primary health clinics. However, not every state of Malaysia offers the same types of PVAS and not all services are available in every healthcare centre. As per the authors' observation, this can be among few reasons that few Malaysian consumers adopt PVAS.

Since the birth of PVAS, the PSD encourages value-added dispensing services in all MOH facilities. In 2011, 343 public pharmacies offered Appointment Card Dispensing System, 188 facilities provided Phone & Collect service and 53 pharmacies started Medicine by Post 1Malaysia.⁽¹⁾ To improve medication supply system, PVAS is closely monitored, groomed and expanded in many hospitals and health clinics in hope to shorten patient's waiting time at the counter, enhance the pharmaceutical professions, refine the pharmaceutical care delivery and reduce drug wastage.²⁸ For greater detail, we discuss the implementation of the four most used PVAS in Malaysia, namely; Medicines by Post 1Malaysia (UMP 1Malaysia), Pharmacy Drive Through (PDT), Integrated Drug Dispensing System (IDDS), and SMS and Collect (S&C).

Medicine by Post 1Malaysia (UMP 1Malaysia)

Medicines by Post 1Malaysia which is well known as *Ubat Melalui Pos 1Malaysia* (UMP 1Malaysia) is one of the PVAS offered by PSD to improve medication supply system via postal system. UMP 1Malaysia provides easy delivery of follow-up medication to patients' designated home, office or other destination in Malaysia via *PosLaju* courier service. Patients with transportation or walking difficulty will greatly benefit from this delivery service. A small postal fee is imposed to users of UMP 1Malaysia. Patients enrolled in this service must abide to the term and conditions which stated that postal fee is beard by individual user and not the provider. It is stated that only certain criteria of medicines can be delivered using UMP 1Malaysia for the safety and quality of medicines.²⁸ Intravenous preparation, fridge items and liquid preparations are currently not transported to patients using this service. UMP 1Malaysia is a collaboration and joint project between MOHM and *Post Malaysia Berhad* with its main objectives to reduce patients' waiting time, promote continuation of medications to patients and to increase drug compliance in patients.²⁸ The service was officially launched on 23rd January 2011 by the Minister of Health Malaysia, the honourable Mr. Liow Tiong Lai at Putrajaya Hospital.¹ The pilot project was initiated at Hospital Putrajaya in October 2009 before being expanded to other MOHM hospitals and clinics.

All medicine delivered via UMP 1Malaysia are packed, labelled, double checked and bubble wrapped by pharmacy staffs before posted to the destinations. As a general

procedure, wrapped drug parcels are collected by postman at the pharmacy department on daily or weekly basis. Drug parcels are then brought back to the main *PosLaju* office for recording before they are delivered to patient's house or office. At the patient's site, an agreed postal fee will be paid to the postmen by patients upon the transaction of receiving the drug parcels. Any improper handling of the medicine during the postal process which resulted in medication damage due to carelessness of post office staffs will be compensated by *Post Malaysia Berhad*. In any case of an undelivered parcel, a notification letter will be issued to the patient/house/letter box as a gentle reminder to collect the parcel from the nearest *PosLaju* office.

Pharmacy Drive Through (PDT)

Pharmacy Drive Through (PDT) was introduced by the PSD (MOHM) to resolve the problems encountered by patients during their medicine collection visits such as inadequate parking space at the health facility, congestion at the pharmacy waiting area and also long waiting time.²⁶ The target groups are patients who are on long term medications, disabled, elderly and working.²⁵

The motivations of this innovation are to improve patient waiting time in the out-patient pharmacy by eliminating the arduous waiting time when patients collect their monthly medicine supplies repeatedly, to create a friendlier and efficient method for special-needs or disabled category to collect their medication over the counter without having to exit their vehicle, and to ease the dissatisfactions from patients who are not able to find parking spaces within the hospital vicinity during peak hours and working days.²⁶

PDT provides monthly medications that are packed, checked, labelled, recorded and cross-checked in advance prior to the arrival of patients via the drive through window. Patients who use the service must first be registered into the system by the pharmacist in charge. Important details like full name, identity number and contact number will serve as patient's record. A collection date will be given to patient in advance. When the patient arrives at the pick-up window, the medicines will be dispensed instantly after patient identification is confirmed. To reduce drug wastage and misuse, most medicines are dispensed monthly. To date, all MOHM drive through service does not charge any fees.

Integrated Drug Dispensing System (IDDS)

Integrated Drug Dispensing System (IDDS) is another convenient standardized and well-organized reference dispensing system whereby patients are allowed to collect their partial supply of drugs from any government

health facilities that is listed under the Ministry of Health's Integrated Drug Dispensing System Directory throughout Malaysia.^{33,28} This system enables patients to refill the subsequent medication supply in facilities most convenient or nearest to their homes or office. Patients will receive the same type and amount of medication based on their prescription.

SMS and Collect (S&C)

SMS and Collect provides an alternative method to collect monthly medicine using short messaging services (SMS). Instead of pre-notifying the pharmacy for an over-the-counter dispensing appointment, SMS is a faster and convenient mode to notify the pharmacist. The patient initiates a message to the pharmacist indicating the expected date for partial drug collection. Upon arrival at the S&C counter with a valid prescription, the user collects the drug supply without having to queue.

Generally, patients who are clinically and psychologically stable, on chronic disease medications, well-counselled and not consuming psychotropic substances are suitable to use PVAS. While many of the mentioned services are rigorously provided by community pharmacies in other countries,^{12,15,9} PVAS is almost primarily provided by government pharmacies with no additional drug or service fee for subsequent refills. Generally, medicines are almost free for most people especially government servants and senior citizens. The only fee required to use public healthcare services is the registration fee at the main registration office or counter, which is only RM 1.00 for non-government employees for a medical officer consultation and RM 5.00 for a specialist consultation.²⁵

DISCUSSION: CURRENT RESEARCH AND THE LATEST FINDINGS FOR MALAYSIAN PVAS PHARMACY PRACTICE

Current studies indicate the great potential PVAS possesses in improving clinical outcomes through innovative and more efficient delivery of pharmacy services. In the Malaysian context, PVAS would improve patient satisfaction with services provided.³⁴ Furthermore, PVAS has proven to be immensely useful at the community pharmacy level even in less conventional settings involving alcohol and methadone treatments.^{35,23} Clearly, PVAS has an immense role to play in the provision of pharmaceutical public health services helmed by pharmacists.^{36,37,24}

In the Malaysian context, although in-depth research into PVAS has been scarce, recent studies utilizing the Theory of Planned Behaviour as a theoretical model has been finalized and forthcoming. These new studies

concerning the Malaysian PVAS scenario study PVAS adoption through the lens of the patient's perspectives. The patient's perspectives are made up of subjective norms, perceived behavioural control and attitudes. The new studies also incorporate the roles of knowledge and expectations in determining intention to adopt PVAS. These three cognitive domains are antecedents of the patient's intention to adopt PVAS. The authors design a multicentre two-step approach to their research. The first is a series of interviews that aims to solicit and generate themes for analysis.³⁸ This is followed by the questionnaire development stage where a survey instrument is designed based on the thematic analysis gained from the qualitative stage as mentioned earlier.³⁹ Finally, the authors perform a final stage quantitative studies to capture the mediating effects of knowledge and expectations on intentions⁴⁰ and also to study how total cognitive perspectives (made up of subjective norms, perceived behavioural control and attitudes) can moderate the patient's intentions to adopt PVAS.⁴¹ Generally, the recent qualitative findings generally find that for respondents who are elderly and on chronic medications, the introduction of PVAS greatly benefits their compliance and overall health outcomes. Overall, innovations such as the drive-through, postal delivery and the IDDS allow the elderly to avoid long queues at both the parking space and over the counter. This encourages their families to favour PVAS over traditional services and promotes compliance in the long term especially for those on chronic medications.³⁸

In simpler terms, a mediating variable strengthens the relationship between the dependent and the independent variables. On the other hand, a moderation occurs when the relationship between the dependent and the independent variable depends on a third variable.⁴² These studies by Tan and colleagues provide the policy maker with important conclusion regarding the implementation challenges of PVAS in Malaysia.³⁸⁻⁴¹ In particular, the results suggest that the influence of peers, friends and family plus the ease of which patients can use the services are the main predictors of adoption intentions. Generally, patient knowledge and their expectations can strengthen the relationship between intentions and cognitive perspectives. Furthermore, it is also found that the relationship between knowledge/expectations to intentions to adopt PVAS depends strongly on perspectives. This provides us with a strong policy implication. This suggests that pharmacist should focus on managing patient knowledge and expectations first with an emphasis on generating positive overall perspectives. Pharmacists should also increase their knowledge levels but also motivate them to have high expectations

and provide services that meet those high expectations of service quality. Lastly, an interesting finding from these studies indicate that curiously, Malaysians of Indian ethnicity seemed to have negative intentions about adopting PVAS despite its benefits. This results should provide the basis for future research into understanding whether this results are mainly cultural/ethnic or sociological in basis.

CONCLUSIONS AND RECOMMENDATIONS

In conclusion, we find that PVAS is unique within the Malaysian context in contrast to international practices. Especially when compared to advanced pharmaceutical markets such as Australia, the U.K and the U.S. Mostly, PVAS in Malaysia can generally cover any extra service provided by pharmacist other than the traditional over-the-counter services. Thus, PVAS in Malaysia transcends general pharmaceutical counselling. Furthermore, PVAS in Malaysia is almost provided in entirety by the Ministry of Health whereas in advanced pharmaceutical economies these services are the mainstay of community pharmacies. We find that this is the crucial difference.

Overall, we find that PVAS is still in its infancy and a more robust and effective advertising and marketing campaign is needed to boost the adoption rate to enjoy economies of scale so that it is cheaper for both the service provider and recipient. The lack of awareness towards PVAS impedes adoption by patients. To increase PVAS adoption among Malaysians, it is strongly suggested to make PVAS well known to the patients who are collecting repetitive supply from government pharmacies.

Furthermore, patients must be given the equal opportunities and resources to use one of the PVAS. This is because some patients may feel that they have little control over their own situations to use PVAS especially if they have very little information about the services, or when requirements and resources changes between facilities, or when unfamiliar elements enter the situation.⁽⁴³⁾ Therefore, we recommend that it is the role and responsibility of the service providers to facilitate patients to choose the right type of PVAS and to assist them to overcome any difficulties and setbacks while using PVAS. While free of charge services are always recommended, unavoidable fees should be charged at the minimal rate to reduce the financial burden of patients. We further suggest that any fees should be waived considering the fact that registration fees itself is only a token RM 1.00.

We should also pay closer attention to Malaysian culture. Malaysians generally have a collectivistic culture that

emphasize social norms conformation and close relationship among group members. Thus, members of the group play a central role in a person's identity. In such cultures, social influences from family, friends, colleagues or even other patients are strong determinants to increase PVAS adoption. Health promotion campaigns and advertisements may incorporate elements from social influences and pressure to highlight the importance of the PVAS message. Patients who are already using PVAS are strongly encouraged to spread the message via word-of-mouth to get the attention from new users. Written pamphlets, brochures and detail information regarding PVAS can be distributed to other government agencies via formal letters, notification or short presentation.

We suggest to enhance peoples' general knowledge about the various PVAS with easy accessible information portals with to up-to-date information such as government health websites. This effort should be provided conveniently, consistently and continuously to patients. It is crucial that government health portals or websites constantly update their information and provide the correct contacts and addresses for future enquiry. Intervention programs should increase their knowledge in the benefits of PVAS and to counter their false perceptions. Electronic advertising and displays, newspaper advertisements and local periodical health carnivals can serve as promotional sites to heighten the awareness among patients.

We further suggest that visibility of these services be enhanced to make it a salient mental reference point for patients. Banners and posters of various type of value added service can be displayed around the hospital and clinic to increase the visibility of message. Pharmacists can also mention the provision of PVAS while they counsel patients in a daily manner. Future programs should target potential customers that will actively ask and participate in the use of PVAS. It would be useful to provide written and verbal information about the PVAS advantages, procedures to adopt PVAS and the exact locations that offer various PVAS throughout the states. Perhaps a printed map and locations could enhance patients' understanding and awareness of the program. Finally, we should refocus on the '*raison d'être*' of community pharmacies and their immense role in PVAS in Malaysia. Surely as Malaysia becomes an advanced high income economy, PVAS is a great source of opportunity for community pharmacist to expand their services and contribution to society which they exist in. Thus, justifying their '*raison d'être*'. This we leave to future research.

CONFLICTS OF INTERESTS

The authors declared no potential conflicts of interest

ACKNOWLEDGEMENT

We thank the Director General of Health, Ministry of Health, Malaysia for publication approval

ABBREVIATIONS USED

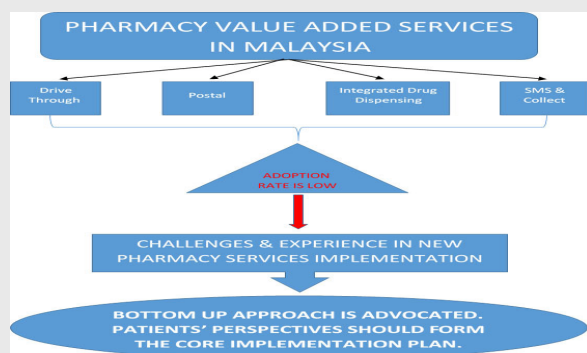
MOHM: Ministry of Health Malaysia; **PSD:** Pharmaceutical Services Division; **PVAS:** Pharmacy value-added services; **SMS:** Short messaging service; **UMP 1Malaysia:** Drug postal delivery service in Malaysia; **Pos Malaysia:** Malaysia's national postal service provider; **PosLaju:** Malaysia's national courier service provider.

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PICTORIAL ABSTRACT



SUMMARY

- Pharmacy Value Added Services were introduced in Malaysia to enhance service and value to patients.
- However, new service adoption rates have been low.
- We discuss, explore, compare and report the beginnings, definitions, early implementations, types of services offered and the challenges faced by Malaysian pharmacist.
- We suggest a “bottom up” approach in addressing the patient’s needs to successful service implementation.