FICCI

E-PHARMACY IN INDIA: LAST MILE ACCESS TO MEDICINES

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INDIAN NATIONAL BAR ASSOCIATION



Foreword

The growth of the Internet has given rise to various technology driven models, to access and serve consumers in a fast paced and most efficient way. One of the progressive technology models that have evolved in the last few years is telemedicine that has enabled accessibility to the finest doctors at the click of a button. Another recent innovation that has positioned itself as an attractive model in the healthcare space is E-pharmacy.

Today, with the growing population and changing lifestyles, rising burden of various health hazards remains a key challenge for a developing country like ours. Providing easy availability of quality medicines and treatment therapies to even the remotest part of the country has emerged as benchmark for driving the health sector in the appropriate direction. This is the time when internet has a crucial role to play in making the healthcare services accessible to all with varied choices and affordable rates.

As the nation is seeing a demographic turnaround with a huge shift of population from rural to urban areas, the concept of nuclear families has seen an upsurge. This has resulted in the aged being further hindered in their access to good medical facilities; also a person living in the rural area has to often travel to his near-by town to get appropriate medicines.

E-Pharmacy is one of the technology advancements which is likely to bridge this gap by providing easy and affordable access of medicines to the consumer at their doorstep at a mere finger click. Moreover, the concept will also provide proper awareness to the buyer regarding the appropriate medicinal remedies.

There is an urgent need to nurture this promising sector with the right set of policy frameworks and guidelines in order to provide the benefits that the sector fosters for the consumers. As one of the key agenda of the Government has been to provide easy, quality and affordable access of health services to the consumers, I'm sure that the evolving concept of e-Pharmacy will definitely give an impetus to the health sector of the country.

This report on e-pharmacy would be the first ever knowledge paper on this subject which FICCI has pioneered; it is aimed at analyzing the growth, potential and challenges of this new & innovative channel of sale of medicines. I am confident it would bring out some key findings and solutions for the growth of this upcoming sector!

Dr. A. Didar Singh

Secretary General

FICCI



Foreword

Pharmacies are ubiquitous yet critical establishments which are often the first points of access to medicines. However, in India, the density of pharmacies is higher in urban areas than that in rural areas.

Urban India has seen a transition from a traditional extended family to a nuclear family structure which has isolated the elderly and reduced their access to medicines; while, people living in remote villages are required to travel to nearby towns to access healthcare services. In addition, another major factor which directly impacts the access to medicines is the inability of the retail pharmacy to store a wide range of products, forcing the consumers to visit multiple stores for procuring all the specified medicines.

Chronic conditions like diabetes, hypertension, etc. require patients to regularly use medications for the remainder of their lives. However, with limited access to medicines, the patient compliance levels get affected. Lack of access to continuing treatment is not only associated with poor health outcomes and/or premature death, but also impacts the economic growth of the country.

Technology, especially the Internet, adds immense value by improving accessibility of healthcare services even to the most remote regions of the country. With the help of technology, healthcare is likely to undergo a revolution and will upgrade to a stage where the consumer would be informed and empowered.

E-Pharmacy is one of the technology advancements that is about to create a huge demand in the upcoming days. In today's world, when most of the products and services are conveniently being delivered to the consumers' doorstep, there is a huge demand for access models that help patients and consumers avail the convenience of medicine delivery without having to leave their homes.

With the use of technology and access to inventory of multiple stores at a time, e-Pharmacies can aggregate supplies, making otherwise-hard-to-find medicines available to consumers across the country. This will significantly help patients who are old and sick and not in a condition to go out to find a pharmacy as well as the rural population where there is limited presence of retail pharmacy.

This report is aimed to understand the benefits of the e-Pharmacy model to the consumers, the industry and the nation; policy level changes needed to address the concerns around the model, thereby, enabling wider access to medicines and improving public health.

Mr. Jayant Singh

Director, Healthcare & Life Sciences

Frost & Sullivan

Acronyms and Abbreviations

BCG	Boston Consulting Group
CAGR	Compound Annual Growth Rate
CHD	Coronary Heart Disease
CSC	Common Services Centers
CVD	Cardiovascular Disease
DEA	Drug Enforcement Administration
EU	European Union
FDA	Food and Drug Administration
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GPhC	General Pharmaceutical Council
IAMAI	Internet and Mobile Association of India
IDF	International Diabetes Federation
INBA	Indian National Bar Association
IT	Information Technology
MOOC	Massive Open Online Course
NCD	Non-communicable Disease
OTC	Over-the Counter
PWC	PricewaterhouseCoopers
RMP	Registered Medical Practitioner
SME	Small and Medium Enterprise
SOP	Standard Operating Procedure
VLE	Village Level Entrepreneur
WHO	World Health Organization

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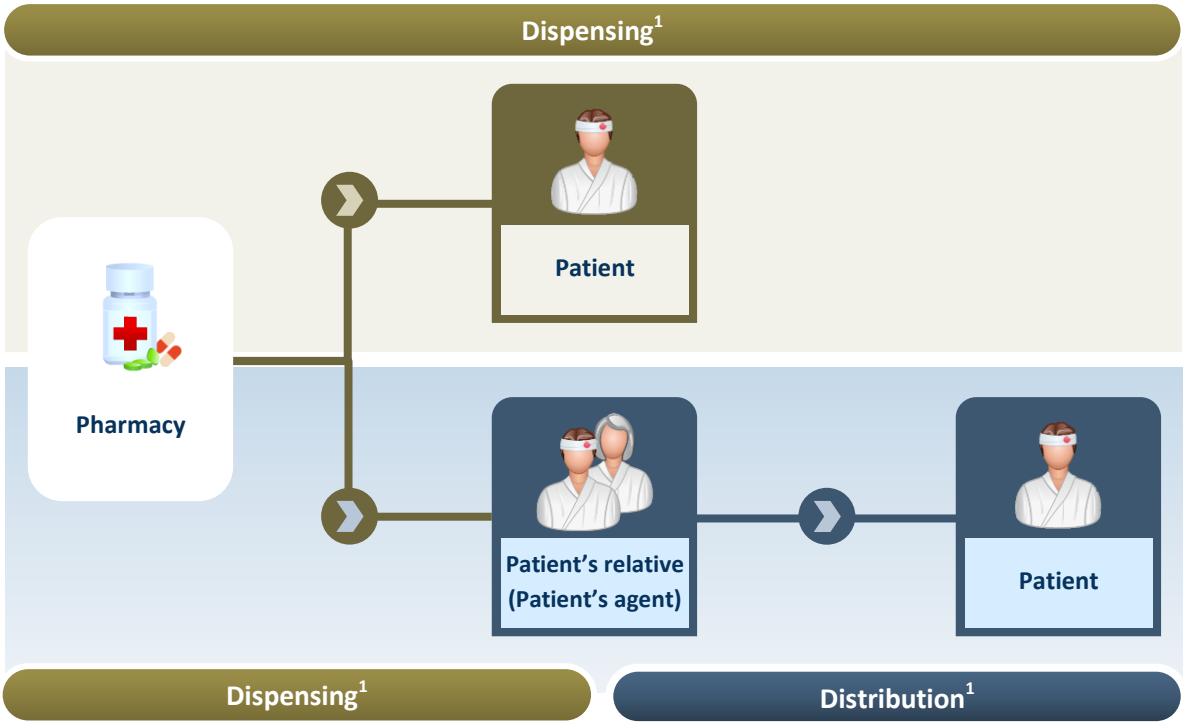
Definitions

Dispensing

Dispensing means interpretation, evaluation, supply, and implementation of a prescription, drug order, including the preparation and delivery of a drug or device to a patient or patient's agent in a suitable container appropriately labeled for subsequent administration to, or use by, a patient.

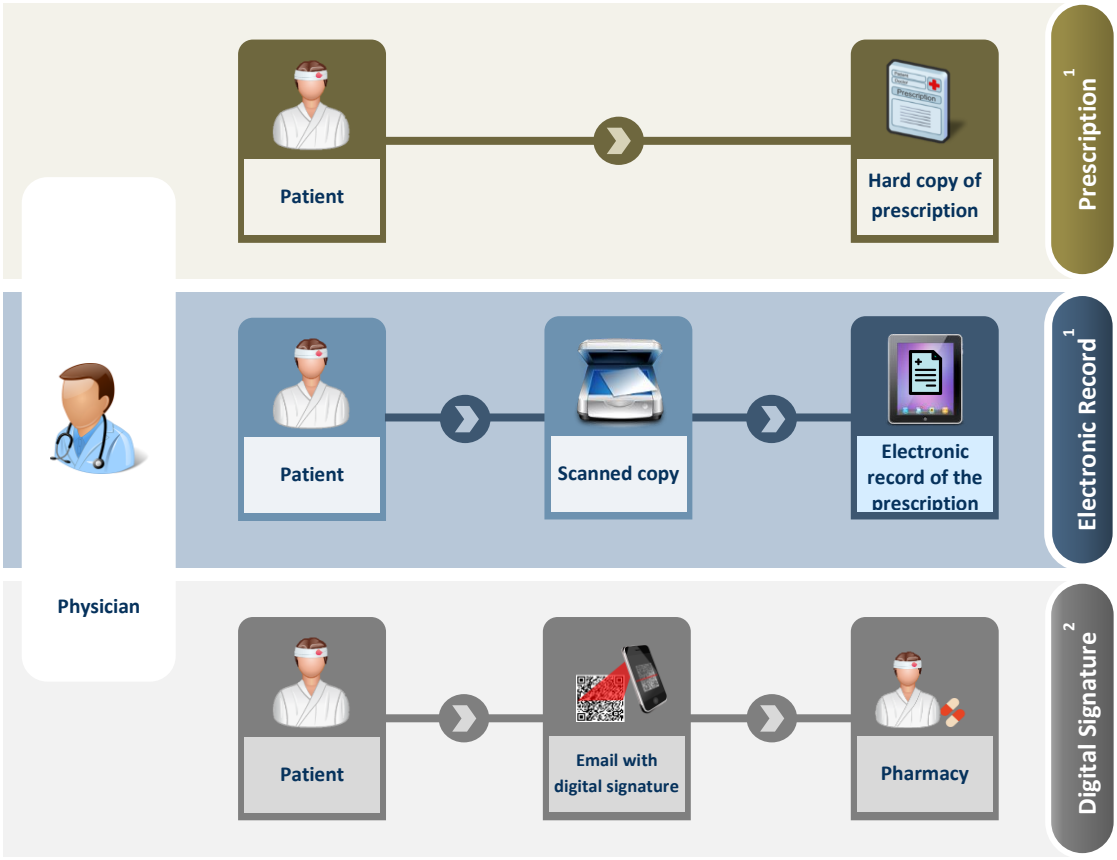
Distribution

Distribution means the delivery of a drug or device other than by administering or dispensing.



Source: 1. Pharmacy Practice Regulations, 2015; The Gazette of India: Extraordinary (Part III Section 4), Published on January 16, 2015

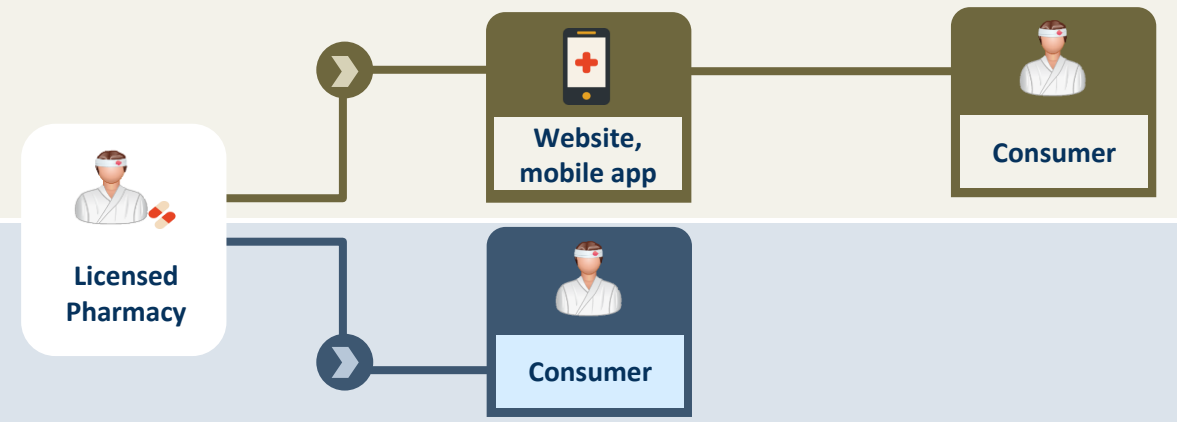
Prescription	Electronic Record	Digital Signature
A written or electronic direction from a Registered Medical Practitioner or other properly licensed practitioners such as a Dentist, a Veterinarian, etc. to a Pharmacist to compound and dispense a specific type and quantity of preparation or prefabricated drug to a patient.	Data, record or data generated, image or sound stored, received or sent in an electronic form or micro film or computer generated micro fiche "intermediary" with respect to any particular electronic message means any person who on behalf of another person receives, stores or transmits that message or provides any service with respect to that message.	Authentication of any electronic record by a subscriber by means of an electronic method or procedure in accordance with the provisions of section 3 "Digital Signature Certificate" means a Digital Signature Certificate issued under subsection (4) of section 35.



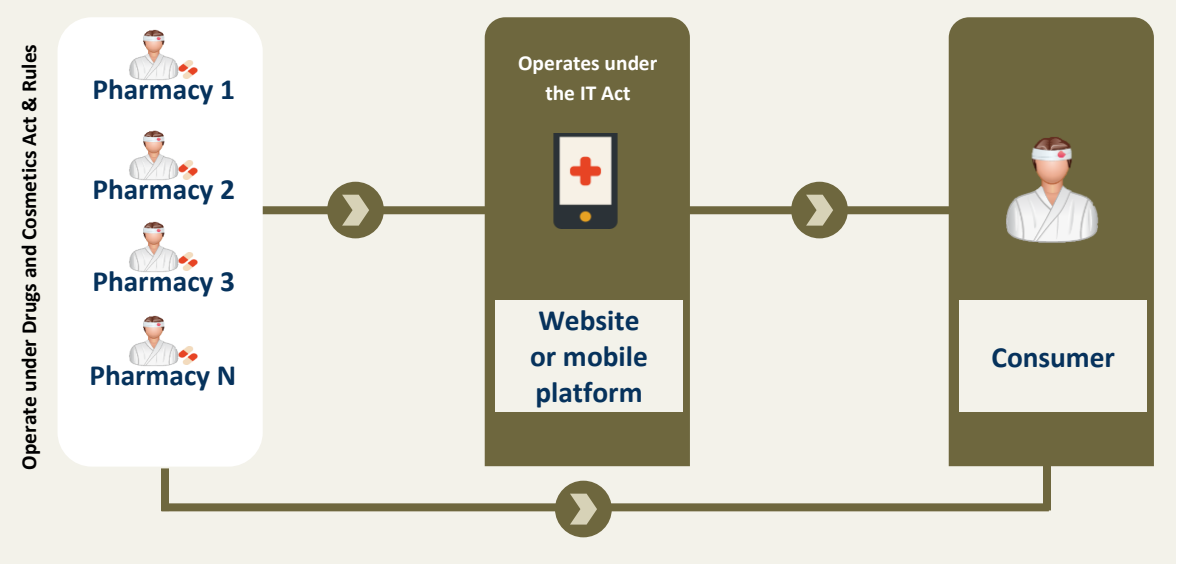
Source: 1. Pharmacy Practice Regulations, 2015; released by the Pharmacy Council of India

2. The Information Technology Act, 2000; released by the Ministry of Law, Justice and Company Affairs (Legislative Department)

Inventory-based Model of e-Commerce: Inventory-based model of e-Commerce means an activity where the inventory of goods and services is owned by the e-Commerce entity and is sold to customers directly.



Marketplace-based Model of e-Commerce: Marketplace-based model of e-Commerce means providing of an information technology platform by an e-Commerce entity on a digital and electronic network to act as a facilitator between a buyer and a seller.



Source: Press Note No 3 (2016 Series); Guidelines for Foreign Direct Investment (FDI) on e-Commerce released by the Government of India, Ministry of Commerce & Industry, Department of Industrial Policy & Promotion (FC Section)

Generic e-Commerce Marketplace:

Generic e-Commerce marketplace is a technology-driven electronic platform where a wide variety of products like electronics, fashion, furniture, home furnishings, cosmetics etc., are sold. This model prohibits the advertisement and sale of prescribed drugs or any drugs, which are in violation of the Drugs & Cosmetics Act.



“REACHING THE UNREACHED”

Executive Summary

India is experiencing a rapid transition with the rising burden of chronic non-communicable diseases (NCDs) which currently accounts for around 60% of the total deaths. Rapid urbanization, increased motorization, mechanization and sedentary lifestyle, especially among the working age groups, predispose the population to premature NCDs.

The treatment of chronic diseases commonly includes long-term use of pharmacotherapy. Although medications are effective in combating disease, their full benefits are often not realized because most of the patients do not consume their medications as prescribed.

Poor adherence to medical treatment not only compromises patient outcomes but also increases patient mortality, thereby impacting the economic growth of the country. According to the WHO, improving adherence to medical therapy for chronic conditions like hypertension, hyperlipidemia and diabetes would yield substantial health and economic benefits to the country.

Some of the patient-related factors contributing to poor medication adherence include suboptimal health literacy, limited access to care, high medication costs, long waiting times at the healthcare set up or pharmacy, lack of family or social support etc.

The urban India has seen a transition from a traditional extended family structure to a nuclear family structure which has isolated the elderly and reduced their access to medicines; while, people living in remote villages are required to travel to nearby towns to access the healthcare services, thereby affecting patient compliance.

Thus, accessibility, affordability and lack of awareness are the major challenges for last mile access to medicines. These barriers could be effectively overcome by adopting technology, specifically the Internet, into the healthcare system.

What is the potential of technology in the healthcare space?

With the help of technology, healthcare is expected to be massively altered and transformed to a system where the consumer would be informed and empowered. This shift could be brought about by an e-Healthcare model, which is built around solving problems of the consumer in the most optimized manner, where the consumer would have the power of knowledge and demand better service, a transparent system which would be free of middlemen causing distortions, and price / quality mismatch. At the same time, an online model, operating across the country, to procure healthcare services will ensure organized tracking and recording of the data for audit trails, thus making the healthcare system more structured.

One of the technology innovations which have positioned itself as an attractive model in the online healthcare space is **e-Pharmacy** and this model is expected to create a huge demand in the future.

What is the potential of e-Pharmacy in India?

The global e-Pharmacy market, led by North America and Europe, was approximately US$ 29.3 billion in 2014 and has been estimated to grow at a CAGR of 17.7% to reach a valuation of US$ 128 billion by 2023. However, e-Pharmacy is at its nascent stage in India, but like other categories, it has the potential to be a very large industry segment in the near future.

Factors driving the demand for e-Pharmacy in India include rising number of people with unmet medical needs due to large population and increasing penetration of internet in both urban and rural India. With the rapidly changing consumer behavior in India, there is a huge demand for accessing a wide range of products at the click of a button, and at competitive prices. It is expected that the e-Pharmacy model could account for 5-15% of the total pharma sales in India, largely by enhancing adherence and access to the medicines for a lot of under-served population.

How does e-Pharmacy add value to the healthcare system in India?

E-Pharmacy improves consumer convenience and access. This will most importantly benefit chronic elderly patients living in nuclear families, and patients who are not in a condition to go out to find a pharmacy. E-Pharmacy also offers competitive pricing which thereby enables less affluent people to afford medicines. There are a lot of technology advancements that are coming up in the form of applications which help in bringing price transparency, create awareness, find an appropriate healthcare service provider, medicine reminders, and pregnancy alerts to the consumers.

In addition, e-Pharmacy models are well aligned to address key known issues in pharmacy retail for tracking authenticity, traceability of medicine, abuse prevention, addressing consumption of drugs without prescription, tax loss and value added services for consumer empowerment in healthcare, which are all key areas of national development. This model also increases entrepreneurship and in turn accelerates wealth creation in the country.

How does an e-Pharmacy model function?

An e-Pharmacy model is required to have two operating components for dispensing prescription medicines:

Technology:

- Web-based and/or mobile-based application for consumers to upload the scanned copy of their prescriptions and place requests for medicines.
- Every order that is received to be verified and checked by a team of registered pharmacists.
- The registered pharmacists to forward the validated prescriptions to the pharmacy store from where the medicines are dispensed.
- The web or mobile-based platform to be governed under the IT Act 2000 and only act as a platform to facilitate connection between consumer and pharmacy store.

Pharmacy Retail Store:

- The licensed pharmacists of the store to check for the validity of the prescriptions; failing which the medicines would not be dispensed.
- The medicines should be dispensed from a licensed premise in a sealed tamper proof pack to the patient or patient's relative (Patient's agent).
- There should be proper invoice with batch number of the medicines dispensed, expiry date, name and address of the pharmacy with signature of the registered pharmacist/(s)
- The pharmacy store to be operated under the oversight of the Drugs and Cosmetics Act & Rules and need to comply with all the requirements of the act, as it does for its normal business.

An e-Pharmacy model would help with better purchasing margins, better inventory management, increased reach, reduced prices and greater provision of value-added services to the consumers.

How does the e-Pharmacy model support Government initiatives?

Jan Aushadhi Program is an integral part of the country's plans to create awareness and enable access of affordable medicines to the general population across the country without compromising the quality of medicines. This program is a key part of the Digital Health Program under the Digital India Initiative and will be of immense benefit to the consumers. Under the Digital India initiative, the Internet and broadband services are being expanded to every remote corners of the country. This could act as a strong pillar to significantly improve awareness and access of Jan Aushadhi medicines.

- The operating model of e-Pharmacy that has been envisaged will have a mobile and a web-based application, directly linked to the inventory at existing Jan Aushadhi stores, which would help consumers procure their medicines. The platform could enable the users to find Jan Aushadhi equivalents for their prescribed brands and also get information about Jan Aushadhi retail stores in their nearby vicinity.
- The operating model could facilitate the last mile access of Jan Aushadhi drugs by driving more traffic to the Jan Aushadhi stores; thus making this program a successful and self-sustainable model.

The Government of India has set up approximately 250,000 **common services centers** (CSC) across the country which plays a pivotal role in delivering various e-health services, like telemedicine, e-Diagnostics, e-Pharmacy, especially to the rural population.

- The e-Pharmacy model could also be effectively aligned to CSC's goal of improving delivery of essential health services in rural India by improving access, ensuring efficacy, transparency and reliability of the services at an affordable cost.

Will the e-Pharmacy model impact the traditional brick and mortar pharmacies?

Currently, there is a lot of misunderstanding about e-Pharmacies impacting the traditional brick and mortar pharmacies. In reality, e-Pharmacy model enables the existing traditional pharmacies to cater to a broader set of customers and also ensures that the inventory is consolidated by reducing the requirement for working capital, removing wastage from system and increasing margins, thus making the model sustainable.

What is the perception of consumers and physicians about e-Pharmacy?

Consumers:

A significant proportion of the population is willing to try purchasing medicine and related products over the internet considering the advantages it has and additional value it creates compared to the existing physical retail outlets. Survey reveals that lower prices, discounts, convenience in ordering and home delivery with preferred time and address are some of the major advantages that will prompt consumers to shift towards e-pharmacy.

Physicians:

There is a positive perception regarding e-pharmacy among medical practitioners as almost 90 percent of respondents perceive it as an acceptable means of sale and purchase of pharmaceutical products. The easy access and convenience factors associated with e-Pharmacies happens to be the major determinants for attracting more and more consumers in the view of medical practitioners as mentioned by 85 percent and 75 percent of the respondents respectively.

What is the need of the hour?

E-Commerce is a shift in how business will be done in the future and everyone will have to align themselves according to the changing trends.

Since e-Pharmacy is only technology advancement, it is recommended that it should be allowed and its benefits should be made available to the consumers in India but with sufficient safeguards and under stringent regulatory control to protect the interest of the consumers.

How to make the e-Pharmacy model fool-proof?

Some of the recommendations for due-diligence of the e-Pharmacy model and making it fool-proof include:

- A separate license and registry of e-Pharmacy players should be created
- Dispensation of drugs to be undertaken through the physical pharmacy, duly licensed under Part VI of the Drug Rules
- The dispensation of scheduled drugs should be against a valid prescription from a Registered Medical Practitioner (“Prescription Drugs”) and must be undertaken by, or under the direction and personal supervision, of a registered pharmacist
- The e-Pharmacy would be permitted to process the order for prescription drugs only after obtaining (i) the original prescription; (ii) a scanned copy of such original prescription
- Audit trail (including the address and name of the patient) should be digitally stored to prevent abuse and ensure tracking in case there is any adverse event to a medicine
- Narcotic medicines (like morphine) and other habit-forming drugs (like sleeping pills) should be restricted to be sold through an e-Pharmacy model

- Suitable arrangements must be made to ensure that the medicines are packed, transported, and delivered in such a way that their integrity, quality, and effectiveness are preserved.
- The website / mobile application must clearly provide information regarding the logo, license number, and contact details of pharmacists for addressing patients' queries and grievances.

What kind of support is expected from the Government?

An e-Pharmacy aligns very well with the national development objectives and has clear and tangible benefits to the consumers as well as the industry. In the meanwhile, it has also been observed that growth of e-Commerce and retail are complimentary and reinforce each other. By leveraging the technology in a smart way and under stringent regulatory control, the e-Pharmacy has a scope of adding immense value to the existing retail industry in India.

The benefits the e-Pharmacy model brings to consumers, who are the majority, should be the first priority of the Government. It is critical that the regulatory framework in the country be conceptualized keeping in mind the larger interests of the consumers in the country. If technology is available to cut the intermediary costs on medicines, it must be allowed to be used to its full potential as it will bring down the retail price of many drugs and benefit the middle-class, which is most impacted by the price hikes.

This is the right time for the Government of India to define policies and guidelines for e-Pharmacy and come up with a clear-cut operating model, in line with the concerns of the regulator, while providing benefits to the consumers.



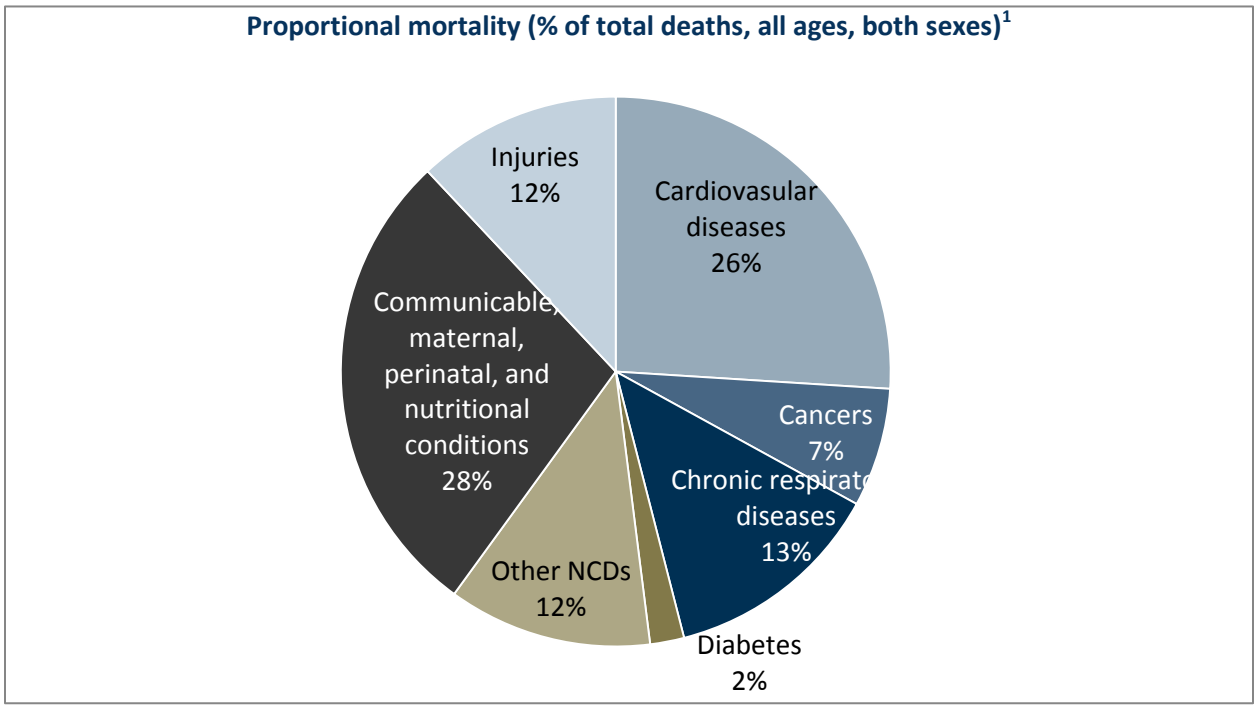
Introduction

Changing Disease Patterns in India

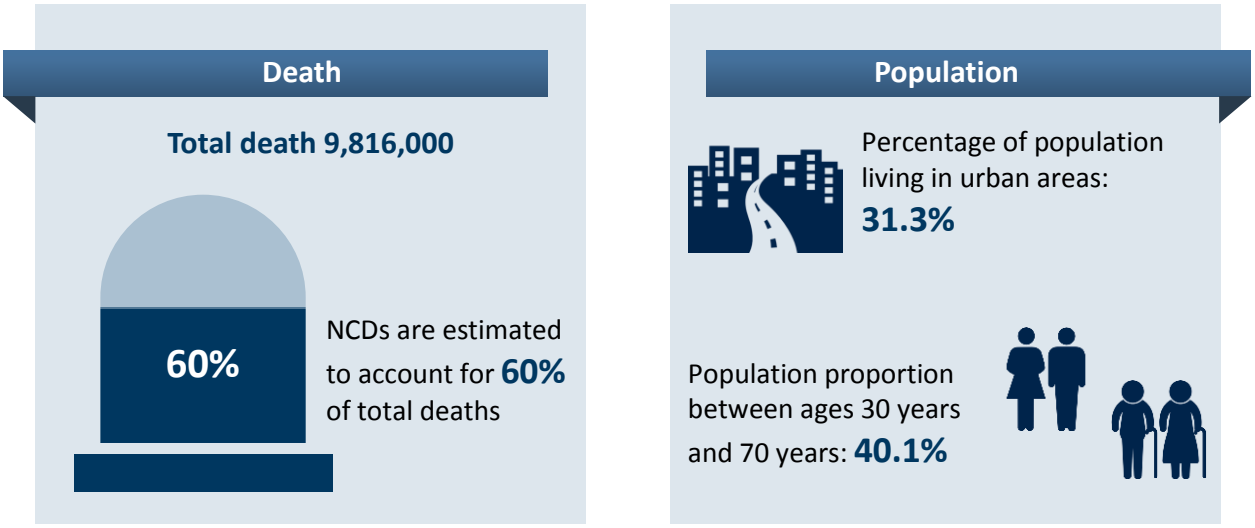
India is experiencing a rapid transition with the rising burden of chronic NCDs like CVDs, diabetes mellitus, chronic obstructive pulmonary diseases, cancer, mental health disorders, injuries, etc. NCDs are the main reasons for mortality and morbidity in both urban and rural population with a considerable loss in potentially productive years (aged 35-64 years) of life.

NCDs, currently, account for around **60% of the total deaths**. The rising burden of NCDs has been attributed to multiple health transitions such as demographic (aging population), epidemiological, and nutritional (high calorie consumption and low physical activity levels) transitions. It has also been noted that the prevalence of NCDs, as a result of lifestyle patterns, have increased twofold in the last decade compared to communicable diseases.

Exhibit 1: Distribution of Diseases by Mortality Rates



Source: http://www.searo.who.int/india/topics/noncommunicable_diseases/ncd_country_profile_2014.pdf



[1] http://www.searo.who.int/india/topics/noncommunicable_diseases/ncd_country_profile_2014.pdf

CVDs[2]:

Currently, about 2.7 million people die due to CVDs and it has been estimated to increase by 1.5 million by 2030. Estimates indicate that currently there are about 30 million coronary heart disease (CHD) patients, with 14 million residing in rural and 16 million in urban areas. The prevalence of CHD in people aged ≥20 years, ranges from 6.6-12.7% in urban India and from 2.1-4.3% in rural India. During the past few decades, **CHDs' prevalence** has increased almost **fourfold in rural areas and sixfold in urban areas** as a result of varied health transitions.

Diabetes Mellitus[3] :

The rapidly increasing incidence and prevalence rate of diabetes mellitus in India has led to the country being labeled as the **"diabetes capital"** of the world. Most recent estimates of the International Diabetes Federation (IDF), report that there are about 65 million people with diabetes in India and this disease accounts for almost a million deaths annually. The incidence rate of diabetes has been projected to increase to 109 million by 2035.

Hypertension[3] :

Hypertension is the leading risk factor for CVDs and accounts for nearly 10% of all deaths in India. There are currently 20-40% adults in urban areas and 12-17% in rural areas who suffer from it. The number of hypertensive patients in India is projected to nearly double from 118 million in 2000 to 213 million by 2025. Besides, nearly 40% adults have pre-hypertension, a precursor condition with high likelihood of converting into hypertension if left unaddressed.

1.1.1 Burden and Social Determinants of NCDs in India:

According to the World Health Organization (WHO), India ranks very high among the nations struck by the rising wave of premature deaths caused by NCDs. Children, adults, and the elderly are all vulnerable to the risk factors that contribute to NCDs, whether from unhealthy diets, physical inactivity, exposure to tobacco smoke or the effects of the harmful use of alcohol.

Globalization and Urbanization:

Rapid urbanization, increased motorization, mechanization, and sedentary lifestyle, especially among the working age groups, predispose the population to premature NCDs. India is poised to experience significant urban growth over the next 35 years. This suggests that more individuals will encounter urban risk factors for NCDs, which could contribute to an increase in disease burden and related economic losses.

[2] http://www.phfi.org/images/what_we_do/PHFI_NCD_Report_Sep_2011.pdf

[3]http://cgd.swissre.com/risk_dialogue_magazine/Cardiovascular_risks_in_HGM/Chronic_Diseases_in_India_Burden_and_Implications.html

Aging India[4]:

In addition to globalization and urbanization, demographic changes are also driving the rise in NCDs. Life expectancy in India is currently 66 years, but is expected to climb to 73 years by 2050. As a result, the share of individuals aged 50 years and older is projected to increase significantly from about 16% of India's population (roughly 190 million) in 2014 to more than 31% (approximately 506 million) by 2050. The segment of those aged 60 years and more will grow from 8% to 18% of the total population in that same time frame, and the relative size of the population aged 80 years and older will also rise sharply, from 1% to 2.3%. Given the increase in the share of India's elderly population, the burden of NCDs is also likely to increase.

1.1.2 Economic Impact of NCDs in India[5] :

NCDs and risk factors entail huge costs not only to individuals but also to the national economy. Most people suffering from NCDs incur out-of-pocket expenses to take care of healthcare costs. Medicines account for up to 45% of this expenditure. In 2010, the annual direct cost per diabetic individual was reported to be US $525, and the annual total cost of diabetes care in India was estimated to be US $32 Billion. During 2005-2015, the projected income loss due to CVD and diabetes alone is likely to be more than US $237 Billion. For obtaining NCD care, individuals and families often resort to distress financing and shell out vast amounts of catastrophic expenditures, which impoverish and ultimately drive people to poverty. Furthermore, families suffering from NCDs suffer income losses not only due to the disease but also due to treatment and premature death.

Patient Access to Medicines: A Growing Challenge

Chronic conditions like diabetes, hypertension, etc. require patients to regularly use medications for the rest of their lives. However, it has been observed in many studies that poor compliance with therapy is the most important reason for inadequate control of various chronic diseases like hypertension, hyperlipidemia, diabetes, etc. It has also been shown that almost all patients who had poor compliance with drugs, eventually dropped out of treatments completely and, therefore, did not benefit from the treatment effects. Thus, lack of access to continuing treatment is associated with poor health outcomes and/or premature death, thus impacting the economic growth of the country.

In order to formulate effective strategies to contain the problem of non-compliance, there is a need to systematically review the factors contributing to non-compliance. Some of the patient-related factors contributing to poor medication adherence include suboptimal health literacy, limited access to care, high medication costs, long waiting times at the healthcare set up or pharmacy, lack of family or social support etc.

Urbanization and industrialization is causing rapid growth of the nuclear family system in the society. According to a report released by BCG in 2015, it has been estimated that more than 200 million

[4]http://www3.weforum.org/docs/WEF_EconomicNonCommunicableDiseasesIndia_Report_2014.pdf
[5] http://www.indiaenvironmentportal.org.in/files/file/PHFI_NCD_Report_Sep_2011.pdf
[6]http://www.livemint.com/Industry/LZmxhIwI0wlotZJflELCLL/Indian-retail-seen-doubling-by-2020-CIIBCG-study.html

households will have nuclear families by 2020[6]. The urban nuclear family members have a busy lifestyle and are left with very limited personal time. In the absence of a functional social welfare system, the family remains a major source of support for the elderly in India. The prevailing nuclear family structure and inter-generational conflicts limit the support and care for elderly adults. This transition from a traditional extended family structure to a nuclear family structure has isolated the elderly, thus reducing their access to medicines.

On the contrary, people who live in remote villages have inadequate access to medications since they are required to travel to nearby towns to access the services. Lack of a reliable means of transport, long waiting and journey times, and high transport costs in addition to the medication costs indirectly affects access to medicines, thereby affecting patient compliance.

Thus, there is a need for comprehensive strategies in order to improve access to medicines and, thus, encourage consistent medication usage among people with chronic conditions in both urban and rural India. Access to medicines is determined by ensuring that the drugs required to respond to the population's health needs are provided at the right time, at the desired location, in an adequate format and according to proper protocols, at a price that would not exploit the financial situation of the community or an individual.

The key barriers, which prevent people from accessing quality affordable medicines in India, include:

- Lack of Accessibility and Availability
- Lack of Affordability
- Lack of Awareness

These barriers could be effectively overcome by adopting technology, especially the Internet, into the healthcare system. Internet-based technology advances healthcare by improving the following:

- Access to Information / Knowledge:
  - The Internet is an ocean of knowledge and, once logged in, a consumer gets the power to make more informed decisions. For example, a patient today is able to learn about his / her condition, treatment options, and best practices in managing the condition, regardless of his / her location or financial situation.
- Access to Health Services:
  - The Internet enables access to qualified specialists and doctors, which is otherwise difficult for a consumer to physically locate. Through **telemedicine**, a village dweller in India can also interact with top specialists anywhere in large cities, or perhaps even globally.
  - Through **e-Pharmacy, e-Diagnostics, e-Healthcare**, etc., consumers in different parts of the country can access the services at their doorstep through a well-tracked system, which would strengthen the authenticity in the supply chain, ensure better access, provide convenience to the customer, and also make sure that deep-rooted issues like middlemen taking commission (often fake and without a bill) is addressed.



2. Digital India: Power to Empower

Digital India is a flagship program of the Indian Government with a vision to transform the country into a digitally empowered society and knowledge economy.

The Digital India program is centered on three key areas, namely:

- Creation of digital infrastructure
- Delivering services digitally
- Digital literacy

The fundamental objective of this program is to **digitally connect every corner of the country with high-speed Internet, including smaller towns and remote villages**. It aims to empower citizens to avail services with more ease and to conveniently interact with the Government. This initiative is expected to not only boost the economic growth of the country but also improve the lives of its citizens.

2.1 Pillars of Digital India

The vision of Digital India is supported by nine key pillars. Some of the key pillars include:

Table 1: Key Pillars of Digital India

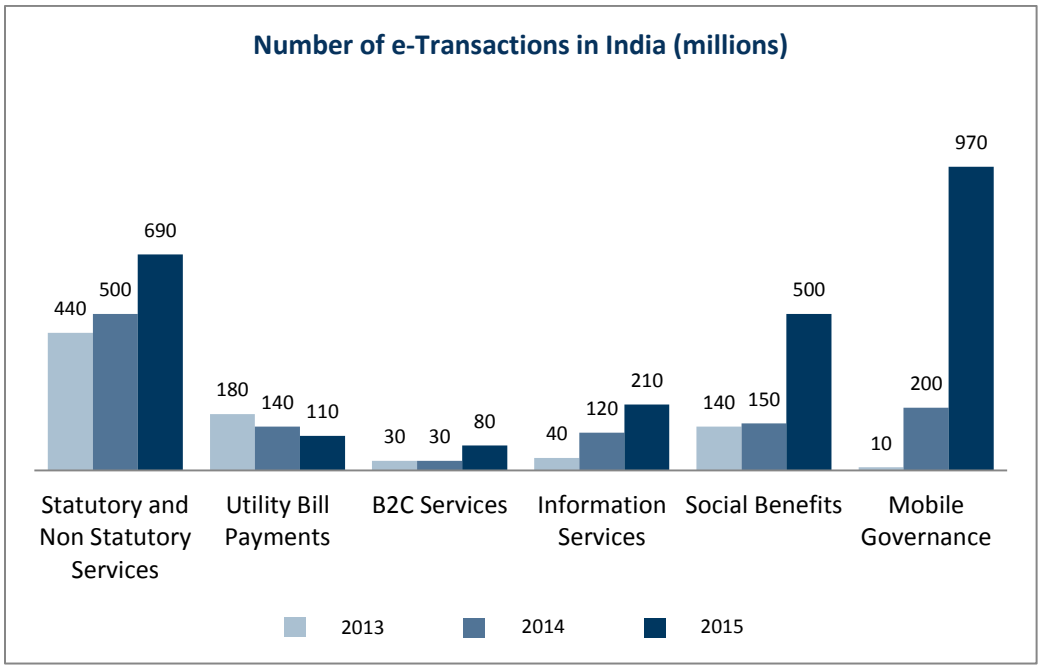
Sl. No.	Pillar	Summary
1	Broadband Highway	• To provide high-speed broadband coverage highways connecting about 250,000 villages, various Government departments, universities, etc.
2	Universal Access to Mobile	• To provide mobile connectivity to about 42,300 villages
3	Public Internet Access Program	• To make 250,000 CSCs operational at Gram Panchayat level for delivery of Government services • To convert 150,000 post offices into multi-service centers
4	e-Governance	• To use business process re-engineering to transform Government processes and make them simple, automated, and efficient
5	e-Kranti	• To use technology for service delivery such as e-education, e-healthcare, technology for planning, farmers, security, financial inclusion, justice, etc.

2.1.1 e-Governance

India is seeing a dramatic growth in the number of online transactions involving citizens and the Government. The number of such e-transactions has grown by more than 200% in 2 years from 840 million in 2013 to 2,580 million in 2015[7].

[7] http://etaal.gov.in/etaal/

Exhibit 2: e-Transactions in India



Source: etaal.gov.in

The rapid growth in e-transactions over a three-year period, as shown above, shows that citizens are quick to adapt to technologies.

The initiative of the Government in bringing the Internet and broadband to remote corners of the country will strongly boost the e-Commerce market, thereby, increasing trading in the country. The global nature of the e-Commerce technology, low cost, opportunity to reach hundreds of millions of people, interactive nature, variety of possibilities, resourcefulness, and rapid growth of the supporting infrastructures result in many potential benefits for the organizations, individuals, and society.

2.1.2 e-Kranti

e-Kranti is an important pillar of the Digital India program. The mission of e-Kranti is to ensure a Government-wide transformation by delivering all Government services electronically to citizens through integrated and interoperable systems via multiple modes, while ensuring efficiency, transparency, and reliability of such services at affordable costs. Some of the services under e-Kranti include:

Table 2: Key Services under e-Kranti

Sl. No.	Services	Offerings
1	e-Education	• Free broadband at panchayat level • Free Wi-Fi will be provided in all the secondary and higher secondary schools (coverage would be around 250,000 schools) • A program on digital literacy would be taken up at the national level • Massive Online Open Courses (MOOC) shall be developed and leveraged for e-Education
2	e-Healthcare	• Online medical consultation • Online medical records • Online medicine supply • Pan-India exchange for patient information

e-Healthcare:

In order to drive innovation in the Digital Health Vision, a key pillar of Digital India plan, there was a need for a functioning online model which improves access to healthcare services. **e-Healthcare,** thus, forms an integral component of an all-encompassing vision of Digital India. This initiative unleashes the power of technology for better health, better medication, and availability of better facilities to the farthest corner of the country.

The healthcare industry in India is at an inflection point right now and is poised to grow up to US $280 Billion by 2020, which is 10 times the growth since 2005[8]. This growth has been driven by several factors including demographics, increased awareness, and availability of medical and healthcare facilities in India.

The healthcare industry holds immense potential and, with e-Commerce booming currently, it will empower the market players to reach out to millions of Indians living in urban as well as rural areas. The future of the health industry seems to be bright and will be one of the key drivers for growth of the Indian economy.

The fundamentals for success of e-Healthcare are based on two principles:

Transparency

- A unique quality of technology is its ability to break barriers. e-Healthcare breaks the barrier of information lying with the experts and brings it to the common man. e-Healthcare envisages new-age concepts like e-Pharmacy, e-Diagnostics, e-Insurance, and more. These facilities provide a robust ecosystem support to the patients and service providers alike with access to information – anytime, anywhere.

[8]http://www.bisinfotech.com/article/healthcare-will-next-big-ecommerce-sector-india/

Access to Quality Health Services / Products:

- One of the progressive technology models to have evolved in the last few years is digital health platforms, which has enabled accessibility to the finest doctors at the tap of a button. Another recent innovation that has positioned itself as an attractive model in the healthcare space is e-Pharmacy, which enables accessibility to cost-effective drugs.

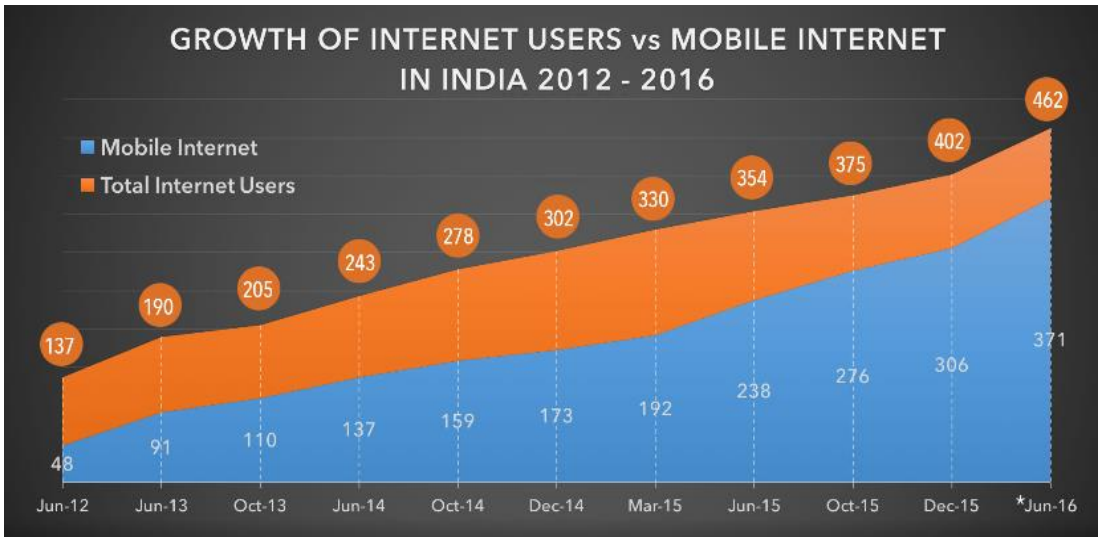
With the help of technology, healthcare is going to be massively altered and will move to a system where the consumer is informed and empowered. This shift could be brought about by an **e-Healthcare model,** which is built around solving problems of the consumer in the most optimized manner, where the consumer would have the power of knowledge and demand better service, a transparent system which would be free of middlemen causing distortions, and price / quality mismatch. At the same time, an online model, operating across the country, to procure healthcare services will ensure organized tracking and recording of the data for audit trails, thus making the healthcare system more structured.

2.2 Key Drivers of Digital Transformation[9]

- Increasing number of Internet subscribers coupled with explosive growth of smartphone users:
  - India is one of the fastest growing Internet markets in the world. The number of Internet users in India rose from approximately 300 million in December 2014 to around 402 million by December 2015, making India the third-largest Internet user base in the world. This number is further likely to increase to around 462 million by June 2016, according to the "Internet in India 2015" report released by the IAMAI and IMRB International.
  - There is an enormous surge in the number of mobile Internet users in India due to increasing adoption of smartphones. The country is estimated to have around 371 million mobile Internet users by June 2016, according to the latest report, "Mobile Internet in India 2016", released by the IAMAI.

[9]IAMAI and IMRB International

Exhibit 3: Growth of Internet Users versus Mobile Internet in India 2012-2016



**Estimated; Figures in Million Users* *Source: IAMAI, Feb 2016*

- Other drivers include:
  - Rising standards of living of the middle class population due to increasing income levels
  - Busy lifestyles, traffic congestion, and lack of parking spaces available for offline shopping in urban regions

2.3 Digital Transformation: Consumer takes the Center Stage

Indian consumers, today, prefer to access both domestic and global products at the click of a button, and at competitive prices. This also extends to the rural consumers who have a rising economic status with better access to the Internet. From a long-term perspective, this change in the consumer behavior is expected to benefit the country's economy as well.

On the contrary, there is a lot of debate around the e-Commerce industry impacting brick and mortar retailers and SMEs. The current battle by the retailers against e-Commerce is similar to the scenario during the industrial revolution. There was a threat posed against machines replacing man power and impacting the economy of the country; however, in reality, the industrial revolution created a massive demand for labor. Similarly, when organized retail stores as well as online shopping sites came into the market, there were similar concerns raised around them being a threat to local traders, corner stores, and retailers. However, it has been repeatedly observed that newer models have only led to market creation; thus, leading to sufficient space for co-existence.

From the above examples, it is clearly evident that the battle is mainly due to a perception of threat than any actual threat. e-Commerce is a shift in the way business will be done in the future and everyone will have to align themselves according to the changing trends. Overall, consumers are in the driving seat and technology is the catalyst for change.

In today's world, when most of the products and services are conveniently delivered to the patients' doorstep, there is a need for access models that help patients and consumers avail the convenience of medicine delivery without needing to leave their homes. This need could be addressed by an **e-Access model**, a functioning online model, which provides access to medicines, through mobile and Internet-based platforms.



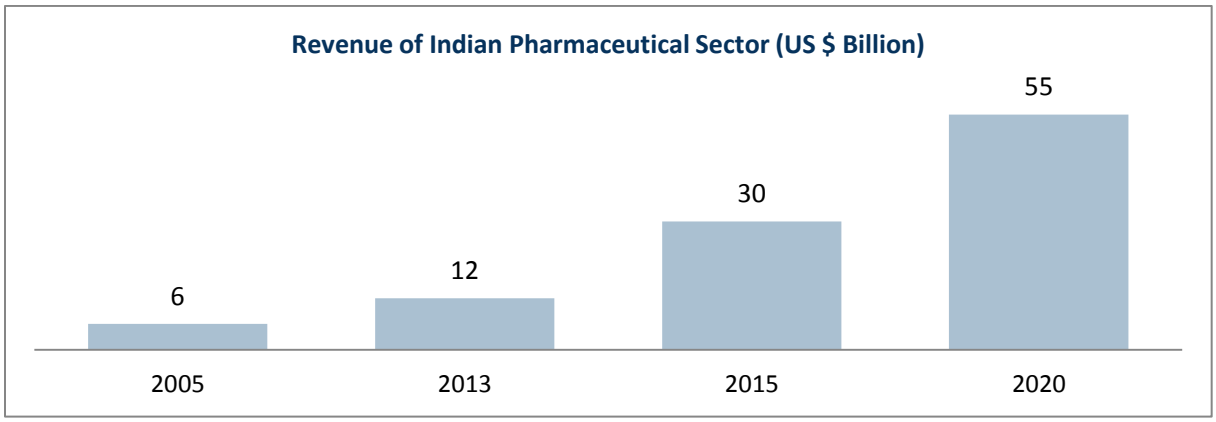
E-Pharmacy: A Safe and Sustainable Alternative

3.1 Indian Pharmaceutical Industry: Market Potential[9]

The Indian pharmaceuticals market is third largest in terms of volume and 13th-largest in terms of value, globally, according to a report released by Equity Master. This market grew from US $6 Billion in 2005 to US $30 Billion in 2015 at a CAGR of 17.46% and is expected to grow at a CAGR of 15.92% to reach US $55 Billion by 2020. This growth is primarily driven by high burden of disease, good economic growth leading to higher disposable incomes, improvements in healthcare infrastructure, and improved healthcare financing, to name a few. India is expected to be among the top three pharmaceutical markets by incremental growth and sixth largest market globally in absolute size by the end of 2020.

[9]http://www.ibef.org/industry/pharmaceutical-india.aspx

Exhibit 4: Revenue of Indian Pharmaceutical Sector

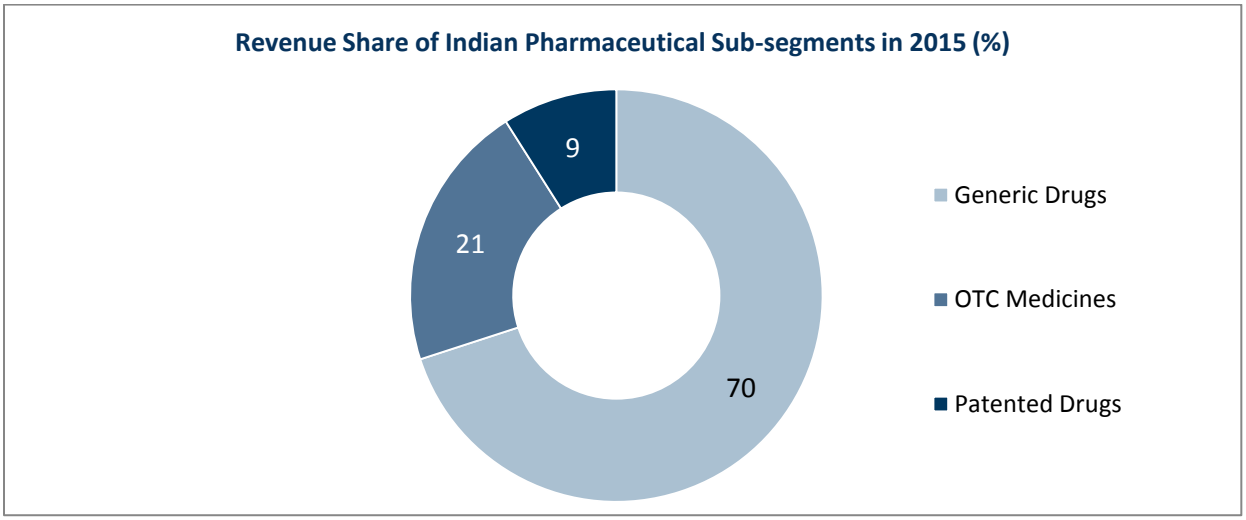


Source: India Brand Equity Foundation, PWC, McKinsey, Frost & Sullivan

3.2 Retail Pharma Market

The retail pharma market in India is currently at a promising stage with its three broad segments of generic drugs, OTC drugs, and patented products. Generic drugs form the largest segment of the Indian pharmaceutical sector, with around 70% market share in terms of revenue. OTC medicines and patented drugs constitute 21% and 9%, respectively, of the total market revenues of around US $20 Billion.

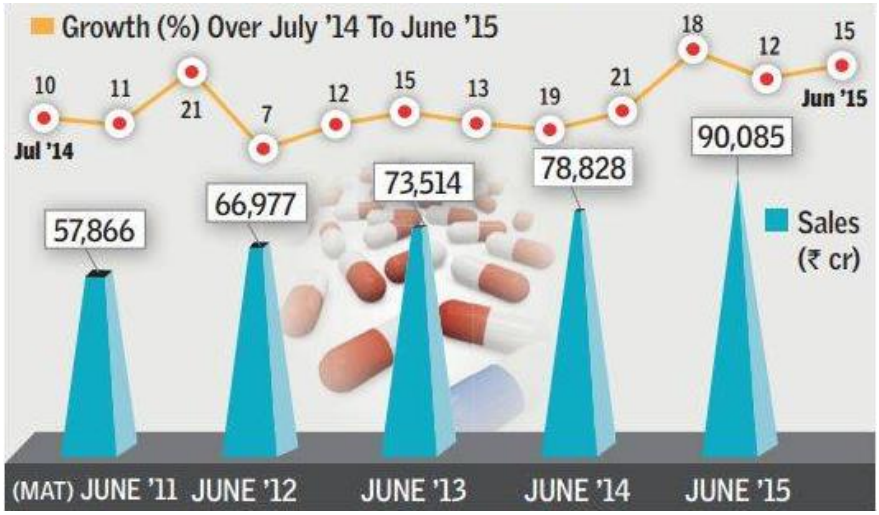
Exhibit 5: Indian Pharmaceutical Sub-segments



Source: India Brand Equity Foundation, PWC, McKinsey, Frost & Sullivan

The domestic pharma retail market, valued around INR 98,000 Crore (2015), is primarily driven by the anti-infective market at 15.17%, cardiac drugs market at 12.47%, gastrointestinal drugs market at 11.75%, vitamins / minerals / nutrients market at 8.78%, and anti-diabetic market at 8.13%[10].

Exhibit 6: Indian Retail Pharmacy Market Growth Trends (2011-2015)



Source: AIOCD Pharmatrac, Frost & Sullivan

The pharmacy industry is widely fragmented throughout the country. It operates around **850,000 pharmacy stores**.

3.3 Challenges of Retail Pharmacy

- **Low Industry Margins:**
  - Retail pharmacy is a highly fragmented and competitive industry. Drugs are bought in smaller quantities from drug distributors at high prices, thereby reducing the profit margins.
- **Sustainability of Industry:**
  - Due to increased competition and rising pressure on price control, the sustainability of the retail pharmacy industry is questionable. This industry could sustain only by adopting technology, which would increase productivity and provide value-added services to consumers.
- **Drug Abuse:**
  - Sale of drugs without prescription, thereby leading to significant cases of drug abuse.
- **Counterfeit Medicines:**
  - Sale of sub-standard and fake medicines, thereby increasing the risk of adverse effects.

[10] AIOCD Pharma Softech AWACS Pharmatrac

- **Documentation / Tracking:**
  - Sale of drugs without providing bill / invoice for the purchase, thereby affecting the amount of tax collected.
  - Poor documentation of prescription drug sales, thereby affecting the drug recalls process.
- **Poor Inventory Management:**
  - Not feasible for a single pharmacy to store wide range of products, which forces consumers to visit multiple pharmacies for procuring all the medicines.

Currently, the retail pharmacy ecosystem has high friction in the system leading to inefficiencies and high cost to the consumers. Thus, there is a need for a technological upgrade of the model for streamlining of the processes. Computerization of pharmacies, recording of transactions, and restricting cash transactions could transform the industry.

3.4 e-Pharmacy: A Potential Pharmacy Model

e-Pharmacies are online platforms where consumers can purchase medicines without having to visit brick-and-mortar pharmacies. This makes the process more convenient for consumers and has resulted in a rising demand for the model across the world. In addition, increasing utilization of e-Prescriptions in the hospitals, globally, has also led to the growth of this industry.

According to Transparency Market Research, the global e-Pharmacy market was around US $29.3 Billion in 2014 and is estimated to grow at a CAGR of 17.7% to reach a valuation of US $128 Billion by 2023. The global e-Pharmacy market is currently led by North America and Europe. However, the major opportunity for the global e-Pharmacy market lies in the vast unmet needs of the developing Asia Pacific market. According to a Boston Consulting Group report released in April 2016, the e-Pharmacy market in China was around US $1.1 Billion in 2014 and is on an upturn[11].

Currently, e-Pharmacy is at its nascent stage in India, but like other categories, it has the potential to be a very large industry segment in the near future. Factors driving the demand include rising number of people with unmet medical needs due to large population and increasing penetration of the Internet in both urban and rural India. It is expected that the e-Pharmacy model could account for 5-15% of the total pharma sales in India, largely by enhancing adherence and access to the medicines for a lot of under-served population[12].

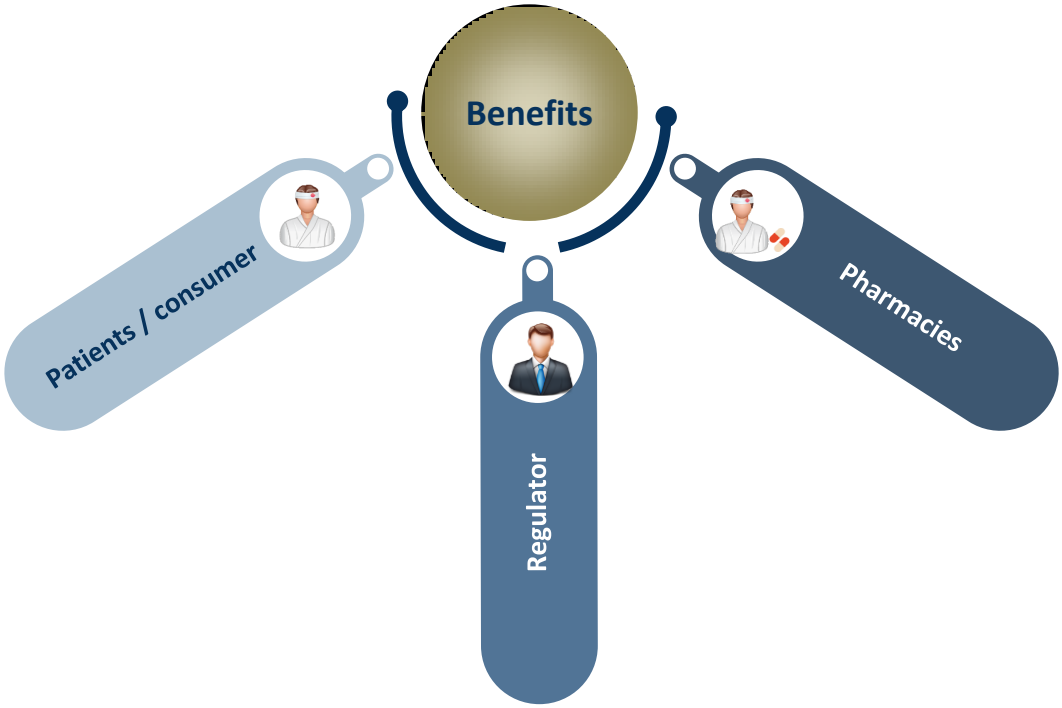
Currently, there are many leading e-Pharmacy players such as Zigy, Netmeds, Bookmeds, 1MG, mChemist, Medidart, Medlife, Pharmeasy, Savemymeds, SaveOnMedicals, etc. who operate in this segment.

[11] http://www.medgadget.com/2016/05/global-epharmacy-market-flourishing-in-western-world-asia-pacific-offers-strong-growth-opportunities.html

12 http://innovareacademics.in/journals/index.php/ajpcr/article/viewFile/10282/4022

3.4.1 Benefits of the e-Pharmacy Model

Exhibit 7: Benefits of e-Pharmacy Model



Source: Frost & Sullivan

3.4.1.1 For Patients / Consumers:

Increased Convenience:

- Consumers would be able to order medicines in a convenient manner from their mobile phones or computers. This will significantly help patients who are old and sick and not in a condition to go out to find a pharmacy. This is also pertinent with the increasing nuclear family concept, working couples, increasing number of elderly population, and urban development in the periphery of the metro cities.

Improved Accessibility:

- With the use of technology and access to inventory of multiple stores at a time, e-Pharmacies can aggregate supplies, making otherwise-hard-to-find medicines available to consumers across the country. Retail pharmacies can only keep a limited inventory, resulting in the consumer having to visit multiple stores to procure the medicines.
- e-Pharmacies also enable access to rural areas where there is limited presence of retail pharmacy.
- e-Pharmacies allow the consumer to choose from a wide range of affordable generic equivalents for a particular branded drug, which is not possible in the current offline model.

Cost Advantage:

- e-Pharmacies enable pharmacy entrepreneurs to broaden their customer base while reducing working capital, overhead costs, and increase margins, which translates into cost advantage to end consumers.

Improved Patients' Compliance and Education:

- e-Pharmacies may provide value-added information to consumers, such as drug interactions, side effects, medicine reminders, and information on cheaper substitutes. This power of knowledge enables the consumer in improving compliance.

Authenticity:

- All medicine purchases are digitally stored making it easy to track the supply chain, thereby decreasing the risk of counterfeit medicines, drug abuse, and self-medication.

3.4.1.2 For the Regulators:

Tracking of Data:

- All the transactions could be efficiently tracked with complete details of the medicines, batch number, dispensing pharmacy name and address, prescribing doctor, name and address of the patient, etc., thereby reducing the problem of drug abuse and self-medication.
- E-Pharmacies could store and analyze large amounts of data on consumers across the nation, which would be very useful for planning public health policies.

Medicine Authenticity:

- The technology-enabled tracking systems of the e-Pharmacy model assist in back-tracing the channel / manufacturer / supplier of the counterfeit medicines, thereby making the market a lot more transparent and authentic.

Documentation:

- 100% orders are documented with records of the prescriptions.
- Every order dispensed through e-Pharmacy has a valid bill and tax to the Government is paid in full.
- Since the e-Pharmacy model has a stringent documentation process, the taxes paid on all transactions will largely benefit the Government.

Innovation:

- The model will be in sync with the global models, thus spurring innovation in the industry.

3.4.1.3 For the Pharmacists:

Additional Business Opportunity:

- An e-Pharmacy model will enable existing pharmacies to start online operations and serve a broader set of customers, or a network of pharmacies integrating to one platform and accessing a broader customer base.

Inventory Consolidation:

- An e-Pharmacy model ensures consolidation of inventory. This would reduce working capital requirements, remove wastage from system, and increase margins, thus making the e-Pharmacy, a sustainable value-added service model.

Upgrade of Retail Pharmacy:

- The e-Pharmacy model has the benefit of technology to streamline and make inventory planning, processes, and systems more efficient.

Enhanced Services of the Pharmacists:

- The e-Pharmacy model enhances the services of the pharmacist to the consumers. Routine questions about medications could be answered by online pharmacists using e-mail or other real-time chat options. Knowledge of a patient's diagnosis, list of drugs the patient is already taking, and established drug monitoring parameters, largely unavailable to the pharmacists at present, could be made accessible through this model.

12.1.2 Government Programs / Initiatives

3.4.2.1 Jan Aushadhi Program

In an effort to address the issues of increasing drug prices in our country and the equally increasing demand for medicines, the Government of India has recently launched the **Jan Aushadhi Program**. This program is an integral part of the country's plans to create awareness and enable access of affordable medicines to the general population across the country without compromising the quality of medicines.

This program is a key part of the Digital Health Program under the Digital India Initiative and will be of immense benefit to the consumers. The Jan Aushadhi scheme is launched by the Department of Pharmaceuticals in association with the Central Pharmaceutical Public Sector Undertakings. Jan Aushadhi stores have been set up across India to provide:

- High quality generic drugs at low prices
- Create awareness through education and publicity that high prices of drug does not imply high efficacy and potency
- Encourage doctors, more specifically in Government hospitals to prescribe generic medicines

The Jan Aushadhi team has been contemplating new and innovative models to create a sustainable model that can make Jan Aushadhi program a huge success.

3.4.2.2 Common Services Center (CSC)

The CSCs enable the three vision areas of the Digital India Program:

- Digital infrastructure as a core utility to every citizen
- Governance and services on demand
- Digital empowerment of citizens

It has been estimated to set up approximately 250,000 access points across the country for delivery of various products and services, especially to the rural population. Through its IT-enabled centers, CSCs play a pivotal role in delivering various e-health services, like telemedicine, e-Diagnostics, e-Pharmacy, etc. A CSC portal also acts as a help desk facility for village level entrepreneurs (VLE).

Telemedicine:

The CSCs use telemedicine to provide expert health services to millions of Indians in the remote areas of the country. A VLE, who manages the CSC, delivers and facilitates telemedicine services at their centers like booking an appointment with the doctor, collecting / recording patient information, assisting the patient to interact with the doctor over video conference, and handing over the printout of the prescription to the patient, thereby achieving the objective of remote patient consultation.

In addition to the above services, the Department of Pharmaceuticals aims to utilize CSCs for offering quality generic medicines at affordable prices. CSCs, omnipresent throughout India, act as a viable infrastructure to extend the advantages and services of the Jan Aushadhi scheme to the rural population.

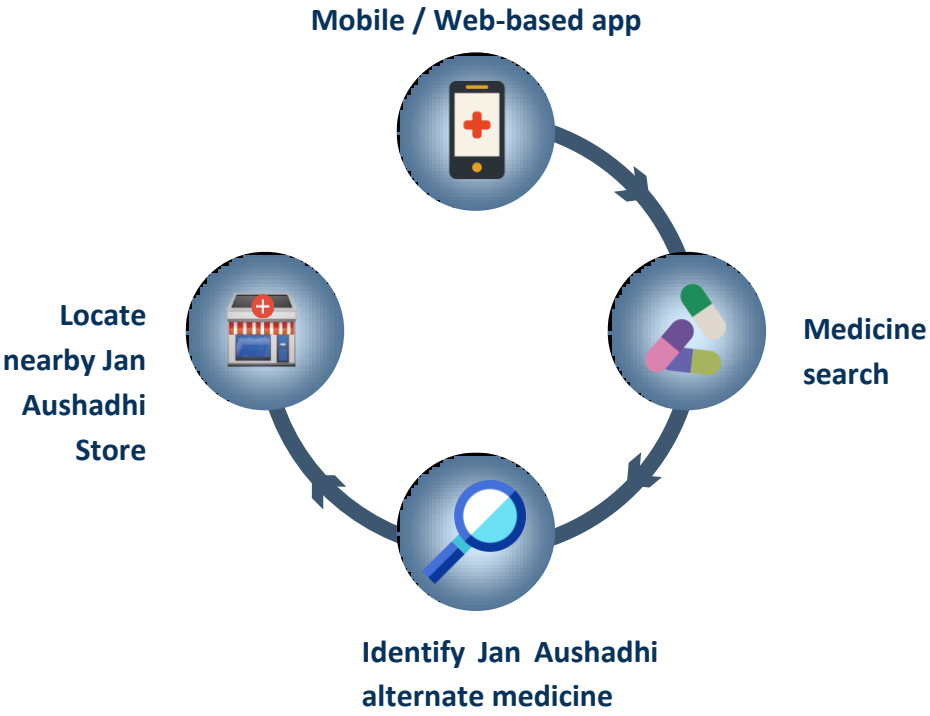
These centers also act as awareness generating entities, spreading information about health, hygiene, and the ease of having access to inexpensive medicines. Thus, CSCs act as a one-stop shop for providing complete, high quality, and affordable healthcare services.

3.4.2.3 How an e-Pharmacy Model Supports the Jan Aushadhi Program

Under the Digital India initiative, the Internet and broadband services are being expanded to every remote corners of the country. This could act as a strong pillar to significantly improve awareness and access of Jan Aushadhi medicines.

The operating model of e-Pharmacy that has been envisaged will have a mobile and a web-based application that could help consumers find their medicines, directly linked to inventory at existing Jan Aushadhi stores. The platform could enable the users to find Jan Aushadhi equivalents for their prescribed brands and also get information about Jan Aushadhi retail stores in their vicinity.

Exhibit 8: e-Pharmacy Model Supporting Jan Aushadhi Program



Source: Frost & Sullivan

The e-Pharmacy model supports the Jan Aushadhi Program in three different aspects:

- **Awareness:**
  - The e-Pharmacy model could create awareness about the program by listing all Jan Aushadhi drugs on its platform.
  - The model enables consumers to search for Jan Aushadhi equivalents for their prescribed drugs.

- **Access:**
  - Consumers could use mobile technology through e-Pharmacy platforms to locate the nearest Jan Aushadhi Store that has the medicine they need anytime, anywhere on their fingertips.
  - The e-Pharmacy model could strengthen the traditional brick-and-mortar model and increase the access of quality and affordable medicines.
  - A mobile application integrated with the Jan Aushadhi pharmacy will ensure that the consumer could visit the pharmacy where his medicines are available.
  - The consumers would be able to order medicines in a convenient manner, from their mobile or computer. This would significantly benefit patients who are sick and old and not in a condition to leave home.

- **Tracking:**
  - All medicines purchased and searched could be effectively tracked and could be analyzed for future planning.

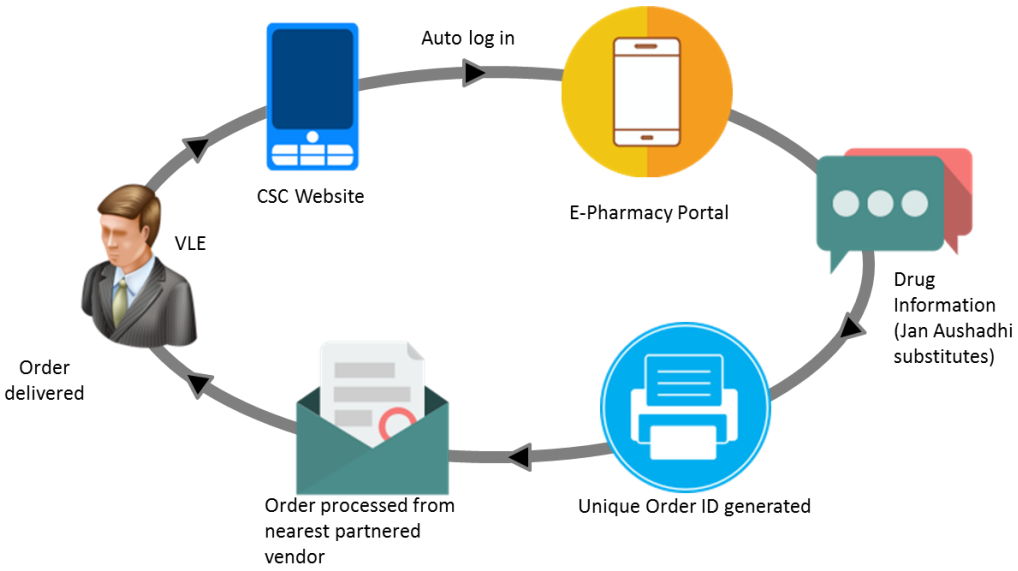
Apart from the benefits to consumers, the e-Pharmacy model could also assist the doctors' fraternity to seek information on the platform about the Jan Aushadhi range of products and prescribe the same to the needy patients; thereby positively contributing to the success of the Jan Aushadhi program.

Thus, an operating model envisaged with a mobile application or a website could facilitate the last mile access of Jan Aushadhi drugs by driving more traffic to the Jan Aushadhi stores; thus making this program a successful and self-sustainable model.

3.4.2.4 How an e-Pharmacy Model aligns with the CSCs?

The e-Pharmacy model could also be effectively aligned to CSC goal of improving delivery of essential health services in rural India by improving access, ensuring efficacy, transparency, and reliability of the services at an affordable cost.

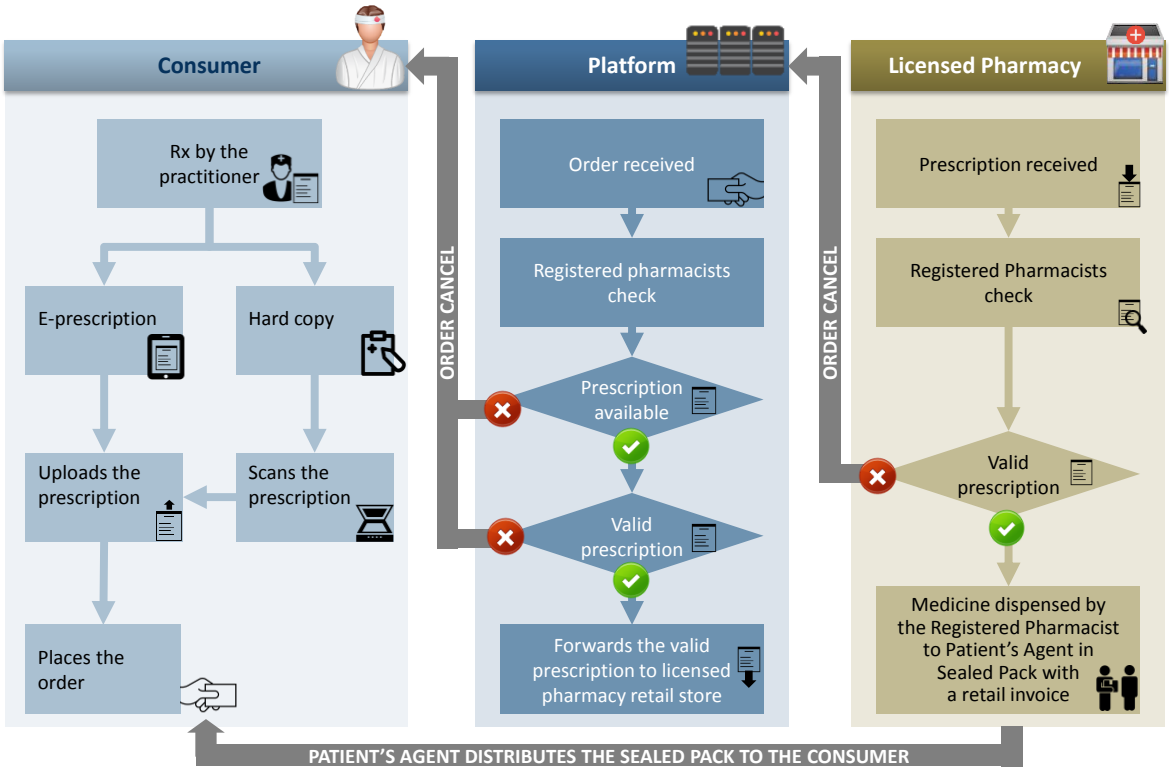
Exhibit 9: e-Pharmacy Model Supporting CSC / VLE



Source: Frost & Sullivan

3.4.3 Suggested e-Pharmacy Model

Exhibit 10: Suggested e-Pharmacy Model to Dispense Prescription Medicines



Source: Frost & Sullivan

An e-Pharmacy model is required to have two operating components for dispensing prescription medicines:

Technology:

- Web-based and/or mobile-based application for consumers to upload the scanned copy of their prescriptions and place requests for medicines.
- Every order that is received to be verified and checked by a team of registered pharmacists.
- The registered pharmacists to forward the validated prescriptions to the pharmacy store from where the medicines are dispensed.
- The web or mobile-based platform to be governed under the IT Act 2000 and only act as a platform to facilitate connection between consumer and pharmacy store.

Pharmacy Retail Store:

- The licensed pharmacists of the store to check for the validity of the prescriptions, failing which the medicines would not be dispensed.
- The medicines should be dispensed from a licensed premise in a sealed tamper-proof pack to the patient or patient's relative (patient's agent).
- There should be proper invoice with batch number of the medicines dispensed, expiry date, name and address of the pharmacy with signature of the registered pharmacist/(s).
- The pharmacy store to be operated under the oversight of the Drugs and Cosmetics Act & Rules and need to comply with all the requirements of the act, as it does for its normal business.

An e-Pharmacy model would help with better purchasing margins, better inventory management, increased reach, reduced prices, and greater provision of value-added services to the consumers.

3.4.4 Key Potential Concerns of e-Pharmacy Model and Possible Solutions:

Table 3: Potential Concerns and Possible Solutions of e-Pharmacy Model

Category	Potential Concerns	Possible Solutions
Fake and Illegal Sites	What if fake e-Pharmacies spring up	• Create a registry of e-Pharmacies with a logo, which needs to be displayed prominently by the authorized players • Consumers can cross verify from the regulator's website about the authenticity of the players
Drug Abuse	How to prevent drug abuse, especially for sensitive medicines	• All the medicines with potential for abuse like Schedule X and other habit-forming drugs could be prohibited • All prescription medicines should only be processed against an electronic copy of valid prescription • Entire audit trail including the name and address of the patient should be digitally stored and tracked
Medication Errors	How can medication errors be addressed through e-Pharmacies	• Registered pharmacist at the licensed pharmacy should be the final decision maker for dispensing a drug • The e-Pharmacy should have a team of qualified pharmacists for validation of a prescription and for handling any drug related queries from the patients • Address / phone / other contact information of the pharmacists should always be clearly disclosed for any drug related query from the customer
Counterfeit Medicines	How do e-Pharmacies help ensure fake or counterfeit medicines are not sold through their platforms	• All medicine purchases to be tracked effectively and to be subject to audits • Digital transaction trails ensuring recording of full transaction payment, valid bill, and batch number of medicines should be available
Substitution	What if the vendor does not have the same brand as on prescription? What do e-Pharmacies do?	• e-Pharmacies should fulfill the orders as per the prescription of the registered medical practitioner (RMP), in exactly the same manner as offline pharmacies • As per current law, substitution is not allowed, unless specifically allowed by the RMP on the prescription
Pharmacovigilance	How can drugs be recalled after dispensing?	• e-Pharmacies to maintain record of every transaction with details around patient's name, address, telephone number, and email • e-Pharmacies to record the batch number and expiry date of the drug for all its transactions • All the drugs to be dispensed with proper invoice by a licensed pharmacy, thus enabling product recalls

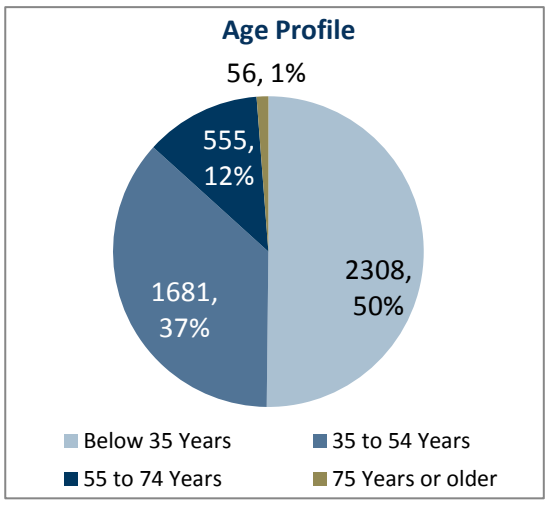


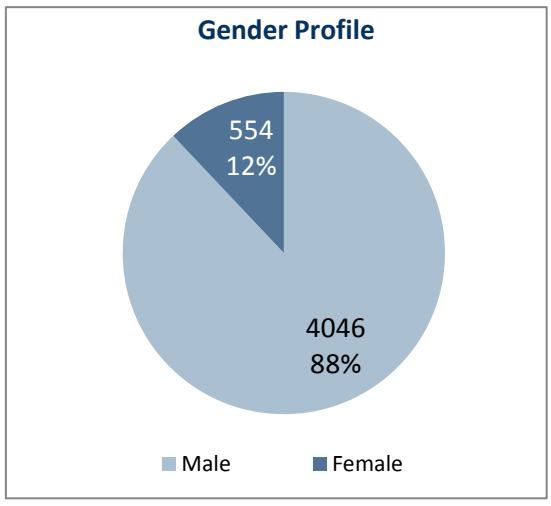
Analysis and Discussion of Consumer Survey Findings

Sample Size	
Type of Respondent	Sample
Consumers	4,600
Physicians	150

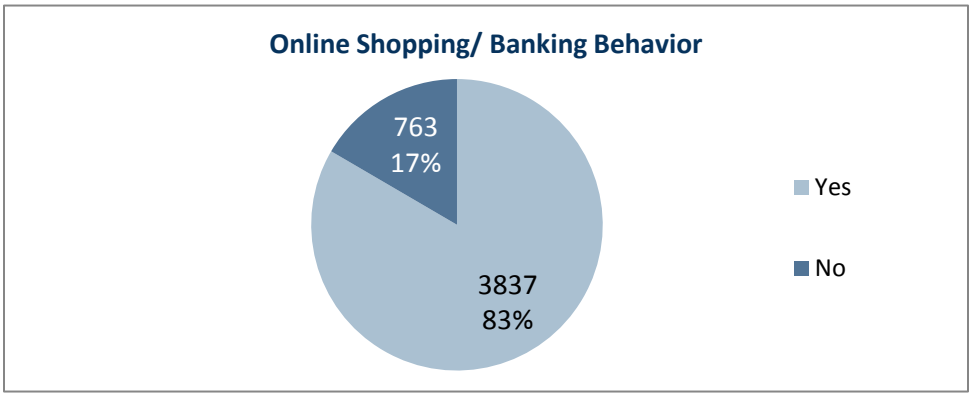
Source: Primary Research by BRIEF India

Demographic Characteristics of Consumer Respondents



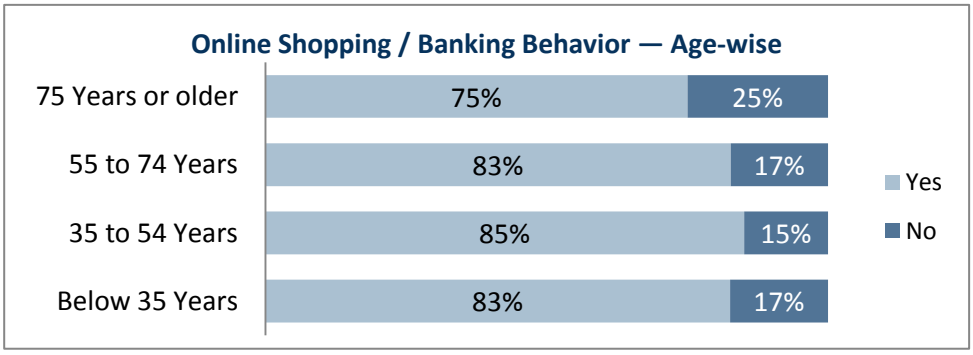


With the improved penetration of the Internet and computer / smartphones in today's age, Internet-based services are increasingly becoming an integral part of people's lives. Some popular Internet-based services such as online shopping and banking have positively influenced the lives of users by making transactions less cumbersome. Result: 83% of the respondents (consumers) bank or shop online.



Source: Primary Research by BRIEF India

A considerable share of the respondents falling within the age groups <35 years and 55-74 years (83% each) were into online banking and shopping. Furthermore, around 85% of the respondents in age groups of 35-54 years performed such transactions. It can be concluded here that **online shopping or banking is not restricted to any particular age group, especially the youth**. Additionally, limitations on physical movement due to old age as well as a continually increasing number of nuclear families – leading to a rise in elderly population with limited support from family members – can be held responsible for such a huge percentage of online shoppers.



Source: Primary Research by BRIEF India

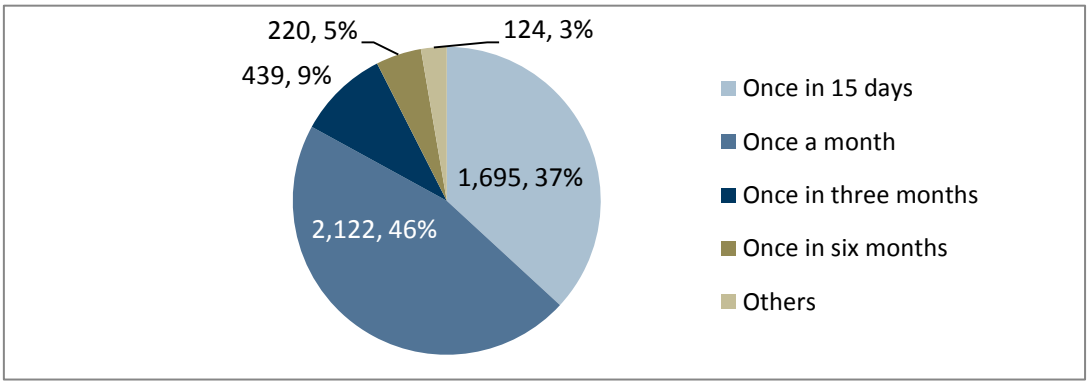
4.1 Consumers' Perspective

4.1.1 Medicine Buying Behavior

4.1.1.1 Frequency of Buying Medicine

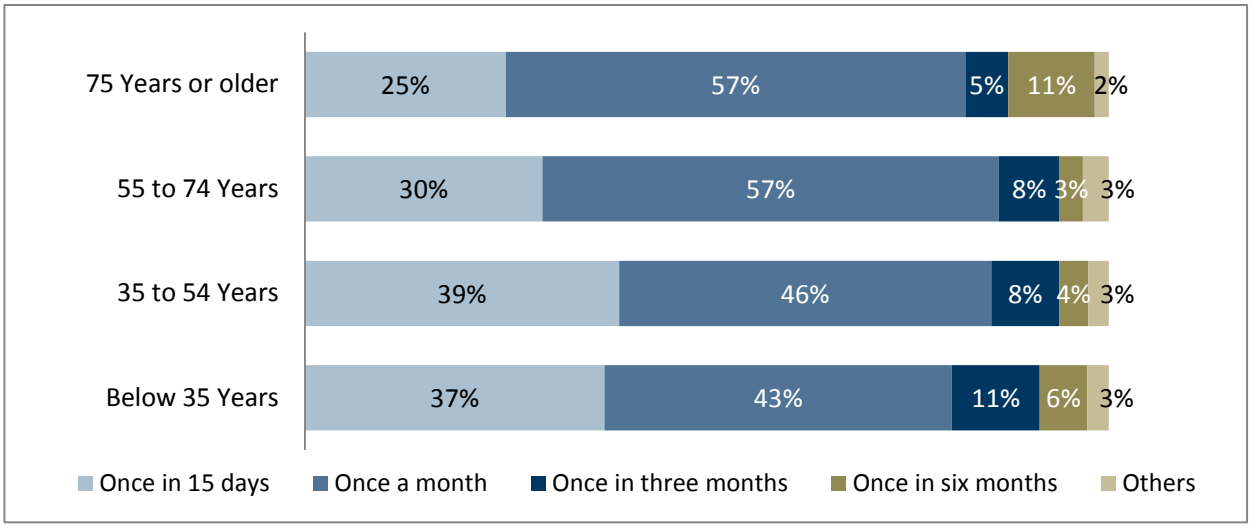
The survey findings revealed that **a considerable share of the respondents tend to buy medicine either once in a month (46%) or once in 15 days (37%)**. Some of the respondents reported that they buy medicines as and when needed or prescribed by their respective doctors. Furthermore, it would be required to understand the effect of the different parameters on the medicine-buying frequency of consumers to get a detailed insight on the same.

Exhibit 11: Frequency of Buying Medicine



Source: Primary Research by BRIEF India

Exhibit 12: Frequency of Buying Medicine — Age-wise



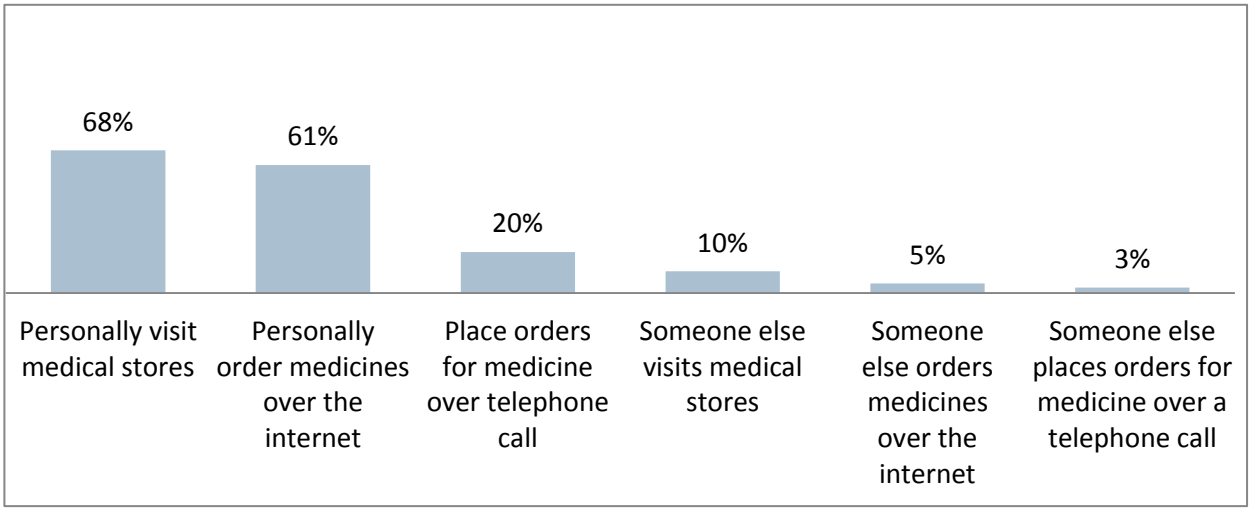
Source: Primary Research by BRIEF India

As analyzed, the frequency of buying medicines changed significantly for different age groups. It can be observed from the chart that instances of buying medicines once in 15 days decreases with increase in

age. On the other hand, instances of buying medicines once in a month increases with increasing age as far as the sample respondents are concerned. In simple words, **with increase in age, consumers tend to have more planned purchases of medicines**.

4.1.1.2 Sources to Buy Medicines

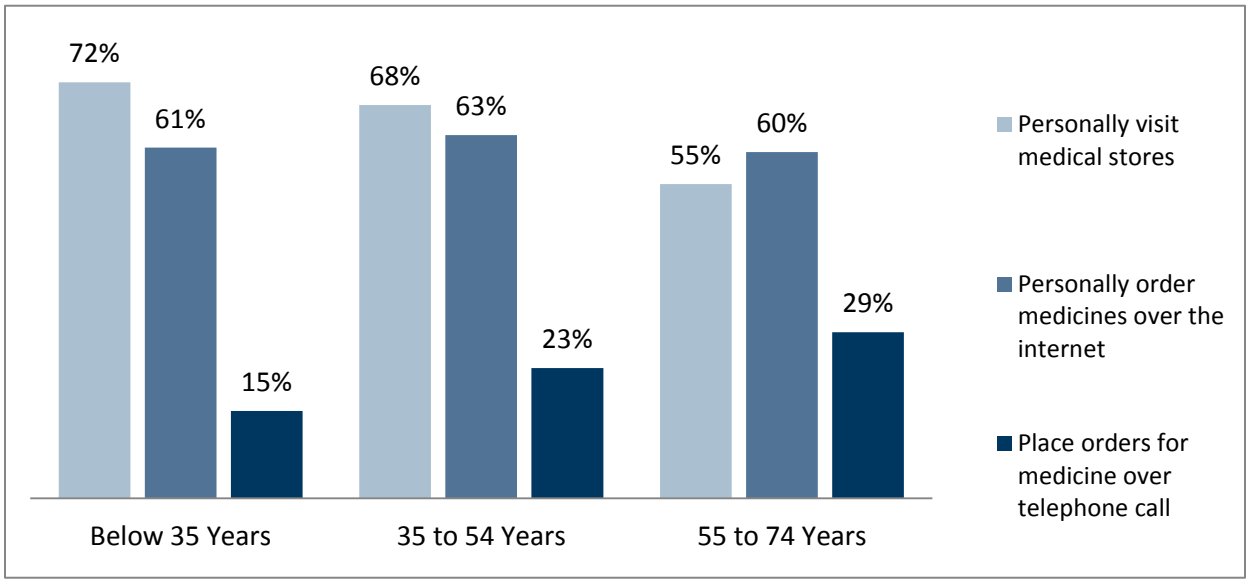
Exhibit 13: Sources to Buy Medicine



Source: Primary Research by BRIEF India

While analyzing the medicine buying behavior of sample consumers, it was observed that **majority of them buy medicines on their own**. The fact that physical medicine outlets form the primary source of medicines was reiterated by the findings, which showed that majority (68%) of the surveyed consumers personally visit medical stores, and about 20% of the respondents order medicines over the telephone from such outlets. However, 61% consumers have reported that they resort to online purchase of medicines.

Exhibit 14: Sources to Buy Medicines — Age-wise

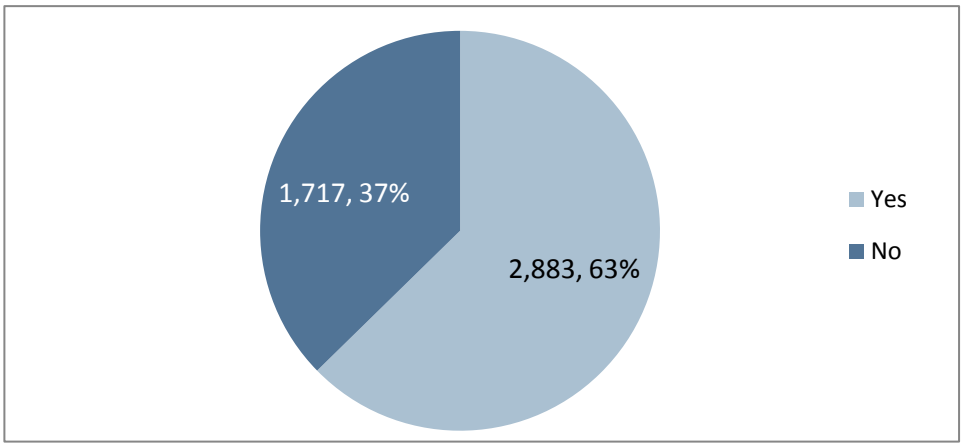


Source: Primary Research by BRIEF India

As per the responses, personal visits to medical stores was the most adopted mode of purchase across all age groups except the age group of 55-74 years, where the adoption of e-Pharmacy (60%) is more as compared to other means of buying medicines. On the other hand, as is evident from the chart, **the preference of buying medicines through physical visits to the medical stores decreases with increase in age. Subsequently, placing orders for medicines over the telephone increases with increasing age**, as indicated by the respondents. Also, it was observed that majority of the elderly respondents buy their medicines on their own; although it has shown a decreasing trend with increase in age.

4.1.1.3 Medicines Bought for Chronic Diseases

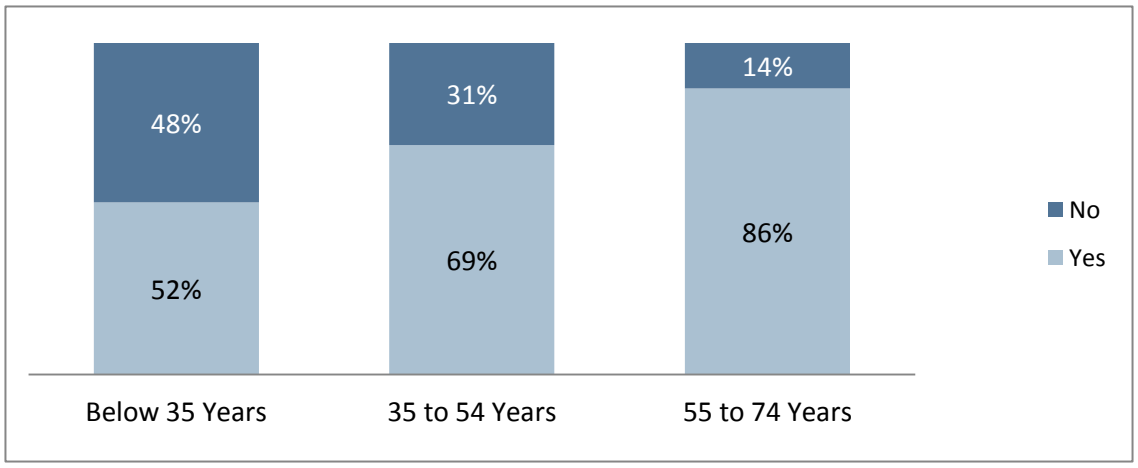
Exhibit 15: Buying Pattern of Medicines for Chronic Diseases



Source: Primary Research by BRIEF India

When asked whether the respondents took medicines for chronic diseases like BP, Diabetes, Asthma, etc., around 63% responded on the affirmative, whereas the remaining 37% said that there were no such requirements. Irrespective of their age and other factors, **majority of consumers need to buy medicines for chronic diseases**.

Exhibit 16: Buying Pattern of Medicines for Chronic Diseases

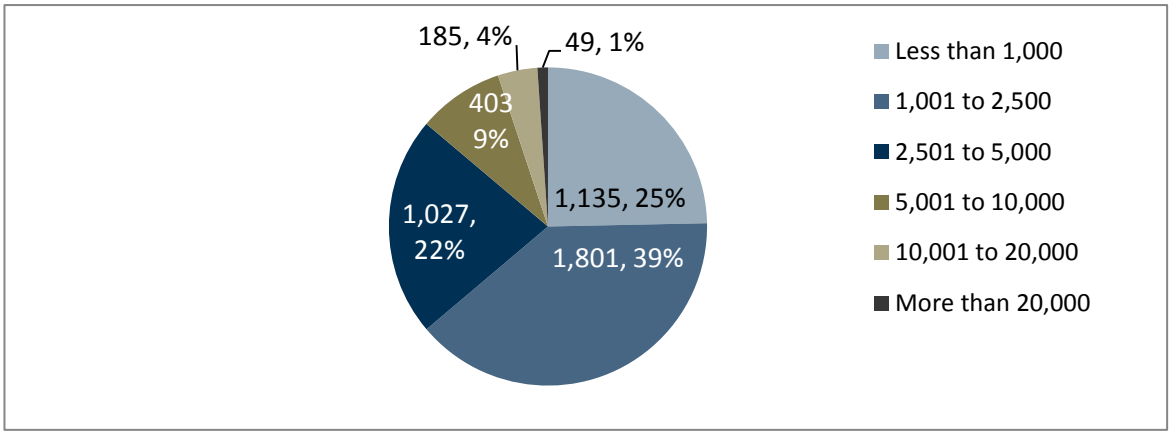


Source: Primary Research by BRIEF India

People are expected to be more prone to chronic diseases with age. Evidences of this pattern can be seen in the above exhibit, wherein **with increase in age, the frequency of buying medicines for chronic diseases was found to increase** among the surveyed consumers. Approximately, 86% of the respondents in the age group of 55-74 years have been buying medicines for chronic diseases.

4.1.1.4 Expenditure on Medicine

Exhibit 17: Monthly Expenditure Incurred Over Medicine (in INR)



Source: Primary Research by BRIEF India

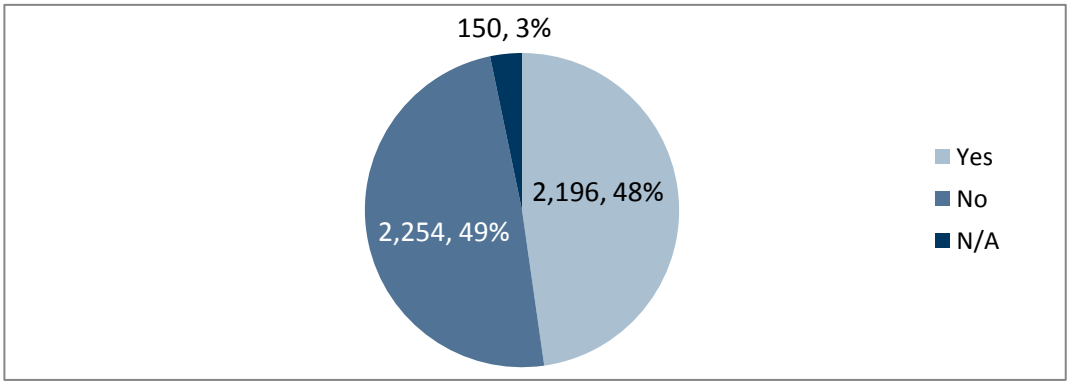
On analyzing the expenditure pattern over medicine by the sample respondents, it was observed that majority (39%) of the surveyed consumers reportedly spent between INR 1,001-2,500 in a month on medicines, followed by 25% and 22% spending less than INR 1,000 and INR 2,501-5,000, respectively. Altogether, **the monthly expenditure incurred over medicine by 86% of the respondent consumers is up to INR 5,000**.

4.1.2 Perception on Retail Pharmacy

4.1.2.1 Consumers' Perceptions toward Existing Pharmacies

The respondents were also questioned with a view to understand certain key aspects about their experiences and perceptions on the services / facilities offered by the existing retail medicine outlets they regularly buy from.

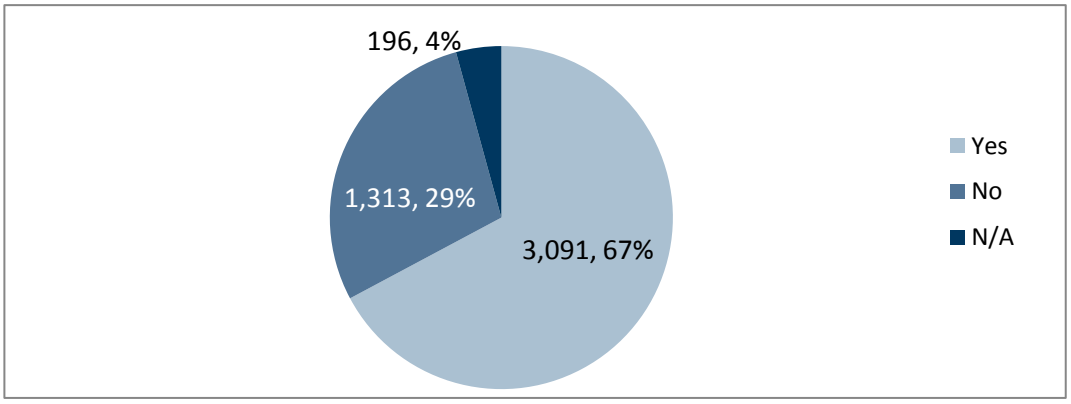
Exhibit 18: Need to Visit Multiple Pharmacies



Source: Primary Research by BRIEF India

It is important to assess the aspect of consumers not being able to find all the required medicines at one particular pharmacy and, therefore, having to go through the inconvenience of visiting multiple pharmacies. To get a view on this aspect, the respondents were asked about their experience on the need to visit multiple pharmacies for medicines. In response, **around 48% respondents reported that they have to visit multiple pharmacies to buy medicines**.

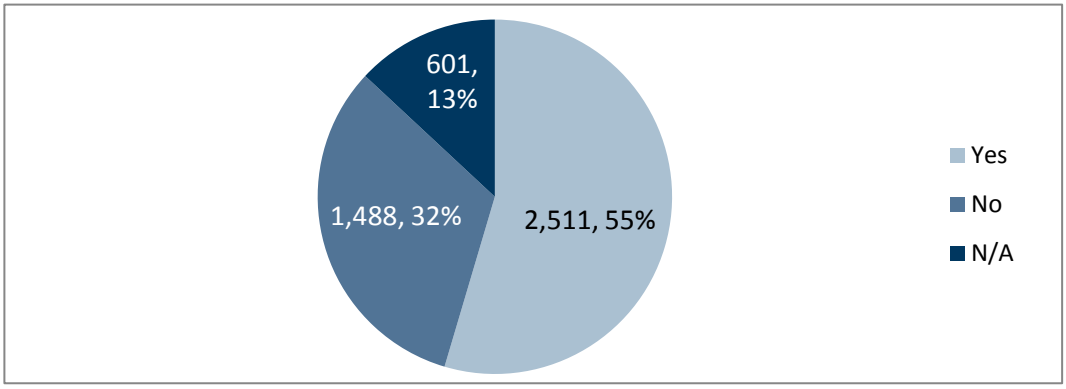
Exhibit 19: Difference in Medicine Price among Pharmacies



Source: Primary Research by BRIEF India

Pricing is another sensitive issue for consumers and their past experience on it needs to be analyzed. To ascertain the same, the respondents were asked if they have been through occasions where they were charged different prices for the same medicine at different pharmacies. **A significant 67% of the sample indicated toward differences in prices of medicines at different outlets**.

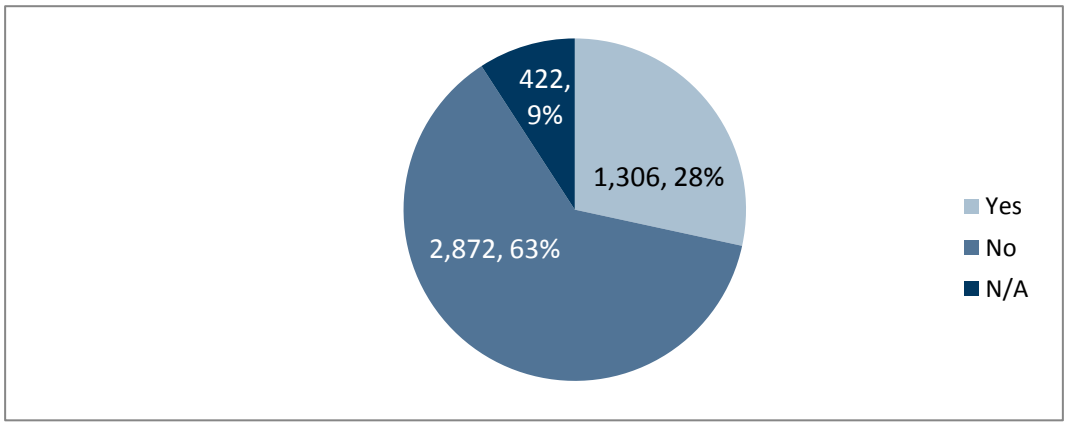
Exhibit 20: Availability of Qualified Pharmacist



Source: Primary Research by BRIEF India

Furthermore, **32% of the consumers reported the unavailability of qualified pharmacists to dispense medicines at pharmacies**, whereas more than half the respondents, i.e., around 55% was of the opinion that they found qualified personnel dispensing medicine at the retail outlets they visited.

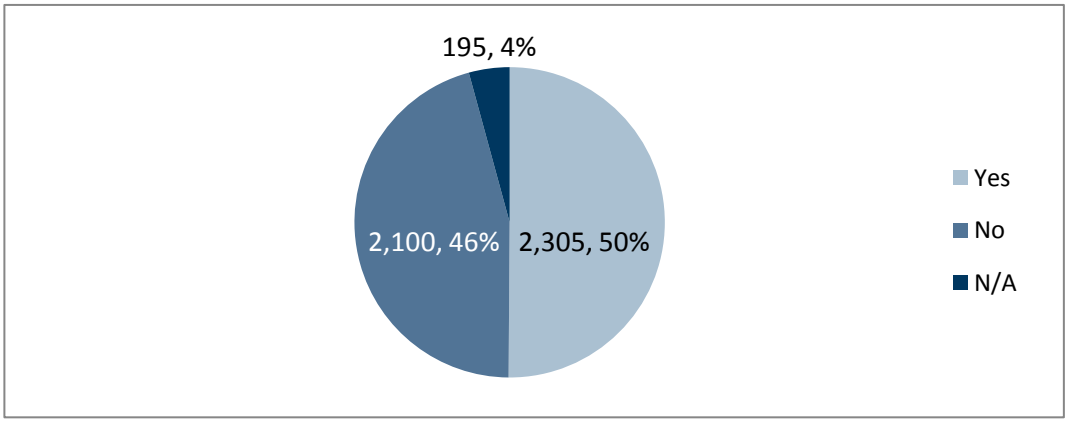
Exhibit 21: Counseling on Administration of Medicines



Source: Primary Research by BRIEF India

Counseling on areas such as dosage, administration, side-effects, etc. of medicines is an extremely important aspect to understand the level of service received by buyers at medical stores. **Approximately, 63% of the respondents reportedly do not get proper counseling about the administration of medicines at their preferred medical stores**, as per the responses.

Exhibit 22: Sale of Medicines without Prescription

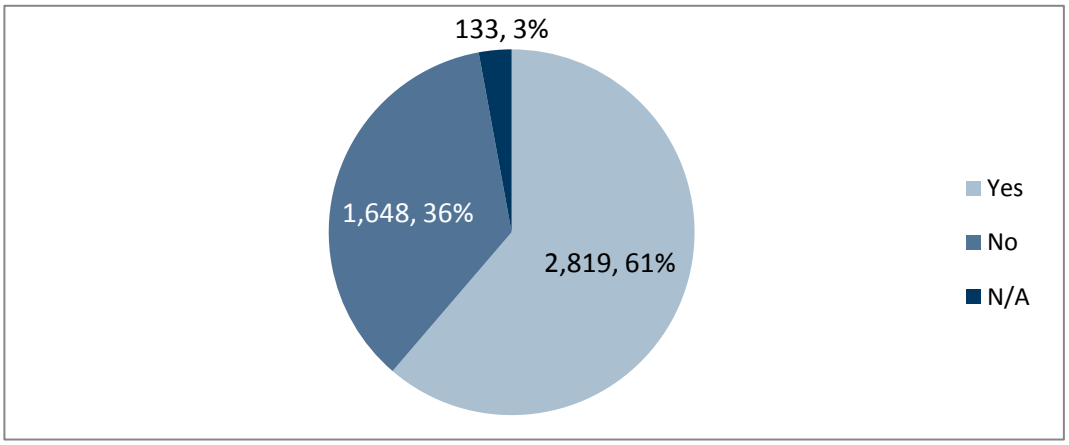


Source: Primary Research by BRIEF India

On assessing the extent of distribution of medicines strictly on the production of valid prescriptions by the buyers at the counter, it was found that 50% respondents get medicines without any prescription as

against 46%, who said that they do not get medicines or other pharmaceutical products without valid prescriptions. **The sale of medicines without prescription is a market norm according to half the respondents**.

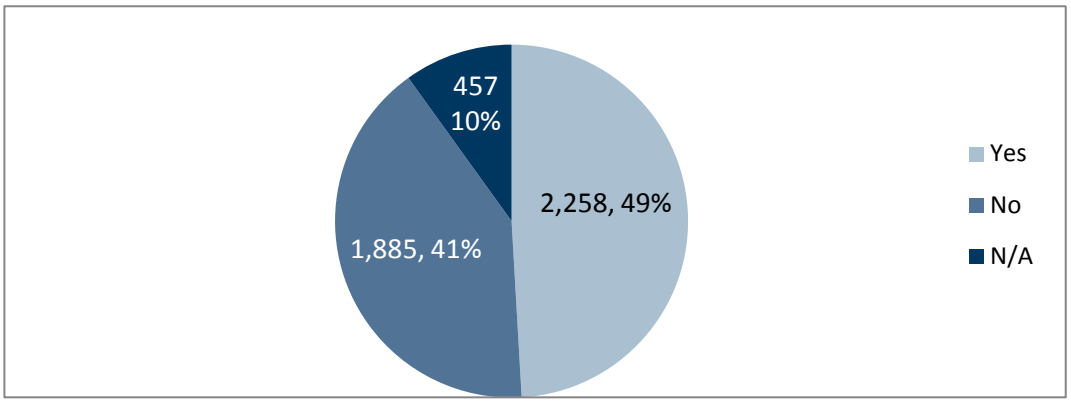
Exhibit 23: Getting Proper Bill for Medicines



Source: Primary Research by BRIEF India

In order to determine if the sale of generic or over-the-counter drugs is accompanied by proper bills with batch numbers and expiry dates of medicines, the respondents were asked if they receive the same during purchase of medicines from the stores they visit. **Around 36% reported that they do not get bills with batch numbers and expiry dates for their purchases**, while more than 60% respondents reported that they receive the same.

Exhibit 24: Home Delivery of Medicines

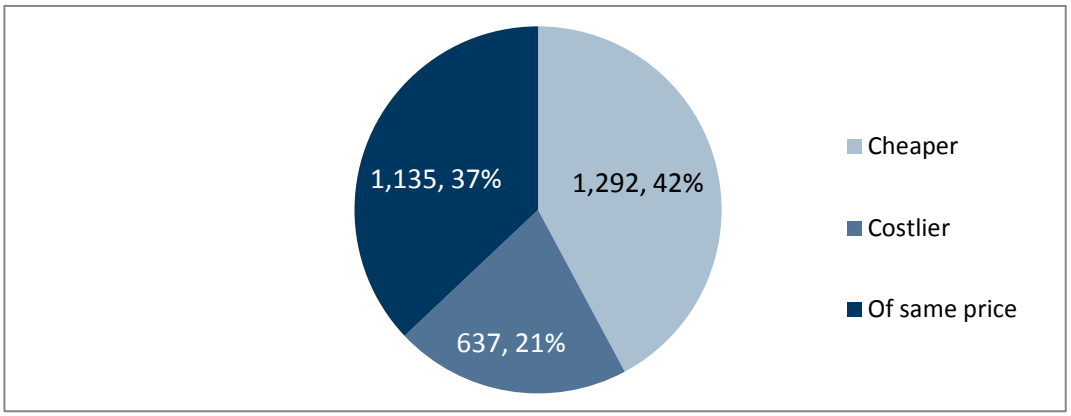


Source: Primary Research by BRIEF India

To increase sales and retain customers, some chemists provide a value-added service of taking orders over phone. In order to determine to what extent this trend is prevalent in the market, the respondents

were asked if they received such services. Nearly half the respondents reportedly have received such services, whereas **41% have never been provided home delivery service by their respective chemists** as per the responses.

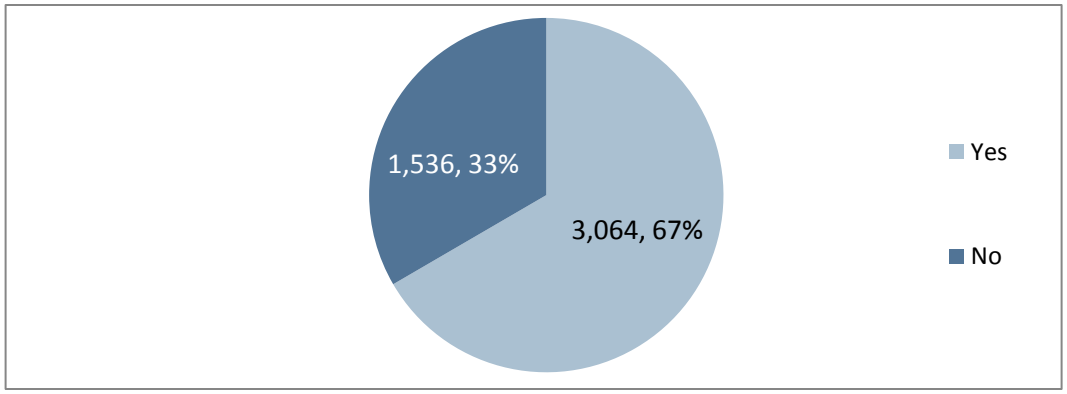
Exhibit 25: Price Difference on Substitute /Alternative Medicine



Source: Primary Research by BRIEF India

Normally, it is a practice (intentionally or in case of unavailability of a particular brand of medicine) adopted by pharmacists to offer medicines of alternate brands of similar composition. On asking about such incidences, **67% of the respondents recalled instances wherein they were offered an alternate or substitute brand for the same composition during purchase,** whereas 33% could not recall any such offer.

Exhibit 26: Substitute / Alternative Medicine offered



Source: Primary Research by BRIEF India

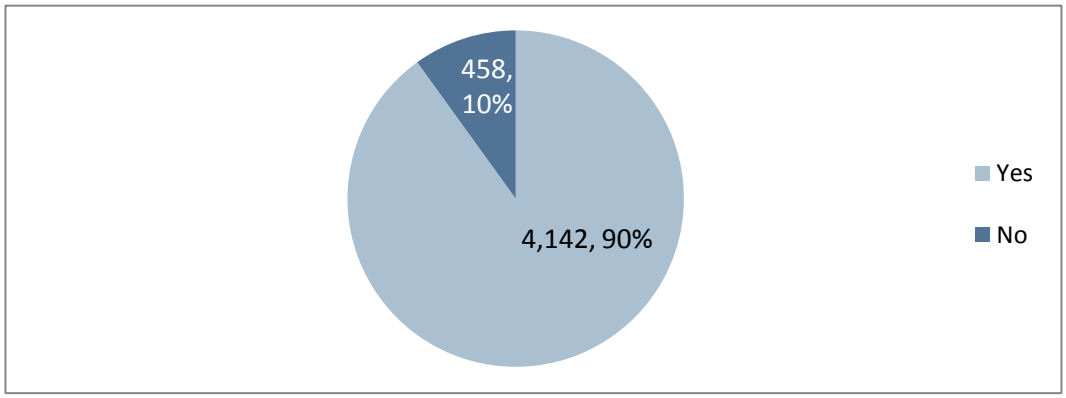
Furthermore, on being asked about any variations in the price of the alternate brands of the medicine offered by the pharmacist, it was observed that **42% of the sample found the alternate brands to be cheaper in price, 37% found the alternate brands to be of the same price,** and only 21% reported that

price was on the higher side. This shows that the most dominant trend in the market is to provide a cheaper alternative to consumers.

4.1.3 e-Pharmacy

4.1.3.1 e-Pharmacy – Way Ahead

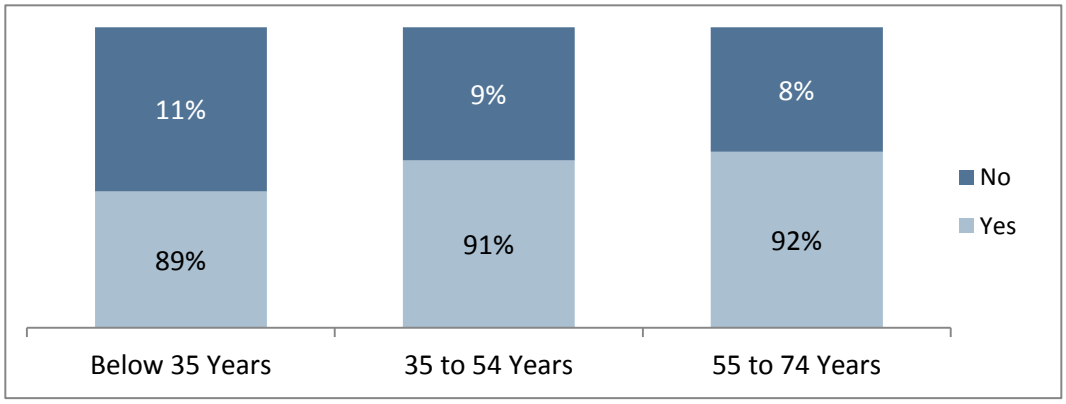
Exhibit 27: Considering e-Pharmacy in Future



Source: Primary Research by BRIEF India

The willingness of the target consumers toward adopting e-Pharmacy needs to be considered to understand its potential, as it is one of the major growth drivers in addition to Internet penetration, computer / smartphone penetration, computer literacy, health consciousness, and purchasing power. **On enquiring about the willingness of the buyers toward online purchase of their medicinal requirements in the near future, it was observed that 90% of the respondents showed such inclination, whereas 10% were averse to it.**

Exhibit 28: Considering e-Pharmacy in Future — Age-wise



Source: Primary Research by BRIEF India

Respondents across all age groups had shown receptiveness toward the concept of e-Pharmacy. **Consumers in the age groups of 65-70 years and 35-44 years have shown the highest intent to use e-Pharmacy in the future**. Respondents aged below 35 years (89%) have shown the lowest inclination toward the adoption of e-Pharmacy in the times to come.

Exhibit 29: Considering e-Pharmacy in Future by Patients with Chronic Diseases

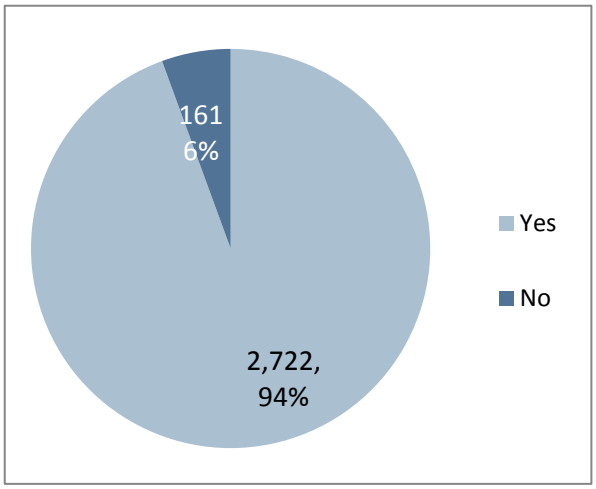
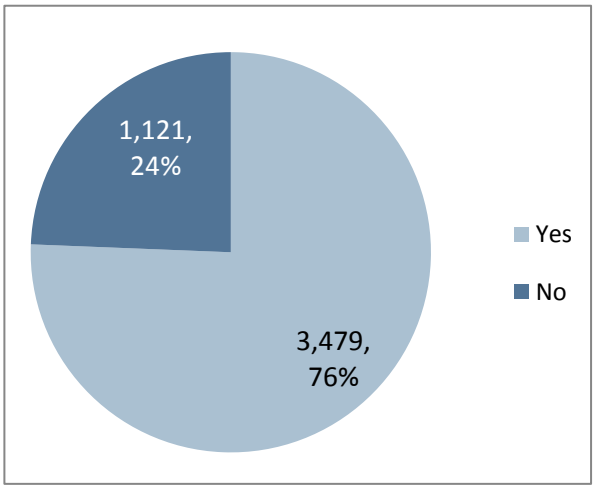


Exhibit 30: Convenience of Ordering from Mobile Application



Source: Primary Research by BRIEF India

The perception of consumers buying medicines for chronic diseases is expected to have a significant impact on determining the acceptance as well as growth of e-Pharmacy in the future. Among such respondents, the acceptability for e-Pharmacy as an important prospect has been found to be higher, with **94% of the respondents currently buying medicines for chronic diseases showing the inclination to accept e-Pharmacy in the future**, reluctance toward the same being displayed by only 6% of the sample.

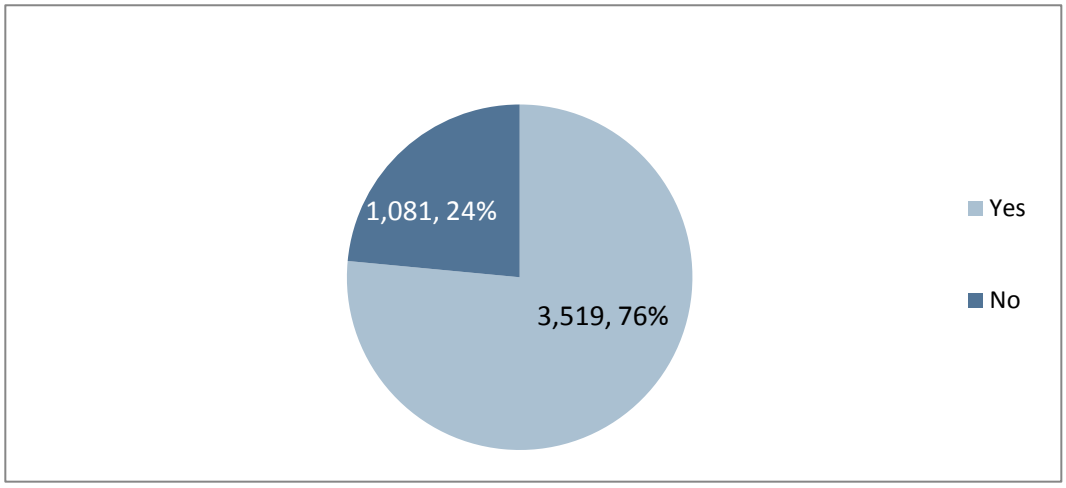
4.1.3.2 Features Attracting Consumers toward e-Pharmacy

The convenience factor associated with e-Pharmacies happens to be one of the major determinants for attracting more and more consumers. Against the routine purchase of pharmaceutical products from physical outlets, the respondents were enquired as to how much convenience online purchase of medicines using a mobile-based application would potentially bring. **Approximately, 76% respondents agreed that e-Pharmacy would be convenient as compared to the existing mode of purchase.**

To find out whether consumers get all the required medicines from a single store or have to go to multiple stores to obtain the same, the respondents were enquired on those lines. **A majority of the respondents (76%) stated that a single store or website sufficed their medicinal requirements.** A small

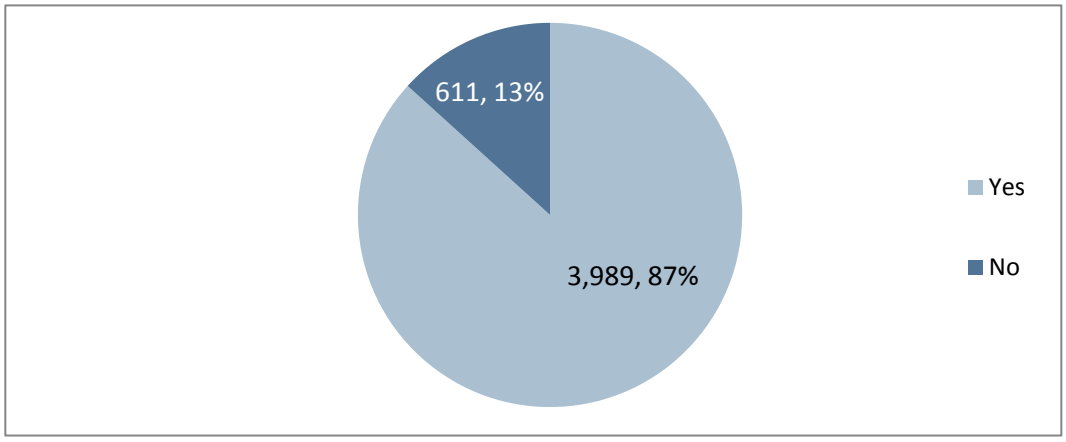
percentage of the respondents, i.e., 24% indicated that visits to multiple stores for buying medicines were necessary in their case.

Exhibit 31: All Required Medicines at One Store / Website



Source: Primary Research by BRIEF India

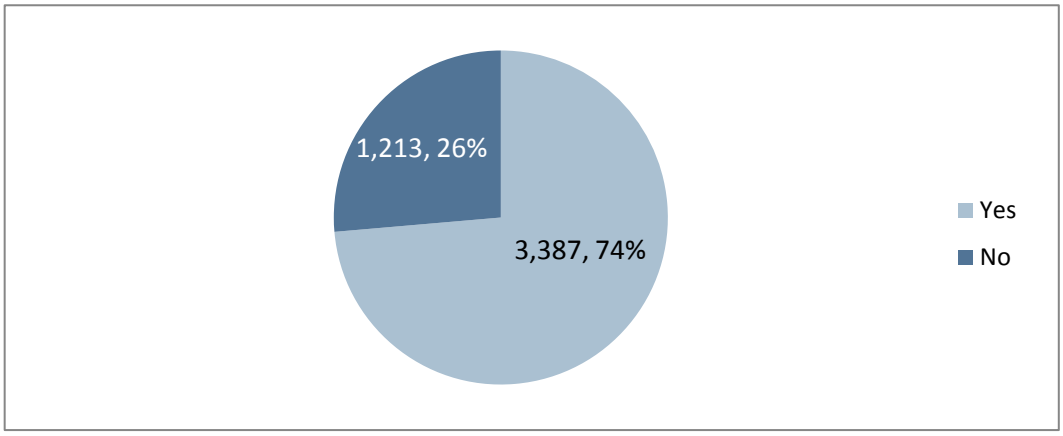
Exhibit 32: Home Delivery of Medicines



Source: Primary Research by BRIEF India

Around 87% of the respondents perceive that home delivery of medicines would be a major factor propelling the increase in acceptance of online shopping of medicines. According to them, this would be considerably helpful for the patients / end users as it would reduce their dependency on other persons for the purchase of medicine.

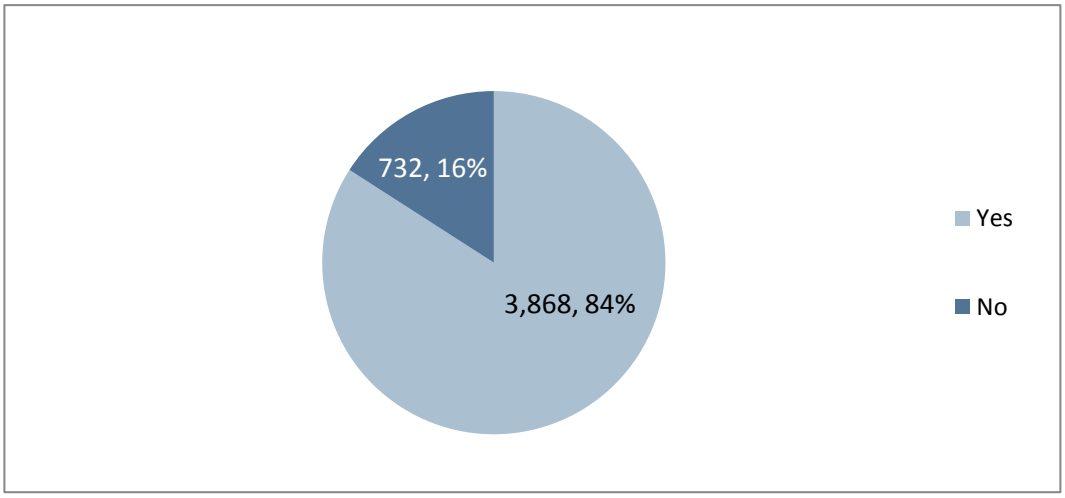
Exhibit 33: Better Price



Source: Primary Research by BRIEF India

Lower prices of products are also perceived as one of the biggest advantages of switching to online shopping of medicines. **Around 84% of the respondents are of the opinion that low prices, discounts, and savings on purchases would be a big feature that would attract consumers toward e-Pharmacy.**

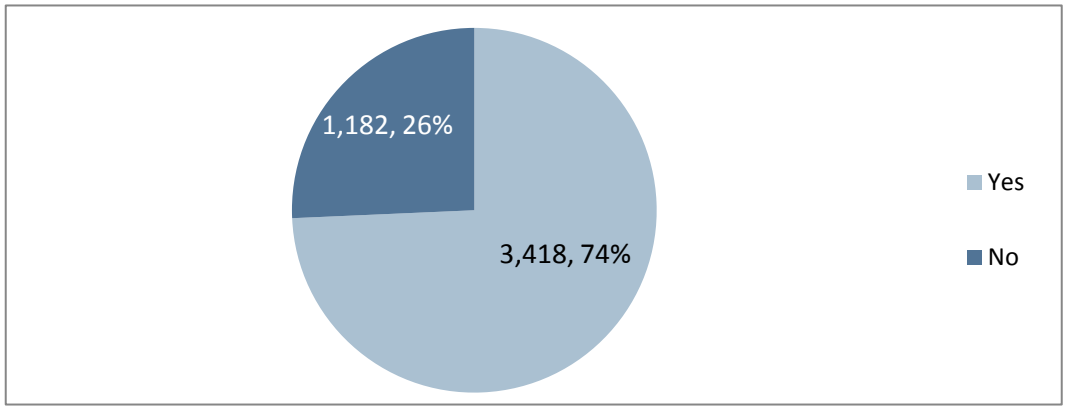
Exhibit 34: Choice of Delivery Time and Location



Source: Primary Research by BRIEF India

Around 74% of the respondents agreed that convenience in choosing the date, time, and location for the delivery of orders would improve the acceptability of e-Pharmacy in the market, leading to more takers for this value-added service.

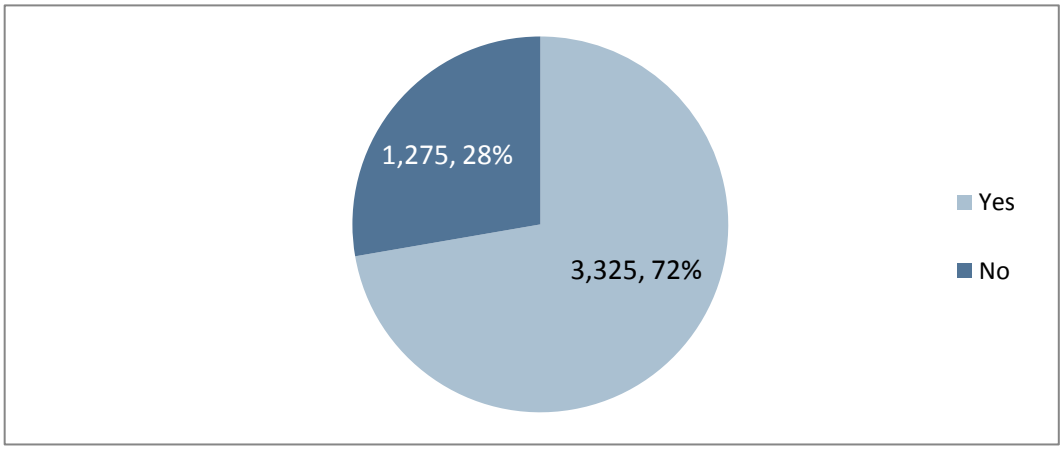
Exhibit 35: Quality of Medicines



Source: Primary Research by BRIEF India

Quality of medicines on offer happens to be a crucial determinant for attracting more and more consumers. Around 26% of the respondents think that quality of medicines, which is a key aspect having considerable ramifications on the health of people, would be compromised if medicine were traded online. However, a majority of the respondents, i.e., **74% are of the opinion that quality of medicines would not be compromised at e-Pharmacy stores, and will eventually be key to attracting consumers to this platform.**

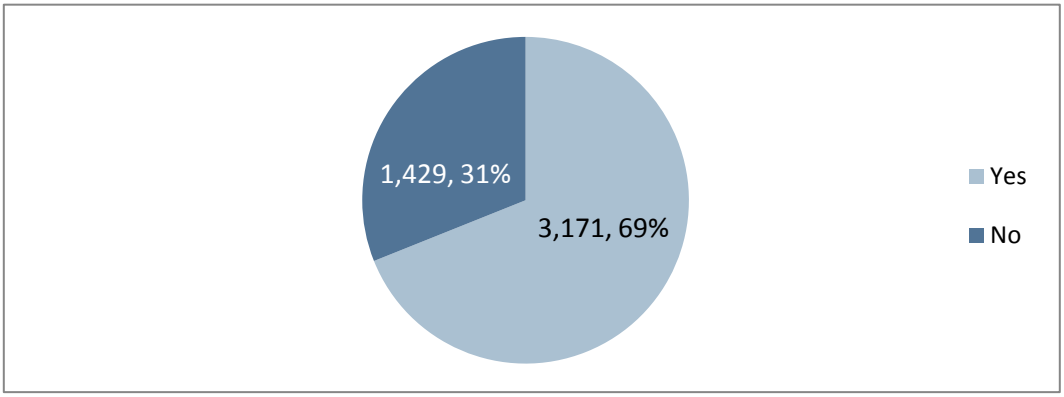
Exhibit 36: e-Bill for Tracking and Reimbursement



Source: Primary Research by BRIEF India

Approximately, 72% of the respondents feel that ease of tracking orders, convenience in cancellation of orders, and the option of reimbursement in online purchase of medicines are advantages that they will enjoy if they opt for e-Pharmacy.

Exhibit 37: Registration by regulators b



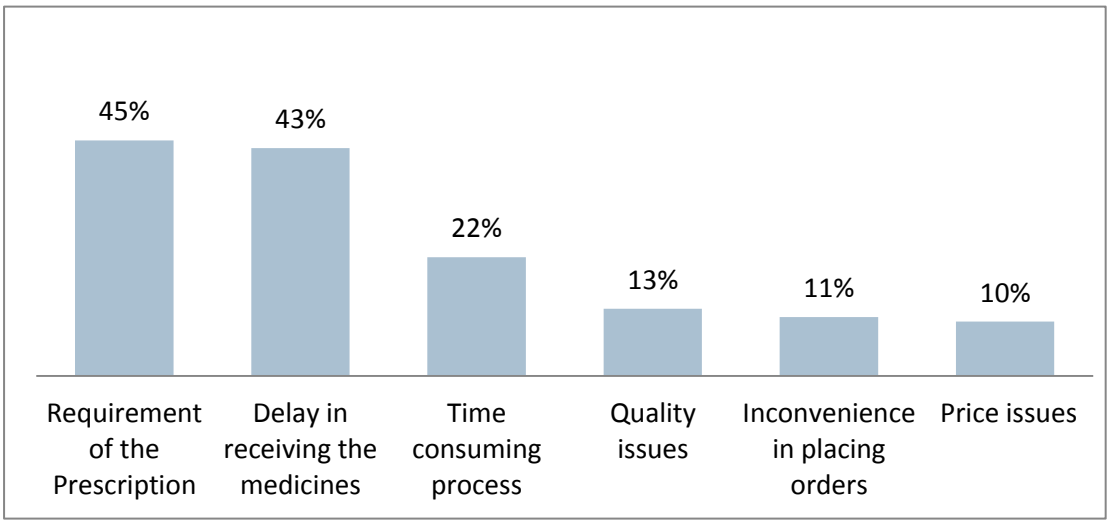
Source: Primary Research by BRIEF India

Registration of e-Pharmacies with the regulatory authorities like drug control authority would enable the consumers to differentiate among the e-Pharmacies. According to our survey, **69% of the respondents think that proper guidelines and certification of the e-Pharmacies by competent authorities would increase the base of online medicine shoppers**. The remaining 31% of the respondents are of the opinion that proper licensing and certification will not boost the market share of e-Pharmacy.

4.1.3.3 Perceived Issues in e-Pharmacy

Since the concept of e-Pharmacy is still at a nascent stage, consumers are expected to face different problems while placing orders online. These problems may be related to technology, operational processes or Government norms.

Exhibit 38: Perceived Problems during Online Transaction



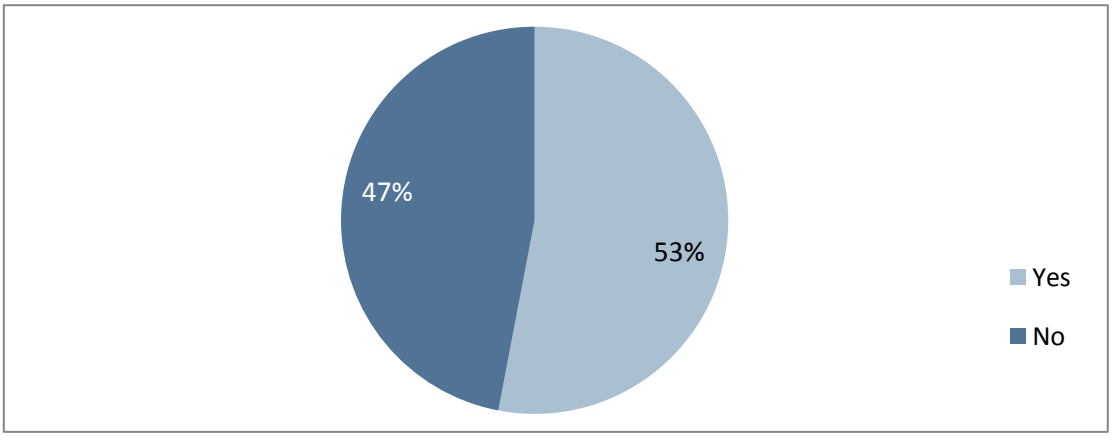
Source: Primary Research by BRIEF India

As per the respondents, **requirement of valid prescription (45%) by the e-Pharmacies has emerged as the major problems perceived while buying medicines online**. The **other major problem perceived by consumers was related to delays in delivery of medicines (43%),** which is related to the operational efficiency of e-Pharmacies in delivering medicines at the door steps of consumers in time. Furthermore, time-consuming processes to place the order for medicines online and quality issues were indicated by 22% and 13% of the surveyed consumers, respectively.

4.2 Physicians' Perspective

4.2.1 e-Pharmacy

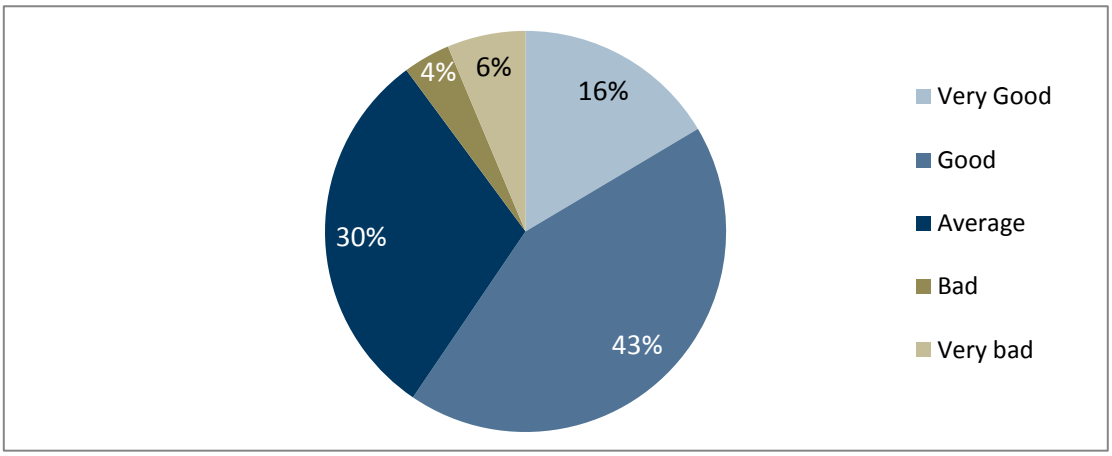
Exhibit 39: Awareness about e-Pharmacy



Source: Primary Research by BRIEF India

A survey of 150 medical practitioners was carried out in order to understand the awareness, perception, and other aspects of e-Pharmacy. With regard to the awareness of respondents vis-à-vis e-Pharmacy, the survey revealed that it is no longer a new phenomenon in the industry, rather a good percentage of respondets, slightly more than 50%, were already aware about e-Pharmacies. **Majority of the medical practitioners have awareness about e-pharmacy.**

Exhibit 40: Perception on e-Pharmacy



Source: Primary Research by BRIEF India

The overall perception regarding the shift of pharmacy to online-centric consumption is positive. Almost 90% of the respondents perceive e-Pharmacies as an acceptable means of sale and purchase of pharmaceutical products. Around 60% of the respondents perceive e-Pharmacy as a more convenient and more value-providing format whereas 30% perceive it just as an alternative to retail shopping. Only 10% of the respondents were averse to the idea of online shopping. **There is a positive perception regarding online sale of pharma products among medical practitioners. This reflects that there is a considerable demand for e-Pharmacy in the market.**

4.2.1.1 Benefits of e-Pharmacy

Exhibit 41: Easy Access

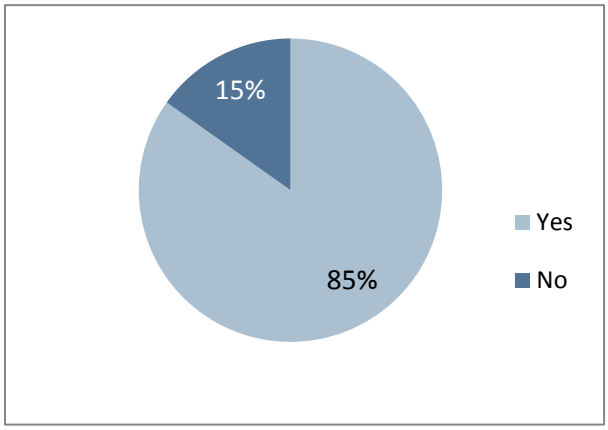
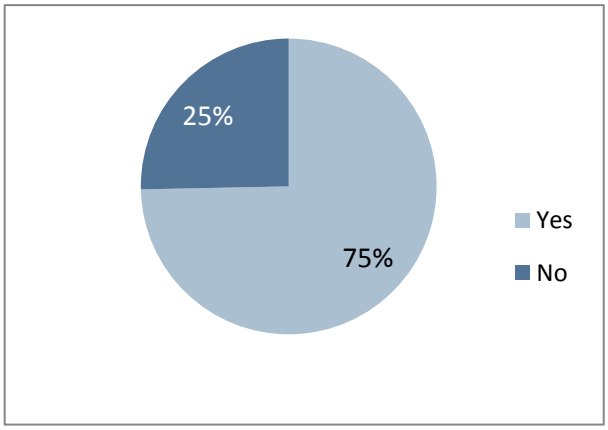


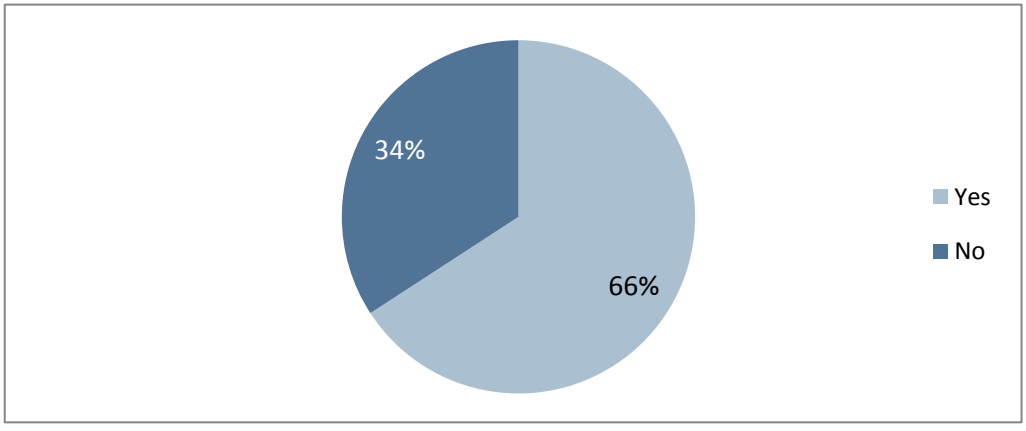
Exhibit 42: Convenience



Source: Primary Research by BRIEF India

The easy access and convenience factors associated with e-Pharmacies happen to be the major determinants for attracting more and more consumers, according to medical practitioners. On being asked about the benefits that e-Pharmacies provide, 85% and 75% of the respondents considered it as easily accessible and a more convenient alternative to regular retail buying, respectively. **The convenience factor of e-Pharmacy takes out the dependence of patients on another person and also saves time, according to respondents**.

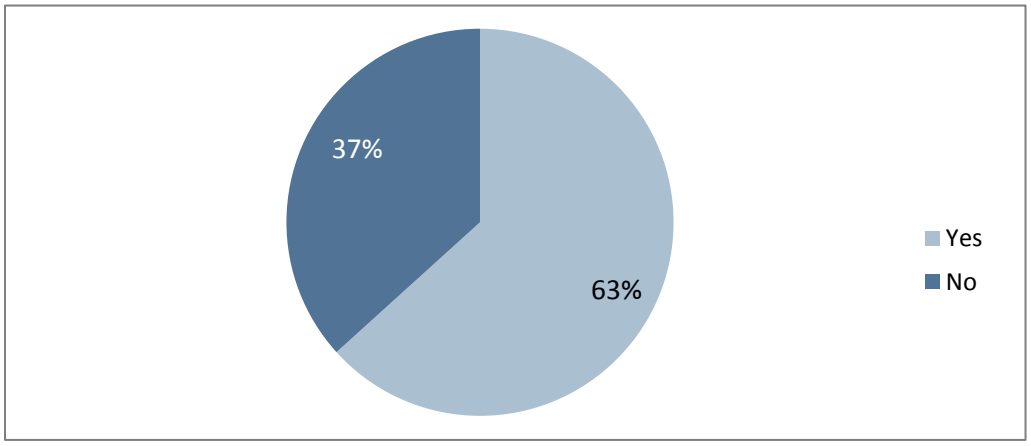
Exhibit 43: Price Benefits



Source: Primary Research by BRIEF India

Price benefits on medicines are also perceived as one of the biggest advantages of switching to online shopping of medicines. **Lower prices, discounts, and savings on pharmacy products were regarded as major value additions by approximately two-third of the respondent population**.

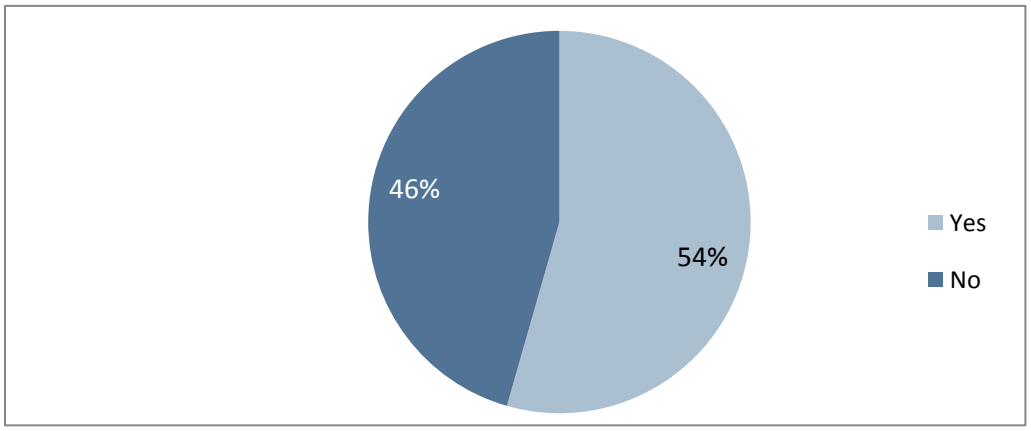
Exhibit 44: Easy Availability of Hard to Find Medicines



Source: Primary Research by BRIEF India

In normal practice, not all the types of medicines are available with all the pharmacies and it becomes hard for consumers to find particular medicines in nearby pharmacies. **63% of the respondents are of the opinion that the value addition that e-Pharmacies create includes the easy availability of *'hard-to-find medicines'***.

Exhibit 45: Better Product Information

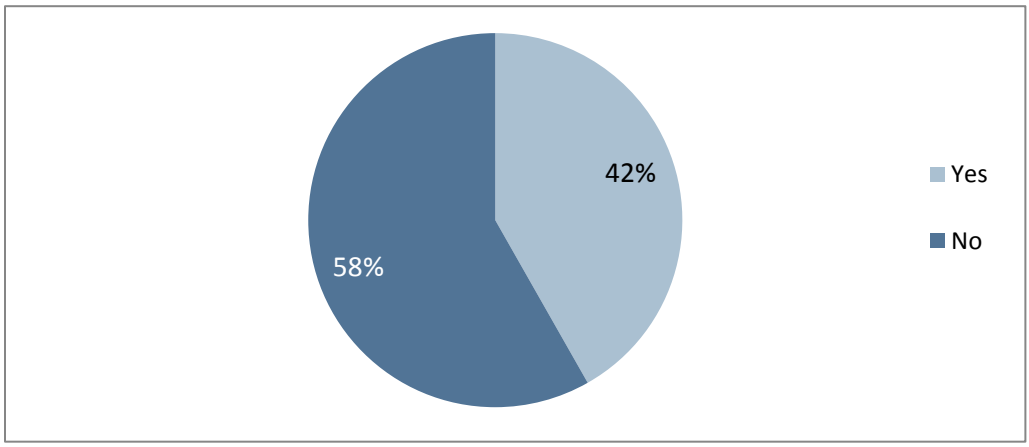


Source: Primary Research by BRIEF India

Improved information on products seems to be another benefit considered by 54% of the respondents. In their view, useful information about medications and diseases as well as links to

medical resources such as universities, government agencies, and health associations can be the advantages of e-Pharmacy.

Exhibit 46: Better Product Quality

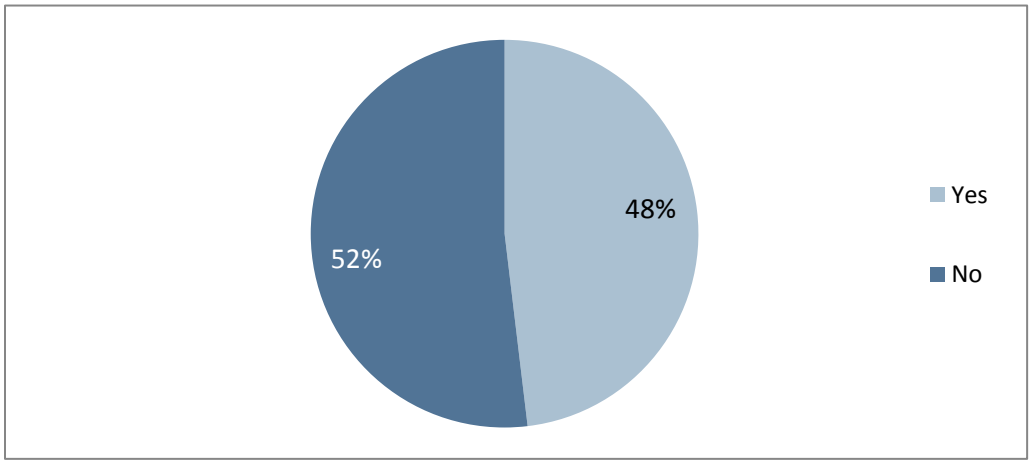


Source: Primary Research by BRIEF India

Quality of medicines on offer happens to be a crucial advantage for consumers in the view of medical practitioners. **Around 42% of the respondents think that quality of medicines, which is a key aspect having considerable ramifications on the health of people, would not be compromised at e-Pharmacies, and will eventually be key to attracting consumers to this platform.**

4.2.1.2 Perceived Issues in e-Pharmacy

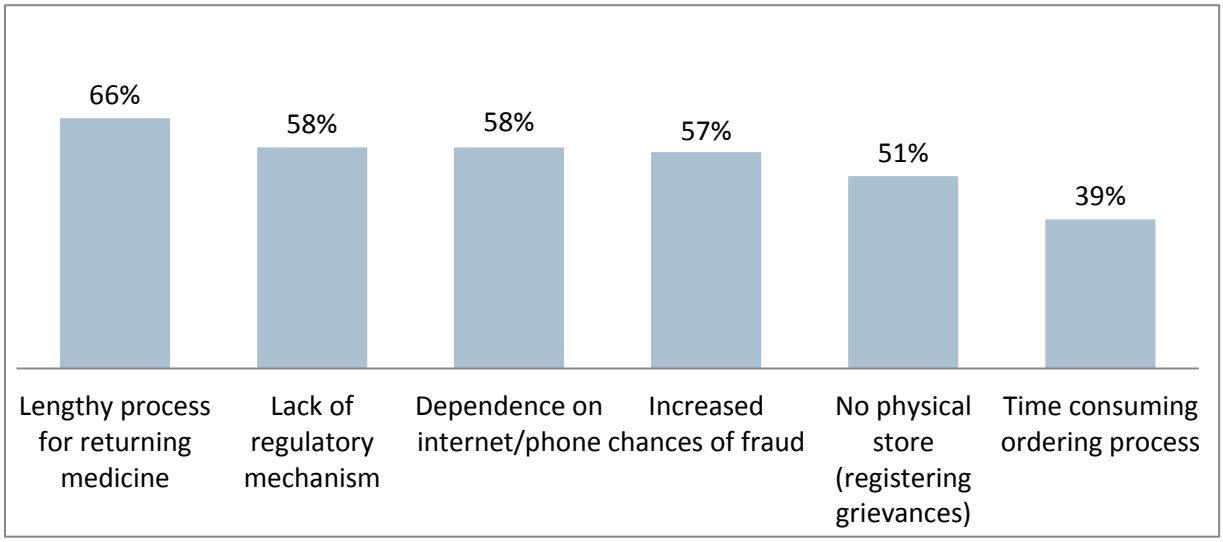
Exhibit 47: Risks Perceived



Source: Primary Research by BRIEF India

The concept of e-Pharmacy is generally under discussion owing to the risks it carries. Medical practitioners, placed in a better situation, can give us a fair idea about the issues related with e-Pharmacies. Among the sample respondents, **52% ruled out any risks associated with e-Pharmacy** and its use, on the other hand, 48% perceives that there are one or multiple kinds of risks involved in the online merchandise of medicine and health products.

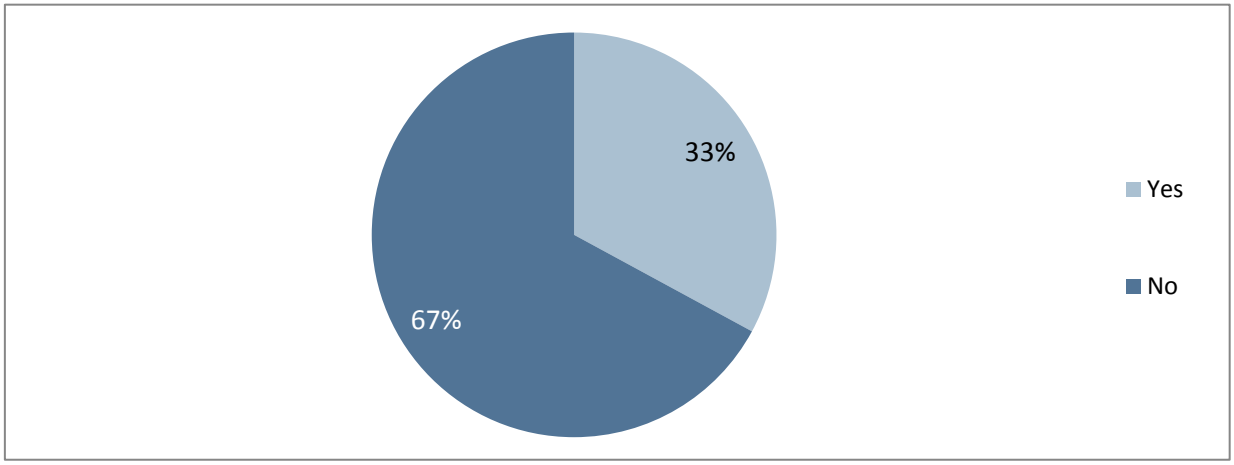
Exhibit 48: Risk Associated with e-Pharmacy



Source: Primary Research by BRIEF India

Respondents who perceived risks in e-Pharmacy were asked to share their perception regarding various kinds; 66% of them perceived the "lengthy returning process" to be a major risk in the operations of e-pharmacy, 58% thought that lack of regulatory mechanism and dependence on the Internet / phone is a considerable risk one will have to deal with while choosing online buying of medicine over regular retail buying. . Non- availability of a physical store for addressing grievances of the consumers was perceived as a serious risk by 51% of the respondents, whereas 39% thought that online buying of drugs would be time consuming compared to physical buying at retail outlets. **Most of the risks perceived by medical practitioners in relation with e-Pharmacy are related to operational challenges as well as regulatory concerns.**

Exhibit 49: Clarity on e-Pharmacy Laws

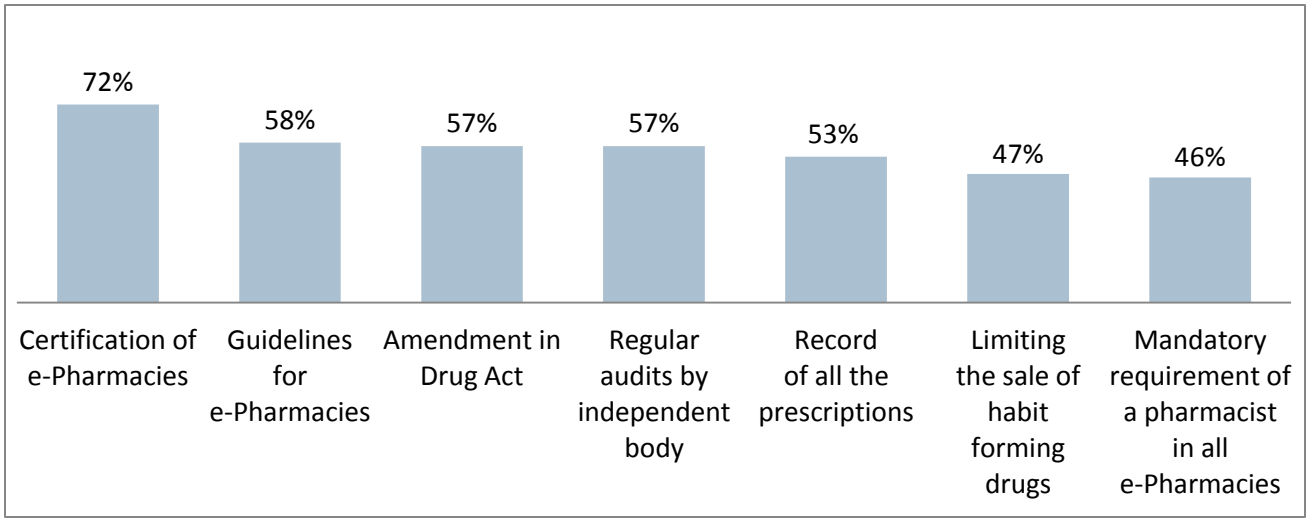


Source: Primary Research by BRIEF India

To get a better understanding of regulatory frameworks governing e-Pharmacies, the views of medical practitioners are of utmost importance. According to survey findings, **67% of the target population is of the opinion that there is ambiguity in the laws governing e-Pharmacies,** whereas only 33% think that there is clarity on the legal aspect of e-Pharmacies.

4.2.1.3 Mitigation of Risks

Exhibit 50: Mitigation of Risks Associated



Source: Primary Research by BRIEF India

Sample respondents were also asked to provide suggestions regarding moderation of risks associated with e-Pharmacies. Findings show that trustworthiness is a major concern; which 72% of the respondents suggested that e-Pharmacies should be certified by competent authorities and only then they should be allowed to sell medicines. More than half of the respondents wanted regulatory changes in the form of proper guidelines for e-Pharmacies.53% of the respondents suggested records should be maintained of all the prescriptions by e-Pharmacies. 47% of the respondents also suggested that there should be a limit put on the sale of habit forming drugs to minimize the risk, whereas 46% wanted a set of mandatory requirements from the Government for e-Pharmacies.

Most of the suggestions entailed a review of existing regulatory environment governing e-Pharmacy from setting of guidelines to Certification of legitimate players.



Recommendations

5 Recommendations

Since e-Pharmacy is only technology advancement, it is recommended that the market place model should be allowed and its benefits should be made available to the Indian consumers but with sufficient safeguards and under stringent regulatory control to protect the interest of the consumers.

The implementation of a fool-proof e-Pharmacy model needs to be based on four guiding principles:

- Orderly growth of e-Commerce in India
- Model that best serves the following consumer interests, should be adopted:
  - Patient Safety
  - Proper Access to Medicines
  - Authenticity
- Business to operate on a level playing field with same rules without selective bias
- Positive business models / entrepreneurship should be enabled and encouraged, while players who try to take short cuts / violate the law should be brought to book

Recommendations for Due Diligence of e-Pharmacy Model

Physically Verifiable Address of the Seller:

In e-Pharmacy, the dispensation of drugs must only be undertaken through the physical pharmacy, duly licensed in this regard under Part VI of the Drug Rules.

Separate License and Registry of the e-Pharmacies:

- A separate license and registry of e-Pharmacy players should be created.
- There could be a logo and a registration number, which would enable the user to cross verify from the regulator's website. The European Union (EU) has issued a common logo for legally operating e-Pharmacies in the EU member states.
- Thus, licensed physical pharmacies, which desire to use the means of the Internet to facilitate the sales of drugs, would require procuring this additional license.
- Furthermore, for entities which operate as a pure marketplace models (that is, entities that neither stock drugs nor run a physical pharmacy), would only require to obtain the separate license from the appropriate authority. This could be an important measure to fight against the illegally operating e-Pharmacies.

Dispensation of Drugs:

- The dispensation of scheduled drugs should be against a valid prescription from a Registered Medical Practitioner ("Prescription Drugs") and must be undertaken by, or under the direction and personal supervision, of a registered pharmacist.
- The licensed pharmacy and the registered pharmacist undertaking the dispensation of drugs ordered on the e-Pharmacy must necessarily comply with the conditions stipulated in this regard under Part VI of the Drugs Rules.
- The e-Pharmacy would be permitted to process the order for prescription drugs only after obtaining (i) the original prescription; (ii) a scanned copy of such original prescription.
- Audit trail (including the address and name of the patient) should be digitally stored to prevent abuse and ensure tracking in case there is any adverse event to a medicine.

Restriction for Habit-forming Drugs:

Narcotic medicines (like morphine) and other habit-forming drugs (like sleeping pills) should be restricted to be sold through an e-Pharmacy model. There should be adequate checks and balances in place to prevent sale of any such drugs.

Qualified Professionals:

An e-Pharmacy should have a team of qualified pharmacists for validation of prescription and for handling any drug related queries from the patients. Contact information should always be clearly disclosed for any communication.

Information on the Website (e-Pharmacy):

- The website / mobile application must clearly provide information regarding the logo, license number, and its authenticity.
- The name and contact information (address, phone number, and e-mail id) of every pharmacy, along with the name of the owner of such pharmacy, from where the dispensation of drugs may be undertaken, after the order has been placed on the e-Pharmacy regarding the same.
- The name and registration number of the responsible pharmacist who would be responsible for the dispensation of drugs in the above mentioned pharmacies.
- The contact details (email id, phone no.) of the pharmacist should be clearly mentioned for any drug-related queries.

Confidentiality of Patient Information:

The e-Pharmacy would be required to fully comply with the provisions of the IT Act read with the RSP Rules regarding the handling and transfer of any personal information of the patients.

Distribution (Delivery) of Drugs:

While undertaking the delivery, the following conditions must be kept in mind by the person / entity arranging for the delivery of drugs:

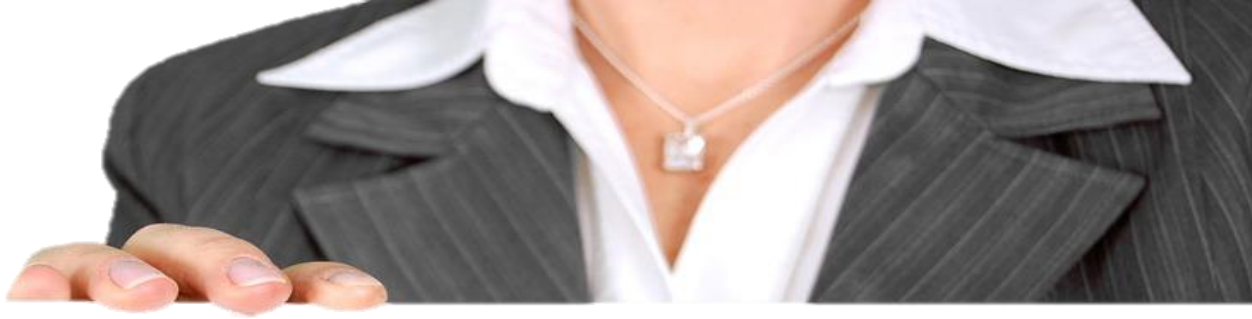
- The consent from the end customer must be obtained for the provision of delivery services.
- Suitable arrangements must be made to ensure that the medicines are packed, transported, and delivered in such a way that their integrity, quality, and effectiveness are preserved.
- The delivery mechanism must provide a verifiable audit trail for the medicine from the time it leaves the pharmacy to the time it is handed over to the end customer or such other person duly designated on his / her behalf.
- The delivery mechanism must preserve the confidentiality and privacy of the end customer and the specific drugs ordered / medical conditions treated, etc.

Generic Marketplaces:

For any sale of prescription drugs over generic e-Commerce marketplaces, the safe harbor provisions provided to them under IT Act should be used and promoted within the regulatory framework. This would provide a reasonable precaution against misuse of e-Commerce platforms for any illegitimate transactions. To support intermediaries in preventing the misuse of their platform by third parties, the Government needs to have a proper guideline for the regulator or the administrator to provide appropriate information to intermediaries in taking down and removing the advertisements for sale of prescribed drugs under the parameters of IT Act. This is also in line with the recent ruling of Honorable Supreme Court of India in Shreya Singhal vs. UOI (2015) in a similar subject matter i.e. dealings of

regulators and law enforcement agencies with intermediaries for any misuse of its platform by third parties.

Further the Government should in fact consider using e-Commerce to play an important role in reaching out to the rural and sub-urban consumers specially in case of OTC drugs / medicines and basic necessities which otherwise are not accessible conveniently to the rural population.



CONCLUSION



6 Conclusions

An e-Pharmacy aligns very well with the national development objectives and has clear and tangible benefits to the consumers as well as the industry. Meanwhile, it has also been observed that growth of e-Commerce and retail are complimentary and reinforce each other. By leveraging the technology in a smart way and under stringent regulatory control, the e-Pharmacy has a scope of adding immense value to the existing retail industry in India.

Besides, Internet-based transactions are well aligned to address key known issues in pharmacy retail for tracking authenticity, traceability of medicine, abuse prevention, addressing consumption of drugs without prescription, tax loss, and value-added services for consumer empowerment in healthcare, which are all key areas of national development.

Additionally, this would also enable the doctors to adopt e-Prescriptions in a big way, which would in turn address the significant issue of errors due to misreading of doctors' handwriting as well as recording of data for public health planning.

E-Commerce offers many advantages to consumers and the most important is the convenience or ease with which drugs can be procured. The benefits the e-Pharmacy model brings to consumers, who are the majority, should be the first priority of the Government. It is critical that the regulatory framework in the country be conceptualized keeping in mind the larger interests of the consumers in the country. If technology is available to cut the intermediary costs on medicines, it must be allowed to be used to its

full potential as it will bring down the retail price of many drugs and benefit the middle-class, which is most impacted by the price hikes.

This is the right time for the Government of India to define policies and guidelines for e-Pharmacies and come up with a clear-cut operating model, in line with the concerns of the regulator, while providing benefits to the consumers.

Annexure

Status of E-Pharmacy in Other Countries



United States

E-Pharmacies are permitted in the US but the Pharmacy must be domiciled within the US. E-Pharmacies must be registered with the Drug Enforcement Administration (DEA) to dispense "controlled substances", must be compliant with Federal Food, Drug and Cosmetic Act, Federal Controlled Substances Act, and cannot dispense medications that are not approved by the FDA. The pharmacy must comply with state-specific rules in addition to federal rules.

Prescription drugs can only be sold if the patient submits valid prescriptions. A prescription is only considered valid if issued by an authorized medical practitioner. E-Pharmacies will have to build robust systems in place to verify the accuracy of drug prescriptions that on the face appear to be issued by authorized medical practitioners (e.g. frequent orders of opioids might indicate that patient suffers from drug-abuse and is likely getting his prescriptions from an unethical medical practitioner).

Patients must have the ability to easily contact e-Pharmacies should they have questions regarding dosage, drug type and/or adverse effects post-drug usage.

FDA guidelines suggest that a legal, regulated "e-Pharmacy":

- Requires a valid prescription
- Provides a physical address in the United States
- Is licensed by the state board of pharmacy in the state and the state where the pharmacy is operating
- Has a state-licensed pharmacist to answer your question

Brazil

Brazil-based pharmacies fills online orders, but with restrictions. Pharmacy has to be licensed in Brazil. An e-Pharmacy must post its ANVISA (Brazilian Health Surveillance Agency) permit number on its website, which provides a link to a searchable database of licensed Internet pharmacies. These pharmacies must be open to the public, with a pharmacist present during all hours of operation.

Canada

Canada-based pharmacies may fill online orders, but with the restrictions. The licensed pharmacy selling drugs over the Internet must be the website of a brick and-mortar pharmacy with a physical street address. However, there is no national licensure for pharmacies — it happens at the provincial level.

According to Health Canada, any licensed pharmacy that offers Internet services must meet the standards of practice within its own province.

United Kingdom

Internet Pharmacies are permitted in Great Britain but that must be registered with the General Pharmaceutical Council (GPhC). The GPhC operates an Internet pharmacy logo scheme to identify legitimate e-Pharmacies so that the public can be sure they are purchasing safe and genuine medicines online. The logo not only provides visual means to help patients identify whether a website is connected to a registered pharmacy, but it will also provide a direct link to the GPhC website. By clicking on the logo, visitors can verify the registration details of both the pharmacy and the pharmacist(s) behind the website.

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