DISSERTATION

ON

PHARMACY BENEFIT MANAGEMENT AND ROLE OF DELL IN IT

SUBMITTED BY

DR.MANI SHANKAR SHARMA

PG/14/030

UNDER THE GUIDANCE OF

PROF. ANANDHI RAMACHANDRAN

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To whomsoever it may concern

This is to certify that **Dr. Mani Shankar Sharma** of **International Institute of Health Management Research, Delhi** has been working with Dell International Services for his summer project.

Project Details:

Project Name	**: Pharmacy benefit management and role of Dell in it**
Duration	**: 08 February 2016 – 29 April 2016 (3 Months)**
Location	**: Bangalore**
Guide Name	**: Mandeep Singh**
Sponsor Name	**: Ajay Aiyar**

He has successfully completed his project and his performance during the tenure of the internship has been found to be satisfactory.

His findings in course of the project has been found to be practical and relevant and some of the recommendations will be incorporated on the floor on approval from the business.

Thanking You,

Regards,

Ashish Kumar
Talent Acquisition Sr. Advisor
Dell International Services India Private Limited

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This is to certify that **Dr.Mani Shankar Sharma** student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from International Institute of Health Management Research, New Delhi has undergone internship training at **Dell international services,Banglore** from 8th Feb, 2016 to 29th April, 2016.The Candidate has successfully carried out the study designated to him during internship training and his approach to the study has been sincere, scientific and analytical.

The Internship is in fulfilment of the course requirements.

I wish him all success in all his future endeavours.

Dr. A.K. Agarwal
Dean, Academics and Student Affairs
IIHMR, New Delhi

Dr.Anandhi Ramachandran
Associate Professor
IIHMR, New Delhi

Certificate of Approval

The following dissertation titled "**Pharmacy Benefit management and role of dell in it** " at **Dell healthcare services** is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **Post Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation.

Name	Signature
Dr. Nishikant Bele	
Dr. Anandi Ramachandran	
Dr. Ommen John	

Certificate from Dissertation Advisory Committee

This is to certify that **Dr. Mani Shankar Sharma,** a student of the **Post- Graduate Diploma in Hospital and Healthcare IT Management** has worked under our guidance and supervision. He is submitting this dissertation titled " **What is PBM and role of Dell**" at "**Dell International Services India Private Limited**" in partial fulfillment of the requirements for the award of the **Post- Graduate Diploma in Hospital and Healthcare IT Management.**

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

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Apr 29, 2016

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This is to certify that the dissertation titled Pharmacy Benefit Management and role of dell in it. and submitted by **Dr.Mani Shankar Sharma** Enrolment No.**PG/14/030** under the supervision of **Mr.AjayAiyar &Dr.Anandhi Ramachandran** (Associate Professor, IIHMR-Delhi) for award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from **8th Feb 2016 to 29 April,2016** embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

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FEEDBACK FORM

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Area of Dissertation : **Pharmacy Benefit Management and role of Dell in it**

Attendance : **100%**

Objectives achieved : **Successfully completed dissertation and expectations were met.**

Deliverables : **1. Trained in different EMR products.**
2. Shadowed on request tasks

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Suggestions for Improvement: **Understanding of end to end process.**

Ajay

Signature of the Officer-in-Charge/ Organisation Mentor (Dissertation)

Date: Apr 29, 2016
Place Bangalore

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List of Abbreviations

1.	ACA	Affordable Care Act
2.	FDA	Food and Drug administration
3.	ERISA	Employee Retirement Income Security
4.	NCD	Non-Communicable Disease
5.	PDP	Prescription drug plan
6.	MAC	Maximum Allowable Cost
7.	AWP	Average wholesale Price
8.	STD	Sexually transmitted diseases
9.	NAS	New active substances
10.	IDN	Integrated delivery network
11.	CBO	Congressional Budget Office
12.	AAFP	American Academy of Family Physicians
13.	NHEP	National Health Expenditure Projections
14	BPO	Business process outsourcing
15	HCP	Health care professional

1. Organization Overview

Dell is a leading provider of end-to-end scalable solutions for customers around the world—delivering technology solutions that enable people everywhere to grow, thrive, and reach their full potential. Michael Dell founded the company more than 30 years ago in Austin, Texas, and since then we have been listening to and engaging our customers with their insight guiding everything we do. Dell's end-to-end solutions strategy—and the innovations and investments it makes to enable that strategy—are, as you would expect, truly customer-inspired.

Dell's industry focus

- Healthcare and life sciences
- Banking, financial services, securities and insurance
- Manufacturing, energy and utilities
- Consumer industries (retail, packaged goods and logistics)
- Education, state and local government
- Travel and hospitality
- Telecommunications, media and technology
- U.S. federal government

Dell in Healthcare

Dell has established four solutions groups to support customer segments—end-user computing, enterprise solutions, software and services—and is committed to designing and delivering technologies that are practical, relevant, and customer-inspired. Dell's goal is to provide the best tools, products, and services for realizing hosting efficiencies, while improving service delivery.

Through automation, standardization, and the right set of tools, IT works smarter to provide the "always-on and anywhere" service that end users expect.

As a leader in healthcare IT for more than 30 years, Dell is continuously chosen by customers to understand and identify the right solutions that help improve care, drive overall efficiency, and manage financial risks. The company offers end-to-end solutions for healthcare providers and health plans, including hardware, software, hosting, application implementation and support, systems integration, consulting, business process services, and services for Electronic Health/Medical Records.
(EHRs/EMRs), Health Insurance Exchanges (HIXs), revenue cycle management, and policy administration.

Dell's global reach encompasses operations in North America, Europe, the Middle East, and Asia.

Dell currently manages IT projects for more than 1,000 hospitals worldwide. The team of experienced technologists within Dell has gained an in-depth understanding of the challenges inherent in integrating IT solutions within the most complex healthcare multi-vendor environments.

Dell's secure end-to-end solutions and services enable healthcare organizations to solve critical problems and enhance patient care. The company's goal is to build and support information-driven healthcare environments. This dynamic environment empowers caregivers and patients with technology, data, and processes to integrate new IT services into their daily routines for the betterment of care delivery.

Dell has successfully assisted customers with meeting their organizational goals through offering support from extremely qualified and experienced individuals who "know" healthcare organizations and workflow processes.

Industry Recognition

- Positioned by Gartner in the "Leaders" quadrant of the *Gartner Magic Quadrant for Data Center Outsourcing and Infrastructure Utility Services, North America* for the fifth consecutive year.
- Ranked "#1 IT Services Provider to Healthcare Providers," by Gartner for the sixth straight year.
- Positioned as a leader in Everest Group's "IT Outsourcing in the Healthcare Provider Industry—Service Provider Landscape with PEAK Matrix Assessment" for a third consecutive year.

Learning

During my internship in DELL international services, Bengaluru,

I learned about various things given below:

- Underwent trainings for various processes followed in the organization.
- Workflow of the support team.
- How the ticketing system works.
- Daily monitoring tasks

2.Abstract

Pharmacy benefit management and US healthcare industry have gone into major transition which has helped millions of people to provide better healthcare services & care and has enhanced their life. As prescription, drugs plays a major role in services which has increased a larger usage of medicine increasing the cost of medicine and led to increased drug expenditure to billions in past decade. As in addition to Medicare that provides care to senior citizen and other Medicare beneficiaries these benefits have leveraged the customers to choose prescription drug plan as, the health insurance companies have provided coverage to large number of corporate which have insisted them to hire a PBM to ease the workflow and in controlling their cost.

PBM manages the prescription drug coverage deals with number of pharma companies and retail pharmacies so that the employee or an individual can fill prescriptions anywhere and take the benefit in any of the location among the United States. PBM maintains the drug Formulary which is maintained according to the health insurance companies consent as they will provide the coverage to Employees or individuals. The consumers are benefited as they need to provide low copayments and avail the benefits with low drug cost.

US healthcare has gone through certain refinement in providing services to individuals and even health insurance Plans for individuals. As there are large number of individuals those are not insured under any plan. Affordable care act had contributed in providing care to large number of customers which had made significant impact on health insurance companies and PBM as they are in need of large customizable product and support to manage the huge transactions of Revenue Cycle which all includes Medicare Part- d prescription drug. Impact of ACA and emerging PBM will close the Medicare prescription donut hole in following decades as coverage spreads over the states. And as Medicare eligibility is expected to go more than 77 million in 2030[4] .

Market share of PBM is rising as they are willing to optimally position themselves to collaborate with health insurance companies. This competition had led to large number of Merger &Acquisition deals with them. Top three companies having competition with each other are- Express Script, CVS Health & Catamaran [1]. Major factors responsible for the growth of US PBM industry are rising aging population, increasing life expectancy and occurrence of chronic and infectious diseases which increases the healthcare expenditure.

3.Introduction

Pharmacy benefit management manages the prescription drug benefit for health plan sponsors such as employers, labor unions, and Health Maintenance Organizations (HMOs). It acts as the third party administrator among pharmacies, drug manufacturers, insurers, and consumers with prescription drug coverage. It comprises purchasing techniques which includes pharmacy networks, negotiated discounts and rebates, preferred drugs & utilization review. Health plan sponsors often hire PBMs to manage prescription drug benefits for their members. Eighty-five percent of Americans with prescription drug coverage receive their benefits through a PBM. It strengthen the ability of health plan sponsors, employers to deal with pharmaceutical prices, physician practices and drug cost .PBM is a part of revenue cycle management which is the financial process of patient care episodes from registration to final payment .

4. PBM services

Pharmacy Benefit Managers (PBMs) are hired as intermediaries by plan sponsors (employers and health insurance organization) to manage the coverage of drugs to plan members by outpatient pharmacies. In reference to that the most important function of PBM is claim processing and paying pharmacies for drugs dispensed, PBMs usually also manage the pharmacy benefit in context to assure appropriate drug use, reasonable cost, safety and value for money. The specific functions of PBMs include:

Network pharmacies: PBMs negotiate discounted reimbursement rates with retail pharmacies in exchange for access to the PBM members' business. Without the services of a PBM, maintaining relationships with a wide network of retail pharmacies, in order to assure convenient access for beneficiaries, would be prohibitively expensive for many plan sponsors.

Claim Processing: PBMs provide services to enable pharmacies to validate, whether a prescribed drug is covered by the plan and the member's co-payment. The pharmacy transmits the point of sale information to the PBM, which validates the claim, and reimburses the pharmacy with the agreed amounts for the drug dispensed and the pharmacy dispensing fee. The PBM is reimbursed by the plan sponsor the contractually agreed amounts for these services. Such information exchange require

significant investments in fixed cost, but once invested can be expanded so that can be widely used that will help in wide convenient financial transactions and creating economies of scale for large PBMs.

Drug formularies: there are certain lists of drugs that are covered by the plan and are kept as per approval with health sponsors. (Prior approvals) with the PBM as the physician prescribes the patient. (Step edits) patient look for less expensive drug as they get approved for costliest one.

There are complete set of physicians, pharmacist who review the FDA approved drug and line them according to their effectiveness, safety, and cost which helps in disease management and designing the Drug formularies. PBM have different levels in their plans to manage patient care as they have plans according to tiers as they have three or four tiers they are lined as per the cost and brands as the lower tier may include a set of drug which is generic drug with low cost and least copay and as employers go with higher formularies they comprise with specialty drug with higher copays. As open formularies covers all sets of approved drugs and closed set exclude the specific drugs from coverage. It all depends on the employers which plan they prefer.

Negotiation with pharmaceutical manufacturers: As negotiation is cost saving to the PBM which benefits in generating revenues to the organization and assist in drug

Utilization to the beneficiaries. As PBM negotiates on list of branded drugs from the manufacturers creating rivalry as generic drugs with similar efficacy and safety are present with low cost. So PBM negotiates by placing only one or two drugs on preferred tier which is relatively low cost sharing and gains market share from non-preferred drugs with higher cost.

Mail-order pharmacy: PBM are providing these services to eliminate the retail pharmacies as the process go long by them from manufacturer to wholesaler which adds cost to the beneficiaries as the mail order pharmacy are better and cost effective as they directly deal with manufacturers.

Specialty pharmacy dispensing services: PBM are involved in numerous marketing strategy to expand their business they have in house specialty pharmaceuticals which constitutes injectable, infusions, cold chain storage which order direct mail order distribution to their members with home infusion as infusions are done in physician's office are not part of pharmacy benefits they come under Patient medical benefits.

Drug utilization: these drug utilization standards are provided by government programs Medicare and Medicaid. As it constitutes reviewing of patient medication

data and to ensure appropriate prescribing, avoiding medication allergies and better management. It's also known as Drug utilization review

Compliance and therapy management services: these services provided by PBM in order to facilitate the achievement of positive therapeutic result. As the service is designed to allow local pharmacists to work collaboratively with local prescribers to enhance our members with quality of care and reduce overall healthcare costs. Such programs helps in reducing the medication error and to avoid drug related allergy.

Different plans For Sponsors – health plans now owns their own in house PBM but they have different plans in today's scenario as employers of larger packages may take core formulary PBM services in house rest may outsource pharmacy network management and claim processing to other PBM. The evidence suggests that small employers are more likely to carve in pharmacy benefit management to their health plan administrator: 66% of small employers contract for their PBM through a health plan administrator and only 30% contract with a PBM directly, whereas for large employers 30% contract through a health plan and 65% contract directly with a PBM (PBMI, 2013).

5. PBM Business Model:

As PBM manages the formularies and the manufacturers sell drug to wholesaler shows the flow of money and goods in pharmacy benefit management. Pharmaceutical manufacturers typically sell their drugs to wholesalers, such as McKesson and Cardinal Health, which distribute the drugs to pharmacies, including independent and chain retail pharmacies and PBMs' mail order pharmacies, which dispense the drugs to patients. PBMs develop and manage formularies, contract with retail pharmacies, and collect rebates from drug manufacturers, and dispense drugs through their mail order pharmacies. They are compensated by plan sponsors for these services. Each stage of this supply chain incurs costs and adds a markup or margin, to cover these costs. The functions of PBMs include not only claims processing but also managing the choice and cost of drugs on the formulary and the costs of the distribution chain. Prescriber sends the prescription to the pharmacist. When the patient goes to the pharmacy gives the copay and then gets the filled prescription by the pharmacist. Pharmacist even dispenses the medicine to the customer and gives him the filled prescription. And dispensing fee is billed to the PBM.

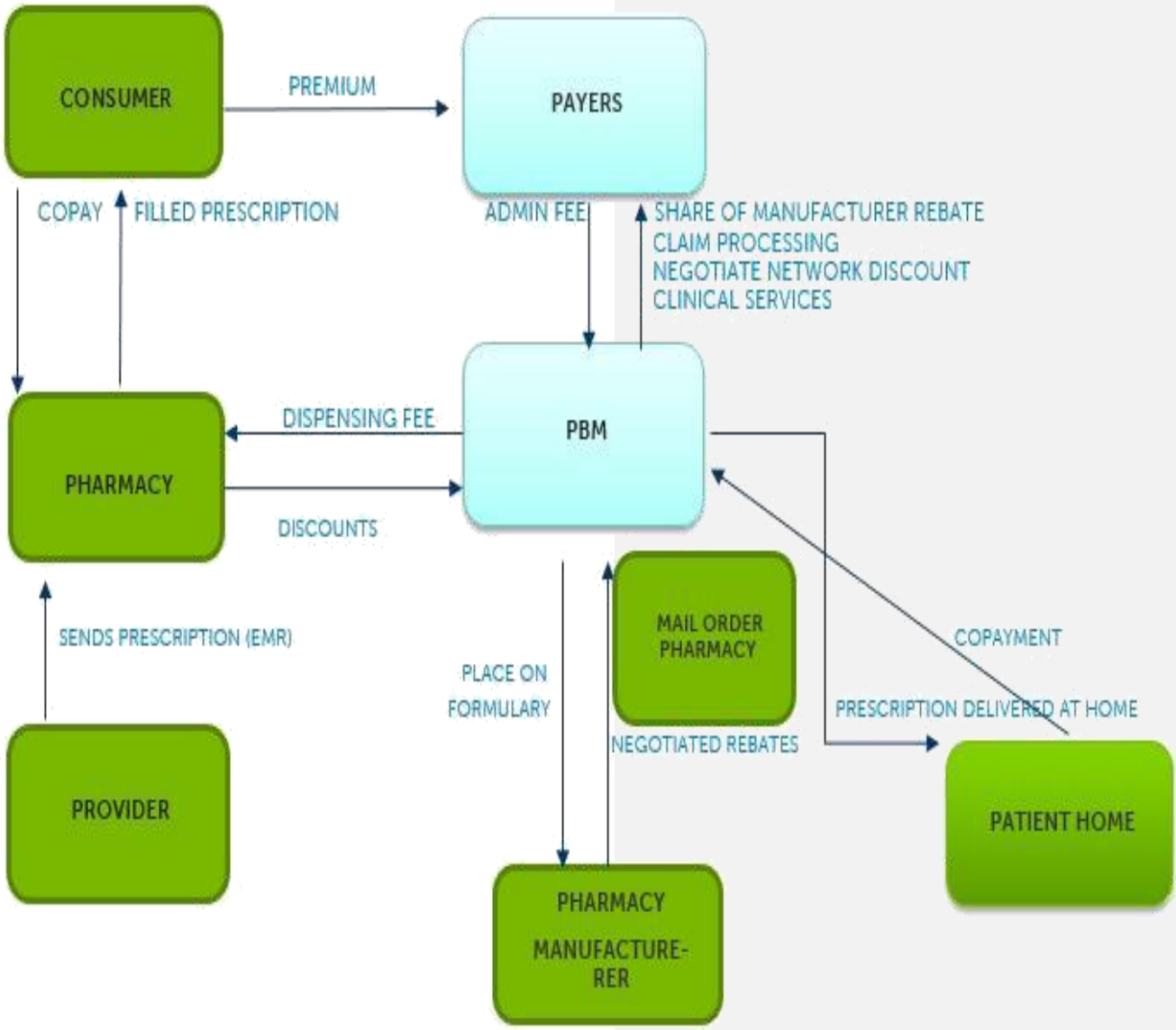

Figure 1. PBM workflow.

6. Framework of Pharmacy benefit management

Most of US patient receive their insurance coverage for Drugs threw PBM which accounts 215 million Americans with the drug coverage. As there are large companies in United States and market have numerous competitors. PBMs accounts for four billion drugs dispensed in a year. Express scripts & Medco have merged as there are among the largest PBM. The PBM market share is increasing gradually and merging with the firms create competition in the market which is influencing the PBM to lower their service prices.

As studies have revealed that the average discount PBM negotiated from pharma companies in 2012 was $16.70 per prescription for each branded drug and the discount that PBM negotiated for each prescription of drug dispensed at pharmacy was $6.13 [2]. PBM plays a significant role in the market as the federal government found that PBM can negotiate on brand name as well as prescription. They found that the drugs are 20% less than the prices that the non-covered consumers paid for the same drug at retail outlets. Generic drug market is more beneficial as they were able to negotiate around $40- 50% less than the prices paid by the non-covered consumers at the retail outlets.

Researches have revealed a significant role of PBM in the market as they have lowered the health plan cost and lowest drug prices to the consumers. Federal Trade Commission revealed that prescription drug coverage has paid 20% less than the branded drugs that didn't had generic alternatives in the same way prescription coverage by PBM paid 30 % less than the branded drugs that have generic alternatives.

Optimum utilization of generic drugs by the PBM which is bioequivalent to the branded drugs as they contain same constituents as the branded drugs have and are chemically identical in dosage, concentration percentage. PBM in comparison with the branded drugs are using a lot of generic drugs which again an addition to the profit as well helping in reduction of healthcare cost.as there are less expensive and are approximately 25- 30%less than the branded prices[3].

The mail order pharmacies are into larger prescription drug dispensing , the prices paid by the health plans and the consumers from mail-order pharmacies was 35 %less than the prices the consumers paid for the brand name generic drugs . For generic drugs, mail order pharmacies dispensed drugs that cost 50% less than what consumers without prescription drug coverage paid at retail pharmacies. These cost savings have translated into significant savings for consumers. The average price that consumers and health plans paid for brand name generic drugs dispensed from mail-order pharmacies was 27% less than the price that consumers without prescription drug coverage paid at retail pharmacies for the exact same drugs. For generic drugs, mail order pharmacies dispensed drugs that cost 67% less than what consumers without prescription drug coverage paid at retail pharmacies.

PBM do have other methods to control over the cost. They even do a research on the lower cost and more appropriate drug for the treatment and validate it with certain physicians. Similarly in providing plans the PBM advices the patient to go for the less expensive drugs. On an average the PBM cost saving range from 40% to 45% of total prescription spending. Which leads more utilization of drugs by the consumers and saving their money which helps in better health outcomes and care and saving people from disease. As the figure below these are the revenue generation areas for the PBM. On the wholesale price of the drug. Admin fee is provided by the payers on per

Prescription claim processed. Manufacturers pay fee for data given by the PBM on which they see the pattern of medication and use of drugs to boost their productions. Manufacturers even push their products into the PBM formulary by providing admin fee and rebates to the PBM.

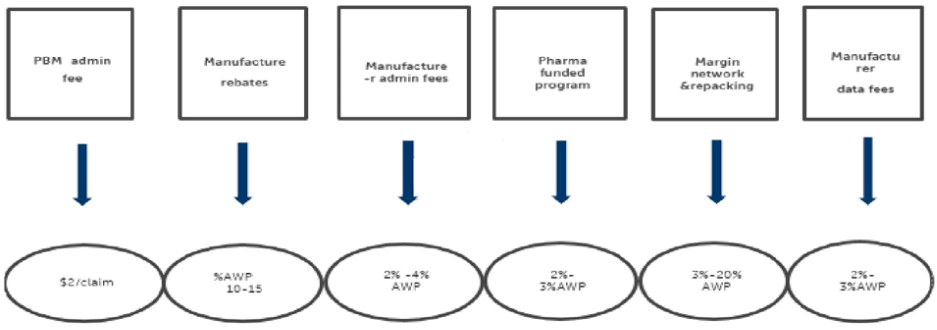

Figure 3 .PBM Revenue Generation

7. Importance of PBM in Medicare part – D

Implementation of Medicare part d program in 2006 in united states have led to provide coverage to the 39 million beneficiaries which are enrolled in part D program which includes both 24 million in Prescription drug program and 15 million Medicare Advantage Prescription Drug plans. The part D plans receive payments from the federal to provide coverage to drug beneficiaries. The part D is provided payment threw general revenues (74%), beneficiary premiums (15%), and state payments (11%). [5] Spending on Part D has grown from $44.3 billion in 2006 to approximately $88.6 billion in 2015, and is expected to grow to $858 billion in 2024. In 2015, 50% of beneficiaries are enrolled in a Prescription drug program or million Medicare Advantage Prescription Drug plan sponsored by UnitedHealth, Humana & CVS Health. In context with the Medicare part D offer a standard benefit which has deductible, coinsurance. They also provide plans including formulary with cost sharing. Decisions on formulary, cost sharing & pharmacy networks are made by PBM.

PBM when serves as a PDP it must comply with number of regulations regarding enrollment, benefits and premiums as it contracts with health insurance companies they need to have certain compliance responsibilities the insurers are required to perform proper monitoring, oversight and auditing to ensure Medicare compliance. The part D clients depend on PBM to conform the drug cost files to Centre for Medicare services. These files are basis for Part D discounts.

Passing of affordable care act will require PBMs to offer lucrative plans adhering to the regulatory requirements. For example elimination of life time caps, capping on maximum limits, restrictions due to pre-existing condition, coverage for Dependents increasing their coverage. And as

amelioration of economic growth in the coming decades and number of rising enrollees will lead to elimination of donut hole in the future.

8. Part D Compliance reporting

As Per the compliance, the Part D plans report to Centre for Medicare services all the data related to care, benefits and payments. In addition to that as the Plan must report to each other electronically determining the benefits, copayment & out of Pocket expense [6]. This information is useful as the beneficiaries switch from one plan to another therefore the information would help new PBM to process the claim more accurately. The TABLE below defines the detailed reporting.

Table 1. Part –D Compliance reporting

Report Type	Types of Data Required	Frequency of Report
Enrollment	Numbers enrolled , denied and incomplete applications	Quarterly
Retail, home infusion.	Percent of beneficiaries by distance from retail pharmacies, number of contracted retail Pharmacies and number of prescriptions filled at retail pharmacies owned or contracted by the plan.	Annual

Access to extended day supplies at Retail Pharmacies	For plans with mail order pharmacy benefits ,number of retail pharmacies in the state or services area that are contracted to provide comparable 90-day supplies	Annual
Medication Therapy Management programs	Number of beneficiaries eligible for MTMP, number who opted out or dis-enrolled. Prescription cost on a per MTMP beneficiary per month basis, number of prescriptions for these beneficiaries, including patient-level identification data.	Annual
Prompt payment By Part D Sponsors	Number of paper and electronic claims paid timely and not paid timely.	Twice per Year
Pharmacy support Electronic Prescribing	Numbs of pharmacies (retail. Long-term care and infusion) that are enabled to receive electronic prescriptions according to Medicare requirements.	Annual
Grievances	Number of beneficiary grievances. Sorted by type of beneficiary (low-income or other) and typo of grievance. Along with percentage of grievance handled timely.	Quarterly
Pharmacy& Therapeutics (P&T)	Changes in P&T committee membership and organization and changes in other organizations that perform certain Part D functions.	Annual
Pharmaceutical Manufacturer Rebates, Discounts, and	Rebates and discounts received from each manufacturer for each rebated drug, including non-cash gifts such as disease management programs.	Annual

other Price Concessions		
Long-Term Care (LTC) Utilization	For each LTC pharmacy in the service area, the number of formulary prescriptions and non-formulary prescriptions, with costs of formulary and non-formulary prescriptions.	Annual
Licensure and Solvency, Business Transactions and Financial Requirements	Detailed data on licensing, revenue and expenses, assets and liabilities and cash now.	Quarterly
Fraud, Waste and Abuse Compliance Programs	Number of potential fraud and abuse incidents reported, broken down by type of incident, source of report (internal vs. external) and follow-up actions including inquiries and reports to CMS and other authorities.	Annual
Employer/Union-Sponsored Group Health Plan Sponsors.	Enrollment data for any participating employer, Unions and other groups.	Annual
Plan Oversight of Agents	Number of agents who recruit members. nut of agents investigated based on complaints, follow-up actions including reports to authorities and number of agent-assisted enrollments	Annual

9. Regulations in PBM

In PBM business model conflicts arise as the incentives are provided by PBM, retail Pharmacies & ownership of mail order pharmacies. By which we led to need of more regulation of the PBM to secure the consumer's interest and satisfaction of plan sponsors. As drug manufacturers pay the

PBM to get the drugs listed in their formularies which denotes them as favoured drugs. PBM even differentiate between the prices of Plan sponsors pay for drug & amount the PBM gives to retail pharmacies to increase the revenue of PBM, which may cause overpayment from the plans. The most important conflict arises as PBM could provide certain lucrative plans to purchase drugs from the PBM owned mail order pharmacies which can dispense more costly drugs or branded drugs. There is no evidence found till now that mail order pharmacies owned by PBM substitute costlier medicine than cheaper ones. But it has provided cheaper medicines in contrast with the branded drugs.

Regulations under PBM include, licensing, investigation, disclosing the financial details with the manufacturers and details of savings passed to the consumers. States has given authorities over PBM to a neutral insurance commission. While some states have given the authorities to boards of pharmacy to regulate PBMs. For processing the claims the PBMs should have a valid license as third party administrator they must adhere to all legal standards for processing the claims and facing auditing of PBMs. in regulations there are certain agreements with clients prohibition of unfair, deceptive acts unfair claim settlement practices. Board authorities audit with onsite

examination of all financial transactions. Even preferred provider benefit Plans provide regulatory authority for payment of the claims and they have certain limit for processing of the claim. According to the Employee Retirement Income Security act (ERISA) sets a standard for voluntarily established pension and Health plans.

PBM regulates their own mail order pharmacies and operates under provisions of state laws accordingly it operates under regulatory power granted by the state license authorities, the state authority have power to investigate and rectify the complaints related to PBM. As the authorities are distributed differently in the states each regulatory authority refers to the claim falling into their jurisdiction. Complaints related to PBM is logged threw the toll free numbers or by fax.

10. Review of Literature

Rising aging population in United States and population acquiring NCDs has given rise to PBM market and opportunities as they are millions of pharmacy prescription written and filled each year and there has been continuous rise in the prescription filling. There is a rise by 10-15 % annually due to aging population. Advertising by pharmaceutical manufacturers regarding newly proved drugs providing benefits to senior citizens under government Medicare programs has led a change into the market.

According to HIPPA for protecting security and confidentiality of the patient as electronic transaction between the departments have led to need of various IT applications in the states. As the act is effect from April 2003. To become HIPPA compliant there is need for implementation of various applications. As per the estimate the current market opportunity for information technology solution and services in the industry is US 1.2 billion and is annually growing as drug utilization rate is rapidly increasing with varieties of transactions such as third party claims, management of drug benefit.

According to the PBMI 2013 report. In today's scenario 66% of small employers contract for their PBM through a health plan administrator and only 30% contract with a PBM directly, whereas 30% of large employers contract through a health plan and 65% contract directly with a PBM . As there is lot of competition going in the market the benefits of PBM depends upon the Plans to whom they negotiated well with. PBM market share is tedious as the claim processing is

outsourced to other companies therefore it leads to duplication in shares as for coverage and total claim processing done by the PBM.

Technavio's market research analyst predicts the PBM market in the US to grow at a rate of 7% during the forecast period. The increase in healthcare expenditure has propelled the demand for PBM services in the US. The US national healthcare expenditure is expected to reach USD 4 trillion by 2019. Also, about 14.4% of the US population is above 65 years of age. The healthcare expenses are especially high for senior citizens as they tend to buy pharmacy benefit plans as a precautionary measure. This, in turn, has boosted the growth of the PBM market.

As per the reports by Pharmaceutical Care Management Association the organization representing Medicare pharmacies. And healthcare partners in pharmaceutical care. PBMs manage about 1.8 billion prescriptions annually, 70 percent of all prescription orders dispensed for ambulatory care patients. PBMs employ more than 9,000 pharmacists. Over two-thirds of prescriptions are covered by pharmacy benefits.

11. Study objective:

- To study PBM and its Detailed Workflow.

11.1 Specific Objectives:

- To analyze the importance of PBM in US healthcare.

- To suggest the opportunities for Dell to enter PBM domain.

12. Methodology:

12.1 Study design:

Ideas, Editorials, Opinions on PBM.-

12.2 Data collection source:

Secondary sources of Data collected from journals, articles, previous studies restricted to PBM.

12.3 Data collection method:

Literature and article related to PBM are critically reviewed, evaluated and analyzed.

13. Findings

PBM Market Structure and volume.

Health plans sponsors three basic options to manage pharmacy benefits. As the basic step is to design these functions to health insurance companies that provides the medical benefits which would typically operate an in house PBM or contract with the independent PBM. And in another phase the pharmacy management directly contract to an independent PBM. In the third option the employers may conduct some of the core formulary- related PBM services in house and outsourcing the PBM only the claim processing which therefore need Best IT support.

Figure 4. Given below explains current market shares of PBM 2013 in terms of revenue generated by each company. As this is annual revenue generated by each group including claim processing.as Express script holds the maximum with 33 % market share. Express script even provides services to Tricare. CVS and the Optum are respectively after it. Humana and Cigna being in better ranking in payers is only 5 and 3 %. as they have entered into PBM industry.

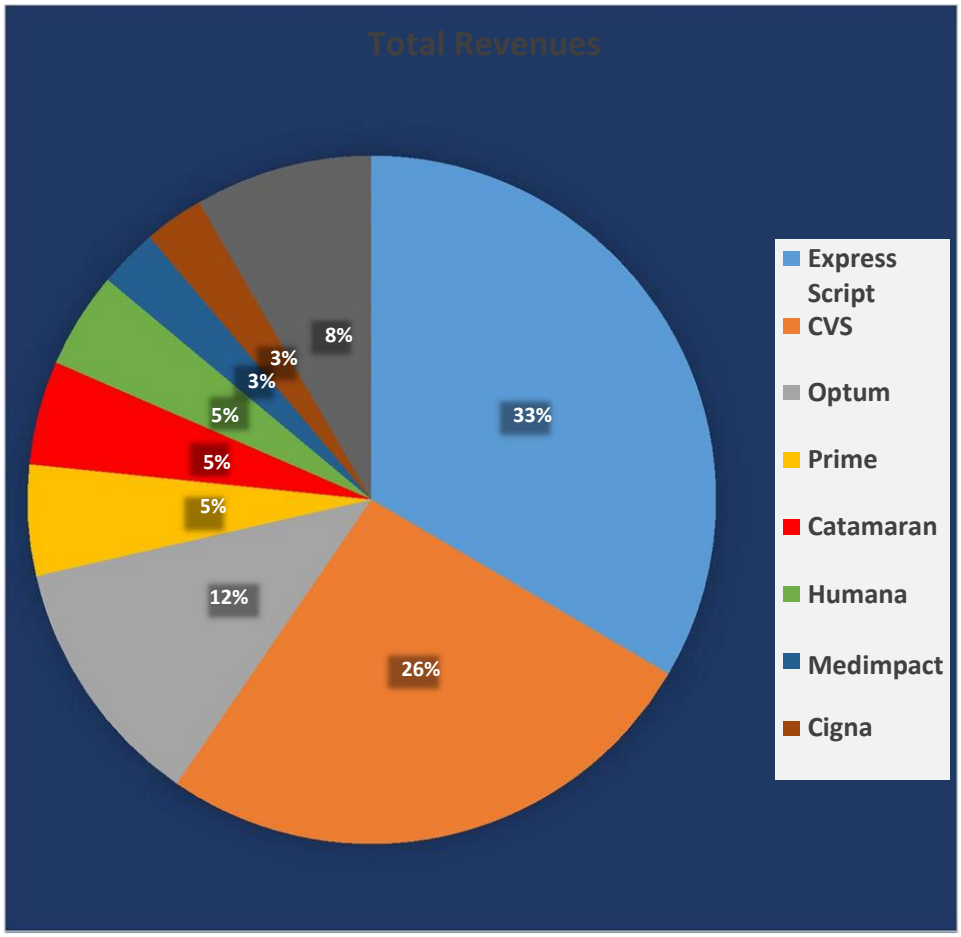

Fig 4. Shares of total PBM market (2013).

Source strategic group

Figure 5. Given below PBMs are the market share in term of claim processed as Express scripts is on top position in terms of claim processing. As Optum of UHG holds the third position.

Fig 5. Market Share by claim Processed (2013).

Source ERISA

Figure 6. Based on annual revenue shares figure (4), the two and four largest independent PBMs account for almost 60% and 76% of the market, respectively. Concentration has increased over the last decade through mergers and acquisitions. Express Scripts acquired Wellpoint's wholly owned NextRx PBM in 2009 (Well point 2009) and then merged with Medco in 2012 (Express Scripts 2012). CVS and its PBM, PharmaCare, merged with Caremark Rx in 2006 (CVS Caremark 2007) to become CVS Caremark and later acquired Longs Drug Stores' PBM, RxAmerica, in 2008 (CVS Caremark 2008). Catamaran was created by SXC Health Solution's 2012 acquisition of Catalyst (Catalyst Health Solutions 2012), which had previously purchased Walgreens Health Initiatives in 2011 (Catalyst Health Systems 2011). As per the figure 4. Below Expressscript holds 33 % market share in the total PBM market in 2013. In 2015 ranking Optum has gone at number one position in providing services which is owned by United Health Group.as other health plans in competition have tried to acquire their own PBM or threw merging with some small scale PBMs in the market so that to compete with large PBM in the market. Prime Therapeutics is co-owned by 13 non-profit Blue Cross Blue Shield Licenses. Serves maximum health plans in United States.

Health insurers Humana, Cigna, and Aetna have their own PBM but outsource the claim processing part. Catamaran has grown quickly since the 2012 SXC/Catalyst merger.

This evidence indicates significant consolidation over time in the PBM industry. Competitive entry by full service PBMs has been limited and has occurred mainly through large health plans insourcing their own pharmacy management. Some of these health plan-owned PBMs depends on partly on external PBMs for claims processing e.g Wellpoint sold its in-house PBM to Express Scripts and Humana and Cigna contract with external claims processors. This evidence suggests that scale economies are significant, particularly in claims processing, which may preclude entry

by new operators other than related business with existing large scale operations. In terms of PDP lives covered UHG covers the maximum market share of 29 % as express script covers the 4th position. In terms of total market share Express script top the position because due to good negotiation power and better services to BCBS and Tricare [8].

The limited public evidence on contracting strategies also sheds light on competitive dynamics in this industry. Catamaran has grown by offering fixed fee per transaction pricing with clarity on rebates and other fees. Med Impact offers clients full disclosure on rebate administration. Large employer members of the HR Policy Association have negotiated an exclusive agreement with Prime Therapeutics, including clear pass through pricing with no undisclosed PBM mark-ups, 100% pass through of pharmaceutical rebates, and the option for additional savings through narrowing the pharmacy network. However, as Morningstar points out, “Express Scripts' operating income accounts for well less than 1% of its clients' overall health-care costs. If Express Scripts can lower its clients' health-care costs by even a few percentage points more than the competition, it will justify the company's margins and facilitate market share gains” (Morningstar 2012). This underscores the agency challenge facing sponsors: focusing solely on driving down a PBM’s operating income could be counterproductive, if this leads the PBM to skimp on efforts to constrain drug costs. As explained in Figure 4 Express script holds highest number of market share in terms of revenue in 2013.

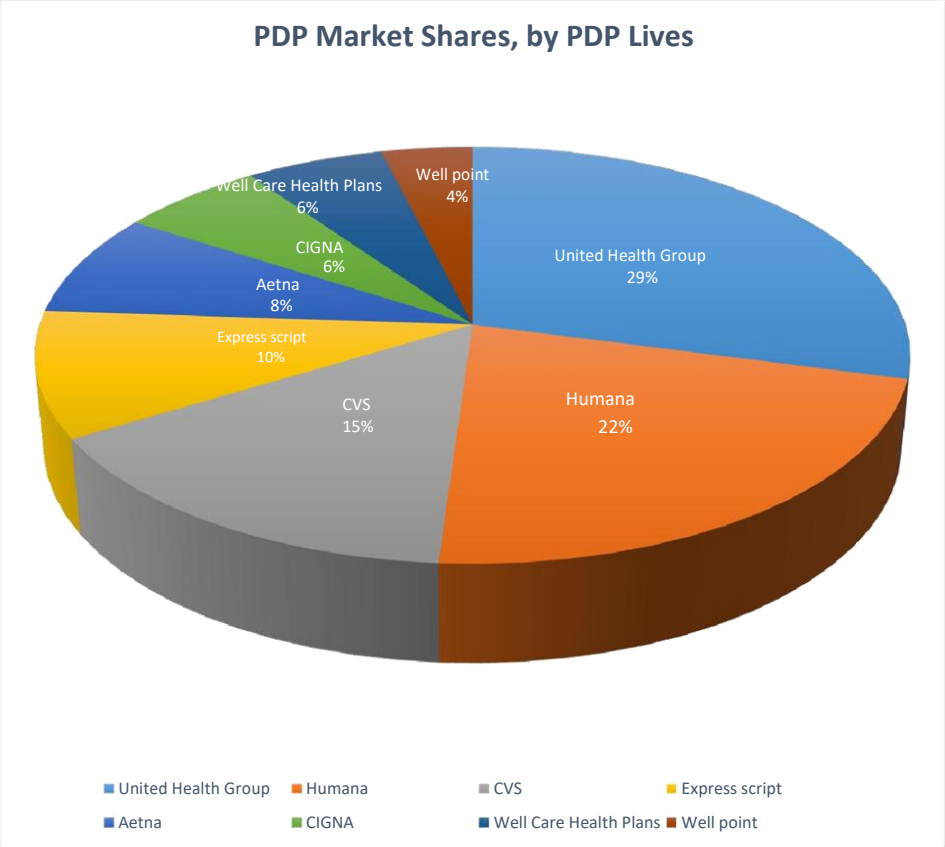

Fig 6. PDP Market Share by PDP Lives (2013).
Source ERISA

13.1 PBM Cost Share Strategy.

PBM operates on a margin of 5%, collecting fees from clients and manufacturers. Its, services include claim data auditing, specialty formularies, disease management programs on consolidated amount signed by the plans sponsors and the PBM. Corporates seeks proposal from several PBM using brokers and consultants, which basically include per claim fee as for claim processing, dispensing and prior authorization. The reimbursement is paid to the PBM for branded and generic drugs at retail and mail order usually expressed in as % of AWP for brands and % of MAC for generics and drug rebates shared to the employers, PBM even charge per member as per the consolidated fee amount per transactions.

The PBMI (2013) survey reveals that the PBM contracting with large less than 5,000 employees and small firms equal to 5,000 employees this stated a broad sample of employers, including large groups and industries. However, it was not random sampling of employers and not all employers responded to the questions, so findings are not categorized. Considering the PBM charges by drugs dispensed by their own mail order pharmacies than there retail pharmacies. The reimbursement level is AWP-16% for branded 30-day retail drugs and AWP-22% for branded mail-order drugs. The median dispensing fee for 30-day retail prescriptions is $1.50 and $0 for mail-order prescriptions. These data indicates that PBMs shares savings from mail dispensing and incentivize sponsors and patients to use mail service. MAC pricing for generics is used by 75% of employers for 30 day retail prescriptions and 70% of employers for mail-order prescriptions. In other cases, the average reimbursement level for generics is AWP-65% for 30 day retail and AWP-61% for mail-order, but this differential is not statistically significant. This survey denotes that employers receive a share of manufacturer drug rebates with different mechanisms, including

specified percentage of actual rebates a consolidated minimum level of rebates per prescription or per rebate able drug preferred tier brands. Different ways of calculating rebates complicate comparison across contracts. The mean and median employer shares of drug rebates were 60% and 80% for retail dispensed drugs, for employers with a rebate share arrangement that responded to this question (PBMI 2013).

PBMI study states that the employers have their own choices to contract with the Plan which is more relevant to them or as per their needs. The prices definitely varies from large and small group of employees. Large group employers received higher retail rebates on branded/generic drugs, paid low dispensing fees and manufacturer rebates as compared to small group of employees. All of these differences were found to be statistically significant. There were no significant differences by employer size for mail or specialty discounts. Mostly the PBM don't disclose the prices that they pay to retail pharmacies Use of average whole sale price for reimbursement by sponsors to PBM for branded drugs which enables sponsor to compare their cost for branded drugs across PBM proposal.

13.2 US Rising Pharmaceutical Growth and Spending

PBM has went into expeditious growth as US pharma spending has reached $310 billion in 2015 on a net price of 8.5 % from the previous year as per the report issued by (IMS health).

As price on branded drug was kept limited as lot of concession has been provided from manufacturing drug industries, on specialty drugs mostly into Anti-retroviral drugs spending reached into $121 billion on a net price of more than 15% from 2014. as generic brand have worked better in compare to the branded one as maintaining the healthcare cost and lower price drug segment with same constituents and effects as in coming 2020 there will be numerous generic drug will maintain the healthcare cost and give rise to more number of drug utilization in competition with branded drugs. On basis of invoice price the mark has reached unto %425 billion in 2015. As PBM has played an important role in the drug utilization and various health plans to provide benefit to customers by providing better rebates on branded drugs which has controlled the price increases.

PBM has provided huge rebates as negotiating with the pharma manufacturer customers which has reached a mark of $309.5 billion and grew at the rate of 8.5 % per year. Growth has gone about 2% from the previous year in 2014. As the spending is highest in the decade now, therefore growth is $24.3 billion on net basis &$46.2 billion on an invoice the more use of generic drugs and rebates on branded drugs has caused more consumption and spending. As these rise will create more revenue generation for the PBM industry and rise in the administration fee by the payers.

13.3 Rise in use of specialty drugs

As slight rise in contracting of the STD and infections in US. The net spending on Specialty drugs For Example (Anti-retroviral drugs)has doubled in the past five years of the time, contributing to more than two third on overall spending. The role of PBM rises in controlling the cost as the dependency towards the Drugs will increase and lot of spending goes in chemotherapy and ART treatment. Mentioned in figure (7). From 2010 to 2015 which include treatment for oncology, hepatitis, autoimmune diseases. Which has accounted for $19.3 billion. In 2015 there is a 21.5 percent spending increase for specialty medicines to $150.8 billion as per the report.[9]

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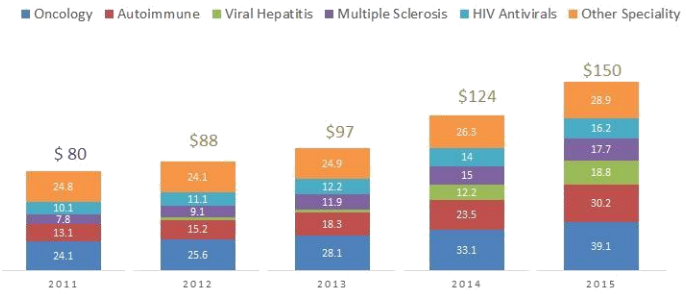


Fig7 – Rise in Specialty Drug

Source IMS Health

13.4 Inducting new medicines

Designations from the FDA in past year, additional brands were launched with new combination and therapies and alternative dosing and treatment administration options to patients. A total of 43 New Active Substances (NASs) was launched in 2015[10]. As in the same year new active substance launches were more which has benefited large populations. The induction of new medicines will give rise to investment on the PBM as the manufacturers will push new medicines into the Formulary which creates revenue for the PBM.

13.5 Rise in Prescription

Influence of the Affordable care act providing the coverage for number of citizen Medicaid and with different health plans has led to rise in the prescription in the past years. As the prescription dispensed in 2015 reached 4.4 billion [11]. And rise in 1% per year. As the demand went up for antidepressants, anti-diabetes each of which increased about 10 % in 2015.

Below is the revenue generation done per by the PBM In one year. Rise in prescription will lead to more revenue toward the PBM as they charge around $1to $2 per prescription the rising numbers will lead to more claim processing business into the PBM. Following Table shows the prescription processed by the PBM in a year.

Table-2 – Prescription Processed per year

Source NCPA 2010

PBM ORGANIZATION	PRESCRIPTION /YEAR
CVS Caremark Rx, Inc	658,500,000
Argus Health System	504,000,000
Express Scripts Inc	449,300,000
Prescription Solution	274,920,504
ACS, Inc.	250,000,000
Medimpact Healthcare System	170,400,000

13.6 Patient Cost exposure

Numerous Health Plans have increased which have affected the patient cost exposure more than 25% since 2010, reaching $44 per prescription last year [11]. Plans with pharmacy deductibles, co-payments and co-insurance is contributing to the rise. Brands are leveraging the customers with coupons and vouchers to reduce the cost.

13.7 Integrated Delivery Networks

Associations of healthcare professionals and integrating them with each other through a network which has made an effort to increase negotiating power with the insurers leveraging economies of scale and boost pay-for-performance initiatives. As around half of the HCP are affiliated with IDN. Urgent care centers and pharmacy have grown by double in past 15 years. Number of prescription by doctors and nurses have doubled over the past 5 years, reaching 676 million prescriptions in 2015.

13.8 Future of Pharma Spending in US

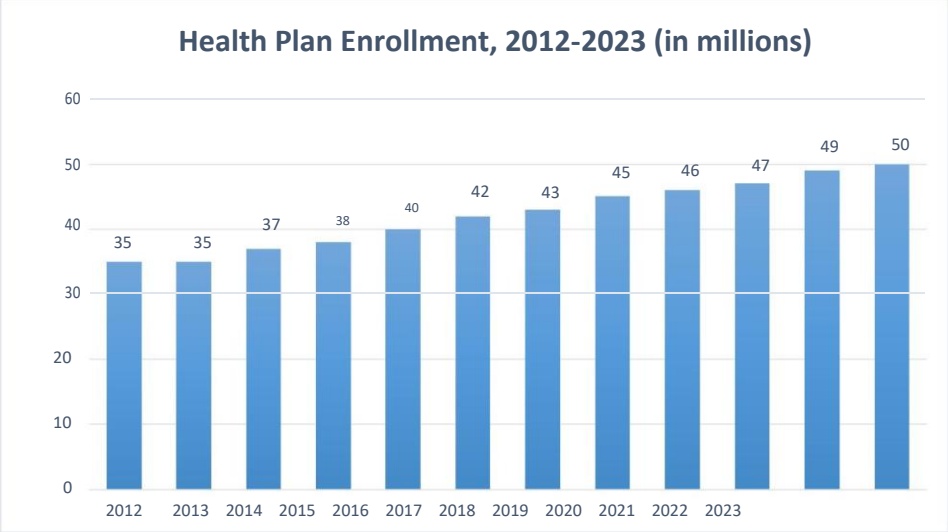
Gross spending on medicines on a net price basis is to reach, $370-600 billion in 2020. At annual growth rate of 4-7 %, per year which will reflect spending on medicines by lowering spending on brands. As brand products are expected to continue at the range of 10-12 % on invoice basis. As there has been certain rise in introduction of new active substance as an average of 43- 49 NAS are expected to be launched annually in the coming years. In future spending on Pharma by 2024, the US Will spend around $560 billion annually on outpatient prescription Drug.[11]

13.9 Rising Medicare Enrollments In health insurance

As there is a difference between original Medicare program and the privately owned health plan, the benefits varies with different health plans. Beneficiaries of Medicare has different private health plan through which they can receive the benefit from health maintenance organizations.

With implementation of Medicare Modernization Act 2003. The Medicare plans A & B are to increase by $172 billion in 2015, as total of 27% of total Medicare spending (CBO) April 2015. As the name changed from Medicare choice to Medicare advantage MMA 2003. There were certain changes in the plans in the Medicare policy as the Medicare started providing access to the private plans and extra benefits in the plans. There was extra increase in the plans policies by the Medicare. As difference there were 14 % more enrollee than the cost of care for beneficiaries in traditional Medicare. As the affordable care act came in 2010 there was change in payment policy as lowering down the payment to Medicare advantage plan over time and bringing them closer to average cost of care under the traditional Medicare Program. For the year 2014, 54 million people on Medicare are in the traditional Medicare. Program with 30% enrolled in a Medicare advantage plan. The number of beneficiaries enrolled got increased from 5.3 million to 15.7 million in 2014. If we talk about HMO and PPO contracts HMO accounts for 64% for total Medicare advantage and the PPO accounts for 23% enrollees. In private fee for service it accounts for 0.2 million enrollees in 2005 to 2.2 million in 2009. As predicted in the below figure (8) there is a rise from 35 million to 38 million in 2015 . This data include the number of people affected with chronic disease these rising number leads to pushing lot of claims into the PBM .According to the latest

Federal Data there is a 6.8 increase in from the same time in 2014. There were around 17.76 million seniors and disabled people enrolled in Medicare advantage plan[5] .



Source – kaser family

Fig 8. Rising Medicare enrollments.

13.10 Increasing Life Expectancy Rate in the US.

As proper Utilization of drugs and formation of Medicare has created benefits to the Medicare beneficiaries as there is projected increase of life expectancy from 70 years in 1965 to 78 years in 2015 as mentioned in figure (9). Which denotes a lot of burden on Medicare as well as the private health plans those who are supporting Medicare. And their expected years of life with a disability at age 65 will increase even more, rising from 7.4 years in 2010 to 8.6 years in 2030. As per the sources provided by University of Southern California Leonard D. Schaeffer Center for Health Policy & Economics. These are the trends for women as the disability age will also mark a rise in to the claims ratio at the payer's side as well as lot of burden into the Medicare spending. The women's life expectancy at the age of 65 will increase by 0.9 years.

But their years of life expectancy will even increase more by 8.4 years in 2010 to 9.8 years in 2030, as there is a slight increase in the life expectancy. As the same with men disability life expectancy at 65 growing 0.6 years from 17.7 in 2010 to 18.3 in 2030,[12] and their expected years of life with a disability at age 65 increasing 1.1 years from 6.3 in 2010 to 7.4 in 2030. In the report by AAFP Medicare's popularity has increased thrice and as per their estimates the life expectancy of people has increased by five years of age. In the year 2013 Medicare spending accounted for 14 percent of the total federal budget.

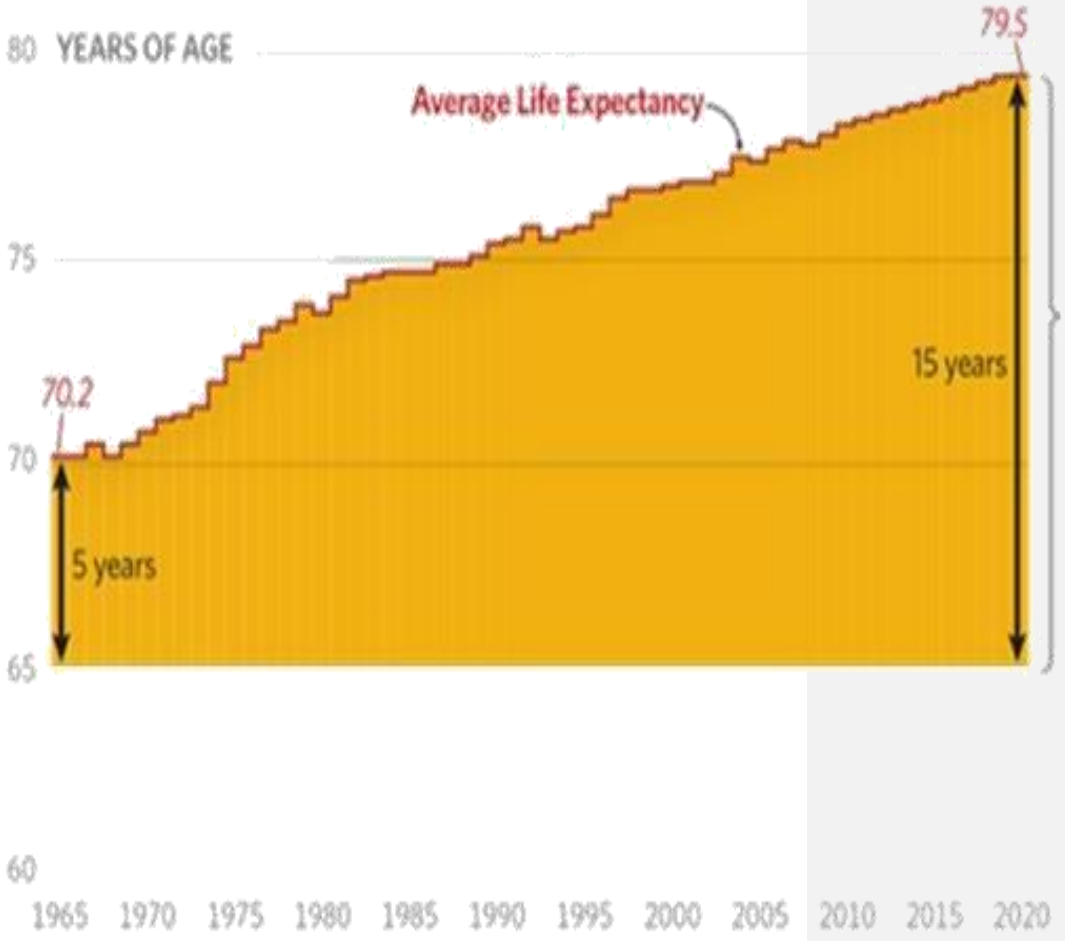


Fig 9. Increasing life expectancy rate in US.

13.11 Rising healthcare expenditure in US.

United States spends a huge amount on health care services as there spending is exceeding the $2.6 trillion mark or we can say that it is 18 % of the gross domestic product. As per the NHEP projections 2014 – 2024 health spending is projected to grow at an average rate of 5 .8 % per year. And health spending would grow 1.1 percent faster than gross domestic product. Implementation of Affordable Care Act's with major coverage expansions, stronger expected economic growth, and population aging. Has made health care spending faster in the recent past years. Factors effecting health spending include the continued increases in cost sharing requirements in private health insurance plans and near rise of low rates of medical inflation. As national health spending is projected to grow 5.3 percent in 2015 and peak at 6.3 percent in 2020 [13]. Expected improvements in the economy contribute to faster projected growth in private health insurance spending, particularly after 2018.

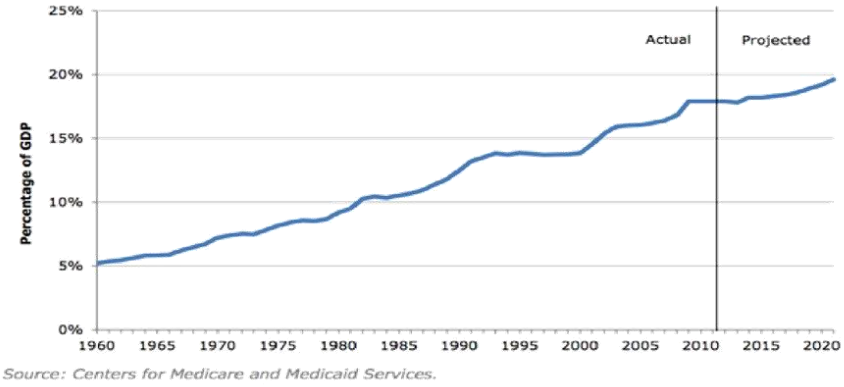
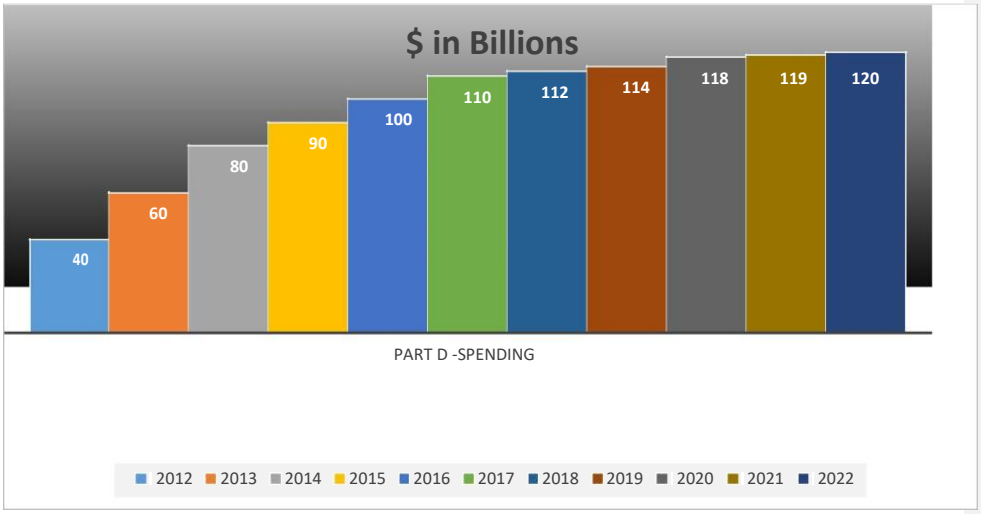


Fig 10. Rising Health Expenditure in US.

Medicaid have grown by 12.0 percent in 2014 due to increased enrollment of 7.6 beneficiaries. Private health insurance premiums are projected to have grown 6.1 percent and to have reached $1.0 trillion, in 2014 due to higher projected per enrollee spending and increased enrollment through Marketplace plans. As well as out-of-pocket spending growth is projected to accelerate after 2014, reaching a peak of 5.7 percent in 2021. Increasing enrollment by implementing the ACA. Impacted more spending among the payers. There is even rise in spending on clinicians and physicians which has accelerated to $615 billion. Prescription drug plan spending has projected to 12.6 to $305.1 billion [13]. Further as improvement in the economy there will be again a projected rise of 6.3 % annual growth from 2015 to 2024. In case of disease like HIV, HBV, HCV there has been certain rise in the expenditure of antiretroviral drugs. As per the below figure Medicare part

–d has risen to 90 billion in 2015 to projected increase to 120 billion according to the report given by the CBO . This shows the number of prescription processed by the PBM and the share of PBM industry in the market.



Source – CBO may 2013

Figure 11. Medicare Spending in US

Table 3. List of Software & their Companies

Pega	Pega care management
Adaptive Software	Catalyst Rx
Hylis	Hylis Pharmacy solution
McKesson Corp.	Enterprise Rx Accounts recievable .
Netsmart Technologies, Inc.	RxConnect
Cerner Corporation	On-Site Pharmacy
iSOFT	i.Pharmacy
M2 Information Systems, Inc.	WebRx – the M2 Pharmacy module
OPUS-ISM, LLC	Pharmacy Management System
CuraScript, Inc	Plan Sponsor Alignment
Storemed	Medication Carts

14. Competitors into the PBM industry.

- Accenture.
- Cognizant.
- Deloitee.
- TCS.
- Xerox.
- IBM
- UHG

15. SWOT Analysis

STRENGHT	OPPORTUNITIES
1. Brand name – No.1 healthcare service in terms of revenue (Gartner) 2. Dell inks $ 100 million deal to help BCBS Rhode island 3. Past experience of handling revenue cycle management before it was sold to Conifer health 4. Onshore team skill set and experience 5. Established offshore support model 6. Own hardware support 7. Own server support 8. Holding US government projects in healthcare	1. New regulations in Medicare part –D plan 2. Can look for projects in BPO services, consultation and implementation in PBM 3. The advantage of already existing payer clients with Dell 4. Rising trends and changes in Medicare 5. Billion dollar industry to invest upon
WEAKNESS	THREATS
1. No focus on PBM industry as compared with payers and provider	1. Competitors are already present in the market

16. Capacity of Dell in PBM

- Consulting services Dell as a consulting firm has a huge market as it can partner with the existing vendors who have well established administrative platforms and provide its expert consulting experience in implementation.
- Big data as, evidenced in previous slides, rising trends in PBM will lead to support for data management ,data analytics, business intelligence, reporting.
- Cloud services for data storage.
- Support Services.
  - Application Support.
  - Interface Support.
  - Database Support.
  - Windows/Intel support
  - Network support
- Testing.

17. Recommendations

- As with the existing payer client an attempt to extend into PBM portfolio support can be done.

- In terms of revenue generation and current market share Express Script and CVS are the leaders in market. Supporting there process will create best opportunities to enter into the PBM market.

- Push marketing will be better strategy to penetrate into the PBM market, as we have best application support for products of McKesson, Cerner, Meditech,Allscript and Nextgen.

- Clients like Humana and Cigna will not only create opportunities for PBM but will open more avenues to RCM.

18. Limitation of the study

Lack of availability of current data. Although, research has led to different avenues for PBM . Data for the current years were not available.

Lack of prior research done on the topic as there was non- availability of data showing the current market structures of IT organizations.

Limited access to the organizations current projects and clients.

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19. Annexure

Prescription claim Form Expresscript

ExpressScripts609-1 9/14/2007 5:18:52 PM PAGE 2/002 Fax Server

EXPRESS SCRIPTS

ORDER FORM FROM EXPRESS SCRIPTS

Fax to: 800-396-2171

It can take up to **72 hours** for the prescription to be entered into our system after your fax is received. It is not necessary to resend the prescription or to call the prescription into our Service Center. Doing so will only delay the fulfillment of your patient's order. Only a prescriber's office may submit fax prescriptions. CII prescriptions **CANNOT** be faxed.

For future orders you must use this form to fax orders to Express Scripts.

1. Fill in ALL of the information below.

DR/PRESCRIBER	Dr/Prescriber Name:	
	DEA or NPI #:	Address, City, State, Zip:
	Phone:	
	Fax:	
	Mid-Level Practitioner's Supervising Physician Name:	
PATIENT	Patient Name:	
	Plan ID:	Address, City, State, Zip:
	Phone:	
	Date of Birth:	

2. Attach Prescription HERE or fill in ALL of the information below.

Rx Form (ONE Fax Form per Patient) Date:

In order for a brand name product to be dispensed, the prescriber MUST handwrite **"BRAND NECESSARY"** or **"BRAND MEDICALLY NECESSARY"** in the table below.

Drug Name	Strength	Qty	Directions For Use	Refills	Brand Necessary / Brand Medically Necessary
1.					
2.					
3.					

Dr/Prescriber Printed Name **Dr/Prescriber Signature – Substitution Permissible**

X

[illegible]

 Fax Confirmation Form [illegible]

Claim Form CVS

Reset

CVS CAREMARK | Mail Service Pharmacy

Fax # 1-800-378-0323

FastStart® New Prescription Fax Form

If you would like to send a maintenance prescription to CVS Caremark Mail Service Pharmacy for your patient, please complete this form and fax it to the number above.

Please complete the 4 steps below.

Step 1: Patient Information

Patient Name: _____ DOB: ___/___/_____

Address: _____ Phone: (____) _____ - _____

City, ST, ZIP: _____

CVS Caremark Member ID#: _____ Prescription Benefit Provider _____

Allergy Information: _____

Step 2: Prescription Information

Prescription Date: ___/___/_____

	DRUG NAME	STRENGTH	DIRECTIONS	QUANTITY	REFILLS
1.	_____	_____	_____	90 days or _____	1 year or _____
2.	_____	_____	_____	90 days or _____	1 year or _____
3.	_____	_____	_____	90 days or	1 year or
4.	_____	_____	_____	90 days or _____	1 year or _____

_____ Authorized by/Title: _____

(Prescriber Signature) (Full name if more than prescriber)

Substitution permissible unless prescriber writes brand necessary or DAW

Step 3: Physician Information Required

Dr. Name: _____ **Phone:** (____) _____ - _____

Address: _____ **Fax:** (____) _____ - _____

City, ST, ZIP: _____

NPI #: _____ **DEA #** (if controlled substance) _____

Step 4: Fax this form toll-free to 1-800-378-0323

If you are not the intended recipient of this FAX, you are hereby notified that any disclosure, copying or distributing is prohibited. If you have received this FAX in error or if you would like to talk to our staff, please notify us by collect call to us at 1-800-378-0387. Please maintain privacy to all protected health information. Our employees are trained regarding the appropriate ways to handle our members' protected health information.

20. References

1. Adam J. Fein, Ph.D., Which PBM Best Managed Drug Trend in 2014: CVS Health, Catamaran, or Express scripts. September 02,201.
2. Joanna Shepherd† regulation in prescription drug market. https://www.ftc.gov
3. .ERBerndt,pricing and reimbursement in US.
4. https://research.hks.harvard.edu/publications
5. www.healthcarereformmagazine.com/.../pharmacy-benefits-management.Jul 4, 2014
6. https://kaiserfamilyfoundation.files.wordpress.com.
7. www.cognizant.ch/.../PBM-Compliance-with-Medicare-
8. medcitynews.com/2016/04/drug-spend/ - US drug spending
9. https://www.express-scripts.com/TRICARE/.
10. https: //www.imshealth.com/.../IMSH%20Institute/.../Medicines
11. www.businesswire.com/news/.../IMS-Health-Study-U.S.-Drug-Spending.
12. medicareissimple.blogspot.com/.../44-billion-prescription-drugswere.ht
13. D Goldman - 2015 www.brookings.edu/...2030.../Medicare2030_Chart
14. https://www.cms.gov/.../proj..Centers for Medicare and Medicaid Services
15. http://www.dol.gov.
16. http://www.heritage.org
17. http://bulletin.facs.org/
18. http://lab.express-scripts.com/
19. www.brookings.edu/.../Medicare2030_Chartbook.p
20. www.healthstrategies.com/.../agendas/2015_PBM_Research_Agenda
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22. http://scholarlycommons.law.northwestern.edu/cgi/viewcontent.cgi?article=1107&context=njlsp
23. https://nei.nih.gov/content/national-community-pharmacists-association