2015 INFORMED TRENDS

catamaran®

To our valued partners:

2014 was remarkable in many ways. Healthcare reform kicked into high gear. New and innovative therapies came to market. Navigating through these changing tides demands agility, ingenuity and accountability. And that's just what Catamaran delivered.

Managing the intersection of cost and care has never been more challenging. Catamaran has invested in the people, the processes and the programs to ensure that your pharmacy benefit is working for your members and working for your business. We take advantage of every moment of opportunity – from helping members make the most of their pharmacy benefit and lead healthier lives, to finding innovative ways to deliver better results for our payer clients.

2014 is proof positive that Catamaran makes today's challenges tomorrow's opportunities. Take *this* opportunity to learn about how we make it tailored, how we make it personal. How we define that one best solution for each client and find that one best way to engage with each member. Engage with Catamaran and work with us to accelerate the right solutions to raise industry standards and improve health.

Mark Thierer
Chairman and CEO
Catamaran

CEO Letter 1

Executive Summary 4

national 6

Book of Business Analysis

Catamaran Trend 8

Traditional Trend 12

Specialty Trend 16

Hot Topics

Compound Drugs 20

Rising Generic Prices 22

Future Trend 24

local 26

Catamaran Market Segments

A Tailored Approach 28

Highly Managed Clients 29

Market Segment Analysis

Employer 30

Health Plans 32

Labor and Trust 34

Medicare Part D 36

State and Local Government 38

Workers' Compensation 40

Health Insurance Marketplace 42

FFS Medicaid 44

For access to updated information
visit our Trend Portal at **trendreport.catamaranrx.com**

personal 46

Engaging with Members

Improving Outcomes Through Personalized Support 48

Patient Case Studies:

Medication Therapy Management (MTM) 50

BriovaRx® Specialty 52

Medication Adherence 54

clinical review 56

Clinical Review: Top 5 Classes

Traditional Therapeutic Class Overview 58

Specialty Therapeutic Class Overview 64

Methodology 70

Glossary 71

References 72

Credits 74

table of contents

moments of opportunity

Catamaran knows that every moment counts. Every moment represents an opportunity: To exploit analytics to uncover opportunities. To stay in front of market trends. To collaborate with our clients to drive better costs and better care. To help patients lead better lives, promoting their physical, psychological and financial well-being.

Today's Challenges = Tomorrow's Opportunities

2014 saw many breakthroughs and challenges. Ongoing increases in the use of specialty therapies... The emergence of new and costly specialty therapies... A record number of new drug approvals... Unexpected generic price inflation... Greater access to drugs as a result of the Affordable Care Act... The proliferation of compound drugs.

Through it all, Catamaran kept our clients well ahead of these pressing market challenges. We used data and analytics as a strategic asset as we quickly responded to these industry trends. And we brought our national perspectives on best practices, our local insights into healthcare practice and our individual interventions to engage members in managing their health.

There are many stand-outs – we tell you about a number of these client and patient stories as part of this report. These stories illustrate how we focus and engage with each and every client to understand their goals, to carefully plan the right approach and to continually review results and adjust the path forward.

2014: The Beginning of a Cost Curve

The breakthroughs and challenges listed earlier marked the beginning of an expected escalation in overall pharmaceutical spending. Catamaran clients experienced an overall per-member-per-month drug trend of 5.7%, compared with 2.4% in 2013. Unit cost was the most significant driver of this trend, propelled by rising specialty costs, as well as new, novel diabetes treatments and ongoing AWP increases in insulin products. The looming end of the patent cliff produced little moderation of trend and a generic dispensing rate increase of 2 percentage points only moderately offset overall trend.

Traditional trend was 1.0%, demonstrating a moderate increase compared to -0.7% last year. Specialty trend rose more dramatically, from 14.3% to 20.0%, largely due to the introduction of new hepatitis C treatments with the promise of groundbreaking cure rates. High price inflation within specialty categories such as autoimmune disorders and multiple sclerosis also contributed to the rise in specialty trend.

What Can We Expect?

Global pharmaceutical spending is expected to reach a 7% compound annual growth rate (CAGR) by 2018, far outstripping the 5.2% CAGR recorded over the past five years. In the U.S., healthcare reform and a robust drug pipeline, along with ongoing price inflation, will continue to challenge payers' ability to keep costs in check. New patent expirations in 2015 will moderate this effect and will have the greatest impact in 2016. However, we do not expect generics to offset trend to the same degree as in recent years. And the emergence of innovative specialty products to treat chronic diseases promises to drive upward momentum on specialty trend.

Catamaran forecasts an overall pharmacy trend ranging between 5.6% and 9.2% for 2015. As always, we are working with our clients to ensure that everything is working for them – leveraging analytics to uncover opportunities and innovating now to provide unique solutions that solve tomorrow's challenges, to effectively manage the intersection of cost and care. We are exploiting each and every moment of opportunity to drive impressive results for clients, to keep it simple for members and to help patients lead better lives.

"Healthcare is imperfect. That's why Catamaran is an expert you can count on, that caring presence at the side of the client and the side of the patient... helping to improve outcomes, to improve the physical, psychological and financial well-being of patients. Catamaran employs national best practices, a local understanding of healthcare and individualized interventions to produce the very best results."

–Sumit Dutta, SVP, Chief Medical Officer, Catamaran

As the practice and regulation of healthcare continues to evolve and change at the national level, Catamaran stands with our clients, ready to bring a national perspective on best practices and the expertise needed to help them capitalize on emerging industry trends. Deep clinical expertise and insightful analytics form the foundation that keeps our clients well ahead.

Book of Business Analysis

Catamaran Trend 8
- Traditional Trend 12
- Specialty Trend 16

Hot Topics
- Compound Drugs 20
- Rising Generic Prices 22

Future Trend 24

catamaran trend

The continued introduction of new and innovative drug therapies and the evolution of the regulatory environment continued to transform the U.S. healthcare landscape in 2014.

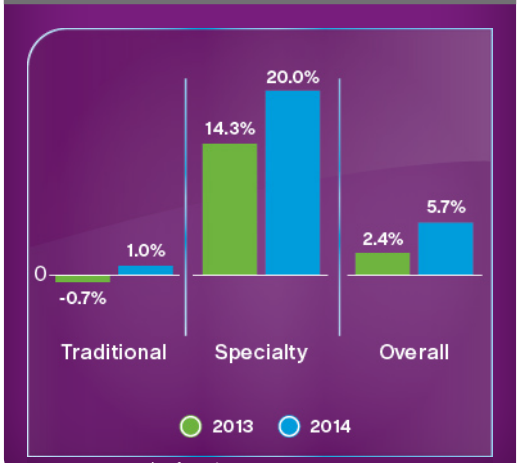
There was a transformation in spending patterns heightened by several trends, including increased utilization of costly biologicals, unexpected generic price inflation and greater consumer access to pharmacy care as a result of the Affordable Care Act. The pharmaceutical industry continued its growth trajectory as the Center for Drug Evaluation and Research (CDER) within the Food and Drug Administration (FDA) approved 41 new drugs, marking a record number of annual approvals by the FDA in the last 15 years.[1]

Specialty trend continued to rise. A robust specialty pipeline saw the adoption of newer, costly therapies for treatment of hepatitis C and cancer. And new molecular entities were approved to treat unique disorders. In addition, the emergence of innovative specialty products to treat chronic diseases not only impacted spending but also sparked intense focus by payers on drug pipeline monitoring and forecasting. Consequently, payers are increasingly open to adopting new strategies to address these trends. Examples include exclusive specialty arrangements for more consistent and streamlined management of specialty therapy and high-touch patient support to promote better adherence and appropriate use. Adding specialty tiers to formularies to drive better pricing and incentives for members to choose preferred options are also receiving careful consideration.

As the end of the generic patent cliff looms, there is greater emphasis on the importance of prescribing not just *any* generic but the most *cost-effective* generic. Fewer blockbuster generics were introduced in 2014, creating a need for innovative ways to manage trend. Moreover, changes in the generic market, including drug shortages, regulatory issues and loss of market competition, led to generic price inflation increases of 5-6%. This increase warrants the development of solutions geared toward promoting adoption of more cost-effective generics, even within classes that already have high generic utilization.

Drug therapy remains one of the most cost-effective methods to maintain wellness and manage chronic diseases. As the healthcare industry focuses on the ongoing challenge to rein in costs while improving overall health outcomes,[2] increased pharmacy utilization for conditions such as cardiovascular disease and diabetes can be expected. Greater emphasis on adherence and reducing gaps in care will expand focus beyond analyzing pharmacy costs as a discrete item to also include evaluation of pharmacy costs based on the essential role drugs play in managing total healthcare costs. Strategies that help ensure medication therapy delivers maximum therapeutic value to the right patient at the right time—and the best cost—become paramount in a move toward more outcome-focused ways to measure performance.

Catamaran Overall Trend
2013 vs. 2014
figure 01



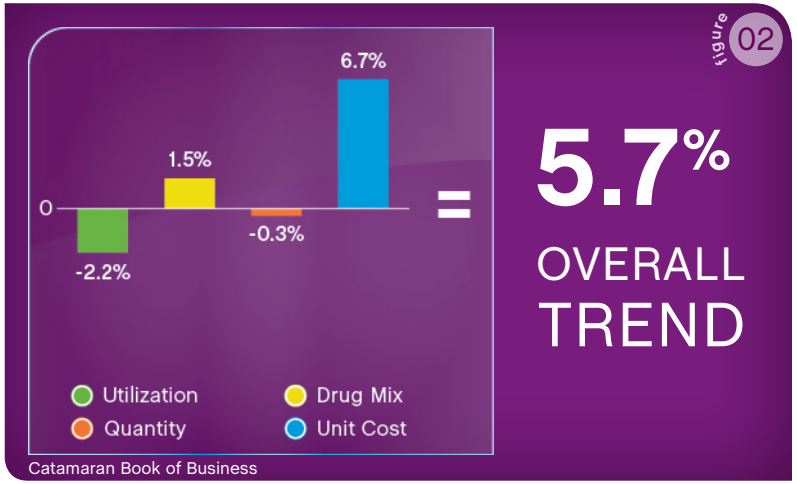
Catamaran Book of Business

Overall Trend

At Catamaran, trend assessment and management are core competencies, enabling us to qualify and quantify the driving factors of pharmacy trend. Continued evaluation of fluctuations within prescribing and utilization patterns as well as cost/inflation factors at specific drug levels creates the ability to quickly pinpoint emerging trends that need to be addressed. Our clients rely on us to provide in-depth visibility into trend changes and recommendations to mitigate trend based on our analysis. This expeditious approach to detailed trend analysis enables us to proactively develop targeted strategies to help our clients manage trend increases, while simultaneously promoting the highest quality of care.

We dissect trend by analyzing key drivers:

- **Utilization** measures the change in prescription volume. It is defined as a percent change in the number of prescriptions per-member-per-month (PMPM). Assessing changes in claim volume on a PMPM basis allows for identification of utilization changes due to factors such as patent expirations, clinical studies that were either favorable or unfavorable for a particular drug or drug class, or the effect of a clinical management strategy.
- **Drug mix** measures the impact of drug choice on trend. It identifies the changes in the mixture of types of drugs dispensed, such as more cost-effective alternatives as a result of generic launches, or more costly drugs due to the introduction of new molecular entities.
- **Quantity** measures the intensity of utilization. It evaluates changes in units dispensed per prescription. The quantity driver provides insights regarding the dosing impact of certain drugs as a result of increased or decreased intensity to obtain the same therapeutic effect. It may also indicate the effectiveness of programs such as quantity management or identify the need for such a program.
- **Unit cost** measures the variation of the cost of the drug. It identifies changes in cost per unit of a drug and determines the impact—whether an increase or decrease in price—as a result of reference price changes and other pricing factors and fees.



Drivers of Overall Trend

- At 5.7%, overall trend was greater in 2014 than the 2.4% trend seen in 2013, primarily because of increased specialty expenditures. There was a surge in the number of hepatitis C patients receiving active therapy in 2014 once the anticipated new therapies became available in late 2013 and 2014.
- Cost savings that were realized by a substantial increase in the use of generics and generic price improvements in 2013 were less in 2014, as fewer blockbuster drugs lost patent protection in 2014, which impacted the amount of savings generated by generic use.
- Utilization decreased, with the most notable impact for HIV/AIDS, cholesterol and ulcer/GERD drugs. These changes correlated to fluctuations in eligibility of HIV patients within the commercial population, treatment guideline changes for cholesterol management and over-the-counter availability of ulcer drugs.
- Drug mix increased, indicating utilization of more costly products. This was primarily due to specialty medications, specifically expensive

hepatitis C medications new to market in late 2013. These medications were a key factor in increasing the average cost per prescription by almost 8%. Innovative traditional medications for diabetes and anticoagulation also impacted the drug mix, on a much smaller scale.

- Unit cost continued to be the most significant driver, due primarily to substantial AWP increases. Drugs to treat diabetes, autoimmune disorders and multiple sclerosis accounted for nearly half of the unit cost increase. As a whole, generics had a dampening effect on trend; however, a small percentage of generics experienced significant cost increases. While several newer generic drugs reduced the unit cost increase due to improvements in pricing following their exclusivity periods, costs for other generics increased due to shortages and other market forces.
- Generic dispensing rate (GDR) increased 2 percentage points, as a result of patent expirations and utilization management programs to drive generic use. With the patent cliff ending, opportunities to increase GDR will lessen, as the patent expirations of blockbuster drugs will greatly diminish.

New Market Entries

The CDER approved a record 41 new drugs in 2014,[3] the highest annual level of new drug approvals in 15 years.[58] Specialty drug approvals continued to surpass traditional drug approvals, and this trend is expected to continue. Anti-infective drugs had the most approvals among all therapeutic classes with 11 new drug approvals including antibacterial, antifungal, antiparasitic and antiviral agents. Cancer drugs accounted for the second highest amount of approvals at 8, followed by endocrine and metabolic drugs with 6 approvals. Respiratory agents and gastrointestinal agents both received 3 new approvals.

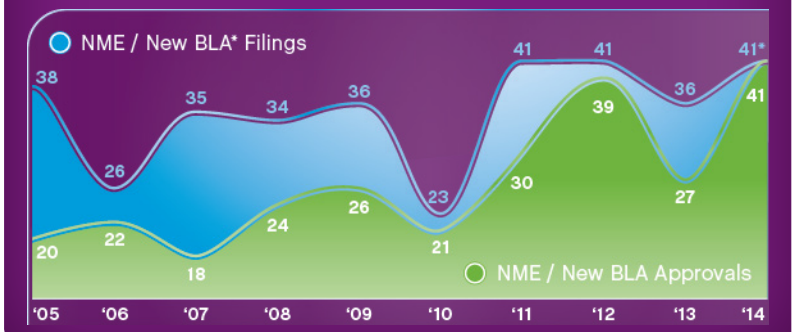
Generic Launches

Expectations of cost savings accompany the arrival of new generics to the marketplace. While it remains true that generics are more cost-effective than brands, 2014 saw less substantial cost differential between the brand and generic price for drugs that came off patent. Despite fewer blockbuster patent expirations in 2014, several key generics such as generics for Diovan and Celebrex did enter the market.

Number of New Molecular Entities

Figure 03

2005 – 2014 Filings & Approvals[3]



*BLA-Biological License Application

2014 Select Traditional FDA Approvals[3]

Figure 04

Brand Name	Indication(s)	Launch Date
Farxiga (dapagliflozin)	As an adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus (DM)	1/8/2014
Tanzeum (albiglutide)	As an adjunct to diet and exercise to improve glycemic control in adults with type 2 DM	4/15/2014
Striverdi Respimat (olodaterol)	Long-term, once-daily maintenance bronchodilator treatment of airflow obstruction in patients with chronic obstructive pulmonary disease (COPD), including chronic bronchitis and/or emphysema	7/31/2014
Jardiance (empagliflozin)	As an adjunct to diet and exercise, to improve glycemic control in adults with type 2 DM	8/1/2014
Belsomra (suvorexant)	Treatment of insomnia, characterized by difficulties with sleep onset and/or sleep maintenance	8/13/2014
Trulicity (dulaglutide)	As an adjunct to diet and exercise to improve glycemic control in adults with type 2 DM	9/18/2014

2014 Select Specialty FDA Approvals[3]

figure 05

Brand Name	Indication(s)	Date
Zykadia (ceritinib)	Treatment of patients with anaplastic lymphoma kinase (ALK)-positive metastatic non-small cell lung cancer (NSCLC) who have progressed on or are intolerant to crizotinib *AA, BT, OD, PR*	4/29/2014
Zydelig (idelalisib)	Treatment of patients with relapsed chronic lymphocytic leukemia (CLL), in combination with rituximab, in patients for whom rituximab alone would be considered appropriate therapy due to other co-morbidities; relapsed follicular B-cell non-Hodgkin's lymphoma (FL) in patients who have received at least two prior systemic therapies; and relapsed small lymphocytic lymphoma (SLL) in patients who have received at least two prior systemic therapies *AA, BT, FT, OD, PR*	7/23/2014
Keytruda (pembrolizumab)	Treatment of patients with unresectable or metastatic melanoma and disease progression following ipilimumab and, if BRAF V600 mutation positive, a BRAF inhibitor *AA, BT, OD, PR*	9/4/2014
Harvoni (ledipasvir/ sofosbuvir)	Treatment of chronic hepatitis C (CHC) genotype 1 infection in adults *BT, FT, PR*	10/10/2014
Viekira Pak (ombitasvir / paritaprevir / ritonavir + dasabuvir)	Treatment of patients with genotype 1 chronic hepatitis C virus (HCV) infection including those with compensated cirrhosis *BT, FT, PR*	12/19/2014
Opdivo (nivolumab)	Treatment of patients with unresectable or metastatic melanoma and disease progression following ipilimumab and, if BRAF V600 mutation positive, a BRAF inhibitor *AA, BT, FT, OD, PR*	12/22/2014

AA = *Accelerated Approval; allows early approval of a drug for a serious or life-threatening illness that offers a benefit over existing treatments*

BT = *Breakthrough Therapy; drugs with preliminary clinical evidence demonstrating substantial improvement on at least one clinically significant endpoint*

FT = *Fast-Track; speeds development and review of drugs with the potential to address unmet medical needs*

OD = *Orphan Drug; drugs to treat rare or orphan diseases that affect <200,000 Americans*

PR = *Priority Review; drugs that potentially provide a significant advance in medical care are reviewed by the FDA in 6 months vs. the standard 10 months*

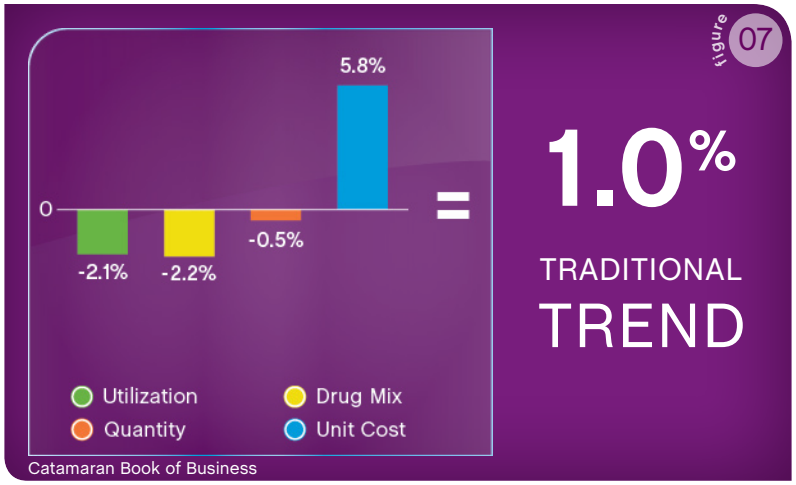
Top Generic Launches of 2014[4]

figure 06

Drug Name	Therapeutic Class	U.S. Sales†	Release Date
Detrol LA	Genitourinary Products	**$572 M**	**January**
Myfortic	Assorted Classes	**$307 M**	**January**
Micardis **Micardis HCT**	Cardiovascular Agents	**$259 M** **$218 M**	**January** **February**
Rapamune	Assorted Classes	**$206 M**	**January*** **October****
Avelox	Anti-infective Agents	**$195 M**	**February**
Evista	Endocrine & Metabolic Agents	**$824 M**	**March**
Xeloda	Antineoplastics & Adjunctive Therapies	**$774 M**	**March**
Lovaza	Cardiovascular Agents	**$1 B**	**April**
Lunesta	CNS Drugs	**$852 M**	**April**
Exalgo	Anesthetics & Analgesics	**$230 M**	**May**
Diovan	Cardiovascular Agents	**$2.2 B**	**July**
Baraclude	Anti-infective Agents	**$328 M**	**September**
OxyContin	Anesthetics & Analgesics	**$2.5 B**	**September**
Exforge **Exforge HCT**	Cardiovascular Agents	**$422 M** **$158 M**	**September** **December**
Valcyte	Anti-infective Agents	**$440 M**	**November**
Celebrex	Anesthetics & Analgesics	**$2.6 B**	**December**
Intuniv	ADHD /Antinarcotic / Antiobesity/ Anorexic Agents	**$668 M**	**December**
Vivelle-Dot	Endocrine & Metabolic Drugs	**$240 M**	**December**

†estimated U.S. sales

*0.5mg-January | **1mg & 2mg-October

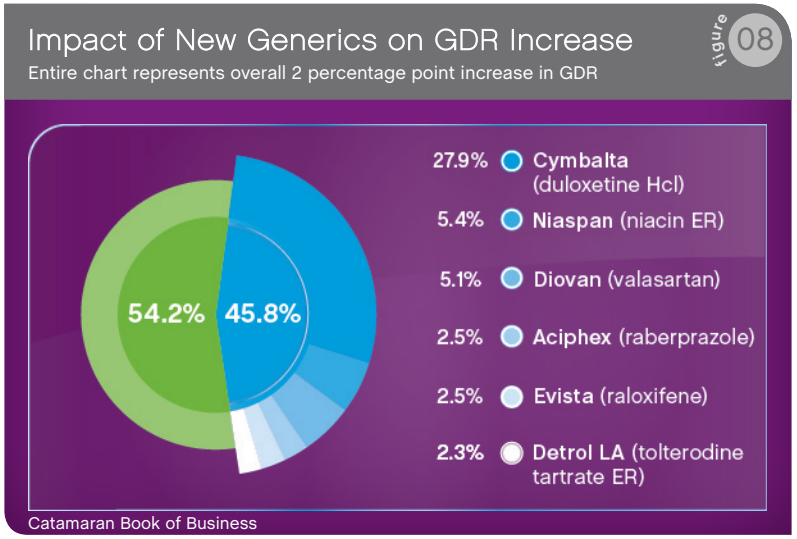


Traditional Trend

In 2014, the Catamaran book of business experienced a traditional trend of 1.0%. Higher than normal unit cost increases due to significant AWP inflation for key drugs were the leading driver. However, the unit cost increases were offset by decreased utilization and an improved drug mix, primarily due to the impact of strong trend and utilization management programs, such as step therapy and prior authorization.

Utilization

- Utilization of traditional drugs decreased, with an average 2.1% reduction in prescription claims PMPM from 1.08 in 2013 to 1.06 in 2014. This utilization shift was due to a decrease in high-risk utilizers across the commercial book of business. Specifically, there was a dramatic 13.7% decrease in HIV agents and associated comorbidity claims that usually accompany these members.
- Higher claims volume of select diabetes agents contributed to increases in utilization. Advances in diabetes management brought about a novel therapy that increases the elimination of glucose from the system, SGLT-2 inhibitors, (e.g. Invokana® and Farxiga®). These drugs, which are more costly than mature oral diabetic therapies, had a 6-fold increase in claims, increasing their market share to 1.7% of diabetes medications.



- Utilization increased for newer generics, led by duloxetine (generic Cymbalta®) which became available in late 2013. Other new generics also contributed to the GDR increase of 2 percentage points, as exhibited in Figure 08.
- There was a 4% decrease in the utilization of agents to control cholesterol, which was influenced by the new 2013 guidelines endorsed by two leading heart organizations: the American College of Cardiology and the American Heart Association.[5] The new recommendations altered the focus away from cholesterol lab levels and toward lowering the risk of heart disease and stroke.

GDR increased 2 percentage points reaching 85.6%

Unit Cost

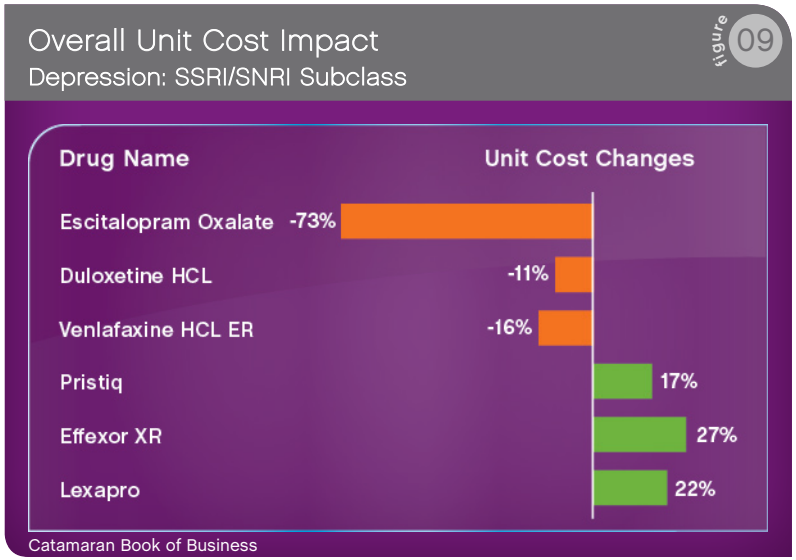
- Brand medications accounted for the majority of the 5.8% unit cost increase. Generic medications had overall pricing improvements, which dampened the effect by offsetting a third of the brand unit cost increases. However, select generics had very high increases due to drug shortages and other market forces impacting supply and demand.
- The insulin class accounted for 30% of the unit cost increase for traditional medications. This was due to frequent and dramatic AWP increases over the past few years. As an example, Lantus® experienced an 88.4% overall AWP increase from January 2013 to December 2014.
- Drugs losing patent protection traditionally experience price inflation prior to generic launch. In 2014, unit cost increases were seen in select brands with generic launches that either occurred in 2014 or are planned for 2015. Key brands with recent or upcoming patent expiration dates that experienced dramatic inflation include:

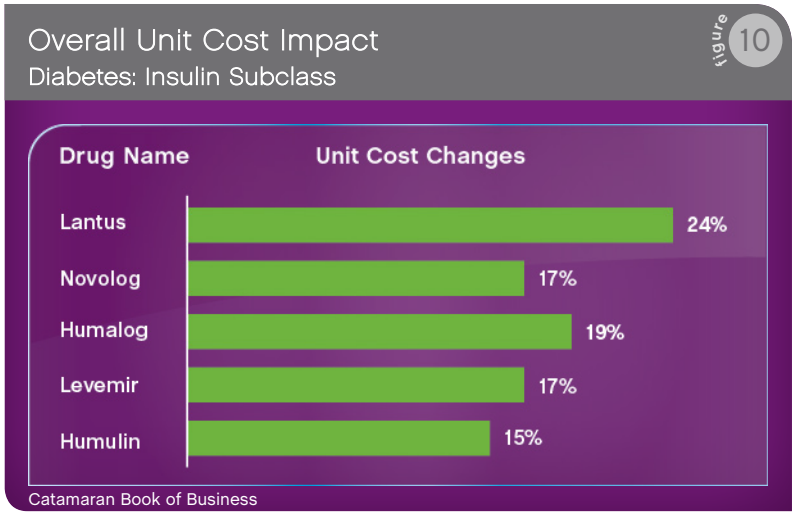
  Diovan®–July 2014 Nexium®–Feb 2015
  Celebrex®–Dec 2014 Abilify®–April 2015

- Generic medications had an overall unit cost decrease that resulted in a 2.4% reduction in traditional expenditures. Generic agents such as Lexapro®, Cymbalta® and Diovan HCT® had improved pricing after the conclusion of their exclusivity period, as products were supplied by more manufacturers. Additionally, improved pricing was realized for key older generics, including the generics of Lipitor® and Valtrex®.

Drug Mix

- Drug mix decreased for traditional medications. Some classes experienced increased utilization of more costly drugs while others saw large decreases. The overall effect was a negative, or favorable, drug mix.





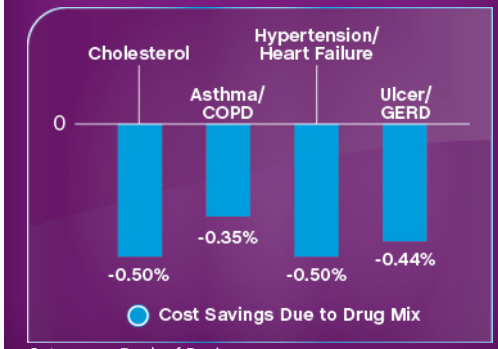
- **Drug mix increased for certain classes including:**
  - Pain–opioids: Increased use of drugs that cost between $50-100 per prescription, versus the average cost of $40 in this class. Tamper-resistant medications and novel dosage forms have also influenced the increased cost.
  - Anticoagulants: Increased use of Xarelto® at a cost 5 times higher than the average in that class.
  - Diabetes: Newer therapies including DPP-4 inhibitors (e.g. Januvia®) and SGLT-2 inhibitors (e.g. Invokana®) have led to higher costs. Overall improved health outcomes are anticipated with these types of newer diabetic therapies.
- **Drug mix decreased for certain classes including:**
  - Cholesterol: Patent expirations for Niaspan® and Lovaza® along with utilization management programs targeted at increasing generic use have led to a notable increase in the utilization of generics. With new medications in late 2015 for familial hypercholesterolemia (FH) and statin intolerant patients, the class is expected to experience an increase in the very near future.
  - Ulcer/GERD drugs: There are many generic and OTC options for treatment. Nexium®, the most utilized brand in the class, became available as an OTC product in 2014. It will be generically available by prescription in 2015 contributing to the GDR in this class approaching 90%.
  - Hypertension/Heart Failure: Diovan® (an angiotensin 2 receptor blocker) became generically available in mid-2014, and helped to drive the GDR of this class to 80%.
  - Depression: With the arrival of generic Cymbalta®, there are now numerous generic options for treatment of depression that are optimal for most patients, reducing the need for brand prescribing. Generic utilization increased by 6%, which resulted in a 15% decrease in the average cost per prescription in this class.

Quantity

- The effect of the quantity driver is minimal within the traditional class, a direct result of our Quantity Limits program working to control costs. There are many drugs that experienced slight increases in quantity, as well as many drugs with slight decreases.
- A marked increase in this driver for a drug or a therapeutic class is a valuable indicator of the need for implementation of quantity management solutions. In 2014, there were only a few drugs that had increases: mesalamine (irritable bowel syndrome/ulcerative colitis), Androgel® pump (hormone replacement) and Absorica® (acne).
- Decreases in quantity were seen in compound claims due to the implementation of plan limits within our compound management strategy, as well as different ingredients included in the mixtures and variation of the conditions treated.

Drug Mix Improvements

Figure 11



Catamaran Book of Business

Drug mix improvements in 4 classes resulted in

savings of 1.8%

in traditional spend

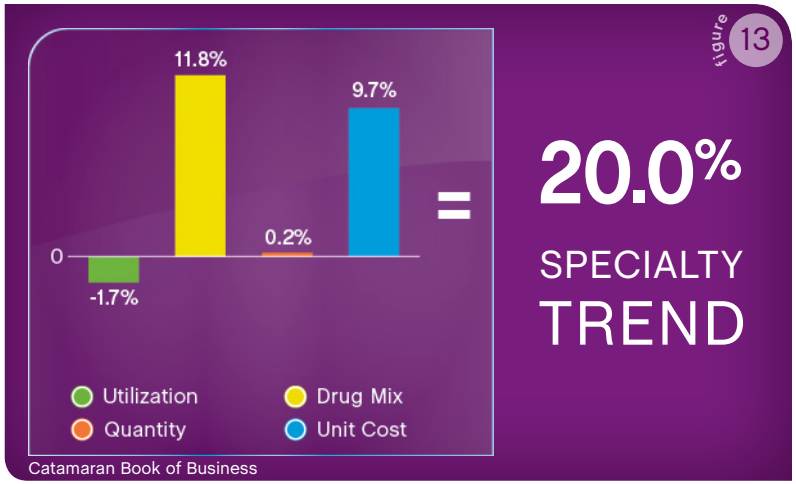
Traditional Quantity Drivers

A recent study shows mesalamine prescribed at higher than normal dosages works favorably for patients with ulcerative colitis. In 2014, we saw a slight increase in the quantity per prescription, and as prescribers adopt the new dosing regimen will likely continue to see increases in the future.[6]

Top 10 Traditional Therapeutic Classes by Cost

figure 12

Catamaran Book of Business



Specialty Trend

In 2014 we saw a higher specialty trend of 20.0%, compared to 14.3% in 2013. This was driven primarily by drug mix, where expensive, highly anticipated new hepatitis C medications with claims costing between $22,000–32,000, considerably impacted overall specialty spend. Unit cost also continued to significantly contribute to the increased specialty spend, as some highly utilized drugs, such as in the autoimmune disorder and multiple sclerosis categories, experienced double-digit inflation. Overall, there was a decrease in utilization, with fewer claims in 2014, although that only slightly mitigated the overall expenditure increases associated within specialty.

Autoimmune Disorder Drivers

Utilization represents 23.2% of overall trend for this class due to more utilizers and improved adherence.

5.4%	1.9%	-0.3%	16.3%
utilization	drug mix	quantity	unit cost

Utilization

- Specialty utilization had a net trend decrease of 1.7% with the most notable utilization decreases in HIV/AIDS and cancer medications. The HIV/AIDS category had a significant decrease in utilization of 13.8%, with only a minimal shift to newer HIV combination products containing multiple agents such as Stribild® and Complera®. This decline in utilization correlated to the decline in HIV members within the commercial population in early 2014. Interestingly, a disproportionate percentage of HIV patients (5 times higher) are represented in the Health Insurance Marketplace segment in early 2014.
- Autoimmune disorders also experienced a significant increase in utilization of 5.4%, impacted by expansion of indications and increased direct-to-consumer advertising. This growth was led by an increase in claims for Humira® mainly prescribed for rheumatoid arthritis, plaque psoriasis, Crohn's disease and ankylosing spondylitis. Largely prescribed for plaque psoriasis and psoriatic arthritis, Stelara® also contributed to the higher expenditures in the class as its cost per day is higher than other agents. Other agents such as Cimzia®, approved for additional indications in recent years, and Xeljanz®, available in an oral dosage formulation, experienced additional growth.
- Cancer medications had a 0.2% decline in utilization, driven by products such as Gleevec® which decreased by 7.2%. However, the impact of decreases in utilization were negated due to prescribing of more expensive cancer therapies such as Inylta® and Mekinist®.
- Utilization of hepatitis C drugs increased by 26.5%, following a substantial decrease in utilization in early 2013 due to patient warehousing. Prescribers delayed patient therapy in anticipation of the highly anticipated new therapies—Sovaldi® and Olysio®—which touted improved outcomes and less adverse effects. The market launch of Sovaldi and Olysio in late 2013 was met with a marked claims increase in early 2014 as physicians resumed patient therapy. Similarly, the late 2014 launch and rapid adoption of Gilead's Harvoni®, a combination of ledipasvir and sofosbuvir, contributed to the utilization increase. In December 2014, Harvoni's 51% market share greatly exceeded the 27% share that Sovaldi held.

Unit Cost

- Unit cost accounted for nearly half of the overall specialty PMPM increase, and was primarily due to AWP inflation associated with high volume categories. Agents within highly utilized categories such as autoimmune, cancer and multiple sclerosis had the highest unit cost increases: 16.2%, 10.0% and 9.9%, respectively, accounting for approximately 40% of the overall specialty trend. Given the high cost of specialty drugs, even small to moderate AWP increases may have significant impact on unit cost.
- A significant percentage (44.6%) of the specialty unit cost increase was associated with autoimmune disorder medications. Specifically Humira and Enbrel® accounted for 85% of this increase, with significant increases of 50% and 35%, respectively.
- The anticoagulant category, at -14.4% trend, represents one of the few specialty classes with generic alternatives available for products such as Lovenox® and Arixtra®. Generic pricing improvements accounted for over 50% of the negative trend. Reductions in unit cost associated with generic price improvements helped to mitigate some of the cost increases in other categories.
- Unit cost was the most significant driver for cancer accounting for approximately 90% of the total trend for this class. The unit cost increase was led by Gleevec, which had an 18.9% increase due to inflation. Unit cost was slightly mitigated, however, as some pricing improvements were made for new generics (e.g. generic Temodar®) and more are expected in 2015, as the generics become more mature.
- A unit cost increase for the multiple sclerosis class was driven by Copaxone® and Tecfidera®. Over the past year, Copaxone experienced a very high unit cost increase of 20.8%, in anticipation of the market launch of its biosimilar.

22% **Increase in the average cost per specialty prescription**

due to both unit cost and drug mix increases as more expensive drugs were utilized

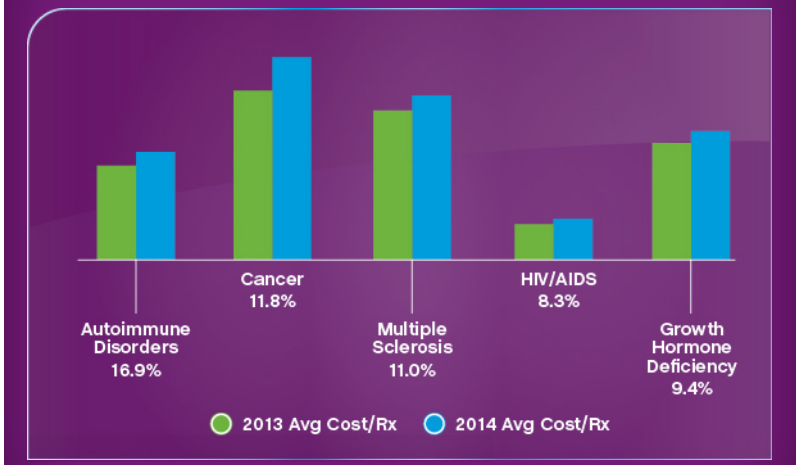
Nearly 25% **of the specialty trend was due to the unit cost increase for the top 5 drugs**

Top drugs impacted by AWP increases

Drug Name	Percent of Overall Increase
Humira	10.4%
Enbrel	7.3%
Gleevec	2.7%
Copaxone	2.1%
Tecfidera	1.8%

Top Classes with Unit Cost Increase:
effect on the average cost per prescription*

Figure 14



Catamaran Book of Business

*Percent figures indicate the percent increase in the average cost per prescription

Drug Mix

- In 2014 drug mix at 11.8% was the dominant driver, unlike 2013 at 0.3%, with two crucial variations in specialty categories that influenced the change:
  - The first was the expected expenditure explosion for hepatitis C medications. In 2012, much press was given to the advent of new therapies, which promised improved outcomes through virus eradication and improved side-effect profiles. In 2013 we saw the effect of the awaited superior therapies, as utilization of current hepatitis C medications diminished significantly. In 2014, the combined effect of new utilization that resulted from warehoused patients beginning treatment, plus new therapies that were triple the cost of the most expensive older options, had a major impact on the specialty drug mix.
  - The second effect was seen in the HIV/AIDS category where there was a reduction in utilization. Since these agents are less costly than most specialty medications, this decrease in claims count also increased the drug mix.
- The previous wave of hepatitis C medications (e.g. Incivek® and Victrelis®) which became available in 2011, had such a comprehensive decline that Incivek was voluntarily pulled from the market in October 2014. Ribavirin and interferon continue to be utilized, but usually in combination with the newer agents. The landscape has changed for this class, with the average cost per claim rising more than 300%—from $3,400 in 2013 to $14,000 in 2014—with the influence of Sovaldi, Olysio and Harvoni ($28K, $22K and $32K, respectively).
- The pulmonary arterial hypertension class, which treats a rare disorder where high blood pressure has serious effects on the lungs and heart, experienced cost savings as generic Revatio® continued to gain share. At a cost differential of almost $5,400 compared to brand agents, use of this medication is a favorable influence on drug mix.
- The multiple sclerosis (MS) class experienced a shift away from injectable therapies to oral medications. Oral medications accounted for less than 20% of the claims in 2013, and now comprise more than 30%. Ease of use and fewer adverse effects have contributed to the movement towards oral agents, although currently accepted MS guidelines do not yet address the subject of orals within their protocols. The cost differential between oral and injectable agents is minimal.
- The autoimmune disorder class has seen a shift in drug and delivery form (e.g. vial and syringe) to integrated delivery options (e.g. pens and other devices). For Humira and Enbrel, the most prescribed agents in this category, there is a 75% market share for drug delivery via devices, up 3% from last year. Devices are marginally higher in costs than vials. Additionally, this class also experienced a slight increase in the use of the oral agent Xeljanz, from less than 1% to almost 2% of market share.

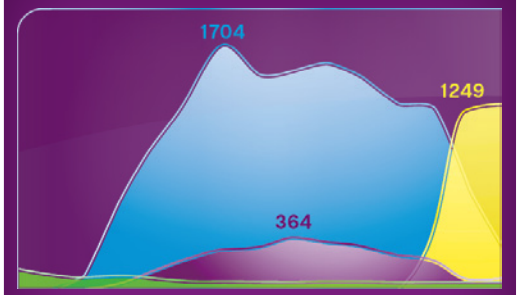
Quantity

- The 2014 quantity driver at 0.2% is negligible, similar to 2013. Variations in the quantity driver are typically the result of changes in prescribing or dosing guidelines, dosing differences based on patient age or weight, as well as utilization management programs that address inefficient medication usage by promoting cost-effective prescribing and reducing waste.
  - **Firazyr®**, an agent to treat acute attacks of hereditary angioedema, had a slight quantity increase. As the dosage of 30 mg can be repeated up to 3 times within a 24 hour span, the quantity dispensed on a prescription can vary, based upon the prescriber's assessment of the patient's dosage requirements for treatment.
  - **Gleevec,** utilized in the treatment of various cancers, had a slight quantity decrease. The variations in units per prescription impacting the quantity driver are based upon the specific cancer or treatment regimen, as different cancers require different doses, as well as variances in prescribing dosages for pediatric and adult patients.

Impact of new hepatitis C drugs Sovaldi, Olysio and Harvoni accounted for a **9.1%** **increase in the average cost/specialty Rx**

Hepatitis C
New Member Utilization

Figure 15

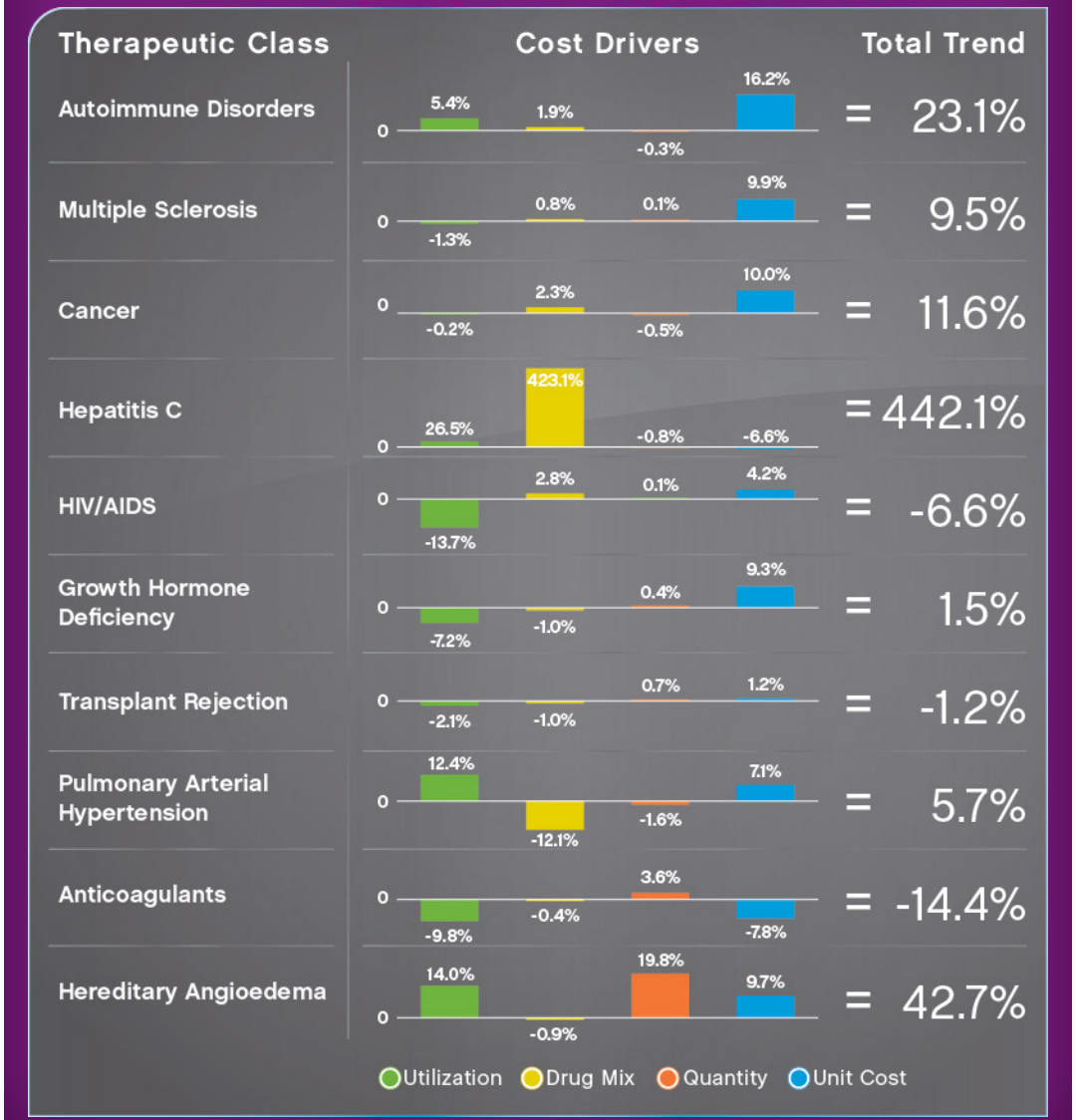


There was a sharp increase in the utilization of newer hepatitis C class drugs

Catamaran Book of Business

Top 10 Specialty Therapeutic Classes by Cost

Figure 16



Catamaran Book of Business

hot topic: compound drug management

The practice and safety of pharmacy compounding—the custom mixing of two or more drugs for an individual patient—burst into the national spotlight in 2012 when a meningitis outbreak sickened 750 and killed 64 people nationwide.

The outbreak was linked to a drug mixed by a compounding pharmacy in Massachusetts. In December 2014, the owners and multiple employees of the pharmacy were charged with using expired ingredients and failing to follow cleanliness standards.[7]

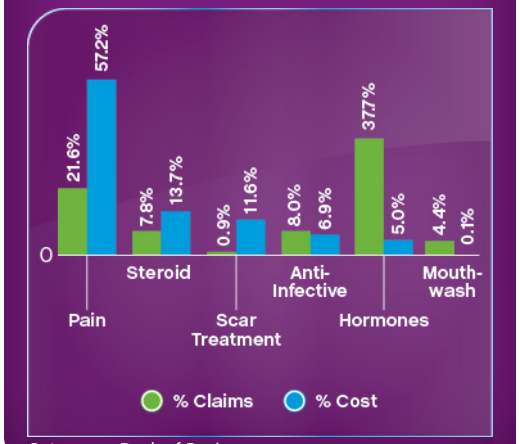
In addition to recognized safety concerns, both the volume and cost of compound prescriptions have been rising at a rapid pace, with some pharmacies billing in excess of $10,000 per prescription.[8] Within Catamaran's book of business, compound prescription expenditures have increased significantly over the past two years, with the overall average cost per claim rising to $520 in 2014. In cases of more expensive compounds—those over $300—the cost per prescription has been even more substantial, averaging $1,473 per prescription.

Causes of skyrocketing prices include an uptick in claim volume and the incorporation of more expensive ingredients into compound formulations. A marked shift in the types of compounds being utilized, from lower cost hormone and mouthwash compounds to more expensive pain and scar treatment compounds, has added to increased costs.

Implementing a comprehensive solution that targets the widespread concerns surrounding compound medications is critical for plans to ensure patient safety, promote appropriate utilization and reduce costs.

Changing Mix of Compounded Agents

figure 17



Catamaran Book of Business

Compound Drug Issues

Safety & Quality

- Compounds are not FDA-approved
- FDA has found widespread safety issues at compounding pharmacies
- Oversight by state boards of pharmacy results in a high degree of variability in regulation from state-to-state

Clinical

- Ingredients are not FDA-approved for specific route of administration
- Lack of clinical data to establish safe and effective dosage strengths
- Drug concentrations far exceed those of commercially available FDA-approved products
- Duplicative therapies used in the same product increase the risk of adverse events

Financial

- More cost-effective FDA-approved alternatives are available
- The most cost-effective, clinically effective ingredients are not always utilized
- Billing practices are not standard

Catamaran Solution

Catamaran manages the rising cost and utilization of compound drugs through our Safe & Effective Compound Use Reassurance Effort (SECURE) program. This program also addresses the significant safety risks associated with the lack of oversight of these medications by the FDA. SECURE offers:

- **Network Credentialing Program**
  Catamaran's Network Compound Credentialing Program (NCCP) is the industry's first such program. The program validates compounding pharmacies through a comprehensive credentialing program and pricing management strategy to ensure that consistent high-quality standards are upheld from pharmacy to pharmacy.
- **Rigorous Prior Authorization Criteria**
  Prior authorization edits can be implemented for a select list of compound ingredients regardless of the submitted cost. This target list includes products used off-label, as well as products with potential safety risks.
- **Enhanced Drug Utilization Review**
  Point-of-service screening for compounds containing two or more duplicative ingredients, reducing adverse events.
- **Lower Price Limitations**
  A maximum dollar threshold for coverage can be set, and compounds exceeding the threshold are subject to prior authorization.
- **Select Bulk Chemicals Exclusions**
  Exclusion of bulk chemicals that are not FDA-approved, have questionable clinical value or conflict with benefit limits. Examples include those used for cosmetic purposes or when over-the-counter alternatives are available.

Compound Drug Case Study

Situation:
Employer with 40,000+ members dealing with rising compound drug utilization and costs.

Solution*:
SECURE program elements that included rigorous prior authorization criteria, exclusion of compound kits and lower price limitations.

Year-Over-Year Compound Claim Comparison	Sept 2012 to Aug 2013	Sept 2013 to Aug 2014
Claims	2,678	3,159
Plan costs	$450K	$163K
Avg cost per claim	$168	$51
PMPM	$0.86	$0.30

*September 2013 implementation

Despite an 18% increase in compound claims volume, the client achieved PMPM **savings of $0.56.**

SECURE program savings:
70% reduction in client compound spend

- **Compound Kit Coverage Exclusions**
  Exclusion of compound kits, which can be significantly more expensive than utilizing individual ingredients.
- **Step Therapy Initiatives**
  Step therapy ensures that clinically appropriate, FDA-approved and cost-effective alternatives are dispensed before a compound medication is covered by the plan.
- **Standardized Claims Submission**
  Catamaran standardizes the submission and billing of compound medications by requiring compliance with current NCPDP multiple ingredient submission logic, applying concurrent DUR edits and pricing logic at the individual ingredient level and only paying for compounds with at least one FDA-approved drug product.

Through our SECURE program, healthcare payers are provided with a comprehensive cost management strategy to ensure the safe and effective use of compound drugs. Healthcare payers can choose to implement the entire program or select the options that best align with their goals.

hot topic: generic prices on the rise

Promoting the use of low-cost generic alternatives over higher-priced brand medications continues to be a key part of pharmacy cost management. But as the use of generics has grown, so has the cost of these typically low-priced medications.

In 2010, consumers paid an average of $13.14 per prescription for the 50 most utilized generics. In 2014, for the top 50 generics they paid an average of $62.10, a 373% increase, based on analysis of Catamaran's commercial book of business. A variety of market forces are contributing to the rising prices of both mature and the new-to-market generics.

Mature Generics – Price increases of widely utilized generics are driven by recent changes in the generic market, such as drug shortages, loss of market competition and reduced materials supply. FDA regulatory requirements, including stricter safety requirements and bans on some manufacturers, have led to a demand greater than the available drug supply. Substantial market consolidations of both generic manufacturers and the resource suppliers providing raw materials have also led to a loss of market competition and higher-priced product ingredients.

New Generics – Higher prices of new generics can be attributed to the availability and use of more complex chemicals, as well as more sophisticated delivery and dosage forms. During the first six months of generic availability, drug manufacturers are frequently given an exclusivity period for production. During this timeframe, new generics often cost three times the price of mature alternatives. Once post exclusivity is reached, prices decline.

Average Cost Per Generic Prescription
2013–2014

Figure 18

Catamaran Book of Business

On average, generics account for

85%+ of plan utilization

but only 30% of plan spend

Analysis of generic trends based on Catamaran year-over-year data shows that the overall trend for prices of generic drugs increased by 5% in 2014. The market share of generics that cost more than $100 per script has increased year over year, representing just over 5% of total generic prescription claims, but 45% of total generic costs.

Even with rising prices, generics overall continue to be more cost-effective compared to brand. On average, generics account for 85% of plan utilization and 30% of spend. Promoting the utilization of generic medications continues to be a strong strategy to mitigate the increase in overall drug costs. However, as the generic landscape continues to change, so does the need to more closely manage generic spend. Plans must implement new strategies to drive members toward choosing the most cost-effective generic options.

Moments of Opportunity

Solutions for mitigating generic price increases should include a thoughtful approach to plan design and formulary management as well as the use of clinical programs that promote prescribing of the most cost-effective generic options. Catamaran offers a comprehensive program that includes:

Generic Tiering

A multi-tier generic formulary moves the highest priced generic drugs to higher tiers, incenting members to choose clinically effective, low-cost generic options. As with brands, non-preferred generics can also be excluded from coverage when clinically appropriate.

Retrospective DUR

Therapeutic interchange and Catamaran's RetroDUR programs deliver savings by identifying and intervening when non-preferred generics are used and a preferred generic is available.

Formulary & Utilization Management

In addition to the Catamaran Value Formulary, Step Therapy and Prior Authorization programs encourage the use of clinically effective, lower-cost drug options as the first choice of treatment. Extensive member education is used during the transition period to assist with successful outcomes.

ePrescribing

With Catamaran's ePrescribing solution, prescribers have real-time access to a patient's formulary and medication history at the time of prescribing, leading to increased formulary compliance and a higher generic dispensing rate.

As generic drug costs continue to rise, the key to managing pharmacy costs will be in implementing creative solutions and innovative approaches that ensure the most cost-effective generics are being used.

"Traditionally, we could count on generics to help decrease costs. For the first time in recent history, generic pricing inflation is now trending on-par with branded medication inflation."

– Sumit Dutta, M.D., SVP & Chief Medical Officer at Catamaran, quoted in Drug Benefit News.[9]

Price Increases for Mature Generics

(July 2013 vs. July 2014)

Generic Capoten
4,340%
(Captopril)

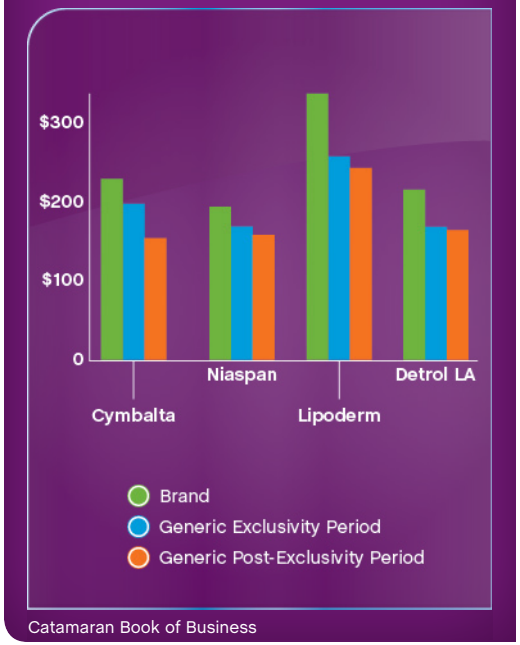
Generic Anafranil
1,818%
(Clomipramine)

Generic Synthroid
194%
(Levothyroxine)

Figure 19

Relative Costs for Select Brands and Generics

Exclusivity & Post-Exclusivity



Catamaran Book of Business

future trend

Global pharmaceutical spending spiked in 2014 and is expected to continue to grow over the next several years, reaching a compounded annual growth rate (CAGR) of up to 7% by 2018, higher than the 5.2% recorded over the past five years.[1]

Launch of costly biologicals and innovations in the treatment of cancer, hepatitis C, diabetes and cholesterol management are fueling increasing trend projections. The U.S. pharmaceutical market represented over one-third of the total global spend, and is expected to grow at a CAGR of 5-8% through 2018.[1]

The 2015 Catamaran forecast estimates an **overall pharmacy trend of 5.7–9.1%.** The rise in trend is a result of the continuing influence of specialty, the effect of price inflation and an increasing focus on medication adherence. The compounding effect of price inflation on expensive specialty agents—such as products within the autoimmune class and highly utilized traditional products such as insulin—will continue to drive trend. Additionally, increases in the adoption of new, innovative therapies that hold promise of improved outcomes in the treatment of diabetes, cholesterol and depression will continue to drive trend.

Patent expirations for blockbuster agents including Nexium®, Celebrex® and Abilify® will help offset some of the rising costs. Following launch, these new generics will have an increasing controlling effect in 2015, but will have the largest impact in 2016 as market share is maximized and greater pricing discounts are realized. However, in future years, generics will have less offsetting impact on overall drug trend than in the past. Generic market forces such as drug shortages and lack of market competition will create an overall rise in generic costs.

Figure 20 illustrates the Catamaran Trend Forecast for 2015–2017, demonstrating that overall pharmacy trend may reach double digits by 2017.

figure 20

Catamaran Trend Forecast Summary 2015–2017

	Traditional	Specialty	Overall
2015	0.8–3.2%	18.2–24.2%	5.7–9.1%
2016	1.0–2.9%	17.6–24.0%	6.2–9.6%
2017	2.7–4.6%	20.7–26.7%	8.7–12.4%

For access to updated information visit our Trend Portal at

trendreport.catamaranrx.com

Expenditures will be fueled by:

Extensive pipeline of traditional products, especially new diabetes therapies.

An industry-wide focus on medication adherence.

Robust pipeline of new molecular entities.

Sales of blockbuster hepatitis C products, expected to peak in 2016.

New therapies in 2015 to treat cancer, autoimmune disorders, cholesterol, pulmonary hypertension and cystic fibrosis.[10]

Novel therapies in common chronic conditions such as PCSK9-Inhibitors.*

Increased utilization of biologics due to expanded indications, DTC advertising, more convenient dosage forms and improved outcomes for autoimmune disorders, hepatitis C, MS and HIV/AIDS.[11]

*Proprotein convertase subtilisin/kexin type 9

The Changing Generic Landscape

The robust research and development pipeline has led to an increased market share of biologics and other innovative brand therapies. Consequently, the increased trajectory for generic dispensing has slightly flattened. Industry sources predict a 30% lower conversion to generics due to the higher uptake for new brand medications, specifically biologicals. Because of these factors, only a 46% conversion to generics is expected from 2014–2020, compared to 64% historically experienced from 2006–2013.[11]

Generics offer more cost-effective options and help to control overall drug trend. With an industry leading GDR of 85.6%, Catamaran offers tailored solutions to maximize cost-effective prescribing through aggressive plan design, utilization management edits and outreach communications to members. Through ongoing deployment of strategies to maximize generic utilization, Catamaran's GDR is expected to reach 90% by 2017 (Figure 21).

Specialty Pipeline

The specialty/biological pipeline is expansive, approaching 50% of pharmaceutical research and development activities.[12,13] Looking ahead to 2020, over half of the top 50 selling products in the U.S. will be specialty drugs.[11] The top biologicals shaping the 2015 forecast include treatment for breast cancer, rheumatoid arthritis, hepatitis C and multiple sclerosis.[11] The pipeline of cancer drugs is abundant, as4 of the top 5 fastest growing indications are cancer-related, including melanoma, chronic lymphocytic leukemia, non-small cell lung cancer and non-Hodgkin's lymphoma.[10] Similarly, the latest innovations in hepatitis C treatment, combination therapies of interferon-free, oral regimens demonstrating high sustained viral response rates, will continue to garner comparable attention as 2014.

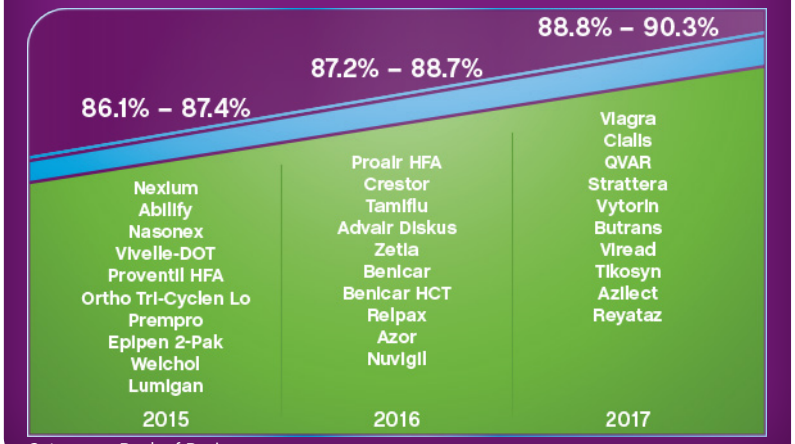
In addition, highly anticipated new market entrants to treat high cholesterol for statin intolerant patients and familial hypercholesterolemia, PCSK9-Inibitors*, will expand cholesterol treatment into the specialty arena. PCSK9-Inibitors are slated to have the first approved agents (alirocumab/evolocumab) in late 2015, potentially reshaping the treatment landscape. Costing an estimated $6–10K annually, these agents are anticipated to have considerable impact on trend in the coming years.[14,15,16] Based on an estimate that 5–10% of the population taking statins will be statin intolerant, and with an estimated treatment adoption rate of 30–50%, Catamaran forecast models project an impact of 0.8–4.4% to trend in one year. Outcomes study data, expected to be released in 2017, will be critical in shaping the full population uptake for these agents over the following years.[17]

With the robust specialty pipeline and new therapies that will soon hit the market, there is much momentum fueling specialty growth. The expansion of treatment indications for biologics and entrance of biosimilars into the market will continue to change the specialty landscape, indicating the growing need for novel cost and utilization management that are tied to outcomes.

Catamaran offers a Hepatitis C Clinical Outcomes-Based Program that provides full treatment support for specialty patients, lowering overall costs and providing an outcome guarantee based on clinical results.

Projected Generic Dispensing Rate
2015–2017

figure 21



Catamaran Book of Business

Knowing that all clients have their own ideas of what works best for them, we find opportunities to work closely together, tailoring solutions to meet their diverse needs. We value open discussions with clients, focused on their unique business goals and cost challenges. A deep understanding of market dynamics and other forces that contribute to overall trend illuminates the path forward.

Catamaran Market Segments

A Tailored Approach 28
Highly Managed Clients 29
Market Segment Analysis
- Employer 30
- Health Plans 32
- Labor and Trust 34
- Medicare Part D 36
- State and Local Government 38
- Workers' Compensation 40
- Health Insurance Marketplace 42
- FFS Medicaid 44

a tailored approach

Yes, there is one best solution. It's just different for every client. While other PBMs make clients fit their model, we fit our clients' needs. We smartly customize our solutions around each client's environment and requirements, with a wide choice of options and services.

As price inflation continues to exert an upward influence on pharmacy spend, Catamaran helps healthcare payers understand their specific cost drivers and develop the right strategies to manage drug mix, utilization and quantity. Plan design, formulary structure and clinical programs are critical tools available to clients that can be tailored to have an impact on pharmacy costs and trends. Plan review discussions with the Catamaran team are an opportunity for clients to leverage insights from their data as we help them prepare for the road ahead. We uncover industry trends and share insights gleaned from their data. While industry experts are predicting that healthcare costs will continue to rise, Catamaran ensures our clients know what trends to expect and how to mitigate their impact. This enables us to help our clients prepare in advance for issues and events that could potentially drive up pharmacy costs—so they can stay well ahead.

In the following pages, we analyze eight distinct market segments that we serve, highlighting current trends and solutions, case studies, trend results and analytic insights for each market.

We start with a brief overview of our highly managed clients, detailing the programs and results for this subset of Catamaran clients.

We continuously analyze a variety of data sources including market, client and member data for unique insights — empowering us to arrive at tailored solutions that deliver the greatest client value.

1.8% Catamaran Highly Managed Client Trend

Going Above & Beyond at Catamaran

Invite clients to engage with and observe our P&T committee as they recommend clinical management approaches

Keep clients in front of emerging trends:
- **Hot Topics on our trend portal**
- **Medication pipeline monitoring**
- **Clinical publications for new therapies, recalls, pipeline updates and more**

Deliver plan reviews that reveal client trend drivers and other key statistics

Run data models to predict the impact of plan design changes or new clinical programs

Build a tailored solution with the right formulary, plan design and clinical programs to meet client needs

Offer the industry's most flexible formulary options, including a Value Formulary that delivers high levels of compliance and savings

Provide regulatory guidance and ensure program compliance every step of the way

Collaborate with clients on clinical trials or pilot studies to evaluate program impact

Highly Managed Clients

Thought leaders and early adopters tend to be clients with highly managed plans. These innovative clients tap into Catamaran's clinical expertise and specialized analytics knowledge, looking to achieve the greatest value for their healthcare dollar. As a result, highly managed clients achieved an **overall trend of 1.8%.** These clients work closely with Catamaran to ensure that their plan:

– Manages drug costs while promoting high quality care

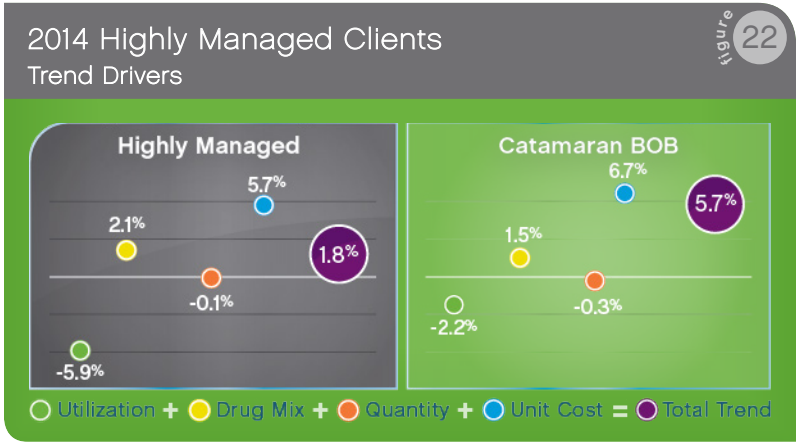
– Ensures safe and effective medication therapy for members

– Leverages drugs to improve member health and wellness

– Helps members get maximum value from their pharmacy benefit

We find opportunities to work closely with our clients, from tailoring solutions to meet their diverse needs to piloting cutting-edge clinical programs with them. Highly managed clients tend to adopt:

- **The Catamaran Value Formulary,** which provides the ideal balance between cost control and member choice
- **Plan design with cost differentials** that strongly encourage the most cost-effective drug choice
- **Exclusive specialty through BriovaRx®,** with highly engaging patient support tools
- **SECURE—**a flexible program to manage the cost, utilization and safety of compound drugs
- **Fraud, waste and abuse program** for aggressive management of controlled drugs
- **Tailored utilization management programs** including prior authorization, step therapy and quantity limits
- **MTM and RetroDUR** to close gaps in care and provide added support
- **Medication adherence program** to help members with chronic conditions stay adherent to therapy
- **Catamaran Home Delivery** for added value and convenience



Analytical Insights

- Overall trend was 1.8%, compared to the Commercial book of business at 5.7%. The lower trend was due to improved drug mix and decreased utilization, as the utilizer population changed. There was a decrease in members with multiple sclerosis, cancer, diabetes and HIV/AIDS and the co-morbidities that often accompany these conditions.
- Formulary, plan design and utilization management programs helped drive a favorable traditional drug mix.
  - Ulcer/GERD: There was a 3.4 percentage point increase in the GDR, driven by decreased utilization of Aciphex and Nexium and increased use of generics.
  - Hypertension/Heart Disease: There was a significant increase in generic utilization and formulary compliance, particularly in the Angiotensin Receptor Blocker (ARB) subclass.
  - Asthma/COPD: There was a shift in utilization from high-cost (e.g. Advair) to lower-cost (e.g. generic Singulair) controller medications.
- Specialty trend increases were driven by two classes, hepatitis C and autoimmune disorders, primarily driven by unit cost.

employer

In response to emerging trends driving pharmacy cost and impacting medication safety and efficacy, employers expect innovative solutions tailored to their unique needs.

Top concerns include: safety risks due to lack of FDA oversight of compound medications, the continued rise in specialty therapy prices, unexpected price increases of generic drugs, a burgeoning specialty drug pipeline and the emergence of innovative new therapies. Proactive solutions, driven by comprehensive analysis and coupled with detailed understanding of current and future cost drivers, are needed to help employers stay ahead of these challenging industry trends.

In addition to the development and delivery of innovative products, employers also want a PBM partner committed to providing best-in-class member service. Strategies that engage, motivate and reward appropriate employee behavior will drive improvements in health outcomes and increases in member satisfaction.

Catamaran Solutions

Utilizing the power of data and technology, our account teams and analytic experts provide insights and recommendations needed to anticipate market trends, evaluate plan performance and calibrate overall benefit strategy. It is our objective to uncover areas which require focus and then deploy client-specific cost management and wellness strategies to meet client goals. We offer:

- Guidance on plan design and formulary options, tailored to align the pharmacy program with the client's culture and objectives.
- A high-touch specialty program that effectively manages cost and care and provides a pathway to physical, psychological and financial member well-being.
- A comprehensive program that addresses the rising cost, utilization and safety risks of compound medications.
- A holistic diabetes program that leverages novel vendor integration to provide real-time alerts and monitoring to improve medication management and health outcomes.
- Identification of at-risk members—particularly those with chronic disease challenges—and interventions that make a meaningful impact on their drug therapy and treatment outcomes.
- Clinical programs that educate members, engaging them at the right moment of opportunity to make the best medication choices.
- Member engagement tools to help them optimize their pharmacy benefit.

Case Study Results

$5.18 PMPM savings–7% of plan spend

$3.4M in savings, year-over-year

Client Situation

A large retailer with 52,000 members sought ways to aggressively reduce costs, while maintaining benefit levels. The company was facing a reduction in operating profit and margin. At the same time, it was incurring additional plan costs due to the elimination of the patient copay for preventive drugs required through the Affordable Care Act.

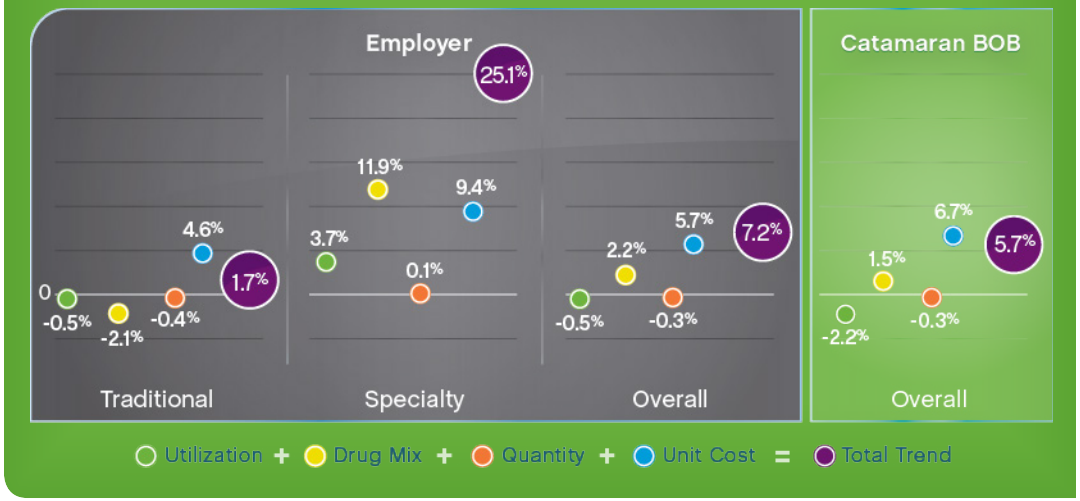
Catamaran partnered with the client to uncover all potential cost-saving measures. A comprehensive cost management strategy was implemented that included:

- plan design changes
- aggressive formulary management
- utilization management
- Retrospective Drug Utilization Review
- Medication Therapy Management (MTM)

Implementation of these strategies drove significant client savings in one year.

2014 Employer
Trend Drivers

figure 23



Top Traditional Classes with Negative Trend

figure 24

Drug Class	Trend	Trend % Attributed to Drug Mix
Cholesterol	-6.7%	111.4%
Ulcer/GERD	-14.2%	74.1%
Hypertension/ Heart Failure	-10.1%	85.6%
Asthma/COPD	-3.7%	137.9%
Depression	-14.3%	27.8%

Ranked by total drug spend | Catamaran Employer Line of Business

Analytic Insights

- Employer trend of 7.2% was driven by the combined effects of increased inflation of both traditional and specialty medications, along with a rise in specialty utilization. Specialty spend increased to 28% of overall expenditures, an increase of 4 percentage points.
- Diabetes, accounting for 13% of traditional expenditures, had a 20.6% trend. This sharp increase was primarily due to AWP inflation of insulin, which caused a 30% increase in the cost per insulin claim. This class also experienced a surge in the utilization of newer, more advanced treatment options—such as Invokana®, Victoza® and Janumet XR®—which are associated with higher claim costs, subsequently driving increases in drug mix.
- Compound drug use increased more than 24%, and the average cost per claim increased by 33%. Compounds are used to treat a variety of conditions, often involving expensive ingredients and with uncertain outcomes. Catamaran's SECURE program, adopted by many employers, has proven to eliminate unnecessary compound costs by 70% on average.
- Traditional trend of 1.7% was controlled by improvements in drug mix, due to the utilization of more cost-effective medications in several highly utilized therapeutic classes (Figure 24).
- Similar to the Catamaran book of business, specialty costs were driven by the high adoption rates of the new hepatitis C medications, which accounted for 40% of the specialty trend. Utilization of Sovaldi®, Olysio® and Harvoni® comprised more than half of the market share in this class. Autoimmune disorders, which accounted for 27.3% of specialty spend, experienced a 25% increase in trend driven by AWP inflation of Humira® and Enbrel®. Increases in spend for multiple sclerosis, cancer and HIV/AIDS contributed another 25.1% to trend.

health plans

The overarching goal of growth requires health plans to be adept at capitalizing on the emergence of new markets and leveraging assets to improve their current position in existing markets. Opportunities for expansion and growth will require plans to adopt new strategies and tools to address industry trends.

Health plans must underwrite their populations more effectively while managing the risk of their changing book of business with greater scrutiny. With prescription prices on the rise, particularly within specialty and generic medications, it is essential that plans leverage the power of medication therapy to better manage chronic diseases and overall pharmacy costs.

Health plans need trusted advisors that can provide flexible solutions to meet evolving requirements and the agility to scale and adapt as needs change. They need a PBM partner that uses focused data insights to help them better understand the health of their populations and can support efforts to achieve the best clinical outcomes and drive down overall costs.

Catamaran Solutions

Catamaran tailors solutions to meet the unique needs of this market. Our expertise serving payers in both private and public markets provides the support, technology, flexibility and data insights that health plans need to quickly adapt to changes and successfully compete in a price-competitive industry. Catamaran offers:

- A flexible technology platform that can be easily adapted to enhance existing operational processes and support business goals.
- Clinical programs, including MTM, to identify and intervene with high-risk members to improve adherence and close gaps in care.
- A comprehensive program that addresses the rising cost, utilization and significant safety issues of compound drugs.
- Personalized, high-touch support for specialty patients that improves medication adherence and optimizes therapy.
- A hospital transition program that is proven to significantly reduce hospital readmissions for targeted conditions.
- Support through our Center of Excellence service model which aligns a dedicated client team of clinicians and business analysts.
- An innovative diabetes management program with continuous patient monitoring that improves medication adherence and leads to better health outcomes.

Case Study Results

$199* Annual savings per member in medical & pharmacy claims

*preliminary

Client Situation

A large commercial health plan collaborated with Catamaran to conduct a randomized controlled study to evaluate the effectiveness of Catamaran's Medication Therapy Management (MTM) and Retrospective Drug Utilization Review (rDUR) programs in reducing pharmacy and total healthcare costs.

Participants were blindly randomized into a treatment and control group, and studied over the course of one year. The treatment group received:

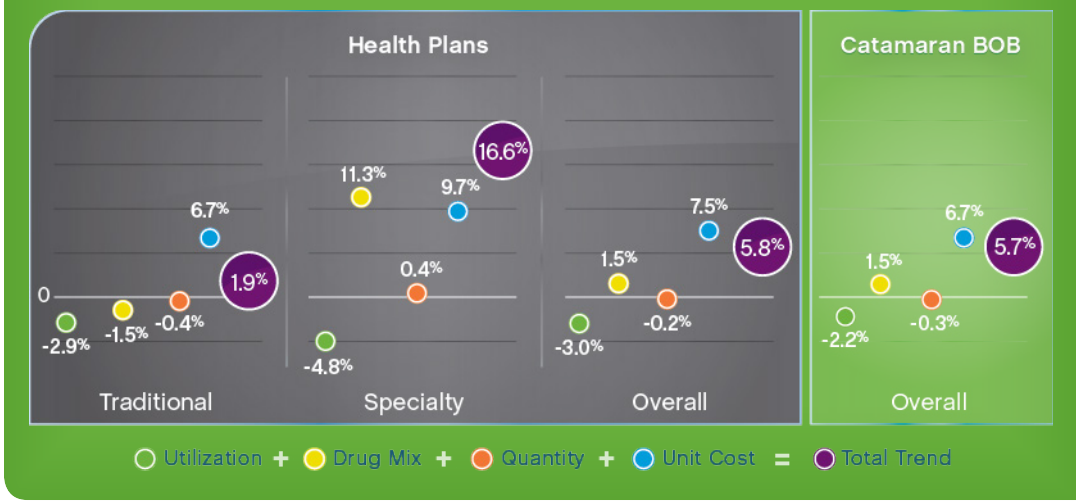
- MTM and rDUR clinical interventions
- Comprehensive medication reviews
- One-on-one pharmacist consultation
- Prescriber notification of clinical concerns

The control group did not receive any interventions. Pharmacy and medical claims were then evaluated for all participants, assessing the overall impact and value of the clinical interventions.

Participants in the treatment group experienced a significant reduction in total medical costs, with a primary decline in inpatient admissions and ER visits. Based on the study results, the client implemented Catamaran's MTM and rDUR bundled program for 2015.

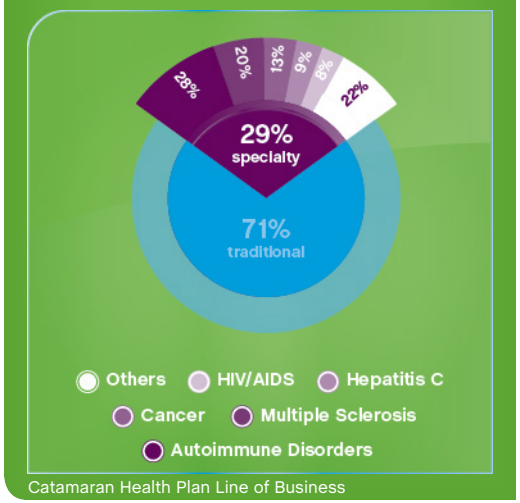
2014 Health Plans
Trend Drivers

figure 25



Specialty as a Percent
of Total Expenditures

figure 26



Catamaran Health Plan Line of Business

Analytic Insights

- Overall trend was 5.8%, three times more than 2013. Specialty expenditures were the main driver of increased trend, due to hepatitis C. Additionally, while traditional medications had a negative trend in 2013 due to higher utilization and pricing improvements in generics, the favorable effect of generics was not as great in 2014.
- Diabetes had the most significant influence on traditional trend. A majority of the 22% diabetes trend was due to unit cost increases for insulin. New oral diabetes therapies, such as Invokana® changed the drug mix, also contributing to the rising trend.
- Conversely, utilization within some traditional classes had favorable effects. A favorable drug mix for hypertension/heart failure, ulcer/GERD, depression and asthma/COPD led to double-digit PMPM decreases. Each of these categories had a blockbuster drug patent expiration that fostered the use of more cost-effective generic options.
- Newer generic medications, such as escitalopram (Lexapro®), pioglitazone (Actos®) and valsartan/HCT (Diovan HCT®), aided in controlling trend through price improvements. This led to a 4% reduction in generic expenditures and a 1.5% reduction overall.
- Hepatitis C accounted for 50% of the specialty increase and 38% of the overall trend. At costs significantly higher than older hepatitis C therapies, new drugs Sovaldi®, Olysio® and Harvoni® were the catalysts behind the increase.
- Specialty trend was also influenced by autoimmune disorders. Although AWP inflation was the driving force of the increase, a rise in utilization due to additional approved indications for psoriasis/psoriatic arthritis, and a surge in direct-to-consumer advertising contributed to escalating trends.

labor and trust

With escalating healthcare costs, trustees for labor and trust funds face numerous challenges. Historically, access to low-priced healthcare coverage and rich benefits has been a staple of labor unions.

Now, more than ever, these plans are looking for strategies to help lower pharmacy costs. At the same time, plan design strategies must minimize the disruption to participants that can sometimes come with stringent cost management strategies.

As specialty trades continue to experience the pressures of a recovering and unpredictable economy, the union population continues to experience their own economic and membership pressures. Additionally, as a result of the ACA, some retiree populations are transitioning into healthcare exchanges for insurance. Rising drug prices, increasing demands for healthcare services from an aging population and the additional coverage mandates of the ACA all create heightened need for innovative new strategies to manage healthcare costs.

With these increasingly complex and challenging financial pressures, fund management seeks a strong consultative approach to delivering pharmacy benefits. They require a PBM partner experienced in working with funds that can guide them on a forward-looking path to leverage medications as an essential tool to maintain the health and wellness of their membership.

Catamaran Solutions

The breadth of dedicated expertise at Catamaran along with our analytical approach identifies specific fund challenges and fuels proactive consultation on potential opportunities to drive down costs and achieve healthcare goals. Catamaran offers:

- Flexible formulary strategies and benefit design consultation to help manage rising pharmacy costs without shifting costs to participants.
- Targeted programs that address the cost and safety issues associated with controlled substances and compound drugs.
- Personalized, high-touch support for specialty patients that improves medication adherence, and leads to better outcomes.
- Innovative clinical programs that improve adherence and optimize health outcomes, while preserving benefit levels.
- A channel-neutral approach that gives choice in where to fill prescriptions and a home delivery program that promotes quality and convenience while maximizing savings.
- Cost-effective retiree drug programs with tailored plan designs for these populations.

Case Study Results

$7.17 Overall PMPM savings

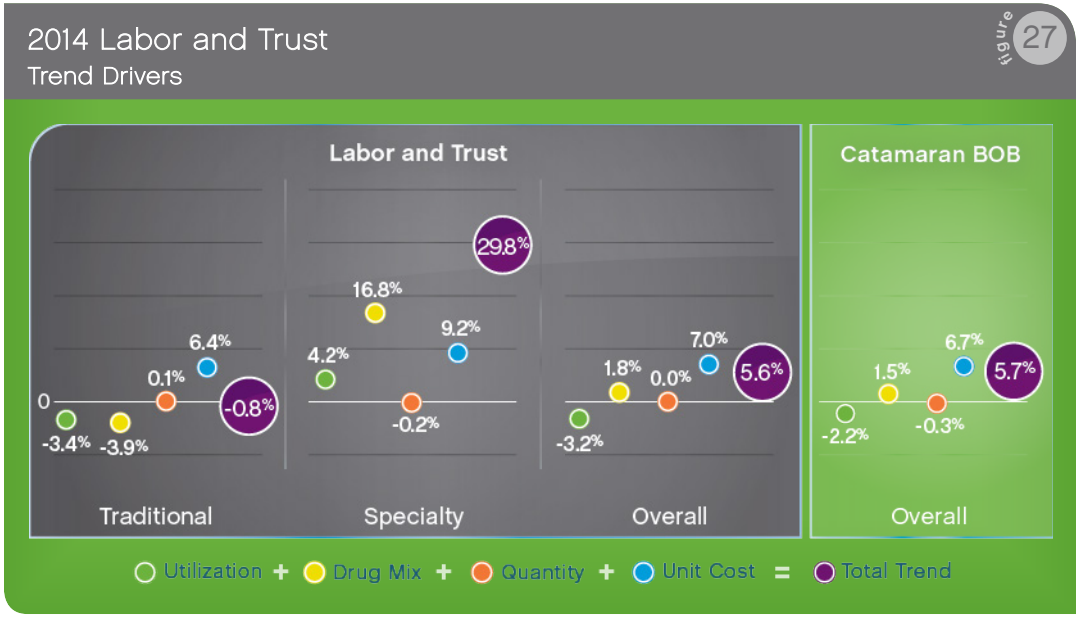
Active Workers:	**3.1%**	Increase in GDR
	81%	GDR achieved
Retirees:	**8.2%**	Increase in GDR
	82.6%	GDR achieved

Client Situation

A labor and trust fund with approximately 80,000 active and retired participants implemented a reference-based pricing program to encourage use of less-costly generic medications over the use of brands and higher priced generics.

This program included development of a formulary for common health conditions within 12 classes that favors “preferred” lower-cost drugs over therapeutically equivalent higher-priced brand or generic drugs. Plan participants electing to use preferred drugs pay lower out-of-pocket costs. Participants choosing non-preferred drugs pay much higher out-of-pocket costs—tied to the actual cost of the drug.

Provider tools and communications were used to educate plan participants and to encourage them to talk with their doctor about various drug options, enabling them to make informed, cost-effective prescription drug decisions.



Adoption of new hepatitis C therapies accounted for more than

70%

of the overall trend increase for the Labor & Trust line of business

Analytic Insights

- Overall trend was 5.6%. The increase was driven almost exclusively by specialty at 29.8% trend, with traditional trend of -0.8% only minimally offsetting the spend for high-cost biologics. Specialty trend was nearly 50% higher than the commercial book of business; yet the overall labor and trust trend was almost equivalent to the commercial trend of 5.7%, due to the slight dampening effect of the traditional trend.
- Spend associated with the rapid adoption of new hepatitis C therapies accounted for more than 70% of the overall trend increase. Exponential increases in hepatitis C costs, from less than 3% in 2013 to almost 17% in 2014, propelled it to the second ranked specialty class by cost, up from sixth last year. This is primarily due to new drugs Sovaldi®, Olysio® and Harvoni®, which are higher-priced but offer more promising clinical outcomes to fully eradicate the virus.
- Other increases for specialty include rising costs for autoimmune disorder and HIV/AIDS medications. The autoimmune disorder class experienced a 3% increase in utilization, although the class was driven primarily by AWP inflation, with Humira® and Enbrel® providing the most impact. Trend for HIV/AIDS was primarily driven by claims volume for combination products—drugs that contain more than one agent.
- Increased generic dispensing improved drug mix, which helped offset increases from AWP inflation, resulting in a negative trend for traditional medications. GDR rose by 2%, with cholesterol, ulcer/GERD and hypertension/heart failure drugs driving a 2.4% reduction in traditional spend.
- Utilization declined for treatment of conditions such as asthma/COPD and cholesterol whereas it increased for contraceptives and vaccines, illustrating the influence of ACA mandates.

medicare part D

With more than 50 million Americans covered by Medicare and the ACA continuing to drive a pay-for-performance model[18], Medicare Part D is a challenging, changing landscape of regulatory requirements requiring highly specialized expertise.

Star Ratings—quality indicators assigned to plans by CMS—help beneficiaries compare service and quality across health plans. As higher Star Ratings drive higher reimbursement levels and attract new beneficiaries, plans have a heightened need for impactful clinical programs to improve their ratings and achieve the highest levels of beneficiary health.

Additional challenges within the Medicare Part D space include reducing expenses, managing high-cost specialty therapy and protecting plans from fraud, waste and abuse. CMS expects plans to find opportunities to reduce costs while consistently raising the bar for improving the coordination and quality of care. Medicare Part D plans must partner with a flexible PBM that helps them meet complex regulatory demands and that has an equal commitment to cost management and quality outcomes.

Catamaran Solutions

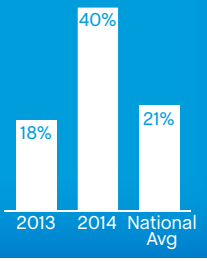
Catamaran offers reliable, repeatable programs that drive quality outcomes and help ensure clients are "audit ready" at all times. We help clients develop a roadmap with specific solutions to help them achieve Star Rating goals. Our Medicare Part D specialists offer detailed assistance in the review of new CMS guidance and provide specific recommendations for client compliance. We provide:

- Industry-leading case completion rates of 42% in our MTM* program.
- A comprehensive fraud, waste and abuse program.
- A flexible Star Ratings program that helps clients achieve top results in key categories. Our program includes in-depth analysis of current state, as well as a specific pathway to improving plan performance.
- Regulatory integration processes, including a consultative guidance review model that includes client input and collaboration.
- Prescription Drug Event (PDE) acceptance rates as high as 99.8%.
- Personalized, high-touch support for specialty patients that improves medication adherence and optimizes therapy.

*MTM=Medication Therapy Management

Case Study Results

$40.56 savings
per intervened member per month

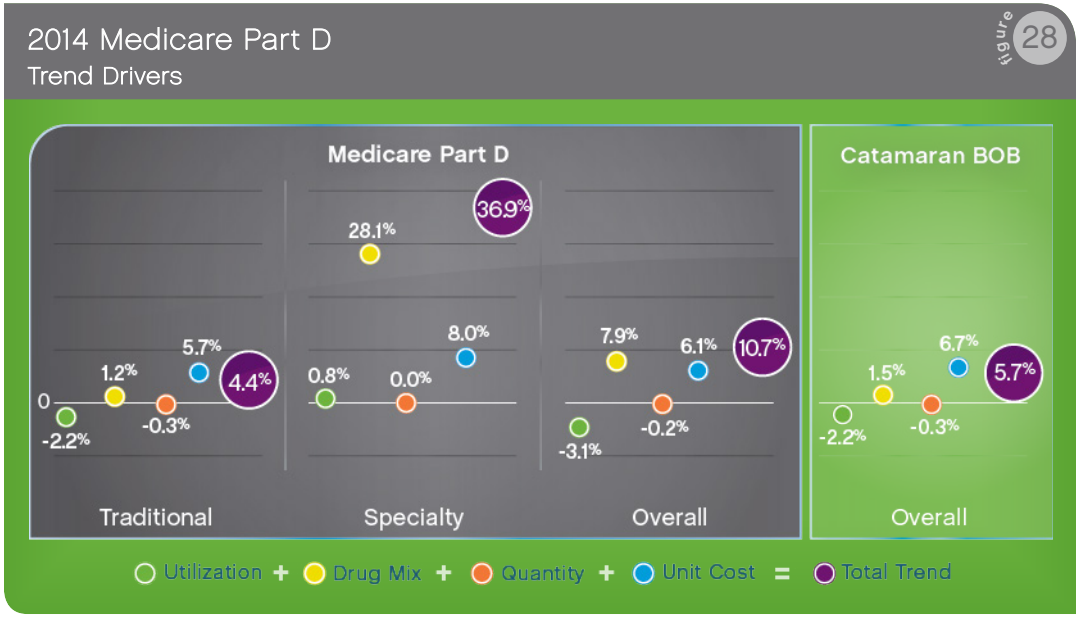


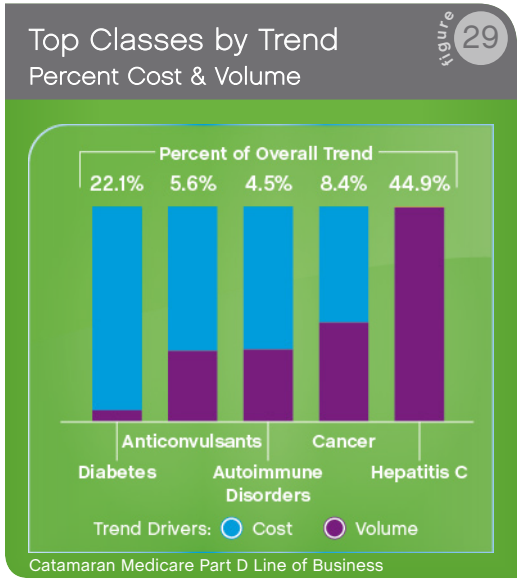
Client Situation

A health plan with 180,000 members wanted to optimize medication therapy for its Medicare Part D population. They also wanted to improve their Comprehensive Medication Review (CMR) case closure rates, a CMS Star Ratings measurement.

Catamaran's MTM and RetroDUR programs were implemented to provide pharmacist consultation and medication review for high-risk/high-cost members. Extensive outreach, including phone calls and letters, was used to encourage targeted patients to contact Catamaran and review their medications with a pharmacist.

During the consult, pharmacists ensured that the safest and most effective medications were being used and addressed member questions. Then, pharmacists alerted the prescriber to unsafe or clinically inappropriate utilization and made recommendations to close any gaps in care. Catamaran also worked with local network pharmacies to engage with members and increase case completion rates.





Analytic Insights

- Overall trend was 10.7%, a 7.1 percentage point increase. Increases were driven by a significant rise in the utilization of high-priced specialty medications and ongoing AWP inflation. This is demonstrated through the upsurge in overall drug mix of 7.9%, and unit cost increases of 6.1%.
- Specialty expenditures increased from 19% of total spend to 24%. Three-quarters of the increase was due to drug mix; one-fourth was due to unit cost. Cancer, autoimmune disorders and multiple sclerosis had the highest increases due to inflation. Unlike other lines of business, autoimmune disorders ranked fifth rather than first in spend for Medicare Part D.
- Hepatitis C was the main driver of specialty trend and now represents more than 20% of specialty expenditures. In 2013, this class was ranked eighth by cost; in 2014 it soared to first. Utilization of these medications is five times higher than observed in the Commercial book of business. This is as expected, as it is estimated that people born between 1945 and 1965 account for 75% of HCV infection.[19] Since this population has an average age of 67, it has a higher estimated prevalence of hepatitis C.
- Diabetes experienced a 20% trend and accounted for almost 17% of traditional expenditures. Approximately 94% of the trend was driven by AWP inflation, with insulins accounting for a majority of that increase. Increased use of agents Victoza®, Tradjenta® and Invokana® added to the expenditures and had a significant impact on drug mix.
- Depression medications had a favorable effect on trend, with a decrease of 24.9% for the class. Savings were driven by both an 8% rise in the GDR—bringing GDR close-to-optimal at 98%—and pricing improvements for generic medications.

state and local government

State and local government plans are challenged by budgetary pressures, rich legacy benefit structures and growing retiree populations who are battling chronic conditions and comorbidities.

A well-managed pharmacy plan that helps get the right medications to the right patients can play an integral role in improving clinical outcomes and the overall health of these populations.

Government payers must have the knowledge and wherewithal to anticipate and comply with federal and state regulations, including coverage requirements mandated by the ACA. They must also be attuned to political sensitivities and the realities of benefit standards guaranteed in union contracts and state law. To effectively manage the complexities within this segment, a PBM partner that is government-sector savvy and skilled in the public markets delivers the most value.

Catamaran Solutions

Catamaran has created an internal hub of specialized experts to support all types of government plans and relations. Analysis of new legislation enables us to provide timely interpretation and guidance to plans and quickly respond with strategic, innovative and tailored solutions. Catamaran is equally adept at managing pharmacy benefits that meet the complex requirements of public employer groups including states, counties, universities, diverse municipalities and niche government accounts. In addition to a dedicated and knowledgeable account team, we offer:

- Expert implementation of small, medium and large government employer accounts.
- Specialized programs to address specific challenges such as high-cost generics, excessive compound drug claim costs and fraud, waste and abuse.
- High touch support for specialty patients that leads to better outcomes.
- In-depth analytic expertise, benefit modeling, trend reporting and consultative support for clients.
- Cost-effective Employer Group Waiver Plan (EGWP) options with tailored plan designs.
- Multiple formulary options, including ACA-compliant formularies that meet or exceed all state requirements, and support for state and federal formulary submissions.
- A channel-neutral model that allows plans to steer to preferred pharmacies, whether local independents or chain pharmacies.
- Regulatory reviews and guidance to keep clients abreast of industry updates.

Case Study Results

86% year-over-year reduction in **compound drug spend**

	PMPM	Drug Spend
2013	$1.62	$3.7M
2014	$0.22	$0.5M
Savings	**$1.40**	**$3.2M**

Client Situation

A large state benefit program experienced a significant increase in compound drug utilization. With annual compound drug plan spend at $3.7 million, the client needed a cost management strategy to ensure members' safe and effective use of these drugs.

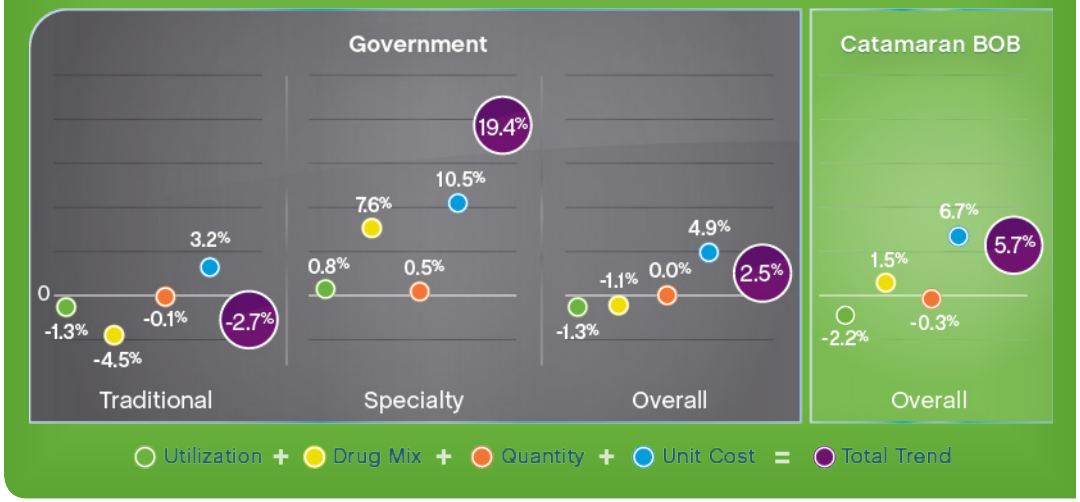
Catamaran worked with the client to introduce new plan parameters that produced significant savings. Plan changes included:

- a maximum plan pay for compound drugs
- exclusions for select bulk chemicals, not approved by the FDA, or with questionable clinical value

Catamaran packaged these strategies and more into a program now known as the Safe & Effective Compound Use Reassurance Effort. The program effectively addresses the rising cost and utilization of compound drugs and addresses the safety risks associated with a lack of FDA oversight of these medications.

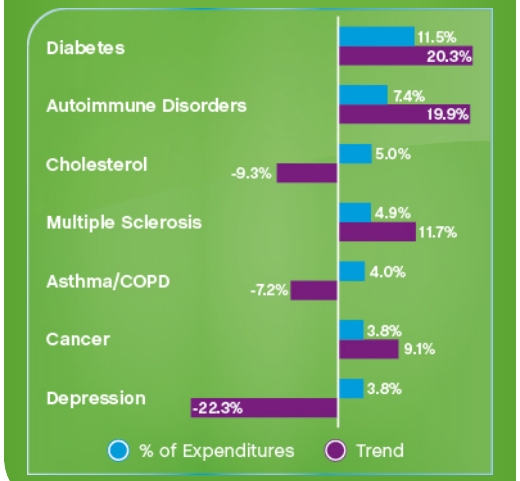
2014 State and Local Government
Trend Drivers

Figure 30



Top Classes by Cost
Percent Expenditures & Trend

Figure 31



Catamaran State & Local Government Line of Business

Analytic Insights

- Overall trend was 2.5% for 2014, just slightly higher than 2.1% in 2013. This segment had the lowest trend across the commercial book of business. The primary factor for the lower trend was a negative traditional trend of 2.7%, while the segment's specialty trend of 19.4% was consistent with the 20% Catamaran book of business trend.
- Improved drug mix, driven by utilization of more cost-effective options and enhanced generic pricing for highly utilized classes treating conditions such as depression and hypertension/heart failure, resulted in a combined 2.7% decrease in traditional expenditures. Agents to treat depression had a 7.3% increase in GDR, which also drove a decrease of 23% in the average cost per 30-day prescription.
- Although price reductions for other generics were noteworthy, utilization of newly launched Cymbalta® was the major contributor to generic savings resulting in a 20.5% savings for the depression class. The hypertension class had a 5.1% GDR increase, lowering the average 30-day prescription to less than $25. Similarly, generic Diovan HCT® moved out of the exclusivity period, resulting in an average price-per-prescription 50% less than for 2013.
- Traditional price increases were dominated by the diabetes class and driven by continuing inflation and changes in drug mix. Both utilization increases for newer therapies, such as SGLT-2 inhibitors (e.g. Invokana®), and cost increases for insulins led to a 20.3% trend.
- The specialty increase was mainly driven by hepatitis C at 31% and autoimmune disorder drugs at 28%. New oral therapies Sovaldi®, Olysio® and Harvoni®, costing between $28K and $32K per prescription, comprise 92% of the expenditures for hepatitis C. The autoimmune disorder class increase was heightened by high AWP inflation. Additional specialty increases can be attributed to new market launches of specialty medications to treat multiple sclerosis, cancer, HIV/AIDS and hereditary angioedema.

workers' compensation

Workers' compensation is a highly regulated market, with state-specific regulatory requirements, combined with federal legislation and budgetary issues.

Layer in the potential future effect of the ACA, and workers' compensation becomes an even more complex environment to navigate. Add to these complexities some familiar industry challenges—such as the rise in the expenditures and use of controlled substances and non-FDA regulated compound prescriptions. An upward trend in spending on specialty drugs is also emerging, particularly for hepatitis C stemming from workers' exposure in healthcare treatment settings.

Effective pain management amid the ongoing misuse, abuse and inappropriate prescribing of opioids continues to concern payers. Zohydro®, a controversial high-dose painkiller, released in early 2014, has many in the industry concerned that it could lead to another epidemic of opioid addiction and overdose deaths.[20] Also contributing to the potential safety issues and rising costs of pain medications are varying state-by-state physician dispensing regulations.

Catamaran Solutions

Catamaran understands the compliance, regulatory and legal nuances of workers' compensation programs. We offer solutions to maximize client resources and reduce pharmacy and medical costs:

- A fraud, waste and abuse program that focuses on controlled substance monitoring and intervention as well as auditing and cost recovery services.
- A comprehensive solution that addresses the rising utilization, cost and safety issues surrounding compound drugs.
- Safe and effective clinical programs to improve adherence and optimize therapeutic outcomes for high-cost claimants.
- Patient support through BriovaRx® that manages care for hepatitis C and other specialty conditions and gets claimants back to work sooner.
- Enhanced clinical interventions, including retrospective and concurrent DUR, to promote proper prescribing, reduce the risk of adverse events and reduce costs.
- Flexible technology platform and solutions that include near real-time adjudication, a client portal for managing prior authorization decisions and ePrescribing solutions.
- Access to medication history across multiple prescribers through ePrescribing to enhance patient safety.

Case Study Results

14.9%

overall reduction in the average MED*

for injured workers with >100 MED, resulting in less risk for adverse effects

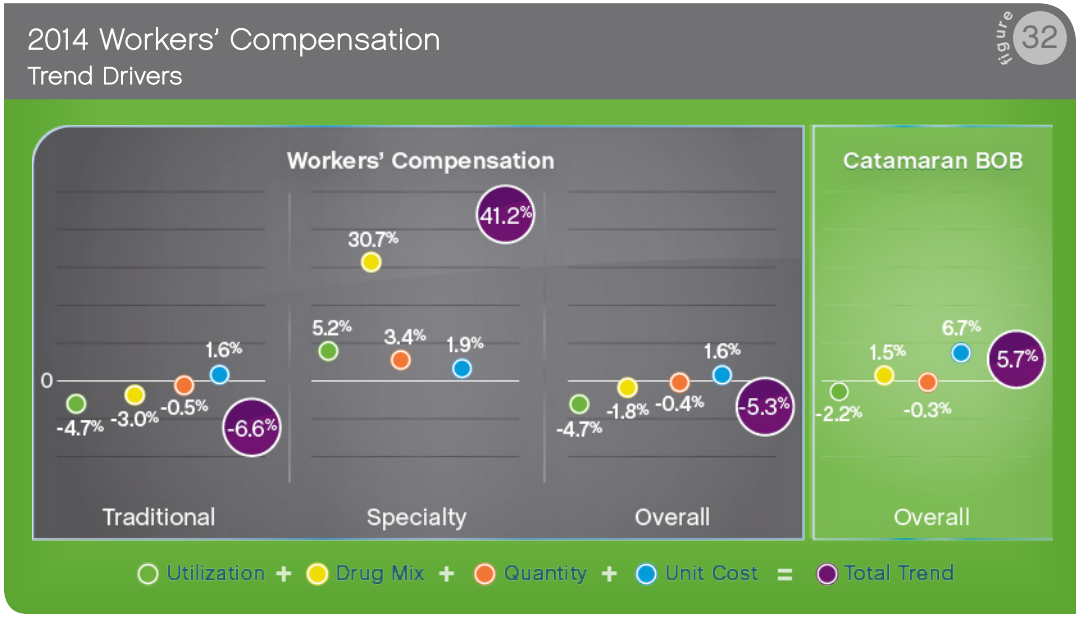
-6.6%	2015
-2.0%	2014
-6.3%	2013

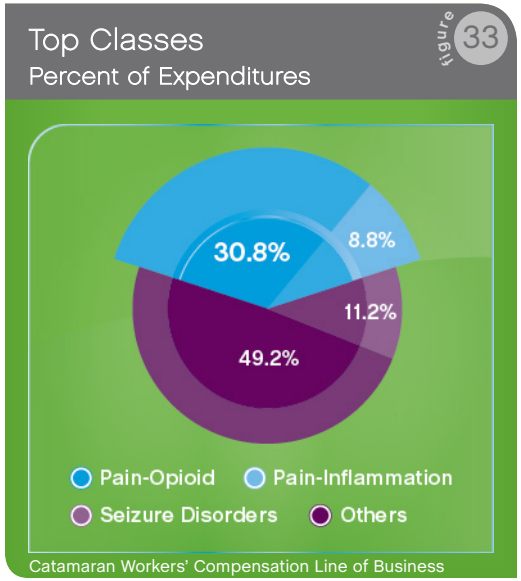
Client Situation

A large workers' compensation payer partnered with Catamaran to better manage utilization of controlled substances. The payer covered injured workers who were receiving treatment for pain and anxiety with opioids and benzodiazepines. The payer wanted to identify and intervene with claimants using higher than average quantities of medications in these drug classes.

Custom morphine equivalent dose (MED) and anxiolytic equivalent dose (AED) reporting was developed to identify claimants exceeding certain daily thresholds. These reports were used to identify intervention opportunities for high-risk claimants. Based on data from these reports, the payer implemented a long-acting narcotic step therapy and benzodiazepine daily dose limits into their custom formulary leading to an overall reduction in MED.

*Year-over-year comparison using January MED data





Analytic Insights

- Overall trend* decreased 5.3% in 2014. This was influenced by the -6.6% trend in traditional medications, which experienced a significant decrease in utilization. Although overall specialty expenditures remained relatively low at less than 5% of overall spend, specialty spend increased 41.2%.
- More than 50% of the medications in this segment are utilized primarily for pain management, specifically opioids and anti-inflammatory agents. Anticonvulsants, used for the treatment of seizures and neuropathic pain, also experienced high utilization.
- Generic dispensing increased by more than 4 percentage points, producing a shift to more cost-effective medications. The largest changes occurred within the depression and dermatological drugs, with GDR increasing more than 27% in each class. Patent expirations for Cymbalta® and Lidoderm® were the main catalysts for this shift.
- Claim volume for compounds increased. However, the cost for compound ingredients decreased, resulting in a -19.1% trend for the class. Strategies implemented through Catamaran's SECURE program, which ensures the appropriate prescribing and utilization of safe and effective compound drugs helped to drive appropriate utilization and rein in costs.
- At only 4% of overall spend versus approximately 28% for commercial clients, specialty costs were primarily driven by hepatitis C and a small increase for HIV/AIDS. Hepatitis C medications accounted for 27% of specialty expenditures and 88% of specialty trend. This was primarily due to utilization of new oral medications expected to greatly improve outcomes, but at a cost of $23–32K per prescription.

*Measured in PUPM (per utilizer per month)

health insurance marketplace

The Health Insurance Marketplace (HIM) was created as part of the ACA to provide access to health and pharmacy benefits for uninsured Americans.

As of mid-February 2015, approximately 11.4 million people had selected or been automatically reenrolled through HealthCare.gov or state-based marketplaces.[21]

As previously uninsured individuals enter the marketplace, HIMs are challenged to ensure their programs and services are prepared to treat these new–to–therapy patients. Many of these patients have not received consistent care for chronic health conditions. Developing clinical programs and leveraging medication therapy to manage chronic diseases for these patients will be crucial to delivering quality healthcare in the most cost-effective manner.

Although there are positive signs that the ACA is making progress, continued change should be expected, as legislation continues to be challenged, delayed or not implemented.[22] It is increasingly important that Qualified Health Plans (QHPs) remain informed of industry and regulatory updates and that they partner with a PBM who is an active participant in the healthcare reform discussion and can provide innovative programs and solutions to meet evolving regulatory requirements.

Catamaran Solutions

Working with Catamaran, plans benefit from the size and scale of a full-service PBM and a dedicated and knowledgeable team. Catamaran's extensive experience gives clients the support they need to adapt and comply with changing healthcare reform regulations. We offer:

- Comprehensive support for clients operating in the HIM, including reporting, product solutions and consultative support.
- Clinical programs to improve adherence and close gaps in care that help achieve high Quality Rating System measurements.
- Technology to support HIM operational regulations such as automatic cost share reduction (CSR) adjustments at point-of-sale.
- High-touch support for specialty patients designed to optimize therapy.
- Weekly regulatory reviews and guidance to keep clients abreast of industry updates.
- A standard Essential Health Benefit (EHB) formulary that meets or exceeds the requirements of every state.
- Formulary management and support of state and federal formulary submissions.

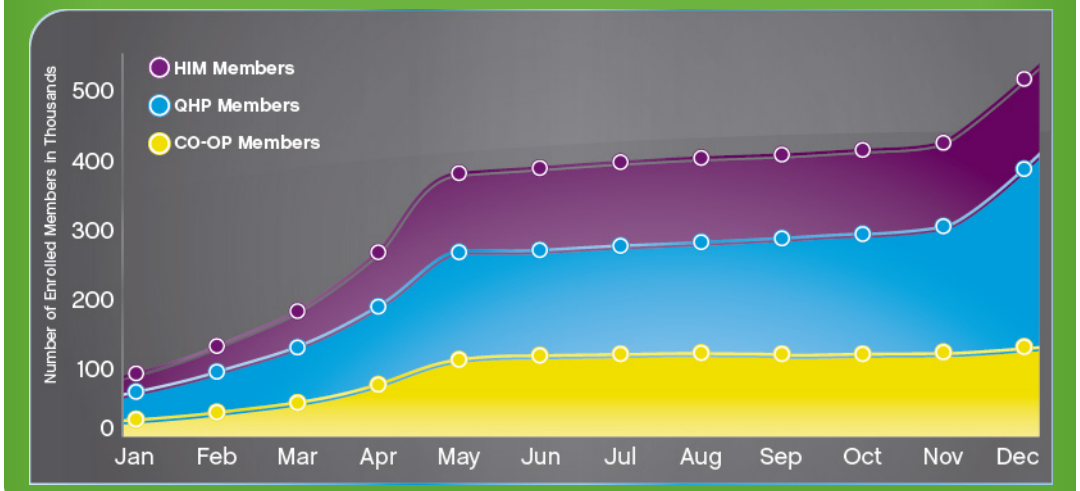
HIM Enrollees
Population characteristics 1Q14 vs 4Q14

- Average enrollee age decreased throughout the year, indicating that a younger, possibly healthier, population began taking advantage of the legislation later in the year.
- There was a 49% decrease in costs per utilizer over the course of the year, indicating that later enrollees utilized less expensive medications than early enrollees.
- CMV/HIV/AIDS and hepatitis C were more prevalent among early enrollees, representing 21.7% and 9.6% of spend, respectively.

2014	1Q	4Q
Enrollees Age 45+	64%	55%
Enrollees Age 20 - 24	16%	21%
Avg Cost Per Utilizer	$338	$171
Treating 5 or more conditions	29%	16%
Avg Number of Comorbidities	3.6	2.7

2014 Growth in HIM Enrollment

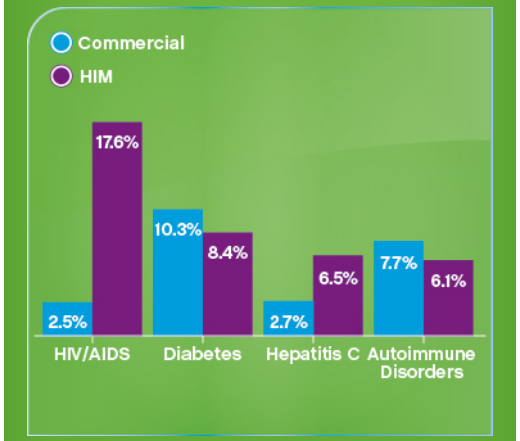
figure 34



Catamaran HIM Line of Business

HIM vs. Commercial
Expenditures Comparison

figure 35



Catamaran HIM Line of Business
& Commercial Book of Business

Analytic Insights

- The HIM segment saw a steady increase in eligibility over the course of 2014. Qualified Health Plans (QHPs) averaged nearly 150% more eligible members than CO-OP plans, although expenditures were higher for CO-OPs, due to a disproportionately higher prevalence of members with HIV/AIDS.
- Specialty spend accounted for more than 43% of total expenditures for the HIM population, compared to 28% for Commercial. The greater proportion of specialty spend is almost entirely due to higher utilization of medications for the treatment of HIV/AIDS and hepatitis C. HIM expenditures are more than six times higher for HIV/AIDS and twice as much for hepatitis C, as illustrated in Figure 35.
- The elevated cost for HIV/AIDS is attributed to a greater prevalence of members (five times higher), rather than use of high cost medications.
- The hepatitis C expenditures were not only associated with a higher prevalence of utilizers, but also driven by drug mix. Utilization of new oral options for hepatitis C accounted for 56% of the market share, whereas for Commercial, the market share was approximately 50%. With an average cost per prescription of nearly $27,000, this difference had a substantial impact.
- Traditional spend was lower for HIM as compared to Commercial, with the most notable difference attributed to drug mix. HIM members are using more cost-effective medications as a result of benefit design. Formulary tier placement and exclusions promoted the use of generics, producing a 5% higher GDR.
- Utilization was also less for HIM, as the PMPM claim count was 12.5% less. There was less claims volume for the treatment of asthma/COPD, ADHD/narcolepsy and cholesterol; yet more utilization of pain (opioids) and seizure medications, reflective of major differences in populations.

fee-for-service medicaid

The influx of new Medicaid recipients under the Affordable Care Act has fueled growth within Fee for Service (FFS) Medicaid plans.

State agencies, each with varying CMS funding and their own set of benefits, continue to analyze the impact of new enrollees, the status of enrollee health and costs associated with their care.

State agencies have been challenged through federal mandates to establish proper oversight and accountability controls for billing, processing rebates and collecting national drug code information on claims for physician-administered medications. States are looking for ways to capitate risk through utilization of Managed Care Entities (MCE). While moving populations to MCEs has shown some results, states are being challenged in providing oversight to ensure health outcomes are improving. They are also working to understand how utilization of MCEs fits their overall spend management.

For these plans, it is also important to address abuse of controlled substances, manage the cost of specialty medications and find ways to improve medication management and health outcomes. With millions of uninsured individuals still eligible for coverage, implementing innovative pharmacy solutions to reduce expenses—while improving the coordination and quality of care—is vital.

Catamaran Solutions

State Medicaid plans value the expertise that Catamaran offers as a result of our extensive public and private sector experience. Catamaran performs a detailed plan analysis to tailor the right mix of programs to meet the specialized needs of FFS Medicaid plans. Catamaran offers:

- Clinical and utilization management programs that help get new-to-treatment patients on the right track, manage drug spend and promote quality care.
- Enhanced COB services that identify third-party liability during pharmacy claim adjudication and deliver significant savings.
- A comprehensive controlled substance program that identifies and mitigates fraud, waste and abuse.
- Clinical support for State Drug Utilization Review (DUR) Boards, including therapeutic class and new drug reviews, to help ensure use of the most appropriate and cost-effective drug therapies.
- Favorable discounts along the pharmacy supply chain and management of state supplemental rebate agreements.
- Flexible and robust claims technology, including an automated prior auth system that increases use of preferred drugs.
- Industry-leading case completion rates of 42% in our MTM program, designed to improve adherence and health outcomes.

Case Study Results

$4.12 in PMPM savings, year-over-year

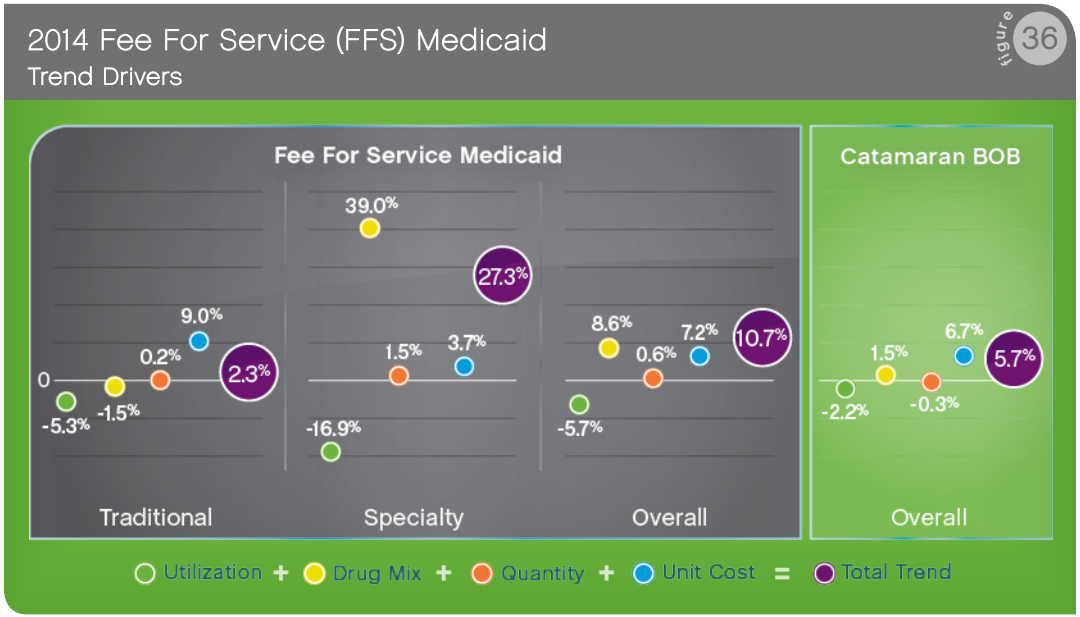
$16.6M **or 1.6%** reduction in annual spend

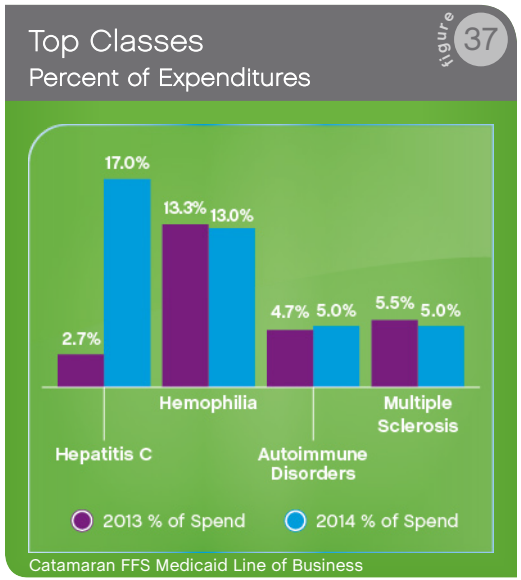
Client Situation

A State Medicaid program with 1.1 million recipients needed to address budget reductions and find cost savings without compromising quality of care, health outcomes or access to care.

When Medicaid recipients have other primary health coverage, it is often undetected at the point of sale, forcing states to rely on marginally effective pay-and-chase efforts for reimbursement. With early identification of Third Party Liability (TPL), Catamaran projected that substantial savings could be achieved by the state.

The state implemented our Enhanced Coordination of Benefits (COB) program. This program automatically identifies TPL and notifies the pharmacy of the correct primary payer. The pharmacy claim is immediately redirected during point of sale processing, with no disruption to the beneficiary. Catamaran identified approximately 12% of plan recipients with TPL, leading to significant savings.





Analytic Insights

- Overall trend was 10.7% and can be attributed to a shift in utilization to more expensive biologicals in the treatment of hepatitis C and autoimmune disorders, and more costly claims for hemophilia.
- While traditional drugs experienced a relatively low trend of 2.3%, specialty medications had a high trend of 27.3%. Although the segment experienced a decline in specialty claims volume, claims in 2014 were for significantly more expensive medications, as the average cost per specialty prescription increased by more than 50%.
- Expenditures for hepatitis C grew by over 700%. Sovaldi®, Olysio® and Harvoni® comprised more than 50% of the claims volume and accounted for 96% of the expenditures in the class, illustrating the effect of prescribers choosing to warehouse patients in the recent past in anticipation of these superior therapies.
- The hemophilia trend of 24.7% can be attributed to an increase in the quantity dispensed per prescription. As dosing is based on the severity of the episode, the quantity in treatment can vary significantly. The effect can be extraordinary, with the cost per claim averaging almost $40K. The increase in quantity for hemophilia products resulted in an 8.4% increase in specialty trend.
- The drug mix improved within the traditional medications which indicates usage of more cost-effective medications. This favorable trend was boosted by increased generic utilization, specifically in classes that experienced major patent expirations, such as hypertension, depression and cholesterol.
- Significant utilization decreases for some traditional medications, most notably for ADHD/narcolepsy/obesity drugs, were seen as membership transitioned from the FFS benefit to managed care.
- Traditional spend increased in the diabetes class. While utilization actually decreased, increases in unit cost more than offset any decline associated with the reduction in claims.

Engaging with Members

Improving Outcomes Through Personalized Support 48

Patient Case Studies:

Medication Therapy Management (MTM) 50

BriovaRx® Specialty 52

Medication Adherence 54

Few things are more personal than our health. Each individual brings unique history, experiences and characteristics as they confront healthcare choices. We understand that decisions made by members drive our clients' healthcare costs. Catamaran engages at an individual level, treating members in a holistic manner, committed to helping members when they need it.

improving outcomes through personalized support

Every day patients make decisions that can have a significant impact on their long-term health and wellness. Medications represent a powerful weapon and are one of the most cost-effective methods to combat illness, prevent disease and manage chronic conditions.

Beyond lifestyle changes, taking maintenance medications as prescribed is one of the leading ways that patients can improve their overall health and live longer, healthier lives. Alternatively, not adhering to prescription medications can lead to treatment failure, disease progression, drug resistance, emergency room visits, hospitalization and drug-related morbidity and mortality.

Empowering and Engaging Members

At Catamaran, we empower members to be active participants in their own healthcare. The advantages of taking medications to improve health and well-being can be life-changing. However, the benefits of medications are best realized when patients take medications as prescribed by their doctors. Whether used to cure an infection, relieve pain or treat a disease, the best possible health outcomes are reached when patients are engaged and knowledgeable about managing and improving their health.

We find and engage with members who can benefit from additional support. We offer a wide range of interventions, from notifying members about cost-saving opportunities and educating members about medication alternatives to reminding them to take their medications. For members taking multiple medications, our clinical pharmacists are experts in engaging members in discussions about the importance of taking their medications as prescribed and working with them to review their medications, answer questions and help them stay on track with medication therapy.

Approximately
4 of 5 patients
leave their doctor's office with a prescription[23]

Nearly
1 in 3 patients
don't fill their prescription[24]

Of prescriptions that are filled,
up to 50%
of medications are not taken as directed[25]

Research shows

70% of patients have at least 1 medication discrepancy upon discharge from the hospital[59]

20% of hospital readmissions within 1 year are due to an adverse drug event[60]

Hospital Transition Program

Patients moving from hospital to home are at risk for treatment complications stemming from medication errors and noncompliance. Our program is a tailored solution that reduces hospital readmissions by avoiding errors, conflicts and harmful duplications in medication therapy. Our program focuses on targeted conditions and includes:

- A comprehensive medication review with patients by a pharmacist within 72 hours of hospital discharge
- Long-term adherence monitoring and support to encourage patient compliance for a full year post-discharge

These interventions help optimize medication therapy and ensure recently discharged patients stay on the road to better health.

Hospital Transition Program Results

71% decrease in the 30-day hospital readmission rate following implementation of Catamaran's Hospital Transition Program with a large health plan

Better Health Outcomes, One Patient at a Time

Catamaran offers a comprehensive suite of clinical programs that leverage medications to improve member health as well as promote safe and effective medication therapy. Through these programs, members are empowered with the information they need to make the right decisions, get the most value from their pharmacy benefit and stay on the road to better health.

- **BriovaRx Specialty–**Provides high-touch comprehensive support for patients with complex or chronic conditions. Using a holistic approach, we offer innovative ways to engage specialty patients in their care, including:
  - –BriovaLive™–patients connect with a pharmacist in the comfort of their own home via a video consult to review medications, discuss side-effects and more.
  - –BriovaCommunity™–members have access to support, information, videos and a community of individuals with similar conditions.
- **Medication Adherence Program–**Optimizes health outcomes by engaging, educating and communicating with patients and prescribers. Utilizing a variety of intervention tools including interactive voice response calls, emails, letters, mobile app medication reminders and one-on-one pharmacist outreach and consultation, we drive desired behavior and adherence outcomes.
- **Medication Therapy Management–**Provides high-risk/high-cost members with a comprehensive medication review and a one-on-one consultation with a pharmacist to ensure that the safest and most cost-effective medications are being utilized.
- **Retrospective DUR–**Delivers prescription savings and ensures patient safety by targeting unsafe and clinically inappropriate medications due to drug-drug interactions, inappropriate prescribing, duplicate therapy, high doses and duration of therapy.
- **Compound Drug Management–**Ensures safe and effective use of compound drugs by targeting unsafe and clinically inappropriate non-FDA approved drugs.
- **Fraud, Waste and Abuse Program–**Focuses on controlled substance monitoring, intervention and patient safety to ensure the proper use and prescribing of pain management medications.
- **ePrescribing–**Gives doctors real-time access to a patient's medication history, pharmacy benefits and preferred drug lists, so that medication therapy is safer, more effective and better coordinated across multiple prescribers.

Over the next few pages patient case studies that demonstrate our personalized clinical care model are featured.

Diabetes Management

Catamaran empowers diabetes patients to take charge of their health through an interactive program that improves medication adherence, better controls blood glucose, reduces the risk of complications and leads to better health outcomes. By simplifying the day-to-day management of their diabetes, members have more time to focus on the best parts of their lives.

The program includes:

- **A wireless smart meter that tracks blood glucose readings and activity data**
- **Real-time alerts and daily messaging**
- **Clinical outreach in response to abnormal blood glucose readings**
- **Tailored tips and reminders**
- **One-on-one counseling with certified diabetes educators**
- **Comprehensive medication review and adherence monitoring**

multi-channel outreach improves results

Enhanced MTM Program

In 2014, Catamaran implemented multiple enhancements to our Medication Therapy Management (MTM) program for our Medicare Part D line of business. Our goal was to improve case completion rates, putting our Medicare Part D clients in position to achieve top results in key Star Rating categories. The MTM program now encompasses a multi-channel outreach program to engage patients. Enhancements include:

- Quarterly outreach via interactive voice response (IVR) phone calls to all patients who have not completed a Comprehensive Medication Review (CMR) consultation. Patients are offered the ability to connect immediately to a Catamaran pharmacist.
- Additional outreach via letters sent to patients we are unable to reach by phone. Letters emphasize the benefits to the patient of completing a CMR and ask the member to call Catamaran to speak with a pharmacist.
- Improved client reporting and internal data tracking to ensure all clients meet goals on a daily, weekly, monthly and yearly basis.

Through outreach to patients via these enhanced communication channels, Catamaran significantly increased CMR case completion rates, which are expected to result in improved Star Ratings for our Medicare Part D clients.

Program Results

42% case completion rate well above the national average of 21%

$323 savings per intervened member per year

15–20%
additional patients were reached via IVR outreach in 2014

Star Ratings

CMS assigns Star Ratings based on a variety of quality measures to help beneficiaries compare quality across Medicare plans. For 2014, CMS added MTM Comprehensive Medication Review case completion rates as a key measure.

As higher Star Ratings drive higher reimbursement levels and attract new beneficiaries, Medicare plans have a strong incentive to implement impactful clinical programs designed to achieve the highest levels of beneficiary health, thus improving their Star Ratings.

Case Study: MTM in Action

Patient Situation

Naomi, an 87-year-old female Medicare Part D beneficiary, was identified for intervention through the Catamaran MTM program. She was sent a welcome letter describing the program and a pharmacist was assigned to perform a comprehensive medication review with her.

Naomi's medication profile was extensive, with an active drug list of 8 maintenance medications, including:

- metformin
- hydrochlorothiazide (HCTZ)
- Nitrostat®
- clopidogrel
- Spiriva®
- nitroglycerin patch
- losartan
- furosemide

She also had multiple chronic disease states including cardiovascular and thrombotic conditions, coronary artery disease, hypertension, diabetes and chronic obstructive pulmonary disease (COPD). **Her estimated annual drug spend was $5,343**.

Pharmacist Guidance

A Catamaran pharmacist reviewed Naomi's clinical profile to identify opportunities to optimize her therapy. The pharmacist recommended:

Dose consolidation

- Consolidation of two medications, losartan and HTCZ, by switching to a single combination drug product (losartan/HCTZ).

Appropriateness of therapy

- Addition of a short-acting beta agonist rescue inhaler to her medication list.

The Catamaran pharmacist contacted the primary care prescriber to discuss recommended changes to her treatment plan. In addition to contacting the prescriber, the pharmacist contacted Naomi to discuss her treatment plan, assess her understanding of her medication therapy and answer any questions. The following topics were discussed:

- The importance of the proper storage of nitroglycerin.
- The signs and symptoms of low blood pressure, including dizziness, blurred vision and nausea.
- Importance of annual flu and pneumonia vaccinations.

MTM at Catamaran

- **Gaining traction across all markets—not limited to Medicare Part D plans**
- **Commercial health plans, employer groups, managed Medicaid and the HIM can also reap the benefits**
- **Clients can tailor MTM program thresholds to align with their cost management goals**
- **A personalized medication review is beneficial for all high-risk members**

Naomi's Results

Gaps in Care Intervention

$500+ potential cost avoidance in medical savings per COPD exacerbation

briovaRx: delivers improved adherence

An estimated 3.2 million people in the U.S. have chronic hepatitis C. Sovaldi®, a breakthrough treatment for hepatitis C with higher cure rates and shorter treatment durations than traditional therapies, was released in December 2013. However, the cost of Sovaldi is more expensive than previous treatments at an average cost of $84,000 per treatment. Including additional required medications, the average cost for an entire treatment regimen exceeds $117,000.

Medication adherence to Sovaldi is critical to successful treatment. Missing more than three days in a row of therapy can impact Sovaldi levels in the body, which may impede a patient's ability to be cured of the hepatitis C virus. Essentially, the entire cost of treatment could be considered wasted for patients who don't comply with the full treatment regimen. These patients may require repeat therapy at additional costs to their plan to achieve a cure.

Case Study

Catamaran completed a detailed review of patient utilization and adherence patterns. Persistency and medication adherence metrics were measured in patients receiving Sovaldi through Catamaran's BriovaRx® specialty pharmacy versus non-BriovaRx pharmacies. Completion of therapy and how closely patients took their medication as prescribed were assessed. Patients were defined as persistent if they received a complete 84-day supply of Sovaldi; patients were defined as adherent if there was less than a five-day cumulative gap in their refill claims history.

Study Results

- **Persistent patients filling Sovaldi exclusively at BriovaRx realized 9.1% better overall adherence results versus patients at non-BriovaRx pharmacies.**
- Patients who participated in a video consult via BriovaLive® had a higher adherence and therapy completion rate.
- Lower adherence rates resulted in $7,402 in wasted financial resources per patient treated at a non-BriovaRx pharmacy.
- Patients with little to no days of gap in Sovaldi therapy realized the highest cure rates.
- Patients taking Sovaldi should be monitored for both persistency and adherence rates to avoid preventable costs due to repeat treatments.

"Thank you for being here for me in my time of need to take hepatitis C treatments. Your staff was so considerate, thoughtful and caring toward me! I could not have gone through this without such a fine support group and pharmacy! With sincere appreciation, thank you!"

– BriovaRx patient

briovaRx

BriovaRx, takes a hands-on approach to patient care that makes a meaningful imprint on the health and quality of life of each patient. Specialty patients can count on guidance, education and compassion throughout their treatment.

BriovaLive

A video consultation with a Briova pharmacist:

- Provides personal support to patients throughout the course of treatment.
- Helps patients understand their disease and how their medication works.
- Promotes adherence to therapy, leading to higher therapy completion rates.

BriovaLive: Personal Patient Stories

1

Roger, a 63-year-old, otherwise healthy male was newly diagnosed with hepatitis C, and was eager to beat the virus as quickly as possible so he could resume his active lifestyle. He had contracted the virus from his partner who was a doctor and was aware of both the older and newer therapies available to combat his virus.

Roger participated in a BriovaLive video session with a Catamaran pharmacist and patient care coordinator (PCC). Seeking hope and reassurance that the virus was beatable—if he strictly adhered to his medication regimen and managed any unwanted side-effects—he was very engaged during the video consultation.

"Your company is really on the right track with customer service. It really gives me the confidence I need to overcome this."
-Roger

The pharmacist walked Roger through each of his three medications—Sovaldi®, Olysio® and Ribavirin®—in great detail. Each medication was explained separately: how each medication affected the virus from replicating; side effects and how to combat them; the appropriate dosing of each medication; and what to do in case of missed doses. The pharmacist and Roger also discussed monitoring parameters, drug interactions, length of therapy and cure date.

"I have never seen someone so grateful for the face-to-face time to explain their medications. With BriovaLive we have taken specialty pharmacy services to the next level."
-Jeremy, Catamaran Pharmacist

2

A variety of patients can be helped by a BriovaLive pharmacist consultation. Evelyn, a 70-year-old female hepatitis C patient, taking all-oral medications, participated in a video consultation with a Briova pharmacist. She shared that she was participating using an iPad that her grandchildren had purchased for her. Evelyn informed the pharmacist that she was a cancer survivor and expressed that she had felt like an object, without support, during her cancer treatments. As a result, she was nervous about her upcoming therapy. Through a comprehensive and meaningful dialogue, the pharmacist was able to ease her concerns and help Evelyn get her therapy off to a good start.

During the call Evelyn was grateful for the support and kindness given to her and expressed her appreciation for our service model. The one-on-one care and compassion provided to her was very meaningful, and she felt that so many people throughout the entire process truly cared about her as a person.

When a newly diagnosed hepatitis C patient comes to BriovaRx, we provide education to help the patient better understand their condition. We explain the disease, how it is transmitted, how others can become infected and how a patient can become reinfected. The pharmacist then dives deeper into the medication: what to expect, possible side effects, dosages and what to do in case of missed doses. The result is a very interactive conversation between the patient and pharmacist, with plenty of time for questions.

improving medication adherence

Patient Situation

Mary, a 66-year-old female, was battling multiple chronic medical conditions and was struggling to keep track of her daily medications. She was prescribed multiple medications for hypertension and diabetes, and was inconsistent in refilling them. Her inability to refill her medications on a timely basis triggered an alert. A Catamaran pharmacist then reached out to Mary to assess her current situation and identify ways to help her improve adherence.

For Mary, who is a diabetic, non-adherence to her hypertension/cardiovascular medications puts her at a higher risk for kidney problems in the future, and long-term non-adherence can lead to heart disease. Non-adherence to her diabetes medication can result in uncontrolled blood sugar levels, which could eventually lead to complications with her kidneys, loss of vision and nerve pain.

Pharmacist Guidance

After speaking with Mary and performing a comprehensive review of her medications, the pharmacist identified and resolved the following:

- Recognized a more effective treatment for Mary's hypertension by combining two hypertension drugs into a single medication.
- Switched Mary from a retail-30 to a retail-90 day supply for both her hypertension and diabetes medications.
- Discussed the importance of taking her medications on a timely and regular basis, and of maintaining a healthy diet.

Mary's Results

Six months later, Mary had a dramatic improvement in her adherence levels:

Adherence Increased

	From	To
Diabetes Medications	38%	85%
Hypertension Medications	34%	94%

Medication Adherence Program

Catamaran's Medication Adherence Program successfully increases adherence by educating, engaging and communicating directly with patients and prescribers, reducing the barriers to adherence. Once Catamaran has identified a patient as at-risk for non-adherence, we quickly act on this insight. Through an array of intervention tools and individualized engagement tactics including interactive voice response calls, email, mail, mobile app medication reminders and one-on-one pharmacist outreach and consultation, Catamaran drives desired behavior and adherence outcomes.

Engaging Patients

Catamaran clinical pharmacists are experts in engaging patients in discussions about the importance of taking medications as prescribed. They work with patients one-on-one to assist and support patients in maintaining adherence to their medications. They take the time to explain to patients what to expect from medications, what to do if they experience side effects or if their condition worsens. During the consultation, patients are encouraged to talk about any personal issues or barriers that may be preventing them from adhering to their medications.

Program Components

Our program provides a continuum of interventions that begin at the first fill and continue throughout the duration of therapy.

New-to-therapy patients:

- Education on new prescriptions
- Optional daily medication reminder and refill reminder via mobile app

Late-to-Refill patients:

- Reminder calls to refill medication(s)
- Patients have option to be transferred to their dispensing pharmacy to refill

Low Adherence*:

- Education on importance of adherence
- Contact prescriber to alert them to patient non-adherence
- Telephone or video consultation with Catamaran pharmacist

Primary Medication Non-Adherence:

- Targets newly diagnosed patients with chronic conditions who fail to fill their initial prescription
- Fax sent to prescriber when prescription not picked up by patient
- Prescriber reaches out to patient

Adherence is Key:[24]

1 in 3 patients do not fill their prescriptions

Non-adherence is the leading cause of preventable **health care costs,** estimated at **$300** billion annually

*Catamaran uses proportion of days covered (PDC) as the preferred measure of medication adherence, with 80% PDC as a benchmark for optimal adherence.

Pharmacist Viewpoint

Catamaran pharmacists experience firsthand the positive impact that a medication adherence consultation can have on a patient's ability to stay the course and successfully follow a long term treatment regimen.

"I find it beneficial to talk with patients who use inhalers, antidepressants or other medications that take a longer time to see positive benefits from a medication. Individuals appreciate us calling and letting them know to be patient and to give the medication time to work. More often than not, they are experiencing disappointment because the drug doesn't seem to be working immediately."

– Catamaran pharmacist

"I once talked with a patient about the difference between long-acting insulin and regular insulin. 'You are a God-send,' she said. She was so confused by these two types of insulin, and my call came just in time to help her."

– Catamaran pharmacist

Clinical Review: Top 5 Classes

Traditional Therapeutic Class Overview 58

Specialty Therapeutic Class Overview 64

clinical review

traditional therapeutic class overview

The top five traditional classes for the Catamaran book of business comprise close to 40% of total traditional drug spend. Diabetes has remained the top class by cost for the last several years, experiencing double-digit trend increases due to price inflation. Similarly, the newcomer to the top five, dermatological disorders, advanced to the fifth spot as a result of price inflation as well. However, a negative drug mix for the top five classes, particularly for cholesterol and asthma/COPD, helped offset increases in traditional trend.

The following section reviews the top five traditional classes by providing a clinical overview and highlighting some of the major industry trends that occurred in 2014. In addition, a "look ahead" section provides insights regarding anticipated trends in the upcoming years that will have an impact on each therapeutic class.

The top five classes by spend reviewed in the traditional therapeutic section include:

1. diabetes
2. cholesterol
3. asthma/COPD
4. ADHD/narcolepsy/obesity
5. dermatological disorders

For access to updated drug pipeline and trend data, visit our Trend Portal at

trendreport.catamaranrx.com

1 | diabetes

Traditional Therapeutic Class Overview

Utilization:	1.1%
Drug Mix:	1.7%
Quantity:	0.3%
Unit Cost:	18.0%

21.1% Overall Trend

Class GDR =63.8%

Top Drugs by Market Share*

Drug Name	Market Share
metformin HCl	32.3%
metformin HCl ER	9.4%
Lantus	9.3%
glimepiride	6.4%
Novolog	5.0%

*by Rx Volume

2014 New Molecular Entity FDA Approvals

- Farxiga—January
- Tanzeum—March
- Afrezza—June
- Jardiance—August
- Invokamet—August
- Trulicity—August
- Xigduo XR—October

2014 New Generic Approvals

- Avandamet—May

Approximate Number of Drugs in the Pipeline[13]

45	67	26	5
Phase One	Phase Two	Phase Three	Pending Approval

U.S. Market as of February 2015

A Look Back

- Lantus® remained the market leader in the basal, long-acting insulin category. Mealtime insulins Novolog® and Humalog® comprise about 40% of the U.S. insulin market.[26] Metformin remains the oral drug of first choice in appropriate type 2 diabetes mellitus (T2DM) patients.
- Invokana® was the first agent approved in the sodium glucose co-transporter-2 inhibitor (SGLT-2) class in mid-2013 and was the market leader in the number of prescriptions dispensed. Both Farxiga® and Jardiance® have begun to gain market share. Additionally, the first combination SGLT-2 inhibitor/metformin products, Invokamet® and Xigduo XR®, were approved.
- Tanzeum® and Trulicity®, two new glucagon-like peptide (GLP-1) analogs injected once-weekly, were approved. Both will be competing with the national market leader, once-daily Victoza® and once-weekly Bydureon®. Trulicity has been shown to be non-inferior to Victoza®.[26]
- Catamaran data shows that metformin comprised 42% of the prescriptions, followed by insulins at 20% and sulfonylureas at 18%. Each diabetic member utilized an average of 1.7 antidiabetic drugs. About 68% of diabetic members were also taking a medication for cholesterol management.

A Look Ahead

- Diabetes affects about 9% of the U.S. population. An additional 86 million people have prediabetes, putting them at risk for developing T2DM.[27]
- By 2018, global sales for this category are projected to be $61–71 billion, making it second only to cancer in sales. Spending growth for diabetes will be more than 10% over the next five years, driven by innovative new therapies and diagnosis rates.[1]
- Toujeo® (insulin glargine, 300 units/mL), Sanofi's next-generation Lantus, received approval in February 2015. Eli Lilly's insulin glargine product, Basaglar®, will likely not see full approval until 2016, when other products similar to Lantus enter the market.[26]
- The first dipeptidyl peptidase-4 (DPP-4)/SGLT-2 inhibitor combination, Glyxambi® (empagliflozin/linagliptin), received FDA approval in February 2015.[28] This class may become a national market leader because 25% of patients taking a SGLT-2 inhibitor also take a DPP-4 agent.[26]
- Afrezza®, an inhaled insulin, became available in the marketplace in February 2015. It remains to be seen how the product will compete versus mealtime injectable insulins.
- Combination insulin/GLP-1 analogs are expected to be available in 2016[29] and may provide better glucose control and promote weight loss.

2 | Traditional Therapeutic Class Overview
cholesterol

Utilization:	-4.7%
Drug Mix:	-6.7%
Quantity:	-0.4%
Unit Cost:	5.5%

-6.3% Overall Trend

Class GDR = 85.6%

Top Drugs by Market Share*

Drug Name	Market Share
simvastatin	30.5%
atorvastatin calcium	28.6%
pravastatin sodium	11.4%
Crestor	7.9%
fenofibrate	5.1%

*by Rx Volume

2014 New Molecular Entity FDA Approvals

- Omtryg—April
- Epanova—May

2014 New Generic Approvals

- Lovaza—April
- Lipofen—May

Approximate Number of Drugs in the Pipeline[13]

10	19	8	2
Phase One	Phase Two	Phase Three	Pending Approval

U.S. Market as of February 2015

A Look Back

- Statins (e.g. simvastatin, atorvastatin) continue to lead the category in the number of prescriptions for the Catamaran book of business. Market shares of recently approved fenofibrate, niacin extended-release and omega-3 acids increased at the expense of their brand counterparts.
- Current guidelines for adults with high low-density lipoprotein cholesterol [LDL-C] levels recommend using moderate to high-intensity statins in most patients.[30] It was thought that higher-intensity statin utilization would increase compared to lower-intensity statins and other agents. However, utilization among the agents did not change appreciatively.
- Vytorin® (simvastatin/ezetimibe) and Zetia® (ezetimibe) utilization had been declining as a result of a lack of cardiovascular outcome data. The IMPROVE-IT trial demonstrated that patients taking Vytroin experienced fewer cardiovascular events and had very low levels of LDL-C compared to patients taking simvastatin alone.[31] These results may make it more likely for the FDA to accept LDL lowering as a surrogate endpoint when approving new drugs.[26] Current guidelines[30] no longer recommend treating to LDL-C levels; this latest study may bring these recommendations into question.

A Look Ahead

- About 33% of U.S. adults have high LDL-C levels, with about 50% treated for their condition.[32] Of patients who are treated, it is estimated that between 5–25% have statin intolerance.[33, 34, 35] Additionally, about 620,000 Americans have a condition called familial hypercholesterolemia (FH) that leads to very high levels of LDL-C.[36]
- By 2018, global sales for cholesterol medications are projected to reach $21–24 billion, making it the 9th largest category in sales of the top 20 classes.[1]
- A new class of specialty agents in this current traditional category may soon be available: the proprotein convertase subtilism/kexin type 9 (PCSK9) inhibitors. Sanofi/Regeneron and Amgen have filed biological license applications (BLAs) for Praluent™ (alirocumab) and Repatha™ (evolocumab), with FDA approval expected in the third quarter of 2015.[29] These are monoclonal antibodies that will be administered by subcutaneous injection every two or four weeks. It is anticipated that they will be utilized in patients with FH, those who are statin intolerant or those who cannot achieve adequate cholesterol lowering with current therapies. Cardiovascular outcome data will not be available for these agents until at least 2017. Projected U.S. sales for both alirocumab and evolocumab are expected to reach $3.4 billion by 2020.[12]

3 | Traditional Therapeutic Class Overview
asthma/COPD

Utilization:	-1.4%
Drug Mix:	-5.1%
Quantity:	-0.2%
Unit Cost:	3.6%

-3.0% Overall Trend

Class GDR = 44.4%

Top Drugs by Market Share*

Drug Name	Market Share
montelukast sodium	30.8%
Proair HFA	16.3%
Ventolin HFA	9.7%
Advair Diskus	8.3%
albuterol sulfate	6.3%

*by Rx Volume

2014 New Molecular Entity FDA Approvals

- Incruse Ellipta—April
- Arnuity Ellipta—August
- Striverdi Respimat—July

2014 New Generic Approvals—none

Approximate Number of Drugs in the Pipeline[13]

Phase One	Phase Two	Phase Three	Pending Approval
22	36	19	6

U.S. Market as of February 2015

A Look Back

- Controller medications, Advair® and montelukast, continued to lead their category based on utilization.
- The first combination long-acting muscarinic antagonist (LAMA)/long-acting beta agonist (LABA) given once-daily, Anoro Ellipta® (umeclidinium bromide/vilanterol trifenatate), was approved in December 2013 and became available in April 2014.
- Two once-daily products, Incruse Ellipta®, a LABA, and Striverdi Respimat®, a LAMA, were approved. Serevent®, a twice-daily LABA, and Spiriva®, a twice-daily LAMA, remained the market leaders in their respective categories.
- Xolair®, the only monoclonal antibody approved for patients with severe allergic asthma, received a new indication for chronic idiopathic urticaria. About 1.5 million U.S. patients have this condition, with about 50% of them not responding to H1-antihistamines.[37]
- Catamaran book of business data found that 40% of patients were using an acute drug without a controller medication. Acute nebulizer use was 44% by children (0–19 years) and 56% by adults. Acute inhaler use was 84% by adults and 16% by children.

A Look Ahead

- Asthma affects more than 25 million Americans and COPD affects approximately 30 million Americans.[38] Severe asthma patients represent about 5–10% of the population.[39]
- A new therapeutic class, anti-inflammatory cytokines, is being studied for patients with severe asthma. Bosatria® (mepolizumab), a subcutaneously injected once-monthly maintenance treatment for severe eosinophilic asthma, is awaiting FDA approval in late 2015. Other anti-interleukin products are in phase 3 trials for asthma and are expected to file for FDA approval in 2015 and 2016. They are also being studied for COPD treatment.[26]
- LAMA/LABA therapy may replace inhaled corticosteroids/LABA therapy for COPD. For example, Anoro Ellipta was shown to provide significantly better lung function compared to Advair.[40] Another LAMA/LABA (olodaterol/tiotropium bromide) is waiting for FDA approval in July 2015 for COPD.[29]
- Triple therapy with a LAMA/LABA plus inhaled corticosteroid may become the treatment of choice in COPD. Triple therapy agents are in phase 3 trials.[26, 41]
- Generic versions of Advair and Proair® HFA are being tested in clinical trials. A few manufacturers are also testing their own versions of these agents and intend to file new drug applications (NDAs) for them. Filings are anticipated in 2015 with possible approvals in 2016 or 2017.[29]

4 | Traditional Therapeutic Class Overview
ADHD/narcolepsy/obesity

Utilization:	1.6%
Drug Mix:	-1.4%
Quantity:	-0.9%
Unit Cost:	1.6%

0.8% Overall Trend

Class GDR = 68.9%

Top Drugs by Market Share*

Drug Name	Market Share
amphetamine/ dextroamphetamine	34.7%
methylphenidate HCl ER	17.5%
Vyvanse	13.7%
methylphenidate HCl	6.8%
Adderall XR	4.7%

*by Rx Volume

2014 New Molecular Entity FDA Approvals—none

2014 New Generic Approvals—none

Approximate Number of Drugs in the Pipeline[13]

17	23	8	2
Phase One	Phase Two	Phase Three	Pending Approval

U.S. Market as of February 2015

A Look Back

- Drug shortages due to raw ingredient supply issues, recalls and shipment delays have been reported for generic and branded methylphenidate extended-release products.[42]
- The FDA has revised guidance for methylphenidate extended-release products and changed the therapeutic equivalence rating for both the Mallinkrodt and UCB/Kudco generic products for Concerta® from AB to BX, making the products not substitutable.[43] Actavis markets an authorized generic for Concerta that is still able to be directly substituted for Concerta.
- Two products were approved for chronic weight management in patients with co-morbid conditions. The first is Saxenda® (liraglutide) a new formulation of a current glucagon-like peptide-1 (GLP-1) receptor agonist Victoza®. The second is Contrave® (naltrexone hydrochloride/bupropion hydrochloride), a new combination of existing entities.
- Catamaran book of business data shows that more than 50% of members utilizing ADHD medications were using long-acting formulations and approximately 20% were using short-acting formulations. Approximately 26% of patients were using a combination of short- and long-acting medications. The highest utilization of ADHD medications occurred in members between the ages of 10–19 at 37%, followed by 22% for ages of 20–24. Approximately 13% of children ages 5–9 years were using ADHD medications. Members who were also concurrently using an antidepressant or antipsychotic were 25% and 3%, respectively.

A Look Ahead

- By 2018, the ADHD category is projected to achieve $7–9 billion in global sales, making it the 20th class out of the top 20 classes.[1]
- Extended-release stimulant products should continue to lead the market due to proven efficacy.[26]
- About 25% of adults with ADHD are treated. Treating additional adults could increase utilization.[26]
- Vyvanse® is the first medication to receive FDA approval for binge eating disorders in adults and may see increased utilization.[44]
- Daytrana®, the only transdermal methylphenidate extended-release product, is projected to become generically available in September 2015.
- More than one-third of American adults are obese.[45] New guidelines suggest using weight-loss agents such as Belviq®, Qsymia®, Contrave and Saxenda in addition to diet, exercise and behavior modification in obese individuals.[46]

5 | Traditional Therapeutic Class Overview
dermatological disorders

Utilization:	-2.1%
Drug Mix:	-0.4%
Quantity:	0.0%
Unit Cost:	8.3%

5.8% Overall Trend

Class GDR = 84.9%

Top Drugs by Market Share*

Drug Name	Market Share
triamcinolone acetonide	10.8%
mupirocin	6.7%
clobetasol propionate	6.6%
clindamycin phosphate	5.0%
ketoconazole	4.8%

*by Rx Volume

2014 New Molecular Entity FDA Approvals

- Julbia—June
- Kerydin—July

2014 New Generic Approvals

- Vanos—January
- Oxsoralen-Ultra—June
- Pennsaid 1.5%—May
- Protopic—September

Approximate Number of Drugs in the Pipeline[13]

25	72	30	4
Phase One	Phase Two	Phase Three	Pending Approval

U.S. Market as of February 2015

A Look Back

- A variety of products comprise the dermatologicals category including topical steroids, topical and oral acne products, topical antifungals, topical antibiotics, topical lice treatments and topical pain treatments. Many of these products are available generically.
- Two antifungal topical solutions were approved to treat onychomycosis of the toenail: Kerydin® (tavaborole) and Julbia® (efinaconazole). Kerydin is a first-in-class oxaborole antifungal. Both products were compared to placebo only, not other antifungal treatments.[47, 48]
- Catamaran book of business data shows that 15% of members using Lidoderm®, a topical product commonly utilized for diabetic neuralgia, were diabetics. About 86% of prescriptions in this category were utilized by patients between the ages of 10–64 years.

A Look Ahead

- By 2018, the dermatology class is projected to reach $22–25 billion in global sales, making it the 8th largest category in sales of the top 20 classes.[1] By 2019, it is projected that the dermatology category will account for approximately 2% of sales within the overall global therapeutic market.[26]
- It is estimated that approximately 85% of 15–24 year olds have acne. Treatment usually begins with topical agents, with combination products gaining utilization due to their ease of use and potentially better adherence. Progression to oral therapy usually advances as acne worsens. The majority of these products are available generically.[26]
- Approximately 7 million Americans suffer from psoriasis; 70% of these individuals have mild-to-moderate disease. Patients are treated with topical treatments largely available in generics such as corticosteroids, generic Dovonex® and generic Taclonex®. Pipeline prospects for psoriasis are concentrated in the moderate-to-severe population using injectable biologic agents.[26]
- Treatment for other therapeutic areas such as pain, antibacterial and antifungal will continue to be driven by generic therapies.
- No new molecular entities or new generics are in the near-term pipeline for this category.[29]

specialty therapeutic class overview

As expected, the specialty trend increased substantially from 2013, primarily due to hepatitis C medications. The trend for that class was further intensified due to significantly lower expenditures in 2013 as prescribers delayed treatment, or "warehoused" patients, prior to the approval of new therapies in late 2013. With the release of innovative but more costly hepatitis C therapies, this class was propelled into the top five, to position four, after barely making the top 10 in 2013.

For the last several years, autoimmune disorders, multiple sclerosis and cancer have remained the top three classes, comprising almost 60% of specialty drug spend. Unit cost increases remained one of the primary drivers of trend within the specialty classes, and the top five classes accounted for 83% of the unit cost increases. HIV/AIDS was the only class in the top five with a negative trend, due to decreased utilization.

The following section reviews the top five specialty classes for 2014 and provides deeper insights around drugs that impacted each class. Emerging trends that will have significant implications over the next few years are also reviewed.

The top five classes by spend reviewed in the specialty therapeutic section include:

For access to updated specialty drug pipeline and trend data, visit our Trend Portal at

trendreport.catamaranrx.com

1. autoimmune disorders
2. multiple sclerosis
3. cancer
4. hepatitis C
5. HIV/AIDS

1 | Specialty Therapeutic Class Overview
autoimmune disorders

Utilization:	5.4%
Drug Mix:	1.9%
Quantity:	-0.3%
Unit Cost:	16.2%

23.1% Overall Trend

Top Drugs by Market Share*

Drug Name	Market Share
Humira	48.2%
Enbrel	35.3%
Cimzia	4.6%
Simponi	2.9%
Stelara	2.6%

*by Rx Volume

2014 New Molecular Entity FDA Approvals

- Otezla—March (PsA) & September (PP)
- Entyvio—May

Approximate Number of Drugs in the Pipeline[12, 13]

68	92	40	1
Phase One	Phase Two	Phase Three	Pending Approval

U.S. Market as of February 2, 2015

A Look Back

- The tumor necrosis factor (TNF) inhibitors, Humira® and Enbrel®, continued to dominate the autoimmune disorder therapeutic category. Both of these agents are well established within the market, with patient and prescriber familiarity. They are recognized for their long-term safety and effectiveness, support as first-line agents by multiple treatment guidelines and expansive indication coverage across multiple autoimmune disorders.
- Utilization of Cimzia®, a newer TNF inhibitor agent, continues to increase, driven by approval for additional indications over the past few years. Utilization of interleukin antagonists Actemra® and Stelara® increased as well. Utilization of Kineret®, with its once-daily administration compared to other agents with less-frequent dosing options, remains relatively low. Xeljanz®, an oral janus kinase (JAK) inhibitor, with its ease of use and patient preference experienced growth.
- 2014 saw the approval of the first oral phosphodiesterase 4 (PDE4) inhibitor, Otezla®.

A Look Ahead

- Approximately 24–50 million Americans suffer from autoimmune disorders. Annual direct healthcare costs for autoimmune-related diseases are estimated at $100 billion.[49]
- By 2018, global sales for the autoimmune category are projected to account for $47–52 billion, with a compound annual growth rate estimated at 12–15% between 2014 and 2018.[49]
- Humira and Remicade® are forecast to be top global sellers between 2015 and 2020. Rheumatoid arthritis (RA) is forecast to be a top therapy area for 2015, accounting for $23 billion in global sales based on projected approvals and pipeline agents.[1]
- Cosentyx®, the first injectable interleukin 17 (IL -17) antagonist, received FDA approval in January 2015[50] and is expected to be one of the top drug launches for 2015. Global sales of $133 million are estimated in 2015 and expected to reach more than $1 billion by 2020.[1]
- Remsima®/Inflectra, a biosimilar version of Remicade, is expected to garner FDA approval by June 2015. Presently there are at least nine biosimilar agents in the pipeline for autoimmune disorders, including more biosimilars for Remicade as well as biosimilars for Enbrel, Humira and Rituxan®.[12, 13]

2 | multiple sclerosis

Specialty Therapeutic Class Overview

Utilization:	-1.3%
Drug Mix:	0.8%
Quantity:	0.1%
Unit Cost:	9.9%

9.5% Overall Trend

Top Drugs by Market Share*

Drug Name	Market Share
Copaxone	27.2%
Tecfidera	17.5%
Avonex	15.5%
Rebif	13.0%
Gilenya	10.8%

*by Rx Volume

2014 New Molecular Entity FDA Approvals

- Copaxone 40 mg/mL—January
- Plegridy—August
- Lemtrada—November

Approximate Number of Drugs in the Pipeline[12, 13]

18	13	7	0
Phase One	Phase Two	Phase Three	Pending Approval

U.S. Market as of February 2, 2015

A Look Back

- For the Catamaran book of business, Copaxone® is the market-leading biologic treatment for multiple sclerosis (MS). Of the interferon products, Avonex® is the leader, followed by Rebif®, Betaseron® and Extavia®. A majority of the injectable MS products saw a decline in utilization, which was offset by an increase in the utilization of oral agents Aubagio®, Tecfidera® and Gilenya®.
- Three new agents were released in 2014: Copaxone 40 mg/mL, Plegridy® and Lemtrada®.[50] Plegridy, the first pegylated interferon beta product approved for the treatment of relapsing forms of MS (RRMS), is administered every 14 days. Lemtrada (alemtuzumab), an intravenous product for RRMS, is administered twice-per-year.
- A new higher-concentration, less-frequent dosing formulation (40 mg/mL) of Copaxone received FDA approval in January 2014, with patent protection until September 2030.[26] Teva has worked diligently to switch patients from 20 mg to 40 mg. Approximately 63% of patients have converted to the higher-concentration, less-frequent dosing formulation. A generic for Copaxone was expected in 2014, but due to ongoing litigation, is now expected at earliest in September 2015.[51]

A Look Ahead

- MS is forecast to remain a top therapy area. In 2015, global spend is projected to account for $21 billion, increasing to $27 billion by 2020.[10]
- With their ease of use compared to injectables, growth of oral therapies is expected to increase. Conversion from Copaxone 20 mg to 40 mg is expected to continue as well, lessening the value of any potential generic formulation finally reaching the market. Tecfidera is forecast to be a top 10 drug in 2020, with global sales approaching $7 billion.[10]
- Manufacturers who have products in the injectable MS pipeline are focusing their efforts on less-frequent dosing therapies. Many of the drugs in the pipeline are being studied for second-or third-line therapies in patients who are refractory to other treatments.
- Zinbryta® (daclizumab), a once-monthly subcutaneously administered product for RRMS, is expected to be filed with the FDA in 2015[12, 13] by AbbVie/Biogen Idec. Genentech/Roche is investigating ocrelizumab, an intravenous product with dosing every 24 weeks, currently in phase 3 development for RRMS and PPMS; results are expected in 2015.[12, 13]

3 | Specialty Therapeutic Class Overview
cancer

Utilization:	-0.2%
Drug Mix:	2.3%
Quantity:	-0.5%
Unit Cost:	10.0%

11.6% Overall Trend

Top Drugs by Market Share*

Drug Name	Market Share
fluorouracil	14.4%
Gleevec	12.4%
Revlimid	9.1%
temozolomide	7.6%
capecitabine	7.5%

*by Rx Volume

2014 New Molecular Entity FDA Approvals

- Cyramza—April
- Zykadia—April
- Beleodaq—July
- Zydelig—July
- Keytruda—September
- Blincyto—December
- Lynparza—December
- Opdivo—December

2014 New Generic Approvals

- Xeloda—March

Approximate Number of Drugs in the Pipeline[12, 13]

Phase One	Phase Two	Phase Three	Pending Approval
521	366	69	10

U.S. Market as of February 2, 2015

A Look Back

- Cancer drugs comprised 20% of all FDA new drug approvals for 2014, with five of the new drugs designated as breakthrough therapies.[3]
- For the Catamaran book of business, Gleevec® (imatinib), a tyrosine kinase inhibitor (TKI), was the top-utilized oral cancer agent, followed by Revlimid® (lenalidomide). Gleevec has multiple FDA-approved indications, which may account for its high utilization.
- Fluorouracil, a component of multiple chemotherapy regimens for multiple types of cancer—including breast, colorectal, gastric, pancreatic and skin—was the top-utilized injectable cancer agent.
- The introduction of generic equivalents for Xeloda® (capecitabine) and Temodar® (temozolomide) impacted utilization of the branded products.

A Look Ahead

- In 2015, the American Cancer Society estimates that more than 1.6 million new cancer cases will be diagnosed and over 580,000 people will die from cancer. Cancer is the second most common cause of death in the U.S., accounting for 1 out of 4 deaths. Prostate, breast, lung and colorectal cancers are anticipated to lead this prediction.[52]
- By 2018, sales for this category are projected to be $71–81 billion, making cancer the top class in sales.[10] Between 2014 and 2018, compound annual growth rate is estimated at 7–10%,[10] with cancer spend estimated to reach $153 billion by 2020.[1]
- Cancer ranks as the top research and development category, with more than 3,000 drugs in various phases of development.[12, 13] Breast cancer is classified as a top 10 valuable indication for 2015.[10] The fastest-growing cancer indications include melanoma, chronic lymphocytic leukemia, non-small cell lung cancer and non-Hodgkin's lymphoma.[52]
- Top cancer product launches for 2015 include Ibrance® (palbociclib) and Opdivo®.[52] Several cancer drugs anticipated to be top sellers in the U.S. market by 2020 include: Opdivo® (nivolumab), Imbruvica® (ibrutinib), Xtandi® (enzalutamide), Perjeta® (pertuzumab), RG-7446, Revlimid® (lenalidomide), Rituxan® (rituximab), Avastin® (bevacizumab), Keytruda® (pembrolizumab); MK-3475, Kadcyla® (ado-trastuzumab), Ibrance® (palbociclib), Kyprolis® (carflizomib) and Abraxene® (paclitaxel).[11]

4 | hepatitis c

Specialty Therapeutic Class Overview

Utilization:	26.5%
Drug Mix:	423.1%
Quantity:	-0.8%
Unit Cost:	-6.6%

442.1% Overall Trend

Top Drugs by Market Share*

Drug Name	Market Share
Sovaldi	35.4%
Ribasphere	19.4%
Pegasys	13.9%
Ribavirin	13.0%
Olysio	9.0%

*by Rx Volume

2014 New Molecular Entity FDA Approvals

- Harvoni—October
- Viekira Pak—December

Approximate Number of Drugs in the Pipeline[12, 13]

14	36	4	0
Phase One	Phase Two	Phase Three	Pending Approval

U.S. Market as of February 2, 2015

A Look Back

- Hepatitis C Virus (HCV) remained a hot topic in 2014, especially the market entry of newer, direct-acting antiviral agents. HCV therapy costs continue to be hotly debated among multiple stakeholders. For Catamaran's book of business, the average cost of HCV therapy increased more than 328% in 2014. As new products continue to enter the market, market competition and contracting opportunities are assisting in making these newer therapies more affordable for patients, prescribers and payers.
- Gilead's Sovaldi®, followed by ribavirin, were the most-utilized HCV drugs among Catamaran's book of business in 2014. As expected with the entry of newer direct-acting antivirals, utilization of oral direct-acting antivirals Incivek® and Victrelis® plummeted. Subsequently, these products will no longer be available.[53, 54] Utilization of pegylated interferon decreased significantly as well.
- Over the past three years, treatment approaches have been rapidly evolving with the availability of the newer direct-acting antivirals.

A Look Ahead

- Emerging therapies in the HCV pipeline are focused on oral antivirals including: NS3/4A protease inhibitors and NS5B polymerase inhibitors; NS5A replication complex inhibitors; fixed-dose combinations (FDC) of oral antivirals; interferon-free and ribavirin-free regimens; and shorter treatment durations in certain instances. Development is focused on regimens that primarily treat genotype 1 HCV and/or are pangenotypic.[12, 13] Genotype (GT) 1 is the most prevalent HCV genotype, accounting for approximately 46% of cases globally.
- Hepatitis C treatment will remain a top therapeutic class for 2015, with global sales projected to be $21 billion in 2015 and $21.8 billion by 2020.[10] Solvadi and Harvoni are forecast to be top 10 global products, and have combined sales of $15.3 billion in 2015 and $12.5 billion by 2020.[10]
- Merck is expected to file for FDA approval for its once-daily, fixed-dose combination product grazoprevir/elbasvir used in the treatment of patients with genotype 1, 4, 5 or 6 chronic HCV infections. Also filing in early 2015 for FDA approval is a fixed-dose combination product containing daclatasvir/asunaprevir/beclabuvir from Bristol Myers Squibb.[12, 13]

5 Specialty Therapeutic Class Overview
HIV/AIDS

Utilization:	-13.7%
Drug Mix:	2.8%
Quantity:	0.1%
Unit Cost:	4.2%

-6.6% Overall Trend

Top Drugs by Market Share*

Drug Name	Market Share
Atripla	16.8%
Truvada	14.7%
Norvir	9.8%
Viread	8.5%
Isentress	7.0%

*by Rx Volume

2014 New Molecular Entity FDA Approvals

- Triumeq—August
- Tybost—September
- Vitekta—September

2014 New Generic Approvals

- Viramune XR—April

Approximate Number of Drugs in the Pipeline[12, 13]

41	32	4	3
Phase One	Phase Two	Phase Three	Pending Approval

U.S. Market as of February 2, 2015

A Look Back

- An estimated 1.1 million people aged 13+ are living with HIV infection in the U.S. including more than 180,000 whose infections have yet to be diagnosed. There are an estimated 50,000 new HIV infections annually.[55]
- HIV treatment regimens comprise a combination of oral antiretroviral medications. The selection of an HIV treatment regimen is dependent on multiple factors, including virologic efficacy, adverse effect potential, pill burden, dosing frequency, drug-drug interactions, resistance issues, patient comorbidities and other factors, including cost.[56]
- For the Catamaran book of business, Atripla® was the most utilized HIV medication, which comprises a recommended HIV regimen in one pill.[56] The second most utilized medication was Truvada®, which is utilized in conjunction with other medications to make a recommended complete HIV regimen.[56]
- Norvir® (ritonavir) is the third most utilized HIV medication and is routinely used to boost the drug levels of other HIV medications.
- Utilization of Stribild® increased in 2014. Triumeq®, a newer HIV treatment, was approved in August 2014. Both offer a recommended HIV treatment regimen using one pill.

A Look Ahead

- The HIV therapeutic class continues to be a top specialty category, with projected global sales of $21.3 billion expected in 2015 and $22.6 billion by 2020.[10]
- Stribild and Tivicay® are forecast to be among the top 50 products in the U.S. by 2020, with projected sales of $3.3 billion and $1.8 billion, respectively.[11]
- The drug pipeline for HIV is comprised of multiple combination agents, helping to decrease pill burden and aid in treatment adherence for patients. These new agents are also focused on combining some of the newer HIV medications into one pill.
- Generics for Viracept® (nelfinavir mesylate) and Fuzeon® (enfuvirtide) are expected in the first half of 2015. If pediatric exclusivity is granted, Fuzeon generics may not be launched until December 2015.[57]

methodology

Data contained in this trend report is from the Catamaran book of business and includes all clients with the exception of Cash Card, Workers' Compensation, Health Insurance Marketplace (HIM), Fee for Service (FFS) Medicaid, Medicare Part D and Managed Medicaid clients.

Workers' Compensation, HIM, FFS Medicaid and Medicare Part D lines of business are included in this trend report, but reported separately. The time period used to determine the trend in this report was from calendar years 2013 and 2014. Listed below are additional parameters that were used to analyze data:

- All costs (e.g., cost per unit) are represented as total drug costs (ingredient cost plus dispensing fee) unless otherwise noted.
- Traditional drugs are identified as all drugs that are not included on the Catamaran Comprehensive Specialty List.
- Specialty drugs are identified by the Catamaran Comprehensive Specialty List.
- Overall drug trend includes specialty and traditional drugs.
- Manufacturer rebates are not included in the plan cost metrics.
- Utilization trend is based on prescription supply per-member-per-month (PMPM), unless otherwise noted. It is calculated by looking at the total number of prescriptions in a study period, divided by total eligible members and total number of months. Utilization is normalized based on distribution channel.
- Workers' Compensation data is reported as per-utilizer-per-month (PUPM) due to the fluid nature of claimants within this segment.
- Client cohort comprises clients who had continuous enrollment from 2013 to 2014 and had 24 months of claim experience.

Catamaran dissects trend by analyzing the following drivers:

- **Utilization** measures the change in prescription volume. Analytically it is defined as a percent change in the number of prescriptions per-member-per-month (PMPM).
- **Drug mix** measures the impact of drug choice on trend. It identifies the changes in the mixture of types of drugs dispensed, such as more cost-effective alternatives as a result of generic launches, or more costly drugs due to the introduction of new molecular entities.
- **Quantity** measures the intensity of utilization. It evaluates the changes in units dispensed per prescription.
- **Unit cost** measures the variation of the cost of the drug. It identifies changes in cost per unit of a drug and determines the impact—whether an increase or decrease in price—as a result of reference price change and other pricing factors and fees.

glossary

ACA	Affordable Care Act
ACO	Accountable Care Organization
ADHD	Attention Deficit Hyperactivity Disorder
AED	Anxiolytic Equivalent Dose
AIDS	Acquired Immune Deficiency Syndrome
AVR	Antiretroviral
AWP	Average Wholesale Price
BLA	Biological License Application
BOB	Book of Business
CDER	Center for Drug Evaluation & Research
CHC	Chronic Hepatitis C
CMR	Comprehensive Medication Review
COB	Coordination of Benefits
COE	Center of Excellence
CO-OP	Consumer Operated and Oriented Plan
COPD	Chronic Obstructive Pulmonary Disease
CSR	Cost Share Reduction
DUR	Drug Utilization Review
EGWP	Employer Group Waiver Plan
EHB	Essential Health Benefit
FDA	Food and Drug Administration
FDC	Fixed-Dose Combinations
FFS	Fee-for-Service
GDR	Generic Dispensing Rate
GERD	Gastroesophageal Reflux Disease
HCV	Hepatitis C Virus
HIM	Health Insurance Marketplace
HIV	Human Immunodeficiency Virus
IVR	Interactive Voice Response
LABA	Long-Acting Beta Agonist
LAMA	Long-Acting Muscarinic Antagonist
LDL-C	Low-Density Lipoprotein Cholesterol
MED	Morphine Equivalent Dose
MS	Multiple Sclerosis
MTM	Medication Therapy Management
NCCP	Network Compound Credentialing Program
NCQA	National Committee for Quality Assurance
NCPDP	National Council for Prescription Drug Programs
NDA	New Drug Application
NME	New Molecular Entities
OTC	Over-the-Counter
PBM	Pharmacy Benefit Manager
PCC	Patient Care Coordinator
PCSK9	Proprotein Convertase Subtilisin/Kexin Type 9
PDC	Proportion of Days Covered
PMPM	Per-Member-Per-Month
PPMS	Primary-Progressive Multiple Sclerosis
P&T	Pharmacy & Therapeutics (Committee)
PUPM	Per-Utilizer-Per-Month
QHP	Qualified Health Plan
RA	Rheumatoid Arthritis
rDUR	RetroDUR/Retrospective Drug Utilization Review
RRMS	Relapsing-Remitting Multiple Sclerosis
SECURE	Safe & Effective Compound Use Reassurance Effort
SGLT-2	Sodium Glucose Co-Transporter-2
SLL	Small Lymphocytic Lymphoma
T2DM	Type 2 Diabetes Mellitus
TKI	Tyrosine Kinase Inhibitor
TNF	Tumor Necrosis Factor
TPL	Third Party Liability
UC	Ulcerative Colitis
UM	Utilization Management

references

1. **IMS Institute for Healthcare Informatics,** *The Global Outlook of Medicines through 2018,* http://www.imshealth.com/portal/site/imshealth/menuitem.0be132395225d98ee566e5661ad8c22a/?vgnextoid=a64de5fda6370410VgnVCM10000076192ca2RCRD&vgnextfmt=default, November 2014.
2. **Managed Healthcare Executive,** *Industry Challenges in 2015, What to watch and what's being done,* Volume 4, Number 12, December 2014.
3. **U.S. Food and Drug Administration (FDA),** *Novel New Drugs: 2014 Summary,* http://www.fda.gov/downloads/Drugs/DevelopmentApprovalProcess/DrugInnovation/UCM430299.pdf, January 2015.
4. **U.S. Food and Drug Administration (FDA),** *New Molecular Entity (NME) Drug and New Biologic Approvals,* http://www.fda.gov/Drugs/DevelopmentApprovalProcess/HowDrugsareDevelopedandApproved/DrugandBiologicApprovalReports/NDAandBLAApprovalReports/ucm373420.htm.
5. **American Heart Association,** *2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults,* http://circ.ahajournals.org/content/129/25_suppl_2/S1.full.pdf+html, November 12, 2013.
6. **Clinical Gastroenterology and Hepatology,** *Mesalamine Dose Escalation Reduces Fecal Calprotectin in Patients With Quiescent Ulcerative Colitis,* http://www.cghjournal.org/article/S1542-3565(14)00635-1/abstract, April 30, 2014.
7. **Washington Post,** *Federal prosecutors charge 14 in deadly meningitis outbreak,* http://www.washingtonpost.com/national/health-science/14-charged-for-roles-in-meningitis-outbreak/2014/12/17/1d4f2b34-8604-11e4-9534-f79a23c40e6c_story.html, December 17, 2014.
8. **M Bowker,** *Compound Drugs – What Can You Do About Their Startling Rise?,* The Truven Health Blog, http://truvenhealth.com/blog/compound-drugs-what-can-you-do-458, April 07, 2014.
9. **Drug Benefit News,** *As Generic Prices Rise, PBM Plans Include Tiers, MAC Tweaks,* Volume 16, Number 1, http://www.navitus.com/getattachment/a6b491dd-f6f5-4121-a913-3472e62a0ade/As-Generic-Prices-Rise,-PBM-Plans-Include-Tiers,-M.aspx, January 9, 2015.
10. **Evaluate Pharma,** *Pharma and Biotech 2015 Preview,* December 2014.
11. **Evaluate Pharma,** *Worldwide Prescription Drug & OTC Sales by Therapy Area in 2020,* June 2014.
12. **BioMedTracker (internet database),** Sagient Research Systems, Inc., by subscription, http://www.biomedtracker.com/, updated periodically.
13. **Thomson Cortellis (internet database),** Thomson Reuters, by subscription, https://cortellis.thomsonreuterslifesciences.com/ngg/login.do?session=nosso, updated periodically.
14. **DM Sanofi,** *Regeneron's PCSK9 - Inhibitor alirocumab halves major cardiovascular events in trial,* FirstWord Pharma, accessed February 13, 2015, http://www.firstwordpharma.com/node/1232507#axzz3MHH4VReT, August 31, 2014.
15. **T Staton,** *Payers fret about the next drug doomsday: Pricey PCSK9 cholesterol meds,* Fierce PharmaMarketing, accessed February 13, 2015, http://www.fiercepharmamarketing.com/story/payers-already-fretting-about-next-pharm-apocalypse-pricey-pcsk9-cholestero/2014-05-07, May 7, 2014.
16. **D Weinstein,** *Analyst gives PCSK9 preview, Medical Marketing and Media (MM&M),* accessed February 13, 2015, http://www.mmm-online.com/analyst-gives-pcsk9-preview/article/339712/, March 25, 2014.
17. **S King,** *FirstWord Lists – The drugs that will shape 2015,* http://www.firstwordpharma.com/node/1258216#axzz3SdPEg7t7, January 19, 2015.
18. **Wall Street Journal,** *Medicare to Rework Billions in Payments,* http://www.wsj.com/articles/medicare-to-rework-billions-in-payments-1422293419, January 26, 2014.
19. **HCV Epidemiology in the United States,** *Hepatitis C Online,* February 6, 2015.
20. **NCBI,** *Zohydro approval by food and drug administration: controversial or frightening?,* http://www.ncbi.nlm.nih.gov/pubmed/25054396, July-August, 2014.
21. **U.S. Department of Health and Human Services,** *Open Enrollment Week 13: February 7, 2015 – February 15, 2015,* http://www.hhs.gov/healthcare/facts/blog/2015/02/open-enrollment-week-thirteen.html.
22. **IMS Health ACA Advisor,** *IMS Health's Affordable Care Act (ACA) newsletter,* http://www.imshealth.com, January 2015.
23. **The Center for Improving Medication Management & the National Council on Patient Information and Education,** *Frequently Asked Questions,* accessed March 2015, *http://www.learnaboutrxsafety.org/faqs.aspx.*
24. **New England Healthcare Institute,** *Thinking Outside the Pillbox: A System-wide Approach to Improving Patient Medication Adherence for Chronic Disease,* August 12, 2009.
25. **Agency for Healthcare Research and Quality (AHRQ),** *Medication Adherence Interventions: Comparative Effectiveness,* Evidence Report/Technology Assessment Number 208, September 2012.
26. **Cowen & Company,** *Therapeutic Categories Outlook,* October 2014.
27. **American Diabetes Association (ADA),** *Statistics about Diabetes,* accessed January 13, 2015, http://www.diabetes.org/diabetes-basics/statistics/, September 10, 2014.
28. **Boehringer Ingelheim,** *U.S. FDA approves first-in-class Glyxambi tablets for adults with type 2 diabetes,* http://us.boehringer-ingelheim.com/news_events/press_releases/press_release_archive/2015/2-2-2015-us-fda-approves-first-in-class-glyxambi-empagliflozin-linagliptin-tablets-adults-type-2-diabetes.html, February 2, 2015.
29. **Catamaran** *RxOutlook Brand Pipeline Database,* January 2015.
30. **NJ Stone, J Robinson, AH Lichtenstein, et al.,** *2013 ACC/AHA guideline on the treatment of blood cholesterol to reduce atherosclerotic cardiovascular risk in Adults,* Circulation 2013, accessed February 6, 2015, http://circ.ahajournals.org/content/early/2013/11/11/01.cir.0000437738.63853.7a.full.pdf+html, November 12, 2013.

31. **Merck,** *Vytorin Significantly Reduced Cardiovascular Events More than Simvastatin Alone in Patients Presenting with Acute Coronary Syndromes in the Investigational IMPROVE-IT Study,* accessed February 6, 2015, http://www.mercknewsroom.com/news-release/prescription-medicine-news/vytorin-ezetimibesimvastatin-significantly-reduced-cardiovas, November 17, 2014.
32. **Centers for Disease Control and Prevention (CDC),** *Cholesterol Fact Sheet,* accessed February 6, 2015, http://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_cholesterol.htm, July 26, 2013.
33. **H Zhang, J Plutzky, S Skentzos, et al.,** *Discontinuation of statins in routine care setting: a cohort study,* Annals of Internal Medicine, 2013;158: 526-34.
34. **PM Moriarty, TA Jacobson, E Bruckert, et al.,** *Efficacy and safety of alirocumab, a monoclonal antibody to PCSK9, in statin-intolerant patients,* Journal of Clinical Lipidology, 2014;8:554-61.
35. **Z Ahmed,** *Statin Intolerance,* American Journal of Cardiology, 2014;113:1765-71.
36. **JC Robinson,** *Management of Familial Hypercholesterolemia: A Review of the Recommendations from the National Lipid Association Expert Panel on Familial Hypercholesterolemia,* Journal of Managed Care Pharmacy, 2013;19(2): 139-49.
37. **Genentech,** *FDA Approves Xolair for People with Chronic Idiopathic Urticaria (CIU), a Form of Chronic Hives,* accessed February 2, 2015, http://www.gene.com/media/press-releases/14563/2014-03-21/fda-approves-xolair-omalizumab-for-peopl, March 21, 2014.
38. **National Heart Lung and Blood Institute (NHLBI),** *What Is Asthma?,* accessed January 30, 2015, *https://www.nhlbi.nih.gov/health/health-topics,* June 15, 2012.
39. **G Garcia, C Taille, P Laveneziana, A Bourdin, P Chanez, M Humbert,** *Anti-interleukin-5 therapy in severe asthma,* European Respiratory Review, 2013;22: 251–7.
40. **GlaxoSmithKline,** *GSK and Theravance announce positive results from studies comparing Anoro Ellipta with Seretide Diskus and Advair Diskus in patients with COPD,* accessed January 23, 2015, http://www.gsk.com/en-gb/media/press-releases/2014/gsk-and-theravance-announce-positive-results-from-studies-comparing-anoro-ellipta-with-seretide-diskus-and-advair-diskus-in-patients-with-copd/, March 14, 2014.
41. **GlaxoSmithKline,** *GSK and Theravance announce initiation of phase III programme with fixed dose triple combination treatment FF/UMEC/VI in patients with COPD,* accessed January 23, 2015, http://www.gsk.com/en-gb/media/press-releases/2014/gsk-and-theravance-announce-initiation-of-phase-iii-programme-with-fixed-dose-triple-combination-treatment-ffumecvi-in-patients-with-copd/, July 16, 2014.
42. **U.S. Food and Drug Administration (FDA),** *FDA Drug Shortages,* accessed January 19, 2015, http://www.accessdata.fda.gov/scripts/drugshortages/dsp_ActiveIngredientDetails.cfm?AI=Methylphenidate Hydrochloride ER Capsules/Tablets&st=c&tab=tabs-1#, 2014.
43. **U.S. Food and Drug Administration (FDA),** *FDA concerns about therapeutic equivalence with two generic versions of Concerta tablets,* accessed January 19, 2015, http://www.fda.gov/drugs/drugsafety/ucm422568.htm, November 13, 2014.
44. **Shire,** *Vyvanse Capsules (CII) Becomes First and Only Treatment Approved by the FDA for Adults with Moderate to Severe Binge Eating Disorder,* accessed February 3, 2015, http://www.shire.com/shireplc/en/investors/investorsnews/irshirenews?id=1059, January 30, 2015.
45. **CL Ogden, MD Carroll, BK Kit, KM Flegal,** *Prevalence of Childhood and Adult Obesity in the United States 2011-2012,* Journal of the American Medical Association, 2014;311(8): 806-14. doi:10.1001/jama.2014.732.
46. **CM Apovian, LJ ARonne, DH Bessesen, ME McDonnell, MH Murad, U Pagotto, et al.,** *Pharmacological Management of Obesity: An Endocrine Society Clinical Practice Guideline,* The Journal of Clinical Endocrinology & Metabolism, accessed January 20, 2015, http://press.endocrine.org/doi/pdf/10.1210/jc.2014-3415, January 15, 2015.
47. **Anacor Pharmaceuticals, Inc.,** *Kerydin prescribing information,* Palo Alto, CA, July 2014.
48. **Valeant Pharmaceuticals North America LLC,** *Jubila prescribing information,* Bridgewater, NJ.
49. **American Autoimmune Related Diseases Association (AARDA),** *Autoimmune Statistics,* http://www.aarda.org/autoimmune-information/autoimmune-statistics/, June 2014.
50. **U.S. Food and Drug Administration (FDA),** *Drugs@FDA: FDA Approved Drug Products,* http://www.accessdata.fda.gov/scripts/cder/drugsatfda/index.cfm.
51. **IPD Analytics (internet database),** IPD Analytics, LLC., by subscription, https://secure.ipdanalytics.com/User/Pharma/Home, updated periodically.
52. **American Cancer Society,** *Cancer Facts & Figures 2015,* http://www.cancer.org/acs/groups/content/@editorial/documents/document/acspc-044552.pdf, 2015.
53. **U.S. Food and Drug Administration (FDA),** *Current and Resolved Drug Shortages and Discontinuations Reported to FDA: Boceprevir,* http://www.accessdata.fda.gov/scripts/drugshortages/dsp_ActiveIngredientDetails.cfm?AI=Boceprevir%20%28VICTRELIS%29%20Capsules&st=d&tab=tabs-2.
54. **C Helfand,** *Sovaldi forces Incivek off the hep C market as Vertex calls it quits,* FierceBiotech, http://www.fiercepharma.com/story/sovaldi-forces-incivek-hep-c-market-vertex-calls-it-quits/2014-08-13, August 13, 2014.
55. **Centers for Disease Control & Prevention (CDC),** *HIV/AIDS Statistics,* http://www.cdc.gov/hiv/statistics/basics/.
56. **Department of Health and Human Services,** *Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents,* http://aidsinfo.nih.gov/contentfiles/lvguidelines/AdultandAdolescentGL.pdf.
57. **IPD Analytics (internet database),** IPD Analytics, LLC, by subscription, https://secure.ipdanalytics.com/User/Pharma/Home, updated periodically.
58. **U.S. Food and Drug Administration (FDA),** *Comparison of NMEs approved in 2010 to previous years,* http://www.fda.gov/downloads/Drugs/DevelopmentApprovalProcess/HowDrugsareDevelopedandApproved/DrugandBiologicApprovalReports/UCM242695.pdf
59. **Wong JD et al.,** *Medication reconciliation at hospital discharge: evaluating discrepancies,* The Annuals of Pharmacotherapy, 2008;42:1373-9.
60. **EC Davies, CF Green, DR Mottram, PH Rowe, M Pirmohead,** *Emergency re-admissions to hospital due to adverse drug reactions within 1 year of the index admission,* Br J Clin Pharmacol, 2010:70:749-755.

credits

Authors

Michelle Brisco, *PharmD, MBA, MHA*
Director, Clinical Analytics

Sue Webb, *RPh*
Sr. Manager, Clinical Analytics

Sherry Andes, *PharmD, BCPS, BCPP, BCACP, CGP, PAHM*
Sr. Manager, Drug Intelligence

Valerie Taylor, *PharmD*
Clinical Pharmacist, Pipeline & Trend Surveillance

Susan Fleming
Vice President, Marketing & Communications

Andrea Hird
Sr. Director, Communications

Echo Morgan
Manager, Communications

Editors

Andrea S. Marks
Vice President & Chief Analytics Officer

Paula Brandon
Manager, Communications

Jennifer Chess
Sr. Communications Specialist

Design and Production

Daniel Bretz
Sr. Graphic Designer/Design Lead

Jennifer Lewison
Graphic Designer

Contributors

David Calabrese, *RPh, MHP*
Vice President & Chief Pharmacy Officer

Sina Carlson, *PharmD*
Sr. Director, Drug Intelligence

David Cartwright
Director, Analytic Data Services

Leonard Fensterheim
Director, Clinical Analytics & Outcomes

Jana Gunn
Sr. Research Analyst, Clinical Analytics

Dustin E. Roberts
Manager, Clinical Analytics

Alla Koulakova
Clinical Analytics Manager, Clinical Analytics

Vu Doan
Sr. Clinical Analyst, Clinical Analytics