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Prescription Drug Use in an Individual Exchange Population

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Acknowledgments

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Summary

This report examines pharmaceutical use by enrollees in individual ACA plans in Kansas during the calendar year 2014. To better understand how enrollment timing was related to relative costs, the population was divided into three categories based on enrollment date.

The paper looks at the relative use of pharmaceuticals for three enrollee categories:

1. *Continuing Enrollees:* Consists of enrollees who were effective as of January 1, 2014, and who were identifiable in the prior year (2013) as members of an individual plan
2. *First Quarter:* Consists of enrollees who had an effective date between January 1 and March 31, 2014, and who were not identifiable in the prior year and
3. *Later Enrollees:* Consists of enrollees who had an effective date of April 1, 2014, and later.

Members who enrolled later used more pharmaceuticals than either those who enrolled in the first quarter or those who were identified as enrolling in an individual plan before the ACA program began. The Later enrollee population group had more members with very high expense in total, most notably in brand and specialty medications; this population also had more members with diabetes and users of pain medications. The population demographics were not different enough to account for the extent of the difference.

The difference in prescription drug spending among the three groups narrowed as the year progressed, but the late enrollee group continued to have a much higher PMPM cost through end of the year. Overall, on a paid per member per month (Paid PMPM) basis, the late enrollees were 2.8 times as expensive as the continuing population.

The hepatitis C medication Sovaldi was a prominent driver of spending in both of the expansion populations, but it also figured in the expense of enrollees who had previously had coverage.

The higher pharmaceutical use for the expansion populations shown in this study should be understood in the context of the Kansas market before and after expansion. The ACA was not implemented to a uniform system nor in a uniform manner. This study provides an interesting result but should be kept in the context of the particular situation it reflects.

Data and Population Details

Data Sources

The data used for this study came from State of Kansas All Payers All Claims (APAC) data, with incurred dates during calendar year 2014, and with claims paid through the first quarter of 2015. The datasets are made available by a contractual arrangement with the Kansas Department of Insurance. While an effort was made to verify the accuracy and completeness of valid values in the data provided, the study relies on the data as supplied to be materially correct. The study uses the values in the data dictionary provided by the State of Kansas to select pharmacy data, individual population identifiers and provided enrollment dates as criteria for inclusion in the study.

Specific drugs were identified by National Drug Code (NDC), and the author used the Medi-Span Electronic Drug File (MED-File) v2 from Wolters Kluwer to identify specific drugs, their therapeutic class and patent status.

Therapeutic class summaries were developed in house in order to present the Kansas data by descriptive reporting categories and at meaningful levels. While this closely followed the Medi-Span methodology, some classes are not hierarchical, and in the modeling paper they are separately grouped. An example of the classification method is provided in the Appendix Table A5.

Specialty drugs were identified by drug name. A specialty pharmacist helped to construct the list, which was also compared with several commercial specialty lists published for ACA plans. The list of specialty drugs is included in the Appendix.

Demographics

This study selected members who had enrolled in an individual plan in Kansas during calendar year 2014 as recorded in the enrollment files of the Kansas APAC.

The identified individual population is divided into three categories:

1. *Continuing Enrollees:* Consists of enrollees who were effective as of January 1, 2014, and who were identifiable in the prior year (2013) as members of an individual plan
2. *First Quarter:* Consists of enrollees who had an effective date between January 1 and March 31, 2014, and who were not identifiable in the prior year and
3. *Later Enrollees:* Consists of enrollees who had an effective date of April 1, 2014, and later.

Later enrollees were primarily people who enrolled due to the ACA enrollment deadline extension to April 15, 2014, as well as to extend a previous study which examined the nature of the first quarter enrollees.

The demographics of the groups differed in several ways. First, more women were found in both of the new populations than in the continuing population. Second, the average age of both of the new populations was older than for continuing members, and the new populations had few children. However, the differences were not of significant and were not sufficient to explain the difference in experience.

The summary demographic differences are outlined in Table 1.

Table 1 Population Demographics

Population	Members	% Female	Average Age
Continuing	30,628	48%	33.6
First Quarter	50,878	51%	35.3
Later Enrollees	23,615	54%	34.6
Total	105,119	48%	34.7

Enrollment

It is important to understand the market conditions during this experience period. The Kansas individual market is dominated by the two geographically distinct Blue Cross Blue Shield plans, and members in this study overwhelming enrolled in the Blue plan in their service area, although two other plans were offered. In 2014, Kansas did not expand Medicaid, and it allowed transitional plans. Kaiser Family Foundation[1] reported the nonelderly uninsured rate for Kansas for 2014 was 12%.

The average months of enrollment were different between the three plans. There was a large influx of new enrollees whose coverage began January 1, 2014, with a much smaller incremental increase each month thereafter, but the average months of enrollment were similar between the Continuing and First Quarter enrollees at about 10 months. Later enrollees had only about five months of enrollment on average, so although most of the comparisons that follow are on a unit basis, the reader should take this shortened enrollment into account. Enrollees in the later enrollment group will not have had as much exposure over the year to have prescription patterns develop, such as total spending, and they will be at different points in their benefit year.

Analysis of Pharmaceutical Use

All three categories of individual enrollees accessed their benefits from the onset of their coverage, but reporting the experience separately by the three enrollment categories causes some differences to become apparent. Many of the comparisons in the study focused on paid expenses (the amount of the claim covered by the health plan, net of member cost sharing), which enable comparisons of financial performance. However, allowed expenses (the total contracted price for the drug, gross of member cost sharing) was also used in certain cases since it better describes the underlying utilization and illness burden.

Per Member per Month (PMPM) Comparisons

Later enrollees overall were nearly three times as costly, on a paid basis, than members who were continuing their plans. In addition, the member cost share percentage is higher for Continuing enrollees versus First Quarter or Later enrollees. This relative difference is larger on a paid basis than an allowed basis because of the smaller member cost share. The relationships between the populations persisted when the populations were subdivided by gender, although numbers changed slightly (see Table 2).

Table 2 Historical Drug Costs for 2014

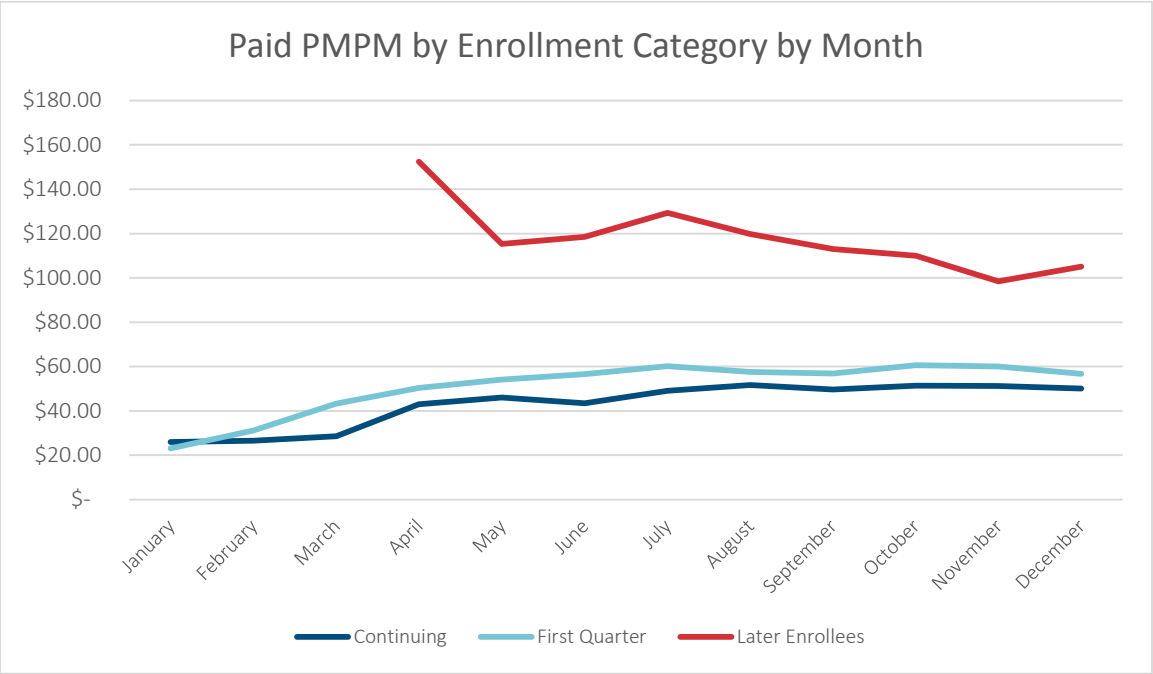
Population	Allowed (PMPM)	Member Cost Share	% Cost Share	Paid	Paid PMPM Relative to Continuing Members
Continuing	$ 52.26	$ 11.83	23%	$ 40.55	1
First Quarter	$ 59.78	$ 9.14	15%	$ 50.64	1.25
Later Enrollees	$ 132.72	$ 18.60	14%	$114.12	2.81
All Enrollees	$ 69.13	$ 11.13	17%	$ 56.26	1.39

Month by Month Spending

The PMPM profile as the year developed was different in the three categories. While the Continuing and First Quarter members had a stable growth pattern across the year, the Later enrollees showed a significant drop in paid PMPM across the enrollment months, because several of the most expensive members enrolled at the beginning of the second quarter, whereas the larger number who enrolled later in the year had much lower pharmaceutical utilization (see Figure 1).

[1] http://kff.org/other/state-indicator/nonelderly-0-64/ http://kff.org/other/state-indicator/nonelderly-0-64/

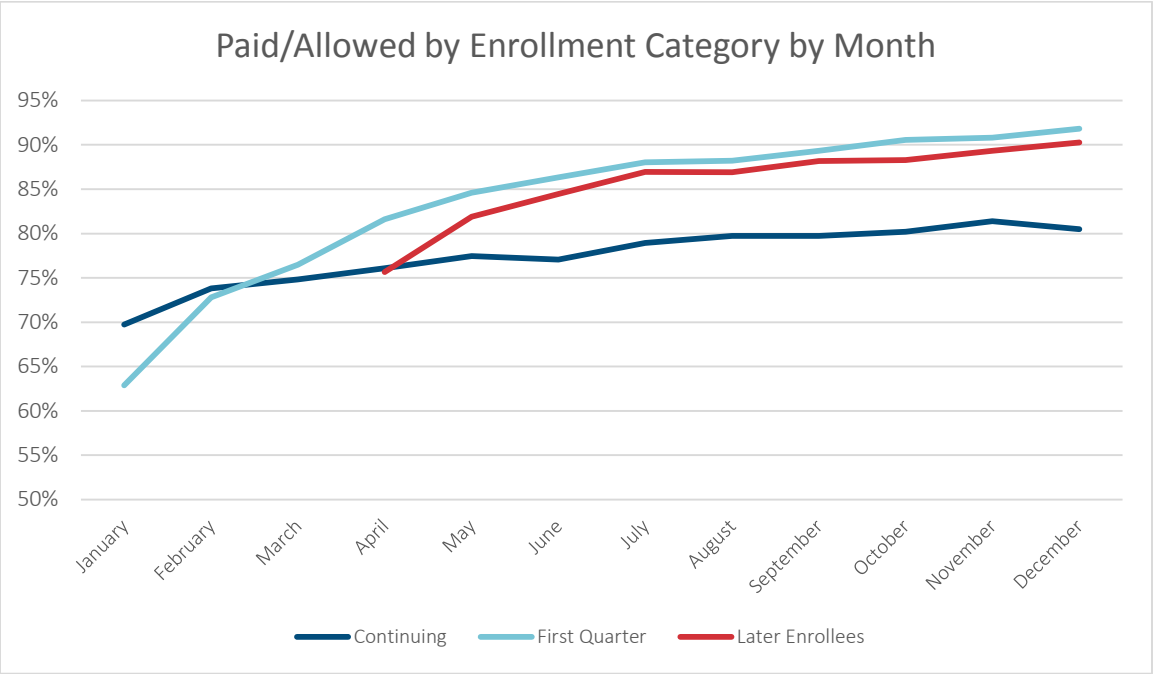
Figure 1 PMPM Development Through the Year



Another measure of interest is the ratio of paid claims to allowed claims over time, by month and enrollment category. As the year developed, plans paid a larger portion of the total cost. This happens for several reasons. When a benefit plan has fixed copays, the cost share remains constant while the underlying mix of pharmaceuticals, in general, has price increases over the course of the year. As the year progresses, deductibles are fulfilled and out-of-pocket maximums are met, meaning plans will be paying a larger portion of the costs. Express Scripts reported that the PMPY trend for pharmaceuticals in the commercial population in 2014 was 13.1 %.[2] Although all three of the enrollment groups showed an increase in the paid-to-allowed ratio, it was a steeper increase in the two new populations than in the Continuing population (see Figure 2).

[2] http://lab.express-scripts.com/drug-trend-report

Figure 2 Member Cost Share Through the Year



Experience by Tier

Most pharmacy benefit plans have cost sharing that differs by the type of drug, such as brand, preferred brand, generic, or specialty. These tiered drug plans seek to incent members to purchase less expensive, but equally effective, generics when it is clinically appropriate.

A brand name drug is one that has been both developed and manufactured by a pharmaceutical company and can be identified in one of two ways: the scientific name or the trademarked name. A brand may be a sole source brand, in which case the formulation and the name hold patent protection. Or it may be a multisource brand, in which case there is more than one manufacturer that can market the drug or its generic equivalent. An example of the difference between a brand and a generic drug is Tylenol, the brand, and acetaminophen, the generic ingredient. Another example is Cymbalta, the brand, and duloxetine HCL, the generic ingredient. This study does not distinguish between the differing kinds of multisource brands and single source brands.

Specialty drugs are often defined as high-cost therapeutics that treat complex conditions and therefore require careful management. Many specialty drugs require special handling, such as refrigeration. Often, but not always, they are self-administered injectable drugs. They may require a regimen of several drugs and thus require a considerable amount of patient education. Patients who receive specialty drugs require monitoring by pharmacists and physicians. Unlike brand and generic drugs, no one single list of specialty drugs applies to all plans and all beneficiaries.

In the Kansas 2014 individual market, the ACA silver plans frequently used a fixed copay for each of the drug tiers. For example, a typical benefit design might require a $10 copay for each generic prescription, a $25 copay for each brand prescription and a $100 copay for each specialty prescription. Even with higher copays for higher cost prescriptions, more expensive drugs had a much lower cost share as a percentage of the total cost.

The three populations used brand name drugs and specialty drugs differently.

Brand drugs comprised 52% of the total paid costs for Later enrollees, but 46% for First Quarter enrollees and 38% for Continuing enrollees. The difference is not just driven by members choosing brand drugs when generics will do, but also reflects a higher

incidence of treatment for conditions for which there is no generic therapy. Members pay a smaller marginal cost share for brand name drugs than for generics, in general (54% vs. 76%).

Specialty drugs were 32% of the total paid costs for Later enrollees, but 34% for First Quarter enrollees and 25% for Continuing enrollees. Specialty drugs have very high unit costs, and they are used by a smaller fraction of the population. Members paid a much smaller percent of the allowed cost for specialty drugs than for nonspecialty drugs, about 5%.

Tables 3 and 4 show additional details by tier.

Table 3 Drug Costs by Tier (% of Spending)

Population	Brand	Generic	Specialty	Supplies and Other	Total
Continuing	38%	35%	25%	1%	100%
First Quarter	46%	19%	34%	1%	100%
Later Enrollees	51%	17%	32%	1%	100%
All Enrollees	46%	21%	32%	1%	100%

Table 4 Drug Costs by Tier (Paid PMPM)

Population	Brand	Generic	Specialty	Supplies and Other	Total
Continuing	$15.57	$14.37	$10.20	$0.41	$40.55
First Quarter	$23.19	$ 9.53	$17.29	$0.63	$50.64
Later Enrollees	$58.84	$18.87	$36.20	$0.91	$114.12
All Enrollees	$25.72	$12.09	$17.85	$0.60	$56.26

Notable Therapeutic and Diagnostic Differences

New enrollees and continuing enrollees had significant differences in costs among two classes of brand drugs: antidiabetics and antivirals. Antidiabetic medications include insulin for injection and oral antidiabetics but do not include diabetic supplies. Antivirals include treatments for herpes, influenza, hepatitis and HIV/AIDS. Table 5 summarizes the relative use of these medications; more specific information is included in the Appendix (Tables A1 and A2).

Both new enrollment categories experienced significantly higher spending for antidiabetic medications on both a paid and allowed PMPM basis, with First Quarter enrollees having more than twice the paid expense, and Later enrollees having more than four times the paid expense. This difference is due almost entirely to the numbers of members who used antidiabetic medications and is not due to the cost of the medications. The number of diabetic members is an indicator of the relative health status between the populations.

Nonspecialty antiviral costs for First Quarter enrollees were five times higher than costs for Continuing enrollees, and antiviral costs for Later enrollees were nearly 24 times higher than costs for Continuing enrollees. Almost all of the antiviral care costs in the new enrollee population were for antiretroviral drugs to treat HIV/AIDS, and nearly all of these are brand name pharmaceuticals with high unit costs. Costs for Continuing enrollees exhibited some use of HIV/AIDS antiretrovirals, but more of the costs were for shingles and herpes.

Table 5 Primary Nonspecialty Brand Drug Class Differentiators (Paid PMPM)

Population	Paid PMPM		% of Brand Spend		
	Antidiabetics	Antivirals	Antidiabetics	Antivirals	Total
Continuing	$1.88	$ 1.02	12%	7%	19%
First Quarter	$4.29	$ 5.83	18%	25%	44%
Later Enrollees	$9.34	$23.72	16%	41%	57%
All Enrollees	$4.30	$ 9.67	17%	27%	43%

Another view of the different use patterns examines nonspecialty pharmaceutical spend by therapeutic category (see Table 6). Continuing members used more contraceptives, dermatological agents and psychotherapeutic drugs than new enrollees, on a paid PMPM basis. Antiviral drugs include antiretroviral medications for HIV/AIDs as well as treatment for herpes, as discussed above. Psychotherapeutics include, in order, drugs for attention deficit disorder, antidepressants and antipsychotics, and other agents. ADHD medications are the largest spend for the Continuing population, antidepressants for the First Quarter enrollees and antipsychotics for the Later enrollees. Cardiovascular drugs are mostly for the control of cholesterol and high blood pressure, but some lifestyle drugs are included in the other cardiovascular category. Other therapeutics include, in order of the amount spent, respiratory agents for asthma, pain medications, gastrointestinal agents, neurological agents, dermatological agents, neurological agents, antibiotics, contraceptives, endocrine drugs and other lesser drug categories. Table A3 in the Appendix gives further details.

Table 6 Top Five Nonspecialty Paid Therapeutic Classes (Paid PMPM) by Enrollment Category

	Enrollment Category			
Drug Category	Continuing	First Quarter	Later Enrollees	Total
Antiviral	$ 1.22	$ 5.96	$24.11	$ 7.06
Psychotherapeutic Agents	$ 7.29	$ 5.40	$11.40	$ 6.71
Antidiabetics	$ 2.05	$ 4.54	$ 9.66	$ 4.53
Cardiovascular	$ 2.73	$ 3.07	$ 4.84	$ 3.21
Other Therapeutics	$17.07	$14.38	$27.93	$16.91
Total	$30.35	$33.35	$77.92	$38.42

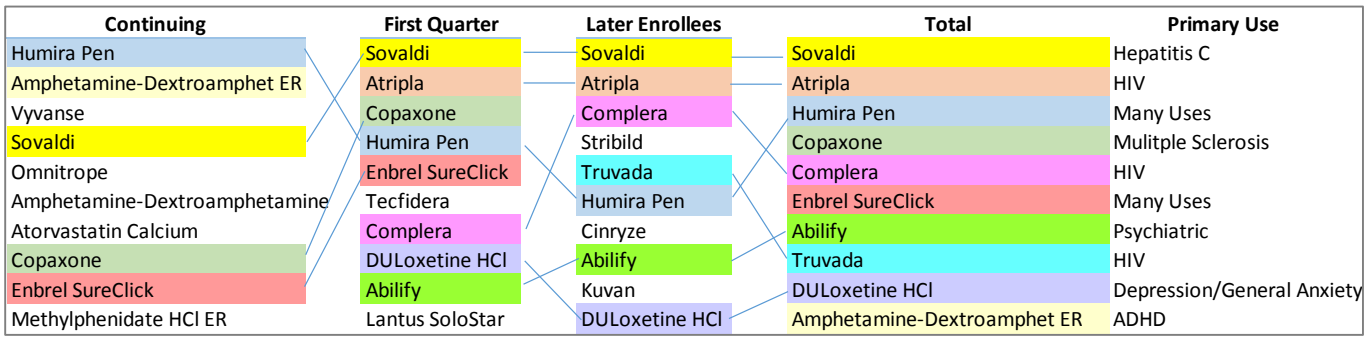
Most Frequently Prescribed Drugs

The three enrollment categories can also be compared by which drugs comprise the largest amount of expense. The schematic in Figure 3 shows the top 10 drugs in each population category, by allowed amount. The recently developed hepatitis C medication Sovaldi tops the list for both First Quarter and Later enrollees, and it is prominent for the Continuing enrollees.

These top 10 drugs are dominated by specialty drugs used for the long-term management and control of complex chronic diseases such as HIV, multiple sclerosis, rheumatoid arthritis and serious mental illness. The therapies are usually not prescribed without good reason and require close patient management for optimal results. Pharmacy expenses for these therapeutics are likely to continue to grow as new therapies emerge and new indications are approved; if recent experience continues, the trend in unit cost for these drugs will far outpace the trend in other commodities.

In total these top 10 drugs played a much larger role in the overall expenses of the Later enrollees (28%) compared to First Quarter enrollees (21%) or Continuing enrollees (18%). This relationship does not change much if the analysis excludes Sovaldi; the Later enrollees had the largest concentration of expense in the top 10 drugs.

Figure 3 Top 10 Drugs by Enrollment Category, in Descending Order by Allowed Amount



Note:
Humira is used for a wide variety of disease: rheumatoid arthritis, Chron's disease, plaque psoriasis, ulcerative colitis, ankylosing spondylitis, psoriatic arthritis.
Enbrel is used for a wide variety of disease: rheumatoid arthritis, plaque psoriasis, ankylosing spondylitis, psoriatic arthritis.
Abilify is used for schizophrenia, bipolar disorder, depression, Tourette syndrome, irritability associated with autism.

Specialty Drug Analysis

Specialty drug utilization is consistently higher in the newer populations across most therapeutic classes. Cancer medications and drugs classified as multiple sclerosis agents also stand out as therapies with high allowed expense in total. Whereas the number of members taking Solvaldi or Firazyr, an anti-inflammatory medication, is very small, the unit costs of these drugs are extremely high, even for a specialty medication.

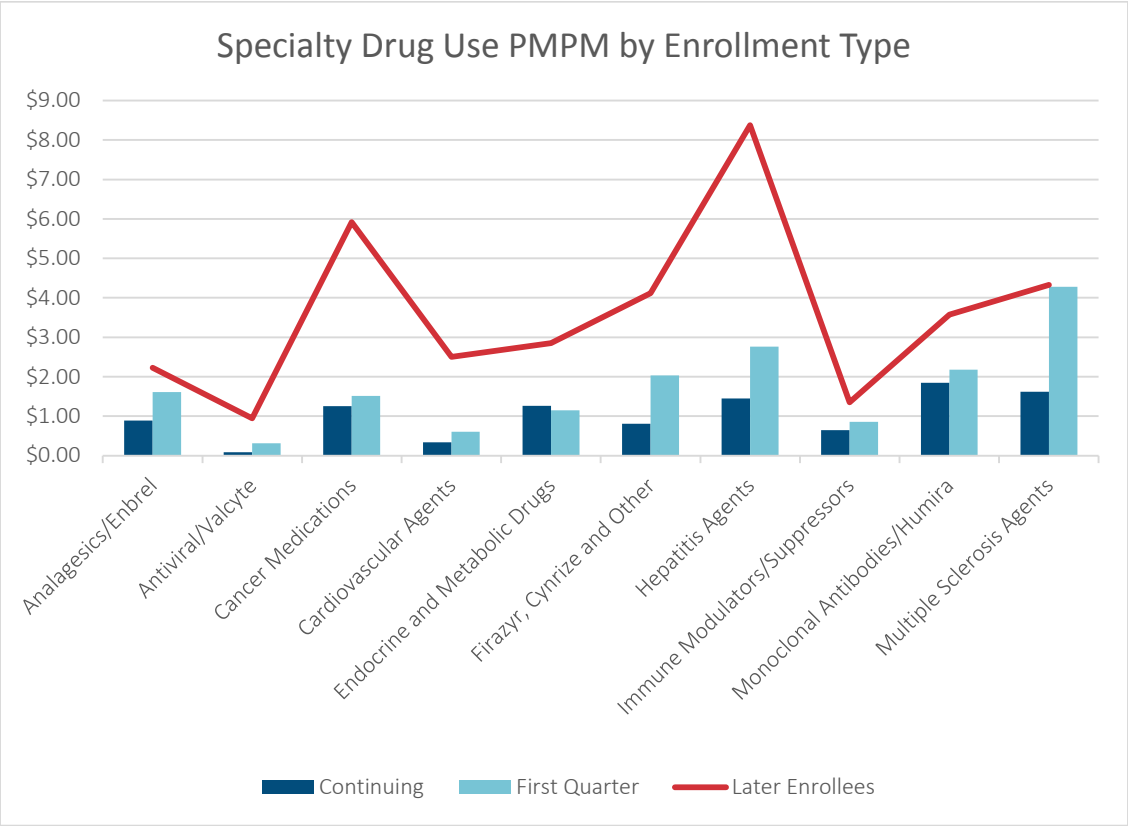
All three populations had members who would have a temporary need for expensive therapy, such as cancer or hepatitis care, as well as members for whom specialty drug care is a core component of long-term management of their conditions, such as those with rheumatoid arthritis or schizophrenia.

The dominance of the Later enrollees in all the specialty classes would indicate a more complex population with a long-term outlook of continued need for pharmaceutical treatment as well as medical care.

The dominance of the Later enrollees in all the specialty classes would indicate a more complex population with a long-term outlook of continued need for pharmaceutical treatment as well as medical care.

Figure 4 illustrates the relationship between the allowed PMPM amount and category of specialty drug.

Figure 4 Relative Cost of Specialty Drugs by Population



The Role of High-Cost Members

The new enrollees, in comparison with the Continuing population, had a high percentage of costs concentrated in a low number of members, as would be expected given the high proportion of the expense in specialty and brand medication described in the previous section. Table 7 shows that high-cost members—those with more than $12,000 per year in paid prescription costs—constituted more than half the pharmacy spending for both of the new enrollee populations, much more than the portion for Continuing members. For the Continuing population half of the pharmacy spending was for members who had more than $5,000 per year in paid prescription costs.

Table 7 Utilization Patterns by Individual Members

Population	Nonusers	Members with Expense in Excess of $12,000	
		% of Paid Dollars	% of Members
Continuing	49%	33%	0.33%
First Quarter	67%	56%	0.95%
Later Enrollees	50%	53%	1.08%
Total	58%	51%	0.80%

In general high-cost members did not bear a high burden for their care. The member cost share for those members with very high claims costs (greater than $50,000) was very small, 3.4% for continuing enrollees and about 2.5% for the two expansion populations, but this average disguises the very high costs that some individuals bore for this care. Nearly 28% of the enrollees

whose costs exceeded $50,000 had out of pocket costs in excess of $2,000 and 2.6% had costs in excess of $15,000. Large cost shares were present in all three populations.

Conclusion and Discussion

The question of the composition of the population of members who newly acquired coverage under the Affordable Care Act and their utilization behavior has been hotly debated ever since the legislation was at the concept stage. Now that the experience data are available, the data are being mined for any indicators of a difference in health status, variation utilization patterns or care history as evidenced by pent-up demand. Published studies have proffered mixed analysis, and it is clear that any interpretation of the numbers for a given state or population must be viewed in the context of the history and the current state of the market studied.

Other studies on the nature of the newly insured are worth examining. Work published recently in *HealthAffairs* on the Covered California experience indicates there was not a great deal of difference in the new enrollees and that subsequent measures show an improvement in health risk measures. However, testimony presented to the administration from insurance companies noted that late enrollees had more complex health problems and used more care. They also remained insured for a shorter period of time, making them a riskier proposition for insurers. These studies serve as a reminder that historically state markets have differed and that the implementation of the ACA differed by state.

This study has a specific focus: the relative pharmaceutical utilization by individual members in one state for the initial year of the ACA. For this situation there appears to be a marked difference between the Continuing enrollees, First Quarter enrollees who signed up for care during the initial enrollment period, and Later enrollees who made a later decision to sign up for care.

The nature of the therapies driving the differences in costs would seem to indicate that the Later enrollee population had more complex, chronic diseases requiring specialty and expensive brand treatments. Due to the enrollment early in the exception period of some members with the most expensive care and subsequent addition of members to the pool with less need for expensive therapies may mean that as time goes on and more people enroll, the average costs will level out to a less extreme number.

This study begs a similar, follow-up analysis on medical costs in addition to pharmaceutical costs. Although pharmaceutical use is a good indicator of relative health status, a full comparison will be performed once medical claims history develops and more than the initial year of the program can be incorporated into the analysis. Comparing this population to other states using the same measures will also help put these results into perspective.

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Appendix

Table A1 Nonspecialty Paid Therapeutic Classes (Paid PMPM) by Enrollment Category

	Enrollment Category			
Drug Classification	Continuing	First Quarter	Later Enrollees	Total
Analgesics	$ 1.55	$1.89	$4.43	$2.13
Antidiabetics	$ 2.05	$4.54	$9.66	$4.53
Anti-infective Agents	$ 1.64	$1.07	$2.23	$1.38
Antiviral	$ 1.22	$5.96	$24.11	$7.06
Cardiovascular	$ 2.73	$3.07	$4.84	$3.21
Contraceptives	$ 2.43	$.70	$1.70	$1.31
Dermatological	$ 3.15	$1.24	$2.36	$1.91
Endocrine and Metabolic Agents	$ 1.07	$1.27	$1.82	$1.29
Gastrointestinal Agents	$ 1.96	$1.92	$3.25	$2.11
Neurological/Neuromuscular Agents	$ 1.60	$1.94	$3.84	$2.10
Other Therapeutic Classes	$ 2.01	$2.24	$4.33	$2.45
Psychotherapeutic Agents	$ 7.29	$5.40	$11.40	$6.71
Respiratory Agents	$ 1.65	$2.11	$3.96	$2.23
Total	$30.35	$33.35	$77.92	$38.42

Table A2 Nonspecialty Paid Therapeutic Classes (% Member) by Enrollment Category

	Enrollment Category			
Drug Classification	Continuing	First Quarter	Later Enrollees	Total
Analgesics	11%	10%	15%	12%
Antidiabetics	27%	18%	23%	21%
Anti-infective Agents	1%	3%	4%	3%
Antiviral	3%	2%	3%	3%
Cardiovascular	9%	11%	15%	11%
Contraceptives	6%	3%	5%	5%
Dermatological	10%	6%	7%	7%
Endocrine and Metabolic Agents	11%	9%	12%	10%
Gastrointestinal Agents	7%	7%	9%	7%
Neurological/Neuromuscular Agents	5%	6%	9%	6%
Other Therapeutic Classes	17%	12%	15%	14%
Psychotherapeutic Agents	14%	11%	17%	13%
Respiratory Agents	13%	9%	11%	11%
Total	51%	33%	50%	42%

Table A3 Specialty Drug Use Detail

	Paid PMPM			Cost per Script		
Specialty Drug Category	Continuing	First Quarter	Later Enrollees	Continuing	First Quarter	Later Enrollees
Analgesics/Enbrel	$ 0.89	$ 1.61	$ 2.23	$ 2,646	$ 2,917	$ 2,852
Antiviral/Valcyte	$ 0.08	$ 0.31	$ 0.95	$ 3,528	$ 2,078	$ 2,919
Cancer Medications	$ 1.26	$ 1.51	$ 5.92	$ 340	$ 511	$ 1,131
Cardiovascular Agents	$ 0.34	$ 0.60	$ 2.50	$ 1,027	$ 1,448	$ 2,405
Endocrine and Metabolic Drugs	$ 1.26	$ 1.15	$ 2.85	$ 3,202	$ 1,777	$ 4,126
Firazyr, Cynrize and Other	$ 0.81	$ 2.03	$ 4.12	$ 5,158	$ 6,460	$ 9,168
Hepatitis Agents	$ 1.45	$ 2.76	$ 8.38	$21,298	$12,439	$15,029
Immune Modifiers/Suppressors	$ 0.64	$ 0.85	$ 1.35	$ 1,162	$ 907	$ 721
Monoclonal Antibodies/Humira	$ 1.84	$ 2.18	$ 3.58	$ 3,126	$ 2,924	$ 2,810
Multiple Sclerosis Agents	$ 1.62	$ 4.28	$ 4.33	$ 4,927	$ 4,831	$ 4,520
Total	$10.20	$17.29	$36.20	$ 1,574	$ 2,207	$ 2,745

Table A4 Specialty Drug List by Drug Name

Actemra	Bosulif	Cystagon	Gammagard S/D
Acthar HP	Bravelle	Cystaran	Gammagard S/D Less IgA
HP Acthar	Buphenyl	Daklinza	Gammaked
Actimmune	Capecitabine	Daraprim	Gamunex
Adcirca	Caprelsa	Duopa	Gamunex-C
Adefovir Dipivoxil	Carbaglu	Egrifta	Gattex
Adempas	Cayston	Eligard	Gengraf
Advate	CellCept	Eloctate	Genotropin
Afinitor	CellCept Intravenous	Enbrel	Genotropin MiniQuick
Afinitor Disperz	Cerdelga	Enbrel SureClick	Geref
Alkeran	Cetrotide	Enoxaparin Sodium	Gilenya
Alphanate/VWF Complex/Human	Chenodal	Entecavir	Gilotrif
Alprolix	Cholbam	Epivir	Glatopa
Ampyra	Chorionic Gonadotropin	Epivir HBV	Gleevec
Apokyn	Cimzia	Epogen	Gleostine
Aranesp (Albumin Free)	Cimzia Prefilled	Erivedge	Gonal-f
Arcalyst	Cimzia Starter Kit	Esbriet	Gonal-f RFF
Arixtra	Cinryze	Etoposide	Gonal-f RFF Pen
Astagraf XL	Cometriq (100 mg Daily Dose)	Exjade	Gonal-f RFF Rediject
Aubagio	Cometriq (140 mg Daily Dose)	Extavia	Granix
Avonex	Cometriq (60 mg Daily Dose)	Farydak	Harvoni
Avonex Pen	Copaxone	Feiba	Hecoria
Avonex Prefilled	Copegus	Feiba NF	Helixate FS
Baraclude	Corifact	Feiba VH Immuno	Hemofil M
Bebulin	Cosentyx	Ferriprox	Lithium Heparin Prefilled Syringe
Bebulin VH	Cosentyx Sensoready Pen	Fertinex	Monoject PreFill Adv Heparin
BeneFIX	Cotellic	Firazyr	Hepsera
Berinert	Cyclophosphamide	Follistim	Hetlioz
Betaseron	Cystadane	Follistim AQ	Hexalen
Bethkis		Forteo	Hizentra
		Gammagard	Humate-P

Humatrope
Humira
Humira Pediatric Crohns Start
Humira Pen
Humira Pen–Crohns Starter
Humira Pen–Psoriasis Starter
Hycamtin
Hyqvia
Ibrance
Iclusig
Ilaris
Imbruvica
Incivek
Increlex
Infergen
Inlyta
Innohep
Intron A
Iprivask
Iressa
Ixinity
Jadenu
Jakafi
Juxtapid
Kalydeco
Kcentra
Keveyis
Kineret
Koate-DVI
Kogenate FS
Kogenate FS Bio-Set
Korlym
Kuvan
Kynamro
Lamivudine
Abacavir-Lamivudine-Zidovudine
Lamivudine-Zidovudine
Lenvima 10 mg Daily Dose
Lenvima 14 mg Daily Dose
Lenvima 20 mg Daily Dose
Lenvima 24 mg Daily Dose
Letairis
Leukine
Leuprolide Acetate
Lomustine
Lovenox
Lupaneta Pack

Lupron
Lupron Depot
Lupron Depot–Ped
Luveris
Lynparza
Matulane
Mekinist
Menopur
Mircera
Moderiba
Monoclate-P
Mononine
Myalept
Mycophenolate Mofetil
Mycophenolic Acid
Myfortic
Myleran
Natpara
Neoral
Neulasta
Neupogen
NexAVAR
Norditropin
Norditropin FlexPro
Norditropin NordiFlex Pen
Northera
Novarel
NovoSeven RT
Novoeight
Nutropin
Nutropin AQ
Nutropin AQ Pen
Nutropin AQ NuSpin 10
Nutropin AQ NuSpin 5
Nutropin AQ NuSpin 20
Octreotide Acetate
Ofev
Oforta
Olysio
Omnitrope
Omnitrope Pen 10 Inj. Device
Omnitrope Pen 5 Inj. Device
Opsumit
Orencia
Orenitram
Orfadin
Orkambi
Otezla
Ovidrel

Paricalcitol
Pegasys
Pegasys ProClick
PegIntron
Peg-Intron
Peg-Intron Redipen
Peg-Intron Redipen Pak 4
Plegridy
Plegridy Starter Pack
Pomalyst
Praluent
Pregnyl
Procrit
Procysbi
Profasi
Profilnine
Profilnine SD
Prograf
Promacta
Pulmozyme
Purixan
Rapamune
Rasuvo
Ravicti
Rebetol
Rebif
Rebif Rebidose
Rebif Rebidose Titration Pack
Rebif Titration Pack
Recombinate
Remicade
Remodulin
Repronex
Revatio
Revlimid
RiaSTAP
Ribasphere
Ribasphere RibaPak
Ribatab
Ribavirin
Rixubis
Ruconest
Sabril
Saizen
Saizen Click.Easy
Samsca
SandIMMUNE
SandoSTATIN
SandoSTATIN LAR Depot

Sensipar
Serostim
Signifor
Signifor LAR
Sildenafil Citrate
Simponi
Simponi Aria
Sirolimus
Sirturo
Sodium Phenylbutyrate
Somatuline Depot
Somavert
Sovaldi
Sprycel
Stelara
Stimate
Stivarga
Sucraid
Sutent
Sylatron
Syprine
Tacrolimus
Tafinlar
Tarceva
Targretin
Tasigna
Tecfidera
Technivie
Temodar
Temozolomide
Tev-Tropin
Thalomid
Tobi
Tobi Podhaler
Tracleer
Trelstar
Trelstar Mixject
Tretten
Tykerb
Tyvaso
Tyvaso Refill
Tyvaso Starter
Tyzeka
ValGANciclovir HCl
Valchlor
Valcyte
Vecamyl
Ventavis
Victrelis

Viekira Pak	Xeljanz	Xyrem	Zomacton
Vimizim	Xeloda	Zarzio	Zorbtive
Vivaglobin	Xenazine	Zavesca	Zortress
Votrient	Xtandi	Zelboraf	Zydelig
Wilate	Xyntha	Zoladex	Zykadia
Xalkori	Xyntha Solofuse	Zolinza	Zytiga

Table A5 Sample Category Mapping to Reporting Grouping

Therapeutic Class: Highest Level	Reporting Group
ADHD/Anti-Narcolepsy /Anti-Obesity/Anorexiant Agents	Psychotherapeutic Agents
Alternative Medicines	Other
Amebicides	Other
Aminoglycosides	Anti-infective Agents
Analgesics - Anti-Inflammatory	Analgesics
Analgesics Anti-Inflammatory	Cancer
Analgesics Anti-Inflammatory	Anti-Inflammatory
Analgesics - Opioid	Analgesics
Analgesics And Anesthetics	Analgesics
Androgens-Anabolic	Endocrine and Metabolic Drugs
Anorectal Agents	Gastrointestinal Agents
Antacids	Gastrointestinal Agents
Anthelmintics	Other
Antianginal Agents	Cardiovascular Agents
Antiarrhythmics	Cardiovascular Agents
Antiasthmatic And Bronchodilator Agents	Respiratory Agents
Anticoagulants	Cardiovascular Agents
Antidepressants	Psychotherapeutic Agents
Antidiabetics	Antidiabetics
Antidiarrheals	Gastrointestinal Agents
Antidotes	Other
Antiemetics	Gastrointestinal Agents
Antifungals	Anti-infective Agents
Antihyperlipidemics	Cardiovascular Agents
Antihypertensives	Cardiovascular Agents
Anti-Infective Agents	Anti-infective Agents
Anti-Infective Agents - Misc.	Anti-infective Agents
Antimalarials	Anti-infective Agents
Antimyasthenic/Cholinergic Agents	Gastrointestinal Agents
Antimycobacterial Agents	Anti-infective Agents
Antineoplastic Agents	Cancer
Anti-parkinson Agents	Neurological/Neuromuscular Agents
Antipsychotics/Antimanic Agents	Psychotherapeutic Agents
Antivirals	Antiviral
Assorted Classes	Other
Beta Blockers	Cardiovascular Agents
Biologicals	Other

Therapeutic Class: Highest Level	Reporting Group
Biologicals Misc.	Other
Calcium Channel Blockers	Cardiovascular Agents
Cardiovascular Agents	Cardiovascular Agents
Cardiovascular Agents: Misc.	Cardiovascular Agents
Central Nervous System Drugs	Psychotherapeutic Agents
Cephalosporins	Anti-infective Agents
Chemicals	Other
Contraceptives	Contraceptives
Cough/Cold/Allergy	Respiratory Agents
Dermatologicals	Dermatologicals
Diagnostic Products	Other
Dietary Products/Dietary Management Products	Other
Digestive Aids	Gastrointestinal Agents
Diuretics	Other
Endocrine And Metabolic Agents: Misc.	Endocrine and Metabolic Drugs
Endocrine And Metabolic Drugs	Endocrine and Metabolic Drugs
Estrogens	Endocrine and Metabolic Drugs
Fluoroquinolones	Anti-infective Agents
Gastrointestinal Agents	Gastrointestinal Agents
Gastrointestinal Agents: Misc.	Gastrointestinal Agents
General Anesthetics	Other
Genitourinary Agents: Miscellaneous	Other
Genitourinary Products	Other
Gout Agents	Other
Hematological Agents	Other
Hematological Agents - Misc.	Other
Hemostatics	Other
Hypnotics/Sedatives/Sleep Disorder Agents	Psychotherapeutic Agents
Local Anesthetics: Parenteral	Other
Macrolides	Anti-infective Agents
Medical Devices	Other
Migraine Products	Neurological/Neuromuscular Agents
Minerals & Electrolytes	Other
Miscellaneous Products	Other
Mouth/Throat/Dental Agents	Other
Multivitamins	Other
Musculoskeletal Therapy Agents	Neurological/Neuromuscular Agents
Nasal Agents: Systemic And Topical	Respiratory Agents
Neuromuscular Agents	Neurological/Neuromuscular Agents
Neuromuscular Drugs	Neurological/Neuromuscular Agents
Nutrients	Other
Nutritional Products	Other
Otic Agents	Other
Oxytocics	Other
Passive Immunizing Agents	Other
Pharmaceutical Adjuvants	Other
Progestins	Endocrine and Metabolic Drugs
Psychotherapeutic Neurological Agents: Miscellaneous	Multiple Sclerosis Agents

Therapeutic Class: Highest Level	Reporting Group
Psychotherapeutic And Neurological Agents: Miscellaneous	Neurological/Neuromuscular Agents
Psychotherapeutic And Neurological Agents: Miscellaneous	Psychotherapeutic Agents
Respiratory Agents	Respiratory Agents
Respiratory Agents: Misc.	Respiratory Agents
Sulfonamides	Anti-infective Agents
Tetracyclines	Anti-infective Agents
Thyroid Agents	Endocrine and Metabolic Drugs
Topical Products	Other
Toxoids	Other
Ulcer Drugs	Gastrointestinal Agents
Urinary Antispasmodics	Other
Vaginal Products	Other
Vasopressors	Cardiovascular Agents

About The Society of Actuaries

The Society of Actuaries (SOA), formed in 1949, is one of the largest actuarial professional organizations in the world dedicated to serving 24,000 actuarial members and the public in the United States, Canada and worldwide. In line with the SOA Vision Statement, actuaries act as business leaders who develop and use mathematical models to measure and manage risk in support of financial security for individuals, organizations and the public.

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The SOA has a history of working with public policymakers and regulators in developing historical experience studies and projection techniques as well as individual reports on health care, retirement, and other topics. The SOA's research is intended to aid the work of policymakers and regulators and follow certain core principles:

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