

SOCIETY OF ACTUARIES

# Indications of Pent-up Demand

New ACA enrollee use  
of preference-sensitive  
services



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## TABLE OF CONTENTS

SECTION 1: INTRODUCTION AND BACKGROUND	4
1.1 Introduction	4
1.2 Background	4
SECTION 2: SOURCES, ANALYTIC METHODS AND OUTCOME MEASURES	6
2.1 Data Sources	6
2.1.1 Calculations	6
2.1.2 Eligibility	6
2.2 Service Identification	6
SECTION 3: RELIANCES	7
SECTION 4: RESULTS	7
SECTION 5: DISCUSSION	9
SECTION 6: NEXT STEPS	10

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### Executive Summary

The Patient Protection and Affordable Care Act (“PPACA” or more briefly “ACA”) has as a central intent the expansion of health insurance to include the millions of Americans who are not able to obtain or afford individual health insurance. State and federal health insurance exchanges began offering coverage to individuals in January 2014. In order to file and evaluate premium rates for the exchange plans, health actuaries needed to make estimates of the expected costs of care for insureds who were previously uninsured and so were not in the experience used to develop these rates. Now that claims experience is emerging, actuaries can begin to examine the way these newly insured members used different types of medical care as they first used their health benefits. In particular, it is possible to look at a set of medical procedures that have significant variation in rates of use due to availability of alternative treatment options, a lack of commonly accepted clinical guidelines, or the preference-sensitive nature of the care.

**“These data indicate that the newly insured were more likely to use preference-sensitive treatments, particularly musculoskeletal surgeries.”**

This, the first in a series of papers, is a preliminary examination of the use of services that are likely to be deferred or even avoided due to financial constraints as a result of lack of health insurance. This study uses Kansas commercial data to examine the different ways individual insureds used these services in the first quarter of 2014. The data indicate that new enrollees, with no prior coverage, were more likely to be female and older than existing individual members with continuous coverage and were also more likely to have chronic disease.

In the first quarter of 2014 the new enrollees appear to have used preference-sensitive treatments at a level that exceeded the expectation of differences due to demographics alone, such as those used in actuarial rating calculations. The average cost of care for these treatments incurred by the new enrollees appears to be much higher than the average cost of care incurred by members with continuous coverage, due to a higher

proportion of more expensive treatments. This paper would suggest that the overall increase in total cost of care due to these preference-sensitive services alone is less than 3 percent.

As a further comparison, the study has also considered new enrollee behaviors in the prior year. The data indicate that new enrollees in 2013, prior to the implementation of the ACA, were less likely than existing members to use these services.

This paper will be followed up with more detailed examinations and comparisons that will feature adjustments for known differences. These continued studies will use more mature data and examine the behavior across the entire first year for patterns of wear-off.

## Section 1: Introduction And Background

### 1.1 INTRODUCTION

The Patient Protection and Affordable Care Act (“PPACA” or more briefly “ACA”) has changed the provision of health insurance for most Americans.<sup>1</sup> The formation of the exchange-based individual market, which uses online health insurance marketplaces to inform and enroll policyholders, was a significant part of the act. The ACA sought to expand the coverage by removing two obstacles to obtaining coverage—out-of-reach premiums for low-income individuals and the inability of some applicants to qualify for insurance due to their health status. Prior to the ACA, individual health insurance was underwritten. Applicants could be declined for such conditions as diabetes, rheumatoid arthritis or obesity, or they may have had a policy issued with a premium that reflected the additional risk of their health status. For low-income individuals, the premiums for even the leanest plans could be unaffordable. The ACA addresses the first issue through subsidies for coverage assisting low- to middle-income persons in paying for premiums and cost-sharing, and addresses the second issue by eliminating underwriting criteria to allow people who did not qualify for insurance due to pre-existing conditions to obtain coverage.

### 1.2 BACKGROUND

As the ACA was implemented in 2013, insurance companies and other entities—such as provider-based plans or Consumer Operated and Oriented Plans (CO-OPs)—created exchange policies that fulfilled the ACA requirements. Actuaries calculated rates for these policies incorporating estimates of the costs of the people who had previously been uninsured. They adjusted the experience for the existing population for all the normal rating factors, such as trend, provider mix and geography, as well as by estimates of how the newly insured differed from existing policyholders. Actuaries needed to account for demographic differences, and they needed to account for the different ways that this new population would use services. An insured population may use services differently than an existing population, all other things being equal, for three different reasons:

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<sup>1</sup> There are many very good sources that can give detailed definitions and descriptions of the provisions of the act, such as *health-care.gov* and <http://kff.org/state-category/health-reform/health-insurance-marketplaces/>.

## SOCIETY OF ACTUARIES

1. The members might need more services because they have a different health profile.
2. They may use services differently because they have become accustomed to interacting with the delivery system in a certain way—for example, using the emergency department rather than a medical office.
3. Lastly, they may have put off care because they had no access to health care or access at a prohibitive cost. This study focuses on this third reason to expect different patterns of care use among the newly insured individuals—namely the pent-up demand, a term used by economists to describe a return to consumption after a period of restriction.

Actuaries generally included an estimate of pent-up demand in their rating. The theory is that after a period of lack of access to health insurance, members would immediately seek care at a rate that exceeded the use of care by members who had continuous access to health insurance, even after adjusting for other factors such as morbidity and demographics.

A facet of pent-up demand is that it does not persist. Once the initial surge in use has passed, the behavior of the population should subside into a more persistent, long-term pattern. It can be difficult to determine if the average costs of the population are due to behavior or health status without sufficient experience or in-depth analysis. This paper examines use of the sorts of care that would be more indicative of pent-up demand rather than morbidity or delivery preference, but does not attempt to adjust for all the differences between the two populations. These are services that could be delayed or bypassed without precipitating an immediate crisis, such as musculoskeletal surgery. This group of services is different from other utilization such as emergency department use and office visits, which can be strongly influenced by behavior patterns and chronic disease burden.

For the purposes of this study, it was important to find data that encompassed all individual members in a market. The Society of Actuaries has a data partnership with the Kansas Department of Insurance to use the Kansas All-Payer Claims Database files for research and education purposes.

Kansas has had a steady rate of uninsured adults, about 12 to 13 percent on a base population of about 3 million. Some demographic measures for Kansas, such as average income or gender mix, are very close to the U.S. average, but not all. For example, according to the U.S. Census Bureau, the state is 87 percent Caucasian compared to the U.S. average of about 78 percent. Fewer Kansans live in poverty—13.7 percent vs. 15.4 percent. Kansas has a significant rural population—a population density of 34.9 persons/square mile compared to a national average of 87.4 persons/square mile.

Kansas has not expanded Medicaid under the ACA and has allowed for transitional policies, which will have important implications on the types of members who opted for the exchange coverage. Kansas also relies on the federal exchange instead of creating its own. Thus, while Kansas is not an exact match to the population of the United States, as a whole, these comprehensive state-level data offer much valuable insight.

Now that a year of experience with the exchanges has passed and 2014 experience data is becoming available, analysts have the opportunity to examine the relative use of services and the timing of this use by newly insured beneficiaries. This paper is the first of a series of papers that will examine the extent and nature of use that would indicate pent-up demand. Each paper will build on the work before, both in depth and breadth, as

more data become available, more specific modeling for inherent population differences is possible, and as more experience unfolds. The intent of the paper is to be informative, within the bounds of the available data; to provide a data point for evaluating experience; and to spur a conversation about the extent and nature of pent-up demand in the new ACA individual enrollees.

The subsequent studies will provide much more in-depth and robust analysis of the pent-up demand phenomenon than this paper and will focus on a much broader scope of activity, such as office visits and diagnostic testing with careful population matching.

## Section 2: Sources, Analytic Methods And Outcome Measures

### 2.1 DATA SOURCES

This report used the Kansas All-Payer Claims Database (APCD). APCDs are large-scale databases that systematically collect medical claims, pharmacy claims, dental claims (typically, but not always), and eligibility and provider files from private and public payers.<sup>2</sup>

The data used in this study were for the years claims incurred 2013 and 2014, with payments through September 2014.

#### 2.1.1 CALCULATIONS

Costs of care—Reported costs are based on allowed dollars and include all costs for a claim that had an identified service on any line of the claim. Allowed dollars are the contracted amounts for a procedure and include the cost share.

Utilization counts—A combination of member and date of service constituted the basis for the utilization count to avoid duplicate counts and to ensure uniform counting methods across different payers.

#### 2.1.2 ELIGIBILITY

Insureds were identified as having medical coverage in an individual product based on the data dictionary provided by the State of Kansas. Individuals were deemed to be existing enrollees in 2014 if they were found to be enrolled in a plan in 2013 or if their start dates for the current coverage were prior to Jan. 1, 2014.

### 2.2 SERVICE IDENTIFICATION

A list of codes for services determined to be preference-sensitive care was compiled by the authors and included many of the surgeries used in the Dartmouth Atlas studies of unwarranted variation.<sup>3</sup> These codes included CT, MRI and MRA scans, minor dermatology procedures, gallstone removal, musculoskeletal surgeries such as knee arthroscopy and replacement surgery, treatment for lower back pain, and upper endoscopy.

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<sup>2</sup> Porter, J., D. Love, A. Peters, J. Sachs and A. Costello (January 2014). The Basics of All-Payer Claims Databases. Retrieved March 5, 2015: <http://apcdouncil.org/sites/apcdouncil.org/files/The%20Basics%20of%20All-Payer%20Claims%20Databases.pdf>.

<sup>3</sup> Brownlee, S., J. Wennberg, M. Barry, E. Fisher, D. Goodman and J. Bynum; K. Bonner, ed. Improving Patient Decision-Making in Health Care: A 2011 Dartmouth Atlas Report Highlighting Minnesota: [http://www.dartmouthatlas.org/downloads/reports/Decision\\_making\\_report\\_022411.pdf](http://www.dartmouthatlas.org/downloads/reports/Decision_making_report_022411.pdf).

### Section 3: Reliances

The study relied on the data dictionary and submitted data to be accurate. Checks for reasonability found the data to have expected values and be reasonable in total. The State of Kansas provided audit totals, and summaries of the data used for the study matched the audit totals.

### Section 4: Results

This process identified more than 17,000 people who were new to the system and nearly 70,000 continuously enrolled insureds. Since the study focused on those who were enrolled within the first three months of the year and only examined the first quarter of 2014, most enrollees had approximately three months of enrollment. There was not a great deal of difference between the two populations in enrollment patterns; most people started coverage on Jan. 1.

The data suggest some differences in the mix of plans the newly insured purchased. The newly insured paid a smaller portion of the first-quarter health expenses (20 percent) than did the continuously enrolled (29 percent). Subsequent studies will investigate this topic, especially focusing on the role of transitional policies.

Table 1

#### ENROLLMENT

ENROLLMENT CATEGORY	MEMBER MONTHS	DISTINCT MEMBERS
Newly Enrolled	41,774	17,480
Prior Coverage	201,248	68,347

There are other, more fundamental, population differences. The demographics are different for the two groups, and this reinforces the need for further study beyond this initial glance.

- The gender split for new enrollees is 56 percent female, while the continuously enrolled population is 48 percent female.
- The average age for new enrollees is 37, while that of the continuously enrolled is 34.
- The new enrollee population has fewer children.
- There is a larger proportion of the new enrollees in the 50-65 age group.

The health status for the newly insured also appears to be different from that for the continually insured. New enrollees appear to have a higher proportion of individuals with a chronic condition such as diabetes or asthma.

All of these differences lead to an expectation that the new enrollees would have higher health costs than the existing population overall and that the differences in relative costs would persist. Examination of the details of overall costs will be a topic of a future paper, when an entire year of data is available.

# SOCIETY OF ACTUARIES

As described above, this study focuses on certain types of specific care that would be prone to deferral. These data indicate that the newly insured were more likely to use preference-sensitive treatments, particularly musculoskeletal surgeries. The results for some individual services are problematic due to small numbers. However, in total, the suite of services does indicate pent-up demand. As shown in Table 2, the increased use is considerable, with the exceptions of dermatology and knee arthroscopy.

Table 2

## IDENTIFYING PENT-UP DEMAND: USE OF PREFERENCE SENSITIVE SERVICES BY INDIVIDUAL MEMBERS Q1 2014

Data Source: Claims History Kansas Insurance Department

Utilization Statistics					
	PROCEDURES		PROCEDURES/MEMBER MONTH X 1000		
	ENROLLMENT CATEGORY		ENROLLMENT CATEGORY		
SERVICE CATEGORY	NEWLY ENROLLED	PRIOR COVERAGE	NEWLY ENROLLED	PRIOR COVERAGE	RELATIVE USE
CT	146	404	3.49	2.01	1.74
Dermatology	230	1,224	5.51	6.08	0.90
Gallstone	16	51	0.38	0.25	1.51
Knee Arthroscopy	17	81	0.41	0.40	1.01
Knee Replacement Surgery	9	7	0.22	0.03	6.19
Lower Back Pain Surgery	98	189	2.35	0.94	2.49
MRI/MRA	302	771	7.23	3.83	1.88
Upper Endoscopy	123	242	2.94	1.20	2.44
<b>Total</b>	<b>941</b>	<b>2,969</b>	<b>22.53</b>	<b>14.75</b>	<b>1.53</b>

While the utilization rate of services is about 50 percent greater, the expense to provide those services is 90 percent higher due to the use of care with higher per unit cost such as lower back pain treatment. The total allowed costs for all preference-sensitive treatments, including incidentals on the associated claim, are shown in Table 3. Newly enrolled members used \$6 per member per month (PMPM) more in this care than continuously enrolled members. As an estimate, there would be no more than 3 percent of increased overall costs associated with preference-sensitive care.

**TABLE 3:**  
**ALLOWED COSTS FOR PREFERENCE-SENSITIVE CARE**

ENROLLMENT CATEGORY	ALLOWED DOLLARS	ALLOWED PMPM	RELATIVE COSTS
Newly Enrolled	\$525,416	\$12.58	1.9
Prior Coverage	\$1,314,296	\$6.53	

The study also examined the first quarter of the prior year, 2013, and new enrollees were 50 percent less likely to use these services than insureds with continuous enrollment, and with relative expenses 60 percent less.

## Section 5: Discussion

The continuous coverage and the newly enrolled populations had different demographics, but may be similar enough to make the comparisons interesting and to provide some guidance as to next steps and refinements. However, there were significant differences in overall costs for the population reflecting the presence of chronic disease, as well as age. Preference-sensitive treatments represented a smaller portion of the total cost of all care for the newly insured than for the continuously insured in the first quarter of 2014. In the first quarter, the newly insured had higher catastrophic costs (members with more than \$100,000 in costs for the first quarter) than the continuously enrolled population, due in part to maternity costs. However, even with catastrophic costs excluded, the newly enrolled were much more costly than the continuously enrolled.

This newly enrolled population used office visits at a much higher rate than the continuing population did, and more of the visits were for established patients. This may indicate an existing relationship, further underlying the evidence that this cohort of new enrollees has more illness than the continuing membership. All of these differences are noted here, but there is no explicit effort to adjust the utilization for expected differences. This provides a starting point for work to follow.

As was discussed earlier, Kansas did not expand Medicaid and allowed for transitional policies, which will have an impact on who signed up for exchange coverage. Medicaid experience may not be directly applicable, but it does provide a reference point for comparison, especially as there is often an initial maternity cost associated with the Medicaid enrollment date.

## SOCIETY OF ACTUARIES

The first-quarter 2014 data are consistent with studies of Medicaid expansion populations—which show that there is an initial high use of services that gradually tapers off over the year—but the rest of the 2014 data will be needed to determine whether the service usage by the newly enrolled population tapers off later in the year. Since this initial study is confined to the first quarter the members here were part of a cohort of eager enrollees. Other studies have shown that later enrollees were younger and had fewer conditions. Pent up demand will probably not be consistent between the two cohorts.

Actuaries who use these results as a reference point for work with their own populations should keep these differences in mind, and should be careful not to stretch the utility of these results too far. It appears that there is pent-up demand for some kinds of services—particularly preference-sensitive services—and it will be interesting to see if this tapers off over the year.

### Section 6: Next Steps

The next step is to do more in-depth analysis of the two populations. There will need to be refinements of the identification method and examination of the relative morbidity of the two populations.

The most important question will be discovering the persistence of the higher costs. Pent-up demand has been studied for years, and there is a consensus that it exists and that it is transitory. As the rest of the 2014 data become available, the study will look at development over the year.

As well as a further examination of the Kansas population, there will be an effort to look at other states that did not allow transitional policies, that had Medicaid expansion, and whose demographic make-up and geography are different from Kansas. This may also offer a chance to look at a population whose morbidity was more consistent with the insured population.

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## 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.

The SOA supports actuaries and advances knowledge through research and education. As part of its work, the SOA seeks to inform public policy development and public understanding through research. The SOA aspires to be a trusted source of objective, data-driven research and analysis with an actuarial perspective for its members, industry, policymakers, and the public. This distinct perspective comes from the SOA as an association of actuaries, who have a rigorous formal education and direct experience as practitioners as they perform applied research. The SOA also welcomes the opportunity to partner with other organizations in our work where appropriate.

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 healthcare, retirement, and other topics. The SOA’s research is intended to aid the work of policymakers and regulators and follow certain core principles:

**Objectivity** The SOA’s research informs and provides analysis that can be relied upon by other individuals or organizations involved in public policy discussions. The SOA avoids taking advocacy positions or lobbying specific policy proposals.

**Quality** The SOA aspires to the highest ethical and quality standards in all of its research and analysis. Our research process is overseen by experienced actuaries and non-actuaries from a range of industry sectors and organizations. A rigorous peer-review process ensures the quality and integrity of our work.

**Relevance** The SOA provides timely research on public policy issues. Our research advances actuarial knowledge while providing critical insights on key policy issues, and thereby provides value to stakeholders and decision makers.

**Quantification** The SOA leverages the diverse skill sets of actuaries to provide research and findings that are driven by the best available data and methods. Actuaries use detailed modeling to analyze financial risk and provide distinct insight and quantification. Further, actuarial standards require transparency and the disclosure of the assumptions and analytic approach underlying the work.

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