

Impact of Health Plan Reforms in Washington on Retirement Decisions

Norma B. Coe

University of Pennsylvania and NBER

JEL Codes:

Key words: health insurance, value-based, retirement

Acknowledgements: I would like to thank Elaine Albertson for excellent research assistance and Lingmei Zhou for amazing programming support. The paper benefitted from working with the entire University of Washington SIM Evaluation team, especially the “PM3 sub-team”, including Douglas Conrad, David Grembowski, and Suzanne J. Wood. Special thanks go out to Shuva Duwadi and Karen Jensen at the Health Care Authority, without whose efforts we would have never procured the data.

Funding: This project was supported by Interagency Agreement No. K1445 from the Washington Health Care Authority, and Grant Number T32HS013853 from the Agency for Healthcare Research and Quality. The content is solely the responsibility of the authors and does not necessarily represent the official views of the Agency for Healthcare Research and Quality.

The study was approved by the Washington State Institutional Review Board, Project D-071416-A17.01

Abstract:

The State of Washington, as part of a State Innovation Model (SIM) grant, is changing the payment model within state employee health insurance plans. The system is moving to value-based purchasing. New plans were rolled out January 2016 (enrollment occurred in late 2015). This move towards value-based purchasing is large-scale, with the stated goal of getting 80% of state employees covered by plans that contain value-based purchasing within the next five years. The goal of payment reform is to improve member experience, member health, and cut costs. However, changing health insurance during employment can directly and indirectly change retirement timing, through changing the relative costs of insurance and through improving health. This paper examines who switches to value-based insurance, where the design explicitly decreases premiums without changing other out-of-pocket risks. We find that older state employees are less likely to switch insurance plans, even after controlling for the network of doctors an individual typically sees. Second, we look at the labor market activity – both leaving the state-employee sector and retiring from state-employment – and find that those with value-based insurance plans are less likely to leave state employment, but more likely to retire. However, the effect sizes are rather small.

1. Introduction

By catalyzing improvements in health care information technology, care processes, and care integration, value-based health insurance is expected to lead to improved health and functioning in the enrolled population (Fisher et al., 2012). Empirical research indicates that value-based insurance is associated with trends that are expected to lead to improved population health, such as reductions in inpatient and emergency department utilization, and improvements in preventive care and chronic disease management (Kaufman et al., 2017; McClellan et al. 2017). The long-term impacts are yet unknown, given the relatively recent introduction of value-based insurance design.

Despite this uncertainty in long-term outcomes, policies continue to encourage the spread of value-based insurance design. The Patient Protection and Affordable Care Act (ACA) established the Center for Medicare and Medicaid Innovation (CMMI), which started the State Innovation Model (SIM) program in 2013 (Shrank 2013). The SIM program aims to drive the development of effective value-based insurance designs, and has set a target for states awarded SIM grants to shift 80% of care from fee-for-service or volume-based, to value-based payment contracts (Rajkumar, Conway, and Tavenner 2014).

In 2014, Washington state received a SIM Round 2 Model Test Award to test reforms in health care payment and service delivery including value-based insurance programs (Centers for Medicare & Medicaid Services 2014). One of five major initiatives developed under the Washington State SIM grant is the creation of two value-based accountable care insurance programs available to public employees, which launched in 2016. The initial roll-out included only 5 counties within the state, encompassing the Seattle and Vancouver regions. This particular reform lowers out of pocket costs, without increasing individual risk in the case of bad health outcomes. Premiums charged for single individuals decreased by 30 percent, without increasing co-payments or out-of-pocket maximums.

It is widely accepted that access to post-retirement insurance influences retirement rates (Blau & Gilleskie, 2006; Blau & Gilleskie, 2008; Boyle & Lahey, 2010; Fitzpatrick, 2014; Gruber & Madrian, 2001; Madrian, 2006; Nyce, Schieber, Shoven, Slavov, & Wise, 2013; Rogowski & Karoly, 2000; Shoven & Slavov, 2014). Much less is known about the relationship of insurance offered during employment, either specifically related to value-based insurance or more generally about the level of premiums paid, and retirement decisions. We know of only one study that examines the role of health insurance premiums in the retirement decision, which finds that increases in post-retirement premiums delays retirement (Johnson, Davidoff and Perese, 2003).

Our paper examines the opposite phenomenon, a decrease in premiums paid during employment, and the subsequent relationship to labor market behavior. Decreasing the relative premiums paid during employment increases the relative costs of leaving the state-employment sector, thus could delay or reduce the number of people leaving state-employment. However, it also acts as an exogenous increase in the budget constraint, allowing for increased savings, which could hasten leaving the state-employment rolls. Since non-Medicare retirees can maintain the 30 percent premium reduction in retirement, we anticipate increased retirements that keep people on the state-employee insurance rolls. Thirdly, in the long-run, if value-based insurance delivers better health to their enrollees (Choudhry et al.2010; Choudhry et al. 2011; Gibson et al. 2011; Wertz et al. 2012) , this could also delay retirement by allowing individuals to be healthy enough to work longer. This uncertainty in the predicted response warrants empirical investigation in order to both gauge the sign and the magnitude of these changes.

Using administrative data from state employees in Washington, we test the impact of the introduction of a value-based insurance reform on retirement decisions through the decrease of premiums and no change in financial risk of health shocks borne by the individual. We first study who is likely to take up the new insurance product. We find that state employees close to the retirement ages are actually less likely to switch insurance and sign up for the new value-based insurance programs, even after controlling for the network of doctors individuals have used in the past. Second, we examine two labor market outcomes; retiring and remaining in the state-employee health insurance plan and leaving the state-employee health insurance rolls all together. We find that those who signed up for the value-based insurance product are less likely to leave state employment, but more likely to retire, consistent with the financial incentives around employment embedded in this health insurance reform.

2. Background and Data

2.1 WA State Health Insurance

Pre-reform

Prior to 2016, state workers and retirees could get health insurance through Group Health, Kaiser Permanente, and the Uniform Medical Plan (UMP). All insurance companies had 4 products – a high deductible plan, a “classic” plan, and two variants for “smart-health”, where individuals could do more screening and more reporting back to the insurance company about activities and health behaviors in exchange for a premium deduction. Kaiser and Group Health run relatively closed health insurance and provider systems, and accounted for 34 percent of the active state-employee enrollment in 2015. UMP offered traditional, fee for service health insurance coverage, with no network requirements, and enrolled 66 percent of active employees in 2015 (HCA 2015).

2016 Reforms

In 2016 (enrollment in Fall 2015), the state introduced UMP-Plus, or two new value-based insurance plans. The primary difference between the two is the network of providers – one was offered by the University of Washington Medicine Accountable Care Network (UW) and the other by Puget Sound High Value Network (PSHVN). While the networks had the possibility of being unique, there is considerable overlap in providers between the networks. It was first rolled out to employees and retirees that are not enrolled in Medicare who lived in the 5-county Puget Sound region for the 2016 calendar year (King, Kitsap, Pierce, Snohomish, and Thurston counties).

These new networks promised lower premiums, lower deductibles, coordinated provider networks, and all the same coverage as provided in UMP Classic. See Table 1 for a benefit and cost comparison between UMP Plus and UMP Classic. While this combination of lower premiums and same coverage typically means higher co-payments for services delivered, the copayments were identical between UMP Classic and UMP Plan plans *if* one used the network providers within the UMP Plan (HCA 2016a). The providers were also promised to collaborate to reduce unnecessary care, they were to be committed to using best practices and research-based medicine, and to work with you to make the best decisions for your own health. This was touted as an especially valuable benefit for members who have multiple providers (HCA 2016b).

As of January 2016, after the first open enrollment offering these plans, 10,571 beneficiaries, or 3 percent of the non-Medicare beneficiaries, we enrolled in a UMP-Plus plan. Enrollment has been increasing since. See Figure 1.

In 2017, the UMP-Plus extended its geographic reach to 4 more counties: Skagit (only UW-ACN); Spokane (only PSHVN); Yakima (only PSHVN); and Grays Harbor (both). There are plans to continue expansion in 2019.

There were five primary goals for this health insurance reform. (1) Improve health of state-employees. (2) Improve member experience. (3) Improve quality of care. (4) Reduce costs trends over the life of the contract. (4) Decrease inappropriate utilization. However, changes in one of the key benefit programs could also change the employment decision.

2.2 Data

We have administrative data for UMP-covered employees, containing information from January 2013 – October 2017. Due to privacy concerns, the data has been aggregated to the per-member-per-month level. We have demographic information (age, gender), geographic information (county in which the

beneficiary lives), and health insurance contract information (retiree vs employee; UMP Classic, UMP Plus (UW or PSHVN), UMP consumer-driven health plan (CDHP)). We also have information on the health of the beneficiary based on claims data; namely indicators for a previous diagnosis in any of 31 categories of disease/illness used for risk adjustment (see Appendix Table 1 for a full list of these conditions).

3. Methodology

3.1 Primary Analysis

1. *Who signs up for UMP-Plus?*

First we examine the correlation between individual characteristics and their propensity to sign up for a UMP-Plus plan. On the sample of individuals age 45 and above living in the 5-county Seattle area, who are active employees or non-Medicare retirees and enrolled in a UMP health insurance plan in 2015, we estimate the following regression via GLM:

$$UMP - Plus_{i,2016} = \beta_1 + \beta_2 X_{i,2015} + \varepsilon_{it} \quad (1)$$

where $UMP - Plus_{i,2016}$ is a 0/1 variable indicating whether the individual signed up for a UMP-Plus contract in 2016. $X_{i,2015}$ are the covariates measured in 2015. These covariates include beneficiary demographics (age in 5-year age bands, gender, county of residence, 31 risk categories based on previous diagnoses), insurance contract characteristics in 2015 (Contract Type (individual, spouse, child); and eligibility type (active employee, cobra coverage, retiree coverage, other coverage)).

3.2 *Retirement behavior*

There are two ways in which retirement behavior could be captured in the administrative data. First, one could change their eligibility status for health insurance – they can convert from an active state-employee to getting health insurance as a retiree benefit. If they retire and remain uncovered by Medicare, they are eligible for UMP-Plus and keep the 30 percent discount on premiums. Second, they could leave the state-employee health insurance rolls altogether. This could be due to retirement, switching employer-sectors, or leaving the labor force. However, leaving the state-employment rolls altogether does not maintain their health insurance premium discount.

First we examine the relationship between leaving state-employment/retiring and UMP-Plus enrollment using the following OLS regression model:

$$R_{i,c,t} = \beta_1 + \beta_2 X_{i,t-1} + \beta_3 HI_{t-1} + C_c + m_t + y_t + \varepsilon_{it} \quad (2)$$

where R is an indicator for either converting to retiree health insurance benefits for at least 3 months or leaving state-employment for at least 6 consecutive months. HI is a vector of health insurance plans, UMP-Classic, UMP CDHP, and UMP-Plus. C , M and Y are county, month and year fixed effects, respectively.

To estimate the effect that UMP-Plus has on retirement behavior on the entire population, we capitalize on the geographic-specific implementation design and use a difference-in-difference framework to evaluate the effect of health insurance reform on work behavior. Among active employees, age 45 and above, we estimate the following regression:

$$R_{i,c,t} = \beta_1 + \beta_2 X_{i,t-1} + \beta_3 5C_{t-1} + \beta_4 Post_t + \beta_5 5C_{t-1} * Post_t + y_t + \varepsilon_{it} \quad (3)$$

Where $5C$ is an indicator variable for living in the 5 treated counties, $post$ is an indicator for 2016 or 2017, and the interaction term identifies the difference in labor market behavior in the 5 county region after the introduction of UMP-Plus.

4. Results

4.1 Who switches to value-based health insurance

Table 2 provides the descriptive statistics for the subsample of state employees and retirees who are eligible to switch to a UMP-Plus contract in 2016; of which, only 6.5 percent did. The first columns are for the entire sample, and the 2nd set of columns is by health insurance status in 2016.

Most individuals (86.7 percent) were active employees and enrolled in the UMP Classic plan in 2015. Subscribers covered under retiree plans are the second most common reason for eligibility, but only at 6.2 percent. Almost 60 percent of the sample is female, and 95 percent is under the age of 65. Forty-four percent live in King County, where Seattle is located. There is considerable prevalence of pre-existing conditions, with over half having muscular-skeletal or connective tissue issues, over 40 percent having nutritional or metabolic issues, thirty percent have cardiovascular issues, and almost a quarter having psychiatric issues.

Of those who signed up for UMP-Plus in 2016, they were more likely to be active employees and less likely to be retirees than among the eligible. Relatedly, those who signed up for UMP-Plus are slightly younger. They are also more likely to be residing in King County. Otherwise, the gender and pre-existing condition profile is remarkably similar between those who signed up for UMP-Plus and those who did not.

Table 3 presents the regression results where we examine what covariates are correlated with signing up for UMP-Plus in 2016. As in the descriptive statistics, residents of King County are most likely to sign up for UMP-Plus, and Active employees were the most likely to sign up compared to any other reason for enrollment in state-employee health insurance plan. Individuals who were already in a high-deductible health insurance plan are less likely to sign up for UMP-Plus than those in UMP Classic, likely because they do not see the same decline in premiums. Personal characteristics, to the extent we have them in the database, seem to play very little role in the decision. Age and gender are insignificant, and only three types of pre-existing conditions are correlated with UMP-Plus enrollment.

4.2 Impact on labor market outcomes

Table 4 presents the descriptive statistics of the sample we use to estimate the labor market outcomes. Here we use employees throughout the state, age 45 and above. We have roughly 50,000 employees that fit this description from 2013-2017, who contribute 2,986,312 person-month observations. Much like the previous sample, most are active state workers, with the second most common group are getting their health insurance through the state because they have retired from state employment. Almost 60 percent of the sample is female and over 90 percent are age 65 or under. It is interesting to note how few people leave the state employment sector— at 0.3 -0.4 percent person-month observations.

Table 5 presents the descriptive statistics of the sample we use to estimate retirement outcomes. We add the additional constraint that individuals must be active employees to be included in the sample. Given that retirees only comprised less than 10 percent of the previous sample, it is not surprising that this additional sample restriction does not change the characteristics much. Again, few people retire during this time period, at 0.4-0.5 percent of person-month observations.

Table 6 presents the regression results from the two labor market outcomes. Panel A presents the reduced form regression, Panel B presents the difference-in-difference estimates. Panel A shows that those who are in UMP-Plus contracts are less likely to leave state employment than those covered by UMP-Classic. However, the estimated effect is relatively small: -0.001. This means that individuals who signed up for UMP-Plus are 0.001 percentage points less likely to leave state-employment rolls than those insured by UMP-Classic. Panel A also shows that individuals in UMP-Plus are more likely to retire than those in UMP-Classic, by 0.0005 percentage points.

Panel B presents the difference-in-difference model results, which estimates the impact of the health insurance reform. Overall, we find that the probability of leaving state employment decreased in the five

counties after the introduced the UMP-Plus insurance option, by 0.0007 percentage points. Retirement also increased in these areas after the introduction of the UMP-Plus plan, by 0.001 percentage points.

5. Policy implications

Employment-sponsored insurance is not going away, nor is its influence over retirement behavior. This work suggests that one strategy that could help firms retain older workers is offering lower out-of-pocket premiums on health insurance and expanding the gap between pre- and post-retirement health insurance costs. This strategy would have to be coupled with successful marketing of these insurance products to older workers. Companies would also have to fund the decrease in premiums. It is too early to tell if the state of Washington achieved this through the offering of value-based insurance, but it is one potential and very popular avenue.

Conclusions

This preliminary analysis shows that, regardless of the impact value-based insurance has on actual health, decreasing premiums without increasing financial risk to the participant has the potential to increase employee retention.

Future work will also assess the impact on retirement through changes in health – given the recent introduction of UMP-Plus we do not anticipate the effects of health insurance on health to impact retirement behavior within the first 2 years, but has a larger potential in the long-term.

References:

Blau, D. M., & Gilleskie, D. B. (2006). Health insurance and retirement of married couples. *Journal of Applied Econometrics*, 21(7), 935-953.

Blau, D. M., & Gilleskie, D. B. (2008). The role of retiree health insurance in the employment behavior of older men. *International Economic Review*, 49(2), 475-514.

Boyle, M. A., & Lahey, J. N. (2010). Health insurance and the labor supply decisions of older workers: Evidence from a US Department of Veterans Affairs expansion. *Journal of Public Economics*, 94(7), 467-478.

Centers for Medicare & Medicaid Services. 2014. "State Innovation Models Initiative Round Two" [accessed on June 30, 2018]. Available at <https://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets/2014-Fact-sheets-items/2014-12-16.html>

Choudhry NK, Fischer MA, Avorn J, Schneeweiss S, Solomon DH, Berman Cet al. 2010. At Pitney Bowes, value-based insurance design cut copayments and increased drug adherence. *Health Aff (Millwood)*. 29(11):1995–2001.

Choudhry NK, Avorn J, Glynn RJ, Antman EM, Schneeweiss S, Toscano M, et al. 2011. Full coverage for preventive medications after myocardial infarction. *N Engl J Medicine*;365(22):2088–9

Fisher, E. S., S. M. Shortell, S. A. Kreindler, A. D. Van Citters, and B. K. Larson. 2012. "A Framework For Evaluating The Formation, Implementation, And Performance Of Accountable Care Organizations." *Health Affairs* 31 (11): 2368–2378.

Fitzpatrick, M. D. (2014). Retiree health insurance for public school employees: Does it affect retirement?. *Journal of Health Economics*, 38, 88-98.

Gibson TB, Mahoney J, Ranghell K, Cherney BJ, McElwee N. 2011. Value-based insurance plus disease management increased medication use and produced savings. *Health Aff (Millwood)*. 30(1):100–8

Gruber, J., & Madrian, B. C. (2001). Health insurance, labor supply, and job mobility: A critical review of the literature, presented at the Research Agenda Setting Conference, University of Michigan, July 8-10, 2001.

Health Care Authority. 2015. PEBB Enrollment Report for January 2015 Coverage. https://www.staging.hca.wa.gov/assets/pebb/carrier_012015.pdf. Accessed 7/31/2018.

Health Care Authority. 2016a. How UMP Plus Compares to UMP Classic. www.hca.wa.gov/ump. Accessed 7/31/2018.

Health Care Authority. 2016b. What's Changing for UMP in 2016? <https://www.hca.wa.gov/search/site/UMP%2520enrollment> accessed 7/31/2018.

Johnson, R. W., Davidoff, A. J., & Perese, K. (2003). Health insurance costs and early retirement decisions. *ILR Review*, 56(4), 716-729.

Kaufman, B. G., B. S. Spivack, S. C. Stearns, P. H. Song, and E. C. O'Brien. 2017. "Impact of Accountable Care Organizations on Utilization, Care, and Outcomes: A Systematic Review." *Medical Care Research and Review*, published online.

McClellan, M., K. Udayakumar, A. Thoumi, J. Gonzalez-Smith, K. Kadakia, N. Kurek, M. Abdulmalik, and A. W. Darzi. 2017. "Improving care and lowering costs: evidence and lessons from a global analysis of accountable care reforms." *Health Affairs* 36 (11), 1920-27.

Nyce, S., Schieber, S. J., Shoven, J. B., Slavov, S. N., & Wise, D. A. (2013). Does retiree health insurance encourage early retirement?. *Journal of Public Economics*, 104, 40-51.

Rajkumar, R., P. H. Conway, and M. Tavenner. 2014. "CMS — Engaging Multiple Payers in Payment Reform." *JAMA* 311 (19): 1967–68.

Rogowski, J., & Karoly, L. (2000). Health insurance and retirement behavior: evidence from the health and retirement survey. *Journal of Health Economics*, 19(4), 529-539.

Shoven, J. B., & Slavov, S. N. (2014). The role of retiree health insurance in the early retirement of public sector employees. *Journal of Health Economics*, 38, 99-108.

Shrank, W. 2013. "The Center For Medicare And Medicaid Innovation's Blueprint For Rapid-Cycle Evaluation Of New Care And Payment Models." *Health Affairs* 32 (4): 807–12.

Wertz D, Hou L, DeVries A, Dupclay L, McGowan F, Malinowski B et al. 2012. Clinical and economic outcomes of the Cincinnati Pharmacy Coaching Program for diabetes and hypertension. *Manag Care*. 21(3):44–54

Tables and Figures

Table 1: Comparison of UMP-Plus and UMP-Classic

	UMP PLUS	UMP CLASSIC	% CHANGE
PREMIUMS: STATE AND HIGHER EDUCATION EMPLOYEES			
Employee only	59	84	30%
Employee + Spouse	128	178	28%
Employee + Children	103	147	30%
Full family	172	241	29%
PREMIUMS: NON-MEDICARE RETIREES			
Subscriber only	552.4	576.78	4%
subscriber + spouse	1098.77	1147.53	4%
Subscriber + children	962.18	1004.84	4%
Full family	1508.55	1575.59	4%
DEDUCTIBLES			
Medical (per person, capped at 3)	125	250	50%
Prescription Drugs	0	100 for Tier 2 or 3	0%-100%
MEDICAL OOP LIMIT	2000 per member 4000 family	2000 per member 4000 family	none
PRESCRIPTION DRUG OOP LIMIT	2000 per member	2000 per member	none

Table 2: Descriptive Statistics: Switching to UMP-Plus Sample

Member enrolled in 2015	Total		Health Insurance in 2016			
			Not UMP-Plus in 2016		UMP-Plus in 2016	
	N	Col%	N	%	N	%
N	30,383		28,396	93.5	1,987	6.5
Plan at 2015						
Don't Know/Missing	1,911	6.3	1,777	6.3	134	6.7
Uniform Medical Plan	27,007	88.9	25,223	88.8	1,784	89.8
Uniform Medical Plan CDHP	1,465	4.8	1,396	4.9	69	3.5
Elig_Type						
Don't Know/Missing	230	0.8	221	0.8	9	0.5
Active Employee	26,346	86.7	24,485	86.2	1,861	93.7
Cobra	469	1.5	448	1.6	21	1.1
N	1,342	4.4	1,300	4.6	42	2.1
O	87	0.3	85	0.3	2	0.1
Retiree	1,892	6.2	1,840	6.5	52	2.6
U	17	0.1	17	0.1		
Age category						
45-50	6,895	22.7	6,394	22.5	501	25.2
50-55	7,496	24.7	6,978	24.6	518	26.1
55-60	8,181	26.9	7,642	26.9	539	27.1
60-65	6,227	20.5	5,879	20.7	348	17.5
65-70	1,210	4.0	1,149	4.0	61	3.1
70-75	298	1.0	283	1.0	15	0.8
75+	76	0.3	71	0.3	5	0.3
female	17,815	58.6	16,634	58.6	1,181	59.4
Diagnosis- related risk adjustment categories						
Infectious and Parasitic	3,584	11.8	3,361	11.8	223	11.2
Malignant Neoplasm	1,384	4.6	1,306	4.6	78	3.9
Benign/In Situ/Uncertain Neoplasm	5,944	19.6	5,600	19.7	344	17.3
Diabetes	3,090	10.2	2,889	10.2	201	10.1
Nutritional and Metabolic	12,264	40.4	11,514	40.5	750	37.7
Hepatobiliary	825	2.7	779	2.7	46	2.3
Gastrointestinal	6,464	21.3	6,079	21.4	385	19.4
Musculoskeletal and Connective Tissue	16,922	55.7	15,885	55.9	1,037	52.2
Hematological	1,784	5.9	1,681	5.9	103	5.2
Cognitive Disorders	295	1.0	285	1.0	10	0.5
Substance Abuse	12	0.0	12	0.0		
Psychiatric	6,973	23.0	6,539	23.0	434	21.8
Developmental Disability	489	1.6	462	1.6	27	1.4
Neurological	4,948	16.3	4,680	16.5	268	13.5

Cardio-Respiratory Arrest	170	0.6	159	0.6	11	0.6
Cardiovascular	9,108	30.0	8,530	30.0	578	29.1
Cerebrovascular	383	1.3	358	1.3	25	1.3
Vascular	1,795	5.9	1,684	5.9	111	5.6
Pulmonary	4,110	13.5	3,861	13.6	249	12.5
Ophthalmic	15,060	49.6	14,034	49.4	1,026	51.6
Ears, Nose and Throat	8,759	28.8	8,194	28.9	565	28.4
Urinary	3,338	11.0	3,154	11.1	184	9.3
Genital	5,196	17.1	4,852	17.1	344	17.3
Obstetric	19	0.1	18	0.1	1	0.1
Dermatologic	8,833	29.1	8,299	29.2	534	26.9
Injury, Poisoning	4,640	15.3	4,369	15.4	271	13.6
Symptoms, Signs and Ill-Defined Conditions	17,513	57.6	16,417	57.8	1,096	55.2
Neonates	164	0.5	153	0.5	11	0.6
Transplants, Openings, Other V-Codes	21,573	71.0	20,115	70.8	1,458	73.4
Screening / History	1,052	3.5	1,004	3.5	48	2.4
County Name						
King	13,375	44.0	12,299	43.3	1,076	54.2
Kitsap	1,143	3.8	1,109	3.9	34	1.7
Pierce	4,541	14.9	4,235	14.9	306	15.4
Snohomish	4,396	14.5	4,136	14.6	260	13.1
Thurston	6,928	22.8	6,617	23.3	311	15.7
All	30,383	100	28,396	100	1,987	100

Table 3: GLM Results: Switching to UMP-Plus

PARAMETER	ESTIMATE	STANDARD ERROR	T VALUE	PR > T
INTERCEPT	0.0743861112	0.00506690	14.68	<.0001
AGE [60-65: OMITTED CATEGORY]				
45-50	0.0097502180	0.00462631	2.11	0.0351
50-55	0.0068510370	0.00449186	1.53	0.1272
55-60	0.0060639136	0.00427644	1.42	0.1562
65-70	-0.0180291774	0.00791414	-2.28	0.0227
70-75	-0.0184678241	0.01479033	-1.25	0.2118
75+	-0.0010150638	0.02856702	-0.04	0.9717
ELIGIBILITY TYPE [ACTIVE EMPLOYEE]				
COBRA	-0.0201077055	0.01152992	-1.74	0.0812
N	-0.0359414600	0.00699826	-5.14	<.0001
O	-0.0431504305	0.02653542	-1.63	0.1039
RETIREE	-0.0390209766	0.00630979	-6.18	<.0001
U	-0.0628848957	0.05986966	-1.05	0.2936
PLAN IN 2015 [UMP CLASSIC]				
DON'T KNOW/MISSING	0.0099648570	0.00625276	1.59	0.1110
UNIFORM MEDICAL PLAN CDHP	-0.0255414714	0.00667510	-3.83	0.0001
FEMALE	0.0032658423	0.00299973	1.09	0.2763
RISK ADJUSTMENT CONDITIONS				
NEUROLOGICAL	-0.0098352609	0.00409052	-2.40	0.0162
OPHTHALMIC	0.0085600272	0.00295610	2.90	0.0038
SCREENING/HISTORY	0.0146579993	0.00352138	4.16	<.0001
COUNTY [KING]				
KITSAP	-0.0461395783	0.00768091	-6.01	<.0001
PIERCE	-0.0114515942	0.00430241	-2.66	0.0078
SNOHOMISH	-0.0171601261	0.00437130	-3.93	<.0001
THURSTON	-0.0340394708	0.00370675	-9.18	<.0001
N	30,383			

Note: Regression also includes dummy variables for the 31 ACC conditions.

Table 4: Descriptive statistics: Leave state-employment sample

	2013-2015		2016-2017	
	Leave Health Plan		Leave health plan	
	Not	Leave	Not	Leave
	%	%	%	%
Age(years)				
45-50	20.1%	17.3%	21.2%	17.7%
50-55	22.9%	18.5%	22.4%	16.7%
55-60	26.3%	18.9%	25.2%	17.4%
60-65	25.0%	31.2%	24.8%	31.5%
65-70	4.5%	11.6%	4.9%	13.3%
70-75	1.0%	2.0%	1.1%	2.5%
75+	0.3%	0.4%	0.4%	0.7%
Health Plan				
UMP Plus-Puget Sound High Value Network			6.2%	4.0%
UMP Plus-UW Medicine			19.1%	8.8%
Uniform Medical Plan	95.2%	95.8%	70.0%	82.8%
Uniform Medical Plan CDHP	4.8%	4.2%	4.7%	4.4%
Female	57.5%	58.1%	57.5%	60.1%
Elig_Type				
Missing				
Active	77.3%	70.5%	78.2%	70.5%
Cobra	2.7%	1.9%	3.3%	1.7%
N	8.8%	10.6%	9.5%	11.7%
O	0.8%	7.2%	0.6%	6.5%
Retiree	10.2%	9.7%	8.2%	9.3%
U	0.1%	0.1%	0.1%	0.3%
leave health plan		0.267%		0.359%
N	1,821,890	4,995	1,155,265	4,162

Study sample are:

- (1) age > 45 years
- (2) Subscribers only(Depcode=1)
- (3) Non-Medicare member only(MedicareElig=N)

Table 5: Descriptive statistics: Retire from state-employment sample

	2013-2015		2016-2017	
	Not %	Retire %	Not %	Retire %
Age(years)				
45-50	22.0%	0.6%	22.3%	0.3%
50-55	25.1%	3.6%	23.6%	5.4%
55-60	26.8%	26.5%	25.8%	22.8%
60-65	19.7%	69.2%	21.3%	71.5%
65-70	4.9%	0.1%	5.4%	0.1%
70-75	1.1%	0.0%	1.2%	0.0%
75+	0.3%	0.0%	0.4%	0.0%
Health Plan				
UMP Plus-Puget Sound High Value Network			6.2%	6.1%
UMP Plus-UW Medicine			19.7%	22.2%
Uniform Medical Plan	95.0%	97.0%	69.4%	67.4%
Uniform Medical Plan CDHP	5.0%	3.0%	4.7%	4.3%
Female	56.4%	0.3%	36.9%	0.2%
Retire		0.5%		0.4%
N	1,658,020	7,488	1,063,896	4,134

Study sample are:

- (1) age > 45 years
- (2) Subscribers only(Depcode=1)
- (3) Non-Medicare member only(MedicareElig=N)
- (4) Active employees only

Table 6: Regression Results: Labor Market Outcomes

	LEAVE STATE EMPLOYMENT			CONVERT TO RETIREE BENEFITS		
	Coef	Std. Error	Pr > t	Coef	Std. Error	Pr > t
PANEL A: REDUCED FORM HEALTH PLAN [UMP CLASSIC]						
UMP PLUS	-0.0012220547	0.00012030	<.0001	0.0005358091	0.00013391	<.0001
UNIFORM MEDICAL PLAN CDHP	-0.0006122222	0.00015078	<.0001	0.0004873991	0.00016754	0.0036
PANEL B: DIFFERENCE IN DIFFERENCE ESTIMATES						
5-COUNTY POST REFORM	0.0053740193	0.01199663	0.6542	0.0004304355	0.01304571	0.9737
5-COUNTY * POST REFORM	0.0000836374	0.00013481	0.5350	-0.0059954518	0.00015387	<.0001
	-0.0007161103	0.00013413	<.0001	0.0011235247	0.00015222	<.0001
N (PERSON-MONTHS)	2,986,312			2,733,538		

Figure 1: Enrollment in UMP-Plus Plans over time.

