

UCSF

UC San Francisco Previously Published Works

Title

Implementation and Operational Research

Permalink

<https://escholarship.org/uc/item/9w92j7r8>

Journal

JAIDS Journal of Acquired Immune Deficiency Syndromes, 73(5)

ISSN

1525-4135

Authors

Satre, Derek D

Altschuler, Andrea

Parthasarathy, Sujaya

et al.

Publication Date

2016-12-15

DOI

10.1097/qai.0000000000001188

Peer reviewed



HHS Public Access

Author manuscript

J Acquir Immune Defic Syndr. Author manuscript; available in PMC 2017 December 15.

Published in final edited form as:

J Acquir Immune Defic Syndr. 2016 December 15; 73(5): e76–e82. doi:10.1097/QAI.0000000000001188.

Affordable Care Act Implementation in a California Health Care System Leads to Growth in HIV-Positive Patient Enrollment and Changes in Patient Characteristics

Derek D. Satre, Ph.D.^{1,2}, Andrea Altschuler, Ph.D.², Sujaya Parthasarathy, Ph.D.², Michael J Silverberg, Ph.D.², Paul Volberding, M.D.³, and Cynthia I. Campbell, PhD.²

¹Department of Psychiatry, UCSF Weill Institute for Neurosciences, University of California, San Francisco, 401 Parnassus Avenue, Box 0984, San Francisco, CA 94143

²Division of Research, Kaiser Permanente Northern California Region, 2000 Broadway, 3rd Floor, Oakland, CA 94612

³AIDS Research Institute, University of California, San Francisco, 550 16th Street, San Francisco, CA 94158

Abstract

Objectives—This study examined implementation of the Affordable Care Act (ACA) in relation to HIV-positive patient enrollment in an integrated health care system; as well as changes in new enrollee characteristics, benefit structure and health care utilization after key ACA provisions went into effect in 2014.

Methods—This mixed-methods study was set in Kaiser Permanente Northern California (KPNC). Qualitative interviews with 29 KPNC leaders explored planning for ACA implementation. Quantitative analyses compared newly enrolled HIV-positive patients in KPNC between January-December 2012 (“pre-ACA”, N=661) with newly enrolled HIV-positive patients between January-December 2014 (“post-ACA”, N=880) on demographics; medical, psychiatric and substance use disorder diagnoses; HIV clinical indicators; and type of health care utilization.

Results—Interviews found that ACA preparation focused on enrollment growth, staffing, competition among health plans, concern about cost sharing, and HIV pre-exposure prophylaxis (PrEP) services. Quantitative analyses found that post-ACA HIV-positive patient enrollment grew. New enrollees in 2014 were more likely than 2012 enrollees to be enrolled in high-deductible plans ($p < .01$) or through Medicaid ($p < .01$), and marginally more likely to have better HIV viral control ($p < .10$). They also were more likely to be diagnosed with asthma ($p < .01$) or substance use disorders ($p < .05$) and to have used primary care health services in the 6 months post-enrollment ($p < .05$) than the pre-ACA cohort.

Corresponding author. Derek D. Satre, Ph.D., Department of Psychiatry, UCSF Weill Institute for Neurosciences, University of California, San Francisco, 401 Parnassus Avenue, Box 0984, San Francisco, CA 94143, dereks@lppi.ucsf.edu, Phone: (415) 476-7382.

Preliminary findings were presented at the Addiction Health Services Research Conference, Los Angeles, CA, on October 15, 2015.

Conflicts of interest: The authors declare no conflict of interest.

Conclusions—As anticipated by KPNC interviewees, ACA implementation was followed by HIV-positive patient enrollment growth and changing benefit structures and patient characteristics. Although HIV viral control improved, comorbid diagnosis findings reinforced the importance of coordinated health care.

Keywords

HIV; ACA; health care reform; insurance; substance use disorders

INTRODUCTION

The Patient Protection and Affordable Care Act (ACA)¹ may improve health care for people living with HIV. A key ACA goal was to increase access to services, particularly for patients with chronic conditions. It was posited that ACA mandates were likely to change the insured population's composition (e.g., growth in Medicaid),² increase demand for primary and specialty care services,^{3–6} and increase patient cost-sharing via deductible plans.^{7,8} These changes are especially relevant to HIV-positive patients, who have high rates of comorbid medical, psychiatric and substance use disorders^{9–12} that complicate their care.

National data collected prior to passage of the ACA indicated that many people living with HIV lacked health insurance covering HIV medical care and medications,¹³ or had gaps in coverage even if they had access to care through Ryan White programs.¹⁴ The ACA addressed significant obstacles to care by eliminating exclusions for pre-existing conditions, expanding Medicaid eligibility, removing caps on costs, and providing financial assistance for healthcare premiums and out-of-pocket expenses.^{15,16} In addition, a key 2014 ACA provision established health insurance exchanges with products tiered by cost and level of coverage, and which included psychiatric and substance use disorder treatment as essential benefits.¹⁷

This study investigated these reforms in the context of a large health care system whose integrated model is becoming increasingly common,^{18,19} and whose small group plan served as a benchmark for the California insurance exchange. Kaiser Permanente Northern California (KPNC) is a large, private not-for-profit integrated health system of 3.9 million members, covering 45% of the region's commercially insured population. Members receive coverage through employers as well as through government programs (e.g., Medicaid and Medicare) and individual plans. By utilizing a multidisciplinary approach with an HIV specialist as team leader, along with HIV nurses, case managers, and clinical pharmacists in each practice,^{20,21} the KPNC HIV program has been identified as a national model for improving care.²²

The ACA-created exchanges are now widely used mechanisms for obtaining individual health insurance at KPNC and other health systems. Yet enrollment of previously uninsured or under-insured HIV-positive patients presented challenges for health systems, e.g., preparing operational systems and increasing staffing levels to accommodate new ACA policies and mandates. Health systems also had to anticipate providing services to individuals who may have lacked access to care for many years.^{23,24} It was unknown how health systems prepared to integrate a potentially large influx of new patients who require

specialized care. Importantly, changing clinical care needs and increased demands on resources (e.g., staffing and program development) could have significant implications for services use.

This study employed a mixed-methods design, which is particularly useful for studying complex, multi-faceted phenomena such as ACA implementation when quantitative or qualitative approaches alone are insufficient.^{25,26} We used qualitative methods to investigate how KPNC leadership and providers prepared for ACA-related changes, and quantitative methods to compare demographic and clinical characteristics and health coverage of HIV-positive members pre-ACA (2012) and post-ACA (2014). As in prior mixed-methods studies,²² we analyzed these two types of data separately and integrated findings for interpretation.

We chose to examine new enrollees in our quantitative analyses, anticipating that differences between the pre- and post-ACA period would be more visible among first-time enrollees than in the overall HIV-positive membership which significantly overlaps between the two periods (~75% common HIV-positive members in the two periods). Compared to the overall HIV membership, newly enrolled HIV-positive members would also likely have different service use patterns due to lack of familiarity with the health care system.

Building on preliminary analysis of HIV-positive KPNC members enrolled in early 2014,²⁷ the current study examined a full year of enrollees using medical, psychiatric and substance use disorder diagnostic data; service utilization data; as well as qualitative interview data integrated into quantitative data interpretation. We anticipated that KPNC would devote considerable effort to planning in areas such as membership changes, new enrollment methods, and care delivery strategies, and that KPNC leaders would describe these aspects of ACA implementation. We expected that HIV viral control for post-ACA enrollees would be at least as good as for pre-ACA enrollees in spite of growth in deductible plans.²⁷ We also hypothesized that the post-ACA new HIV-positive members might have more comorbid conditions and greater services utilization than the pre-ACA cohort due to pent-up demand for health care.

METHODS AND PARTICIPANTS

Qualitative Data Collection

Between October 2013 and February 2014, authors DDS, AA and CIC conducted semi-structured interviews with 15 KPNC clinical leaders (e.g., Physicians in Chief of large medical centers, HIV and behavioral health clinic directors) and 14 KPNC operational leaders (e.g., Associate Executive Director for Government Relations, HIV Benefit Coordinators). Our approach to sampling was purposeful, seeking to identify key informants who would be knowledgeable about ACA-related planning. We initially identified the sample based on organizational charts and our prior interactions with clinical and operational leaders within Kaiser Permanente. Kaiser Permanente's Associate Executive Director also provided names of operational leaders engaged in ACA implementation. Two interviewees were additionally suggested by original interviewees. Of our target sample (N=30), only one person declined to be interviewed, citing a lack of time. In interviewing

the final sample of 29 individuals, we assumed based on experience with previous qualitative projects that we would reach some level of saturation, which we did in several domains such as expectations about the number of new enrollees and their characteristics. We were not expecting to reach saturation in all domains because these interviews were in part based on interviewees' separate areas of expertise.

We developed an interview guide that addressed the main domains of interest for both sets of leaders, and included question follow-ups and probes that were specific for each type of leader when appropriate (see Appendix A). Questions focused on ACA-related planning relevant to HIV patients: perceptions of the ACA within the context of California and the U.S. health care environment, organizational changes/responses including new insurance products; anticipated membership changes; and expected impact of the ACA on HIV care. Interviews were conducted in-person for 25 and by phone for 4 participants. Interviews lasted approximately 45 minutes and were digitally recorded and transcribed. Study procedures were approved by the KPNC and University of California, San Francisco Institutional Review Boards.

Coding was developed from the content of the fielded questions, field notes, and transcript review.²⁸ Coding included broad themes, e.g., "overall expectations regarding new members" and subthemes such as "anticipated patient characteristics" (See Appendix B). After establishing the final set of codes, each investigator applied the codes to a sub-sample of four transcripts, and the investigators then discussed the results. After establishing consensus on definitions, the remaining coding was completed by AA, and reviewed and checked by the other investigators. All discrepancies (fewer than 15%) were resolved by consensus. Our analysis involved an iterative, inductive process that included the drafting of notes, codes, and themes and drew from both modified grounded theory,^{29,30} in order to generate insights into how ACA implementation might affect HIV-positive patient care.

Quantitative Data Collection

Participants were identified from the KPNC HIV registry, which includes an up-to-date list of all HIV patients, clinical HIV data and demographics. The registry is populated through monitoring electronic inpatient, outpatient, laboratory testing, and pharmacy databases for sentinel indicators of HIV-infection. HIV-positivity is then confirmed through review of medical records. The registry has >24,000 historical patients, with 8,389 active during 2014.

Linkage to other databases through unique KPNC medical record identifiers permits analysis of patient diagnoses and service utilization.^{12,31} HIV patients included in the quantitative analysis for the pre-ACA era were newly enrolled in KPNC between 1/1/2012–12/31/2012, and were confirmed HIV-positive prior to or up to 6 months post-enrollment. Newly enrolled was defined as having no KPNC coverage in the 6 months prior to index date in the HIV registry. We chose 2012 rather than 2013 to ensure that the pre-ACA comparison time period was not subject to any contamination due to early adoption of ACA-related changes. The post-ACA sample selection used the same criteria for the time period 1/1/2014 – 12/31/2014.

Demographic variables included *sex, age and race/ethnicity*. Comorbid health conditions were obtained from the EHR for the six months post-enrollment, and grouped into: a) *comorbid medical conditions* common among HIV-positive patients including arthritis/osteoporosis, asthma, cancers, cardiovascular diseases, COPD, diabetes, end-stage renal disease, hypertension, pneumonia, pulmonary disorders and viral hepatitis (B and C),^{9–11} b) *psychiatric disorders* consisting of major psychiatric diagnoses regulated by California parity law (bipolar, major depression, developmental disorders, eating disorders, obsessive compulsive and panic disorders, and schizophrenia)³² and c) *substance use disorder diagnoses* including alcohol, drug and tobacco. We examined tobacco use disorders assigned by providers using diagnostic criteria for dependence as well as any current smoking reported by patients. We examined these comorbidities as binary variables (any vs. none). We also examined differences in *HIV clinical parameters* in the pre-ACA and post-ACA periods, including HIV RNA levels, and CD4+ T-cell counts (using lab values closest to the index date of HIV diagnosis recorded in the EHR, which are likely the values most relevant to care and treatment planning for new enrollees) as well as whether participants met clinical AIDS-defining criteria (i.e., opportunistic infections or AIDS-defining cancers)³³ at any time up to six months post-enrollment.

Type of insurance coverage was stratified by Commercial, Medicaid, and other (e.g., other government subsidy programs), ascertained from the EHR. *Deductible plan* data included patient deductible limits classified into 3 levels (none, 1–\$999 and > \$1000). *Tiered metal plans* reflect those sold on the California insurance exchange: Bronze, Silver, Gold, and Platinum; members' cost-sharing (e.g., co-payments and deductibles) decreases with the rise from Bronze to Platinum.³⁴ We examined *health service utilization* in the six months post-enrollment for both cohorts, including any inpatient hospitalizations, emergency department (ED), primary care, psychiatry and substance use clinic visits.

Quantitative Analyses

We compared demographic characteristics using chi-squared tests of bivariate frequencies for categorical variables such as age group, gender, race/ethnicity, deductible levels and service use to examine differences between the two cohorts descriptively. We used logistic and multiple regression to compare HIV clinical parameters, and medical comorbidity rates between the pre- and post-ACA cohorts, controlling for age, gender and race/ethnicity. The coefficient of interest was the indicator variable for cohort (=0 if pre-ACA, =1 if post-ACA).

QUALITATIVE RESULTS

Uncertainty Regarding Membership Growth

The extent and type of membership growth were key questions associated with ACA implementation. At the conclusion of interview data collection in early 2014, considerable uncertainty remained regarding demographic and medical characteristics of the new HIV patient populations, and the future demand for services. Some respondents (especially operational leaders) anticipated that past enrollees might return through the exchanges and would be easy to integrate. However, clinical leaders in particular felt that more attention would be required for new members, including linkage with appropriate services. Clinical

respondents believed that this was especially true for those covered under expanded Medicaid provisions, who would be less likely to have had recent insurance coverage and who might have higher rates of untreated medical, psychiatric and substance use disorders.

Staff flexibility and care demand monitoring were the most commonly expressed approaches to this uncertainty. Leaders reported modest staffing increases in anticipation of the influx of new HIV-positive members, with the largest HIV clinic hiring just one new physician. Respondents indicated that in the event that an unanticipated number of new HIV patients enrolled in KPNC, additional clinicians would be hired if needed, but that the team-based model of HIV care allowed for some fluctuations in the number of patients served within each clinic. Thus, there was a sense that uncertain growth could be effectively managed over time.

Benefit Planning and Coordination with California State Agencies

Respondents consistently reported that benefits issues were especially relevant to ACA planning in HIV care. Much of KPNC's preparation involved planning for new ACA health insurance products and systems (e.g., developing benefit plans and coordinating with the California insurance Exchange). Respondents indicated that Kaiser Permanente is not a Ryan White program and does not receive funding directly. Clinics with large HIV-positive patient populations had benefit coordinators who assisted patients in obtaining state and federal health care benefits to which they were entitled (e.g., State of California AIDS Drug Assistance Program and Office of AIDS Health Insurance Premium Program that are in part supported by Ryan White funds).³⁵ In preparation for the ACA, they worked collaboratively with the California Office of AIDS to understand fully the implications of the ACA and other policy changes, to help ensure that patients with HIV/AIDS received appropriate coverage. Benefit coordinators reported that they helped direct current members to information about the range of Exchange plans so that patients could make informed decisions.

The ACA's Impact on Patient Care and Health Care Costs

Respondents had a range of opinions on how growth and benefit structures were related to the ACA's impact on HIV patient care. Some respondents (primarily operational leaders) reported an organizational focus on patient service and satisfaction, e.g., same-day appointments to meet the expectations of new enrollees and to remain competitive with other health systems offering coverage via the ACA. Clinical leaders did not expect any adverse overall impact on care because of KP's strong HIV treatment programs and flexible approach to staffing, but were aware of the potential impact of cost sharing on medications. Until recently, the impact of patient cost-sharing for visits or tests had been minimal, since amounts for co-pays were predictable and low (e.g., zero to \$20). However, even pre-ACA, many patients' out-of-pocket costs had risen with increased enrollment in high-deductible plans, and physicians have felt an increased obligation to communicate with patients about the potential impact of cost sharing on their health care. Interest in HIV pre-exposure prophylactic medication (PrEP)³⁶ reportedly was growing, bringing new HIV-negative patients to clinics specialized in caring primarily for HIV-positive patients.³⁷ There was concern that PrEP might be considered too expensive by at-risk HIV-negative patients with

high deductible plans. In summary, there was consensus that while growth could be managed and that care would remain strong, increasing costs to patients had the potential to affect future access to services.

QUANTITATIVE RESULTS

Demographic Characteristics

The overall prevalence of HIV infection among new KPNC enrollees was 0.16% (N=661) in the 2012 pre-ACA cohort and 0.17% (N=880) in the 2014 post-ACA cohort. Differences by gender, race/ethnicity and age group were not significant (Table 1).

Health Coverage

There was an increase in selection of deductible plans in the post-ACA cohort (28.0% overall, with 17.8% enrolled in deductible plans > \$1,000), compared with the pre-ACA cohort (12.7% overall, with 8.7% enrolled in deductible plans > \$1,000, $p < .01$). The post-ACA cohort also had a significantly greater proportion of members enrolled via Medicaid (6.6% vs. 1.7%, $p < .01$), (Table 1).

Among the post-ACA HIV-positive new enrollees, 15.9% (n=140) of were enrolled via the California insurance exchange. Among these new members, 52.8% had a deductible plan (20.0% with deductible levels \$1 – \$999 and 32.9% with deductible levels > \$1,000) compared with 22.4% among non-exchange enrollees (8.0% with deductible levels \$1 – \$999 and 14.4% with deductible levels > \$1,000), ($p < .01$). Exchange enrollment was as follows: Bronze (n= 13, 9.3%), Silver (n=71, 50.1%), Gold (n=8, 5.7%), Platinum (n=47, 33.6%), and Catastrophic (n=1, 0.7%) (not shown).

HIV Clinical Parameters

Based on the EHR lab results closest to the index date of HIV diagnosis recorded in the EHR following enrollment in KPNC, over 70% of both cohorts had HIV RNA levels below limits of quantification (BLQ) with post-ACA cohort marginally more likely to have levels BLQ (76.1% vs. 71.3%; $p = .072$). No significant differences were found in prevalence of clinical AIDS diagnosis or mean CD4+ cell counts between the pre-ACA and post-ACA cohorts (Table 1).

Comorbidities

We examined provider-assigned medical, psychiatric and substance use disorder comorbidities in the six months after enrollment (Table 2). Almost one-third of both cohorts had one of the following conditions: arthritis/osteoporosis, asthma, cancer, cardiovascular diseases, COPD, diabetes, end-stage renal disease, hypertension, pneumonia, pulmonary disorders and viral hepatitis (B or C). The post-ACA cohort had a marginally higher overall rate of having one or more of these disorders, (38.5% vs. 33.6%; $p = .09$). Most individual rates were not significantly different, although the prevalence of asthma (ICD-9 code 493) was higher in the post-ACA cohort (9.9% vs. 5.1%; $p < .01$).

The post-ACA cohort had a significantly higher rate of overall substance use disorders (18.9% vs. 15.0%; $p=.03$) including alcohol, tobacco use disorders and other drugs combined; tobacco use disorders were marginally higher (14.3% vs. 11.8%, $p=.10$) in the post-ACA cohort (Table 2). When only alcohol and/or drug diagnoses were combined for analysis (excluding tobacco), differences between the two cohorts remained non-significant. The post-ACA cohort had significantly higher rates of current smokers (28.8% vs. 22.7%, $p = .03$) than the pre-ACA cohort (not shown).

Services Use

We examined use of primary care, psychiatric and substance use treatment, ED and inpatient services in the 6 months following enrollment. The post-ACA cohort had a higher rate of any primary care utilization (91.8% vs. 88.0%; $p = .01$) than the pre-ACA cohort (not shown). Percentages of patients accessing psychiatric services in the post-ACA cohort was similar to the pre-ACA cohort (both 9.2%; $p=.98$); and use of substance use treatment services was also similar (3.1% vs. 2.3% respectively; $p=.34$). The post-ACA cohort had similar rates of ED as the pre-ACA cohort (13.4% vs. 15.4% respectively; $p=.26$), and inpatient service use (3.2% vs. 3.8%; $p=.52$).

DISCUSSION

This study integrated qualitative data from interviews with health system leaders from late 2013 to early 2014 with quantitative pre-post enrollee data to examine both anticipated and actual changes in HIV-positive patient enrollment over time. Consistent with the expectations of interviewees, we found growth in enrollment overall and significant increase in use of deductible plans, yet mixed findings regarding shifts in clinical characteristics and comorbidity. Findings suggest that overall the ACA has had a positive impact by increasing access to coverage, and viral control showed stability or improvement; yet findings were mixed regarding access to health care services.

Many large U.S. health plans have experienced growth in the post-ACA period examined in the current study.³⁸ Consistent with this trend, HIV-positive patient enrollment in KPNC post-ACA was higher than enrollment pre-ACA. The increase was expected because of increased post-ACA coverage for HIV-positive patients owing to implementation of the exchanges, removal of pre-existing condition exclusions, Medicaid expansion, and potentially broader HIV testing.³⁹ Growth also is consistent with the increased number of HIV-positive individuals in the population due to reduced mortality.

Selection of appropriate insurance coverage is important for patients with chronic health conditions such as HIV. One prior study conducted in 2013 indicated that most HIV-positive patients felt that they were not informed enough to make ACA-related decisions about their insurance.²³ This concern for patient decision making was also expressed by clinical leaders in our interviews. A substantial percentage of post-ACA HIV-positive patients were enrolled in plans with high deductibles, but a majority of those enrolled through the California exchange had plans with better coverage (e.g., silver-tiered or above). This suggests that KPNC and the exchange were able to communicate effectively with new enrollees about appropriate plan selection.

Analysis of health characteristics yielded a mixed picture in which HIV viral control was marginally better post-ACA, consistent with preliminary analysis of early 2014 enrollees.²⁷ This result could be attributable to the widely adopted policy of starting antiretroviral treatment for all newly diagnosed patients regardless of CD4 cell counts and/or to care previously received in Ryan White facilities. Yet the post-ACA cohort also had a higher proportion with asthma and substance use disorders (and hypertension and depression were substantial in both cohorts). Other studies also have found elevated rates of asthma,⁴⁰ hypertension,⁴¹ smoking, psychiatric and substance use disorders⁴² in HIV-positive patient samples, indicating that addressing these comorbidities remains essential in HIV care planning.

In our results, the post-ACA cohort was more likely to use primary care services within the first six months of enrollment than the pre-ACA cohort. Increased rates of outpatient service utilization and stable (or improved) HIV viral control suggest that post-ACA enrollees were able to initiate care at least as quickly as those in the pre-ACA cohort. These findings are consistent with interview findings indicating that engagement of HIV-positive new enrollees with appropriate services was a high priority for KPNC leaders, and suggest that the flexible approach of clinical leaders to care demand was effective.

For members with psychiatric and substance use diagnoses, comparison of diagnosis and service utilization rates suggests that some patients may not have accessed care. For example, in both the pre- and post-ACA cohorts, the rate of patients diagnosed with a drug or alcohol use disorder other than tobacco was more than twice the rate of specialty substance use disorder treatment initiation. It can be a challenge to engage HIV-positive patients (and others) with specialty care clinics due to variable patient motivation, stigma, and other factors.^{43,44} Examining services patterns over a longer time period will allow us to observe how deductible plans and Medicaid coverage impact access to these services and whether additional outreach efforts are needed to new enrollees.

Limitations

Quantitative analyses represent a descriptive examination of new enrollees with HIV in 2012 and 2014. Although timing for cohort selection corresponds to pre- and post-ACA enrollment, other factors could have also contributed to the results. We relied on provider-assigned diagnoses. Therefore some disorders would be underestimated if not clinically identified. Yet determining these diagnosis rates is useful for patient care planning. Information on prior non-KPNC insurance coverage was unavailable since this study relied on electronic health record data within the health system. The study was not designed to qualitatively examine patient experiences with ACA enrollment, which is an area for future research. Qualitative data on patients' experiences with regard to enrollment and service use, both pre- and post-ACA, would provide additional insight into the ways in which health care reform has affected patients with HIV. Additionally, our study would have been enriched by more interviews with front-line HIV clinicians such as nurse practitioners and behavioral health specialists. Results were confined to a single institution, but this study provides an important examination of how a large health system prepared for and initially implemented health care reform and identifies trends that may impact other health systems.

CONCLUSIONS

This mixed-methods study examined ACA implementation in a large health care system in California. KPNC leaders anticipated and planned for changes in new enrollment by HIV-positive patients, and actual post-ACA enrollment growth was substantial. Although HIV viral control showed evidence of improvement in the post-ACA cohort, the long-term effects of shifts in patterns of comorbidity, growth in Medicaid and increased selection of higher deductible plans remain unknown. HIV-positive patients have high rates of comorbid medical, psychiatric and substance use disorders that pose a challenge to providing effective care. Increased HIV-positive patient enrollment and changes in benefit plans may impact other health systems as well, and influence delivery of care for these complex patients as ACA implementation continues.

Acknowledgments

Source of funding: This study was supported by the National Institute on Drug Abuse (R21/R33 DA035645).

REFERENCES

1. [Accessed August 11, 2016] Patient Protection and Affordable Care Act, 42 U.S.C. § 18001. Public Law 111–148. 2010. Available at <https://www.gpo.gov/fdsys/pkg/PLAW-111publ148/html/PLAW-111publ148.htm>
2. Leibowitz AA, Lester R, Curtis PG, et al. Early evidence from California on transitions to a reformed health insurance system for persons living with HIV/AIDS. *J Acquir Immune Defic Syndr*. 2013; 64(Suppl 1):S62–S67. [PubMed: 24126449]
3. Alegria M, Lin J, Chen CN, Duan N, Cook B, Meng XL. The impact of insurance coverage in diminishing racial and ethnic disparities in behavioral health services. *Health Serv Res*. 2012; 47(3 Pt 2):1322–1344. [PubMed: 22568675]
4. Buck JA. The looming expansion and transformation of public substance abuse treatment under the Affordable Care Act. *Health Aff (Millwood)*. 2011; 30(8):1402–1410. [PubMed: 21821557]
5. Druss BG, Mauer BJ. Health care reform and care at the behavioral health–primary care interface. *Psychiatr Serv*. 2010; 61(11):1087–1092. [PubMed: 21041346]
6. Molfenter T, Capoccia VA, Boyle MG, Sherbeck CK. The readiness of addiction treatment agencies for health care reform. *Subst Abuse Treat Prev Policy*. 2012; 7(1):16. [PubMed: 22551101]
7. Martin EG, Schackman BR. What does U.S. health reform mean for HIV clinical care? *J Acquir Immune Defic Syndr*. 2012; 60(1):72–76. [PubMed: 22517415]
8. Sharts-Hopko NC. Health care reform: what does it mean for people living with HIV infection? *J Assoc Nurses AIDS Care*. 2012; 23(2):107–110. [PubMed: 21900024]
9. Goulet JL, Fultz SL, Rimland D, et al. Aging and infectious diseases: do patterns of comorbidity vary by HIV status, age, and HIV severity? *Clin Infect Dis*. 2007; 45(12):1593–1601. [PubMed: 18190322]
10. Park LS, Hernandez-Ramirez RU, Silverberg MJ, Crothers K, Dubrow R. Prevalence of non-HIV cancer risk factors in persons living with HIV/AIDS: a meta-analysis. *AIDS*. 2016; 30(2):273–291. [PubMed: 26691548]
11. Crothers K, Huang L, Goulet JL, et al. HIV infection and risk for incident pulmonary diseases in the combination antiretroviral therapy era. *Am J Respir Crit Care Med*. 2011; 183(3):388–395. [PubMed: 20851926]
12. DeLorenze GN, Satre DD, Quesenberry CP, Tsai AL, Weisner CM. Mortality after diagnosis of psychiatric disorders and co-occurring substance use disorders among HIV-infected patients. *AIDS Patient Care STDS*. 2010; 24(11):705–712. [PubMed: 20969465]

13. U.S. Department of Health & Human Services. [Accessed March 22, 2016] The Affordable Care Act and HIV/AIDS. *AIDS.gov*. 2013. Available at <https://www.aids.gov/federal-resources/policies/health-care-reform/>
14. Brennan C. ACA and HIV: opportunities and challenges. *HIV Clin*. 2014; 26(2):1, 4–6.
15. Benjamin GC. Landmark health reform law ruling a major public health victory, provisions still require support. Statement from Georges C. Benjamin, MD, executive director of APHA. American Public Health Association. 2012 Jun 28. [Accessed January 18, 2016] Available at <https://www.apha.org/news-and-media/news-releases/apha-news-releases/landmark-health-reform-law-ruling-a-major-public-health-victory-provisions-still-require-support>.
16. Aberg JA. Supreme Court decision on Affordable Care Act offers great promise in fight against AIDS. *HIV Medical Association*. 2012 Jun 28. [Accessed January 18, 2016] Available at http://www.hivma.org/Supreme_Court_Decision/.
17. *HealthCare.gov*. [Accessed April 5, 2016] Essential health benefits. Available at <https://www.healthcare.gov/glossary/essential-health-benefits/>
18. Shortell SM, McCurdy RK. Integrated health systems. *Stud Health Technol Inform*. 2010; 153:369–382. [PubMed: 20543254]
19. Yong, PL.; Saunders, RS.; Olsen, LA., editors. Institute of Medicine Roundtable on Evidence-Based Medicine. *The Healthcare Imperative: Lowering Costs and Improving Outcomes: Workshop Series Summary*. Washington, DC: National Academies Press; 2010.
20. Horberg MA, Hurley LB, Silverberg MJ, Kinsman CJ, Quesenberry CP. Effect of clinical pharmacists on utilization of and clinical response to antiretroviral therapy. *J Acquir Immune Defic Syndr*. 2007; 44(5):531–539. [PubMed: 17224844]
21. Horberg MA, Hurley LB, Towner WJ, et al. Determination of optimized multidisciplinary care team for maximal antiretroviral therapy adherence. *J Acquir Immune Defic Syndr*. 2012; 60(2): 183–190. [PubMed: 22293551]
22. Kaiser Permanente. Kaiser Permanente asks you to take the HIV Challenge. [Accessed March 22, 2016] Available at http://info.kaiserpermanente.org/communitybenefit/html/our_work/global/hivchallenge/index.html?kp_shortcut_referrer=kp.org/hivchallenge.
23. Rozin I, Sayles H, Anderson MJ, et al. HIV-infected patient knowledge, attitudes, and beliefs regarding the Affordable Care Act. *AIDS Res Hum Retroviruses*. 2015; 31(6):581–586. [PubMed: 25682714]
24. Chen J, Vargas-Bustamante A, Mortensen K, Ortega AN. Racial and ethnic disparities in health care access and utilization under the Affordable Care Act. *Med Care*. 2016; 54(2):140–146. [PubMed: 26595227]
25. Klassen AC, Creswell J, Plano Clark VL, Smith KC, Meissner HI. Best practices in mixed methods for quality of life research. *Qual Life Res*. 2012; 21(3):377–380. [PubMed: 22311251]
26. Zhang W, Creswell J. The use of "mixing" procedure of mixed methods in health services research. *Med Care*. 2013; 51(8):e51–e57. [PubMed: 23860333]
27. Satre DD, Parthasarathy S, Altschuler A, Silverberg MJ, Storholm E, Campbell CI. Demographic, insurance, and health characteristics of newly enrolled HIV Patients after implementation of the Affordable Care Act in California. *Am J Public Health*. 2016; 106(7):1211–1213. [PubMed: 27077361]
28. Miles, MG.; Huberman, AM.; Saldana, J. *Qualitative Data Analysis. A Methods Sourcebook*. 3rd. Los Angeles, CA: SAGE Publications; 2014.
29. Thomas DR. A general inductive approach for analyzing qualitative evaluation data. *Am J Eval*. 2006; 27(2):237–246.
30. Schreier, M. Qualitative content analysis. In: Flick, U., editor. *The SAGE Handbook of Qualitative Data Analysis*. Thousand Oaks, CA: Sage; 2014. p. 170-183.
31. Satre DD, DeLorenze GN, Quesenberry CP Jr, Tsai AL, Weisner C. Factors associated with treatment initiation for psychiatric and substance use disorders among persons with HIV. *Psychiatr Serv*. 2013; 64(8):745–753. [PubMed: 23584606]
32. California Department of Managed Health Care. [Accessed January 18, 2016] Mental health care. 2016. Available at <http://www.dmhc.ca.gov/HealthCareinCalifornia/GettheBestCare/MentalHealthCare.aspx#paritylaw>

33. Schneider E, Whitmore S, Glynn KM, et al. Revised surveillance case definitions for HIV infection among adults, adolescents, and children aged <18 months and for HIV infection and AIDS among children aged 18 months to <13 years--United States, 2008. *MMWR Recomm Rep*. 2008; 57(RR-10):1–12.
34. Health insurance benefits. Covered California. 2014 [Accessed January 18, 2016] Available at <http://www.coveredca.com/shopandcompare/2015/#benefits>.
35. Cahill SR, Mayer KH, Boswell SL. The Ryan White HIV/AIDS Program in the age of health care reform. *Am J Public Health*. 2015; 105(6):1078–1085. [PubMed: 25880940]
36. Grant RM, Lama JR, Anderson PL, et al. Preexposure chemoprophylaxis for HIV prevention in men who have sex with men. *N Engl J Med*. 2010; 363(27):2587–2599. [PubMed: 21091279]
37. Volk JE, Marcus JL, Phengrasamy T, et al. No new HIV infections with increasing use of HIV preexposure prophylaxis in a clinical practice setting. *Clin Infect Dis*. 2015; 61(10):1601–1603. [PubMed: 26334052]
38. Mark Farrah Associates. Membership for leading health plans up 5.6 million from 3Q13 to 3Q14. *Healthcare Business Strategy*. 2015 Feb 19. [Accessed April 5, 2016] Available at <http://www.markfarrah.com/healthcare-business-strategy-print/Membership-for-Leading-Health-Plans-Up-5.6-Million-from-3Q13-to-3Q14.aspx>.
39. Wagner Z, Wu Y, Sood N. The Affordable Care Act may increase the number of people getting tested for HIV by nearly 500,000 by 2017. *Health Aff (Millwood)*. 2014; 33(3):378–385. [PubMed: 24590934]
40. Drummond MB, Kirk GD. HIV-associated obstructive lung diseases: insights and implications for the clinician. *Lancet Respir Med*. 2014; 2(7):583–592. [PubMed: 24831854]
41. Nduka CU, Stranges S, Sarki AM, Kimani PK, Uthman OA. Evidence of increased blood pressure and hypertension risk among people living with HIV on antiretroviral therapy: a systematic review with meta-analysis. *J Hum Hypertens*. 2015
42. O'Cleirigh C, Magidson JF, Skeer MR, Mayer KH, Safren SA. Prevalence of psychiatric and substance abuse symptomatology among HIV-infected gay and bisexual men in HIV primary care. *Psychosomatics*. 2015; 56(5):470–478. [PubMed: 25656425]
43. Soller M, Kharrazi N, Prentiss D, et al. Utilization of psychiatric services among low-income HIV-infected patients with psychiatric comorbidity. *AIDS Care*. 2011; 23(11):1351–1359. [PubMed: 21767117]
44. Weaver MR, Conover CJ, Proescholdbell RJ, Arno PS, Ang A, Ettner SL. Utilization of mental health and substance abuse care for people living with HIV/AIDS, chronic mental illness, and substance abuse disorders. *J Acquir Immune Defic Syndr*. 2008; 47(4):449–458. [PubMed: 18197121]

Appendix A

Affordable Care Act (ACA) Implementation Study: Qualitative Interview Guide

To get us started, I'd like to know a little about your professional background

- 1 I know that your title is [xxx], but you can tell me about what that involves?
 - About how long have you been working at Kaiser Permanente (KP) or Kaiser Permanente Northern California (KPNC)?
- 2 How involved have you been with planning for ACA implementation?
- 3 Overall, how would you describe the process so far?

- (Depending on whether Health Plan or Clinical leader) To what extent is planning program-wide versus region-specific (or region-wide versus site-specific)?
 - Are you seeing any impact yet? For example, does it seem that any departments (or sites) are more impacted than others, including HIV care settings?

Now I'd like to ask you some more specific questions about planning for ACA implementation

- 4 To what extent do you anticipate changes in the membership?
 - For example, growth in membership size or changes in demographics, socioeconomic composition, previously uninsured members.
 - Can you tell me to what extent ACA planning has taken account of anticipated membership increases regarding increases of members with specific diseases?
 - For example, people with HIV?
- 5 Can you comment on the extent to which the KP Health Plan and Medical Group worked together for ACA implementation overall, and with respect to HIV services?
- 6 Can you comment on the extent to which KP is addressing HIV within the context of health reform implementation?
 - Do you anticipate that patients with HIV will be over-represented among the previously uninsured?
- 7 In terms of care delivery and the ACA, is there an overall plan for service expansion, hiring more clinicians, or increasing access?
 - Is there an overall plan for all HIV clinics?
 - How do you expect changes in Medicaid or Medicare reimbursement rates to have an impact?
- 8 How are you communicating to your employees and patients about ACA-related changes?
- 9 (*Health Plan Leaders only*) What changes are anticipated regarding the types of benefit plan products and coverage, and in cost sharing designed for these patients (i.e., those with HIV)?
 - What new products may be rolled out?
 - Where do you anticipate there will most growth?

- To what extent do you anticipate that members may switch between product lines (i.e. “churning” between Medicaid/ Commercial/Medicare)?
- 10** In terms of the new ACA population with HIV, to what extent do you anticipate increases or decreases in the membership?
- Do you anticipate that members with HIV or SUDs will be over-represented among new members enrolling under the ACA?
 - If yes, what kind of planning has been taking place regarding bringing those patients into KP, regarding orientation, getting them situated with a provider?
- 11** *(Clinical Leaders only)*: What sort of impact, if any, do you anticipate the ACA will have for the diagnosis and treatment of patients with HIV, both for new and existing members?
- 12** Can you describe for me any mechanisms you are aware of for how KPNC’s implementation of ACA-related changes will be tracked or monitored over time?
- 13** What do you anticipate as barriers/facilitators to implementation of the ACA at KPNC? And specifically for HIV issues?
- *(Probe as appropriate for interviewee)*: Government relations/ rules/legislation, financial, clear goals for implementation, common understanding among actors?
- 14** Is there anything we haven’t talked about that would give me a better understanding of how Kaiser Permanente is implementing ACA, especially with regard to the HIV and SUD populations?

Appendix B

ACA Implementation in a California Health Care System – Codebook for Key Informant Interviews

Domain	Code Name	Code Definition
Health care environment	Ongoing changes	Health care is increasingly costly; ACA is part of evolutionary change
	KP as California benchmark plan	ACA trying to move market to KP-like system
	Covered California as KP purchaser	Ways in which Covered California behaves as other larger purchaser
	Mandates for new types of care	Mandates to pay for care beyond what has traditionally been medical care, e.g., autism, eating disorders, transgender surgery
	Other initiatives	Other state/county/federal initiatives, contracting that affects KP planning, delivery of care

Domain	Code Name	Code Definition
Healthcare financing concerns	Concern finance	Concern about revenue reduction if ACA disproportionately attracts seriously ill and/or Medicaid patients, cost burden to health systems
	Community health clinics	Concern about ability to survive with ACA “unintended consequences” such as influx of patients and staff to KP, issues related to shifts from county programs
	Rate setting challenges	Issues around setting rates in relation to costs of care
Overall KP preparation for ACA	Early history	How KP leaders worked with state and federal officials pre-ACA on health reform
	Health plan preparation – national program offices	Ways in which KP national offices prepared for ACA implementation
	Medical group preparation	Ways in which KP Northern California medical group prepared for ACA
	Collaboration between health plan and medical group – positive	Ways in which KP health plan and medical group collaborated on preparation in positive ways
	Collaboration health plan and medical group – negative/neutral	Ways in which health plan and medical group collaborated on preparation in neutral to negative ways
	Staff training and preparation	Ways in which HIV and other benefits coordinators were preparing/doing own research regarding ACA implementation
	Workflow/scope of practice	ACA may affect changes in workflows, scope of practice
	Patient experience	Need to improve service/perception of service to retain members
	ACA general response	Respondents’ general orientation to KP’s implementation of ACA
	HIV care preparation	KP HIV specific preparation for ACA (logistics/details)
Overall expectations regarding new members	Membership growth	Membership growth in KPNC/numbers of new patients
	Patient characteristics – general	Anticipated patient characteristics (general population)
	Patient characteristics – HIV	Anticipated patient characteristics – HIV specific
	Uncertainty - characteristics	Demographics, medical conditions, health care needs
	Switching	Assumption that many “new” ACA patients will be KP patients switching KP coverage plans via Covered California
	KP return	Return of previous KP patients
ACA policies/ coverage that may affect patient care	ACA cost – degree change	Problem of increased costs for patients over past 10 year or so; with ACA difference degree, rather than kind
	Tiered pricing	Tiered pricing, anticipated problems with utilization for people at lower level plans; concerned this might affect HIV patients, patients in general
	Checking coverage	Issues related to physicians not having history/interest regarding issues related to checking patients’ coverage of recommended services
	Patients unaware	Patients unaware of how changes in coverage will affect them
	ACA long-term issues	Emphasis on care delivery/cost cutting aspects of ACA can negatively impact long-term care delivery issues

Domain	Code Name	Code Definition
	Churning between coverage source	Potential impact of churning/going between Exchange and Medi-Cal
	Enrollment issues	Financial, administrative issues specific to signing up people for KP with HIV for ACA coverage
	Onboarding	Issues/changes in orienting patients to KP system, ACA onboarding requirements
	Care exemplar	KP HIV care as care model/exemplar
	Access	Degree to which ACA affecting patients' access to outpatient care
	Behavioral health care	Linking HIV and psychiatry, substance use disorder treatment
	HIV specific	Issues related to HIV care
	PrEP	Pre-exposure prophylaxis (PrEP) services growing/coverage issues; ways in which stretching HIV clinical staff resources
Workforce issues	Staff learning	How clinical staff learned from leadership about clinical impact of ACA
	Workforce expansion	Hiring level, types of new providers
	More with less	Doing more with less/i.e., more patients, fewer resources/operational efficiencies
	ACA metrics KP	How ACA metrics may affect KP internally
Other	Other	Other comments that aren't specific to ACA or HIV, but may be of interest

Notes: ACA= Affordable Care Act, KP= Kaiser Permanente.

TABLE 1

Demographic Characteristics, Insurance Coverage and HIV Clinical Markers in Pre-ACA and Post-ACA Cohorts of HIV-Positive New Enrollees

	Pre-ACA		Post-ACA		p-value
	(N=661)	%	(N=880)	%	
Gender					
Female	62	9.4%	65	7.4%	0.16
Male	599	90.6%	815	92.6%	
Race/Ethnicity					
White	353	53.4%	455	51.7%	0.15
Black	116	17.5%	146	16.6%	
Asian	41	6.2%	70	8.0%	
American Indian/Alaskan Native	9	1.4%	3	0.3%	
Native Hawaiian/Pacific Islander	3	0.5%	9	1.0%	
Hispanics	110	16.6%	149	16.9%	
Unknown	29	4.4%	48	5.5%	
Age*					
< 26	36	5.4%	45	5.1%	0.41
26–35	138	20.9%	192	21.8%	
36–45	196	29.7%	233	26.5%	
46–55	218	33.0%	288	32.7%	
56–64	73	11.0%	122	13.9%	
Deductible Level** ^a					
None	525	87.4%	541	71.9%	<.01
\$1 – \$999	24	4.0%	77	10.2%	
=> \$1000	52	8.7%	134	17.8%	
Payer Type** ^a					
Commercial	578	96.2%	698	92.8%	<.01
Medicaid	10	1.7%	50	6.6%	
Other	13	2.2%	4	0.5%	
HIV Clinical Markers					
Clinical AIDS	256	38.7%	330	37.5%	0.35

	Pre-ACA		Post-ACA		p-value
	(N=661)	%	(N=880)	%	
HIV RNA levels BLQ ^b	458	71.3%	644	76.1%	0.07
Mean CD4+ T-Cell Count	Mean	Std. Err	Mean	Std. Err	
	605.46	(25.4)	629.7	(25.1)	0.13

Notes: Pre- and post-ACA cohorts included HIV-positive patients newly enrolled from 1/1/2012 to 12/31/2012, and from 1/1/2014 to 12/31/2014, respectively.

^a Does not add up to full sample size due to missing values.

^b BLQ = Below Limits of Quantification.

Comparisons of HIV clinical markers were adjusted for age, gender and race.

** p < .01.

Prevalence of Medical, Psychiatric and Substance Use Disorders in Pre- and Post-ACA Cohorts of Newly Enrolled HIV-Positive Patients

TABLE 2

	Pre-ACA % (N=661)	Post-ACA % (N=880)	Adjusted Odds Ratio	95% Confidence Interval	P-value
Any Major Non-HIV Medical Diagnoses[†]	33.6%	38.5%	1.22	(0.969, 1.526)	0.09
Arthritis/Osteoporosis	6.8%	7.7%	1.24	(0.827, 1.863)	0.30
Asthma ^{**}	5.1%	9.9%	1.95	(1.284, 2.946)	<.01
Cancer	2.3%	1.9%	0.75	(0.367, 1.546)	0.44
Cardiovascular Diseases	1.2%	1.8%	1.22	(0.503, 2.944)	0.66
COPD	2.0%	2.5%	1.18	(0.579, 2.388)	0.65
Diabetes	4.1%	4.9%	1.04	(0.624, 1.736)	0.88
End-Stage Renal Disease	0.2%	0.3%	2.22	(0.211, 23.318)	0.51
Hypertension	16.0%	15.8%	0.90	(0.666, 1.210)	0.48
Pneumonia	1.5%	1.9%	1.22	(0.547, 2.706)	0.63
Pulmonary Disorders	1.1%	1.1%	0.85	(0.307, 2.330)	0.75
Viral Hepatitis (B or C)	6.8%	8.4%	1.20	(0.808, 1.779)	0.37
Any Major Psychiatric Diagnoses	20.0%	22.0%	1.16	(0.895, 1.497)	0.27
Bipolar Spectrum Disorders	3.5%	4.5%	1.44	(0.837, 2.486)	0.19
Depressive Disorders	17.7%	18.4%	1.05	(0.802, 1.377)	0.72
Developmental Disorders	0.2%	0.0%	--	--	0.95
Eating Disorders	0.5%	0.0%	--	--	0.85
Obsessive/Compulsive	0.0%	0.3%	--	--	0.81
Panic Disorders [†]	0.3%	1.3%	4.13	(0.907, 18.819)	0.07
Schizophrenia	0.8%	0.7%	0.97	(0.291, 3.215)	0.96
Any Substance Use Diagnoses[*]	15.0%	18.9%	1.36	(1.032, 1.800)	0.03
Alcohol	2.0%	2.3%	1.17	(0.577, 2.386)	0.66
Drugs	5.0%	6.3%	1.30	(0.832, 2.039)	0.25
Tobacco [†]	11.8%	14.3%	1.30	(0.952, 1.766)	0.10

Notes: Pre- and post-ACA cohorts included HIV-positive patients newly enrolled from 1/1/2012 to 12/31/2012 and from 1/1/2014 to 12/31/2014, respectively. Analyses used conditional logistic regression to compare prevalence rates between the two cohorts, controlling for age, gender, and race/ethnicity. Diagnoses were assigned by providers within six months of patient enrollment.

** p < .01,

* p < .05,

† < .10.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript