June 2015

HEPATITIS C SPECIALTY DRUGS: PREVALENCE, TREATMENT AND COST PROJECTIONS FOR STATE OF CALIFORNIA

When Gilead priced Sovaldi – a highly effective treatment that could cure Hepatitis C with minimal side effects – at $84,000 in December 2013, it quickly became a tipping point for the American public's tolerance for sky high drug prices. A year later, it launched Harvoni at more than $94,000. Employers, health plans, government agencies and even physicians have sounded the alarm about the impact of an ever-higher ceiling for pharmaceuticals on the affordability of health care.

In California, Governor Brown this year included $228 million in supplemental funding for Hep C treatments across state programs – in addition to each department's own budgeted amount for Hepatitis C. At the same time, the Secretary of the California Health and Human Services Agency (CHHS) has convened internal and external workgroups to more thoroughly address the issue of soaring drug costs.

The Legislature has also acknowledged the strain of high-priced drugs with hearings on health care cost drivers and the introduction of AB 463 (David Chiu-D, San Francisco), which would require pharmaceutical manufacturers to submit supporting data on drug pricing for any treatments that cost more than $10,000 per year.

Health plans are at the front line in grappling with these high-cost drugs. Our member plans quickly and acutely felt the impact of Gilead's new breakthrough treatment – particularly those plans serving the 10 million Californians in Medi-Cal managed care. The Department of Health Care Services responded by offering additional support to cover the costs of these unexpectedly high-priced drugs.

But the state's costs extend beyond Medi-Cal. CalPERS offers health coverage to current and retired state and local government employees, the California Department of Corrections & Rehabilitation provides health care to inmates at state prisons, and state hospitals and the AIDS Drug Assistance Program (ADAP) offer necessary Hepatitis C treatments to their constituencies.

Given the California Association of Health Plans' exclusive focus on issues in our home state, we felt the ongoing dialog about high-priced drugs should include an examination of the impact of these drugs on state programs – and the taxpayers who fund them. Accordingly, we commissioned the following report, which considers the populations served through state programs, the prevalence of Hepatitis C within each program, a range of prices state programs would be asked to pay for treatments with various possible discounts, a range of how many people with Hepatitis C within state programs could receive treatment in a calendar year, and the resulting cost estimates across state programs to cover these expensive drugs.

This report, offering the first look at the impact of Hepatitis C treatments across the state, is intended to help with the work of the CHHS aforementioned workgroups, of which CAHP is a member. It also serves as a cautionary tale for how new breakthrough therapies currently in development could compound the impact high-priced drugs are having on state budgets. A recent Avalere Health report estimated that 10 new breakthrough therapies could cost the federal government up to $50 billion over the next decade.

New and innovative drug therapies offer much promise, but sky-high prices could bust the budgets of federal, state and local governments. We look forward to working with public policy leaders to ensure we have greater transparency around the pricing of these drugs and to identify additional strategies that will sustain the long-term affordability of our health care system.

Hepatitis C Specialty Drugs

Prevalence, Treatment and Cost Projections For State of California

Provided for CAHP

by

The Taylor Feldman Group

June 2015

SUMMARY

Introduction:

- According to the CDC, an estimated 3.2 million persons, or roughly 1% of population in the United States, have chronic Hepatitis C. Most people do not know they are infected because they don't look or feel sick. Hepatitis C virus infection (HCV) can last a lifetime and lead to serious liver problems, including cirrhosis (scarring of the liver) or liver cancer.
- Recently, specialty drugs have emerged that can cure Hepatitis C and spare people the serious health consequences of the condition. These drugs have also made headlines due to their prices – ranging from $65,000 to $189,000 or more for a treatment regimen of 8 to 24+ weeks.
- Federal, State, commercial and other health coverage payers are grappling with the impact of these potential new costs. The Governor has earmarked $228 million in supplemental funding for hepatitis C treatments within State-funded programs in the proposed FY15-16 budget.
- To help inform, CAHP commissioned this fiscal analysis of the projected costs for the new HCV specialty drug treatments over the next 12 months.

Methodology:

- This cost analysis utilizes a linear model based on population counts, HCV prevalence, HCV treatment rates (% of HCV population treated), and specialty drug treatment regimen pricing based on latest information, estimations, and input from a panel health plan pharmacy representatives. The resulting estimates are provided with a range of treatment rates and pricing for all Californians and for select state-funded programs, including Medi-Cal, prisons, state hospitals, CalPERS, and the AIDS Drug Assistance Program.
- Note: The modeling does not include estimates of medical costs avoided through reducing or curing HCV and does not adjust for current treatments costs replaced by specialty drugs.

Results:

- Assuming that 10% of the California HCV population is treated with specialty drugs at the average full treatment price, **the projected total specialty drug expenditure would be $4.77 billion in the next year including $2.05 billion for the State-funded population.**
- Treatment rates and drug discounts influence the estimates. With a 10% treatment rate and a 30% discount, **the projected total drug cost would be $3.34 billion for all Californians treated including $1.43 billion for the State-funded population.**

HCV Specialty Drug Treatment Cost Modeling:

A. Population

- Overall State
- State-Funded Populations of Interest

B. Prevalence

- % of population with HCV condition

C. Treatment Regimen Cost

- Price based on discounts and mix of drugs regimens

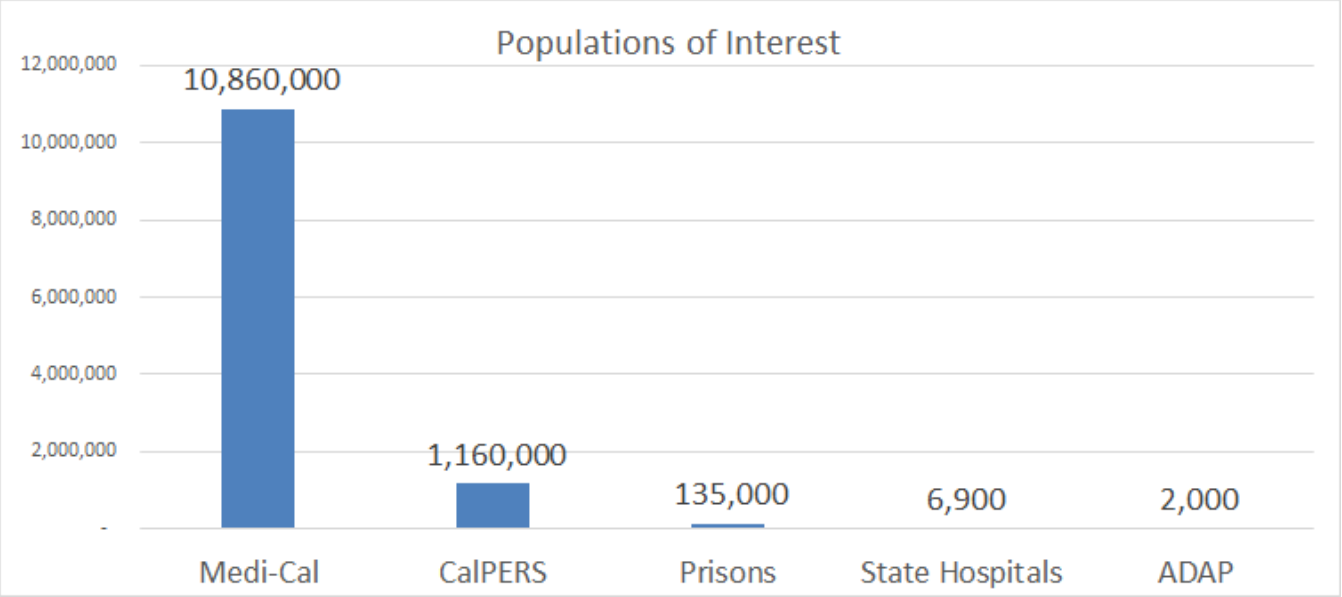
D. Treatment Rate

- % of HCV population treated

ABCD Multiplied to estimate TOTAL COST

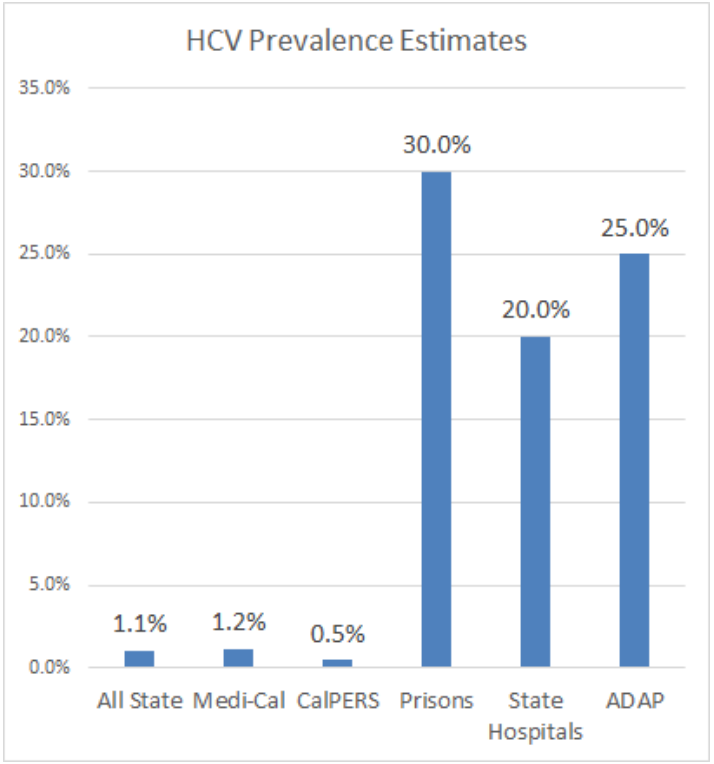
A. Populations

- The populations used as a starting point for the cost estimates are:
  - Total California (38.8 million)
  - Selected State-Funded Populations as shown below. These populations are highlighted for estimation to help inform near-term State budgeting. CalPERS count reflect the non-Medicare population. ADAP is the AIDS Drug Assistance Program. Note that the Medi-Cal population excludes 1.1M Dual Eligibles who are primarily funded by Medicare with lower costs in Medi-Cal.
- Sources for population counts include 15/16 Governor's budget, US Census, CalPERS and California Health Benefits Review Program (CHBRP).



B. HCV Prevalence

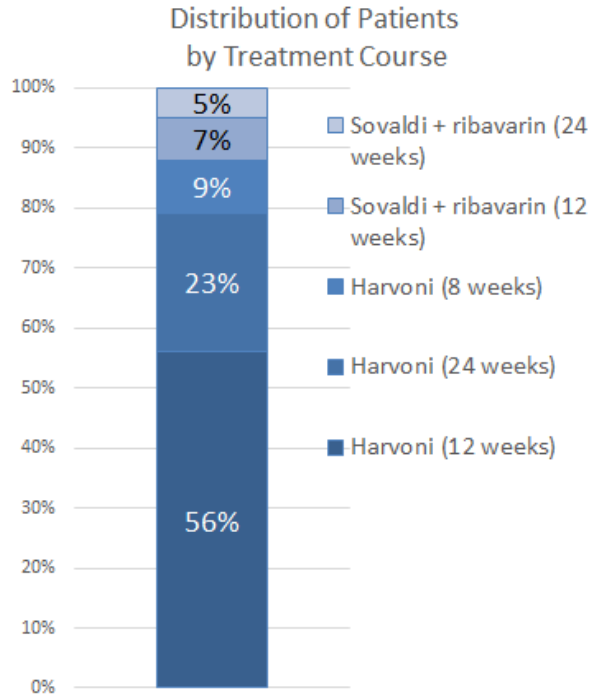
- CDC reports that an estimated 3.2 million persons in the United States have HCV, a 1.0% prevalence (portion of population with condition).
- California-specific HCV prevalence rates are not readily available for all populations. The cost model incorporates the available information coupled with a Milliman study that presents prevalence rates by categories suitable to this study's populations.
- The resulting prevalence rates are shown to the right. Medi-Cal prevalence is a composite of Milliman's reported Medicaid and Uninsured prevalence. The table below applies the estimated HCV prevalences to the population counts to arrive at estimated HCV populations.



Population Name	Population	Prevalence	HCV Population
All State	38,850,000	1.1%	408,000
Medi-Cal	10,860,000	1.2%	127,000
CalPERS	1,160,000	0.5%	5,000
Prisons	135,000	30.0%	41,000
State Hospitals	6,900	20.0%	1,400
ADAP	2,000	25.0%	500
Populations of Interest	12,160,000	1.4%	174,900
All Other	26,690,000	0.9%	233,100

C. HCV Specialty Drug Treatment Costs

- A variety of HCV specialty drug combinations are available, with Harvoni and Sovaldi currently holding a 90%+ market share. The market is dynamic and in flux – another treatment is Viekira Pak with similar pricing and regimens. The usage of specific drugs and treatment duration depends on patient-specific condition (HCV genotype), co-morbidities and previous treatment history.
- For the cost modeling, we calculated an average treatment course price across treatment types. We first determined a distribution of HCV drug regimens (figure to the right) based on input from health plan pharmacy representatives. We then used the wholesale acquisition cost (WAC) to derive a weighted average WAC price of $117,000 (see table to the right).
- Government, commercial and other payers are negotiating discounts and rebates for HCV specialty drugs. Some payers are reportedly receiving substantial discounts – 23% for Medicaid, 41% for VA. The total cost projections consider a range of possible pricing from the full price to a 50% discount for treatment regimens.

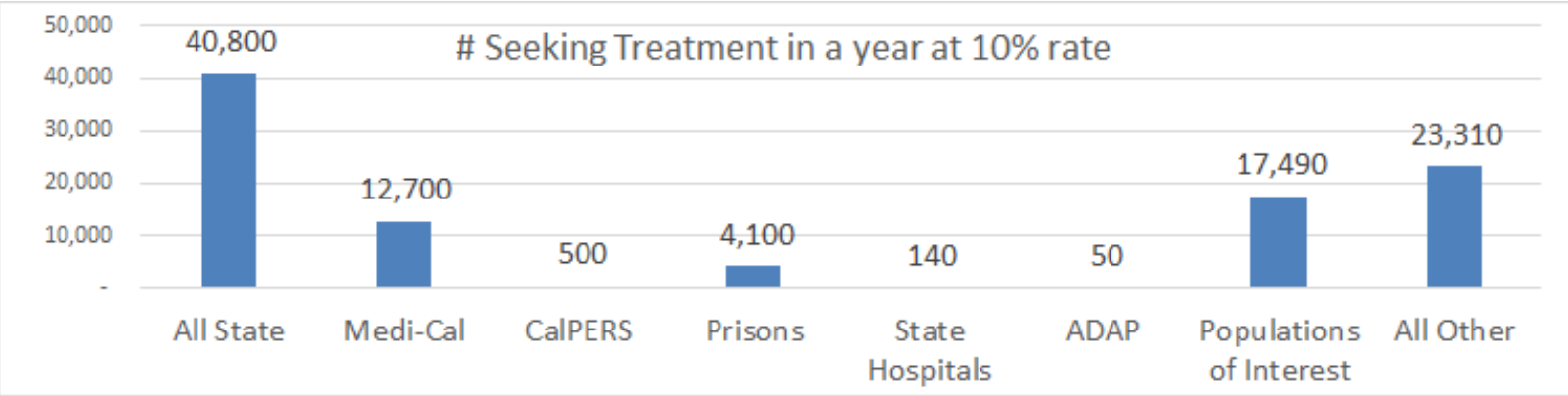


Treatment Regimen	% of Patients Receiving	WAC Price per Treatment Course
Harvoni (12 weeks)	56%	$94,500
Harvoni (24 weeks)	23%	$189,000
Harvoni (8 weeks)	9%	$63,000
Sovaldi + ribavarin (12 weeks)	7%	$85,300
Sovaldi + ribavarin (24 weeks)	5%	$170,600
Weighted Pricing for All Regimens	100%	$117,000

D. How many seek treatment?

- Not all of the HCV population will seek specialty drug treatment in the next 12 months for various reasons, including:
  - As many as half are asymptomatic and do not realize they have the disease
  - Some know they are infected but are not currently being treated
  - Some are being treated using other treatment regimens
  - Some are not yet at the stage of disease that warrants treatment with these drugs
  - Some are seeing physicians who are not aware of how these treatments work

- Using input from health plan pharmacists coupled with reported specialty drug sales volume, we estimated a baseline treatment rate of 10% of the HCV population in the next year.
- In addition to the baseline treatment rate of 10%, the cost modeling uses a range of treatment rates from 5% to 25% for the first year. Over additional years, the cumulative treatment rate would rise, perhaps as high as 40%.



One-Year Treatment Cost Estimates

- The resulting one-year specialty drug costs are shown below:
  - $4.77B for All California including $2.05B for the populations of interest, assuming full price for the specialty drug treatments.
  - Discounts on the drugs directly reduce the cost estimates – for example, a 30% discount on the treatment courses reduces the overall estimates by 30% to $3.34B for All California and $1.43B for the state-funded populations of interest.
- The following pages show the one-year estimates by ranges of treatment rates and drug discounts for the various populations.

		All State	Populations of Interest
Total Population		38,850,000	12,160,000
Prevalence		1.05%	1.44%
Estimated HCV Population		408,000	174,900
% Seeking Treatment		10.0%	10.0%
Treatment Course Cost			
@ Full Price	$117,000	$4,774,000,000	$2,046,000,000
with Discount	30.0%	$3,342,000,000	$1,432,000,000

One-Year Treatment Cost Estimates – All State

- The shaded totals represent a range of estimates from $1.41B to $5.51B centered on $3.34B with a 10% treatment rate and a 30% average drug discount. These estimates account for total Medi-Cal taxpayer funding (federal and state) excluding dual eligibles.

Population Name	All State
Population	38,850,000
HCV Prevalence	1.05%
HCV Population	408,000

			One-Year Treatment Cost Estimates for Population - All State				
		Treatment	% HCV Population Seeking Specialty Drug Treatment				
		Course Cost	5%	10%	15%	20%	25%
Average WAC		$117,000	$2,387,000,000	$4,774,000,000	$7,160,000,000	$9,547,000,000	$11,934,000,000
Avg Realized Discount off WAC	10.0%	$105,300	$2,148,000,000	$4,296,000,000	$6,444,000,000	$8,592,000,000	$10,741,000,000
	23.1%	$89,973	$1,835,000,000	$3,671,000,000	$5,506,000,000	$7,342,000,000	$9,177,000,000
	30.0%	$81,900	$1,671,000,000	$3,342,000,000	$5,012,000,000	$6,683,000,000	$8,354,000,000
	41.0%	$69,030	$1,408,000,000	$2,816,000,000	$4,225,000,000	$5,633,000,000	$7,041,000,000
	50.0%	$58,500	$1,193,000,000	$2,387,000,000	$3,580,000,000	$4,774,000,000	$5,967,000,000

One-Year Treatment Cost Estimates State-Funded Populations of Interest

- Estimate for Populations where State is principal payer (Medi-Cal, Prisons, CalPERS, State Hospitals, and ADAP (AIDS Drug Assistance Program).
- The shaded totals represent a range of estimates from $604M to $2.36B centered on $1.43B with a 10% treatment rate and a 30% average drug discount.

Sub Population Name	Populations of Interest
Population	12,160,000
HCV Prevalence	1.44%
HCV Population	174,900

			One-Year Treatment Cost Estimates for Population - Populations of Interest				
		Treatment Course Cost	% HCV Population Seeking Specialty Drug Treatment				
			5%	10%	15%	20%	25%
Average WAC		$117,000	$1,023,000,000	$2,046,000,000	$3,069,000,000	$4,093,000,000	$5,116,000,000
Avg Realized Discount off WAC	10.0%	$105,300	$921,000,000	$1,842,000,000	$2,763,000,000	$3,683,000,000	$4,604,000,000
	23.1%	$89,973	$787,000,000	$1,574,000,000	$2,360,000,000	$3,147,000,000	$3,934,000,000
	30.0%	$81,900	$716,000,000	$1,432,000,000	$2,149,000,000	$2,865,000,000	$3,581,000,000
	41.0%	$69,030	$604,000,000	$1,207,000,000	$1,811,000,000	$2,415,000,000	$3,018,000,000
	50.0%	$58,500	$512,000,000	$1,023,000,000	$1,535,000,000	$2,046,000,000	$2,558,000,000

One-Year Treatment Cost Estimates
State-Funded Populations of Interest : Medi-Cal

- The shaded totals represent a middle range of estimates from $438M to $1.71B centered on $1.04B with a 10% treatment rate and a 30% average drug discount. Deeper discounts would reduce estimates.

Sub Population Name	Medi-Cal
Population	10,860,000
HCV Prevalence	1.17%
HCV Population	127,000

			One-Year Treatment Cost Estimates for Population - Medi-Cal				
		Treatment Course Cost	% HCV Population Seeking Specialty Drug Treatment				
			5%	10%	15%	20%	25%
Average WAC		$117,000	$743,000,000	$1,486,000,000	$2,229,000,000	$2,972,000,000	$3,715,000,000
Avg Realized Discount off WAC	10.0%	$105,300	$669,000,000	$1,337,000,000	$2,006,000,000	$2,675,000,000	$3,343,000,000
	23.1%	$89,973	$571,000,000	$1,143,000,000	$1,714,000,000	$2,285,000,000	$2,857,000,000
	30.0%	$81,900	$520,000,000	$1,040,000,000	$1,560,000,000	$2,080,000,000	$2,600,000,000
	41.0%	$69,030	$438,000,000	$877,000,000	$1,315,000,000	$1,753,000,000	$2,192,000,000
	50.0%	$58,500	$371,000,000	$743,000,000	$1,114,000,000	$1,486,000,000	$1,857,000,000

One-Year Treatment Cost Estimates
State-Funded Populations of Interest : CalPERS

- The shaded totals represent a middle range of estimates from $17.0M to $67.0M centered on $41.0M with a 10% treatment rate and a 30% average drug discount. Deeper discounts would reduce estimates.

Sub Population Name	CalPERS
Population	1,160,000
HCV Prevalence	0.47%
HCV Population	5,000

			One-Year Treatment Cost Estimates for Population - CalPERS				
		Treatment Course Cost	% HCV Population Seeking Specialty Drug Treatment				
			5%	10%	15%	20%	25%
Average WAC		$117,000	$29,000,000	$59,000,000	$88,000,000	$117,000,000	$146,000,000
Avg Realized Discount off WAC	10.0%	$105,300	$26,000,000	$53,000,000	$79,000,000	$105,000,000	$132,000,000
	23.1%	$89,973	$22,000,000	$45,000,000	$67,000,000	$90,000,000	$112,000,000
	30.0%	$81,900	$20,000,000	$41,000,000	$61,000,000	$82,000,000	$102,000,000
	41.0%	$69,030	$17,000,000	$35,000,000	$52,000,000	$69,000,000	$86,000,000
	50.0%	$58,500	$15,000,000	$29,000,000	$44,000,000	$59,000,000	$73,000,000

One-Year Treatment Cost Estimates
State-Funded Populations of Interest : Prisons

- The shaded totals represent a range of estimates from $142M to $553M centered on $336M with a 10.0% treatment rate and a 30% average drug discount. Deeper discounts would reduce estimates.

Sub Population Name	Prisons
Population	135,000
HCV Prevalence	30.00%
HCV Population	41,000

			One-Year Treatment Cost Estimates for Population - Prisons				
		Treatment Course Cost	% HCV Population Seeking Specialty Drug Treatment				
			5%	10%	15%	20%	25%
Average WAC		$117,000	$240,000,000	$480,000,000	$720,000,000	$959,000,000	$1,199,000,000
Avg Realized Discount off WAC	10.0%	$105,300	$216,000,000	$432,000,000	$648,000,000	$863,000,000	$1,079,000,000
	23.1%	$89,973	$184,000,000	$369,000,000	$553,000,000	$738,000,000	$922,000,000
	30.0%	$81,900	$168,000,000	$336,000,000	$504,000,000	$672,000,000	$839,000,000
	41.0%	$69,030	$142,000,000	$283,000,000	$425,000,000	$566,000,000	$708,000,000
	50.0%	$58,500	$120,000,000	$240,000,000	$360,000,000	$480,000,000	$600,000,000

One-Year Treatment Cost Estimates
State-Funded Populations of Interest : State Hospitals

- The shaded totals represent a middle range of estimates from $5.0M to $19.0M centered on $11.0M with a 10% treatment rate and a 30% average drug discount. Deeper discounts would reduce estimates.

Sub Population Name	State Hospitals
Population	6,900
HCV Prevalence	20.00%
HCV Population	1,400

			One-Year Treatment Cost Estimates for Population - State Hospitals				
		Treatment Course Cost	% HCV Population Seeking Specialty Drug Treatment				
			5%	10%	15%	20%	25%
Average WAC		$117,000	$8,000,000	$16,000,000	$25,000,000	$33,000,000	$41,000,000
Avg Realized Discount off WAC	10.0%	$105,300	$7,000,000	$15,000,000	$22,000,000	$29,000,000	$37,000,000
	23.1%	$89,973	$6,000,000	$13,000,000	$19,000,000	$25,000,000	$31,000,000
	30.0%	$81,900	$6,000,000	$11,000,000	$17,000,000	$23,000,000	$29,000,000
	41.0%	$69,030	$5,000,000	$10,000,000	$14,000,000	$19,000,000	$24,000,000
	50.0%	$58,500	$4,000,000	$8,000,000	$12,000,000	$16,000,000	$20,000,000

One-Year Treatment Cost Estimates
State-Funded Populations of Interest : AIDS Drug Assistance Program

- The shaded totals represent a range of estimates from $1.70M to $6.70M centered on $4.10M with a 10% treatment rate and a 30% average drug discount. Deeper discounts would reduce estimates.

Sub Population Name	ADAP
Population	2,000
HCV Prevalence	25.00%
HCV Population	500

			One-Year Treatment Cost Estimates for Population - ADAP				
		Treatment Course Cost	% HCV Population Seeking Specialty Drug Treatment				
			5%	10%	15%	20%	25%
Average WAC		$117,000	$2,900,000	$5,900,000	$8,800,000	$11,700,000	$14,600,000
Avg Realized Discount off WAC	10.0%	$105,300	$2,600,000	$5,300,000	$7,900,000	$10,500,000	$13,200,000
	23.1%	$89,973	$2,200,000	$4,500,000	$6,700,000	$9,000,000	$11,200,000
	30.0%	$81,900	$2,000,000	$4,100,000	$6,100,000	$8,200,000	$10,200,000
	41.0%	$69,030	$1,700,000	$3,500,000	$5,200,000	$6,900,000	$8,600,000
	50.0%	$58,500	$1,500,000	$2,900,000	$4,400,000	$5,900,000	$7,300,000

Summary
One-Year Treatment Cost Estimates

- The table below summarizes the one-year estimates at low/mid/high-range drug discounts combined with low/mid/high-range treatment rates.
- All State: the low treatment cost estimate is $1.41B, which is based on a 41% drug discount and a 5% treatment rate. The high estimate of $5.51B is based on a 23% discount and a 15% treatment rate.
- Populations of Interest: the low treatment cost estimate is $604M, which is based on a 41% drug discount and a 5% treatment rate. The high estimate of $2.36B is based on a 23% discount and a 15% treatment rate.

				Discount from WAC Treatment Course Cost			% Treated		
							5%	10%	15%
							Total Annual HCV Drug Treatment Course Cost		
Group	Population	HCV Prevalence	HCV Population	Low	Mid	High	High Discount Low Rate	Mid Discount Mid Rate	Low Discount High Rate
All State	38,851,000	1.1%	408,000	23%	30%	41%	$1,408,000,000	$3,342,000,000	$5,506,000,000
Populations of Interest	12,162,000	1.4%	174,900	23%	30%	41%	$604,000,000	$1,432,000,000	$2,360,000,000
Medi-Cal	10,863,000	1.2%	127,000	23%	30%	41%	$438,000,000	$1,040,000,000	$1,714,000,000
CalPERS	1,155,000	0.5%	5,000	23%	30%	41%	$17,000,000	$41,000,000	$67,000,000
Prisons	135,000	30.0%	41,000	23%	30%	41%	$142,000,000	$336,000,000	$553,000,000
State Hospitals	6,900	20.0%	1,400	23%	30%	41%	$5,000,000	$11,000,000	$19,000,000
ADAP	2,000	25.0%	500	23%	30%	41%	$1,700,000	$4,100,000	$6,700,000

APPENDIX

- **CDC Hepatitis Facts**
- **Sources:**
  A. **Populations**
  B. **Prevalence**
  C. **Treatment Regimen Costs**
  D. **Treatment Rate**

Center for Disease Control: Hepatitis C Facts

- **Hepatitis C** is a contagious liver disease that ranges in severity from a mild illness lasting a few weeks to a serious, lifelong illness that attacks the liver. It results from infection with the Hepatitis C virus (HCV), which is spread primarily through contact with the blood of an infected person. Hepatitis C can be either "acute" or "chronic."
- **Acute Hepatitis C** virus infection is a short-term illness that occurs within the first 6 months after someone is exposed to the Hepatitis C virus. For most people, acute infection leads to chronic infection. **Chronic Hepatitis C** virus infection is a long-term illness that occurs when the Hepatitis C virus remains in a person's body. Hepatitis C virus infection can last a lifetime and lead to serious liver problems, including cirrhosis (scarring of the liver) or liver cancer.
- **How serious is chronic Hepatitis C?** Chronic Hepatitis C is a serious disease that can result in long-term health problems, including liver damage, liver failure, liver cancer, or even death. It is the leading cause of cirrhosis and liver cancer and the most common reason for liver transplantation in the United States. Approximately 15,000 people die every year from Hepatitis C related liver disease.
- **What are the long-term effects of Hepatitis C?** Of every 100 people infected with the Hepatitis C virus, about75–85 people will develop chronic Hepatitis C virus infection; of those,60–70 people will go on to develop chronic liver disease5–20 people will go on to develop cirrhosis over a period of 20–30 years1–5 people will die from cirrhosis or liver cancer
- **Can acute Hepatitis C be treated?** Yes, acute hepatitis C can be treated. Acute infection can clear on its own without treatment in about 25% of people. If acute hepatitis C is diagnosed, treatment does reduce the risk that acute hepatitis C will become a chronic infection. Acute hepatitis C is treated with the same medications used to treat chronic Hepatitis C. However, the optimal treatment and when it should be started remains uncertain.
- **Can chronic Hepatitis C be treated?** Yes. There are several medications available to treat chronic Hepatitis C, including new treatments that appear to be more effective and have fewer side effects than previous options.
- **Is it possible to get over Hepatitis C?** Yes, approximately 15%–25% of people who get Hepatitis C will clear the virus from their bodies without treatment and will not develop chronic infection. Experts do not fully understand why this happens for some people.

Source:
A. Populations

	Population Count	Source
US	316,128,839	http://www.census.gov/popest/data/state/asrh/2013/files/SCPRC-EST2013-18+POP-RES.csv
CA	38,332,521	http://www.census.gov/popest/data/state/asrh/2013/files/SCPRC-EST2013-18+POP-RES.csv
Medi-Cal	10,862,700	excluding Dual Eligibles http://www.ebudget.ca.gov/fullbudgetsummary.pdf
CalPERS	1,155,000	http://www.calpers.ca.gov/eip-docs/employer/program-services/health/health-enrollment-report.pdf
Prisons	134,986	http://www.ebudget.ca.gov/fullbudgetsummary.pdf
State Hospitals	6,892	http://www.ebudget.ca.gov/fullbudgetsummary.pdf
ADAP	2,000	Aids Drug Assistance Program
Populations of Interest	12,161,578	Calculated
All Others	26,689,422	Calculated
All State	38,851,000	http://www.ebudget.ca.gov/fullbudgetsummary.pdf
		Additional source: California Health Benefits Exchange Program "Estimates of Sources of Health Insurance for 2015" http://www.chbrp.org/other_publications/docs/Estimates_for_Sources_2015_Final_041114.pdf

Source:
B. HCV Prevalence

CDC Information		Source
HCV Population Nationwide	3,200,000	http://www.cdc.gov/hepatitis/HCV/HCVfaq.htm
% HCV Prevalence Nationwide	1.01%	Calculated
HIV/AIDS	25%	http://www.cdc.gov/hepatitis/Populations/hiv.htm

Milliman Prevalence - "Convergence of Risk and Opportunity" December 2013
http://us.milliman.com/uploadedFiles/insight/2013/convergence-of-risk-and-opportunity.pdf

Population	HCV Prevalence
Prison	30.00%
Veterans Affairs	5.40%
Dual Medicare Medicaid	2.91%
Uninsured	2.08%
Total	1.05%
Medicaid	0.87%
Commercial	0.47%
Other Military	0.47%
Medicare	0.31%

Study Inputs

Populations	Prevalence	Source
All State	1.1%	Milliman US Prevalence
Medi-Cal	1.2%	Weighted avg of Milliman's Medicaid and uninsured prevalence.
CalPERS	0.5%	Milliman commercial prevalence
Prisons	30.0%	Miliman Prison prevalence
State Hospitals	20.0%	per DSH publications
ADAP	25.0%	CDC HIV/AIDS prevalence

Source:
C. HCV Specialty Drug Treatment Costs

Treatment Regimen	% of Patients Receiving	WAC Price per Treatment Course
Harvoni (12 weeks)	56%	$94,500
Harvoni (8 weeks)	9%	$63,000
Sovaldi + ribavarin (12 weeks)	7%	$85,300
Sovaldi + ribavarin (24 weeks)	5%	$170,600
Harvoni (24 weeks)	23%	$189,000
Weighted Pricing for All Regimens	100%	$117,000

Source:
Treatment regimens, distribution estimates and wholesale acquisition cost information from CAHP member health plan pharmacy representatives.

Source:
D. One-Year Treatment Rate Estimates

- Source: CAHP member health plan pharmacy representatives and reported specialty drug manufacturer sales (Gilead).
- Treatment rate estimate based on Sales Volume: Given the newness of the current specialty drug regimens, documented treatment rates were not found in the literature. To derive a baseline treatment rate, we used Gilead Sciences' financial statements to estimate revenue from specialty drugs in the US over the next 12 months.
- Assumptions:
  - Growth of sales over the next 4 quarters would be the same as growth from Q4 2014 to Q1 2015.
  - Sovaldi + Harvoni represent 90% of the market for Hepatitis C specialty drugs.
  - We assumed California's share of these costs was the same as its share of population.
- Based on these assumptions, this sales-based model shows all California HCV specialty costs of $2,258,000,000 in the next 12 months (figure lower right).
- As a sensitivity analysis, we used the same calculation but assumed 16% sales growth and allocating 15% of drug sales to California (this later assumption because some states, e.g. Texas, will not pay for these drugs). The resulting estimate from these assumptions was $3,367,000,000.
- The highlighted ranges in the table show where the $2.3B to $3.4B falls, from 7% to 10% treatment rate, depending on assumptions on average specialty drug treatment discount rate.
- Based on this comparison of the Sales model and Prevalence models, we chose a baseline estimate that 10% of HCV patients statewide will seek treatment in the next twelve months.

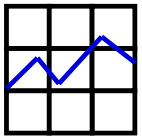
SALES BASED MODEL - TOTAL PROJECTED SPECIALTY DRUG COST BASED ON SALES

	Q1 2015	Q4 2014
Harvoni – U.S.	$3,016,000,000	$2,001,000,000
Sovaldi – U.S.	$421,000,000	$1,178,000,000
	$3,437,000,000	$3,179,000,000
Quarterly Growth	8%	16%
Next 12 Months Projection	$16,773,000,000	$20,200,000,000
Sovaldi + Harvoni Market Share	90%	90%
Total New Treatments 2015 US Sale	$18,637,000,000	$22,444,000,000
US Population	316,100,000	
CA Over 18 Population (thousands)	38,300,000	
% CA	12%	15%
2015 Projected CA Sales (Millions)	**$2,258,000,000**	**$3,367,000,000**

	All State
Total Population	38,850,000
Prevalence	1.05%
Estimated HCV Population	408,000

	All State Total Cost					
			% HCVPopulation Seeking Specialty Drug Treatment			
	Treatment Course Cost		5%	7%	10%	15%
	Avg WAC	$117,000	$2,387,000,000	$3,342,000,000	$4,774,000,000	$7,160,000,000
	10.0%	$105,300	$2,148,000,000	$3,008,000,000	$4,297,000,000	$6,444,000,000
Avg Realized	23.1%	$89,973	$1,836,000,000	$2,570,000,000	$3,671,000,000	$5,506,000,000
Discount off	30.0%	$81,900	$1,671,000,000	$2,339,000,000	$3,342,000,000	$5,012,000,000
WAC	41.0%	$69,030	$1,408,000,000	$1,972,000,000	$2,817,000,000	$4,224,000,000
	50.0%	$58,500	$1,194,000,000	$1,671,000,000	$2,387,000,000	$3,580,000,000

About The Taylor Feldman Group



THE TAYLOR FELDMAN GROUP

- Erik Taylor and David Feldman, principals in the Taylor Feldman Group, bring extensive medical insurance analytics to this project with over 40 years combined experience in organizing and analyzing data to support decisions in the managed health care industry. Over the past ten years, The Taylor Feldman Group has delivered analyses to pharmacy benefit managers, insurance carriers, third party administrators, Fortune 100 Corporate clients, government agencies, and providers in both the workers compensation and group health plan arenas.
- Taylor and Feldman previously directed the Analytic Consulting and Metrics Departments at First Health, a $900 million national managed care company. They worked directly with the CEO and other top-level executives and business units to increase sales, develop new products, improve operations, and maximize product effectiveness. They designed actuarial benefits modeling software and did extensive consulting with employers and union groups regarding medical and pharmacy benefit plan design and economic incentives to change patient behavior. They provided analyses and reporting on pharmacy program impact and benefit plan performance to the company's clients.
- Prior to First Health, Taylor managed a client-reporting department for Blue Cross/Blue Shield of Massachusetts and worked for the California Health Facilities Commission as a health policy analyst. He received his bachelor's degree in Economics from the University of California at Davis. Feldman's prior experience was at the Health Data Institute, where he was responsible for evaluating the performance of various utilization management products for insurance carriers and large self funded health plans. He received his SB in economics from the M.I.T. and his MBA from UC Davis.