California HealthCare Foundation

# The Fiscal Impact of the Medi-Cal EHR Incentives

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*Prepared for*
California HealthCare Foundation

*by*
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## About the Authors

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## About the Foundation

The **California HealthCare Foundation** works as a catalyst to fulfill the promise of better health care for all Californians. We support ideas and innovations that improve quality, increase efficiency, and lower the costs of care. For more information, visit us online at www.chcf.org.

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# I. Executive Summary

*By spending $5.2 million on administrative costs, the state will experience an increase in sales, income, and corporation taxes of $109 million. The state will also experience $2.3 billion in increased economic output and almost 16,000 new jobs as a result of the influx of federal funds.*

In 2009, as part of the American Recovery and Reinvestment Act (ARRA), the federal government approved $18 billion for a program to encourage the use of electronic health record (EHR) systems. In California, this translates into approximately $1.4 billion to $2 billion in federal incentives that the Medi-Cal EHR Incentive Program will pay to eligible providers. To assist states in meeting the administrative and oversight requirements of the incentive program, the federal government will also pay 90% of its administrative costs; states are responsible for the remaining 10%.

A financial analysis was conducted by Blue Sky Consulting Group to understand the economic and fiscal impact of the EHR incentive program on the state of California. This analysis demonstrates that using state funds to draw down the federal administration grant and incentive payments will result in a substantial net benefit to California's General Fund. Specifically, estimates show that by spending $5.2 million on administrative costs, the state will experience an increase in sales, income, and corporation taxes of $109 million. The state will also experience $2.3 billion in increased economic output and almost 16,000 new jobs as a result of the influx of federal funds.

## Measuring the Benefits

Federal funds from the administrative grant and EHR incentive payments will increase California's level of economic output, and, ultimately, the amount of tax revenue collected by the General Fund. Although the EHR Incentive Program may also provide fiscal benefits to the Medi-Cal program through an increase in efficiency and a reduction in health care costs, the more immediate fiscal benefit stems from the economic effects of the large amount of new federal money that will be spent in the state. This money will be used by the state to pay state employees and contractors and by health care providers to purchase and maintain EHR systems. In turn, these public and private employees will spend their wages, and private businesses will purchase supplies. This incentive-related increase in economic activity will boost state revenues.

To estimate the program's net impact on the General Fund, the effect of both the federal administration grant and the EHR incentives from July 2012 until the scheduled end of the program on July 1, 2021, was modeled. The economic modeling software IMPLAN was used to model the flow of federal funds through the state's economy.

## The Net Benefit to the Economy and General Fund

According to this analysis, the large amount of federal funds that will flow into the California economy through the Medi-Cal EHR Incentive Program will produce an estimated $2.3 billion in additional economic output and spur the creation of 16,000 jobs. The most significant job growth — almost 6,000 new jobs — is estimated to occur in the computer industry that supplies and supports EHR systems. The health care industry is projected to experience substantial growth as well.

The EHR program's net effect on the state's General Fund will also be highly positive. From July 2012 through June 2021, the estimated cost to the General Fund will be equal to the amount of the 10% administration match, or $5.2 million. Meanwhile, the fiscal benefits from increased personal income, corporation, and sales taxes total $109 million. Thus, the net benefit to the General Fund will be $103 million. For every dollar spent by the state, an estimated $240 of federal money will enter the state and produce $21 of new General Fund revenue.

**Table 1. Net Fiscal Impact of the Medi-Cal EHR Incentive Program, July 2012 to June 2021**
(in millions)

| | |
|---|---|
| Administration Grant Benefits | $4.2 |
| EHR Incentive Benefits | $104.5 |
| Cost to State | – $5.2 |
| **Net Benefit** | **$103.5** |

# II. Introduction

*The question has arisen: Would it be financially beneficial for the state to pay the 10% share of the EHR incentive program's administrative costs?*

In 2009, as part of the American Recovery and Reinvestment Act (ARRA), the federal government approved $18 billion to encourage the use of electronic health record (EHR) systems. Part of this funding is for Medicare incentives, but states may also opt to create a Medicaid incentive program to draw down additional federal funds. In California, the Medi-Cal EHR Incentive Program will provide between $1.4 billion and $2 billion in federally funded EHR incentives to eligible providers. To assist states in meeting the administrative and oversight requirements of the incentive program, the federal government will also pay 90% of the administrative costs of the program.

Despite the generous federal match for the EHR incentive program, the California State Legislature remained concerned about potential budget impacts and passed enabling legislation in 2011 that forbade the use of state General Fund money for the program.[1] As a result, private money is being used to draw down the 90% federal administrative match for the 2011–12 fiscal year. With these funds, the Department of Health Care Services (DHCS) created and launched the EHR incentive program. As of June 11, 2012, eligible hospitals and providers have already been awarded $238 million.

The question has arisen: Would it be financially beneficial for the state to pay the 10% share of the EHR incentive program's administrative costs?

Blue Sky Consulting Group was commissioned to analyze the fiscal impact of the federal funds coming into California through the Medi-Cal EHR Incentive Program. The analysis demonstrates that using state funds to draw down the federal match and incentive payments will result in a substantial net benefit to the state's General Fund.

# III. Background: The EHR Incentive Program

*The Medi-Cal EHR incentives are intended to support the purchase, initial implementation, and upgrade of certified EHR technology.*

The Medi-Cal EHR incentives are intended to support the purchase, initial implementation, and upgrade of certified EHR technology, including training, support services, and operation and maintenance of systems selected by qualified providers. Qualified providers include acute care and children's hospitals as well as physicians, nurse practitioners, certified nurse-midwives, and physician assistants in physician assistant-led Federally Qualified Health Centers and Rural Health Centers.[2,3]

The amount of the incentive is based on the average cost of implementing and maintaining EHR systems as calculated by the Centers for Medicare and Medicaid Services (CMS). Thus, the incentive payments are not directly related to the actual cost of the system or services purchased by qualified providers. Individual providers can receive a maximum of $63,750 over six years, with a $21,250 maximum payment in the first year, and maximum annual payments of $8,500 for the next five years. Hospital payments start at approximately $2 million, and will be adjusted according to the size of the hospital and number of Medi-Cal discharges. Aggregate hospital incentive payments will be distributed over four years with 50% paid in the first year, 30% in the second year, and 10% in the third and fourth years. To continue receiving incentive payments after implementation, providers will be required to demonstrate "meaningful use" of their EHR systems by reporting on a number of required functional and clinical objectives established by CMS.

An initial DHCS review of the EHR provider landscape estimated that 250 hospitals and 10,000 providers in California would be able to claim incentive payments totaling approximately $1.2 billion. An update of this original assessment indicates that the number of eligible providers may be as high as 20,000, which would increase the total amount of incentive payments to the state to approximately $2 billion.[4]

# IV. Incentive Payments and the Administrative Grant

*By paying 10% of the administration costs, the state will receive federal funds equal to 90% of the administration costs, plus the EHR incentive payments themselves.*

In exchange for 100% federal funding for the Medi-Cal EHR incentive payments, CMS requires strict DHCS administrative oversight. Specifically, DHCS must verify provider eligibility; disburse payments to eligible providers; establish a system capable of interfacing with a national database to coordinate and/or make payments; fight fraud and abuse; recoup funds if overpayments or erroneous payments are paid; and provide an appeals process for eligibility, payments, and determinations of meaningful use. DHCS is required to submit a quarterly progress report documenting specific implementation and oversight activities performed. Finally, DHCS must make incentive payments directly to eligible providers without any deduction or rebate — it cannot use any of the incentive money to cover administrative costs.

However, the federal government will provide 90% Federal Financial Participation (FFP) for California's administrative expenses as long as the state meets three requirements:

1. Uses the funds to administer Medi-Cal incentive payments for certified EHR technology, including tracking of meaningful use by Medi-Cal eligible providers and eligible hospitals

2. Conducts oversight of the Medi-Cal EHR Incentive Program, including routine tracking of meaningful use substantiations and reporting mechanisms

3. Pursues initiatives to encourage the adoption of certified EHR technology for the promotion of health care quality and the exchange of health care information

Because the administrative grant requires the state to design initiatives to promote the meaningful use of EHRs, California will also receive 90% FFP for the administrative work done to bolster the meaningful use of EHRs, as well as to administer the incentive payments. For example, providers will be required to use their EHR systems to report to a statewide immunization registry. Since this statewide immunization registry does not yet exist in California, DHCS can use 90% FFP to create it.

The rules do not require that California pay the 10% match for the administration grant to receive the federal incentive. However, as described above, the rules do require that the program be administered to CMS specifications. The administrative grant covers all incentive-related administrative costs, but also requires some additional promotional activities. The extent of these promotional activities is determined by DHCS. The state has three choices: Pay the 10% match for the administrative grant, pay 100% of incentive-related administration costs, or forego the federal incentive payments.

By paying 10% of the administration costs, the state will receive federal funds equal to 90% of the administration costs, plus the EHR incentive payments themselves. If the state should choose not to make this 10% payment, it would not be able to put in place the administrative requirements necessary for receipt of the federal EHR incentives — and consequently would not receive these federal payments.

# V. Fiscal Effects of the EHR Incentive Program

*For every dollar spent by the state, $240 of federal money enters California to produce $21 of new General Fund revenue.*

Because the EHR incentive program has such a large federal funding component (100% of the incentive payments and a 90% match for program administration), it will have an immediate fiscal benefit stemming from the large amount of new money coming to the state. This money will be used by the state to pay public employees, contractors, and suppliers, and by health care providers to purchase and maintain EHR systems. In turn, these public and private employees will spend their wages, and private businesses will purchase supplies. All this incentive-related economic activity will increase state revenues. (See Appendix A.)

Many government programs reap long term fiscal benefits as a direct result of accomplishing program goals, such as decreased health care costs due to prevention programs. In theory, the adoption of EHRs by Medi-Cal providers will also reduce costs by making health care delivery more efficient. This report, however, focuses only on the benefits of the infusion of new federal funds into the economy because the effects are widely understood and experienced almost immediately. Any efficiency benefits would be in addition to the benefits quantified here.

## Estimating the Fiscal Effects

To estimate the net General Fund impact of the state's funding the 10% administrative grant match, the fiscal impacts of both the federal administration grant and the EHR incentives from July 2012 through June 2021 were modeled.

First, the amount of money coming into California beginning in July 2012 was estimated. Then the flow of that money through the affected industries (e.g., hospitals and EHR vendors) was mapped to estimate how much of the money would go to employee wages, purchases, and profit. For example, when services are purchased, the service providers use that income to pay employees, buy supplies, and increase profits. When goods are purchased, the purchase itself triggers a sales tax, while the payments to the supplier become revenue used to pay employees, buy supplies, and increase profits.

IMPLAN, a widely used economic modeling software tool, was used to model the relationship between increased revenue for the affected industries and employee wages and profits. IMPLAN was also used to estimate the increased economic output created by these private firms' employee and supplier spending, known as the multiplier effect.[5] Finally, the additional income, corporation, and sales tax revenue generated from this increased economic activity was estimated. To estimate the direct economic effect of the federal funding, taxable wages, profits, and supplier purchases were identified, and effective tax rates were applied. To calculate the indirect economic benefits, the change in General Fund revenues resulting from an increase in state economic output was estimated based on the historical relationship between economic activity and state revenues.

## Administration Grant

To estimate the amount of federal money attached to the administrative grant, recent DHCS administration cost data were used.[6] These data include historical spending as well as DHCS cost estimates for fiscal year 2012–13 and for the first quarter of fiscal year 2013–14.[7] To estimate the incentive amounts for the life of the program, the ratio of DHCS costs to estimated incentive amounts in fiscal year 2011–12 was used. It was assumed that this ratio would apply for the life of the program. In effect, when incentive payments increase, so will administration costs, and vice versa.

It is estimated that DHCS will incur approximately $52 million in administrative costs during the remaining period of the incentive program — until June 2021. California would be responsible for 10% of this amount, or $5.2 million, while the federal government would provide nearly $47 million to DHCS to pay for these activities.

## Flow of Money

To measure the fiscal impact of the $47 million in new federal funds, recent DHCS costs were analyzed to map the flow of this money. An analysis of this cost data estimates that DHCS would use 16% of the funds to pay salaries, 58% to pay for contracted services, 7% for benefits, and 19% for other activities, such as training, operating expenses, equipment, and outreach.

## Taxable Amounts

DHCS will use the administrative grant on three main expenses: state employee wages, the purchase of contractor services, and the purchase of other supplies and services. State employee wages and contractor revenue that flows to employee wages and profits would be subject to income and corporation taxation. DHCS spending on other activities and the indirect spending by employees and suppliers will also create taxable economic activity.

The estimated fiscal benefits:

- DHCS employees will receive $7.7 million in wages over the next nine years from the federal share of administrative grant payments.
- Contractors will receive payments of $27 million in the same time period.[8] Using IMPLAN, which uses empirically derived estimates of economic relationships to model the percentage of new industry revenue that would go to employee compensation and proprietor income, it is estimated that contractors will pay $16 million in employee wages and earn $2.4 million in taxable profit.[9]
- The $9 million in state spending on other supplies will generate increases in personal income, corporate income, and taxable purchases.

- Money earned by employees and contractors will be used to buy goods and services. Modeling of the flow of the employee compensation, contractor payments, and supplier payments through the California economy using IMPLAN yields an estimate that these expenditures will create another $56 million in indirect and induced economic activity.

### Tax Revenue

Personal income tax data from 2005 to 2009 were used to estimate an average effective income tax rate of 4.5%.[10] This rate was applied to the $7.7 million in state wages and $16 million in contractor wages estimated above. In total, this $24 million in wages will generate $1.1 million in additional personal income tax revenue.

Corporation tax statistics from 2005 to 2009 were used to estimate an average effective corporation tax rate of 5.3%.[11] The $2.4 million in increased profits for DHCS contractors will generate $126,000 in corporation tax revenue.

*In total, the General Fund is estimated to see a $4.2 million increase in tax revenue from direct and indirect economic activity spurred by the administration grant.*

To estimate the fiscal benefit of the $9 million in other state spending and the $56 million in indirect economic activity, the average annual amount of sales, income, and corporation tax revenue collected by the General Fund for every dollar of economic output was measured. It is estimated that 4.6% of the $9 million in other state spending and the $56 million in additional indirect output would come back to the General Fund as $3 million in new tax revenue.

In total, the General Fund is estimated to see a $4.2 million increase in tax revenue from direct and indirect economic activity spurred by the administration grant, as shown in Table 2.

**Table 2. Direct and Indirect Effects of the Administration Grant, July 2012 to June 2021**

| | TAXABLE ECONOMIC ACTIVITY (in millions) | EFFECTIVE TAX RATE | GENERAL FUND REVENUE (in millions) |
|---|---|---|---|
| Personal Income | $23.9 | 4.5% | $1.1 |
| Corporate Profit | $2.4 | 5.3% | $0.1 |
| Other State Spending | $8.7 | 4.6% | $0.4 |
| Indirect and Induced Output | $56.2 | 4.6% | $2.6 |
| | | **TOTAL** | **$4.2** |

## EHR Incentives

The amount of EHR incentives that will be paid between July 2012 and June 2021 depends largely on the number of providers that apply for the incentives and the amounts for which they are eligible. The "minimum scenario" planned for by DHCS includes 250 hospitals and 10,000 providers, while the "maximum scenario" includes 20,000 providers. The analysis presented below is based on a "middle scenario" where 250 hospitals and 15,000 providers

will qualify for $1.7 billion over the lifetime of the incentive program.

Using information provided by DHCS, an estimated 154 hospitals and 10,000 providers will have qualified for $434 million in Year 1 incentive payments in fiscal year 2011–12. These payments are not counted in the calculation of the fiscal impact of the EHR incentive payments.[12] This analysis is based on the remaining $1.2 billion in incentive payments to be provided between July 2012 and June 2021.[13]

It is important to note that additional factors may influence how much incentive money actually goes to providers. On one hand, some providers may not be eligible for additional payments after the initial implementation incentive due to their inability to meet meaningful use criteria. The number of providers who will be potentially ineligible is unknown and will depend on several factors, including the amount of technical assistance given to providers during the years when meaningful use demonstration is required. On the other hand, a number of providers may become newly qualified for the program — beyond what is projected in this analysis — as a result of Medi-Cal expansion due to the Affordable Care Act. The magnitude of this additional provider pool is unknown. This analysis does not explicitly account for these factors, but instead presents results based on the likely participation rate as determined by DHCS.

## Flow of Money

The fiscal benefit of the EHR incentives will be derived from direct payments to medical providers in California.[14] The $1.2 billion in incentive funds will be distributed to hospitals (39%) and providers (61%).

According to a CMS analysis, these funds will be used for two purposes: implementation costs and maintenance costs. The incentive disbursement is structured so that 50% of the hospital money and 67% of the provider money is disbursed after the first year. It is assumed that the first-year payments will be directed toward implementation costs and that subsequent payments will be directed toward maintenance costs.[15,16] Because a large proportion of the total number of eligible providers have already received implementation payments in fiscal year 2011–12, it is assumed that these providers will receive only maintenance payments from this point forward. For hospitals, it is estimated that 27% of the incentive payments will go to implementation costs and 73% to maintenance; for individual providers, it is estimated that 14% and 86% of payments will go to implementation and maintenance, respectively.

Published studies on the cost of EHR systems were used to allocate funding towards implementation and maintenance. Costs for implementation are categorized as those for hardware (e.g., computers and printers), software, training, and internal staff time.[17] Using three studies that presented costs for all four categories, the percentages allocated to each category were estimated.[18] The same process was used to divide maintenance costs between hardware maintenance and software maintenance, which includes license fees and upgrades. Some of these maintenance services are conducted by provider office staff members.[19,20] While hospitals and providers may differ on their breakdown of these costs, the literature provides detailed breakdowns only for clinics and provider offices. For the purposes of this analysis, it is assumed that hospitals mimic provider offices in their spending patterns. Table 3 maps this flow of funds in more detail, indicating the percentage and amount of total incentive funds that are allocated to and within implementation and maintenance costs. (See page 12.)

Incentives are also provided to applicants for upgrading to certified EHR systems. It is assumed

**Table 3. Implementation and Maintenance Costs, by Category, July 2012 to June 2021**

| | PERCENTAGE | HOSPITALS (in millions) | PROVIDERS (in millions) | TOTAL (in millions) |
|---|---|---|---|---|
| **Purchase and Implementation** | | **$131.5** | **$106.2** | **$237.7** |
| Hardware Purchase* | 31% | $40.4 | $32.6 | $73.0 |
| Software Purchase | 26% | $34.4 | $27.8 | $62.1 |
| Training and Support | 16% | $21.7 | $17.5 | $39.2 |
| Internal Staff Time | 27% | $35.0 | $28.3 | $63.4 |
| **Maintenance** | | **$353.5** | **$637.5** | **$991.0** |
| Ongoing Equipment Costs | 28% | $100.5 | $181.2 | $281.8 |
| Ongoing Service Costs | 72% | $253.0 | $456.3 | $709.2 |
| **TOTAL** | **100%** | **$485.0** | **$743.7** | **$1,228.7** |

*See endnote 21.

that these "upgraders" will spend similarly to "implementers" except that costs that would go to hardware purchases would go instead to the provider's general revenue stream.[21] These assumptions are made because upgraders will likely experience lower upfront costs than implementers.

## Taxable Amounts

After modeling the spending path of the incentive money, the transactions that will incur state taxes were determined. The three main direct benefits will be the purchases of taxable software and hardware, the increased revenue for the suppliers of goods and services (e.g., EHR vendors and hardware suppliers), and the increased revenue for providers. In general, the purchase of hardware will be subject to sales tax, while the purchase of the EHR software will be taxed only under certain circumstances. The increased revenue for EHR vendors and hardware suppliers that goes to profits will be subject to corporation tax, while the portion that goes to employee wages will be subject to personal income tax.[22] Portions of the increased revenue for hospitals and providers will also go to profits and employee wages, with the attendant corporation and personal income tax impacts. Finally, the indirect spending by suppliers of the medical providers, EHR vendors, and computer hardware retailers will also create taxable economic activity.

The estimated fiscal benefits:

- $357 million in software and hardware sales will be subject to sales tax over the next nine years, including $345 million of initial hardware purchases and ongoing equipment spending and $12 million in software purchases.[23] These estimates are based on the assumption that 100% of hardware and ongoing equipment costs will be taxable and that software sales to newly implementing hospitals will incur sales taxes 25% of the time, to updating hospitals 15% of the time, and to provider practices 15% of the time.[24] It is also assumed that none of the ongoing EHR service costs will be subject to sales tax.[25]

- Revenues will increase by $345 million for hardware suppliers, by $811 million for EHR vendors, and by $73 million for medical providers.[26–28] According to IMPLAN, this increased revenue will go towards $532 million in employee compensation and $145 million in taxable profit.[29,30]
- The money earned by employees, EHR system suppliers, and medical providers will also be used to buy goods and services. Modeling the flow of these purchases through the California economy in IMPLAN yields an estimate of $1.3 billion in indirect and induced economic activity.

### Tax Revenue

Effective tax rates were applied to the taxable amounts using the same approach that was applied to the administration grant revenue.[31] Applying these rates to the taxable amounts, it was estimated that incentive payments to California would generate $46 million from direct expenditure of the incentive payments: $14 million in additional sales tax revenue, $24 million in personal income tax revenue, and $8 million in corporation tax revenue. In addition, $59 million in increased sales, income, and corporation tax revenue would be generated from the indirect economic effects associated with these expenditures.

In total, California would experience $104 million in General Fund fiscal benefit from the EHR incentive payments (see Table 4).

*California would experience $104 million in General Fund fiscal benefit from the EHR incentive payments.*

**Table 4. Direct and Indirect Effects of the EHR Incentives, July 2012 to June 2021**

| | TAXABLE ECONOMIC ACTIVITY (in millions) | EFFECTIVE TAX RATE | GENERAL FUND REVENUE (in millions) |
|---|---|---|---|
| Taxable Purchases | $357.1 | 4.0% | $14.2 |
| Personal Income | $532.4 | 4.5% | $24.1 |
| Corporate Profit | $145.2 | 5.3% | $7.7 |
| Indirect and Induced Output | $1,286.0 | 4.6% | $58.5 |
| | | **TOTAL** | **$104.5** |

## The Net Benefit to the General Fund

With these estimates, it is possible to calculate the expected net impact on the General Fund. From July 2012 through June 2021, the estimated cost to the General Fund will be the 10% match, or $5.2 million. The benefits will be $4.2 million resulting from the administration grant and $104 million from the incentives — a total benefit of $109 million. Thus, the net benefit to the General Fund will total $103 million. For every dollar spent by the state, $240 of federal money enters California to produce $21 of new General Fund revenue. Even excluding any indirect benefits from the multiplier effect, the state will experience a $47 million net benefit just from the initial expenditure of the federal funds in California.

This overall finding is not sensitive to changes in the input assumptions. For example, if the model is run under a "minimum scenario" with just 10,000

providers participating and assumptions that none of the EHR software sold is taxable and 5% of providers drop out every year, the net benefit would still be $69 million, as shown in Table 5. Similarly, the overall finding is not sensitive to assumptions about how the EHR money is spent (i.e., what fraction is spent on employees, supplies, equipment). Finally, if administration costs are doubled in every year but the level of provider enrollment remains at 15,000, the net fiscal benefit will still exceed $100 million.

**Table 5. Net Benefits, Middle and Minimum Scenario, July 2012 to June 2021** (in millions)

| | MIDDLE SCENARIO | MINIMUM SCENARIO |
|---|---|---|
| Administration Grant Benefits | $4.2 | $3.2 |
| EHR Incentive Benefits | $104.5 | $69.8 |
| Cost to State | –$5.2 | –$4.0 |
| **Net Benefit** | **$103.5** | **$69.0** |

In addition, the yearly fiscal effects of the program were modeled to see if the results would be positive in each fiscal year, as well as over the entire program period. The amount of incentives that would be handed out in each year was estimated based on the assumption that the remaining eligible providers were evenly dispersed throughout the remaining initial grant period.[32] (See Appendix B.) Then the yearly direct and indirect benefits of both the administration grant and incentive payments were estimated. It was found that each year will likely produce a net fiscal benefit to the state General Fund. As Table 6 shows, it is anticipated that the state will experience the largest net benefit, $23.4 million, in fiscal year 2012–13, and the smallest net benefit, $900,000, in fiscal year 2020–21. Moreover, even if a one-year lag between the expenditure of General Fund money and subsequent changes in direct and indirect economic activity was modeled, the yearly net benefits will be positive throughout the program period.

**Table 6. Estimated Yearly Net Benefits of the EHR Incentive Program, July 2012 to June 2021** (in millions)

| | 2012–13 | 2013–14 | 2014–15 | 2015–16 | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
|---|---|---|---|---|---|---|---|---|---|
| State Cost | –$1.2 | –$0.9 | –$1.0 | –$0.9 | –$0.7 | –$0.2 | –$0.2 | –$0.1 | –$0.0 |
| Fiscal Benefits | $24.5 | $19.4 | $20.9 | $18.5 | $14.2 | $4.9 | $3.4 | $1.9 | $0.9 |
| **Net Benefit** | **$23.3** | **$18.5** | **$19.9** | **$17.6** | **$13.5** | **$4.7** | **$3.2** | **$1.8** | **$0.9** |

# VI. Economic Benefits of the EHR Incentive Program

*In total, it is estimated that the EHR incentive program will increase state economic output by $2.3 billion and create 16,000 new jobs.*

THE FISCAL BENEFITS PRESENTED ABOVE STEM FROM the increased economic activity that the EHR incentive program will create. It is estimated that the infusion of $47 million in federal administrative grant funds to DHCS will generate $92 million in increased economic activity in the state and an additional 700 jobs. Meanwhile, it is estimated that the $1.2 billion in federal incentive payments given to providers will generate $2.2 billion in increased economic activity and more than 15,000 new jobs. In total, as shown in Table 7, it is estimated that the EHR incentive program will increase state economic output by $2.3 billion and create 16,000 new jobs.

**Table 7. Estimated Total Economic Benefits, July 2012 to June 2021**

| | EMPLOYMENT | OUTPUT (in millions) |
|---|---|---|
| Administrative Grant Benefits | 700 | $92 |
| EHR Incentive Benefits | 15,300 | $2,230 |
| **TOTAL** | **16,000** | **$2,322** |

As shown in Table 8, the bulk of these new jobs (5,770) are projected for the EHR industry, in those firms that will provide systems and support to medical providers. In addition, 1150 new jobs are estimated for the health care industry (i.e., hospitals, physician offices, and group practices). Another 580 new jobs are expected in the wholesale trade industry, spurred in part by increased computer equipment purchases. Finally, service industries that provide food, labor, and real estate to employees and firms are also poised to see growth.

**Table 8. Employment Effects, by Industry, Top 10 Areas of Job Growth, July 2012 to June 2021**

| INDUSTRY | EMPLOYMENT |
|---|---|
| Custom computer programming services | 5,770 |
| Food services and drinking places | 810 |
| Real estate establishments | 710 |
| Employment services | 660 |
| Wholesale trade businesses | 580 |
| Private hospitals | 510 |
| Offices of physicians, dentists, and other health practitioners | 380 |
| Securities, commodity contracts, investments, and related activities | 270 |
| Medical and diagnostic labs and outpatient and other ambulatory care services | 260 |
| Services to buildings and dwellings | 230 |

# VII. Conclusion

*By paying the 10% share of administrative costs of participation in the EHR incentive program, California's economy and the State General Fund will reap considerable benefits that far exceed the modest investment required by the federal government.*

THE LARGE AMOUNT OF FEDERAL MONEY THAT WILL flow into California through the Medi-Cal EHR Incentive Program will produce a net benefit for the state's General Fund. This analysis of the fiscal and economic benefits of the program finds that if the state expends $5.2 million from the General Fund on administration costs:

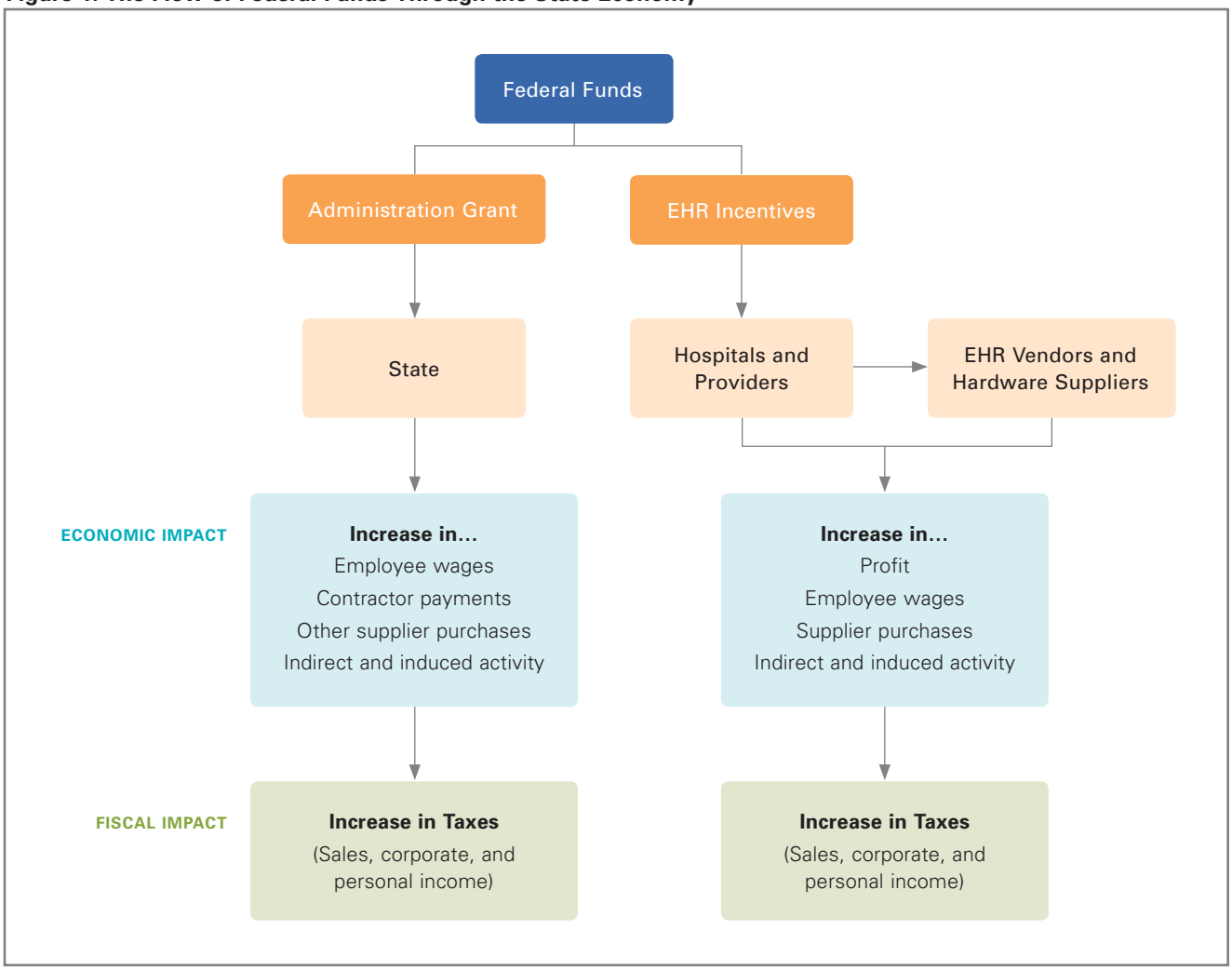
- $1.2 billion in federal funds will enter the state between July 2012 and June 2021 and generate $109 million in new General Fund revenue.
- The state will experience $2.3 billion in increased economic output and almost 16,000 new jobs.
- For every dollar spent by the state, $240 of federal money enters the state to produce $21 of new General Fund revenue.

By paying the 10% share of administrative costs of participation in the EHR incentive program, California's economy and the State General Fund will reap considerable benefits that far exceed the modest investment required by the federal government.

## **Appendix A:** Flow of Federal Funds

Figure 1 diagrams the flow of federal funds through the state's economy via the administration grant and EHR incentives. First, federal administration grant funds are used to pay employee wages, contractors, and other suppliers of the Department of Health Care Services, who then create additional indirect and induced economic activity. These payments and purchases next make their way to the state's General Fund via sales, corporation, and personal income taxes. Similarly, the federal EHR incentive payments are given to hospitals and providers, who use most of this money to purchase EHR software and computer hardware from vendors. In addition, some of this provider money is used to pay employee wages and suppliers and to keep as profit, which then creates additional indirect and induced economic activity. This provider-based economic activity funnels some of the federal money to the state General Fund via sales, corporation, and personal income taxes. Finally, the software and hardware vendors use the money to pay employee wages and suppliers and to keep as profit, creating additional indirect and induced economic activity. Some of this money also makes its way to the state's General Fund via sales, corporation, and personal income taxes.

**Figure 1. The Flow of Federal Funds Through the State Economy**



## **Appendix B:** Yearly Federal Spending Detail

Table 9 details the level on federal spending expected in California in each fiscal year via both the administration grant and EHR incentive payments.

**Table 9. Estimated Yearly Federal Spending in California, July 2012 to June 2021** (in millions)

| | 2012–13 | 2013–14 | 2014–15 | 2015–16 | 2016–17 | 2017–18 | 2018–19 | 2019–20 | 2020–21 |
|---|---|---|---|---|---|---|---|---|---|
| Administration Grant | $10.6 | $8.4 | $9.0 | $8.0 | $6.1 | $2.1 | $1.5 | $0.8 | $0.4 |
| Incentive Payments | $277.6 | $219.2 | $236.4 | $209.2 | $160.4 | $55.6 | $38.4 | $21.3 | $10.6 |
| **Total Federal Spending** | **$288.2** | **$227.6** | **$245.4** | **$217.2** | **$166.5** | **$57.7** | **$39.9** | **$22.1** | **$11.0** |

## Endnotes

1. Chapter 433, Statutes of 2011 (SB 945)
2. Dentists and optometrists may also eventually be eligible, but are not currently eligible. Cited in DHCS' Advanced Planning Document Update; see endnote 6.
3. For acute care hospitals, at least 10% of their patients must be Medi-Cal clients in order to participate. Individual providers must generally have a minimum 30% Medi-Cal patient volume.
4. Results of a University of California, San Francisco, and California Medical Board landscape assessment commissioned by DHCS as communicated by the Office of Health Information Technology.
5. IMPLAN is a widely used economic modeling tool created by MIG.
6. Office of Health Information Technology, Department of Health Care Services, *Health Information Technology Implementation — Advanced Planning Document Update,* March 2012.
7. DHCS labeled its contractor costs from January 2012 to September 2013 as "To Be Determined." Based on the description of the ongoing and new contractor projects to be undertaken during that time, it is assumed that these costs were equal to the known contractor costs from January 2011 to January 2012.
8. The authors note that only some of these contractors are for-profit, and therefore subject to corporation or personal income taxes.
9. Authors assume the current split between for-profit (52%) and nonprofit (48%) continues throughout the life of the incentive program. Given the various ways in which for-profit contractors could be organized (e.g., partnerships, LLCs, C Corps), the authors make the simplifying assumption that all profits are taxed as corporate taxes.
10. Based on the relationship between adjusted gross income and total tax liability in the Franchise Tax Board's Table B-2.
11. The corporate tax rate was estimated using the ratio of tax assessed to income for corporations reporting net income from the Franchise Tax Board's Exhibit B-2 (www.ftb.ca.gov).
12. To determine how much in incentives will have been given out before the beginning of 2012–13, the authors used information provided by DHCS. Currently, 116 hospitals have qualified for an average first year payment of $1.4 million. The authors assume that they will make this average incentive payment to all 154 hospitals that applied for funding this year for a total of almost $222 million. In addition, DHCS has a goal of providing payment to 10,000 providers. Because the provider application window is still open, the authors do not have an estimate of the average payment. Instead, the authors use the maximum first year payment of $21,250 to estimate that another $212 million in incentives will have been paid out to providers by the end of the fiscal year.
13. The $1.7 billion in total payments for this middle scenario is calculated using the same methodology as was used to calculate the amount of payment dispersed in 2011–12 and the minimum and maximum amounts; that is, using the average cost in first year payments experience by hospitals and maximum costs possible for providers to estimate their total payments. See endnote 12 for additional information.
14. Although the incentive payments are not obligated to be spent on the purchase of EHR systems, the receipt of the incentive is contingent upon the purchase and meaningful use of these systems. Thus, the authors modeled the flow of incentive money through the purchase, implementation, and maintenance of EHR systems.

15. CMS, citing published studies on the cost of EHR systems, assumes yearly maintenance costs are 20% of the initial implementation costs for both hospitals and providers. Because hospitals receive "maintenance" payments for three years and providers receive them for five years, the maintenance payments would be 38% and 48%, respectively, of the total spending in that time period. See endnote 17 for additional information on the literature.

16. Incentive payments do not match up exactly with costs in either period; they will be less than the estimated cost of EHR systems in both implementation and maintenance years. CMS estimates that the costs for a provider would be $54,000 per physician FTE for implementation and $10,000 per physician FTE per year for maintenance. For hospitals, they estimate the costs to be $5 million for implementation and $1 million per year for maintenance. In comparison, the incentives would be less than $22,000 in the first year for providers and are averaging $1.4 million for hospitals. For maintenance, providers receive a maximum of $8,500 per year and hospitals would be getting $848,000 in the second year and $283,000 in both year 3 and 4. Thus, the incentive payments are substantially less than total anticipated costs.

17. The EHR system cost literature includes the five studies of EHR implementation costs considered by CMS, plus six other studies identified through our own literature search. These are: Gallego, Ana Isabel, Marie-Pierre Gagnon, and Marie Desmartis, "Assessing the Cost of Electronic Health Records: A Review of Cost Indicators," *Telemedicine and e-Health,* 16, no. 9 (2010): 963–972; Fleming, Neil S and Steven D Culler et al, "The Financial and Nonfinancial Costs of Implementing Electronic Health Records in PrimChriary Care Practices," *Health Affairs,* 30, no. 3 (2011) 481-489; Miller, Robert H and Christopher E West, "The Value of Electronic Health Records in Community Health Centers: Policy Implications," *Health Affairs,* 26, no.1 (2007): 206-214; Gans, David, John and John Krawlewski et al., "Medical Groups' Adoption of Electronic Health Records and Information Systems," *Health Affairs,* 24, no. 5 (2005): 1323-1333; Kibbe, David and Steven Waldren, *Partners for Patients Electronic Health Record Market Survey,* (Center for Health Information Technology, 2005); Kashal, Rainu and Ashish K Jha et al., "Return on Investment for a Computerized Physician Order Entry System," *Technology Evaluation,* 13, no. 3 (2006):261-266; Girosi, Federico, Robin Meili, and Richard Scoville, *Extrapolating Evidence of Health Information Technology Savings and Costs,* (RAND Corporation, 2005); Gans, David N., "Off to a slow start…," *MGMA Connexion,* 5, no. 9 (2005): 42-46; Miller, Robert H and Christopher West et al., "The Value of Electronic Health Records in Solo or Small Group Practices," *Health Affairs,* 24, no. 5 (2005): 1127-1137; Wang, Samuel J and Blackford Middleton et al., "A Cost-Benefit Analysis of Electronic Medical Records in Primary Care," *American Journal of Medicine,* 114 (2003): 397-403.

18. Miller, Robert H. and Christopher E West (2007); Miller, Robert H. and Christopher West, et al. (2005); Wang, Samuel J and Blackford Middleton et al (2003).

19. Miller, Robert H. and Christopher E West (2007); Miller, Robert H. and Christopher West, et al. (2005);

20. Although a portion of the maintenance costs will be spent internally, the literature was not clear on the percentage of the maintenance costs that was spent on in-house technical staff. In addition, the use of in-house technical staff will likely vary by practice. Thus, for purposes of this analysis, the authors assume that all the maintenance money goes to the EHR vendors for eventual use and, as such, is subject to taxation. Given the nonprofit nature of many hospitals and clinics and the for-profit structure of EHR vendors, this may overstate the tax benefits of the maintenance spending. However, the authors also assume that none of these software maintenance costs have sales tax applied to them, which has a counterbalancing effect on the estimates.

21. $10 million ($7 million for hospitals and $2.9 million for providers) of the hardware costs are assumed to go to general revenue of providers that are updating instead of implementing new systems. The percentage that are updating is based on the percentage of each provider type that have implemented some type of EHR system times the percent that would be apply for an incentive, as determined by the NAMCS and AHA provider surveys. For hospitals, 17% are assumed to be updating; for providers, 9% are assumed to be updating. Cited in DHCS' Advanced Planning Document Update; see endnote 6.

22. Some EHR vendors might not be corporations. As a result, profits from these vendors would be subject to personal income taxes rather than corporation taxes. For simplicity, however, the authors assume that all profits are subject to corporation taxes.

23. $345 million is the sum of hardware purchase ($73 million) and ongoing equipment costs ($282 million) in Table 3. $12 million is the amount of the software purchase figure of $62 million in Table 3 that has sales tax applied to it based on the assumptions described in the same paragraph.

24. Only pre-written EHR software that is transferred to the hospitals and providers via a tangible medium such as a CD or a piece of computer hardware is subject to sales tax. EHR software that is mostly custom built, installed by the vendors at the practice site, hosted on servers off-site, downloaded via the Internet, or accessed "in the cloud" is not subject to sales tax. Discussions with EHR vendors revealed the popularity of the vendor installation and remote electronic installation method, especially for larger practices, and the growing use of Internet applications for smaller, less complex practices. In addition, the fact that providers must purchase pre-certified systems means that custom builds are not the market norm, even though the system capabilities can be mixed and matched by the practices. These market characteristics form the basis of this report's software sales tax assumptions.

25. For EHR updates that are installed by practices using a tangible medium, sales tax would be paid. However, updates that are downloaded via the Internet or installed by the vendors would not be taxed. For EHR systems that incur license fees, these ongoing costs are taxed only if the original installation was taxed. Conservatively, the authors estimate that none of these software maintenance costs are taxed. This also has the effect of offsetting the fact that the authors do not apportion any of the maintenance costs to the hospital and providers. See endnote 20.

26. $345 million is the sum of hardware purchase ($73 million) and ongoing equipment costs ($282 million) in Table 3.

27. $811 million is the sum of software purchase ($62 million), training and support ($39 million), and ongoing service costs ($709 million) in Table 3.

28. $73 million is the sum of internal staff time and the $10 million of the hardware purchase amount shown in Table 3 that is assumed to go to general revenue of providers that are updating instead of implementing new systems.

29. EHR vendors are classified as custom computer programming services when using IMPLAN.

30. The original divisions between provider types become more nuanced for this part of the analysis. Hospitals are classified as nonprofit and for-profit based on the average representation of each type in the acute care hospital landscape and in the Disproportionate Share Hospital (DHS) hospital sector as found in the 2010 Office of Statewide Health Planning and Development (OSHPD) Hospital Annual Financial data. Thus, the authors assume 28% of hospitals are for-profit. In addition, individual providers are classified as individual offices, for-profit medical groups, and nonprofit medical groups. Based on DHCS data that 85% of individual provider incentive recipients are reassigning their payments to medical groups, the authors assume 85% of incentive recipients are medical groups and that the other 15% are individual practices.

Of the medical groups, the authors assume that 15% are for-profit based on the percent of the eligible group landscape of nonprofit clinics, public hospitals, and medical groups that are for-profit. Of these, the authors make the simplifying assumption that all groups are organized as corporations and are subject to the corporate income tax instead of the individual income tax (as experienced by offices operated by individuals or under partnerships). For-profit status of medical groups is based on an analysis of the medical group database maintained by Cattaneo & Stroud. When using IMPLAN, all hospitals are classified as private hospitals; individual providers are classified as offices of physicians, dentists, and other health care providers; and medical groups are classified as medical and diagnostic labs and outpatient and other ambulatory care services.

31. Information from the Board of Equalization indicates a statewide effective sales tax rate of 8.1%, of which only 3.9625% goes to the General Fund. This rate was used to estimate sales tax effects resulting from the incentive payments.

32. Although the program runs through FY 2020–21, providers are only eligible to begin receiving payments until FY 2015–16. After that year, only maintenance payments to remaining providers will be handed out.

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