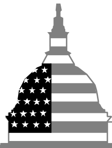

G A O

Accountability * Integrity * Reliability

United States Government Accountability Office
Washington, DC 20548

December 13, 2012

Congressional Committees

Subject: *Electronic Health Records: Number and Characteristics of Providers Awarded Medicaid Incentive Payments for 2011*

Widespread use of health information technology, such as electronic health records (EHR), has the potential to improve the quality of care patients receive and reduce health care costs. However, studies have estimated that as of 2009, 78 percent of office-based physicians and 91 percent of hospitals had not adopted EHRs.[1] Among other things, the Health Information Technology for Economic and Clinical Health (HITECH) Act, enacted as part of the American Recovery and Reinvestment Act of 2009,[2] provided funding for various activities intended to promote the adoption and meaningful use of certified EHR technology.[3] The largest of these activities, in terms of potential federal expenditures, are the Medicare and Medicaid EHR programs.[4] Starting in 2011, these programs have provided incentive payments for certain providers, including both hospitals and health care professionals such as physicians and dentists that demonstrate meaningful use of certified EHR technology and meet other program requirements established by the Centers for Medicare & Medicaid Services (CMS). The Congressional Budget Office estimates that from 2011 through 2019, spending for the Medicare and Medicaid EHR programs will total $30 billion,

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[1]See C. J. Hsiao, E. Hing, T. C. Socey, and B. Cai, "Electronic Medical Record/Electronic Health Record Systems of Office-Based Physicians: United States, 2009 and Preliminary 2010 State Estimates," *National Center for Health Statistics Health E-stat* (2010); and A. K. Jha, C. M. DesRoches, P. D. Kralovec, and M. S. Joshi, "A Progress Report on Electronic Health Records In U.S. Hospitals," *Health Affairs*, no.10 (2010):1951-1957.

[2]The HITECH Act was enacted as title XIII of division A and title IV of division B of the American Recovery and Reinvestment Act of 2009. Pub. L. No. 111-5, div. A, tit. XIII, 123 Stat. 115, 226-279 and div. B, tit. IV, 123 Stat. 115, 467-496 (2009).

[3]Congress defined "meaningful use" in this context to reflect that the user of health information technology demonstrates to the satisfaction of the Secretary of Health and Human Services (HHS) that the technology is certified and being used in a meaningful manner, that the technology is connected in a manner that provides for the electronic exchange of health information to improve the quality of health care, and that such information is submitted in a form and manner specified by the Secretary. See Pub. L. No. 111-5, § 4101(a), 123 Stat. 467-472. To be certified, EHR technology must meet certain criteria established by HHS's Office of the National Coordinator for Health Information Technology that describe minimum related performance standards and implementation specifications.

[4]See Pub. L. No. 111-5, §§ 4101-4201, 123 Stat. 467-494. Medicare is a federal program financing health care for individuals aged 65 and older, certain disabled individuals, and individuals with end-stage renal disease. In 2010, Medicare covered 47 million beneficiaries. Medicaid is a federal-state program financing health care for certain low-income individuals. In fiscal year 2009, Medicaid covered over 65 million beneficiaries.

with spending for the Medicaid EHR program accounting for more than a third—$12.4 billion. This report focuses on the Medicaid EHR program.

Provisions in the HITECH Act define the types of hospitals and professionals that may be eligible to receive Medicaid EHR incentive payments. Eligible hospitals include acute care hospitals, critical access hospitals, children's hospitals, and cancer hospitals.[5] Eligible professionals include doctors of medicine, dental medicine or surgery, and osteopathy; nurse practitioners; certified nurse midwives; and physician assistants who work for a federally qualified health center or rural health clinic that is led by a physician assistant.[6] To participate in the Medicaid EHR program, providers must generally meet a patient volume requirement. This requirement was established to ensure that providers that receive incentive payments from the Medicaid EHR program serve a minimum volume of Medicaid patients, or, for certain professionals, a minimum volume of needy patients.[7] Hospitals generally must have a Medicaid patient volume of at least 10 percent.[8] Professionals must have a Medicaid patient volume of at least 30 percent unless they are pediatricians or practice predominantly in a federally qualified health center or rural health clinic; pediatricians must have a Medicaid patient volume of at least 20 percent.[9]

To qualify for incentive payments in 2011 or during the first year they participate in the Medicaid EHR program, providers only need to adopt, implement, or upgrade to a certified EHR system, and they do not have to demonstrate meaningful use. In subsequent years, however, providers must demonstrate meaningful use of the EHR systems in order to qualify for the program's incentive payments. To demonstrate meaningful use, providers must collect and report information on various measures established by CMS.

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[5]In this report, for the purpose of analyzing participation in the Medicaid EHR program, we use the term acute care hospital to describe short-term hospitals that are not critical access or cancer hospitals. However, in the Medicaid EHR program, the term acute care hospital refers to short-term hospitals generally, which includes critical access hospitals, and cancer hospitals. The hospitals classified as critical access hospitals typically are very small (25 inpatient beds or fewer) and operate in rural areas.

[6]Federally qualified health centers are urban or rural centers that provide comprehensive community-based primary care services to individuals regardless of their ability to pay. Rural health clinics provide similar primary care services in underserved rural areas, but unlike federally qualified health centers, rural health clinics are not required to provide services to all individuals, such as those who are uninsured.

[7]Needy patients are defined by CMS as patients who are enrolled in Medicaid or the State Children's Health Insurance Program, receive uncompensated care, or receive care at no cost or on a sliding scale determined by ability to pay.

[8]Children's hospitals are the only hospitals that do not have to meet the 10 percent Medicaid patient volume requirement.

[9]Professionals who practice predominantly in a federally qualified health center or rural health clinic must have a needy patient volume of at least 30 percent. To be considered as practicing predominantly in a federally qualified health center or rural health clinic, a professional must treat over 50 percent of his or her total patient volume over a period of 6 months in a federally qualified health center or rural health clinic.

States, the District of Columbia, and the U.S. insular areas administer and oversee the Medicaid EHR program, with CMS providing additional oversight and funding. Although states are not required to offer the Medicaid EHR program, 42 states launched a Medicaid EHR program and disbursed incentive payments for 2011.[10] During 2011, the first year of the program, 2,700 hospitals and 66,663 professionals registered for the Medicaid EHR program, which is a necessary first step to participate in the program.[11] Under the Medicaid EHR program, incentive payment amounts to hospitals and professionals are determined as follows.[12] Payments are determined and awarded on a fiscal year basis for hospitals and on a calendar year basis for professionals.[13]

- For hospitals, the amount of incentive payment in any given year is generally based on the hospital's annual discharges and Medicaid share, which is the percentage of the hospital's inpatient bed days that were attributable to Medicaid patients. The number of years over which incentive payments are awarded (from 3 to 6 years) is at the discretion of the state. As a result, the payment amount awarded to hospitals for a certain level of discharges and Medicaid share in any given year, including 2011, can vary across states. Theoretically, the maximum possible amount a hospital could receive in total Medicaid EHR incentive payments is $15,926,000.[14]

For most professionals, the amount of incentive payment that a professional receives in any given year is, in general, a fixed amount, $21,250 in the first year and $8,500 each year for up to 5 subsequent years. The total amount over a 6-year period cannot exceed $63,750.[15]

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[10]In addition to the U.S. insular areas and the District of Columbia, the following states did not offer the Medicaid EHR program in 2011: Colorado, Hawaii, Idaho, Minnesota, Nebraska, New Hampshire, Nevada, and Virginia.

[11]For hospitals, see CMS, "Medicare and Medicaid EHR Incentive Program Payment and Registration Report, November 2011." For professionals, see CMS, "Medicare and Medicaid EHR Incentive Program Payment and Registration Report, February 2012."

[12]The last year for which providers may begin receiving payments is 2016 and the last year for which providers may be awarded Medicaid EHR incentive payments is 2021. Providers can maximize their total payments by first participating in the Medicaid EHR program no later than 2016.

[13]As a result, year 2011 refers to the fiscal year—October 1, 2010, through September 30, 2011—for hospitals and the calendar year for professionals.

[14]This amount assumes that all patients the hospital served were Medicaid patients and that the hospital had at least 23,000 discharges each year, which is the highest number of discharges used in the calculation of Medicaid EHR incentive payments. For more information see CMS, "Medicaid Hospital Incentive Payment Calculations" accessed December 3, 2012, http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/MEDICAID_HOSP_INCENTIVE_PAYMENTS_TIP_SHEETS.PDF.

[15]Pediatricians who qualify with less than 30 percent Medicaid patient volume (but have at least 20 percent) may receive $14,167 in the first year and $5,667 in subsequent years, up to a total amount of $42,500 over a 6-year period.

The HITECH Act requires us to report on, among other things, the impact of its provisions on adoption of EHRs by providers.[16] In response to this requirement, in April 2012 we reported on CMS's efforts to oversee the first year of the Medicare and Medicaid EHR programs as well as challenges encountered by providers and strategies they used to participate in these programs.[17] We recommended, among other things, that CMS take steps to enhance its processes used to verify that providers receiving incentive payments have met program requirements. On behalf of CMS, the Department of Health and Human Services agreed with most of our recommendations. In July 2012, we reported information on providers that were awarded Medicare EHR incentive payments for 2011, including the number of award recipients and their characteristics.[18]

Concerns have been raised that various factors, such as location in urban or rural areas or the size of hospitals and professional practices, may affect the extent to which different providers will respond to the incentives provided by the HITECH Act. Identifying the number and characteristics of providers that participated during the first year of the Medicaid EHR program can provide important information on whether certain types of providers were more likely than others to participate. As discussed with the committees of jurisdiction, in this report we provide information on providers that were awarded Medicaid EHR program incentive payments for 2011, the first year of the program.

To provide information on providers—that is, hospitals and professionals—awarded Medicaid EHR incentive payments for 2011, we analyzed data related to the 2011 program year that CMS collected from participating states as well as data from CMS and other government and private sources on provider characteristics.[19] We used these data to

- determine the number of providers that were awarded a Medicaid EHR incentive payment,
- estimate the percentage of eligible providers that were awarded a Medicaid EHR incentive payment,
- determine the amount of Medicaid EHR incentive payments awarded to providers, and

[16]Pub. L. No. 111-5, § 13424(e), 123 Stat. 278-279.

[17]See GAO, *Electronic Health Records: First Year of CMS's Incentive Programs Shows Opportunities to Improve Processes to Verify Providers Met Requirements*, GAO-12-481 (Washington, D.C.: Apr. 30, 2012). In our April 2012 report, we analyzed partial-year data that Medicare providers reported to CMS to demonstrate that they meaningfully used their certified EHR technology.

[18]See GAO, *Electronic Health Records: Number and Characteristics of Providers Awarded Medicare Incentive Payments for 2011*, GAO-12-778R (Washington, D.C.: July 26, 2012).

[19]In the Medicaid EHR program, states have the flexibility to establish the deadline by which providers must submit the information needed to determine incentive payment eligibility. States also have the flexibility to establish the deadline for completing the incentive payment awards. As a result, at the time of our analysis, not all states had determined which hospitals and professionals would receive incentive payments for 2011. We analyzed data related to the 2011 program year that CMS collected from the states from January 3, 2011, through October 1, 2012.

- examine the characteristics of providers that were awarded Medicaid EHR incentive payments.

Specifically, to determine the number of providers that were awarded a Medicaid EHR incentive payment for 2011, we analyzed CMS data on providers that had an incentive payment disbursed to them. We also used these data to estimate the percentage of eligible providers awarded a Medicaid EHR incentive payment for 2011. To do this, we divided the number of providers awarded an incentive payment by the estimated total number of eligible providers, that is, providers that were eligible for the Medicaid EHR program, regardless of whether they were awarded an incentive payment. To determine the total amount of Medicaid EHR incentive payments awarded to providers, we summed the Medicaid EHR incentive payments awarded to providers. To provide context, we compared these numbers to participation levels and total award amounts made under the Medicare EHR program for 2011.[20] We also examined the distribution of the Medicaid incentive payments across providers. Specifically, for hospitals, we determined the minimum, 25th percentile, median, 75th percentile, and maximum Medicaid EHR incentive payment amount. For professionals, we determined the percentage of professionals who were awarded an incentive payment of various amounts.

To examine the characteristics of providers awarded Medicaid EHR incentive payments for 2011, we analyzed data from CMS, the Health Resources and Services Administration, the Office of the National Coordinator for Health Information Technology (ONC), and Surescripts.[21] Examples of professional characteristics included whether the professional had previously participated in CMS's Electronic Prescribing program or signed an agreement to receive technical assistance from a Regional Extension Center.[22] As part of our analysis, we also compared the characteristics of hospitals that were awarded Medicaid EHR incentive payments for 2011 to those of other hospitals that were eligible for the Medicaid EHR program but

[20]Information on participation in the Medicare EHR program in 2011 was obtained from GAO-12-778R.

[21]Surescripts operates the nation's largest electronic prescription network and collects data on, among other things, the number of electronic prescriptions sent to pharmacies in its network.

[22]The Electronic Prescribing program, which was established by the Medicare Improvements for Patients and Providers Act of 2008, provides incentive payments from 2009 through 2013 to physicians and certain other Medicare professionals, such as physician assistants and nurse practitioners, who have prescribing authority and who adopt and use systems that meet CMS's definition of a qualified electronic prescribing system. From 2012 through 2014, the program may apply a payment adjustment, or penalty, on the program's eligible providers that do not adopt and use such systems. See GAO, *Electronic Prescribing: CMS Should Address Inconsistencies in Its Two Incentive Programs That Encourage the Use of Health Information Technology*, GAO-11-159 (Washington, D.C.: Feb. 17, 2011).

The Regional Extension Center program was established by the HITECH Act and is administered by ONC to help some types of providers, such as those located in rural areas, participate in CMS's EHR programs.

were not awarded a payment for that year.[23] Our comparisons included eligible hospitals from the 50 states, the District of Columbia, and the U.S. insular areas.

To ensure the reliability of the various data we analyzed, we interviewed officials from CMS, ONC, and Surescripts; reviewed relevant documentation; and conducted electronic testing to identify missing data and obvious errors. As part of our efforts to ensure the reliability of CMS data on providers that received a Medicaid EHR program incentive payment for 2011, we reviewed information from states, which submit the data to CMS, to assess the completeness of the CMS data. In general, we found that total participation and amounts awarded for 2011 will likely increase because some states had not completed their determinations of which hospitals and professionals had met all the requirements to receive incentive payments for 2011. We estimate that up to 4 percent more hospitals and up to 9 percent more professionals may obtain 2011 incentive payments.[24] On the basis of these activities, we determined that the data we analyzed were sufficiently reliable for our analysis.[25] Enclosure I provides additional information on our scope and methodology.

We conducted this performance audit from January 2012 to December 2012 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

In summary, 1,964 hospitals and 45,962 professionals were awarded a total of approximately $2.7 billion in Medicaid EHR incentive payments for 2011. These 1,964 hospitals, which represented 39 percent of the 5,013 eligible hospitals, were awarded a total of $1.7 billion in Medicaid EHR incentive payments for 2011.[26] While the amount of Medicaid EHR incentive payments awarded to each hospital ranged from $7,528 to $7.2 million, the median payment amount was $613,512. Participation rates, as well as total payments, were higher for hospitals in the Medicaid EHR program when compared to the Medicare EHR program, though the median payment amount in the Medicaid EHR program was less than half as large. (See table 1.)

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[23]It was not feasible to conduct a similar analysis of professionals that examined characteristics of eligible professionals who received Medicaid EHR incentive payments compared to those who did not. We lacked the data to be able to identify professionals who met the minimum Medicaid or needy patient volume threshold—a key eligibility requirement in the Medicaid EHR program—but did not receive a Medicaid EHR incentive payment.

[24]Most of the hospitals that had not yet been paid at the time of our analysis were concentrated in Illinois, and most of the professionals that had not yet been paid at the time of our analysis were concentrated in California, Illinois, and New York.

[25]The amount of missing data on provider characteristics was generally low; however, in instances in which data were missing for 6 percent or more of providers, we noted this explicitly in tables presented in encs. II and III, as appropriate. See enc. I for specific information on the extent of missing data for the various provider characteristics we examined.

[26]In contrast to professionals, certain hospitals may receive an incentive payment from both the Medicare and Medicaid EHR programs in the same year. Through October 1, 2012, 529 hospitals were awarded an incentive payment from both programs for 2011.

Table 1: Participation in the Medicaid and Medicare EHR Programs by Hospitals, 2011

	Medicaid	Medicare
Number (percentage of eligible)	1,964 (39)	761 (16)
Median payment	$613,512	$1.7 million
Total payments	$1.7 billion	$1.3 billion

Source: GAO analysis of CMS data.

Notes: Medicaid figures are based on data CMS collected through October 1, 2012, for the 2011 program year. Medicare figures were reported in GAO, *Electronic Health Records: Number and Characteristics of Providers Awarded Medicare Incentive Payments for 2011*, GAO-12-778R (Washington, D.C.: July 26, 2012). The total number of hospitals that receive incentive payment awards from the Medicaid or Medicare EHR programs may increase.

About 50 percent of hospitals accounted for about 80 percent of the total amount of Medicaid incentive payments awarded to hospitals. Among hospitals awarded a Medicaid EHR incentive payment for 2011, we found that

- the largest proportion (46 percent) were located in the South and the smallest proportion (15 percent) were located in the Northeast,
- three-fifths (62 percent) were located in urban areas,
- four-fifths (80 percent) were acute care hospitals,
- more than half (57 percent) were nonprofit hospitals, and
- more than half (57 percent) were not members of a chain.

Comparing the hospitals that received incentive awards to the eligible hospitals that did not, we found that hospitals with certain characteristics were more likely to have been awarded Medicaid EHR incentive payments for 2011. For example, acute care hospitals were 1.7 times more likely and children's hospitals were 1.6 times more likely to have been awarded a Medicaid EHR incentive payment for 2011, when compared to critical access hospitals. In addition, hospitals with the highest number of total beds were 2 times more likely to have been awarded an incentive payment than hospitals with the lowest number of total beds.

The 45,962 professionals awarded a Medicaid EHR incentive payment for 2011 represented 33 percent of the estimated 139,600 professionals eligible for the program and were awarded a total of $967 million in incentive payments. Almost all professionals (97 percent) were awarded the maximum incentive payment amount generally available to professionals in 2011 ($21,250). Proportionally more than three times as many eligible professionals participated in the Medicaid EHR program in 2011 than in the Medicare EHR program, though the total payment amounts in the two programs were nearly equivalent.[27] (See table 2.)

[27]Although the Medicare and Medicaid EHR programs both distributed a total of $967 million to professionals for 2011 as of the dates we obtained the data from CMS, the aggregate amount distributed is determined independently for the two programs.

Table 2: Participation in the Medicaid and Medicare EHR Programs by Professionals, 2011

	Medicaid	Medicare
Number (percentage of eligible)	45,962 (33)	56,585 (9)
Median payment	$21,250	$18,000
Total payments	$967.1 million	$967.4 million

Source: GAO analysis of CMS data.

Notes: Medicaid figures are based on data CMS collected through October 1, 2012, for the 2011 program year. Medicare figures were reported in GAO, *Electronic Health Records: Number and Characteristics of Providers Awarded Medicare Incentive Payments for 2011*, GAO-12-778R (Washington, D.C.: July 26, 2012). The total number of professionals who receive incentive payment awards from the Medicaid or Medicare EHR programs may increase.

Among the professionals who received a Medicaid EHR incentive payment for 2011, we found that

- the largest proportion (37 percent) were located in the South and the smallest proportion (20 percent) were located in the Midwest;
- four-fifths (83 percent) were located in urban areas;
- nearly three-quarters were physicians—either general practice physicians (23 percent) or specialty practice physicians (51 percent)—and the lowest proportion (1 percent) were physician assistants; and
- almost half (47 percent) had signed agreements to receive technical assistance from a Regional Extension Center.

See enclosure II for more information on the characteristics of hospitals that were awarded a Medicaid EHR incentive payment for 2011. See enclosure III for more information on the characteristics of professionals who were awarded a Medicaid EHR incentive payment for 2011.

We provided a draft of this report to the Department of Health and Human Services for comment. The department provided technical comments, which we have addressed as appropriate.

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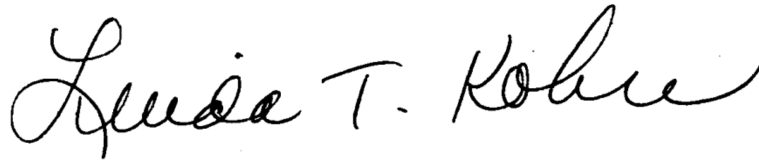
We are sending copies of this report to the Secretary of Health and Human Services, the Administrator of the Centers for Medicare & Medicaid Services, the National Coordinator for Health Information Technology, and other interested parties. In addition, the report is available at no charge on the GAO website at http://www.gao.gov.

If you or your staffs have any questions about this report, please contact me at (202) 512-7114 or at kohnl@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Major contributors to this report were Kristi Peterson, Assistant Director; Julianne Flowers; Krister Friday; Melanie Krause; E. Anne Laffoon; Shannon Legeer; Monica Perez-Nelson; and Eric Peterson.



Linda T. Kohn
Director, Health Care

Enclosures – 3

List of Committees

The Honorable Max Baucus
Chairman
The Honorable Orrin G. Hatch
Ranking Member
Committee on Finance
United States Senate

The Honorable Tom Harkin
Chairman
The Honorable Michael B. Enzi
Ranking Member
Committee on Health, Education, Labor, and Pensions
United States Senate

The Honorable Fred Upton
Chairman
The Honorable Henry A. Waxman
Ranking Member
Committee on Energy and Commerce
House of Representatives

The Honorable Dave Camp
Chairman
The Honorable Sander M. Levin
Ranking Member
Committee on Ways and Means
House of Representatives

Scope and Methodology

This enclosure provides additional details regarding our analysis of data from the Centers for Medicare & Medicaid Services (CMS) and other government and private sources to (1) determine the number of providers that were awarded a Medicaid electronic health record (EHR) incentive payment, (2) estimate the percentage of eligible providers that were awarded a Medicaid EHR incentive payment,[1] (3) determine the amount of Medicaid EHR incentive payments awarded to providers, and (4) examine the characteristics of providers that were awarded Medicaid EHR incentive payments.

Number of providers that were awarded a Medicaid EHR incentive payment. To determine the number of providers that were awarded an incentive payment, we analyzed data on providers that were awarded Medicaid EHR incentive payments for 2011 from CMS's National Level Repository.[2] We analyzed data related to the 2011 program year that CMS collected from January 3, 2011, through October 1, 2012.[3] Specifically, we counted the number of providers that had an incentive payment disbursed to them.

Estimate of the percentage of eligible providers that were awarded a Medicaid EHR incentive payment. To estimate the nationwide percentage of hospitals that were awarded an incentive payment, we divided the number of hospitals that were awarded an incentive payment by the total number of eligible hospitals, that is, hospitals that were eligible for the Medicaid EHR program, regardless of whether they were awarded an incentive payment. We identified eligible hospitals as those that met the following three criteria:

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[1]We use the term eligible providers to refer to hospitals and professionals who were generally eligible for the Medicaid EHR program, regardless of whether they were awarded a Medicaid EHR incentive payment for 2011, as described in greater detail later in this enclosure.

[2]The National Level Repository is a database that contains information on providers pertaining to the Medicaid EHR program, including information on providers that are registered for the incentive program and the amount of incentive payments, if applicable. The National Level Repository also contains information on providers pertaining to the Medicare EHR program, which we generally did not include in our analysis.

[3]As part of our efforts to ensure the reliability of CMS data containing information on providers that received a Medicaid EHR program incentive payment for 2011, we reviewed information from states, which submit the data to CMS, to assess the completeness of the CMS data. In general, we found that total participation and amounts awarded for 2011 will likely increase because some states had not completed their determinations of which hospitals and professionals had met all the requirements to receive incentive payments for 2011. We estimate that up to 4 percent more hospitals and up to 9 percent more professionals may obtain 2011 incentive payments. (Most of the hospitals that had not yet been paid at the time of our analysis were concentrated in Illinois, and most of the professionals that had not yet been paid at the time of our analysis were concentrated in California, Illinois, and New York.) However, we also found that the data we obtained from CMS for 2011 may have included some providers that were awarded payments for 2012 rather than 2011, and this would reduce the extent to which our results underestimate the total number of providers that obtained incentive payments for 2011. Specifically, we compared CMS and state records in the six states that paid the largest proportion of total hospitals or total professionals and found no discrepancies between CMS and state hospital data in four of the states. But in two of the states, CMS data listed more hospitals awarded a payment for 2011 than the states reported having paid for 2011—6 percent more hospitals in one state and 11 percent more in the other. Discrepancies between the NLR and state data were much smaller for professionals, less than one percent in all 6 states.

- were acute care, critical access, cancer, or children's hospitals;
- were located in one of the 50 states, the District of Columbia, or a U.S. insular area; and
- were not terminated from participating in the Medicaid program on or before January 2, 2011.[4]

We used a similar approach to estimate the percentage of hospitals that were awarded an incentive payment in each state. To estimate the nationwide percentage of professionals who were awarded an incentive payment, we divided the number of professionals who were awarded an incentive payment by the national estimate of the number of eligible professionals—139,600—that CMS developed in consultation with the Congressional Budget Office.[5] We used CMS's national estimate of eligible professionals because we lacked the data to be able to identify professionals who met the minimum Medicaid or needy patient volume threshold—a key eligibility requirement in the Medicaid EHR program—but did not receive a Medicaid EHR incentive payment. Because CMS's estimate of the number of eligible professionals was not available at the state level, instead of estimating the percentage of professionals awarded an incentive payment in each state, we estimated the number of eligible professionals awarded an incentive payment per 10,000 Medicaid enrollees for each state (based on a CMS count of enrollment for each state as of December 31, 2010).

Amount of Medicaid EHR incentive payments awarded to providers. We determined the total amount of the incentive payments that were awarded to providers by summing the Medicaid EHR incentive payments that had been disbursed to providers. To provide context, we compared these numbers to participation levels and total award amounts made under the Medicare EHR program for 2011.[6] We also examined the distribution of the Medicaid incentive payments for hospitals and professionals. Specifically, for hospitals, we determined

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[4]In this report, for the purpose of analyzing participation in the Medicaid EHR program, we use the term acute care hospital to describe short-term hospitals that are not critical access or cancer hospitals. However, in the Medicaid EHR program, the term acute care hospital refers to short-term hospitals generally, which includes critical access hospitals, and cancer hospitals. The hospitals classified as critical access hospitals typically are very small (25 inpatient beds or fewer) and operate in rural areas.

[5]CMS determined its estimate of the professionals eligible for the Medicaid EHR program as follows. First, CMS estimated that 14 percent of the 553,200 professionals participating in fee-for-service Medicare in 2011 were ineligible for an EHR payment for 2011 because they were hospital based. Of the 477,500 remaining professionals, it estimated that 20 percent, or 95,500, would meet the Medicaid patient volume requirements and choose to participate in the Medicaid EHR program instead of the Medicare EHR program because the incentive payment in the Medicaid EHR program is higher than that in the Medicare EHR program. Next, CMS estimated that there were about 44, 100 professionals who were not eligible for the Medicare EHR payment but were eligible under the Medicaid program. These included pediatricians and eligible nonphysicians such as nurse practitioners and certified nurse midwives. Together, these two groups totaled 139,600. See 75 Fed. Reg. 44314, 44548 (July 28, 2010).

[6]See GAO-12-778R for information on participation in the Medicare EHR program in 2011.

the minimum, 25th percentile, median, 75th percentile, and maximum Medicaid EHR incentive payment amount. For professionals, we determined the percentages who were awarded an incentive payment amount of (1) $21,250, which was the maximum Medicaid EHR incentive payment amount for most professionals, and (2) $14,167, which is the maximum Medicaid EHR incentive payment amount for pediatricians who qualify with a Medicaid patient volume of less than 30 percent but at least 20 percent.[7]

Characteristics of providers that were awarded Medicaid EHR incentive payments. To examine the characteristics of providers that were awarded Medicaid EHR incentive payments for 2011, we analyzed data on provider characteristics from CMS, the Health Resources and Services Administration, the Office of the National Coordinator for Health Information Technology (ONC), and Surescripts.[8] (See table 3.) Each characteristic is divided into two or more categories. For example, the characteristic "location" is divided into two categories—rural and urban. As part of this analysis for hospitals, we also compared the characteristics of hospitals that were awarded a Medicaid EHR incentive payment to those of eligible hospitals that were not awarded such payments.[9] To do so, we calculated relative risk ratios that indicate how much more likely a hospital in each category was to have been awarded an EHR incentive payment than a hospital in the category that was least likely to have been awarded a payment.

[7]Pediatricians with a 30 percent Medicaid patient volume or greater were awarded an incentive payment of $21,250 for 2011.

[8]Surescripts operates the nation's largest electronic prescription network and collects data on, among other things, the number of electronic prescriptions sent to pharmacies in its network.

[9]It was not feasible to conduct a similar analysis of professionals that examined characteristics of eligible professionals who received a Medicaid EHR incentive payment compared to those who did not. We lacked the data to be able to identify professionals who met the minimum Medicaid or needy patient volume threshold—a key eligibility requirement in the Medicaid EHR program—but did not receive a Medicaid EHR incentive payment.

Table 3: Data Sources Analyzed to Examine Characteristics of Eligible Providers

Agency or entity	Data source	Date of extract, download, or release
Centers for Medicare & Medicaid Services (CMS)	National Level Repository	October 2012
	National Plan and Provider Enumeration System Data Dissemination File[a]	May 2012
	Provider Enrollment, Chain, and Ownership System[a]	August 2012
	Provider of Services File	June 2012
	Online Survey, Certification, and Reporting System	May 2011
	Fiscal Intermediary Standard System	August 2012[b]
	2011 primary care health professional shortage areas	November 2010
	2010 recipients of incentive payments from CMS's Electronic Prescribing program	July 2011
Health Resources and Services Administration	Area Resource File	March 2012
Office of the National Coordinator for Health Information Technology (ONC)	Regional Extension Center Customer Relationship Management System extract file[c]	July 2012
	List of zip codes serviced by a Beacon Community[d]	June 2012
Surescripts	Extract file containing county-level information on electronic prescription transactions and prescribers	January – December 2011

Source: GAO.

[a]Data contained in this data source are generally self-reported by providers to CMS.

[b]We used data that we obtained from CMS in December 2011 for 110 hospitals for which we did not have August 2012 data.

[c]The Regional Extension Center program was established by the Health Information Technology for Economic and Clinical Health Act and is administered by ONC to help some types of providers, such as those located in rural areas, participate in CMS's EHR programs.

[d]ONC provided funding to support 17 Beacon Communities to build and strengthen their health information technology infrastructure and exchange capabilities. These communities were selected for various reasons, including the progress they had already made in adopting EHRs. The 17 Beacon Communities focus on specific and measurable improvement goals in three areas for health systems improvement—quality, cost efficiency, and population health—to demonstrate the ability of health information technology to affect local health care systems.

Using the data obtained from the sources listed in table 3, we examined the following provider characteristics:

- *Regional characteristics*. We analyzed data on the following regional characteristics:[10]

[10]In most cases, in order to link the information from these files to individual providers, we obtained zip codes for hospital locations from CMS's Provider of Services file and zip codes for professional practice locations from CMS's National Plan and Provider Enumeration System and CMS's Provider Enrollment, Chain, and Ownership System. We were missing zip code data for no hospitals and 17 professionals. Then, with the assistance of a zip code to Federal Information Processing Standard code crosswalk file we obtained from CMS, we were able to determine the counties in which hospitals were located and professionals practiced. When there was a discrepancy in practice state between those previously mentioned data sources and the state from which the provider received an incentive payment, as reflected in the National Level Repository—which occurred for 3 hospitals and for 702 professionals—we used the payment state and generally excluded those providers from our analysis of regional characteristics. However, for geographic region we were able to use state information rather than zip code information.

- *Geographic region*. We used the Health Resources and Services Administration's Area Resource File to identify the U.S. census region—Northeast, Midwest, South, or West—where providers were located or practiced.[11]

- *Location*. We used the Health Resources and Services Administration's Area Resource File to determine whether providers were located in a metropolitan area—an area that has at least one urbanized area of 50,000 people.[12] We then categorized providers located in metropolitan areas as being located in urban areas and providers that were not as being located in rural areas.

- *Average county volume of electronic prescribing based on transactions per professional who submits electronic prescriptions*. We used data from Surescripts to calculate, for each county during 2011, the average number of electronic prescriptions submitted per month from an ambulatory care setting by each professional who submitted electronic prescriptions.[13] Using these aggregated data, we created three categories for hospitals: (1) low—less than or equal to the 33.3rd percentile, (2) middle—greater than the 33.3rd percentile but less than or equal to the 66.7th percentile, and (3) high—greater than the 66.7th percentile.

- *Whether a provider is located in a county with a Beacon Community*. We used data from ONC to categorize providers as either being located in a Beacon Community or not.[14]

- *Whether a professional practices in a health professional shortage area*. We used the list from CMS that identifies the zip codes that were designated as primary care health professional shortage areas for bonus payments in 2011 to categorize providers as either being located in a health professional shortage area or not.[15]

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[11]Information on U.S. census region was available for all providers.

[12]Information on whether providers were located in urban or rural areas was missing for 5 eligible hospitals (less than 0.1 percent) and 732 professionals (1.6 percent).

[13]Information on county volume of electronic prescribing transactions was missing for 35 eligible hospitals (less than 1 percent).

[14]ONC provided funding to support 17 Beacon Communities to build and strengthen their health information technology infrastructure and exchange capabilities. These communities were selected for various reasons, including the progress they had already made in adopting EHRs. The 17 Beacon Communities focus on specific and measurable improvement goals in three areas for health systems improvement—quality, cost efficiency, and population health—to demonstrate the ability of health information technology to affect local health care systems. Information on whether a provider is located in a county with a Beacon Community was missing for 3 eligible hospitals (less than 1 percent) and 732 professionals (1.6 percent).

[15]CMS's list of zip codes for health professional shortage areas does not contain zip codes that were only partially in a shortage area. Information on whether a professional practices in a health professional shortage area was missing for 732 professionals (1.6 percent).

- *Hospital type*. We analyzed data on the following categorizations of hospital type:

  - *Hospital classification*. We determined whether hospitals were classified as acute care, critical access, cancer, or children's hospitals by using data from CMS's Provider of Services file and a list provided by CMS.[16]

  - *Major teaching hospital*. We determined whether hospitals were listed as having a major affiliation with a medical school in CMS's Provider of Services file.[17]

  - *Ownership type*. We primarily used data on ownership type from CMS's Provider of Services file to create three categories of ownership: (1) for-profit by combining private for-profit and physician ownership, (2) nonprofit by combining church and private not-for-profit, and (3) government-owned by combining four government designations (federal, state, local, and hospital district or authority) and tribal. In instances in which ownership type was listed as "other" in the Provider of Services file, we obtained information needed to classify hospitals as for-profit, nonprofit, or government-owned from another CMS data source—the Online Survey, Certification, and Reporting System.[18]

  - *Chain membership*. We categorized hospitals as being a member of a chain if the hospital has a chain home office listed in CMS's Provider Enrollment, Chain, and Ownership System. All other hospitals with a record in CMS's Provider Enrollment, Chain, and Ownership System were designated as not being a member of a chain.[19]

- *Hospital size*. We analyzed data on the following measures of hospital size from CMS's Provider of Services file and Fiscal Intermediary Standard System:[20]

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[16]CMS provided a list of hospitals that were eligible for the Medicaid EHR incentive program, but not the Medicare EHR incentive program, including children's and cancer hospitals and hospitals located in the U.S. insular areas. Information on hospital classification was available for all eligible hospitals.

[17]Information on hospital affiliation with a medical school was available for all hospitals.

[18]Information on hospital ownership type was missing for two eligible hospitals (less than 0.1 percent).

[19]Information on chain membership was missing for 212 hospitals (about 4 percent).

[20]Data from CMS's Fiscal Intermediary Standard System were missing for 168 acute care hospitals (about 5 percent of eligible acute care hospitals) because, at the time of our data extract, CMS had not populated the system with information on those hospitals. These data were also missing for 837 critical access hospitals (about 63 percent of eligible critical access hospitals) because, in general, CMS only populates the system with information for those hospitals after the hospital has applied for an incentive payment from the Medicare EHR program and submitted documentation of the reasonable costs associated with the acquisition of the EHR system. In addition, these data were missing for most cancer hospitals, children's hospitals, and hospitals in the U.S. insular areas because CMS does not populate the system with information for those hospitals. Consequently, data from CMS's Fiscal Intermediary Standard System were missing for a total of 1,108 hospitals.

- *Total beds*. Using data from CMS's Provider of Services file on the total number of hospital beds, we created three categories: (1) low—less than or equal to the 33.3rd percentile, (2) middle—greater than the 33.3rd percentile but less than or equal to the 66.7th percentile, and (3) high—greater than the 66.7th percentile.[21]

- *Total discharges*. Using data from CMS's Fiscal Intermediary Standard System on the total number of discharges for each hospital, we created three categories: (1) low—less than or equal to the 33.3rd percentile, (2) middle—greater than the 33.3rd percentile but less than or equal to the 66.7th percentile, and (3) high—greater than the 66.7th percentile.

- *Hospital charges*. We analyzed data on the following measures of hospital charges from CMS's Fiscal Intermediary Standard System:

  - *Total charges*. Using data on the total amount of charges, we created three categories: (1) low—less than or equal to the 33.3rd percentile, (2) middle—greater than the 33.3rd percentile but less than or equal to the 66.7th percentile, and (3) high—greater than the 66.7th percentile.[22]

  - *Charity charges*. Using data on charity charges, we created three categories: (1) low—less than or equal to the 33.3rd percentile, (2) middle—greater than the 33.3rd percentile, but less than or equal to the 66.7th percentile, and (3) high—greater than the 66.7th percentile.[23]

- *Professional characteristics*. We included in our analysis the following five types of professional characteristics:

  - *Professional specialty*. We chiefly obtained data on professionals' primary specialty from CMS's National Plan and Provider Enumeration System Downloadable File. Then, with the assistance of a crosswalk we obtained from CMS that aggregates specialty taxonomy codes into a smaller number of specialties, we created the following six categories: (1) general practice physician, (2) specialty practice physician, (3) certified nurse midwife or nurse

[21]Information on total beds was available for all eligible hospitals.

[22]In addition to the 1,108 hospitals for which we were missing data on total charges and charity charges, we excluded an additional 7 hospitals from our analyses of total charges and of charity charges after determining that the hospitals' data were unreliable because the amount of charity charges exceeded the total amount of charges.

[23]Charity charges reflect the cost for providing inpatient and outpatient hospital services for which the hospital is not compensated.

practitioner, (4) physician assistant, (5) dentist, and (6) other professional.[24] In instances in which the professional specialty information was missing from the National Plan and Provider Enumeration System, we obtained information on professionals' specialty from another CMS data source—the Provider Enrollment, Chain, and Ownership System.[25] To examine variation among different types of specialty practice physicians, we used information from the CMS crosswalk to assign specialty practice physicians to 1 of 28 specialty categories, such as such as cardiology, surgery, and psychiatry.

- *Number of professionals in the practice*. We estimated the number of professionals in each practice by counting the number of professionals who were listed as members of each professional practice in CMS's Provider Enrollment, Chain, and Ownership System.[26] We subsequently created four practice size categories: (1) solo practice, (2) practice of 2 to 10 professionals, (3) practice of 11 to 50 professionals, and (4) practice of 51 or more professionals. We also created a fifth category for professionals who were associated with more than one group practice of different sizes.

- *Whether the professional had signed an agreement to receive technical assistance from a Regional Extension Center*. We obtained data on whether professionals (identified by National Provider Identifier) had signed an agreement to receive technical assistance from a Regional Extension Center from ONC's Regional Extension Center Customer Relationship Management System.[27] We then categorized professionals as either having signed an agreement to receive technical assistance or not.

[24]We classified doctors of medicine and osteopathic medicine that specialize in family practice, general practice, or internal medicine as general practice physicians; all other doctors of medicine and osteopathic medicine were classified as specialty practice physicians. "Specialty practice physician" also includes optometrists because the Medicaid statute permits states to consider, under the provisions of their state Medicaid plans, optometrist services as physician services; thus, optometrist services may qualify for the Medicaid EHR program. "Certified nurse midwife or nurse practitioner" also includes other registered nurses because CMS regulations permit states, in accordance with the scope of practice defined under state law, to allow other types of registered nurses who meet the regulations' training and experience to qualify for the Medicaid EHR program as nurse midwives or nurse practitioners. "Other professional"—531 professionals (1.2 percent)—comprises 426 professionals for whom information on professional specialty was missing and 105 professionals who we could not confirm had specialty types that were eligible to receive incentive payments. However, CMS officials told us that these 531 professionals had permissible professional specialties.

[25]Professionals were not required to enroll in the Provider Enrollment, Chain, and Ownership System in order to receive incentive payments from the Medicaid EHR program.

[26]Information on the number of professionals in the practice was missing for 14,747 professionals (32 percent).

[27]The Regional Extension Center program was established by the Health Information Technology for Economic and Clinical Health Act and is administered by ONC to help some types of providers, such as those located in rural areas, participate in CMS's EHR programs.

- *Whether the professional had received an incentive payment from CMS's electronic prescribing incentive program in 2010*. We obtained data from CMS on whether professionals received an incentive payment from CMS's Electronic Prescribing program in 2010.[28] We then categorized professionals as either having received such an incentive payment or not.

- *Years since the professional's degree was awarded*. Using data on when professionals had received their degree from CMS's Provider Enrollment, Chain, and Ownership System, we determined the number of years since each professional's degree was awarded.[29] We dropped data on years since the professional's degree was awarded if the data were potentially unreliable—that is, if the number of years exceeded 75. We subsequently created three categories: (1) low—15 years or fewer, (2) middle—16 to 29 years, and (3) high—30 years or more.

To ensure the reliability of the various data we analyzed, we interviewed officials from CMS, ONC, and Surescripts; reviewed relevant documentation; and conducted electronic testing to identify missing data and obvious errors. On the basis of these activities, we determined that the data we analyzed were sufficiently reliable for our analysis. Although the amount of missing data was generally low, in instances in which data were missing for 6 percent of providers or more, we noted this explicitly.

We conducted this performance audit from January 2012 to December 2012 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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[28]The Electronic Prescribing program, which was established by the Medicare Improvements for Patients and Providers Act of 2008, provides incentive payments from 2009 through 2013 to physicians and certain other Medicare professionals, such as physician assistants and nurse practitioners, who have prescribing authority and who adopt and use systems that meet CMS's definition of a qualified electronic prescribing system. Pub. L. No. 110-275, § 132(a), 122 Stat. 2494, 2527. From 2012 through 2014, the program may apply a payment adjustment, or penalty, on the program's eligible providers that do not adopt and use such systems. See GAO, *Electronic Prescribing: CMS Should Address Inconsistencies in Its Two Incentive Programs That Encourage the Use of Health Information Technology*, GAO-11-159 (Washington, D.C.: Feb. 17, 2011).

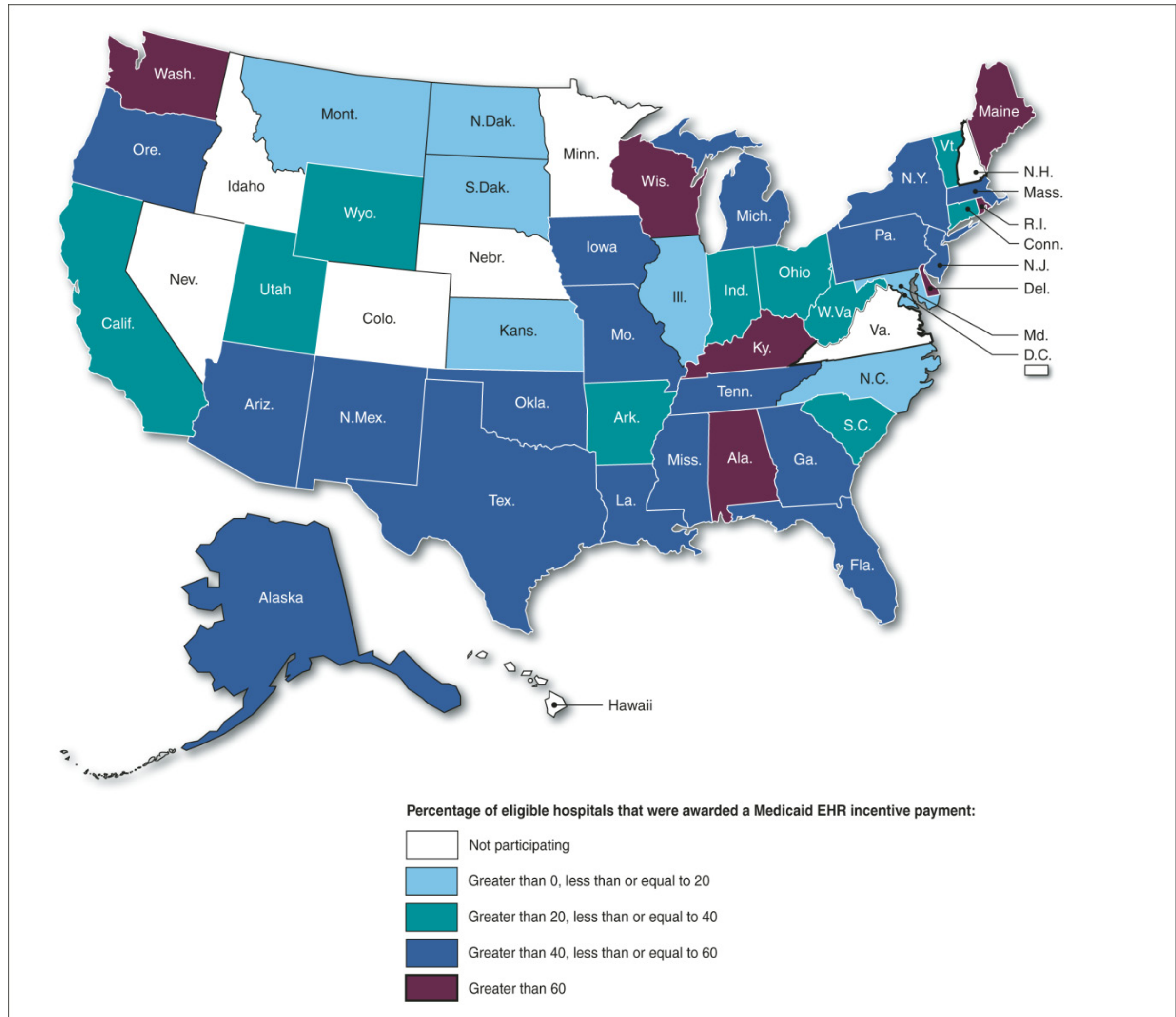
[29]Information on the number of years since the professional's degree was awarded was missing for 12,848 professionals (about 28 percent).

Information on Hospitals Awarded Medicaid EHR Incentive Payments for 2011

This enclosure provides information on the number and percentage of hospitals that were awarded Medicaid EHR incentive payments for 2011, the amount of incentive payments awarded to hospitals, and the characteristics of hospitals that were awarded incentive payments. This enclosure also compares different categories of eligible hospitals to determine which were more likely and which were less likely to have been awarded an incentive payment.

Of the estimated 5,013 eligible hospitals, 39 percent, or 1,964 hospitals, were awarded a Medicaid EHR incentive payment for 2011. In contrast to professionals, certain hospitals may receive an incentive payment from both the Medicare and Medicaid EHR programs in the same year. As of October 1, 2012, 529 hospitals were awarded an incentive payment from both programs for 2011. The percentage of eligible hospitals that were awarded a Medicaid EHR incentive payment varied across states. For example, more than 60 percent of eligible hospitals in Alabama were awarded a Medicaid EHR incentive payment for 2011, whereas less than 20 percent of eligible hospitals in Montana were awarded an incentive payment. (See fig. 1.)

Figure 1: Percentage of Eligible Hospitals Awarded a Medicaid EHR Incentive Payment for 2011, by State

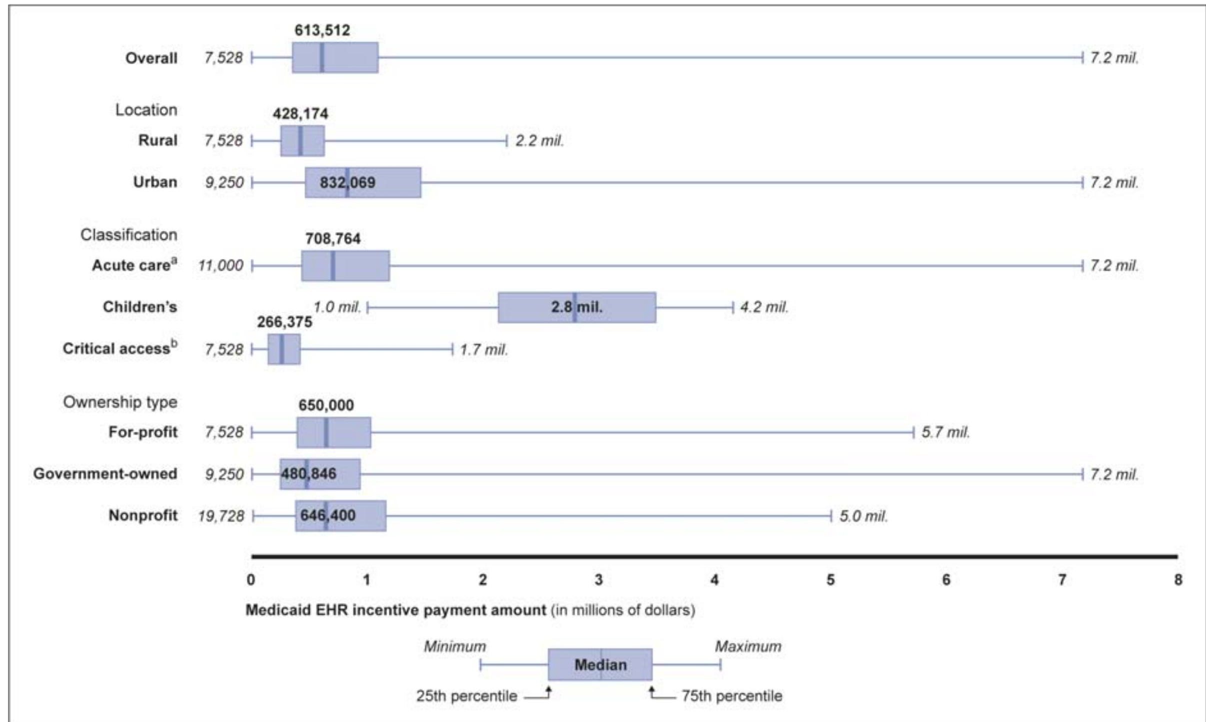


Sources: GAO analysis of CMS data (data); MapArt (map).

Notes: We analyzed data CMS collects pertaining to the Medicaid EHR program through October 1, 2012, for the 2011 program year. Colorado, the District of Columbia, Hawaii, Idaho, Minnesota, Nebraska, Nevada, New Hampshire, Virginia, and the U.S. insular areas did not participate in the Medicaid EHR program in 2011.

Of the approximately $2.7 billion in Medicaid EHR incentive payments that was awarded to providers for 2011, a total of $1.7 billion was awarded to hospitals. The amount of Medicaid EHR incentive payments awarded to hospitals ranged from $7,528 to $7.2 million, with the median amount being $613,512. About 50 percent of hospitals that were awarded an incentive payment accounted for about 80 percent of the total amount of incentive payments awarded to hospitals. Acute care hospitals tended to receive larger incentive payments than critical access hospitals but smaller incentive payments than children’s hospitals. (See fig. 2.)

Figure 2: Distribution of Medicaid EHR Incentive Payment Amounts Awarded to Hospitals for 2011, by Selected Hospital Characteristics



Source: GAO analysis of CMS and Health Resources and Services Administration data.

Notes: We analyzed data CMS collects pertaining to the Medicaid EHR program through October 1, 2012, for the 2011 program year. We excluded the 11 cancer hospitals from this analysis.

[a]For the purpose of analyzing participation in the Medicaid EHR program, the term acute care hospital refers to short-term hospitals that are not critical access or cancer hospitals.

[b]Critical access hospitals typically are very small (25 inpatient beds or fewer) and operate in rural areas.

As illustrated in table 4, among hospitals that were awarded a Medicaid EHR incentive payment for 2011,

- the largest proportion (46 percent) were located in the South and the smallest proportion (15 percent) were located in the Northeast,
- three-fifths (62 percent) were located in urban areas,
- four-fifths (80 percent) were acute care hospitals,
- more than half (57 percent) were nonprofit hospitals,
- more than half (57 percent) were not members of a chain, and
- more than two-fifths (43 percent) were relatively large in terms of number of beds.

Table 4: Selected Characteristics of Hospitals Awarded a Medicaid EHR Incentive Payment for 2011

Characteristics	Categories	Number (percentage)
Geographic region	Midwest	437 (22.3)
	Northeast	295 (15.0)
	South	897 (45.7)
	West	335 (17.1)
Location	Rural	744 (37.9)
	Urban	1,217 (62.0)
Hospital classification	Acute care hospital[a]	1,570 (79.9)
	Critical access hospital[b]	354 (18.0)
	Children's hospital	39 (2.0)
	Cancer hospital	1 (0.1)
Ownership type	For-profit	413 (21.0)
	Government-owned	434 (22.1)
	Nonprofit	1,117 (56.9)
Chain membership	Chain	827 (42.6)
	Nonchain	1,114 (57.4)
Total beds	Low (40 beds or fewer)	416 (21.2)
	Middle (41-175 beds)	713 (36.3)
	High (176 or more beds)	835 (42.5)
Total		**1,964 (100)**

Source: GAO analysis of CMS and Health Resources and Services Administration data.

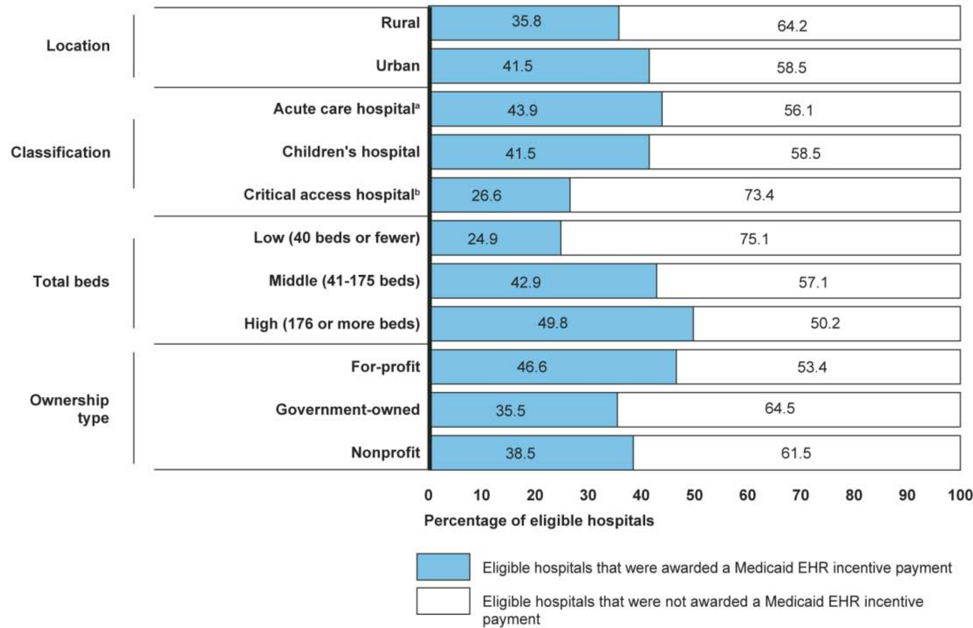
Notes: We analyzed data CMS collects pertaining to the Medicaid EHR program through October 1, 2012, for the 2011 program year. The sum of the number of hospitals listed by category may not equal the overall number of hospitals because of missing data. The sum of the percentage of hospitals listed by category may not equal 100 percent because of rounding.

[a]For the purpose of analyzing participation in the Medicaid EHR program, the term acute care hospital refers to short-term hospitals that are not critical access or cancer hospitals.

[b]Critical access hospitals typically are very small (25 inpatient beds or fewer) and operate in rural areas.

Among eligible hospitals, the percentage of hospitals that were awarded a Medicaid EHR incentive payment for 2011 varied by certain characteristics, such as bed size and location in an urban or rural setting. (See fig. 3.)

Figure 3: Percentage of Eligible Hospitals Awarded a Medicaid EHR Incentive Payment for 2011, by Selected Hospital Characteristics



Source: GAO analysis of CMS and Health Resources and Services Administration data.

Notes: We analyzed data CMS collects pertaining to the Medicaid EHR program through October 1, 2012, for the 2011 program year. Hospitals located in the states, the District of Columbia, and the U.S. insular areas that did not offer the Medicaid EHR program in 2011 are included in the category of eligible hospitals that were not awarded an incentive payment. Hospital classification excludes the 11 cancer hospitals because so few hospitals belong to that category.

[a]For the purpose of analyzing participation in the Medicaid EHR program, the term acute care hospital refers to short-term hospitals that are not critical access or cancer hospitals.

[b]Critical access hospitals typically are very small (25 inpatient beds or fewer) and operate in rural areas.

Tables 5 through 8 explore the relationship of various factors to the likelihood of hospitals receiving Medicaid EHR incentive payments for 2011 by comparing the characteristics of hospitals that were awarded Medicaid EHR incentive payments for 2011 to those of other eligible Medicaid hospitals that did not receive a payment for that year. Each characteristic is divided into two or more categories. For example, the characteristic “geographic region” is divided into four categories—Northeast, Midwest, South, and West regions. As part of this analysis, we calculated relative risk ratios that indicate how much more likely a hospital in each category was to have been awarded an EHR incentive payment than a hospital in the category that was least likely to have been awarded a payment. Hospitals least likely to receive an incentive payment are labeled “ – “. For example, as table 5 shows, under the characteristic “location,” the relative risk ratio of 1.2 for the category “urban” indicates that hospitals in urban areas were 1.2 times more likely to have been awarded an incentive payment for 2011 than hospitals in rural areas. A relative risk ratio of 1.0 indicates no difference in the likelihood of having been awarded an incentive payment between the two categories, and as relative risk ratios approach 1.0, there is less and less difference in the likelihood of having been awarded an incentive payment between the two categories.

Table 5 examines the relationship between hospitals receiving Medicaid EHR incentive payments for 2011 and characteristics of the regions in which the hospitals are located. We found the following:

- Geographic location had a modest effect on the likelihood that hospitals were awarded an EHR incentive payment for 2011. For instance, hospitals in the Northeast and South—the regions of the country with the highest level of program participation—were 1.6 times more likely to have been awarded a payment than hospitals in the Midwest—the region of the country with the lowest level of program participation.

- There was little association between the likelihood of having been awarded an EHR incentive payment for 2011 and whether the hospital was located in a Beacon Community.

Table 5: Number and Percentage of Hospitals Awarded Medicaid EHR Incentive Payments for 2011, by Regional Characteristics

Characteristics	Categories	Number of eligible hospitals[a]	Number (percentage): Awarded a Medicaid EHR incentive payment	Number (percentage): Not awarded a Medicaid EHR incentive payment	Relative risk ratio[b]
Overall		5,013	1,964 (39.2)	3,049 (60.8)	
Geographic location					
Geographic region	Midwest	1,461	437 (29.9)	1,024 (70.1)	—
	Northeast	625	295 (47.2)	330 (52.8)	1.6
	South	1,904	897 (47.1)	1,007 (52.9)	1.6
	West	965	335 (34.7)	630 (65.3)	1.2
Location	Rural	2,076	744 (35.8)	1,332 (64.2)	—
	Urban	2,932	1,217 (41.5)	1,715 (58.5)	1.2
County level of participation in selected health information technology initiatives[c]					—
Average county volume of electronic prescribing based on transactions per professional who submits electronic prescriptions	Low (126.2 or fewer transactions)	1,731	556 (32.7)	1,165 (67.3)	—
	Middle (126.3-176.9 transactions)	1,568	663 (42.3)	905 (57.7)	1.3
	High (177 or more transactions)	1,679	723 (43.1)	956 (56.9)	1.3
Located in a county with a Beacon Community	Yes	305	136 (44.6)	169 (55.4)	1.1
	No	4,705	1,825 (38.8)	2,880 (61.2)	—

Source: GAO analysis of CMS, Office of the National Coordinator for Health Information Technology, Health Resources and Services Administration, and Surescripts data.

Notes: We analyzed data CMS collects pertaining to the Medicaid EHR program through October 1, 2012, for the 2011 program year. In general, hospitals located in the states, the District of Columbia, and the U.S. insular areas that did not offer the Medicaid EHR program in 2011 are included in the category of hospitals not awarded an incentive payment. However, geographic region does not include the 58 hospitals located in the U.S. insular areas because none of those areas participated in the Medicaid EHR program for 2011. The sum of the number of hospitals listed by category may not equal the overall number of hospitals because of missing data.

[a]We use the term eligible hospitals to refer to those hospitals that were eligible for the Medicaid EHR program, regardless of whether they were awarded a Medicaid EHR incentive payment for 2011. Specifically, eligible hospitals are those that were (1) acute care, critical access, cancer, or children's hospitals; (2) located in one of the 50 states, the District of Columbia, or a U.S. insular area; and (3) not terminated on or before January 2, 2011.

[b]The relative risk ratios indicate how much more likely a hospital in each category was to have been awarded an EHR incentive payment than a hospital in the category that was least likely to have been awarded a payment, which is labeled " – ". A relative risk ratio of 1.0 indicates no difference in the likelihood of having been awarded an incentive payment between the two categories, and as relative risk ratios approach 1.0, there is less and less difference in the likelihood of having been awarded an incentive payment between the two categories.

[c]These characteristics describe the level of participation in selected health information technology initiatives across all the hospitals in a given county, rather than the level of participation associated with any particular hospital.

Table 6 examines the relationship between receiving a Medicaid EHR incentive payment for 2011 and hospital type. We found that hospital classification had a greater impact on the likelihood of receiving a Medicaid EHR incentive payment for 2011 than being a major teaching hospital, ownership type, or chain membership. In particular, we found the following:

- Among the three hospital classifications identified below, acute care hospitals were 1.7 times more likely and children's hospitals were 1.6 times more likely to have been awarded a Medicaid EHR incentive payment for 2011 than critical access hospitals.

- There was a more modest relationship between a hospital's status as a major teaching hospital, ownership type, and chain affiliation with the likelihood of a hospital being awarded an EHR incentive payment for 2011; major teaching hospitals, for-profit hospitals, and chain hospitals were 1.3 to 1.4 times more likely than other hospitals to be awarded payments.

Table 6: Number and Percentage of Hospitals Awarded Medicaid EHR Incentive Payments for 2011, by Hospital Type

			Number (percentage)		
Characteristics	**Categories**	**Number of eligible hospitals[a]**	**Awarded a Medicaid EHR incentive payment**	**Not awarded a Medicaid EHR incentive payment**	**Relative risk ratio[b]**
Overall		5,013	1,964 (39.2)	3,049 (60.8)	
Hospital classification[c]	Acute care hospital[d]	3,576	1,570 (43.9)	2,006 (56.1)	1.7
	Critical access hospital[e]	1,332	354 (26.6)	978 (73.4)	—
	Children's hospital	94	39 (41.5)	55 (58.5)	1.6
Major teaching hospital	Yes	493	244 (49.5)	249 (50.5)	1.3
	No	4,520	1,720 (38.1)	2,800 (61.9)	—
Ownership type	For-profit	887	413 (46.6)	474 (53.4)	1.3
	Government-owned	1,222	434 (35.5)	788 (64.5)	—
	Nonprofit	2,902	1,117 (38.5)	1,785 (61.5)	1.1
Chain membership	Chain	1,662	827 (49.8)	835 (50.2)	1.4
	Nonchain	3,139	1,114 (35.5)	2,025 (64.5)	—

Source: GAO analysis of CMS data.

Notes: We analyzed data CMS collects pertaining to the Medicaid EHR program through October 1, 2012, for the 2011 program year. Hospitals located in the states, the District of Columbia, and the U.S. insular areas that did not offer the Medicaid EHR program in 2011 are included in the category of hospitals not awarded an incentive payment. The sum of the number of hospitals listed by category may not equal the overall number of hospitals because of missing data.

[a]We use the term eligible hospitals to refer to those hospitals that were eligible for the Medicaid EHR program, regardless of whether they were awarded a Medicaid EHR incentive payment for 2011. Specifically, eligible hospitals are those that were (1) acute care, critical access, cancer, or children's hospitals; (2) located in one of the 50 states, the District of Columbia, or a U.S. insular area; and (3) not terminated on or before January 2, 2011.

[b]The relative risk ratios indicate how much more likely a hospital in each category was to have been awarded an EHR incentive payment than a hospital in the category that was least likely to have been awarded a payment, which is labeled " – ". A relative risk ratio of 1.0 indicates no difference in the likelihood of having been awarded an incentive payment between the two categories, and as relative risk ratios approach 1.0, there is less and less difference in the likelihood of having been awarded an incentive payment between the two categories.

[c]This analysis excludes the 11 cancer hospitals because so few hospitals belong to that category.

[d]For the purpose of analyzing participation in the Medicaid EHR program, the term acute care hospital refers to short-term hospitals that are not critical access or cancer hospitals.

[e]Critical access hospitals typically are very small (25 inpatient beds or fewer) and operate in rural areas.

Table 7 examines the extent to which the size of hospitals, measured in various ways, is related to whether hospitals were awarded Medicaid EHR incentive payments for 2011. We found that large hospitals were more likely to have been awarded Medicaid EHR incentive payments for 2011. Specifically, we found the following:

- Hospitals with the highest number of total beds were 2 times more likely than hospitals with the lowest number of total beds to have been awarded an incentive payment.
- Hospitals with the highest number of total discharges were 1.5 times more likely to have been awarded an incentive payment than hospitals with the lowest number of discharges.

Table 7: Number and Percentage of Hospitals Awarded Medicaid EHR Incentive Payments for 2011, by Hospital Size

			Number (percentage)		
Characteristics	**Categories**	**Number of eligible hospitals[a]**	**Awarded a Medicaid EHR incentive payment**	**Not awarded a Medicaid EHR incentive payment**	**Relative risk ratio[b]**
Overall		5,013	1,964 (39.2)	3,049 (60.8)	
Total beds	Low (40 beds or fewer)	1,674	416 (24.9)	1,258 (75.1)	—
	Middle (41-175 beds)	1,662	713 (42.9)	949 (57.1)	1.7
	High (176 or more beds)	1,677	835 (49.8)	842 (50.2)	2.0
Total discharges	Low (2,216 or fewer discharges)	1,302	433 (33.3)	869 (66.7)	—
	Middle (2,217-8,845 discharges)	1,302	610 (46.9)	692 (53.1)	1.4
	High (8,846 or more discharges)	1,301	660 (50.7)	641 (49.3)	1.5
	Missing[c]	1,108	261 (23.6)	847 (76.4)	N/A

Source: GAO analysis of CMS data.

Notes: We analyzed data CMS collects pertaining to the Medicaid EHR program through October 1, 2012, for the 2011 program year. Hospitals located in the states, the District of Columbia, and the U.S. insular areas that did not offer the Medicaid EHR program in 2011 are included in the category of hospitals not awarded an incentive payment.

[a]We use the term eligible hospitals to refer to those hospitals that were eligible for the Medicaid EHR program, regardless of whether they were awarded a Medicaid EHR incentive payment for 2011. Specifically, eligible hospitals are those that were (1) acute care, critical access, cancer, or children's hospitals; (2) located in one of the 50 states, the District of Columbia, or a U.S. insular area; and (3) not terminated on or before January 2, 2011.

[b]The relative risk ratios indicate how much more likely a hospital in each category was to have been awarded an EHR incentive payment than a hospital in the category that was least likely to have been awarded a payment, which is labeled " – ". A relative risk ratio of 1.0 indicates no difference in the likelihood of having been awarded an incentive payment between the two categories, and as relative risk ratios approach 1.0, there is less and less difference in the likelihood of having been awarded an incentive payment between the two categories.

[c]Data from CMS's Fiscal Intermediary Standard System were missing for 168 acute care hospitals (about 5 percent of eligible acute care hospitals) and for 837 critical access hospitals (about 63 percent of eligible critical access hospitals) because CMS had not populated the system with information on those hospitals at the time of our data extract. In addition, these data were missing for most cancer hospitals, children's hospitals, and hospitals in the U.S. insular areas because CMS does not populate the system with information for those hospitals. Consequently, we were missing data for 1,108 hospitals.

Table 8 examines the relationship between receiving Medicaid EHR incentive payments for 2011 and the type and amount of hospital charges. We found that hospitals with the highest charges were more likely to have been awarded a Medicaid EHR incentive payment for 2011 compared to hospitals with lower charges. Specifically, we found the following:

- Hospitals with high total charges were 1.5 times more likely to have been awarded an incentive payment than hospitals with low total charges.
- Hospitals with high charity charges were 1.6 times more likely to have been awarded an incentive payment than hospitals with low charity charges.

Table 8: Number and Percentage of Hospitals Awarded Medicaid EHR Incentive Payments for 2011, by Hospital Charges

			Number (percentage)		
Characteristics	**Categories**	**Number of eligible hospitals[a]**	**Awarded a Medicaid EHR incentive payment**	**Not awarded a Medicaid EHR incentive payment**	**Relative risk ratio[b]**
Overall		5,013	1,964 (39.2)	3,049 (60.8)	
Total charges	Low ($111,593,929 or less)	1,299	448 (34.5)	851 (65.5)	—
	Middle ($111,593,930-$478,030,437)	1,300	571 (43.9)	729 (56.1)	1.3
	High ($478,030,438 or more)	1,299	683 (52.6)	616 (47.4)	1.5
	Missing[c]	1,115	262 (23.5)	853 (76.5)	N/A
Charity charges[d]	Low ($828,462 or less)	1,299	435 (33.5)	864 (66.5)	—
	Middle ($828,463-$10,937,135)	1,300	587 (45.2)	713 (54.8)	1.3
	High ($10,937,136 or more)	1,299	680 (52.3)	619 (47.7)	1.6
	Missing[c]	1,115	262 (23.5)	853 (76.5)	N/A

Source: GAO analysis of CMS data.

Notes: We analyzed data CMS collects pertaining to the Medicaid EHR program through October 1, 2012, for the 2011 program year. Hospitals located in the states, the District of Columbia, and the U.S. insular areas that did not offer the Medicaid EHR program in 2011 are included in the category of hospitals not awarded an incentive payment.

[a]We use the term eligible hospitals to refer to those hospitals that were eligible for the Medicaid EHR program, regardless of whether they were awarded a Medicaid EHR incentive payment for 2011. Specifically, eligible hospitals are those that were (1) acute care, critical access, cancer, or children's hospitals; (2) located in one of the 50 states, the District of Columbia, or a U.S. insular area; and (3) not terminated on or before January 2, 2011.

[b]The relative risk ratios indicate how much more likely a hospital in each category was to have been awarded an EHR incentive payment than a hospital in the category that was least likely to have been awarded a payment, which is labeled " – ". A relative risk ratio of 1.0 indicates no difference in the likelihood of having been awarded an incentive payment between the two categories, and as relative risk ratios approach 1.0, there is less and less difference in the likelihood of having been awarded an incentive payment between the two categories.

[c]Data from CMS's Fiscal Intermediary Standard System were missing for 168 acute care hospitals (about 5 percent of eligible acute care hospitals) and for 837 critical access hospitals (about 63 percent of eligible critical access hospitals) because CMS had not populated the system with information on those hospitals at the time of our data extract. In addition, these data were missing for most cancer hospitals, children's hospitals, and hospitals in the U.S. insular areas because CMS does not populate the system with information for those hospitals. Consequently, we were missing data for 1,108 hospitals. We excluded an additional 7 hospitals from our analysis of hospital charges after determining that the hospitals' data were unreliable because the amount of charity charges exceeded the total charges.

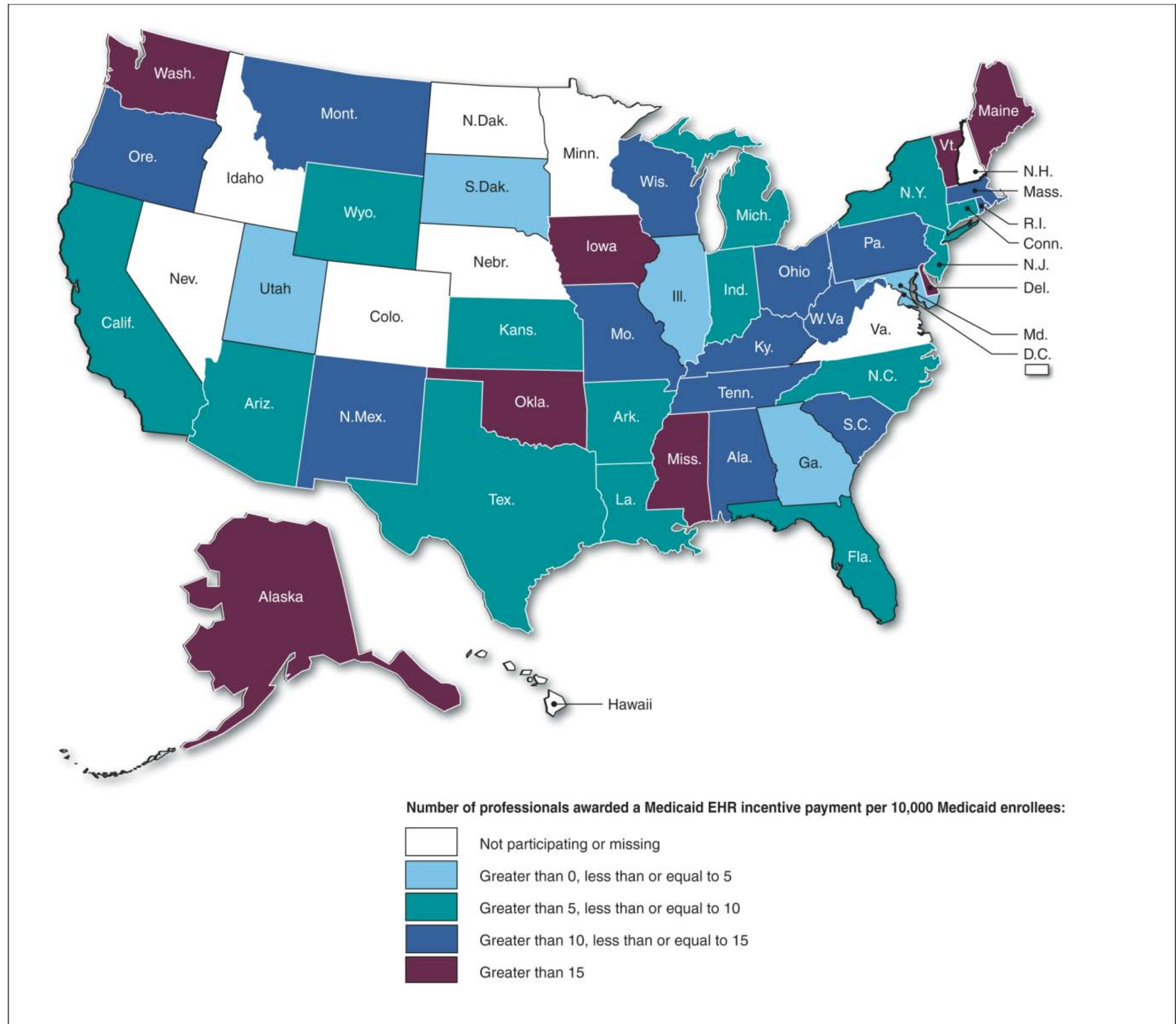
[d]Charity charges reflect the cost for providing inpatient and outpatient hospital services for which the hospital is not compensated.

Information on Professionals Awarded Medicaid EHR Incentive Payments for 2011

This enclosure provides information on the number and percentage of professionals who were awarded Medicaid EHR incentive payments for 2011, the amount of incentive payments awarded to professionals, and the characteristics of professionals who were awarded incentive payments.

Of the estimated 139,600 eligible professionals, 33 percent, or 45,962 professionals, were awarded a Medicaid EHR incentive payment for 2011. The number of eligible professionals who were awarded a Medicaid EHR incentive payment varied across states. For example, more than 15 eligible professionals per 10,000 Medicaid enrollees in Mississippi were awarded a Medicaid EHR incentive payment for 2011 whereas less than 5 eligible professionals per 10,000 Medicaid enrollees in Utah were awarded an incentive payment. (See fig. 4.)

Figure 4: Number of Eligible Professionals Awarded a Medicaid EHR Incentive Payment per 10,000 Medicaid Enrollees for 2011, by State



Sources: GAO analysis of CMS data (data); MapArt (map).

Notes: We analyzed data CMS collects pertaining to the Medicaid EHR program through October 1, 2012, for the 2011 program year. Medicaid enrollment data are based on enrollment, by state, as of December 31, 2010. Colorado, the District of Columbia, Hawaii, Idaho, Minnesota, Nebraska, Nevada, New Hampshire, Virginia, and the U.S. insular areas did not participate in the Medicaid EHR program in 2011. North Dakota did participate but had not reported to CMS on its payments to professionals by the time of our analysis.

Of the approximately $2.7 billion in Medicaid EHR incentive payments that was awarded to providers for 2011, $967 million was awarded to professionals. Among participating professionals, 97 percent were awarded an incentive payment of $21,250, which was the maximum amount for most professionals. The remaining 3 percent of professionals were awarded an incentive payment of $14,167, which was the maximum amount for pediatricians that had a Medicaid patient volume of 20 percent or more but less than 30 percent.

As illustrated in table 9, among professionals who were awarded a Medicaid EHR incentive payment for 2011,

- the largest proportion (37 percent) were located in the South and the smallest proportion (20 percent) were located in the Midwest, and

- four-fifths (83 percent) were located in urban areas.

Table 9: Regional Characteristics of Professionals Awarded a Medicaid EHR Incentive Payment for 2011

Characteristics	Categories	Number (percentage)
Geographic location		
Geographic region	Midwest	8,946 (19.5)
	Northeast	10,079 (21.9)
	South	17,008 (37.0)
	West	9,929 (21.6)
Location	Rural	7,662 (16.9)
	Urban	37,568 (83.1)
Located in a health professional shortage area	Yes	3,324 (7.3)
	No	41,906 (92.7)
County level of participation in selected health information technology initiative[a]		
Located in a county with a Beacon Community	Yes	3,604 (8.0)
	No	41,626 (92.0)
Total		**45,962 (100)**

Source: GAO analysis of CMS, Office of the National Coordinator for Health Information Technology, and Health Resources and Services Administration data.

Notes: We analyzed data CMS collects pertaining to the Medicaid EHR program through October 1, 2012, for the 2011 program year. The sum of the number of professionals listed by category may not equal the overall number of professionals because of missing data. The sum of the percentage of professionals listed by category may not equal 100 percent because of rounding.

[a]This characteristic describes the level of participation in selected health information technology initiatives across all the professionals in a given county, rather than the level of participation for any particular professional.

As illustrated in table 10, among professionals who were awarded a Medicaid EHR incentive payment for 2011,

- nearly three-quarters were physicians—either general practice physicians (23 percent) or specialty practice physicians (51 percent)—and the lowest proportion (1 percent) were physician assistants, and

- almost half (47 percent) had signed agreements to receive technical assistance from a Regional Extension Center.

Table 10: Professional Characteristics of Professionals Awarded a Medicaid EHR Incentive Payment for 2011

Characteristics	Categories	Number (percentage)
Professional specialty	General practice physician	10,458 (22.8)
	Specialty practice physician[a]	23,490 (51.1)
	Certified nurse midwife or nurse practitioner[b]	8,454 (18.4)
	Physician assistant	545 (1.2)
	Dentist	2,484 (5.4)
	Other professional[c]	531 (1.2)
Number of professionals in practice[d]	Solo practice	5,200 (16.7)
	2-10 professionals	5,569 (17.8)
	11-50 professionals	4,257 (13.6)
	51 or more professionals	8,387 (26.9)
	More than one group practice of different sizes	7,802 (25.0)
Signed an agreement to receive technical assistance from a Regional Extension Center	Yes	21,374 (46.5)
	No	24,588 (53.5)
Received an incentive payment from CMS's Electronic Prescribing Program for 2010	Yes	1,783 (3.9)
	No	44,179 (96.1)
Years since degree awarded[e]	Low (15 years or fewer)	13,761 (41.6)
	Middle (16-29 years)	11,800 (35.6)
	High (30 years or more)	7,553 (22.8)
Total		**45,962 (100)**

Source: GAO analysis of CMS and Office of the National Coordinator for Health Information Technology data.

Notes: We analyzed data CMS collects pertaining to the Medicaid EHR program through October 1, 2012, for the 2011 program year. The sum of the percentage of professionals listed by category may not equal 100 percent because of rounding.

[a]This category also includes optometrists because the Medicaid statute permits states to consider, under the provisions of their state Medicaid plan, optometrist services as physician services; thus, optometrist services may qualify for the Medicaid EHR program.

[b]This category also includes other types of registered nurses because CMS regulations permit states, in accordance with the scope of practice defined under state law, to allow other types of registered nurses who meet the regulations' training and experience requirements to qualify for the Medicaid EHR program as nurse midwives or nurse practitioners.

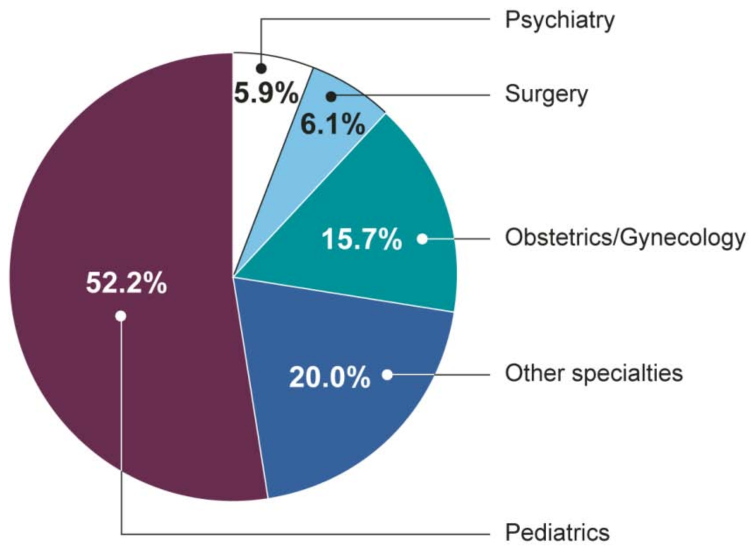
[c]This category includes 426 professionals for whom information on professional specialty was missing and 105 professionals who we could not confirm had specialty types that were eligible to receive incentive payments. However, CMS officials told us that these 531 professionals had permissible professional specialties.

[d]Information on the number of professionals in the practice was missing for 14,747 professionals (32 percent).

[e]Information on the number of years since the professional's degree was awarded was missing for 12,848 professionals (about 28 percent).

Of the specialty practice physicians who were awarded a Medicaid EHR incentive payment for 2011, over half (52 percent) had a pediatrics specialty. (See fig. 5.)

Figure 5: Specialty Practice Physicians Awarded Medicaid EHR Incentives for 2011, by Type of Specialty



Source: GAO analysis of CMS data.

Notes: We analyzed data CMS collects pertaining to the Medicaid EHR program through October 1, 2012, for the 2011 program year. “Other specialties” includes specialty practice physicians belonging to 23 discrete specialties, none of which makes up as much as 3 percent of the total.

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