An overview of costs and revenues of Oregon's School Based Health Centers

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Oregon's SBHC cost model project: background, goals and methodology

What amount of financial resources does it take for startup and annual operation of a School Based Health Center (SBHC)? What are the major sources of revenue for SBHCs? Answering these questions is essential for both prospective and existing centers. Being able to accurately estimate costs and understand revenue sources for sustainability allows centers to efficiently plan resource allocation.

In 2006, Oregon' SBHC state program office initiated a cost model project in order to answer these questions. The cost model relies on a mix of methodological approaches and it is designed to be replicable over time. A major concern in the design of data collection methodologies was to not overburden the centers with information requests. Thus, the state program office designed a process involving a mix of three methodological approaches: theoretical estimations of costs, case studies to collect cost information, and a short budget survey form that all centers are required to complete as part of the state certification process.

First, the theoretical estimation approach was used in order to calculate costs for salaries and benefits for most SBHC staff positions (such as registered nurses, physician assistants, center administrators, medical secretaries, etc.). Oregon state salary survey data for these occupations, as well as national data from the Bureau of Labor Statistics, were used to estimate these salary and benefits costs. The theoretical approach was also used to estimate certain startup costs – mainly furniture, electronic equipment, office equipment, and medical equipment. For these expenses, we collected prices from major market retailers.

Second, in 2007, the SBHC state program office conducted a number of in-depth case studies involving five Oregon SBHC systems (representing 25% of Oregon's 20 SBHC systems) in order to obtain cost data for expenses that could not be reliably estimated using the theoretical approach. These costs include space, utilities, maintenance, administrative costs (such as human resources, billing costs, advertising, medical records management), travel, education, office and program supplies, medical supplies, information technology as well as other indirect costs.

The five systems that participated in the case study were carefully selected in order to reflect a variety of factors that drive costs. Thus, the SBHC state program office included in the case study rural and urban systems, systems that are sponsored by Federally Qualified Health Centers (FQHCs) and systems that are sponsored by non-FQHCs, systems that are sponsored by local county health departments vs. private organizations (such as hospitals or clinics), and systems that have centers based in elementary, middle and high schools.

Third, the SBHC state program office designed a short survey form collecting information about total operational costs, revenue sources, and billing revenue. All Oregon SBHCs seeking certification were required to complete the survey form. Information collected from the centers in the spring of 2007 was entered in a database.

Furthermore, this database was linked to additional information at the center level, such as the number of unduplicated clients and visits, public and private insurance status, student population size on campus(es) served, urban/rural location, medical sponsor type, and hours of provider time (physical and mental health provider hours).

These three different methodologies provide valuable data about the costs and revenue sources of Oregon SBHCs. This report highlights the major data findings; for more detailed information concerning the methodology of data collection and analysis, please see appendix 1.

Overview of costs

One time expenses incurred during planning phases, before the center opens, are referred to as "startup costs". Recurring expenses incurred during each school year of operation are referred to as "annual costs of operation".

Startup expenses are similar for both core centers (centers functioning with a minimum amount of staffing and hours of services as required by certification) and expanded centers (centers that have "full time" staffing and hours during the school year, and provide mental health services). However, annual operation expenses vary largely from core to expanded centers, depending mostly on the number of hours of primary care and mental health care provided and whether the center is open during the summer.

In general staffing terms, and in accordance with Oregon's SBHC Standards for Certification (2000[1], revised 2005[2]), a core center requires 20 hours of health care provider and 15 hours of support staff per school week. An expanded center requires 40 hours of health care provider, 30 hours of support staff, and 20 hours of mental health provider per school week. An "intermediate" level center would then have a mid-level of staffing, meaning 30 hours of health care provider, 22.5 hours of support staff, and 10 hours of mental health provider per school week. In addition, we approximate that a center needs approximately 10 hours of administrator staff time per week.

In what follows, we provide an overview of estimated budgets for startup and annual operation expenses for core, intermediate and expanded centers. We also present total cost estimates for each category of centers; the estimates provide the median (typical or mid range) cost; as well as a range of potential costs from minimum to maximum.

Table 1 presents an overview of 1) startup costs for centers that do not build their own space (known as "modular") but are rather using a space on school property that they renovate and use as the SBHC facility; and 2) startup costs for centers that build their own modular on school property. An additional potential expense that is not included in the startup costs is the development of a sound business plan; because the SBHC state program office does not have sufficient information to accurately estimate such costs, and not all centers choose to develop a business plan, we did not include this expense in the

[1] Section C, pages 7-11.
[2] http://www.oregon.gov/DHS/ph/ah/sbhc/certstandrev05.doc

estimation of startup costs. We discuss this potential expense in more detail in the remainder of the report.

Table 2 presents annual operation costs for core centers, "intermediate level" centers, and expanded centers open during the school year. Table 3 presents annual operation costs for the same three types of centers, assuming that the center is open year round (although certification only requires centers to be open during the school year, some centers are actually open all year). All figures have been rounded to the nearest dollar amount using $250 increments.

We would like to strongly caution the reader against the danger of considering the minimum cost as a feasible operational cost. A major issue in collecting budget data from the centers is that some costs may be severely underestimated. Many of the centers' resources come from in-kind donations that are not included in the budget. Other expenses, such as chart auditing, records management or billing related costs are incurred by the medical sponsor without being specifically included in the SBHC budget; the medical sponsor incurs these costs already on a larger scale, because they operate a larger medical facility, and they do not include these expenses in the SBHC budget. In other centers, especially centers under the medical sponsorship of local county health departments, certain expenses are shared with other programs and charged to other programs, again without being recorded into the SBHC budget.

Therefore, we believe that minimum costs may often reflect a lack of accuracy in recording expenses, and that underestimation of costs may affect these minimum estimates. The state program office was particularly careful to obtain, where feasible, accurate estimates of the value of in-kind donations – whether space, supplies or staff time. However, underestimation remains an important concern and minimum expenses should be interpreted in light of this shortcoming in data collection.

Table 1: Overview of SBHC startup costs

	Mid-range cost	Minimum cost	Maximum cost
Center without modular	**$49,750**	$34,750	$95,750
Center with modular	**$128,250**	$110,250	$163,750

Table 2: Overview of SBHC annual costs (if SBHC open during school year only)

	Mid-range cost	Minimum cost	Maximum cost
Core center	**$90,750**	$41,000	$212,500
Intermediate center	**$121,750**	$60,000	$247,000
Expanded center	**$152,750**	$88,500	$311,250

Table 3: Overview of SBHC annual costs (if SBHC open year round)

	Mid-range cost	Minimum cost	Maximum cost
Core center	**$116,000**	$56,500	$255,000
Intermediate center	**$162,250**	$85,000	$277,500
Expanded center	**$208,500**	$127,000	$402,500

What exactly makes up these costs?

Startup costs* are comprised of:

1. Space costs: costs for renovating the space (if using school facility) or costs of building a modular and installing it on school property

2. Furniture (desks and chairs for primary care provider and office assistant, reception area furniture, bookcase, locking file cabinets for patient records, locking medication cabinet, etc)

3. Electronic equipment (computers, monitors, printer)

4. Office equipment (telephones, fax/copier, paper shredder)

5. Medical equipment

6. Salary and benefits for administrative staff during planning phases

*A potential additional expense is the development of a business plan. This expense is discussed at more length in the report.

Annual costs of operation are comprised of:

1. Staffing costs (primary care provider, registered nurse, mental health counselor, office support and system administrator salaries)

2. Staff benefits costs (benefits for staff: paid leave, supplemental pay, insurance, retirement and savings, and legally required benefits)

3. Space rent, utilities, janitorial and maintenance

4. Office and program supplies

5. Administrative costs and other/indirect costs (such as medical liability, advertising)

6. Medical supplies, drugs, vaccines and medications, and lab tests

7. Information technology

8. Travel, education and training

9. Memberships and dues

The large majority of the annual costs of operation of SBHCs is made up of staffing salaries and employer costs for staff benefits.

In the next section, we present a breakdown of these costs by category, and emphasize for each of the categories the type of resources required. More detailed information on methods used to produce the estimates and data sources can be requested from Oregon's SBHC state office program.

A) Startup costs

1. Space costs

There are two types of SBHCs in Oregon: those that build their own modular and place it on school property; and those that transform a school space, such as a classroom. In the first scenario, the costs incurred comprise the site preparation, permits, building of the modular, as well as the set up for sewer, water, heat, electricity, phone lines, concrete/pavement, all other plumbing and wiring necessary, and necessary cabinetry. In the second scenario, a cost will be incurred for setting up the space properly, which varies depending on how readily usable the space is (more or less renovation efforts will be required).

If a center builds its own modular, the cost of the modular (including permits, site preparation, setup and inside specs such as cabinetry, lab with sink, bathroom, etc), ranges from **$85,500 to $100,000**. The mid-range price is **$92,000**.

If a center is given a space on school property from the school administration, it will incur renovation costs only – which depend on the status of the space. The mid-range renovation cost is **$13,500**, with a range of variation between **$10,000 and $32,000**.[3]

2. Furniture cost

The following furniture items should be found, at a minimum, in the inventory of a typical SBHC: office desk (two needed, one for primary care provider and another for office assistant), fabric task chair (two needed, one for primary care provider and another for office assistant), chairs for waiting room (five bean bags or guest chairs), side tables

[3] Renovation costs may be very high, depending on the needs of each center. Information we received from a center opened relatively recently in an urban area indicated costs as high as $134,500 for setting up the space. However, we considered this expense an outlier rather than a typical cost and did not include it in the model.

for waiting room (two), coffee table, medium size bookcase (with five shelves), locking file cabinets for patient records (at least three cabinets with four drawers each), locking cabinet for medication storage, office lamps (two needed, one for primary care provider and another for office assistant), a wall clock, and a pamphlet rack in waiting area to hold informational brochures for SBHC clients. A center can be expected to pay on average **$3,500** for furniture supplies, with a range of variation between **$1,750 and $8,000**.

3. Electronic equipment

The following electronic equipment items can be found in the inventory of a typical SBHC: desktop computer (two needed, one for primary care provider and another for office assistant), computer monitors (two needed, one for primary care provider and another for office assistant), and a printer. The mid-range price for these electronic supplies is **$2,000**, with a range of variation between **$750 and $7,000**.

4. Office equipment

The office items that can be found in the inventory of a typical SBHC are: telephones (two needed, one at front desk and another in the exam room), a fax/copier/printer combo, and a paper shredder. The mid-range price for the office equipment is **$1,250**, with a range of variation between **$500 and $ 3,250**.

5. Medical equipment

The following medical equipment items that can be found in the inventory of a typical SBHC: exam table with stirrups, exam table stool, refrigerator/freezer for medical purposes, hemocue hemoglobin analyzer machine, Hgb controls set, microscope, mayo stand, otoscope, opthalmoscope, sphygmomanometer (blood pressure cuff) for adults, sphygmomanometer (blood pressure cuff) for children, tympanic thermometer, digital thermometer, upright scale, stadiometer, adult and child stethoscopes, centrifuge, eye wash station, glucometer, nebulizer, pulse oximeter, transport wheelchair, halogen gooseneck lamp, UV light exam lamp, timer for lab tests, vision screening chart, digital maximum-minimum thermometer for monitoring refrigerator/freezer temperatures (for vaccine storage purposes), tuning fork, percussion hammer, and an emergency kit. The total estimated cost of purchasing the medical equipment is **$8,250** – based on mid-range pricing for the equipment (mid-priced models).

6. Salary and benefits for administrative staff during planning phases

During the startup period, an administrator is needed who will connect with the SBHC program state office, the medical sponsor, and community partners, in order to coordinate the SBHC startup process. We estimate ten hours/week of administrator work needed during the two planning phase years, at an mid-range cost of **$21,250** for this period, with a minimum estimated pay of **$13,500** and a maximum pay of **$37,250**.

An additional potential expense for startup is the development of a sound business plan. A sound business plan is ideal in order to efficiently plan the startup and yearly operations of an SBHC. Startup processes involve regularly organized meetings where school officials, local county health department representatives, medical sponsors such as hospitals and clinics and consultants work together to develop strategies to engage the community, a sound budget, policies and procedures, position descriptions, and other important operational and financial aspects.

The SBHC state program office does not systematically collect information regarding this expense category, however, two systems shared their business plan development costs. One system participated in the SBHC case study and pointed to an expense of $6,000 to hire consultants who helped design brochures, position descriptions and policies and procedures; another system is currently undergoing a comprehensive planning process for opening multiple SBHCs, and shared an expense of $35,000 for the development of the complex business plan.

We did not include this cost in the estimation of startup expenses, because not all centers dedicate similar resources to the development of a business plan, and we did not collect this information from sufficient centers to be able to conclude that the costs are typical.

B) Annual costs of operation

1. Staffing costs

For a **core center**, certification requires:

- 10 hours of primary care provider (MD, DO, PA, or NP)
- 10 hours of Registered Nurse (RN) or Qualified Mental Health Provider (QMHP)
- 15 hours of support staff.

For an **expanded center**, certification requires:

- 20 hours of primary care provider (MD, DO, PA, or NP)
- 20 hours of Registered Nurse (RN)
- 20 hours of Qualified Mental Health Provider (QMHP)
- 30 hours of support staff.

An "**intermediate level" center** (midway between core and expanded) would thus require:

- 15 hours of primary care provider (MD, DO, PA, or NP)
- 15 hours of Registered Nurse (RN)
- 10 hours of Qualified Mental Health Provider (QMHP)
- 22.5 hours of support staff.

In addition, centers must have an administrator. We assume 10 hours of administrator time needed per center, based on discussions with system administrators regarding the amount of time they typically spend managing the center.

In all three types of centers, the primary provider is allowed to assume (but not replace) the RN's hours. Thus, in theory, there are many possible combinations of staffing that a center can hire. However, in practice, no center hires MDs or DOs[4], rather the typical center hires NPs, RNs, and, when mental health services are provided, QMHPs[5]. Our estimates for salary costs thus rely on possible combinations of NP, RN and QMHP time.

Table 4 presents staffing costs (mid-range, minimum and maximum) for core, intermediate and expanded centers that are open during the school year only; and table 5 presents the same costs for centers that are open year round.

Table 4: Staffing costs for centers that are open during the school year

	Mid-range cost	Minimum cost	Maximum cost
Core center	**$37,000**	$23,500	$58,000
Intermediate center	**$59,000**	$37,250	$80,750
Expanded center	**$81,000**	$57,750	$123,000

Table 5: Staffing costs for centers that are open year round

	Mid-range cost	Minimum cost	Maximum cost
Core center	**$55,000**	$34,750	$86,000
Intermediate center	**$87,750**	$55,250	$120,000
Expanded center	**$120,500**	$85,500	$183,000

How were these costs calculated? Consider the smallest center possible – a core center open during the school year. In a typical core center with 10 hours of NP, 10 hours of RN, 15 hours of office assistant, and 10 hours of site administrator, the expected cost of salaries is **$37,000.** The range of salary costs is between **$23,500** and **$58,000**. The minimum cost is calculated assuming the least expensive type of staffing possible at the lowest pay rate - 10 hours of NP, 10 hours of QMHP, 15 hours of office assistant and 10 hours of site administrator; the maximum assumes the most expensive type of staffing, at the highest pay rate - a combination of 20 hours of PA, 15 hours of office assistant and 10 hours of site administrator. We exclude MDs or DOs from the calculation of salaries because literally no center currently hires one. Similarly, we calculated estimated costs for all types of centers.

[4] Hiring an MD/DO/physician is very expensive. A recent physician compensation survey published by Practice Support Resources Inc. shows that the pay range for family practice physicians is $157,045 to $173,576 per year.

[5] We also analyzed the most recent SBHC utilization dataset (2005-06) to investigate primary care provider frequencies. The data provided strong evidence that the typical center hires NPs and RNs: NPs were the primary care provider for 55% of all visits, whereas PAs were the primary care provider for only 6% of the visits; and RNs were the provider for 31% of the visits, whereas the QMHP was the provider for 7% of the visits.

2. Staff benefits costs

We estimate that the typical center will spend 41% of wages on employee benefits. The cost will be highest when the employer/medical sponsor is the local county health department (52%) and lowest when the employer is a private institution (39%). Thus, the average amount spent on benefits will be 41% of wages, with a range if variation between 39% and 52%.

Tables 6 and 7 show estimated benefits costs for all types of centers.

Table 6: Staff benefit costs for centers that are open during the school year

	Mid-range cost	Minimum cost	Maximum cost
Core center	**$15,250**	$9,250	$30,250
Intermediate center	**$24,250**	$14,500	$42,000
Expanded center	**$33,250**	$22,500	$64,000

Table 7: Staff benefit costs for centers that are open year round

	Mid-range cost	Minimum cost	Maximum cost
Core center	**$22,500**	$13,500	$44,750
Intermediate center	**$36,000**	$21,500	$62,500
Expanded center	**$49,500**	$33,250	$95,250

The following seven cost categories estimates are based on information from the case studies, and are not differentiated by center type (core, intermediate, and expanded), because the information we obtained from the case studies was not sufficient to support such detailed distinctions. This downside is offset by the fact that differences in costs by center type will not be as large for these expense categories as they are for the staff and benefits categories.

3. Space rent, utilities, janitorial and maintenance

The median cost for space rent, utilities, janitorial and maintenance is $11,750, with a range of variation from $2,250 to $45,000. Included here are space rent, water, electric, trash, phone lines, other utilities, janitorial and maintenance. In some centers, these costs include a cell phone line for the provider. Keep in mind that most of these costs are covered in-kind by the school district, and thus these costs are estimated by the school district, mainly depending on how school administration values their own space. Hence the large range of variation in these costs.

4. Office and program supplies

The median cost for office and program supplies is $2,250, with a range of variation from $1,250 to $12,500. These costs include paper, printing, charts, binding, copier, and other needed supplies.

5. Administrative costs and other/indirect costs (such as medical liability, advertising)

The median costs are $14,000, with a range of variation from $2,500 to $25,750. This cost category includes a variety of expenses, such as grant writing, grant administration, meetings for an oversight committee, the time of administrative personnel in human resources, billing or purchasing departments, the medical director's time, the financial manager's time, chart auditing, advertising, etc.

6. Medical supplies, drugs, vaccines and medications, and lab tests

The median cost is $2,500, with a range of variation from $750 to $10,500.

7. Information technology

The median cost if $5,250, with a range of variation from $500 to $27,250. The major factor driving information technology costs is the presence of a billing system. Billing software, licenses and maintenance all drive information technology costs higher in centers that have comprehensive billing systems.

8. Travel, education and training

Median costs reported by case study systems were $2,500, with a range of variation between $1,000 and $3,000. Typical travel, education and training costs include participation in the NASBHC conferences, coordinator meetings organized by the state program office, as well as continuing education credits for medical providers.

9. Memberships and dues

Median costs are $250, with a range of variation between 0 and $250. Memberships and dues typically include Oregon School Based Health Care Network fees, as well as professional licenses and fees for medical providers.

C) Revenues

The SBHC state program office collected its most recent information about the operational costs and sources of revenue of Oregon SBHCs during the certification process conducted in spring 2007. All centers seeking certification were required to complete a budget and revenue survey form providing information from the most recent

completed fiscal year (2005-06), as well as a survey form providing staffing information from the current year (2006-07).

Forty-two of the 43 Oregon centers seeking certification completed the surveys. Unfortunately, due to the nature of the information collected through certification, no data is available for staffing patterns for 2005-06. In the following analyses, 2006-07 staffing data is used in conjunction with 2005-06 revenue data; there is good reason to believe that there were no major changes in staffing patterns from one year to the next.

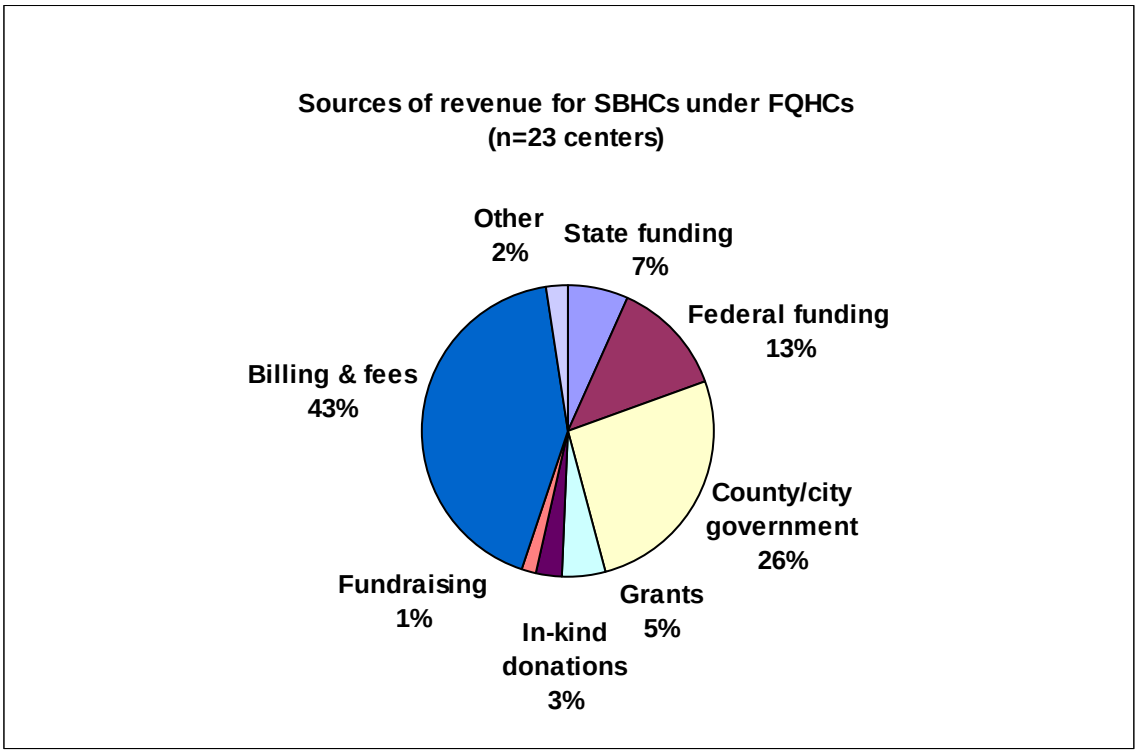
Most of the analyses in this report distinguish between centers under FQHC vs. non-FQHC sponsorship. In particular, FQHC medical sponsors are more likely to bill insurances and to sponsor SBHCs with federal dollars. Twenty-three of the 42 centers in our analyses are under FQHC sponsorship, as opposed to 19 that are operated by non-FQHC medical sponsors.

The median operational cost reported for all centers for 2005-06 was $194,750 (the mean cost was close to the median, at $199,500). Operational costs ranged from $50,000 to $437,000. The large majority of centers have substantially more staffing than a core center; the median number of physical care provider hours per week per center was 38 (with a mean of 46).

Of the forty-two centers, seven are open in the summer. These seven centers have a median number of 60 weekly physical care provider hours, and a median operational cost of $340,250. Only five centers of the forty-two have less than 25 hours of physical care provider time and no mental health services, fitting the definition of a core center; for these centers, the median cost is $80,500 (the mean cost is $85,750), with a range of variation from $50,000 to $120,000. These figures are close to the theoretical estimates for core centers presented in table 2.

What are the major sources of revenue for Oregon SBHCs? Figure 1 presents the percent of total operational costs by revenue source reported by SBHCs under FQHC sponsorship. All figures in this report are enclosed in appendix 2 in full size version.

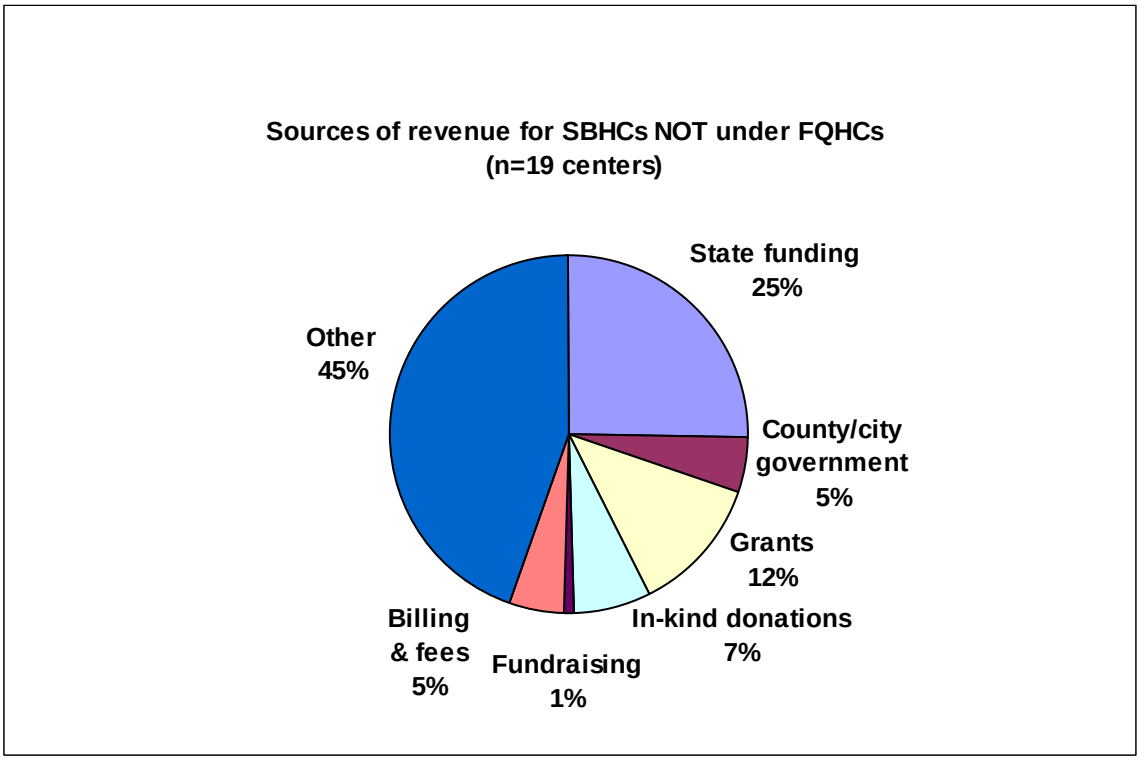
Figure 1: Revenue sources for SBHCs under FQHC sponsorship



The biggest source of revenue reported by centers sponsored by FQHCs is represented by billing dollars. Forty-three percent of all revenues come from billing insurances.

Figure 2 presents the percent of total operational costs by revenue source for SBHCs that are NOT under FQHC sponsorship. A total of 19 centers are included here.

Figure 2. Revenue sources for SBHCs that are NOT under FQHC sponsorship

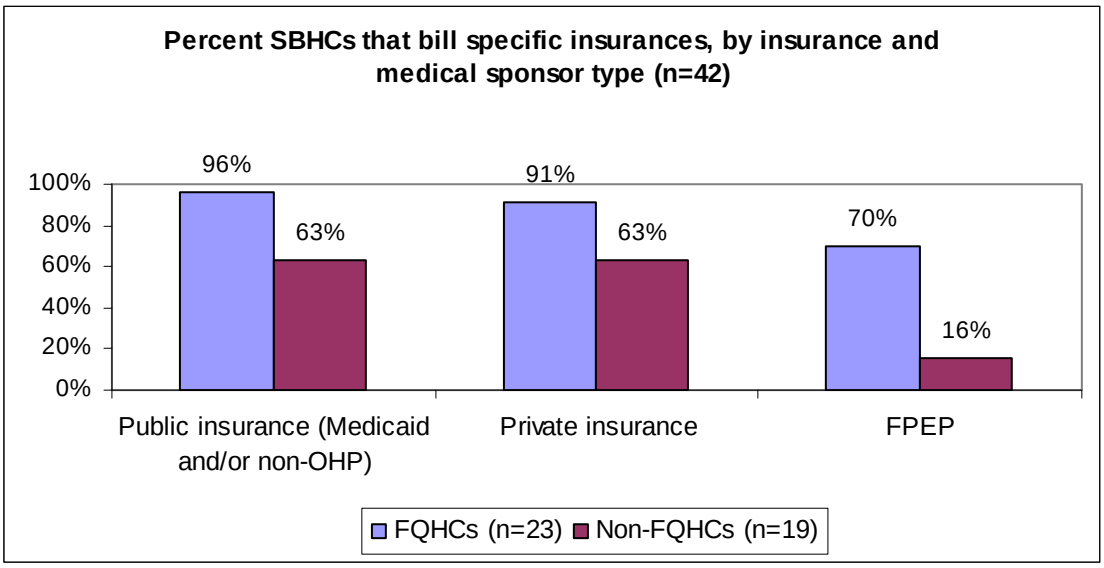


For centers with medical sponsors that are not FQHCs, billing and fee revenue is significantly smaller (only 5% of operational costs), federal dollars are literally absent, and state funding represents a larger proportion of program income.

The following analyses aim to provide a good understanding of revenue from billing. Because the centers that are significantly more successful at billing are under FQHC sponsorship, most analyses are limited to data reported by the 23 centers that have FQHC medical sponsors.

Figure 3 shows the percent of SBHCs that reported billing specific insurances, by insurance and center type.

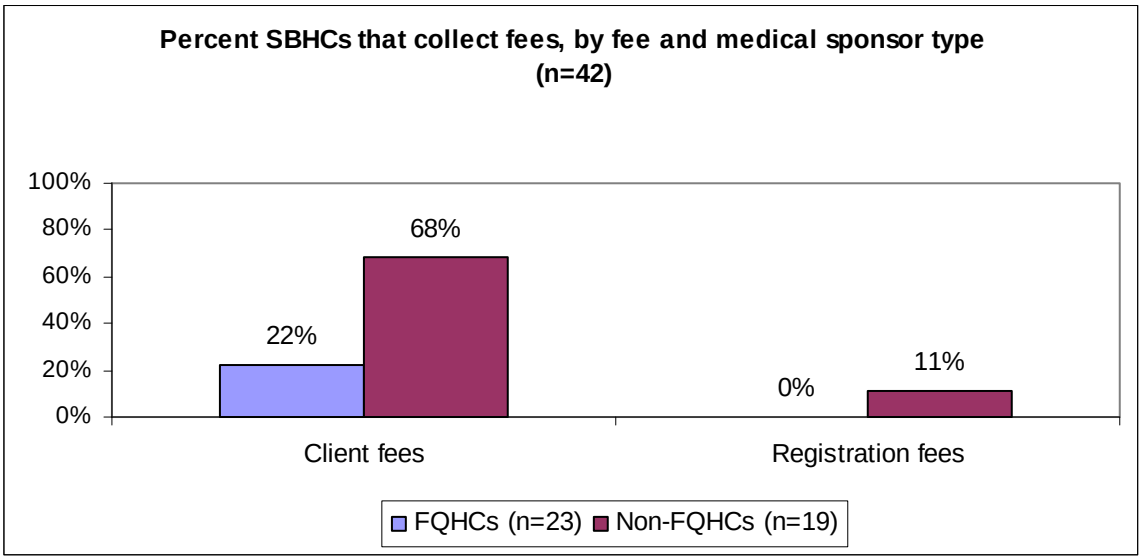
Figure 3. Percent SBHCs that bill specific insurances, by insurance and medical sponsor type



SBHCs that are under FQHC medical sponsorship are more likely to bill all types of insurances, and significantly more likely to bill Family Planning Expansion Project (FPEP) insurance clients. These results are not unexpected, given the higher billing capacity of FQHCs. We also checked for a correlation between FQHC medical sponsorship and location of the SBHC in a particular school type; if most FQHC sponsored centers are located in high schools, then higher levels of FPEP billing activity in FQHCs are due to the school type (high school students are more likely to access the center for family planning services). However, no such correlation exists – of the 27 SBCHs located in high schools, the large majority (16 centers) are actually under non-FQHC medical sponsors.

Another potential source of billing revenue is the collection of client and registration fees. Figure 4 shows the percent of SBHCs that collect client and registration fees, again by medical sponsor type.

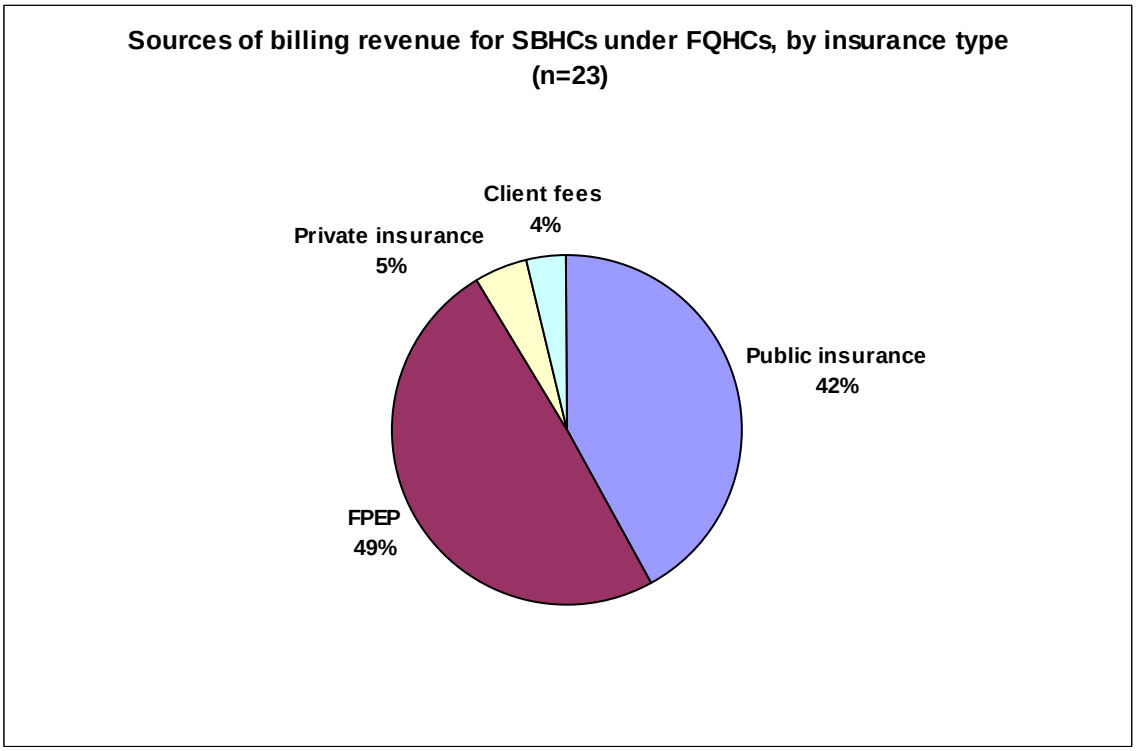
Figure 4. Percent SBHCs that collect fees, by fee and medical sponsor type



SBHCs under FQHCs are less likely to rely on collecting client or registration fees. A potential explanation is that the billing capacity of FQHCs generates revenue from billing insurances, thus there is be less need to collect client or registration fees.

What is the make up of revenue from billing for those centers where billing revenue is a major source of program income – namely, centers under FQHC sponsorship? Figure 5 shows the composition of revenue from billing reported by the 23 centers under FQHCs, by insurance type. The total dollar volume from billing revenue that the 23 centers reported all together was $2,372,000.

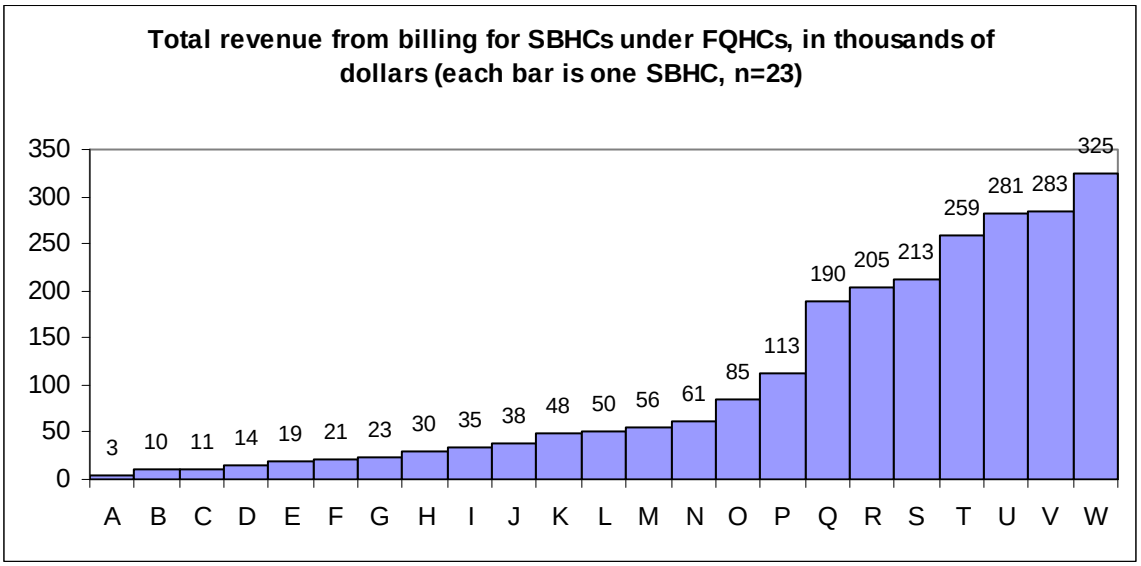
Figure 5. Sources of billing revenue for SBHCs under FQHC medical sponsors, by insurance type



Of the $2,372,000 billing dollars generated by centers under FQHC sponsorship, 49% came from billing FPEP insurance, followed by 42% from billing public insurance. Private insurance billing income represents a very small percentage of billing revenue (only 5%).

What kind of dollar volumes does billing insurances generate for FQHC centers? Figure 6 shows the amount of revenues from billing, in thousands of dollars, for each of the 23 centers. Each center is unique identified by an alphabet letter. This labeling will allow the reader to identify the same center in subsequent analyses, in particular figures 7 and 8.

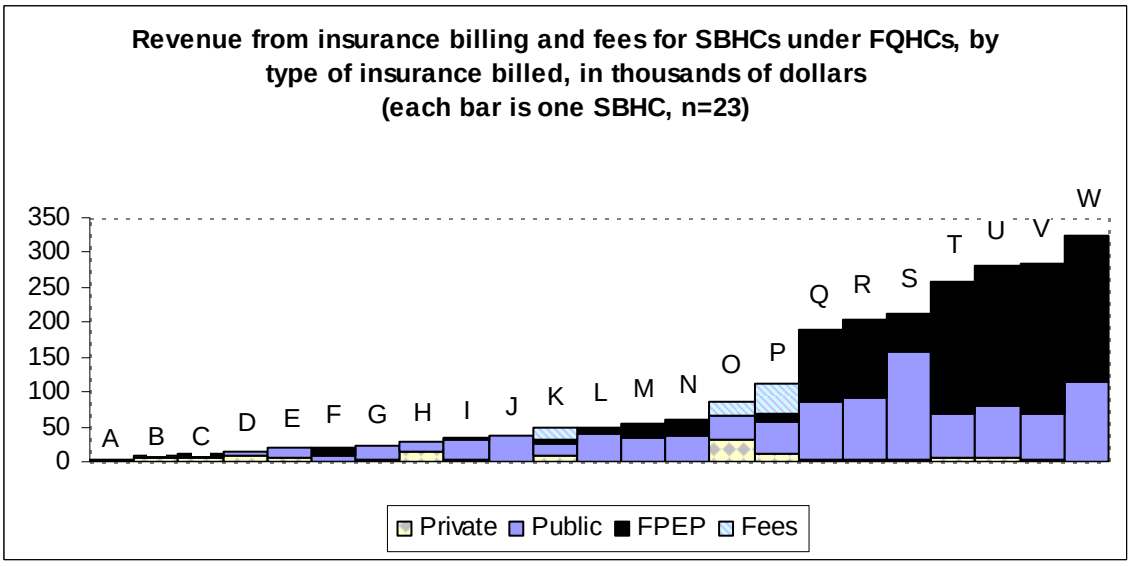
Figure 6. Total billing revenue for SBHCs under FQHC sponsors



The median revenue from billing is $50,000, and the mean is $106,000. Depending on the billing capacity of each center, and on other important factors such as the percent of uninsured clients and hours of care provided, billing revenue ranges from $3,000 to $325,000.

A closer look at the revenue from insurance billing for centers under FQHC medical sponsors shows the distribution of billing revenue by insurance type for each center. Results are presented in figure 7 below.

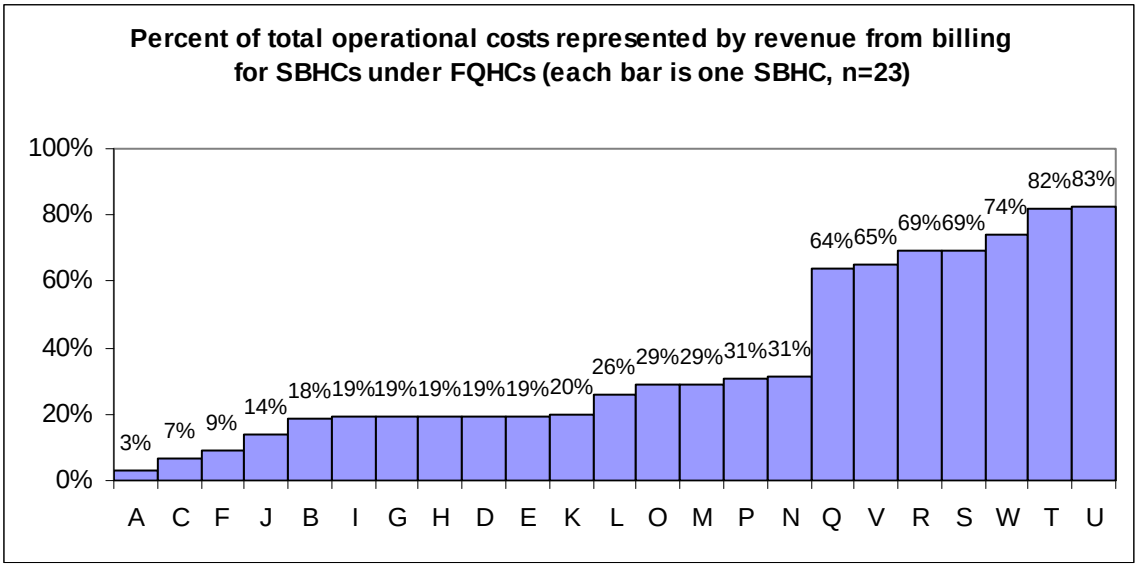
Figure 7. Revenue from insurance billing and fees for each center under FQHC sponsors, by type of insurance billed



SBHCs under FQHC sponsors that are successful at generating high program income from billing insurances rely on a combination of public and FPEP insurance billing. Few centers generate a substantial amount of their billing revenue from private insurance billing.

Does billing revenue has the potential of generating a large proportion of program income, and thus ensure financial sustainability? Figure 8 shows the percent of total operational costs that is represented by revenue from billing. Again, each individual center is identified by an alphabet letter that will allow the reader to connect information from this graph to data from the previous two graphs.

Figure 8. Percent of total operational costs represented by revenue from billing for SBHCs under FQHC sponsors



The data indicate that a substantial proportion of program income can be generated from billing insurances. Seven of the 23 centers under FQHC sponsorship are able to cover more than 60% of their total program cost from billing revenue.

An important driver of income from billing is the percent of total visits where the client is insured. The higher the number of clients with insurance (whether public/FPEP or private insurance), the more opportunity for SBHCs to bill insurances and generate program income. However, our analyses involving client insurance status and the relationship to income from billing are limited by one factor. When SBHCs collect data concerning the insurance status of each client, it does not necessarily mean that the client's insurance is being billed for services. Thus, in a center where a high proportion of clients are insured, revenue from billing can be small if the center does not have an efficient billing system in place.

With this limitation in mind, we present in figures 9 and 10 the relationship between the percent of uninsured visits and revenue from billing.

Figure 9. Revenue from billing volumes and the percent uninsured visits

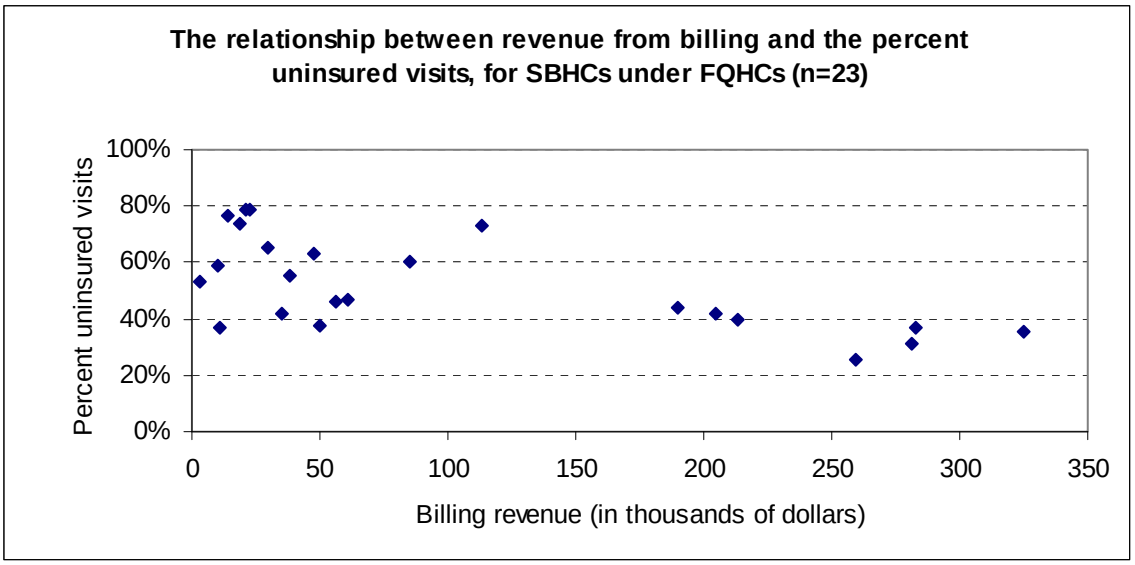
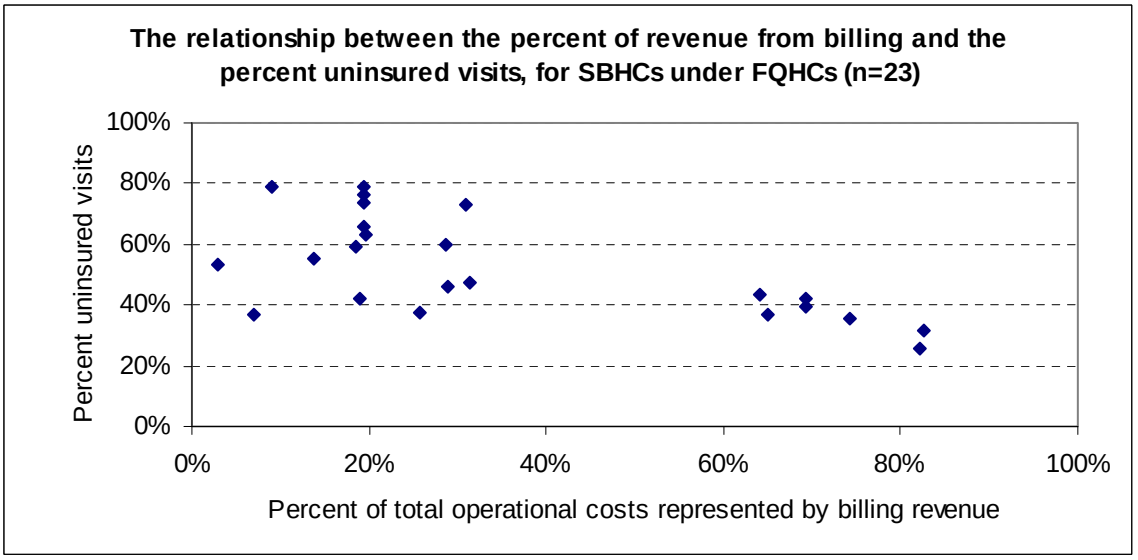


Figure 10. Percent total operational costs from billing revenue and the percent uninsured visits

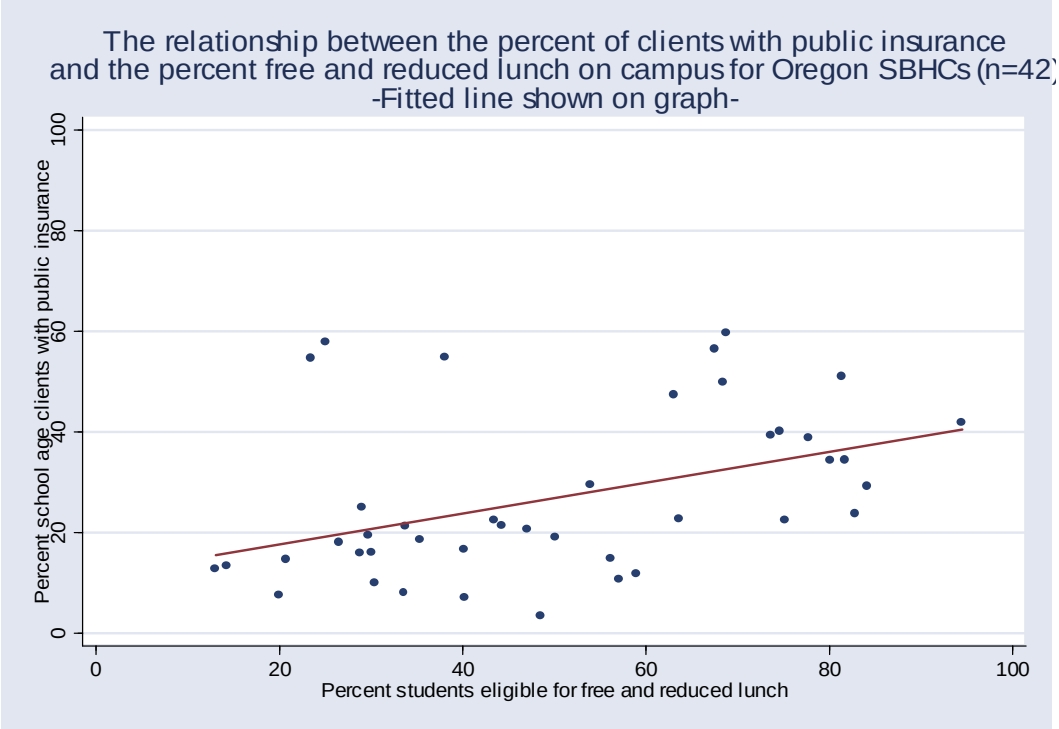


According to figure 9, as the percent of uninsured visits decreases, revenue from billing increases. Similarly, figure 10 shows that as the percent of uninsured visits decreases, the percent of total operational costs that is represented by billing revenue increases (a higher percent of total operational costs is covered through billing revenue). What these graphs show is the difference between centers that are efficiently billing and those that need

more technical assistance to improve their billing systems. For instance, a few centers have approximately 40% uninsured visits, yet they only generate less than 30% of their program income from billing (under $50,000). By comparison, the cluster of centers on the right side of the graphs has similar levels of uninsured visits, yet they generate substantial levels of income from billing (over 60% of their operational costs come from billing revenue).

Since public insurance is the main generator of revenue from billing, how can a prospective center estimate the percent of clients with public insurance? The expectation is that in schools with lower socio-economic status of the student population, there should be more students eligible for public insurance enrollment. We collected data from all 42 schools with SBHCs for a potential measure of socio-economic status – namely the percent of students eligible for free and reduced lunch. We also calculated the percent of school age clients with public insurance.[6] Naturally, we excluded from the analysis community clients in centers that see patients other than the student population (centers that are open to the community). Results are presented in figure 11.

Figure 11. Percent school age clients with public insurance and socio-economic status



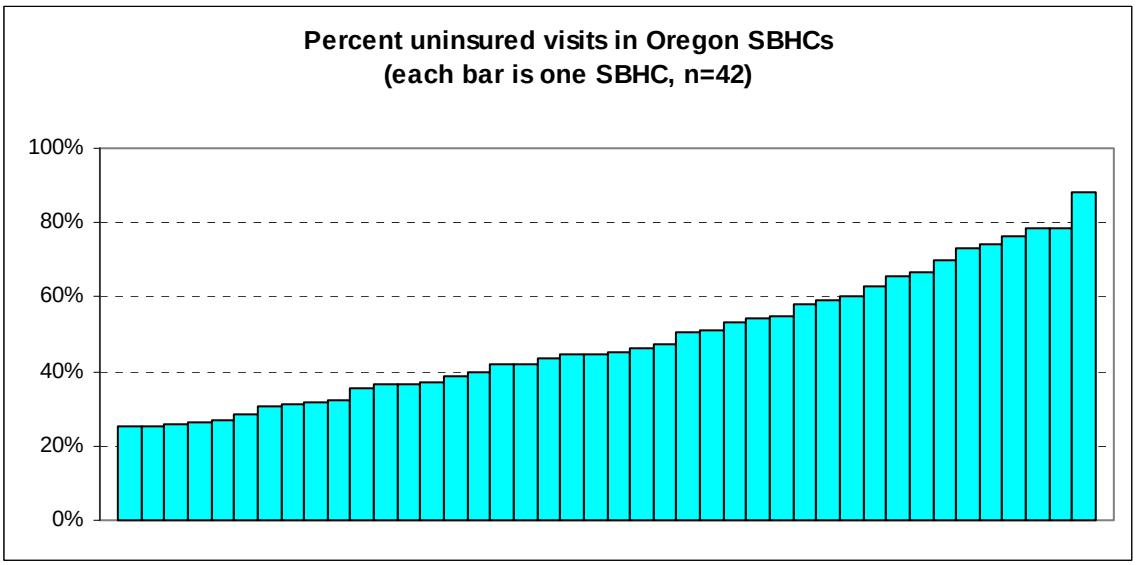
As expected, the percent of students with public insurance increases as socio-economic status decreases (that is, the percent students eligible for free and reduced lunch

[6] When multiple schools are served on the same campus, all students corresponding to that age range are included in the analysis. Similarly, the percent free and reduced lunch measure is computed taking into account all schools served, using a formula that weighs each school by its student population size.

increases). How can we interpret the difference in percent students with public insurance for centers that have similar levels of socio-economic levels? A potential explanation is that not all centers are equally efficient in enrolling students in public insurance. If this holds true, there is potential for technical assistance to help centers that have low levels of socio-economic status yet low levels of students with public insurance to do more outreach and enrollment of students under public insurance plans.

But what exactly is a typical percent of uninsured visits in Oregon SBHCs? Figure 12 presents the distribution of the percent of uninsured visits for Oregon SBHCs.

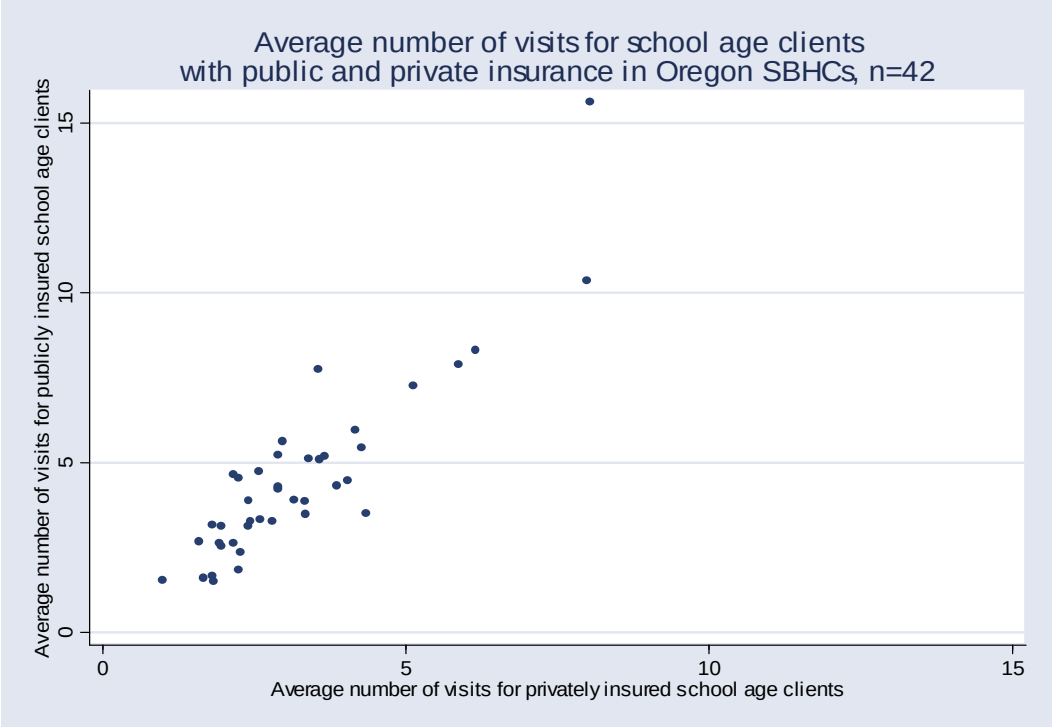
Figure 12. The distribution of percent uninsured visits in Oregon SBHCs



The median percent of uninsured visits is 45% (the mean is close, at 49%), with a range of variation from 25% to 88%. Initially we suspected there may be differences between FQHC sponsored centers vs. non-FQHC centers, because FQHCs are more motivated to collect accurate insurance information, due to their billing capacity and reliance on income from billing insurances. However, there are no significant differences between FQHC and non-FQHC sponsored centers.

An interesting difference that may affect billing revenue estimates is the likelihood that clients with public insurance will more frequently use the SBHC. Figure 13 shows the average number of visits for school age clients with public and private insurance in Oregon SBHCs.

Figure 13. Average number of visits for publicly and privately insured school age clients



School age clients with public insurance have higher usage frequency of the SBHC. A snapshot of the average and median number of visits for school age clients with public and private insurance is presented in table 8.

Table 8. Median and average number of visits for publicly and privately insured school age clients

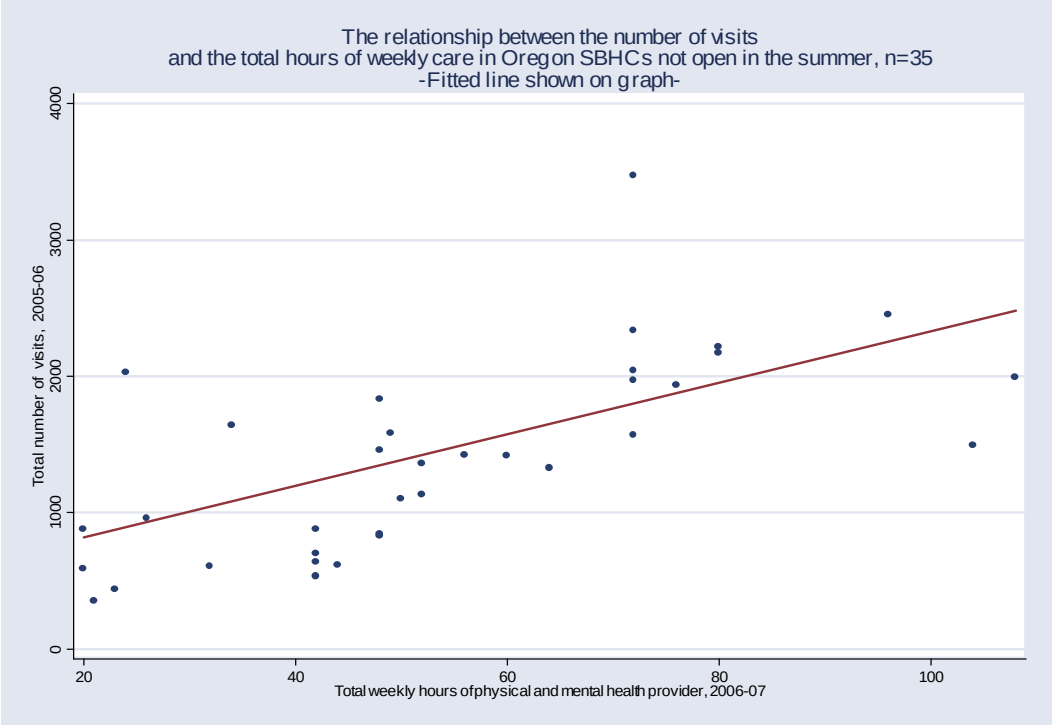
	Median	Average
Visits for publicly insured school age clients	**3.9**	**4.5**
Visits for privately insured school age clients	**2.9**	**3.2**

There were no significant differences for FQHC vs. non-FQHC sponsored centers. In all type of centers, publicly insured students use the SBHC more frequently than privately insured students.

A major question, particularly relevant for prospective centers, is the number of visits they can expect given the desired number of provider hours. Being able to estimate the number of visits, in addition to estimating the percent of insured clients, helps prospective centers develop reliable budget and revenue estimates. In figure 14, we analyze the total number of visits for each center as a function of the total number of

hours of primary care and mental health care. As explained before, the number of visits is from 2005-06, and staffing hours are from 2005-07. The x-axis represents the sum of primary and mental health care hours for 2006-07, and the y-axis has the total number of visits for 2005-06. We excluded from the analysis centers that are open in the summer, because we do not have data about the total number of provider hours for the summer in these centers.

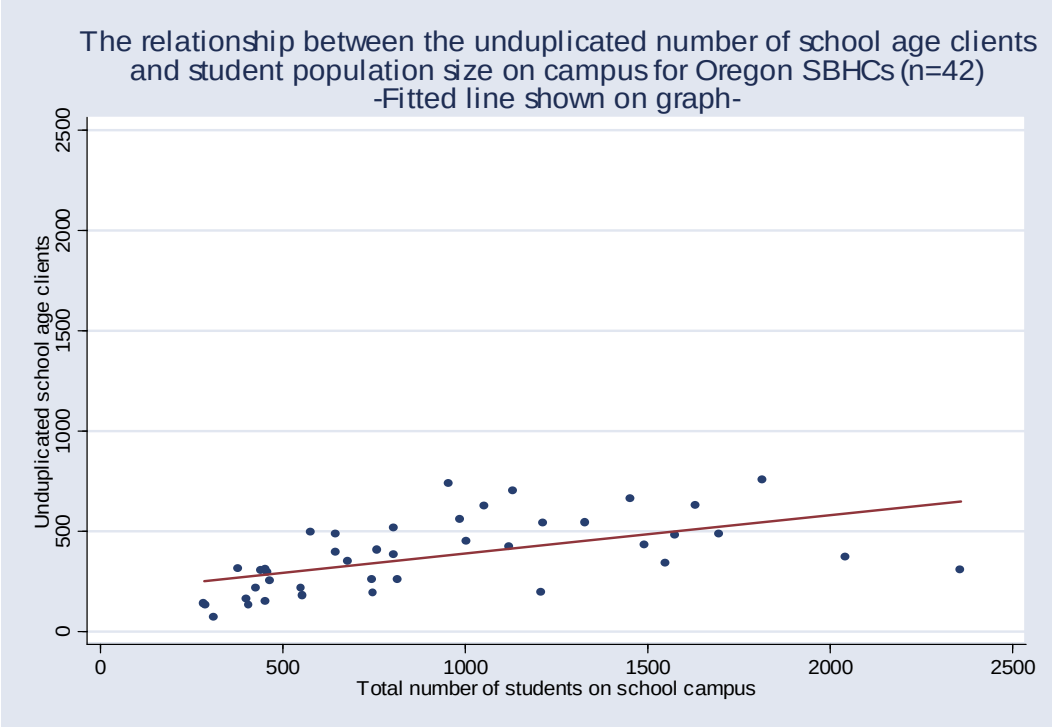
Figure 14. The number of visits and weekly hours of physical and mental health care



The fitted line shows predicted values for the number of visits depending on the weekly number of hours of physical and mental health care. Thus, a core center with under 25 hours of weekly care should normally expect approximately 1,000 visits during the nine months of operation. Centers with 80 hours of weekly physical and mental health care can expect approximately 2,000 visits. However, the number of visits does not double when the number of hours of weekly care doubles – that is, the increase in hours does not lead to a linear increase in visits. Some obvious reasons are that 1) centers with high numbers of weekly hours of care have mental health providers, and it is known that mental health visits are longer; and 2) in centers with high numbers of weekly hours the primary care provider could be spending more time on administrative/coordinator type responsibilities.

How about the total number of unduplicated clients? We examined the relationship between the number of students on campus and the total number of unduplicated clients of school age. Results are presented in figure 15.

Figure 15. Unduplicated school age client count and student population size



As the number of students on campus(es) served increases, the number of unduplicated school age clients increase slightly. However as the number of students on school campuses increases, the number of unduplicated clients does not increase at a proportional rate. Rather, when the number of students on campus increases dramatically, the increase in unduplicated clients is relatively small. The reason could be that the proportion of traditionally underserved youth population that mostly needs and accesses SBHC services differs radically from center to center. For instance, the two outliers in figure 15 – the two centers in schools with over 2,000 students – have some of the smallest percentage of free and reduced lunch population. Thus, although the student population is larger, the number of unduplicated clients is not as high because of the reduced proportion of students in need to access SBHC services.

Appendix 1: SBHC cost and revenue report: data sources and methodological explanations

A) Startup costs

1. Space costs

The cost of the modular was estimated based on figures disclosed by 3 systems that built modular units. A fourth system, with bigger exam rooms and space, informally quoted a cost of **$100,000** for their modular unit as well. Renovation costs were calculated using budgetary information from the planning grants of three systems that chose to renovate a space donated by the school for use as SBHC facility. The higher end of renovation costs (the maximum) was considered to possibly be as high as the costs of setting up the modular and equipping it with all the necessary specs.

2. Furniture costs

We collected median, minimum and maximum prices from 2 different sources: state contract discount rates (Office Max is the state contracted supplier) as well as regular prices from three top office supplies and furniture retailers (Office Max, Office Depot and Staples). Both types of pricing are relevant because some centers purchase office supplies and furniture at discounted prices through their medical sponsor (i.e. when the medical sponsor is the local county health department), yet others may shop for their supplies without benefiting from such discounts.

The median state discounted price for the supplies listed above was $3,000, with a range of $2,250 to $4,500. The typical market pricing from the top 3 retailers indicated a median of $4,000, with a range of variation of $1,750 to $8,000. Thus we estimated that a center can be expected to pay on average $3,500 for furniture supplies, with a range of variation between $1,750 and $8,000.

3. Electronic equipment

For electronic supplies, we collected prices from three top suppliers (Dell, Best Buy and Circuit City). Again, we collected median, minimum and maximum prices.

4. Office equipment

For office equipment, we collected market prices from the top 3 office supply retailers (Office Max, Office Depot and Staples). Once again, we collected median, minimum and maximum prices.

5. Medical equipment

For medical equipment, we used a quote estimate for purchasing the equipment from a major medical equipment retailer. We requested mid-range pricing for all items listed.

6. Salary and benefits for administrative staff during planning phases

We estimated that an administrator is needed during the school year for the two years of planning (phases I and II), for 10 hours a week, 35 weeks a year. The data source and reasoning for these estimates are explained in more detail in the “Annual costs

of operation" section, where salary and benefit costs for the system administrator are discussed.

B) Annual costs of operation

1. Staffing costs

For RNs, PAs, medical secretaries (MS), QMHPs, and center administrators we used state salary data from the 2006 Employment Division Salary Survey. The state report provides median and mean salaries; as well as 10^{th} and 90^{th} percentiles (they do not collect actual minimum and maximum salaries) – so we employed these percentiles to compute the minimum and maximum of salary ranges.

For NPs, Oregon does not collect salary data, and there were no other Oregon specific reliable resources. A national survey of NP salaries is conducted every 2 years and results are published by *ADVANCED* for Nurse Practitioners; the latest survey results are from 2005. Because the data are national and not Oregon specific, we collected data from the 19 SBHC systems that employ NPs as primary care providers. For SBHC systems that are sponsored by the local county health department, we simply used the official county pay scale for NPs; for others, we asked them to share their NP pay with us. We were able to obtain salary information from 13 systems, however we computed the salary estimates based on data from 11 counties only, because two of the smaller counties pay their NP by the hour without benefits.

The following table shows median, minimum and maximum salaries per hour (excluding benefits).

Type of staff	Median salary/hour	Min salary/hour	Max salary/hour
NP	$31.7	$23.8	$42.99
PA	$35.84	$26.59	$49.36
RN	$29.77	$22.37	$36.73
QMHP	$20.99	$12.82	$27.75
MS	$15.05	$10.93	$21.28
Administrator	$21.50	$13.89	$34.98

For centers that are open during the school year, we calculated salaries for 35 weeks. The typical school year has 165 school days, or 33 weeks; and an additional 2 weeks of preparation are needed before the center opens. For centers that are opened year round, we calculated full time rates for the full working year.

Comments about medical secretary salaries: The salary for medical secretaries is very close to the salary of a medical assistant ($14.07/hr.). We chose to use the medical secretary scale for the office assistants after checking the salary of office assistants in a few Oregon SBHCs. Receptionists make far less – their median salary is only $11.65/hr, which is an underestimate compared to what the centers told us they actually pay their office assistants.

Comments for NP salaries: The median salary for NPs based on information from SBHC systems that hire NPs is $31.7/hr. The average salary is almost identical, at

$31.9/hr. *This number is very close to the national average for NP salary in an elementary or secondary school setting, which is $31/hour.*

Comments for administrator salaries:

Centers are also required by certification standards to have an administrator or program manager, but there is no formal requirement regarding who the person should be and how many hours they should work. Therefore, there is wide variation with respect to the hours and the position of the center administrators. In the bigger systems, the administrator works full time and oversees a larger number of centers, in others the administrator oversees one center. The administrator is sometimes the same person as the coordinator of the center, and/or with the RN or NP that works in the center.

Administrators are basically paid as program managers (we checked with few centers and confirmed that the pay scale for the position was a program manager scale). We thus employed the pay scale for social and community services managers, which is the closest match for a management profession surveyed by the state of Oregon yearly. Medical and health services managers were the other closest match from a descriptive perspective, but this class of respondents included many private sector/profit organizations health care professionals whose salary was not representative of the non-profit sector.

Whereas administrators oversee the system, each center also has a coordinator. In systems with one SBHC only, the coordinator and administrator may be the same person; and in some centers, the coordinator is one of the staff (NP or RN). For this reason, we did not include a coordinator in the calculation of salaries.

Below is an overview of the staffing amounts included in the calculation of mid-range, minimum and maximum salaries

	Mid-range staffing costs	Minimum staffing costs	Maximum staffing costs
Core center	10 hours NP 10 hours RN 15 hours MS 10 hours administrator	10 hours NP 10 hours QMHP 15 hours MS 10 hours administrator	20 hours PA 15 hours MS 10 hours administrator
Intermediate center	15 hours NP 15 hours RN 10 hours QMHP 22.5 hours MS 10 hours administrator	15 hours NP 25 hours QMHP[7] 22.5 hours MS 10 hours administrator	30 hours PA 22.5 hours MS 10 hours administrator
Expanded center	20 hours NP 20 hours RN 20 hours QMHP 30 hours MS 10 hours administrator	20 hours NP 20 hours RN 20 hours QMHP 30 hours MS 10 hours administrator	40 hours PA 20 hours QMHP 30 hours MS 10 hours administrator

[7] In a core center, the QMHP can assume all of the RN's time.

For mid-range staffing costs, we used median salaries; for minimum staffing costs, we used minimum salaries; and for maximum staffing costs, we used maximum salaries. Here is an example of calculation to estimate mid-range staffing costs for a core center open during the school year:

Mid-range staffing cost = [(10 hours NP @ $31.7/hr) + (10 hours RN*$29.77/hr) + (15 hours MS*$15.05/hr) + (10 hours administrator*$21.5/hr)]*35 = **$37,000**

2. Staff benefits costs

There are no benefits data available that are specific to Oregon. However, national benefits data are collected by the Bureau of Labor Statistics (BLS). The project is called the "Employer Costs for Employee Compensation" (ECEC) and it measures the average cost per employee hour worked that employers pay for benefits. Benefit calculation includes paid leave, supplemental pay, insurance, retirement and savings, and legally required benefits. The industry classification employed for our estimates is "health care and social assistance" – which is the occupational category that includes clinic employees.

According to these national data, state and local government employees in health care receive benefits that value about 52% of their wages and salaries. Private industry workers in health care receive benefits that value about 39% of their wages and salaries.[8] Overall, civilian workers in health care receive benefits that value about 41% of their wages and salaries (where civilian economy means both private industry, as well as state and local government data).

These estimates agree well with reality. Three of the systems that shared their budget information with us revealed employer costs for benefits that equaled 43%, 48% and 55%, respectively, of their total salary expenses.

To produce staff benefits estimates, we assumed that the typical center will spend 41% of wages on employee benefits. The cost will be highest (maximum) when the employer/medical sponsor is the local county health department (52%) and lowest (minimum) when the employer is a private institution (39%). Thus, the average amount spent on benefits will be 41% of wages, with a range if variation between 39% and 52%. Thus, for mid-range estimates, we calculated 41% of the mid-range staffing wages, for minimum estimates we calculated 39% of the minimum staffing wages estimated, and for maximum estimates, we calculated 52% of the maximum staffing wages.

Note: in some counties, NPs are paid by the hour without benefits. In this case, their salary is higher in order to make up for the lack of benefits. We collected data from 3 counties that have SBHCs where NPs are paid without benefits. The median salary per hour for the NP was $45, thus totaling **$15,750** per year for a core center open during the school year (10 hours/week for 35 weeks). Compare this amount to the salary of NPs that receive benefits - $11,095/year plus an additional 41% of the salary compensation in benefits = **$15,644**. Thus, whether employees are paid with benefits or hired by the hour without benefits, their total compensation is similar; in the first scenario the base pay is lower but the benefits make up for the lower pay rate, and in the second scenario the higher compensation makes up for the lack of benefits. Thus our cost modeling does not

[8] For instance, registered nurses receive 41%, sales and office health care employees receive 43%.

suffer from any drawbacks by calculating total salaries as base pay plus benefits, and excluding from modeling salaries contracted by the hour without benefits.

All remaining cost figures for annual operation costs (categories three through nine) were estimated using data collected from the case studies. In all situations where there was reason to believe that costs were underestimated because of underreporting for a specific cost category, that particular system's information was treated as missing in order to avoid biased estimates. The remaining (non-missing) cost figures for each category were included in the analysis, providing a median, minimum and maximum cost estimate.

Appendix 2: Full size graphs

Figure 1: Revenue sources for SBHCs under FQHC sponsorship

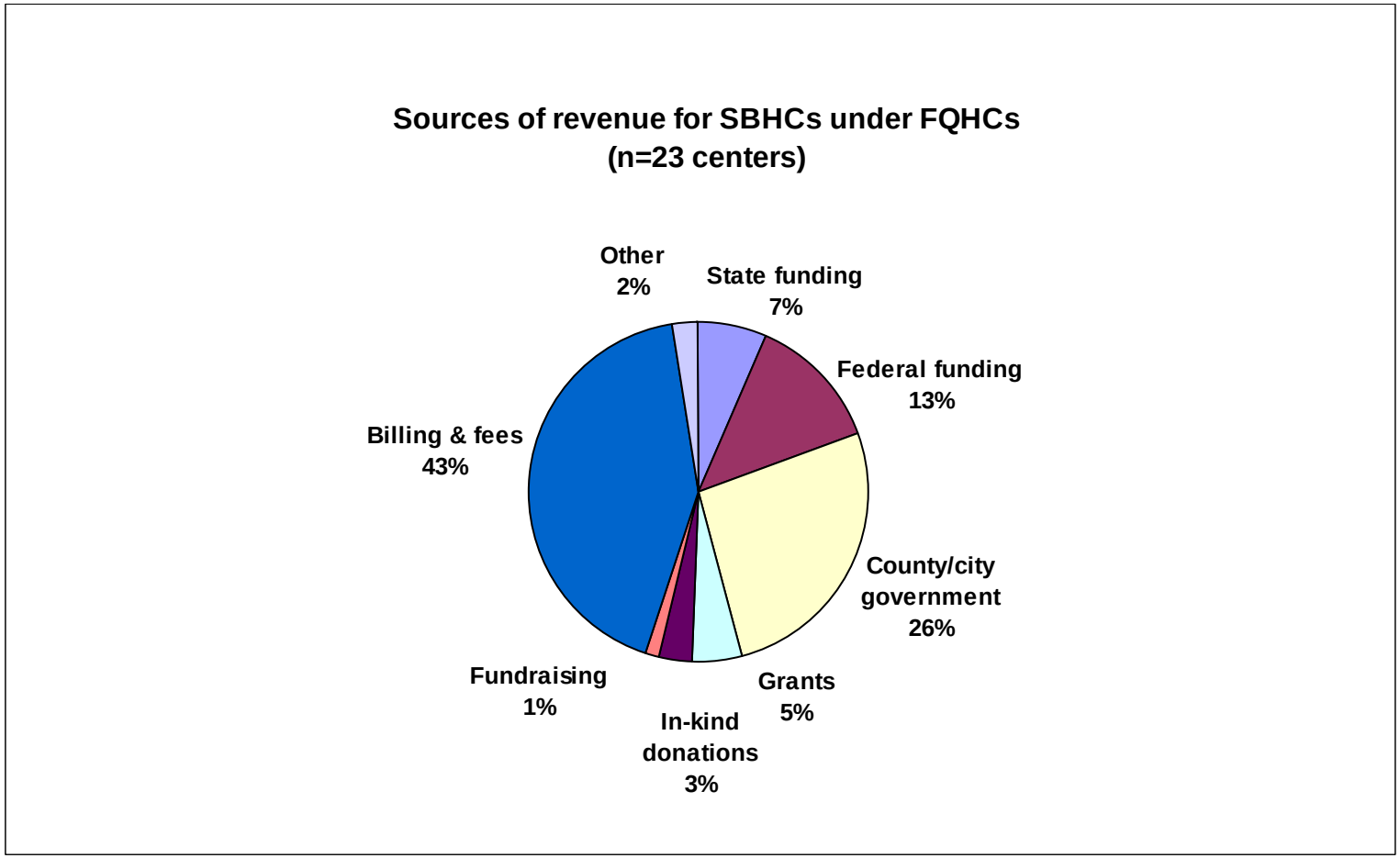


Figure 2. Revenue sources for SBHCs that are NOT under FQHC sponsorship

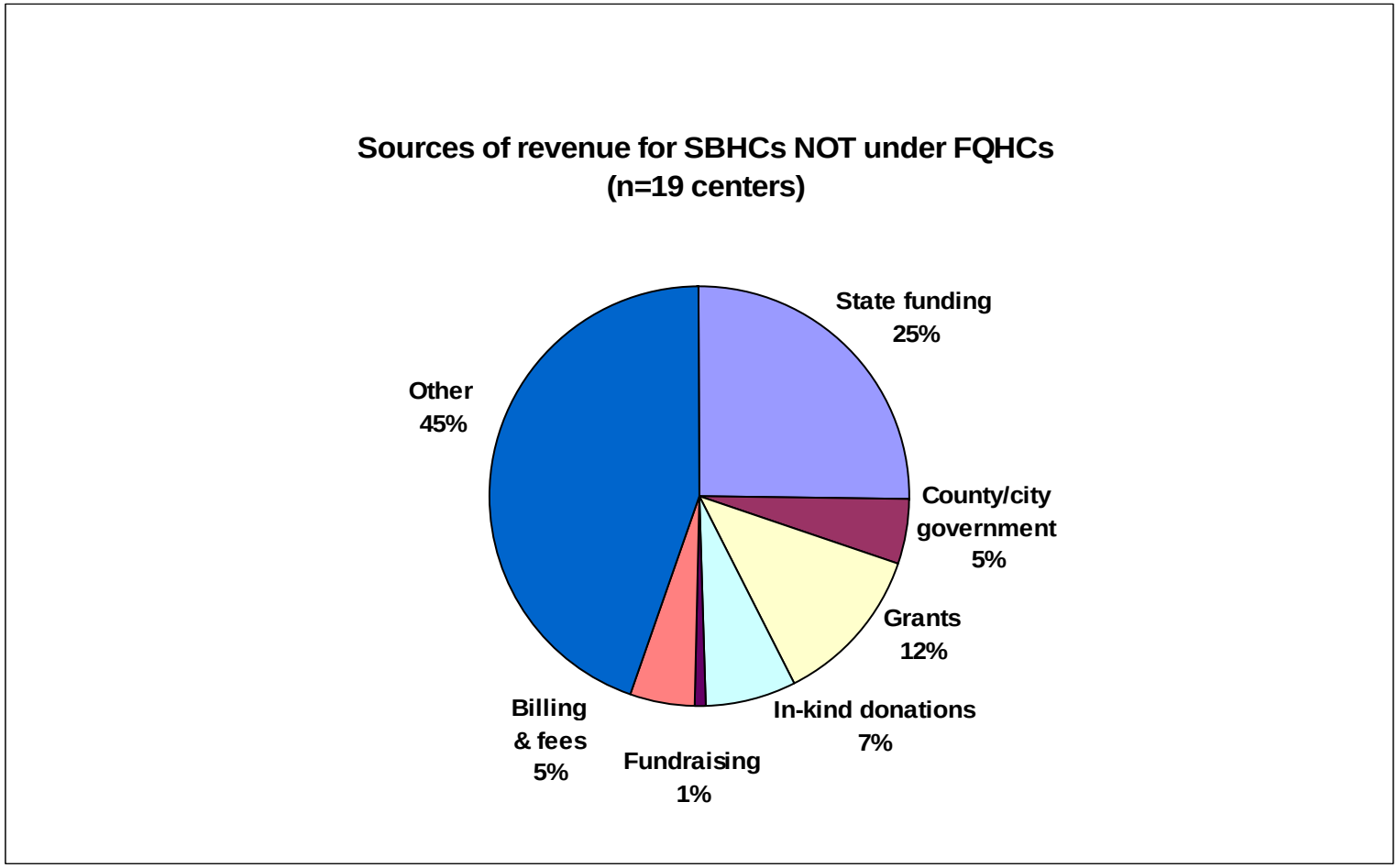


Figure 3. Percent SBHCs that bill specific insurances, by insurance and medical sponsor type

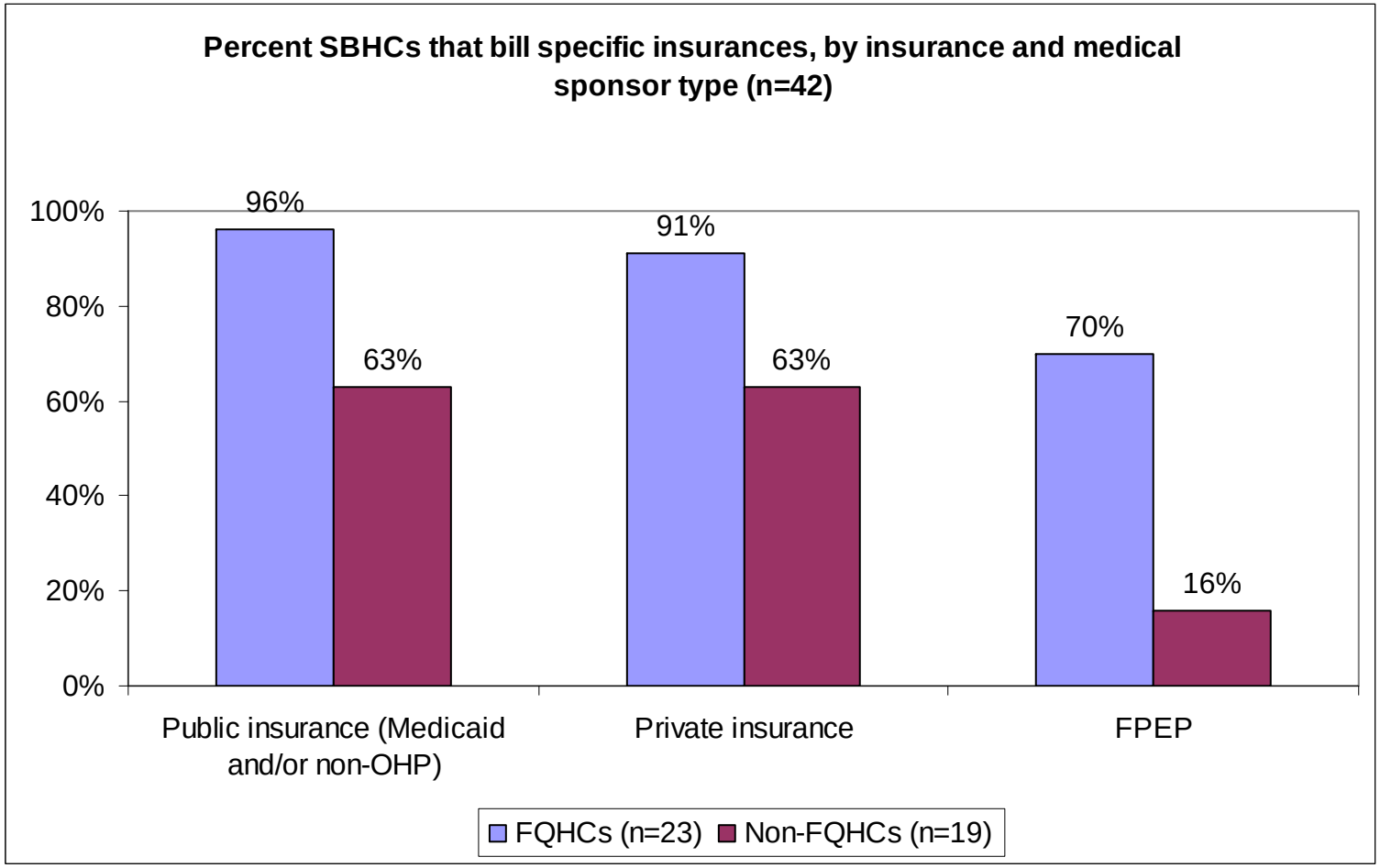


Figure 4. Percent SBHCs that collect fees, by fee and medical sponsor type

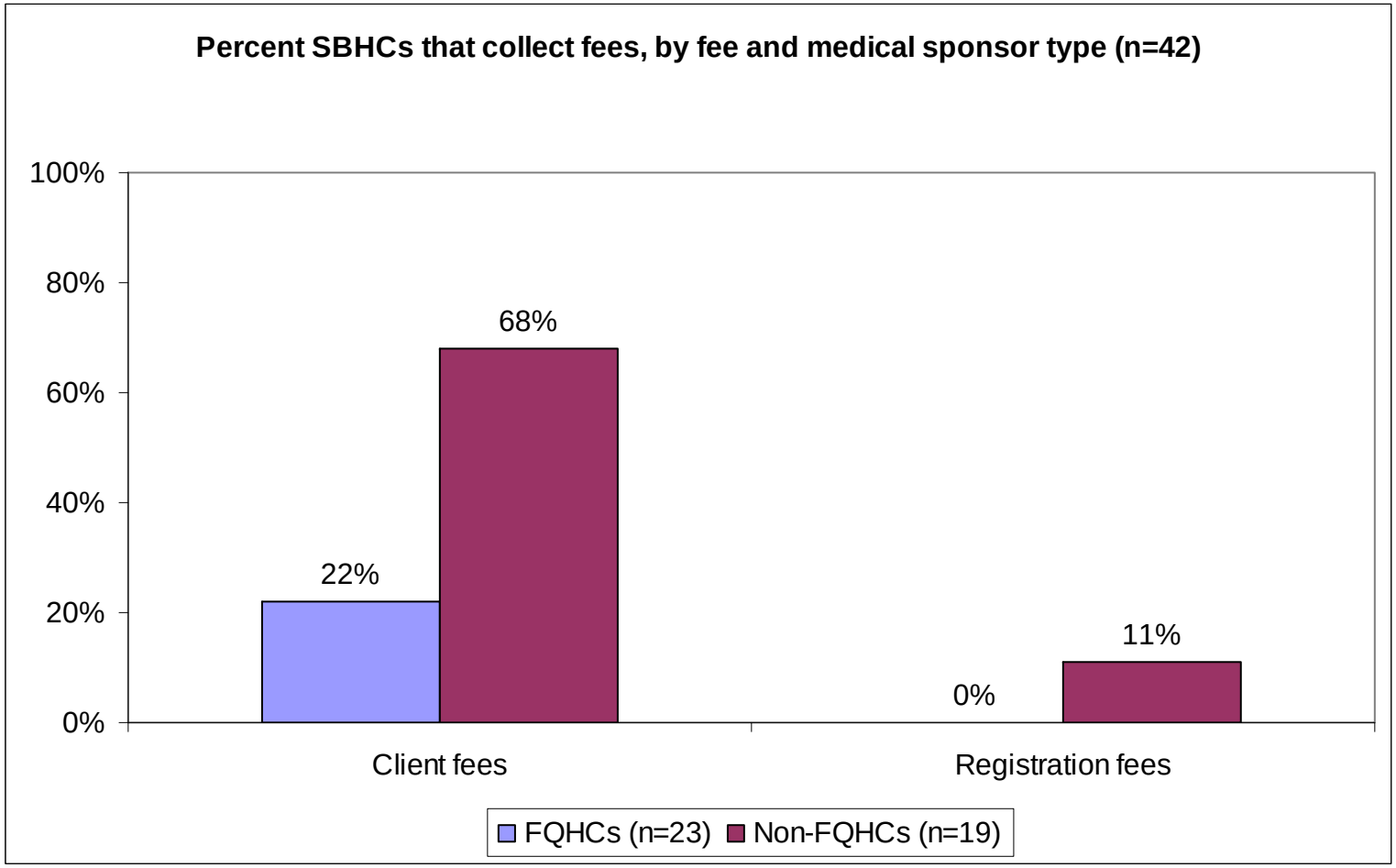


Figure 5. Sources of billing revenue for SBHCs under FQHC medical sponsors, by insurance type

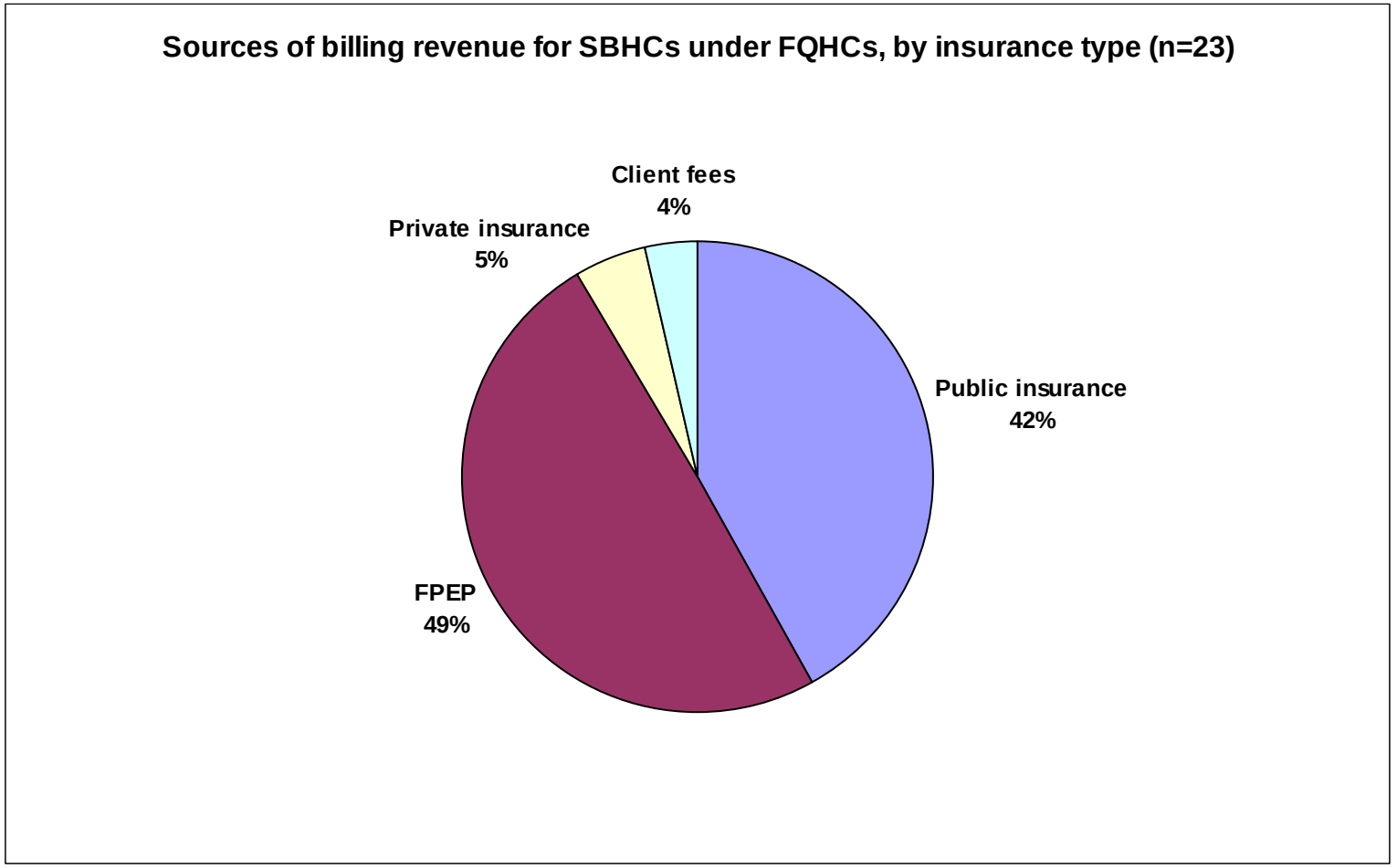


Figure 6. Total billing revenue for SBHCs under FQHC sponsors

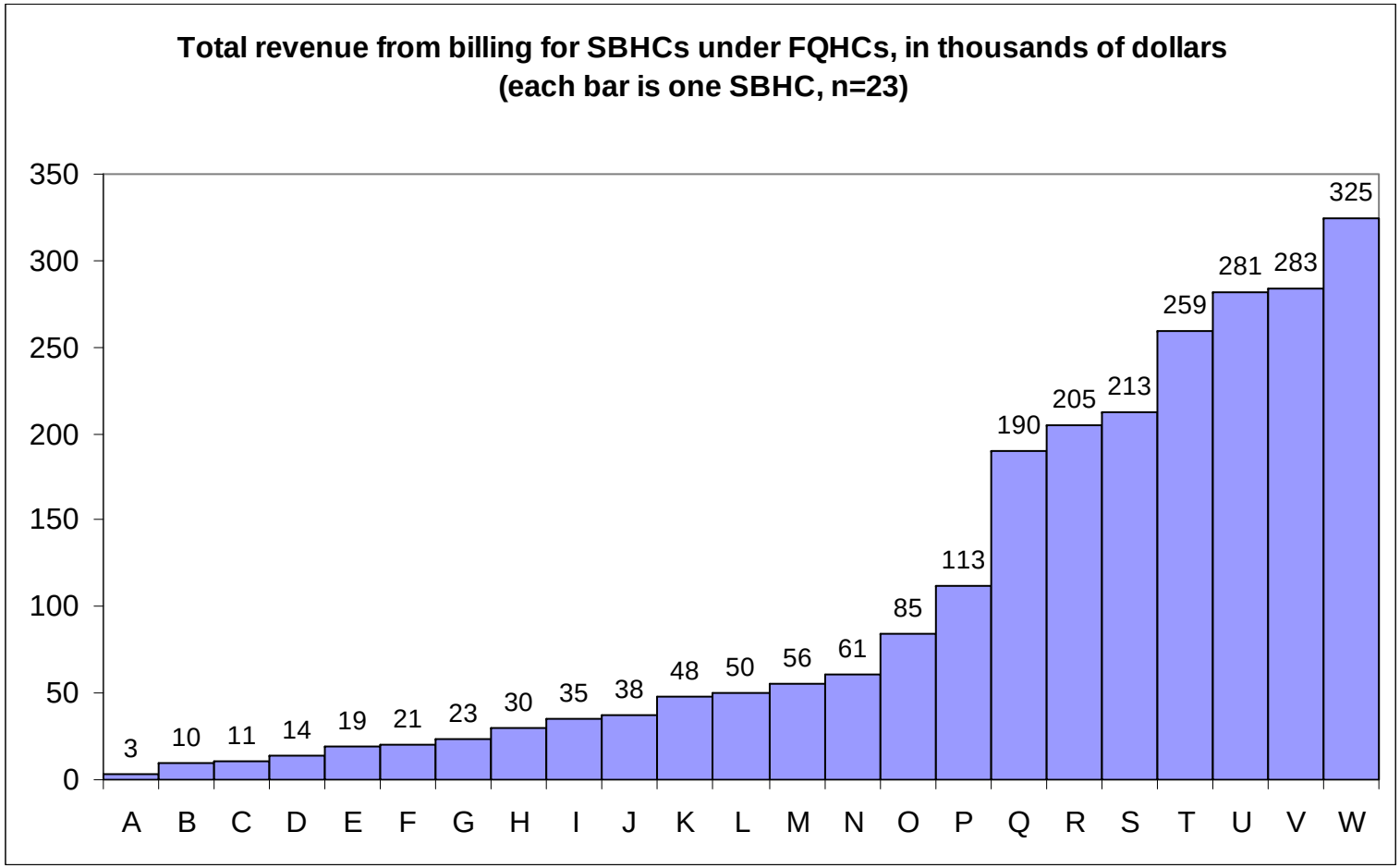


Figure 7. Revenue from insurance billing and fees for each center under FQHC sponsors, by type of insurance billed

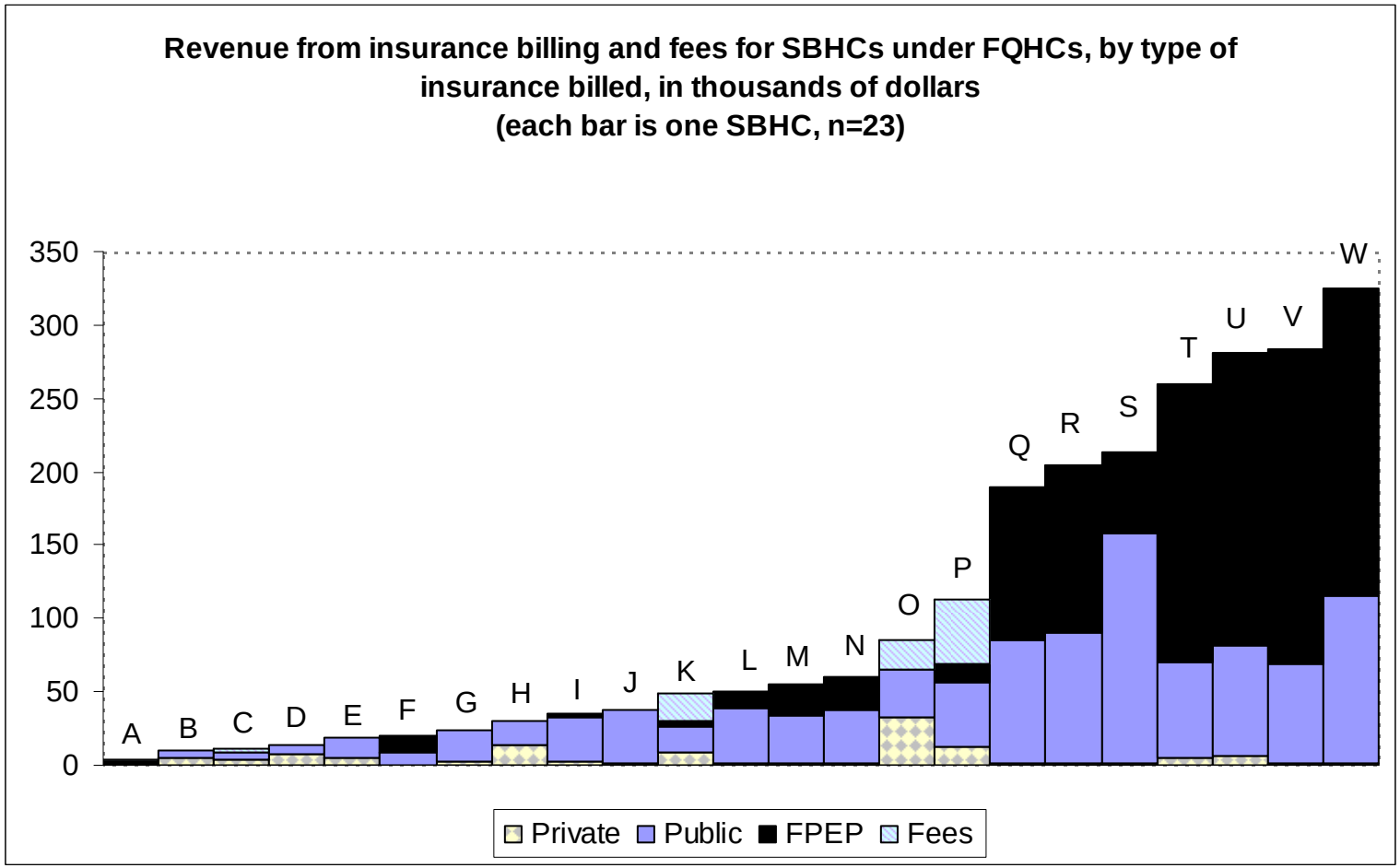


Figure 8. Percent of total operational costs represented by revenue from billing for SBHCs under FQHC sponsors

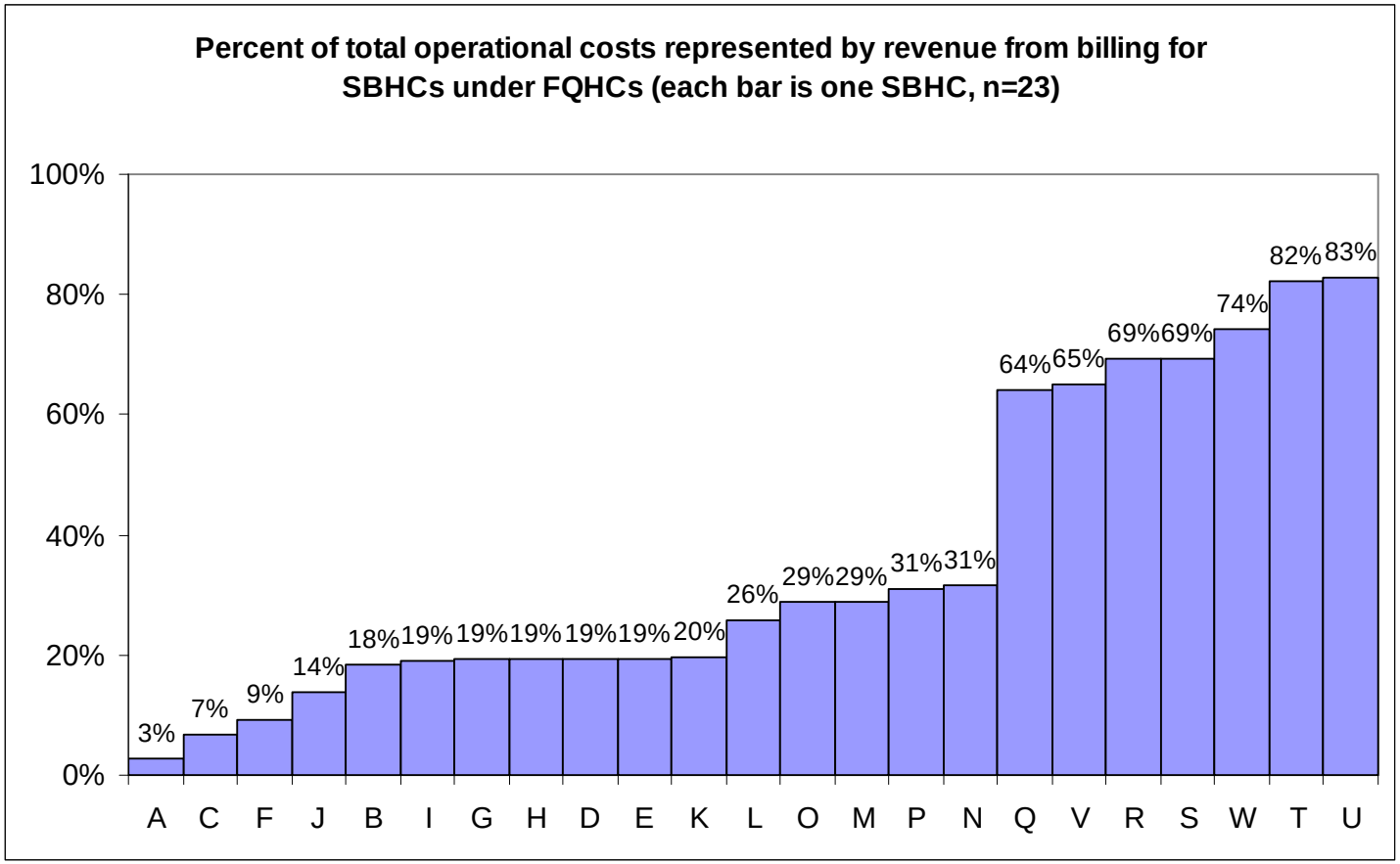
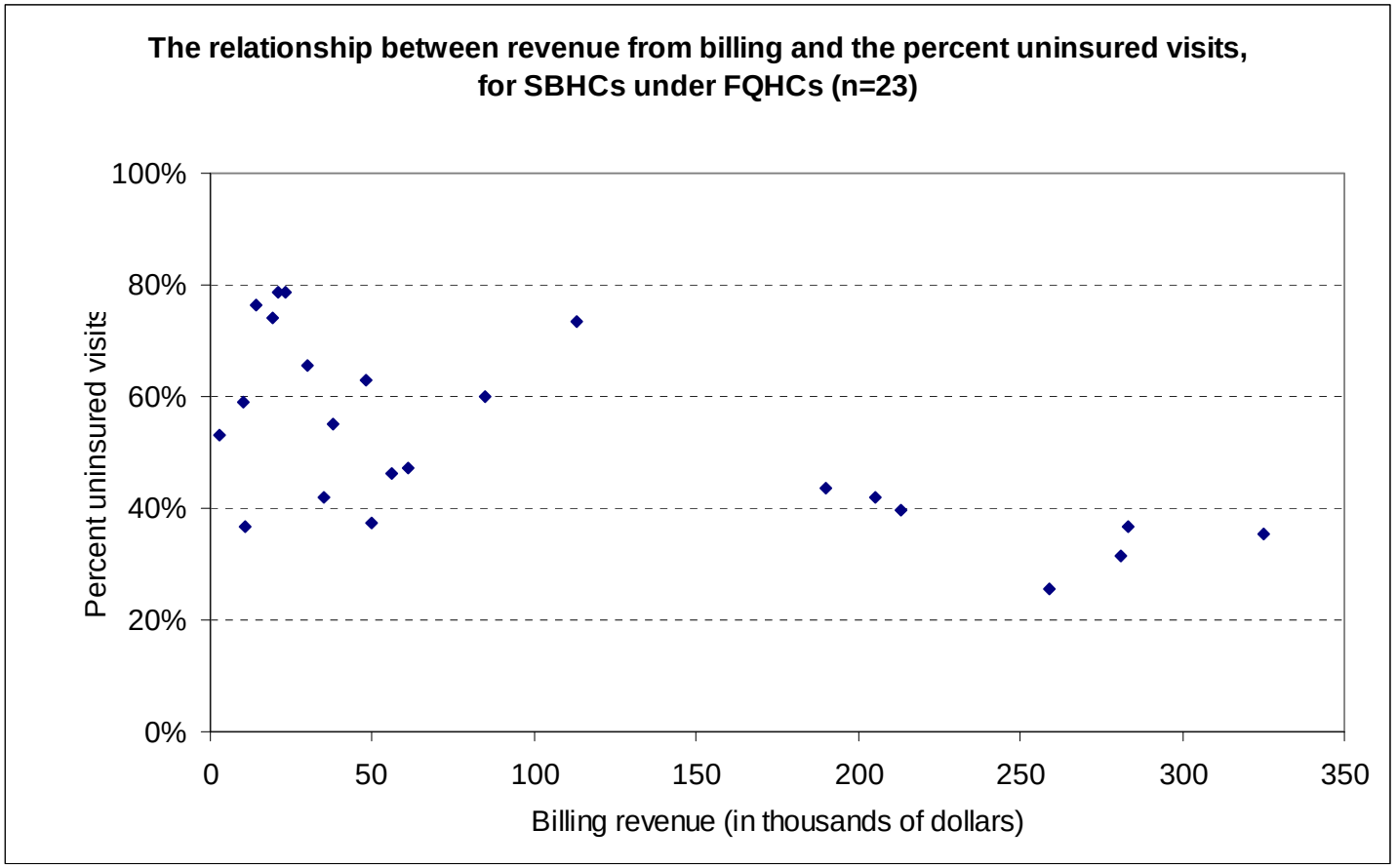


Figure 9. Revenue from billing volumes and the percent uninsured visits



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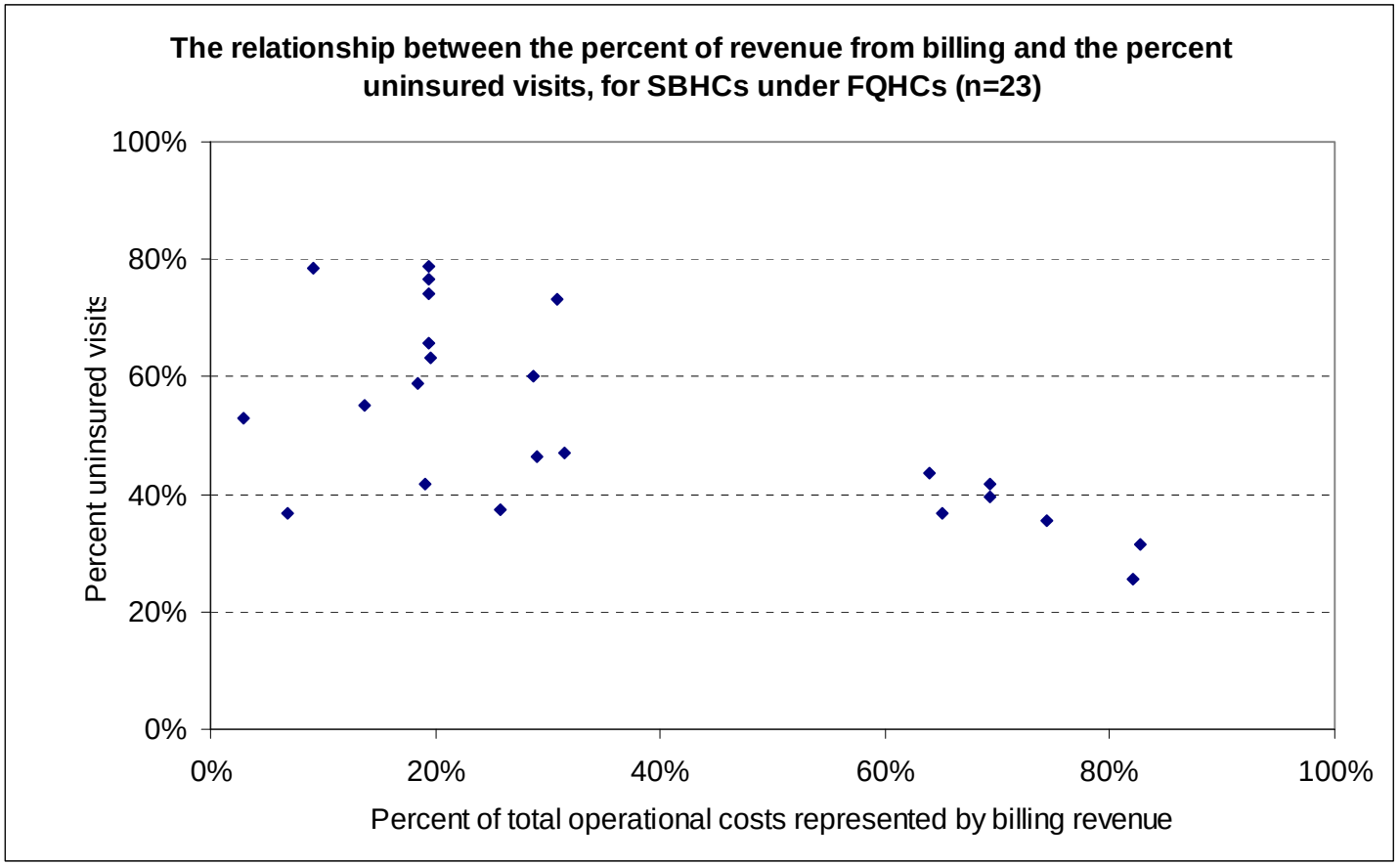

Figure 11. Percent school age clients with public insurance and socio-economic status

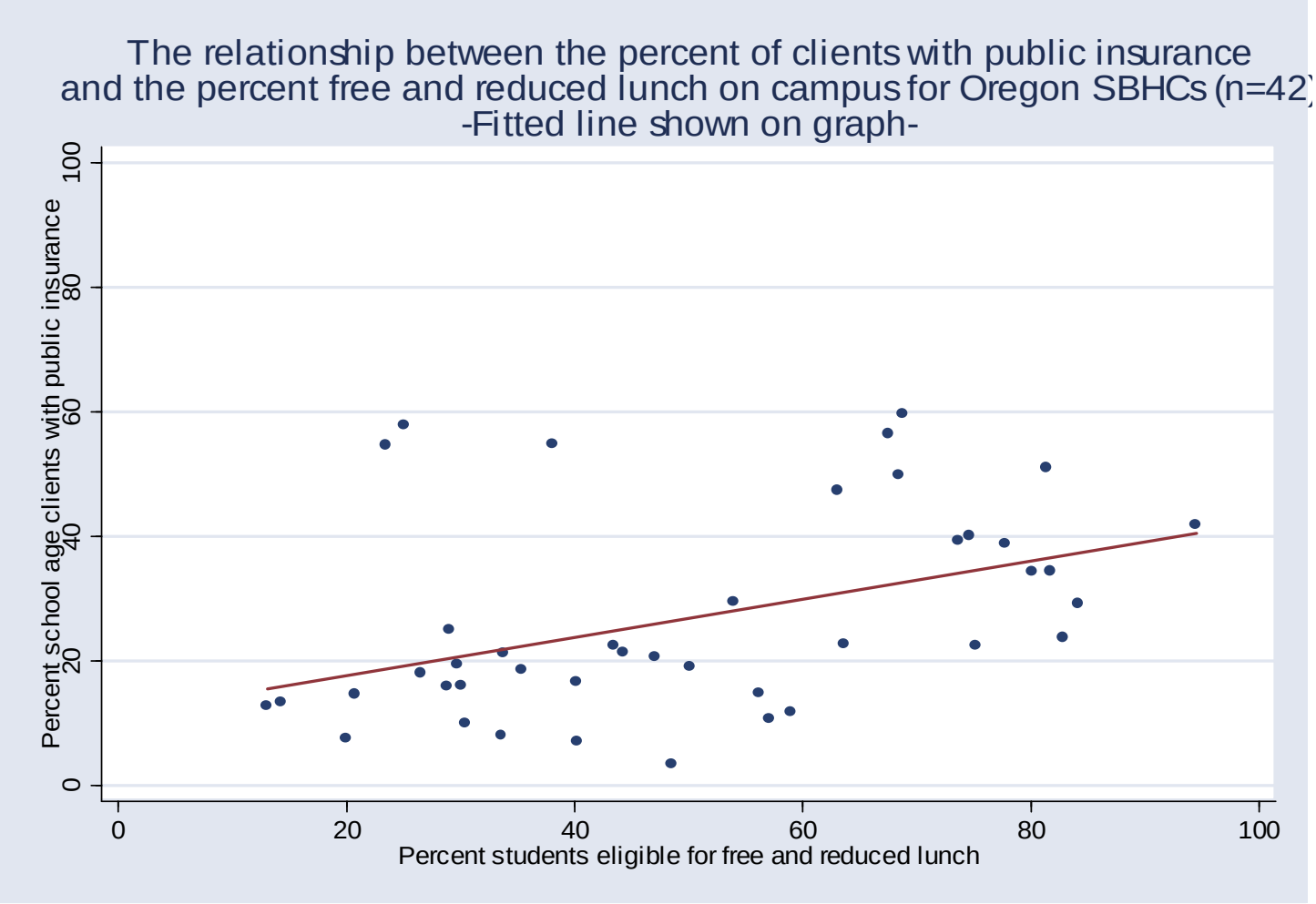

Figure 12. The distribution of percent uninsured visits in Oregon SBHCs

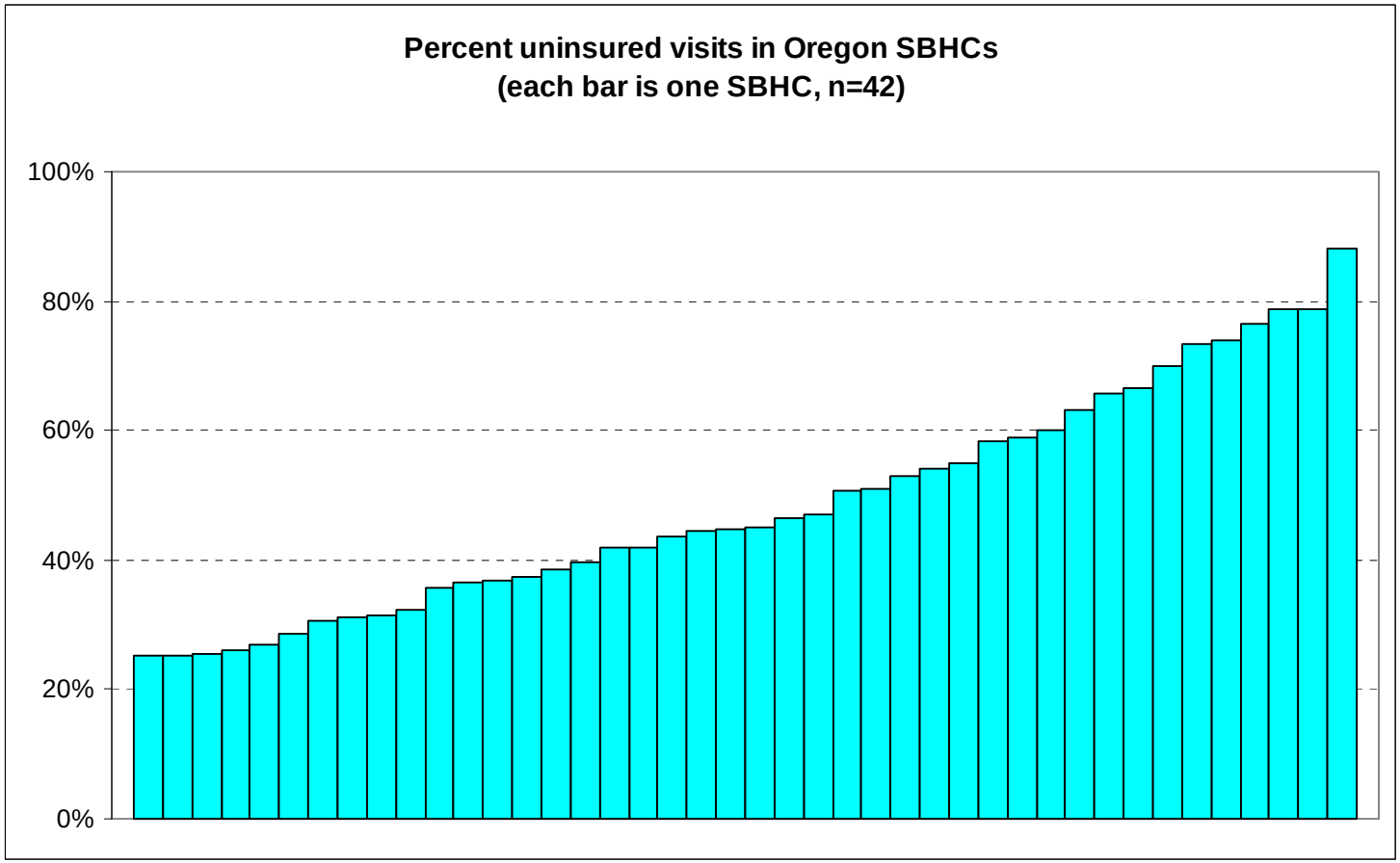

Figure 13. Average number of visits for publicly and privately insured school age clients

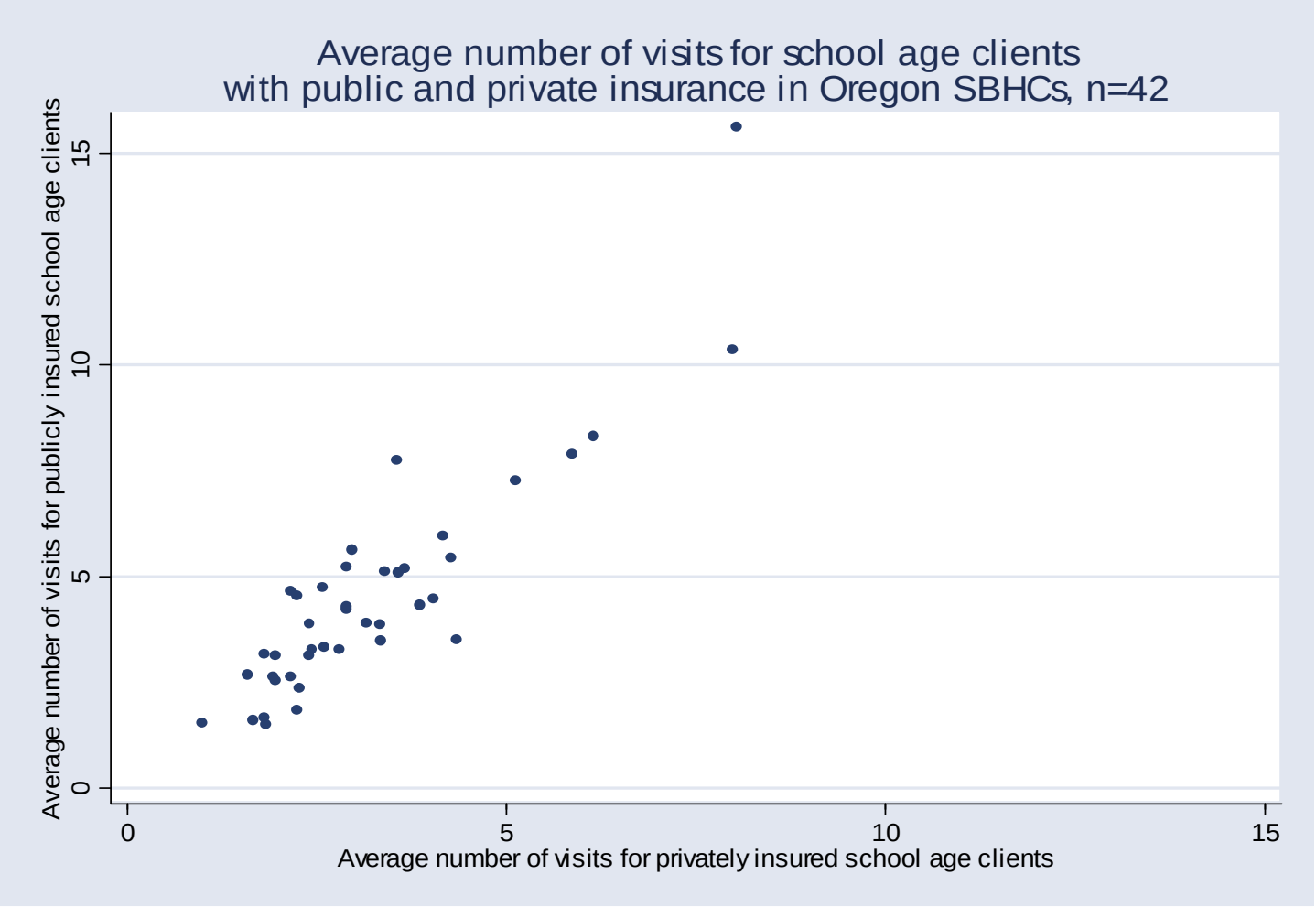

Figure 14. The number of visits and weekly hours of physical and mental health care

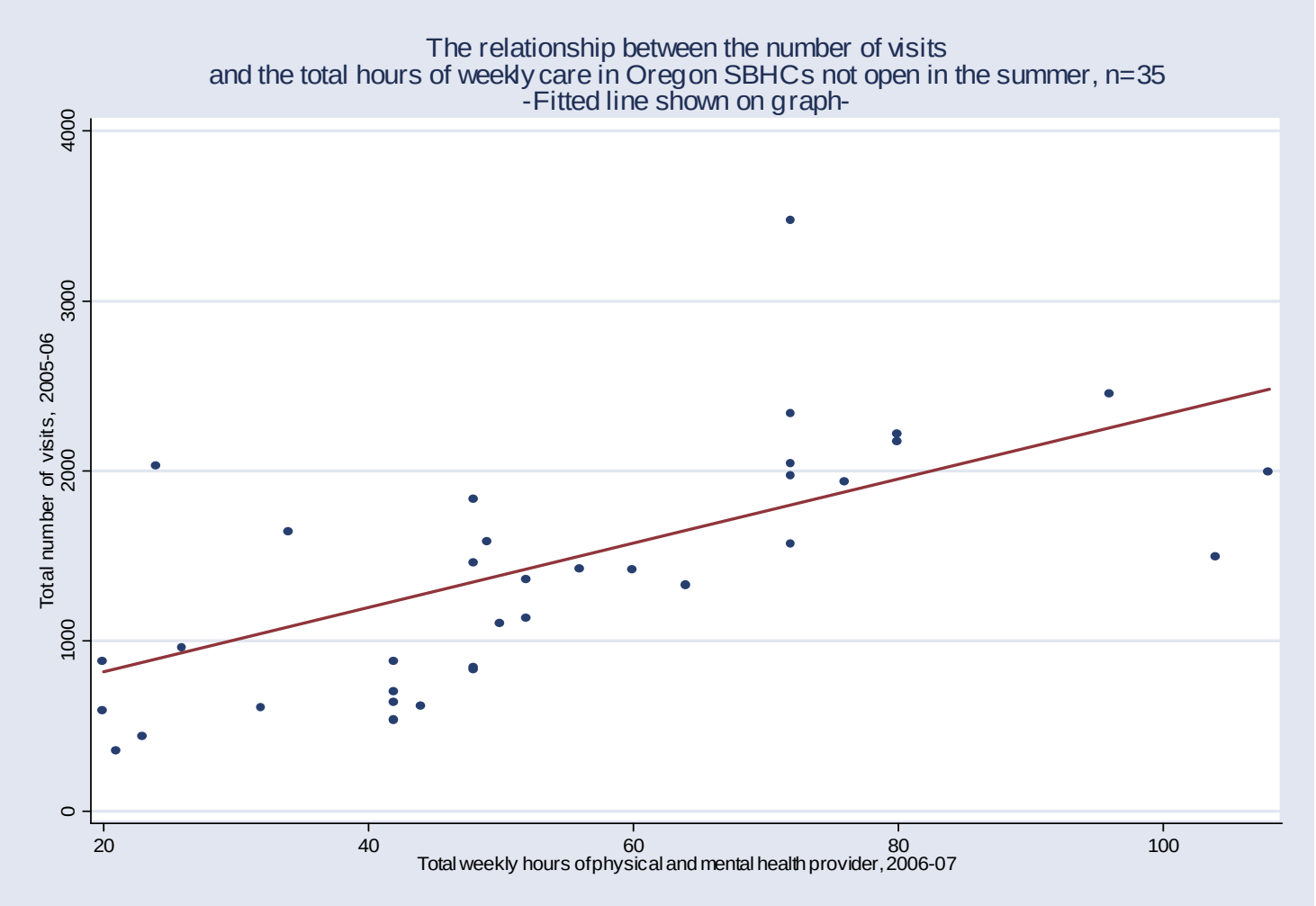

Figure 15. Unduplicated school age client count and student population size