



BENCHMARKING PERFORMANCE AND EFFICIENCY OF YOUR BILLING PROCESS...WHERE TO BEGIN

There have been few if any meaningful benchmark analyses available for revenue cycle management performance. Today that has changed; HSI has created a way to benchmark a current in-house billing service against an outsourced service or vice-versa, using the Billing Efficiency Rating (BER). Without benchmarks, without the ability to know how your accounts receivable are being managed, or how they could be managed, patient transport companies are in a position of leaving some large amount of money on the table – for some companies this has been millions of dollars. That seems a good reason to dig deeper, ask more questions, and understand if your billing company is vested in your success. The reimbursement landscape has changed and will continue to evolve for years to come. Transport programs must be self-supporting companies as the days of lost-leaders are fading away and rightfully so. Privately-held companies, hospital or community based providers, profit, or non-profit – all must plan to survive on revenues derived mainly from patient transports. This is a challenge for any company that relies on the healthcare reimbursement system with its mix of very different, and sometimes difficult, payers. How important is it that a self-supporting transport company has an efficient and effective patient accounts system? Anyone who faces the fiscal responsibility of meeting a payroll, finding dollars to fund capital budgets, or funding the startup of new bases as a growth and survival strategy lives the answer to this question. What are the key measures of billing office performance, what are the benchmarks, and how can you learn how your own operation measures up?

Measures of Billing Office Performance

Billing office performance can be measured by three metrics: direct cost per dollar collected; proportion of total charges collected as cash (collection rate); and the speed of the collection cycle, or days' sales outstanding (DSO). The overall performance efficiency of any billing office is determined by the combined impact of these three variables, and fortunately all three are highly measurable.

Key Performance Measurement Formulas
Cost per dollar collected = Total billing expense / total cash collections
Collection rate = Total cash collections / total gross charges
Day's sales outstanding (DSO) = Net accounts receivable / average daily net revenue
Net accounts receivable (AR) = Total AR – provisions for doubtful accounts
Average daily net revenue = (Total gross charges – contractual write offs and bad debt) / days in period

Cost Per Dollar Collected

This metric is calculated differently depending on whether billing is outsourced or managed in-house. If outsourced billing and collections, the cost per dollar collected is simply total annual billing fees divided by total annual cash collections. If patient accounts are managed in-house, sum the fully loaded annual billing office expenses and divide by total annual net cash collections. Later we will incorporate this metric into an overall measure of efficiency.

Collection Rate

There is much clamor around “collection rate” this term carries vast limitations and often limitations are misunderstood. A classic example of the series of actual annual collection rates achieved by, or on behalf of, a particular transport service over a 5-year period are shown in Table 1.

Table 1 Annual Collection Rates		
Year of Service	Collection Rate	Billing Provider
Year 1	65.9%	In-house
Year 2	63.0%	Outsourced company A
Year 3	64.8%	Outsourced company B
Year 4	65.0%	Outsourced company C
Year 5	64.9%	Outsourced company D

(Annual Collections Table 1)

A quick review of these numbers creates the impression that, with the exception of the poor performance of Outsource Company A in its first contract year there is no more than a single percent difference amount all other years, and the best performance of the 5 years was the first, when accounts were managed in-house. Table 2 demonstrates “collection rates” and how incorrect perceptions are generated with this metric.

Fiscal Year	Average Charge	All Flights		Government Payers		Non-Govmt Payers	
		Ave. Net Revenue	Collection Rate	Ave. Net Revenue	Collection Rate	Ave. Net Revenue	Collection Rate
In-House	\$4,750	\$3,130	65.9%	\$2,102	43.9%	\$3,482	73.3%
Outsource Co. A	\$7,117	\$4,484	63.0%	\$2,932	41.2%	\$4,939	69.4%
Outsource Co. A	\$7,433	\$4,817	64.8%	\$2,721	36.6%	\$5,486	73.8%
Outsource Co. B	\$8,126	\$5,282	65.0%	\$2,730	33.6%	\$6,176	76.0%
Outsource Co. B	\$9,204	\$5,973	64.9%	\$2,945	32.0%	\$7,271	79.0%

(Annual Collections Table 2)

Over the 5 year period, the average proportion of claims subject to a fixed government fee schedule was 26%. Because payment per transport from these sources is the same regardless of the transport charges, with every increase in price the collection rate for government pay claims should drop, and all things being equal, the overall collection rate should therefore drop. During the period in question, prices were raised each year, and by the fifth year the average transport charge was near double what it was in the first year. As expected, the collection rate

attributable to government pay declined from 43.9% of billed charges in year 1 to 32% of billed charges in year 5. The overall collection rate did not significantly decline over the 5 years, however. This can only mean that the proportion of non-government (commercial and self-pay) charges converted to cash must have increased. In fact, with the exception of year 2 this was the case. The collection rate for non-government payers rose from 73.3% in the first year to 79% in the fifth year. This did not happen through the generosity of commercial insurance companies; it required effort and expertise provided by Outsource Company B.

Further investigation and study taking increasing prices into account tells a very different story than simply comparing consecutive annual collections rates. Outsource Company A did not perform as well as Outsource Company B or the in-house operation (at least in its first year), and Outsource Company B performed significantly better than both. What this means in dollars depends on total gross annual patient charges. The 5.7 point (79%-73.3%) improvement in the non-government collection rate translates to an additional \$524.63 cash revenue per non-government transport (in year 5 – the exact benefit is different each year based on prices). If there were 1,000 non-government transports in this particular year, the total cash benefit for that year was \$524,630. Because the benefit is cumulative over subsequent years, this equates to significant amount of dollars for the service.

The point of this exercise was to prove how elusive and futile it is to compare or benchmark simple overall collection rates, especially among programs or billing companies and how the elusiveness proliferates over the years. Because a large proportion of transported patients are covered by Medicare and Medicaid insurance, the overall collection rates are only comparable if (1) the proportion of government payers (and what they pay) is equal; and (2) the average gross transport charge is equal. Because this is unlikely to be the case either between different programs or for different years within the same program, let's forget about calculating overall collection rates. They truly are all but meaningless. In fact, as an interesting aside, one of the fastest ways to increase cash revenue in a healthcare business is to reduce the collection rate. Of course, that is never the goal, but it is what inevitably happens whenever prices are increased; therefore, raising prices could net more money from many payers. In place of the overall collection rate, a metric is needed that will allow apples-to-apples comparisons among programs and across years within the same program.

Day Sales Outstanding

The third performance metric is day's sales outstanding (DSO), the accounting term for the collection cycle, or speed of collections. Simply put, the DSO is the average number of days it takes a billing service to collect the money charged for a transport. Improving the DSO does not increase net income (profit) the way improvements in either of the first two metrics do. Because of that this critical metric is often ignored. Improving the DSO can dramatically improve cash flows and bank balances. A low DSO is critically important to efficient operations of patient transport companies because all companies provide services on credit.



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The value of one DSO is not static but fluctuates with the value of the average daily net sales. This number, in turn, varies with payer mix, flight volume, and average charge per transport; it is simply the expected case collections attributable to transports in a specified period divided by the number of days in that period. For example, if in a 3-month period \$6,750,000 is billed out and the expected collection is 58%, or \$3,913,000, the average daily net sales, and the value of one DSO, for that period is \$43,000 (\$3,913,000/91 days). This number multiplied by the number of days' sales sitting in AR is the amount of the transport service's money sitting in insurance company bank accounts. The number of days' sales represented in AR is the DSO and is calculated as follows:

A DSO Calculation Formula (there are variations)

$$\text{DSO} = \frac{(\text{Total AR} - \text{bad debt provision}) / (\text{Total patient charges} - \text{estimated uncollectible})}{365}$$

(DSO Calculation Formula)

DSO can never be zero, unless all payments are collected at the time of service. Therefore, the valuable information contained in this metric is the cash benefit of shortening DSO by some realistic amount, or conversely, the cash cost of allowing it to rise. The value of a decrease (or increase) in the DSO is the current average daily net sales times the number of days' change in the DSO from some baseline. Thus, the value of shortening the DSO, or the cost of extending it, changes as average daily net sales change over time. For example, let's say the baseline DSO is 100 days and an improvement of 10 days is achieved in a given year and maintained in subsequent years. The increase in the program's bank balance would always be equal to 10 times the average daily net sales, whatever the current average happens to be. If the average daily net sales in year A is \$50,000 and in year B is \$60,000, the value of the on-time 10-day improvement in DSO is \$500,000 in year A and \$600,000 in year B. This is true because if the DSO drops back 10 days in year B, the company's bank account would suffer by \$600,000, not by \$500.00, because the average net cash revenue per day is currently \$60,000. Therefore, the value or cost of any given change in the DSO has a new value each year as the factors that determine it change, and it also has a different cash value for every program or company. The DSO is a critically important number to a self-supporting, capital-intensive transport company. Some transport services have achieved improvement in their DSO by 55 days or more. Transport services can readily calculate the "bank account value" of such an improvement to the company by multiplying this number times the company's own average daily net sales. The number can be large – easily reaching into the millions of dollars – and be assured it is real money already earned, whether or not it is currently in your pocket.

The cash benefit of an improvement in the DSO, because it is potentially so volatile and is always subject to being "withdrawn," can be thought of as analogous to an interest-bearing loan. Although it is certainly not borrowed money – it simply represents more rapid transfer of money



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from insurance company bank accounts into the transport service’s bank account – it is nevertheless “impermanent” money that has an acquisition cost when it becomes necessary to invest money to collect earned (transport services money) faster. For example, if the in-house billing operation would have to add staff to improve the DSO: \$40,000 in new staff costs to achieve and maintain a \$1,000,000 improvement in the collection cycle. The acquisition cost of the \$1,000,000 is 4% per year (\$40,000/\$1,000,000). Maintaining an improvement in DSO will rise to its baseline level. When that happens, your bank balance will suffer to the tune of the current average daily net sales times the numbers of days increase in DSO. In effect, the “loan” will have been called (though still paying acquisition cost).

The loan analogy works because of the real possibility of needing to cover a longer-than-necessary DSO with a real loan that has its own acquisition cost. That acquisition cost is not only interest on the borrowed money, but the opportunity cost of dedicating some portion of limited borrowing capacity to covering cash needs that could and should be covered by cash flow. This is an important concept. How much is it worth in acquisition cost to improve DSO by several millions of dollars versus the acquisition cost (interest) of borrowing the same amount of money from a bank? Nothing, if there are no borrowing needs even at baseline DSO. But if borrowing is necessary (and very few companies do not need to so) the comparison is not simply the loan interest rate compared with the cost of improving the DSO. There is considerable additional value in having access to the company’s own money and thereby freeing up borrowing capacity for any number of foreseeable and unforeseeable business needs.

What should a company’s DSO be? Similar to the collection rate, the best achievable DSO is impacted by payer mix, but in a slightly different way. Different profiles of commercial payers can result in different “best achievable” DSOs. For example, if commercial payers include a large proportion of HMOs that pay what they are billed and send the checks directly to the company, the DSO can be shorter than if a large proportion of commercial plans with a variety of benefit programs (more underpayments and appeals), and checks are sent to the patients rather than to the company. Based on HSI’s experience, a DSO in the 55 to 60 day range is possible in the former environment, and a DSO in the 70 to 75 day range is possible in the latter environment. If the company’s own DSO is significantly higher than these ranges, steps can be taken to reduce it. If it is significantly lower, the company should be making a fortune consulting with other programs.

Summary of BER Calculations	
Cost per dollar collected	= 1 - cost of billing services / total cash collections
Adjusted collection rate	= Total cash collections / total collectible charges
DSO efficiency	= (100-DSO) / 100

(Summary of Billing Efficiently Rating Table)

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Proposed Standard Billing Efficiently Rating (BER)

Currently no standard measure of billing office performance exists that allows for meaningful comparisons among programs, billing services, or even over time within a single program or company. Without such a measure, useful benchmarks are impossible, and subjective judgments about how well a given program or service performs too often carry the day, when in fact accounts receivables management is a numbers game and judging performance should be objective and explicit vs. subjective and vague. As a crude first step in the right direction, HSI would propose the following as a process for arriving at a number a company can use to compare the performance of current billing office with that of colleagues or with commercial billing services with whom you might be talking about outsourcing. This process is also simply useful in setting performance goals and standards for a company-specific billing operation, whether internal or outsourced, especially once others have used it and some benchmarks have been established.

The goal is a single number that will take into account the three primary metrics of billing office performance just discussed: (1) cost per dollar collected; (2) collection rate (in a modified form); and (3) DSO, or collection speed. HSI will arbitrarily set optimum performance at 100% for each of these measures for purposes of standardization. Thus, an efficiency rating of 100 would mean there is zero cost per dollar collected, 100% of collectible charges are in fact collected, and the DSO is zero. Obviously no billing office could ever achieve a score of 100, but standardizing the scale would result in a number that is directly comparable across programs and across years if the math is done correctly and consistently.

Step 1: Cost per Dollar Collected

Simply divide the total cost of billing and collections by total cash collected and subtract from 1.00. For example, if your cost is 2% of collected cash, this component of the total efficiency score will be $1.0 - .02 = 0.98$.

Step 2: Collection Rate

This process is a bit more difficult but the extra steps really are necessary if we compare apples to apples. As described earlier the overall collection rate is not a worthy measurement because, it is too impacted by different mixes of government and non-government payers and different pricing structures; rendering it useless as a meaningful measure of relative performance would be the proportion of collectible charges we are in fact collecting. Thus, even if Program A has a very different payer mix and fee schedule than Program B, if we consider only collectible charges we can adjust out collection rate differences due to payer mixes and prices and produce a reliable measure of comparison. The first step is to perform the following calculation:

1. Commercial Payers

Total cash collected divided by total allowed amounts (Unless there are contracts with one of more commercial payers, this will be total billed charges.)

2. Medicare (include all payers who pay at MC rates)

Total cash collected divided by total allowed amounts

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3. Medicaid
Total cash collected divided by total allowed amounts
4. Uninsured patients (self-pay)
Total cash collected divided by total billed amounts divided by 2 (The division by 2 is completely arbitrary, and has the sole purpose of recognizing that the self-pay collection rate is very low. Dividing by 2 simply produces a more “aesthetically pleasing” adjusted collection rate.)

Once we have arrived at the four adjusted collection rates, we will calculate a single weighted collection rate by dividing total cash collected by the sum of the denominators defined in 1 through 4, above. In the example in Figure 1, the single adjusted and weighted collection rate percentage is 89.5%. As complex as this process might seem, most billing software applications should make it pretty straight forward.

DSO

Subtract the DSO from 100 and divide by 100. This will produce a number in the form of a percentage that would be 100% if the DSO were zero and will be progressively less than 100% for each day above zero (it can even go negative so do not be surprised by that). In the example in Figure 1, the DSO contribution to the final efficiency rating is 0.0, meaning the DSO is exactly 100 days.

The Overall BER Score

Add the three numbers and divide by 3. We now have a single number that takes into account all three measures of billing office performance, and is both adjusted and weighted for differences in payer mix and average transport charges. In Figure 1, the Billing Efficiency Rating, or BER score, is 63%.

It may not be perfect, but this represents the only approach HSI is aware of that allows for meaningful comparisons among different programs and across different years within the same program. Companies can use it to get a rough idea of in-house billing office efficiency compared with that of a colleague without sharing confidential information. It also can be a place to start when evaluating the potential benefit of outsourcing the billing operations, bringing billing back in-house if it is already outsourced, or assessing the need for consulting help. We reference “rough idea” because it is possible to be much more specific in a direct head-to-head comparison of any two billing services if the two services are willing to share the detailed information that goes into the BER. Prior to that discussion, let’s consider what a comparison of overall BER scores can prove about current billing operations relative to others.

If the company’s current BER score is 66% and the program or service being compared to the company has a score of 77%. This difference means that at least one of the three performance metrics (cost per dollar collected, adjusted collection rate, or DSO) is significantly better for the other program than it is for the current company and there is an overall net difference in their favor. However, the overall BER score does not tell you which metric(s) is (are) the problem,

and if action is taken based on this comparison, the company needs to identify which metric is different. For example, if the adjusted collection rate and DSO components of the BER are the same for both programs but the cost per dollar collected is much higher, this would require a very different response than if the adjusted collection rate or DSO is significantly worse than that of the comparison program. Even small differences between scores should prompt you to identify weaknesses and take steps to improve the efficiency of current billing operations if the current company score is the lower score. Purchasing some targeted consulting help might well be a good investment for a company as well.

Billing Efficiency Rating					
I. Cost per Dollar Collected					
Total Cost Billing Service	Total Cash Collected	Result			
\$253,914	\$12,695,707	0.98			
II. Adjusted/Weighted Collection Rate					
Base Fee:	\$5,600				
Mileage Fee:	\$90				
Average Miles:	\$46				
Average Supply:	\$550				
Payer Category	Annual Flights	Total Charges	Collectible Charges	Actual Collected	Actual % of Possible
Commercial	805	\$8,283,450	\$8,283,450	\$7,537,940	91%
Medicare Urban	85	\$874,650	\$323,575	\$317,103	98%
Medicare Rural	444	\$4,568,760	\$2,534,858	\$2,484,161	98%
Medicaid	828	\$8,520,120	\$2,332,145	\$2,285,502	98%
Private	138	\$1,420,020	\$710,010	\$71,001	10%
TOTALS	2300	\$23,667,000	\$14,184,038	\$12,695,707	89.5%
III. DSO					
AR Balance	Bad Debt Provision	Total Patient Charges	Estimated Uncollectible	Result	
\$4,123,245	\$645,956	\$23,667,000	\$10,971,293	0.00	
IV. Overall Efficiency Rating					
Score					
0.63					

(Figure 1 – Billing Efficiency Rating Charts)

The Outsourcing Decision

Programs outsource for a variety of reasons, only one of which is the goal of increasing net annual cash revenue. Strictly from a dollars and cents perspective, however, if a billing service the with whom a company is considering working can demonstrate a BER score with their existing clients that is at least 5 points higher than the company’s current score, it’s probably



worth taking a closer look. If the difference is smaller than 5 points, and another billing service that can demonstrate a spread greater than 5 points can't be identified, then the current billing solution is performing as well as any and the transport company is best served to tweak current services but keep it in-house (if the primary motivation for outsourcing is to improve cash revenue). Even if the difference is 5 points or greater, HSI would suggest a more detailed performance comparison that will reveal exactly where and to what extent the outside billing service is likely to help. The attractiveness of the BER score is that a billing company can generate a projection of what they can do for a transport company, using that company's transport numbers and fee schedule, based on the billing company's actual performance with other clients – without disclosing any confidential information about other clients.

Billing Performance Comparison Evaluator

I. Cost per Dollar Collected

	Total Cost Billing Service	Total Cash Collected	BER Result
Current	\$248,450	\$12,422,514	0.98
Target	\$643,069	\$12,861,376	0.95

II. Adjusted/Weighted Collection Rate

Base Fee:	\$5,600
Mileage Fee:	\$90
Average Miles:	\$46
Average Supply:	\$550

Payer Category	Annual Fights	Total Charges	Collectible Charges	Current		Target	
				Actual Collected	Actual % of Possible	Target collected	Target % of Possible
Commercial	\$805	\$8,283,450	\$8,283,450	\$7,330,853	89%	\$7,703,609	93%
Medicare Urban	\$85	\$874,650	\$323,575	\$313,867	97%	\$317,103	98%
Medicare Rural	\$444	\$4,568,760	\$2,534,858	\$2,458,812	97%	\$2,484,161	98%
Medicaid	\$828	\$8,520,120	\$2,332,145	\$2,262,180	97%	\$2,285,502	98%
Private	\$138	\$1,420,020	\$710,010	\$56,801	8%	\$71,001	10%
TOTALS	\$2,300	\$23,667,000	\$14,184,038	\$12,422,514	87.6%	\$12,861,376	90.7%

BER Result

III. Days Sales Outstanding

	AR Balance	Bad Debt Provision	Net AR	Total Patient Charges	Estimated Uncollectible	Daily Net Sales	DSO	BER Result
Current	\$3,956,856	\$645,956	\$3,310,900	\$23,667,000	\$11,244,486	\$34,034	97	0.03
Target	\$2,546,859	\$576,544	\$1,970,315	\$23,667,000	\$10,805,624	\$35,237	56	0.44

IV. Overall Efficiency Rating



	Score	Net Cash Rev	Annual	DSO
Current	0.63	\$12,174,064	Difference	Contribution
Target	0.77	\$12,218,307	\$44,243	\$1,407,817

(Figure 2 – Billing Performance Chart)

Figure 2 is a snapshot of a modified BER calculator designed to directly compare current performance with any other program or service, including an outside billing service wooing your business. The beauty of this calculator is that it allows you to be very specific about exactly what an outside billing service is promising to achieve in terms of net financial benefit to a company, and exactly how their performance with other clients supports their ability to achieve this. Transport companies can now set contractual performance standards based on this information designed to ensure you're never paying for your billing service – the transport company should always expect a net financial gain in any outsource billing arrangement, usually a large net gain. In this example, the program would pay substantially more in direct billing service costs by outsourcing than by keeping the program in-house – \$400,000 more annually. However, assuming the outside billing service performs as advertised, it would be money well spent. The improvement in the collection rate would generate more than enough new revenue each year to cover the added billing service expense (with \$44,243 to spare), and as an added bonus the program's bank account would grow by \$1.4 million because of faster speed of collections (lower DSO). Notice in this example a 14-point spread in BER score is needed to produce this cash benefit. Could a company do even better with a different billing service? Could a company achieve all or most of the improvement in-house with or without outside consulting help? This calculator will help answer that question.

Effort is involved in generating these scores and comparisons, no denying it. With coming advances in AR management software, the level of effort will decrease substantially. But obtaining, understanding, and appropriately using the BER score, or any other meaningful benchmarking tool, will always require an investment of energy on the part of someone who sees value in the process. HSI's take on it is this: everyone complains about reimbursement, but here is an opportunity to do something about it today, for your company, and it does not require an act of Congress. The great value of benchmarking is it sets the bar for best practices, and it sets the stage for that bar to be raised and raised again. Simply asked...why would you not want to know if higher financial performance can be achieved?