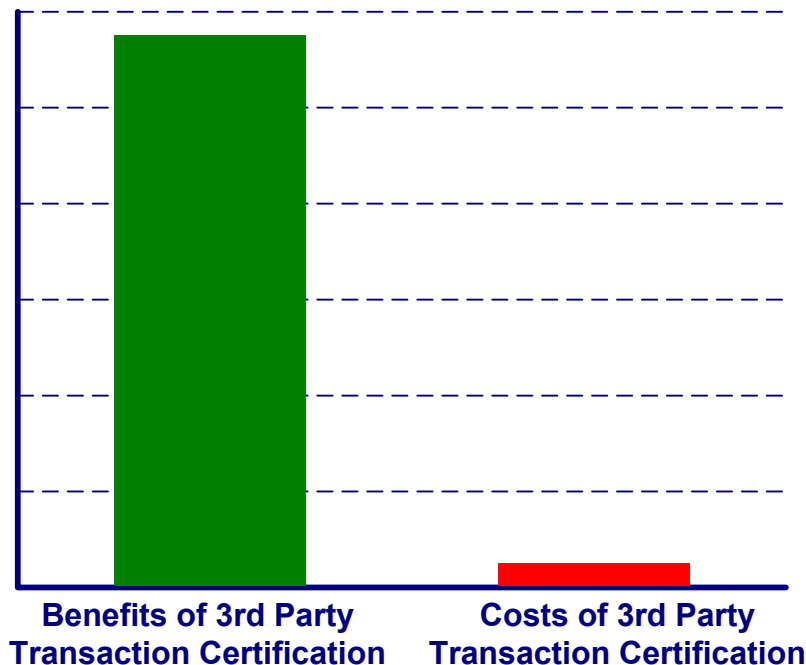

ROI: Economics of Third-Party Transaction Certification

- Certification hugely benefits every participant.
 - Certifiable entity is defined by the Single-Source-of-Error principle.
 - Entities should require partners to certify.
 - Transaction certification is the only way we can meet the deadline.
-

For a Certified Entity

ROI =



April 8, 2002

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I have in the past and may in the future accept consulting assignments from providers, payers, and other users and suppliers of testing and certification services.

I was initially asked by Claredi, Inc., to write an analysis how best to define which EDI participants should be tested and certified, using the rules and the two SNIP papers on testing and certification as guidelines. It seemed to me this determination hinged on the most effective practical definition that would best get rid of EDI errors, making it essentially an economic analysis. So I chose to widen the paper to be an economic analysis estimating the benefits and costs that each participant would experience. Along the way, I had also to address such market operatives as whether one participant could require third party services of another.

Notwithstanding the above, in this paper I am describing my own opinion and analysis. There is room for much discussion, particularly with the quantitative assumptions and estimates. I very much welcome comment and suggestion for improvement from everyone, and I will revise the paper based on such new understanding. Although details and calculations may change, it seems certain to me that the basic conclusions will remain because of the simple magnitude of the benefits in comparison to costs and time.

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April 8, 2002
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References

1. *Transaction Compliance and Certification*, Version 2.0, October 11, 2001, WEDI SNIP Transactions Work Group, Testing Sub-Group. This paper describes recommended solutions for compliance certification of HIPAA standard transactions before the transaction types are put in production. It strongly recommends (i) conducting transaction compliance testing with an independent third party before attempting business-to-business tests with trading partners, (ii) obtaining certification of compliance from an independent third party, and (iii) listing exact capabilities in the certificate.
2. *Business-to-Business Transaction Set Testing*, Version 2, December 17, 2001, WEDI SNIP Transactions Work Group, Testing Sub-Group. This paper describes recommended solutions for transaction testing between business partners before the transaction types are put in production. It addresses issues specific to trading partner exchanges and testing to assure data integrity "when completing the round trip". It is a companion document to *Transaction Compliance and Certification* above.
3. *Front-end Edits*, Draft Version, August 29, 2001, WEDI SNIP Transactions Work Group, Business Issues Sub-Group. This paper describes issues and solutions for edit testing of incoming production transactions and standard automated response.

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Management Summary

Cost And Other Benefits For Every Participant

In this paper we show (i) that certification of transaction compliance has many very attractive benefits besides lower cost, (ii) that all entities, large and small, are well within their prerogative to require certification of their trading partners and should do so, and (iii) that certification is by far the least expensive and easiest way for every participant and the whole industry to convert to standard transactions. On these benefits alone, certification is completely a win-win solution.

- Payer or clearinghouse with 2500 partners: savings \$680,000 and meet the deadline.
- Hospital with own system, 150 partners: savings \$106,000 and meet the deadline.
- Large vendor: savings \$60,000 plus \$2,000 per installation and meet the deadline.
- Small provider: savings \$2,000+ implicit in upgrade or fees, compel vendor compliance, detail capabilities, and meet deadline.

Certification Is The Only Way To Meet The Deadline

But in the last topic we show that it is also the *only* method that has a respectable chance of leading the industry toward complete, successful compliance with transaction standards by the legal deadline for compliance. This is actually very good news; it means it is possible to convert the whole industry by the deadline.

Service Staff Level Reasonable With Transaction Certification

Not using transaction certification requires three times the average service staff and four times the peak service staff when compared to using certification. For a large payer or clearinghouse, peak staff without certification is 60, with is only 15. For a hospital it is the difference between 4 to 6 full time and only 2 part-time service persons.

| Estimating Peak Service Staff for Large Payer or Clearinghouse with 2500 Partners | | | |
|---|---------------|--------------------|------------|
| | Average Staff | Peak Demand Factor | Peak Staff |
| Without transaction certification: | 30 | 2.00 | 60 |
| With transaction certification: | 10 | 1.50 | 15 |

So Certification Is A Total Win-Win

How could a method be any better? It saves huge amounts of money for every player. It makes life so much easier for everyone. And it makes meeting the deadline possible. This is the very definition of win-win.

Recommendation. For these reasons, I strongly recommend:

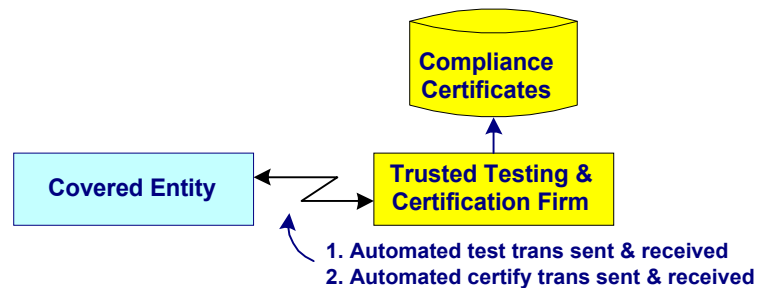
1. **Certify own capabilities.** Each certifiable entity should employ a competent third party to certify its own capabilities to comply with transaction standards. The certificate should detail the specific capabilities.
2. **Who must certify?** We should define a certifiable entity according to the Single-Source-of-Error principle described in the paper.
3. **Require certification.** Every entity should require transaction certification of its trading partners as a condition for doing EDI.

1.0 Description of Third-Party Transaction Compliance Certification

This section describes what we mean by third-party transaction certification, and it describes the certification process.

1.1 Difference between transaction compliance certification and business-to-business testing.

- a. **Transaction compliance certification** is an automated process between an entity and a trusted testing and certification firm. The only errors are from the covered entity and possibly business associates acting on its behalf. The completely automated process involves a single staff working at its own fast pace, exhaustive test data, and simple identification of problems from automated reports.



Third-party Transaction Certification

- b. **Business-to-business testing** involves the systems of two entities; so errors can originate from either side. It requires coordinating two staffs, tests that are less likely to be comprehensive, much communication to isolate and agree ownership of problems, time to resolve differing interpretations of the standard and set up to retest. After certification, some business-to-business testing is still necessary to test communications between the entities and to determine the "round trip" of data through each entity's application systems, but this testing is by far faster and cheaper because certification ensured the transactions are clean beforehand.

1.2 So transaction compliance certification should be separate and prior to business-to-business testing.

So it makes sense to certify transaction compliance of each covered entity first, before any attempt to exchange transactions between two covered entities. The SNIP paper drew the same conclusion as follows:

... The **current practice** is that the Transaction Compliance testing is included as one of the steps of the Business-to-Business testing. This causes increased cost and complexity, by

repeating the Transaction Compliance testing between each pair of trading partners. Separating the Transaction Compliance testing from the Business-to-Business testing, and the use of Certification to reduce or eliminate the need for repeated Transaction Compliance testing is a better alternative.

Recommendation [Transaction compliance first]: All trading partners should go through Transaction Compliance testing before engaging into transactions with trading partners. This testing should be conducted with automated testing tools.

Recommendation [Certify through third party]: Transaction Certification by a third party should be used by trading partners in order to reduce or eliminate the necessity of repeated Transaction Compliance Testing. Trading partners should use and accept Transaction Certification by an acceptable third party in lieu of repeated Transaction Compliance Testing.

Recommendation [Publish exact capabilities]: Transaction Certification should accommodate the needs of different trading partners and should represent the exact capabilities certified for each trading partner, in consideration of their need to comply with different HIPAA product type or line of services requirements. These certified capabilities should be disclosed to trading partners.

[SNIP Transaction Compliance Certification paper]

1.3 The testing and certification process

The sequence to complete transaction compliance certification is as follows:

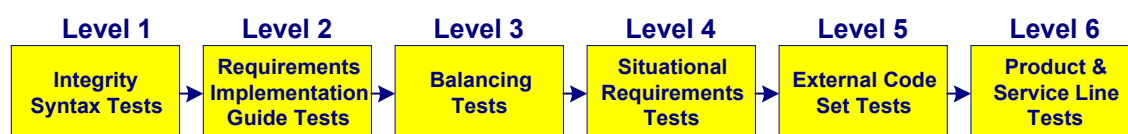
- a. Complete development of the application such that the system is able to send or receive transactions thought more or less to be standard.
- b. Test transactions against third-party automated certification system until its right; receive detailed error reports; correct; retest until no errors.
- c. Certify. Exchange the now fully tested transactions with third party to certify capability to send and receive fully compliant transactions.
- d. Certificate must include detail list of demonstrated capabilities.

1.4 Need to certify ability to receive compliant standard transactions

It is easy to understand the testing and certification process for transactions that an entity creates and sends. But the goal is to eliminate as much error in the exchange of standard transactions as possible. Error occurs on both the send and receive side. So, in addition to ability *to send*, it is equally important that the entity fully test and certify its ability *to receive* and edit standard transactions.

1.5 Types of tests in transaction compliance certification

The SNIP paper identified six types of tests that should be performed to obtain certification of transaction compliance.



1.6 **Certificate should be more than yes/no. It should detail capabilities.**

The last three levels of testing above require an extensive library of test information and a means to build tests specific to the entity.

For example, claim standards are very flexible. They can carry requisite information for all the specialties and scenarios. But few entities need to support every situational claim combination; so the entity should certify all the combinations--but only those combinations--that the entity *does* support, and the certificate should list the capabilities tested and certified in detail.

Say you don't do ambulance claims; so you would not test ambulance claims; so the capabilities to be listed in the certificate would include all your other demonstrated capabilities, but not ambulance claims.

1.7 **Why certify? Why not just test?**

The economic benefit from certification, as opposed to just testing, derives from discipline and formality, which assure greater certainty of objective compliance. The economic benefit pertains on several planes:

- a. **Within the entity**, certification serves as the objective target. We've all known systems that the developers (including ourselves from time to time) have tested and tested and declared to be ready, but the system is still riddled with errors. But third-part certification is formal. It represents the passing grade of having demonstrated compliance against exhaustive transaction combinations, professional test data that is frankly much more comprehensive than what we would put together ourselves. Moreover, the foundation of the test data is the same for everyone; it sets a common measure.
- b. **With the entity's trading partners**, certification is a good faith demonstration of preparedness, and along with detail of the capabilities, it enables trading partners to correspond capabilities with their needs. Certification by a trusted third party provides confidence to trading partners in a way that self-assertions of testing, even through outside testers, cannot. Confidence directly translates into economic benefit by allowing trading partners to shift their transactions to standard without a full battery of redundant one-on-one testing. It also avoids one party, usually the larger, from being seen as the "heavy" when the other party is not compliant.
- c. **For the health care industry**, certification provides increased market confidence, which will speed transition to standard, and that benefit during the deadline stress will greatly reduce risk of seriously disrupted commerce.

It assures cash flow continuity. To borrow an army term, it reduces friction.

- d. ***On all planes***, certification saves transition costs significantly more than does the inconsistent quality of just testing. We examine these savings later in this paper.

1.8 Value of disclosing capabilities to trading partners

Certification is powerful when it is tailored to the capabilities of each specific entity. With this information, prospective trading partners are able to ascertain that each has the capabilities needed to work together. This not only reduces trial and error, it establishes--or in the case of the transition to standard--reestablishes trading partner relationships smoothly and quickly.

2.0 Certified Entity Defined as Only a Single Source of Error

Definition. I define the entity that should be tested and certified as that combination of payer, provider, clearinghouse, vendor, or system that taken together, reasonably embody only a single major source of error. Under this definition, when the entity certifies, other errors cannot reasonably arise from another untested source in the same data stream.

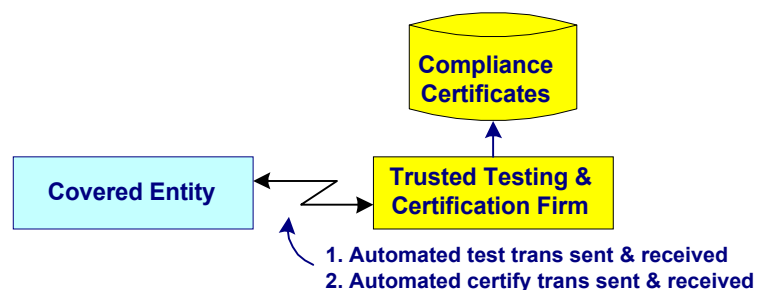
Rationale. The economic purpose of transaction compliance certification is to get rid of transaction errors that would otherwise remain after development of the capability for conducting standard transactions. Certification attests that an entity has demonstrated error free transaction compliance with specific listed capabilities.

If a covered entity operated two systems, it would make no sense to certify the covered entity based on one of the systems. The other system might be full of errors. For certification to attest to error-free compliance, both systems must be certified. The capabilities of each should be established.

Examples. The following examples apply the Single-Source-of-Error definition of certified entity:

2.1 Covered entity certifying directly

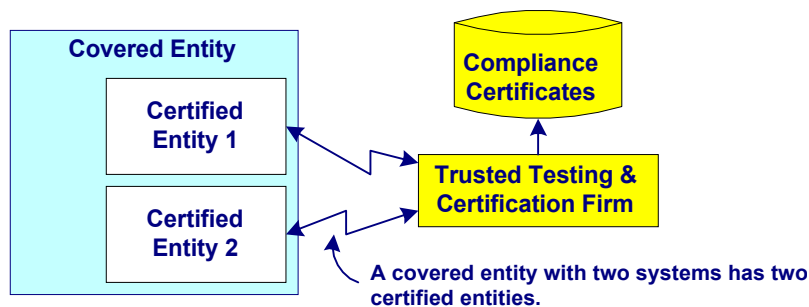
A covered entity that conducts transactions in standard form would obtain certification of transaction compliance directly. The entity may or may not use a consultant or vendor to assist them.



Third-party Transaction Certification

2.2 Covered entity with multiple systems certifying directly

A covered entity that conducts transactions in standard form, where the transactions originate or are processed in more than one application system such that there is more than one source of potential error, would define a separate certified entity for each system. In this way, each system is individually certified and its capabilities detailed in the certification.



Two Certified Entities When Two Systems

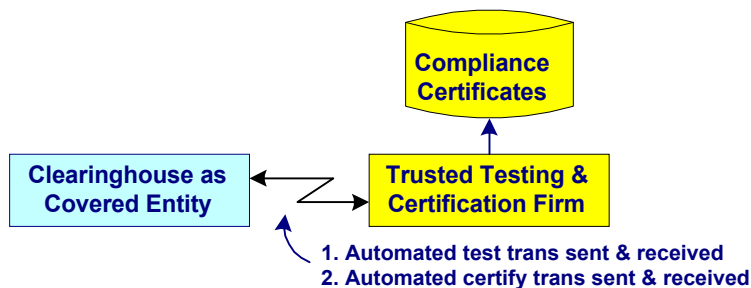
2.3 Clearinghouse

The SNIP recommendations were as follows:

Recommendation: Clearinghouses should test their operations, not only at the EDI interface level like all other trading partners, but also at the translation and data integrity levels, especially when translating from and to pre-HIPAA legacy formats. The limitations of the translation process, data constraints, data mapping, and the population of HIPAA transactions from table driven data by the clearinghouse must be tested, documented, and available to the trading partners, including certification agencies. [SNIP Transaction Compliance Certification paper]

Based on this recommendation and the Single-Source-of-Error principle, certification for a clearinghouse is in two steps:

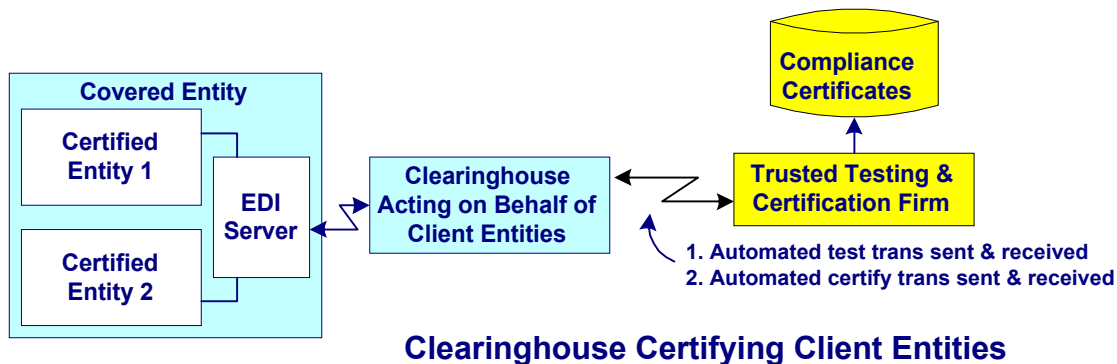
- a. **First the clearinghouse certifies its own capabilities as a covered entity.** The clearinghouse should test and certify its own ability to send and receive compliant transactions.



Clearinghouse Should Certify its own Capabilities

- b. **Then the clearinghouse certifies each entity for which it is a business associate.** Covered entities that are using the clearinghouse as a business associate, on the principle factually that each such entity is a strong potential source of error, must be individually certified. Here it is

the client entities, operating through the clearinghouse, that are certifying; but as a practical matter as a service to the client entity, the clearinghouse would usually conduct the testing and certification on behalf of the client.

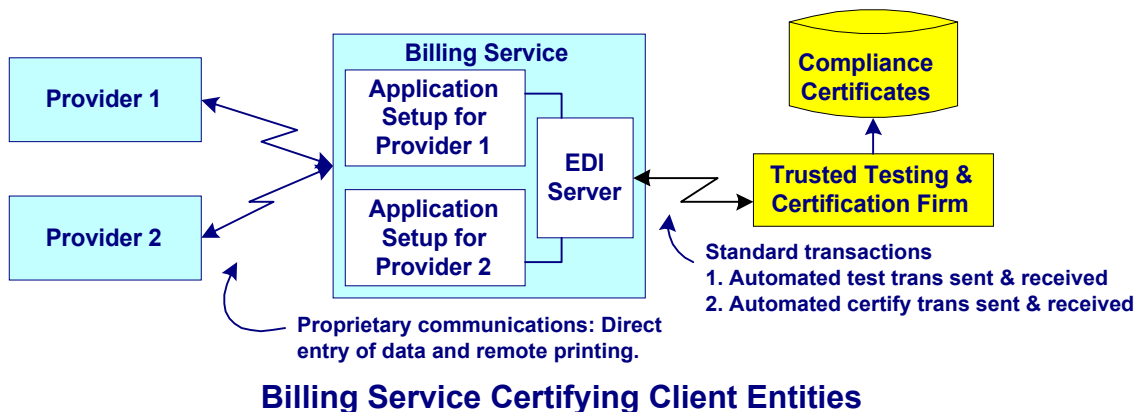


The above illustration combines several scenarios. It shows clearinghouse acting on behalf of client entities to test and certify them. It also shows a covered entity that has two systems such that it has two certified entities.

2.4 Billing Service

Say a billing service is serving a dozen provider offices using a direct entry process. How many entities should be tested and certified. The Single-Source-of-Error principle applies. Usually, the billing service is nominally using the same software for each office. In fact, however, the typical software differs for each office because of the providers' specialties, setup parameters, tables, and versions. Unless the service is using exactly the same setup for everyone, in order to have only a single source of error, it should certify each provider office individually.

The second major reason to certify each provider office is that it enables the provider's detailed capabilities to be listed on the certificate and made available to its trading partners.

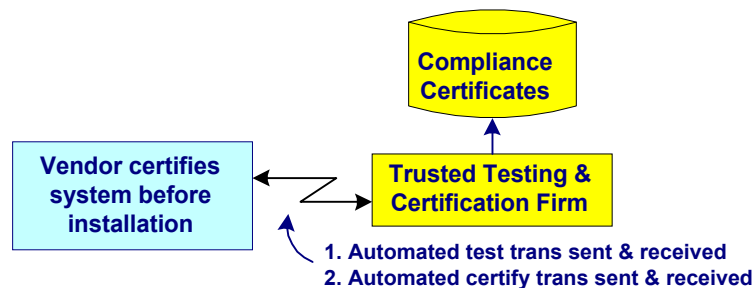


In addition, as in the illustration above, a billing service may be a clearinghouse. In such case, just as a clearinghouse it should certify its own operations.

2.5 Vendor

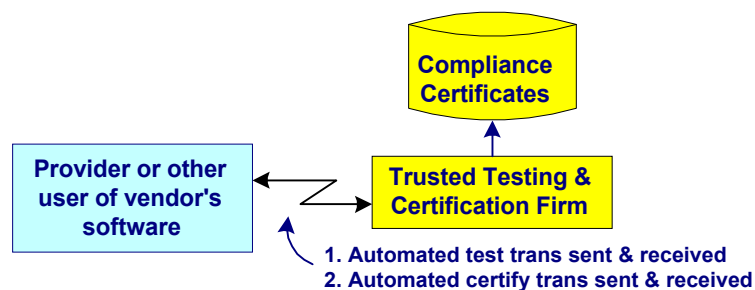
A vendor that has sold its practice management or hospital software to many providers, or claims software to many TPAs, should certify in two steps:

- a. First the vendor certifies its software capabilities in general.** It should thoroughly test and certify its software before it installs and certifies it in each customer's site. This only makes sense because certifying the system before installing it in many sites is much more cost effective. But more than that, certification has strong marketing value to the vendor.



Vendor Should Certify its own Capabilities

- b. Then each installation should certifies individually.** Each installation of the vendor's software is factually a strong potential source of error. So after the vendor's software is installed in a provider's site, the provider should be certified independently. The vendor may do this on behalf of the provider as a service.



Vendor Assists User of its Software to Certify

2.6 Other Scenarios

The scenarios above are not exhaustive; they are intended to illustrate the Single-Source-of-Error principle that defines a certified entity. There are other scenarios. For example:

- When a covered entity uses more than one clearinghouse, it has more than one source of error; so it should certify its capabilities through each clearinghouse as separate certified entities.
- A billing service may not conduct EDI transactions in standard form but use a clearinghouse. The certified entities are defined as each provider office separately. So in this case each certified entity is defined as each combination of:

Provider office + billing service + clearinghouse

3.0 Can You Legally Require Trading Partners To Certify Through A Third Party? Yes.

The question is, can an entity legally require that its prospective trading partners obtain third-party certification of successful transaction testing before it agrees to conduct standard transactions in production? The answer is, yes. It is a business negotiation subject. It is good business to make the requirement, and I strongly recommend it.

3.1 HIPAA requires transactions comply before they're put in production.

The General Rule mandates that covered entities use standards where applicable. By requiring standard, the rule is forbidding production transactions from being nonstandard¹. Therefore, the rule requires both parties must assure their transactions are compliant before they conduct the transactions in production.

3.2 The compliance burden is on all participants equally.

The compliance burden is the responsibility of all participants equally. There is nothing in the rules to burden one side more than the other. Yet there is a tendency erroneously to think health plans somehow have greater responsibility. There are two reasons for the misconception:

- **Past practice.** Historically, health plans developed their own specifications for the submission of claims; so they offered free testing to providers. After all, the providers were using the plan's specs. But now the specs are national standards. Compliance is not specific to a given plan; so the plan, responsible for its own compliance, has no increased responsibility for system testing its trading partners.
- **Health plan mandate rule.** The second reason for the misconception is that the health plan mandate rule says a plan must agree to conduct standard transactions when an entity requests it. Sounds like a burden on the plan. But the rule only speaks to conducting standard transactions, not prior system testing to determine if they are standard; so the rule does not in any way burden the plan with debugging the other party's systems.

3.3 HIPAA leaves compliance testing to business practice.

The general rule requires parties to assure transactions are standard before they conduct the transactions in production. HIPAA rules are silent on how they are to

¹ Murphy says errors will occur, and we must acknowledge that the odd transaction in production, even years after the deadline, will violate standard. This is obvious and irrelevant to the analysis.

do this. The HIPAA preamble places compliance testing, certification, and results posting into industry cooperation and business domains.

3.4 Requiring third-party certification is permitted as a business negotiation decision.

The general rule is results-oriented. Each party to a standard transaction must assure itself that the transactions between them comply before they go live. It leaves to the parties themselves to determine how to make that assurance.

It is enormously expensive and time consuming for one party to debug another party's systems. It ties up two staffs and a lot of communication to isolate the problem, judge which party owns the problem, resolve differing interpretations of the standard, fix the problem, and retest. Moreover, time consumed by one-on-one testing would be wholly unacceptable in the conversion crush of the deadline.

There is no legal mandate, and it would be unreasonable and unfair, to burden one party who, say, has exhaustively tested its own systems, to run debug tests one-on-one with trading partners who have not yet brought their systems into compliance.

3.5 Recommend requiring third-party transaction certification.

As business negotiation, it is entirely reasonable to ask the other party for demonstration that it has already achieved full transaction compliance.

The most efficacious demonstration of compliance is certification by a competent and independent third party. Also, it's a win-win solution; third-party certification of transaction compliance is highly beneficial to both parties.

Therefore, it is entirely reasonable for one party, as a condition of doing business, to require third-party certification of its trading partners before agreeing to conduct standard transactions. I recommend making certification a business requirement.

3.6 Could a small provider require a large payer to certify? Yes.

It is too easy to think of the big requiring certification of the small. It works in both directions, although since it is business negotiation, the reality is probably that larger organizations will do most of the requiring.

Yet it raises an interesting exchange. A small provider, fully tested, certified, and already in production with a half dozen payers, approaches a large payer, points to the health plan mandate rule, asks that the payer conduct transactions as standard

transactions, and asks that the payer, in order best to demonstrate its readiness, first obtain certification of transaction compliance. The payer declines getting certified and asserts that it is compliant and doesn't need certification. So the provider, lacking market power, attempts to conduct standard transactions with the payer only to find the payer is woefully unprepared: lot of errors, lot of back-and-forth communications, costs the provider real money, takes up a lot of the provider's time. In fairness, the provider was right, and the payer should have certified. Same fairness would apply between a huge provider and a small TPA.

Whereas market leverage favors larger organizations requiring certification of smaller organizations, the persuasion of ordinary fairness equally impels larger organizations to certify as well. They must not ask of others what they don't do themselves.

3.7 How to require trading partner to certify

Citing the rationale described here, simply state: "Prior to conducting standard transactions with a trading partner we require the trading partner to obtain certification of its compliance capabilities from a competent third party. At present, we recognize transaction compliance certificates from the following third party firms: _____."

3.8 Require Vendors to Certify

It makes sense for purchasers of practice management, hospital, translator, or other systems to require transaction certification from their vendors. First, it is very beneficial to the vendor anyway, and second it offers objective demonstration to the purchaser that the vendor's system fully complies with transaction standards.

4.0 Benefits of Third-Party Transaction Compliance Certification

This section describes the benefits of third-party transaction compliance certification in qualitative terms. Benefits accrue mainly from three operatives:

- **Risk reduction.** The big risk is that health care finance will be seriously disrupted, especially at the deadline, by chaos and the crush of last minute conversion. This risk is real both for each covered entity and for the industry.
- **Chance to meet the deadline.** Certification enables each entity to establish its own compliance at its own pace well in advance and without dependence on the schedules and priorities of its trading partners, and it greatly reduces the labor needed to implement standards with each trading partner; so certification gives the industry a winning chance to complete conversion to standard before the deadline. But if instead the industry were to use one-on-one business testing, in my opinion, it will not meet the deadline.
- **Savings in one-on-one testing and problem resolution.** In the ideal each certified entity would be responsible for its own capabilities such that, by the time two trading partners conduct transactions, each is already fully compliant and the standard transactions between them immediately succeed without a hitch. In contrast, if every pair of trading partners had to test one-on-one, the cost increases exponentially.

Benefits of transaction certification include:

- 4.1 Enable the industry to meet the deadline.** Certification means the industry can meet the deadline while one-on-one debugging and testing will exhaust resources as the deadline approaches and will not meet the deadline.
- 4.2 Avoidance of the last minute stress of the deadline.** For each entity, the costs in labor and time of one-on-one testing would be chaotic as the deadline approaches. Certification removes the one-on-one problem, enables the more conscientious covered entities to all but finish their own work months in advance, and because the last minute work is itself reduced, chaos at the deadline should be completely averted.
- 4.3 Significant reduction of risk and liability.** Because it so beneficially improves prospects for a smooth industry conversion, certification greatly improves the chances for uninterrupted cash flow. Most importantly, certification reduces the financial liability that an entity might incur from cash flow disruption.
- 4.4 Certify at your own pace without dependence on others.** With certification, each entity can get itself ready at its own pace; it can offer demonstrated assurance of its compliance to others; and it can obtain demonstrated

assurance of its trading partners compliance before investing *any* labor, time, hassle, or dispute in debugging transactions with the trading partner.

- 4.5 *Faster conversion on the same standard.*** The dramatic reduction or near elimination of one-on-one problem resolution not only saves exponential costs, it saves time and critical manpower especially as the deadline approaches.
- 4.6 *Same standard.*** In the ideal, everyone would measure against the same tests for each capability; so the transactions inherently conform.
- 4.7 *Avoidance of disputes between trading partners.*** Certification avoids disagreements on the correct interpretation of the standard between trading partners. Certification is the objective measure.
- 4.8 *Avoidance of contract disputes.*** Certification provides the measure by which a vendor's capabilities are determinable with outside objectivity.
- 4.9 *Demonstration of good faith effort.*** Certification is in itself strong evidence of good faith efforts by each covered entity to be in compliance. This might be critical in defending liability.
- 4.10 *Capabilities.*** Certification with listed capabilities enables trading partners to ensure their capabilities and requirements mesh. Certification is not just a yes or no to compliance. Given the complexity of claims in particular, a simple yes/no would be nearly meaningless. This is a key reason for smaller providers to certify.
- 4.11 *Reduction in production errors.*** On an ongoing basis, certification should significantly reduce the occurrence of rejected transactions, manual exception processing, delays in making payment, requests of additional information, and other friction.
- 4.12 *Small providers can independently determine if its vendor or business associate complies.*** Entities, particularly smaller providers, that are dependent on vendors and business associates, cannot easily ascertain by their own efforts that they are in compliance. But certification by a competent third party gives you that vital assurance at extremely low cost and with third-party objectivity.
- 4.13 *One-third the required service staff level.*** As described in 6.0, not using transaction certification requires three times the average service staff and four times the peak service staff when compared to using certification. For a large payer or clearinghouse, peak staff without certification is 60, with is only 15.

5.0 Estimating Cost Savings from Third-Party Transaction Certification

This section is pure art. I welcome suggestions to improve it, especially with hard data. But since savings so far outweigh costs of certification, getting anything close suffices.

5.1 Assumptions

a. Assume each certified entity pays its own costs. For purposes of this calculation, I assume every certified entity is paying its own costs.

b. Assume certification is highly automated. Transaction compliance certification should be automated and supported by high quality on-line instructions and detailed testing reports.

Certifiers are not consulting firms. The significance of assuming an automated certification model is that none of the trusted testing and certification firms would be absorbing labor-intensive consulting and handholding to assist entities to understand and develop their standard transactions. Each covered entity, itself or through its business associates, vendors, or consultants, will provide for its own systems development.

c. Labor rates. We assume the following labor rates:

- IT Analyst = \$400 per day
- EDI Support = \$250 per day

5.2 Costs

The cost of using an automated testing and certification service, based on the SNIP *Transaction Compliance and Certification* paper and other sources, appears to be very low and proportional in comparison to the savings each entity would realize internally to test its own systems.

5.3 Formula for calculating savings

Total Savings = Net savings own systems + Savings from reducing 1:1 testing

Where:

Net savings own systems = Days.Saved.Own x IT.Analyst.Rate

Savings from reducing 1:1 testing =

**Avg.Days.Saved.Per.Partner x EDI.Support.Rate x Number.of.Partners
adjusted somewhat for non-linearity of a learning curve**

5.4 Days saved testing and certifying own systems, large entities

| Large Payer, Provider, Clearinghouse, or Vendor Certifying Own System | | | |
|---|-----------------------|-----------------|-----------------|
| Testing Procedure | Estimated Person Days | | |
| | Independent | Third Party | Savings |
| Organize transaction combinations | 30 | 10 | |
| Devise means to generate combinations | 20 | 10 | |
| Set up means to test for standard | 30 | 1 | |
| Run tests to conduct the transactions | 40 | 15 | |
| Test compliance | 30 | 5 | |
| Evaluate the tests | 30 | 5 | |
| Fix problems and repeat | 30 | 20 | |
| Track combinations tested | 20 | 0 | |
| Certify transactions compliance | Na | 1 | |
| Total person days | 230 days | 67 days | 163 days |
| Estimated cost of certification large entity | | \$6,000 | |
| Total cost for testing & certifying own system | \$92,000 | \$32,800 | \$60,000 |

5.5 Days saved for an installation tested and certified by vendor

We estimate the savings for each installation, after the vendor has tested and certified the capabilities of its software product for all transactions, to be 10 days per installation in comparison to the total days that would be needed to test the specific setup of each installation against each of its trading partners.

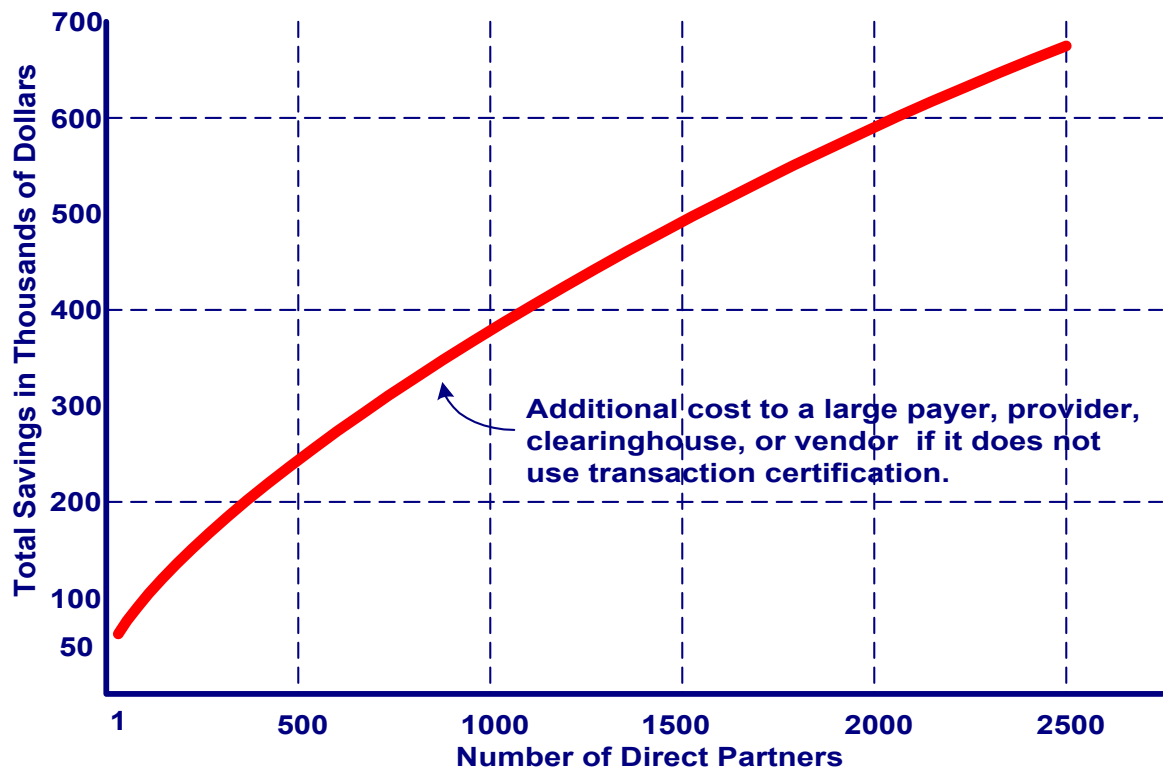
5.6 Average days saved per direct partner by reducing 1:1 testing

We use direct partner because the one-on-one costs of indirect are borne in the calculations for a clearinghouse entity. The first half dozen one-on-one are very labor intensive until the entity begins to get the bugs out. So we average to 12 hours without prior certification (most estimates are 15+ hours) and 4 hours with prior certification (I think it will be less). Therefore, we are assuming average time saved = 8 hours or 1 day per direct partner. This is a conservative estimate.

| Large Payer, Provider, Clearinghouse, or Vendor Certifying Own System | | | |
|---|------------------------|-------------|---------|
| Testing Procedure | Estimated Person Hours | | |
| | Independent | Third Party | Savings |
| One-on-one time per trading partner | 12 hours | 4 hours | 8 hours |
| Cost per trading partner | \$375 | \$125 | \$250 |

Moreover, for purposes of this calculation we are only counting average time saved per trading partner, but because of the peak demand factors described in Section 6.0 below, the number of staff saved is in fact significantly greater. So again, these dollar calculations are conservative.

5.7 Cost comparison chart for a large covered entity



5.8 Savings according to type of installation (shown after certification fees have been paid)

- **Large payer and clearinghouse** savings are indicated in the chart above.
- **Large hospital** savings are indicated in the chart above, given fewer direct trading partners. Hospital with own system with 150 partners, savings are \$106,000.
- **Vendor and billing service** savings are described in 5.5, adding also the savings from first certifying the vendor's product. For a major vendor's product, we estimate savings to be \$60,000 plus \$2,000 per installation after certification fees have been paid.
- **Small provider** savings will usually be imbedded in the cost of system upgrade and service fees but can be estimated at the proportional share of vendor or clearinghouse savings. Two key benefits to a small provider from certification are: (i) knowing in advance that its vendor, billing service, and clearinghouse have in fact complied and that its transactions will be accepted and claims paid without conversion problems or cash flow interruption as the deadline approaches, and (ii) being able to list and match its capabilities and needs with trading partners.

6.0 Can We Meet the Deadline? With Certification, Yes.

This is the practical question about how much staff will you need to complete conversion of EDI with all trading partners. Without transaction certification, staffing levels for one-on-one trading partner conversions are simply impractical.

The problem is roughly proportional to the number of direct trading partners. It is especially critical for clearinghouses and large payers because they have so many direct trading partners that they require significant staffing of EDI support persons. But it is the same problem of practicality, with smaller staffs, for hospitals and other providers.

For cost purposes in the previous section we used averages. But averages don't work when you calculate how large a service staff you will need to complete the conversions of all your trading partners before the deadline.

6.1 Without transaction certification there will be an insurmountable backlog.

If conversion were evenly distributed over every business day for six months, without certification a payer with 2500 direct trading partners would require an EDI support staff of 30.

But it won't be evenly distributed. Without certification it will bunch up toward the deadline and during certain hours of the day for four reasons:

- **Parkinson's law** says the typical trading partner will not be ready at the beginning of the six-month testing period but later.
- **The dependence on others** for testing, plus delay of the typical partner, constitutes a multiplier such that testing for both partners on balance will be delayed more than the delay caused by just one of them.
- **Normal queuing patterns** mean that demand will peak during certain business hours of the day and certain days in the week.
- **Significant underestimation** of the required number of EDI support hours when trading partners do not certify means an immediate backlog that will be expensive to work down before the deadline.

The result of these factors is that, to have any chance of making the deadline without certification, the organization would have to staff for a peak demand at probably twice the apparent average. This would mean a large organization with 2500 direct trading partners would need a peak staff level of 60 people. When the

backlog develops, the number of staff to stay even and to work down the backlog before the deadline would mean more than 60 people. I don't think staffing even approaching this level is going to happen; consequently, I don't think a large organization can meet the deadline without transaction certification.

6.2 **With transaction certification staffing is reasonable to meet the deadline.**

In contrast, when transaction certification is used, much more reasonable staffing levels will be adequate to meet the deadline. The key operative in this math is the average number of hours needed for each trading partner. Using transaction certification, an entity needs only one-third the average number of hours. But the math is not linear; so instead of needing, say, 60 people, the organization will need only 13 to 15 people. Consider the same four factors:

- **Parkinson's law still applies.** Some entities will still delay; however the magnitude of the delay is much less because the number of days needed to certify their own systems is only one fourth as much and the average number of hours per direct trading partner is one third.
- **Independence.** The entity can certify independently of others; so there is no multiplier effect.
- **Queuing effect is less.** The normal demand distribution will still pertain, but mathematically the way to reduce its effect is to reduce average service time. Since the relationship of average service time to staff is not linear, reducing service time by two-thirds reduces staff more than two-thirds.
- **Adequate staffing.** Peak staff levels need to be much less than a third; so staff levels are more likely to be adequate and, if there *were* underestimation, it would not snowball so fast and it could be corrected.

6.3 **Estimating Peak Demand Factors**

Based on the above, we estimate the peak demand factor for service personnel without transaction certification at 2.00, and with transaction certification at 1.50.

| Estimating Peak Service Staff for Large Payer or Clearinghouse with 2500 Partners | | | |
|--|----------------------|---------------------------|-------------------|
| | Average Staff | Peak Demand Factor | Peak Staff |
| Without transaction certification: | 30 | 2.00 | 60 |
| With transaction certification: | 10 | 1.50 | 15 |

From the paper:

"There is no legal mandate, and it would be unreasonable and unfair, to burden one party who, say, has exhaustively tested its own systems, to run debug tests one-on-one with trading partners who have not yet brought their systems into compliance."

"Therefore it is entirely reasonable for one party, as a condition of doing business, to require third-party certification of its trading partners before agreeing to conduct standard transactions. I recommend making certification a business requirement."

"I define the entity that should be tested and certified as that combination of payer, provider, clearinghouse, vendor, or system that taken together, reasonably embody only a single major source of error."

"Without transaction certification, staffing levels for one-on-one trading partner conversions are simply impractical."

Without certification a large organization with 2500 direct trading partners would need a peak staff level of 60 service people, and when the backlog develops, more than 60 people. Staffing approaching this level is not going to happen; so, I don't think a large organization can meet the deadline without transaction certification. In contrast, when transaction certification is used, the same organization will need only 13 to 15 people.

Transaction certification is the only method that has a respectable chance of leading the industry toward complete, successful compliance with transaction standards by the legal deadline for compliance. This is actually very good news. The industry has a way to meet the deadline.

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