2017 CAQH INDEX®

A Report of Healthcare Industry Adoption of Electronic Business Transactions and Cost Savings

CAQH® Explorations

2017 CAQH Index: A Report of Healthcare Industry Adoption of Electronic Business Transactions and Cost Savings

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CAQH, a non-profit alliance, is the leader in creating shared initiatives to streamline the business of healthcare. Through collaboration and innovation, CAQH accelerates the transformation of business processes, delivering value to providers, patients and health plans.

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Executive Summary

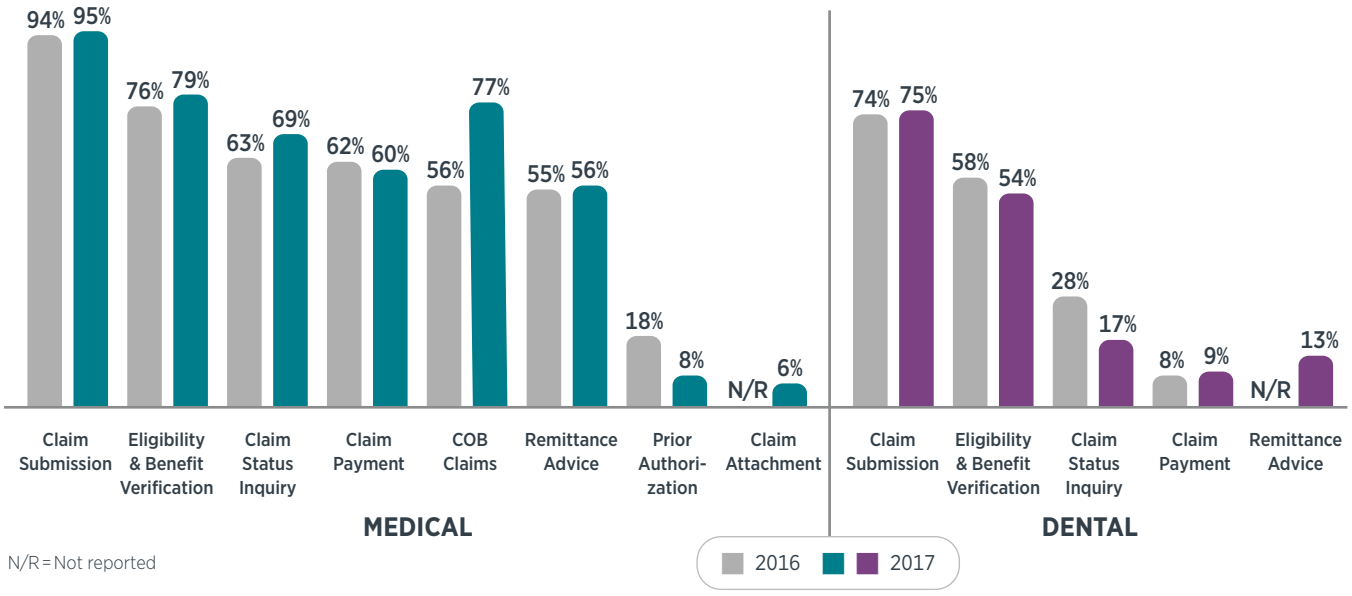
The business of healthcare in the United States can and should be simpler, less burdensome and, perhaps most of all, less costly. Many studies estimate costs associated with healthcare billing and insurance-related administrative activities.[1,2] One study projected administrative costs to reach $315 billion by this year,[3] nearly as much as the 10 highest-spending state Medicaid programs paid combined in 2016 to provide care for more than 46 million beneficiaries.[4,5]

While the sources of excessive administrative costs are many, one important driver is the use of time-consuming manual business processes—phone, fax or mail—to conduct claims-related transactions between healthcare stakeholders, including payers, providers and the vendors that facilitate their transactions. Longstanding healthcare industry-led efforts and government mandates have sought to rein in some of those costs by transitioning the industry to fully electronic administrative transactions.

The 2017 CAQH Index is the fifth annual report assessing industry progress to reduce the use of manual transactions and eliminate cost. Several findings, in combination, point to opportunities for continued industry collaboration, study and dialog:

- **Only modest progress:** The healthcare industry continued to make only modest progress in its transition from manual to fully electronic administrative transactions (Figure 1). Only one transaction—coordination of benefits claims—showed an appreciable increase. These results extend the trend reported in prior years as mixed or only marginal gains in adoption. Also, some vendor product and service platforms do not fully support the use of all transactions, while others provide such support only in premium system configurations. This scenario may make it difficult for providers to access a solution that can facilitate their full participation in the transition.

FIGURE 1:
Adoption of Fully Electronic Administrative Transactions, Medical and Dental, 2016 – 2017 Index

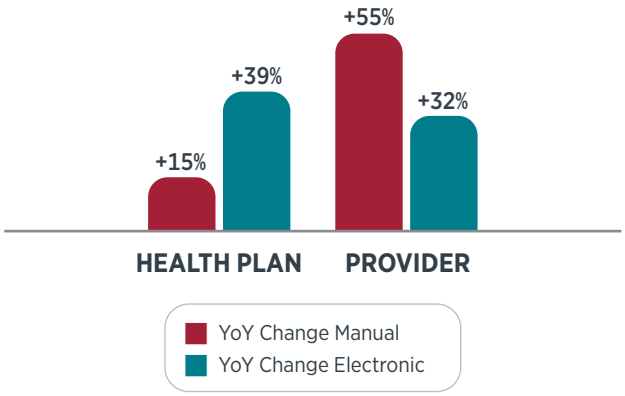


N/R = Not reported

- **Some ground lost:** In some cases, the industry lost ground, reversing gains made in prior years. Notably, online portal use drove a 55 percent overall increase in the volume of manual transactions by providers as compared to the prior year (Figure 2) while adoption of electronic transactions grew only slightly or declined for the transactions most affected by portal use (See "Portals: Boost or Barrier to Adoption?").

  These portal transactions are counted by the CAQH Index as electronic for health plans and as manual for providers. While portals offer health plans a highly automated solution, these systems are still burdensome for providers, requiring them to sign on and navigate a different online system for each health plan with which the provider is contracted.

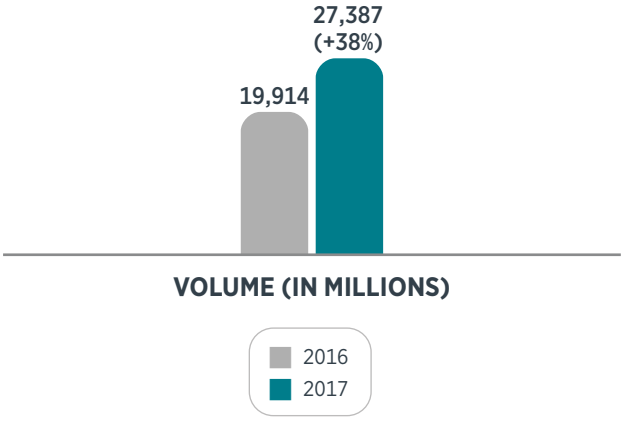
FIGURE 2:
Year-Over-Year Percent Change in National Volume of Transactions, by Mode, 2016 – 2017 Index



- **Greater potential for savings:** The industry can save an even greater amount, $11.1 billion, compared to the savings potential reported in the prior year by transitioning to electronic transactions. This amount, a year-over-year increase of $1.8 billion, reflects a higher estimated national volume of administrative transactions—a 38 percent increase over the prior year (Figure 3). Transaction volume increases magnified the effects of other factors, such as the higher costs of portal transactions, low electronic adoption levels for some transactions and varying levels of adoption (as described below).

  Some of the transaction volume growth can be explained by an increasing number of insured lives under the Affordable Care Act (ACA). This growth has converged with rising use of complex insurance products, such as high-deductible health plans (HDHPs), and the availability of real-time information through use of the fully electronic eligibility and benefit and claim status transactions. These transactions are being used in greater numbers to answer patient and provider questions about patient financial responsibility and the status of claims. A rise in the number of eligibility and benefit and claim status transactions per member suggests that providers and vendors may be processing transactions multiple times. For example, they may be following up to get a second electronic response or by phone to get additional information after an unsatisfactory response from an electronic transaction. Also, vendors often use automation to routinely query health plan systems, a practice that inflates the number of transactions.

FIGURE 3:
Total Estimated National Volume of Administrative Transactions by Health Plans and Providers, 2016 – 2017 Index



- **Variance in adoption levels:** Adoption levels of electronic business transactions vary greatly between organizations, with some entities reporting very high levels of adoption and others reporting comparatively low use for the same transaction. For example, even for transactions with the highest levels of fully electronic adoption, such as claim submission, the levels reported by top performers exceeded those of their peers by slightly more than 30 percentage points and by more than 70 percentage points for other transactions, such as claim attachments and claim status.

There is also significant adoption variance between the transactions (Figure 1). Only one transaction, claim submission, has an adoption level above the 90 percent mark, while others, such as remittance advice and claim status, hover between 50 percent and the three-quarters mark. For the healthcare industry overall, adoption of at least one electronic transaction, prior authorization, is only in the single digits. This variation reflects a range of factors, including stakeholder programs driving adoption, resistance to change and lack of industry standards.

Variance between healthcare sectors also exists. Dental has not yet caught up with its medical peers in its adoption of any of the electronic transactions tracked for both sectors (Figure 1). Electronic claim status, payment and remittance advice all lag that of medical with a 43 to 52 percentage-point difference. Even for claim submission, the electronic transaction with the highest level of adoption by both sectors, fully electronic adoption by dental has a 20 percentage-point gap compared to medical.

- **Mixed effects of portal use:** The use of health plan portals drove sharp increases in the use of partially electronic transactions and declines in adoption of some fully electronic transactions. For one transaction, remittance advice, portal use increased, while adoption of fully electronic transactions remained steady and fully manual declined. For prior authorization, however, portal use increased as adoption of fully electronic transactions declined and use of manual remained steady.

  For claim status and eligibility and benefit verification, the Index detected a more hopeful sign. In those cases, the overall proportion of partially electronic (portal) transactions remained high, but a small decline in their use was matched by an increase in fully electronic adoption.

  In the dental industry, increased portal use resulted in corresponding decreases in adoption of fully electronic and use of manual for eligibility and benefit verifications and claim status inquiry transactions.

  Portal use may slow the transition to fully electronic transactions, or it may ultimately serve as a bridge to adoption of fully electronic transactions. More study and industry dialog are needed to fully understand the administrative burdens and costs of portal use, as well as its long-term effect on the transition from manual to electronic transactions (See “Portals: Boost or Barrier to Adoption?”).

Introduction

The Index is the industry source for tracking health plan and provider adoption of electronic administrative transactions. It also estimates the industry cost savings opportunity, an amount that declines as adoption and efficiency grows.

Tracking adoption and the cost savings opportunity is essential for assessing the progress and momentum of an ongoing transition that now spans nearly two decades. By benchmarking progress, industry and government can more easily identify barriers that may be preventing stakeholders from realizing the full benefit of electronic administrative transactions. These insights can prompt new initiatives to address and reduce barriers.

About CAQH Index Data

The Index relies on data submitted through a voluntary, survey-based process. Data was submitted from health plans covering more than half of the commercially insured U.S. population in the year studied based on enrollment reported in "AIS's Directory of Health Plans: 2017"[6]. Medical health plans contributing data covered 155 million lives, or approximately 51 percent of U.S. commercially insured covered lives. The data submissions represent 1.6 billion claims and over 6 billion total transactions (Table 1). Dental health plans contributing data represented nearly 50 percent of the covered dental lives. Dental data submissions represent 650 million transactions.

TABLE 1:
Basic Characteristics of CAQH Index Data Contributors, 2014 – 2017 Index

	2014 Index	2015 Index	2016 Index	2017 Index
MEDICAL				
Health Plan Members (total in millions)	112	118	140	155
Proportion of Total Commercial Enrollment (%)	42	45	46	51
Number of Claims Received (total in billions)	1.4	1.4	1.5	1.6
Number of Transactions (total in billions)	3.9	4.3	5.4	6.0
DENTAL				
Health Plan Members (total in millions)	N/A	93	112	117
Proportion of Total Commercial Enrollment (%)	N/A	44	46	48
Number of Claims Received (total in millions)	N/A	158	173	182
Number of Transactions (total in millions)	N/A	439	564	650

N/A = Not applicable

Note: CAQH Index data collection was for different transactions in some years.

Providers submitted data on transactions occurring in calendar year 2017, and health plans reported on 2016 transactions (Table 2). Throughout this report, comparisons are made to results reported in the prior year. The 2016 Index reported 2016 data from providers and 2015 data from commercial medical and dental health plans, as well as Medicare Fee-for-Service data from the Centers for Medicare and Medicaid Services (CMS). For more on methodology, please see Appendix: Detailed Methodology.

TABLE 2:
Guide to Data Collection, by Participant Type, 2016 – 2017 Index

	2016 Index	2017 Index
Provider-supplied data	Calendar year 2016	Calendar year 2017
Health plan-supplied data	Calendar year 2015	Calendar year 2016
CMS-supplied data	Calendar year 2015	Not available

Transactions Studied and Benchmarks Reported

This report studies 13 electronic administrative transactions (Table 3). Seven of these apply to dental.

TABLE 3:
Overview of 2017 Index Data and Benchmarks, Per Transaction

	Adoption		Cost per Transaction	National Potential Cost Savings		Time per Transaction for Providers	First Index Report Year Studied	
	Medical	Dental		Medical	Dental		Medical	Dental
Claim Submission	♦	♦	♦	♦	♦	♦	2013	2015
Eligibility & Benefit Verification	♦	♦	♦	♦	♦	♦	2013	2015
Claim Status Inquiry	♦	♦	♦	♦	♦	♦	2013	2015
Claim Payment	♦	♦	♦	♦	♦	♦	2013	2015
Remittance Advice	♦	♦	♦	♦	♦	♦	2013	2016
Prior Authorization	♦		♦	♦		♦	2013	
Referral Certification	No Benchmark Reported (Insufficient Data)						2015	
Coordination of Benefits Claim	♦						2015	
Claim Attachment	♦		♦	♦			2014	2016
Prior Authorization Attachment	No Benchmark Reported (Insufficient Data)						2013	
Enrollment/ Disenrollment	No Benchmark Reported (Insufficient Data)						2015	
Premium Payment	No Benchmark Reported (Insufficient Data)						2015	
Acknowledge-ments	No Benchmark Reported (First Year of Study)	No Benchmark Reported (First Year of Study)					2017	2017

Adoption of Electronic Administrative Transactions

Commercial Medical Plans and Providers

Volume Benchmarks

The annual volume of administrative transactions reported by medical plans increased substantially, rising by 25 percent, from 4.8 billion in the prior year to more than 6 billion (Table 4). The Index also estimates that the number of transactions per member rose, but by a smaller margin, 16.6 percent. Medical health plans are estimated to have conducted 42 transactions per member compared to 36 in the prior year. Some of this increase may be attributed to the increasingly common practice of large, national health plans to post certain transactions for access on the health plan portal, in addition to generating a HIPAA response.

As in prior years, the vast majority of transactions reported were eligibility and benefit verifications. The Index estimates that healthcare providers verified eligibility and benefit information 18 times during the calendar year, on average, for every commercial health plan member. This is an increase of one per member from the prior year.

TABLE 4:
Annual Volume of Administrative Transactions Reported by Medical Plans, Per Member and Per Claim, 2016 – 2017 Index

	Number of Transactions (in millions)		Number of Transactions per Member		Number of Transactions per Claim Submitted	
	2016	**2017**	**2016**	**2017**	**2016**	**2017**
Claim Submission	1,475	1,568	11	10	N/A	N/A
Eligibility & Benefit Verification	2,403	2,917	17	18	1.7	1.8
Claim Status Inquiry	489	719	3	6	0.2	0.5
Claim Payment	173	261	1	2	0.1	0.2
Coordination of Benefits	42	24	<0.1	0.8	<0.1	<0.1
Remittance Advice	173	474	1	4	0.1	0.3
Claim Attachment	48	47	<0.1	0.4	<0.1	<0.1
Prior Authorization	32	37	<0.1	0.3	<0.1	<0.1
Total Transactions	**4,835**	**6,047 (+25%)**	**36**	**42 (+16.6%)**	**N/A**	**N/A**

N/A = Not applicable

The high number of eligibility and benefit verifications per member may reflect:

- Routine transmission of more than one eligibility inquiry for a single medical encounter;
- Inquiries transmitted prior to scheduled medical encounters that did not ultimately take place; and/or
- Providers seeking information to support consumer navigation of products with complex benefit designs, such as high-deductible health plans.

Remittance advice and claim status inquiry showed the largest and most consistent trends in volume increases, with significant growth in number of transactions overall, per member and per claim as compared to the prior year. This is likely due to the increased use of health plan portals. While fully electronic transactions and portals both give providers the ability to follow the progress of claims and track reimbursement, portals may be more convenient in some ways. For example, health plans report that providers often prefer to retrieve remittance advices from the portal as provider systems may not always support the companion HIPAA (fully electronic) transaction. Portals also permit revenue cycle vendors to automate queries of the health plan system, giving providers meaningful opportunities to proactively manage denials and revenue.

The volume of claim payment transactions also increased considerably, rising from 173 million to 261 million total reported volume, yet the volume of claim submission transactions rose only slightly overall. The rise in claim payment is likely due to two factors. First, new mandatory flags in healthcare transactions are improving the ability for NACHA to identify healthcare payments on the Automated Clearing House (ACH) network. In addition to this, the organizational policies and processes of new data contributors likely had a strong effect on this transaction.

Claim Submission

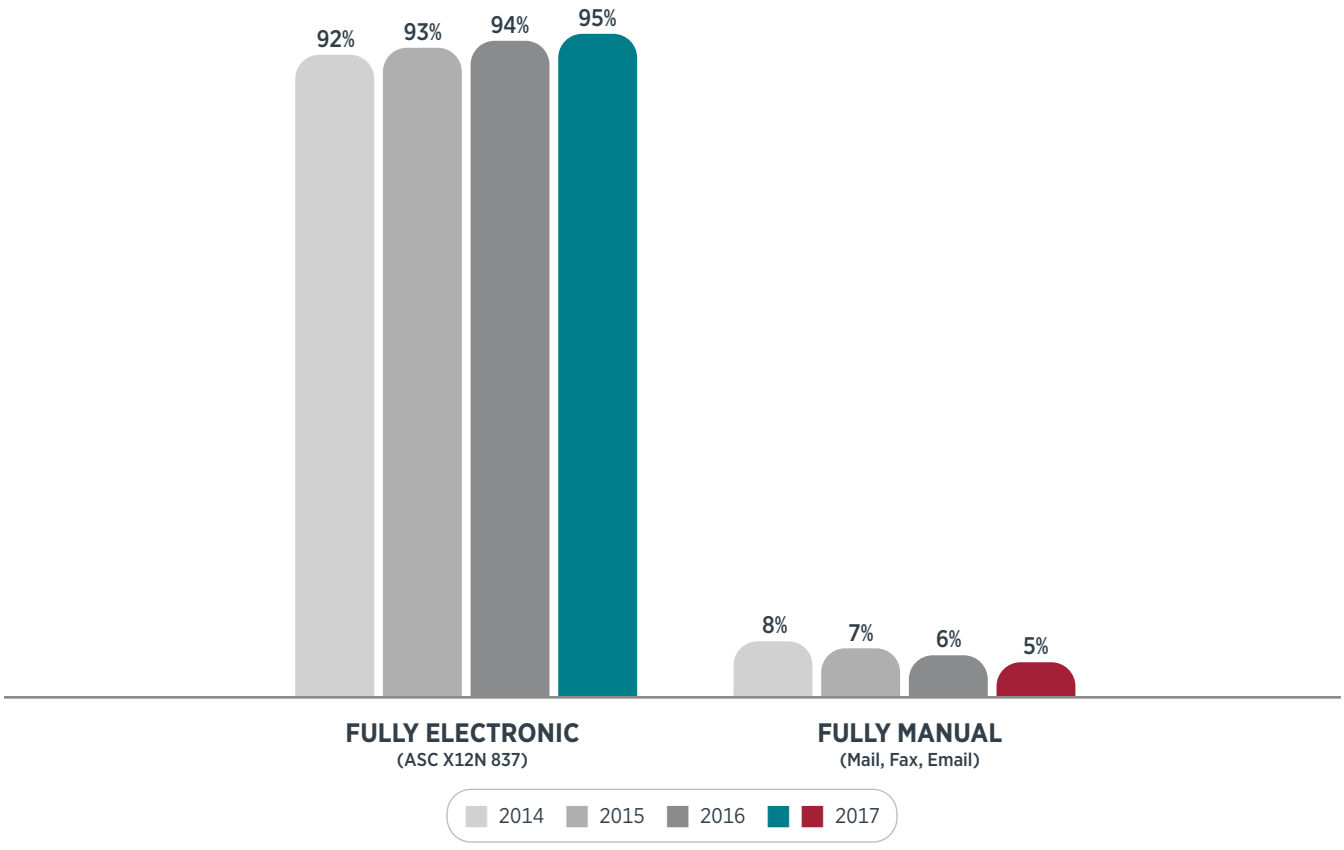
Adoption rose slightly for claim submission—the most widely used fully electronic transaction.

Claim submission had the highest overall adoption level among the electronic transactions studied at 95 percent, a slight (one percentage point) increase over the prior year (Figure 4). This transaction also showed the tightest range of variance in the adoption levels reported by health plans, from 84 percent to 98 percent.

Longstanding payer efforts to encourage provider adoption of fully electronic claim submission have played a role in driving these results. For example, many health plans require providers to submit claims electronically.[7,8] A CMS mandate requiring electronic claim submission for Medicare Part A and B fee-for-service claims also has advanced provider adoption of this fully electronic transaction.[9]

The Index counts all claim submissions by providers to health plans. This includes a growing proportion of claims that are being submitted for the purpose of transmitting encounter information. In addition, after claims are adjudicated by the health plan, a large portion of claims are ultimately paid by patients.

FIGURE 4:
Adoption of Electronic Claim Submission by Medical Plans and Providers, 2014 – 2017 Index



Claim Attachment

Claim attachment, with a fully electronic adoption level of six percent, showed no measurable change as compared to the prior year. Also, this transaction had one of the widest plan-to-plan adoption level variances reported, ranging from zero, or no adoption, to 73 percent.

Neither a standard nor an operating rule for claim attachment is federally mandated. The Index tracks both the ASC X12N 275 and HL7 CDA (Clinical Data Architecture) for claim attachment. A subset of participating health plans reported nearly 47 million claim attachment submissions. Of these, 6 percent were submitted electronically, all using the ASC X12N 275 transaction standard. No use of the HL7 standard for claim attachment was reported. The majority of data contributors reported that 100 percent of claim attachments were submitted manually.

Claim Attachment Standard In the Works

In response to an ACA mandate calling for a claim attachment standard, the National Committee on Vital and Health Statistics (NCVHS) recommended that the U.S. Department of Health and Human Services (HHS) adopt a combination of ASC X12 and HL7 claim attachment-related standards.[10]

HHS included proposed rulemaking for an attachment standard in its Fall 2017 Unified Agenda. According to the agenda, a Notice of Proposed Rule Making is expected in August 2018. This timeline likely puts a future standard on a timeline to be issued no earlier than 2019 and to be implemented two years later.

Meaningful Use Stage 2 requires electronic health record (EHR) systems to adopt the HL7 standard, Consolidated Clinical Document Architecture (C-CDA), which is used for clinical attachments. While no authoritative benchmark data is available on the adoption of these standards for EHR systems, some EHR vendors publicly share insight into C-CDA volumes. For example, Epic has reported calendar year volumes being nearly 250 million.[11]

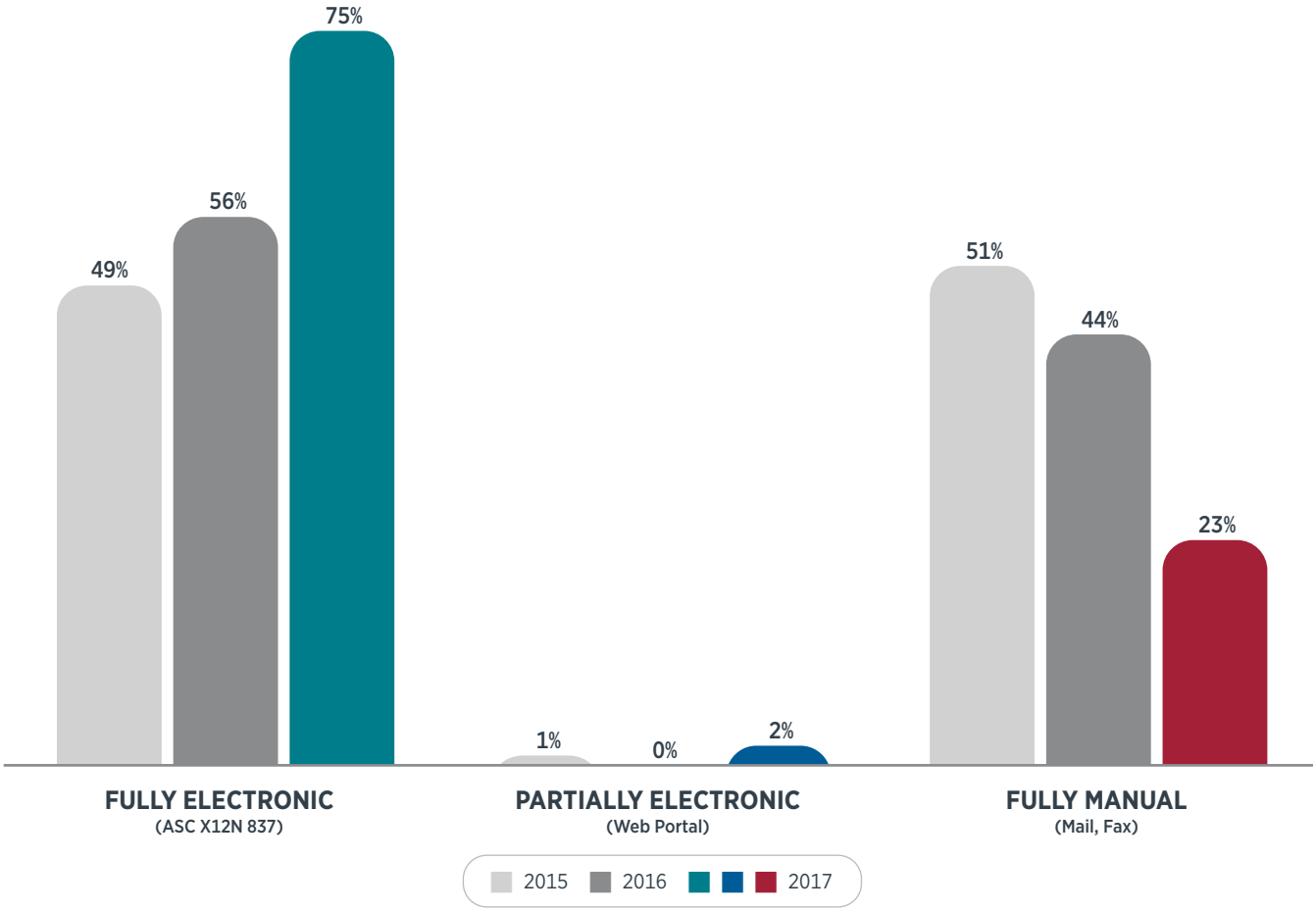
Coordination of Benefits / Crossover Claim

Adoption of fully electronic coordination of benefits (COB) / crossover claim transactions increased dramatically, climbing by 19 percentage points to reach 75 percent (Figure 5). This transaction had one of the narrowest plan-to-plan adoption level variances reported, ranging from 64 percent to 96 percent.

It is possible that the CAQH COB Smart® solution, which health plans started to use in 2014 to share information about secondary forms of coverage, played a role in these results. Some of the newest Index data contributors for this transaction are COB Smart participants, a factor that could have positively influenced the fully electronic rate. This potential connection will be researched for the 2018 Index.

FIGURE 5:

Adoption of Electronic Coordination of Benefits by Medical Plans and Providers, 2015 – 2017 Index



Eligibility and Benefit Verification

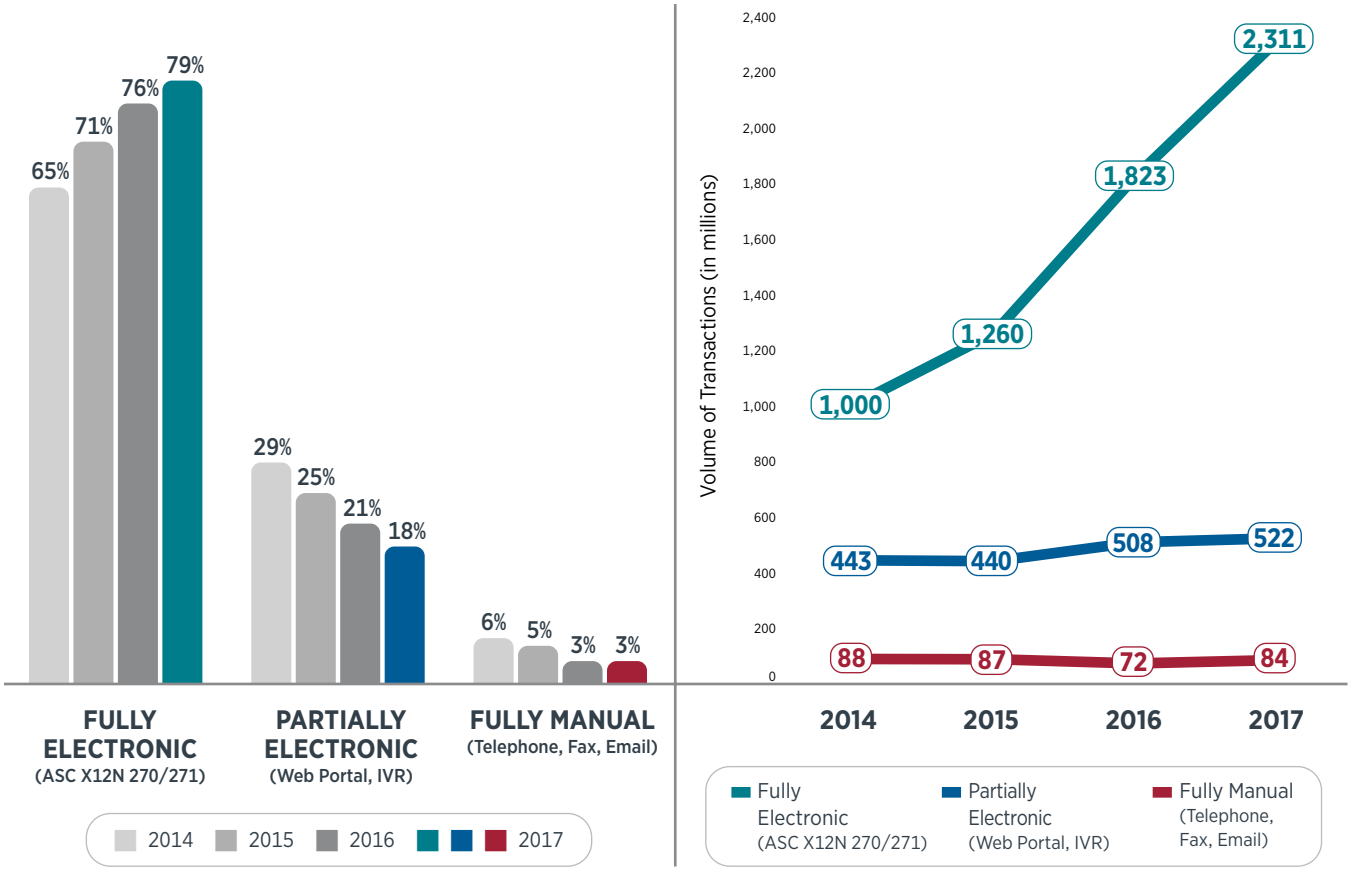
Adoption of fully electronic eligibility and benefit verifications rose slightly, reaching 79 percent, an increase of three percentage points over the prior year. This increase corresponded to an equal decline in the proportion of partially electronic transactions (Figure 6).

Despite continued progress in adoption of electronic transactions, eligibility and benefit verifications are an ongoing source of cost and inefficiency. The volume of these transactions far outpaces that of all others tracked. The per-member per-year transaction count rose from 17 inquiries in the prior year to 18 in this report, and the per-claim count rose from 1.7 to 1.8 (Table 4). Health plans fielded more than 84 million telephone inquiries from providers (Figure 6).

In many ways, fully electronic eligibility and benefit transactions are becoming more useful. For example, CAQH CORE® Phase II Operating Rules, which are federally mandated, require real-time access to patient eligibility and benefit information. Access to this information in real time may increase the likelihood that a provider will check patient eligibility. In addition, the Operating Rules may improve productivity by offering access to information more quickly than a telephone inquiry. Real-time access also helps providers identify potential payment issues before they occur.

The proliferation of high-deductible health plans drives use of eligibility and benefit transactions to answer provider and patient questions about these complex insurance products. Also, some non-provider entities use eligibility and benefit verification transactions for coordination of benefits and other services for providers (e.g., state Medicaid plans and third-party benefit verification services).

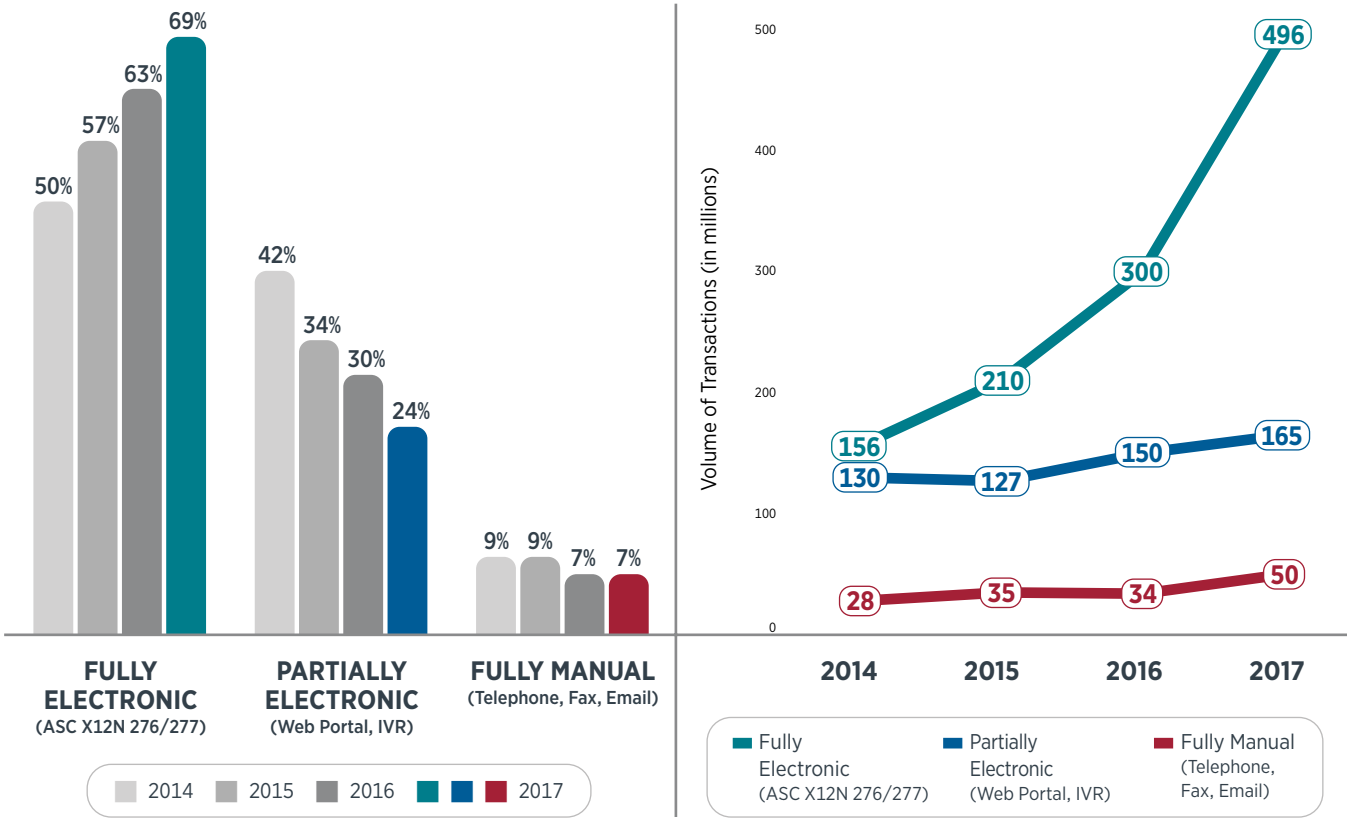
FIGURE 6:
Adoption and Volume of Electronic Eligibility and Benefit Verification by Medical Plans and Providers, 2014 – 2017 Index



Claim Status Inquiry

Adoption of fully electronic claim status inquiries rose by 6 percentage points, from 63 percent in the prior year to 69 percent in this report, yet the volume of telephone inquiries and the concurrent need for manual labor remained stable (Figure 7).

FIGURE 7:
Adoption and Volume of Electronic Claim Status Inquiry by Medical Plans and Providers, 2014 – 2017 Index



There was also a significant increase in the overall volume of claim status inquiries. The per-member transaction count rose to 6 inquiries per year from 3 in the prior year, and the per-claim count rose to 0.5 from 0.2 (Table 4).

Claim status inquiries are increasingly playing a role in provider revenue cycle management strategies. For example, federally mandated CAQH CORE Phase II Operating Rules, which require real-time access to claim status information, offer unique incentives for providers to access claim status. This insight allows them to rapidly respond to health plan requests for additional information needed to process payment. Some vendors offer the capability to repeatedly check the status of claims until payment has been made. In addition, it is not uncommon for provider staff to follow up with a phone call after a vendor has submitted multiple queries.

Like eligibility and benefit verifications, the volume of manual transactions remained static, and health plans continued to maintain costly call centers to field manual, phone-based inquiries. It is possible, however, that some manual transactions were not counted. This could happen when call center representatives, responding to multiple questions, complete multiple transactions in a single phone-based inquiry. These calls are typically recorded as a single transaction.

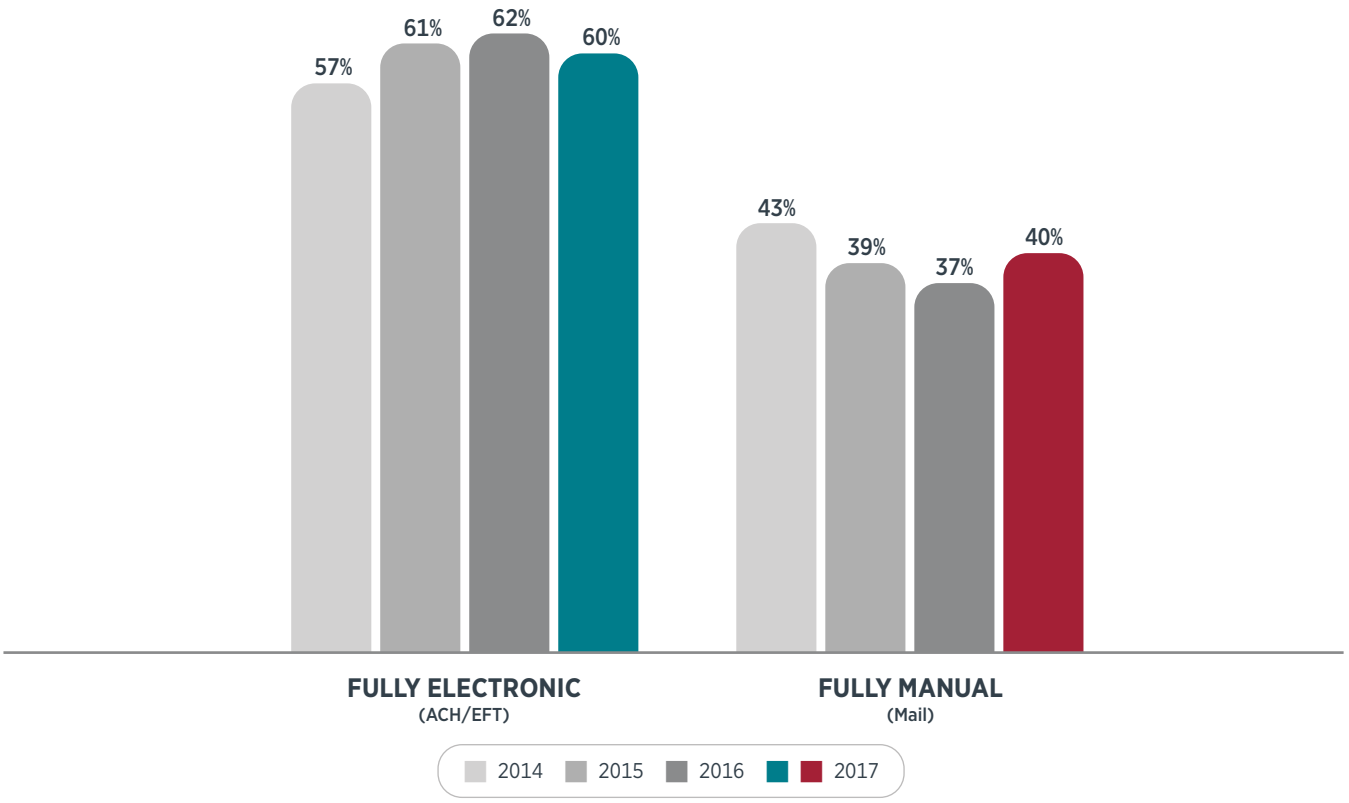
Claim Payment

Electronic funds transfer (EFT) adoption for claim payment decreased slightly, falling to 60 percent from 62 percent in the prior year.

Even with adoption of electronic claim submission at 95 percent, 37 percent of claim payments were fully manual (Figure 8). The slight decrease in the adoption level of fully electronic transactions is reflective of the specific business practices of new data contributors, as well as improved tracking by ongoing participants.

Also, the volume of claim payment transactions grew overall, per member and per claim, as compared to the prior year (Table 4). Much of this increase can be attributed to improved tracking. NACHA, the Electronic Payments Association, reported an increase (approximately 3 percent) in healthcare payments via the ACH network in 2016 and 2017. NACHA tracks ACH payments that contain a unique healthcare payment flag. NACHA mandated use of the flag for all healthcare payments in the ACH network in September 2013, a few months before the ACA federal mandate for using the ACH CCD+.

FIGURE 8:
Adoption of Electronic Funds Transfer for Claim Payment by Medical Health Plans and Providers, 2014 – 2017 Index



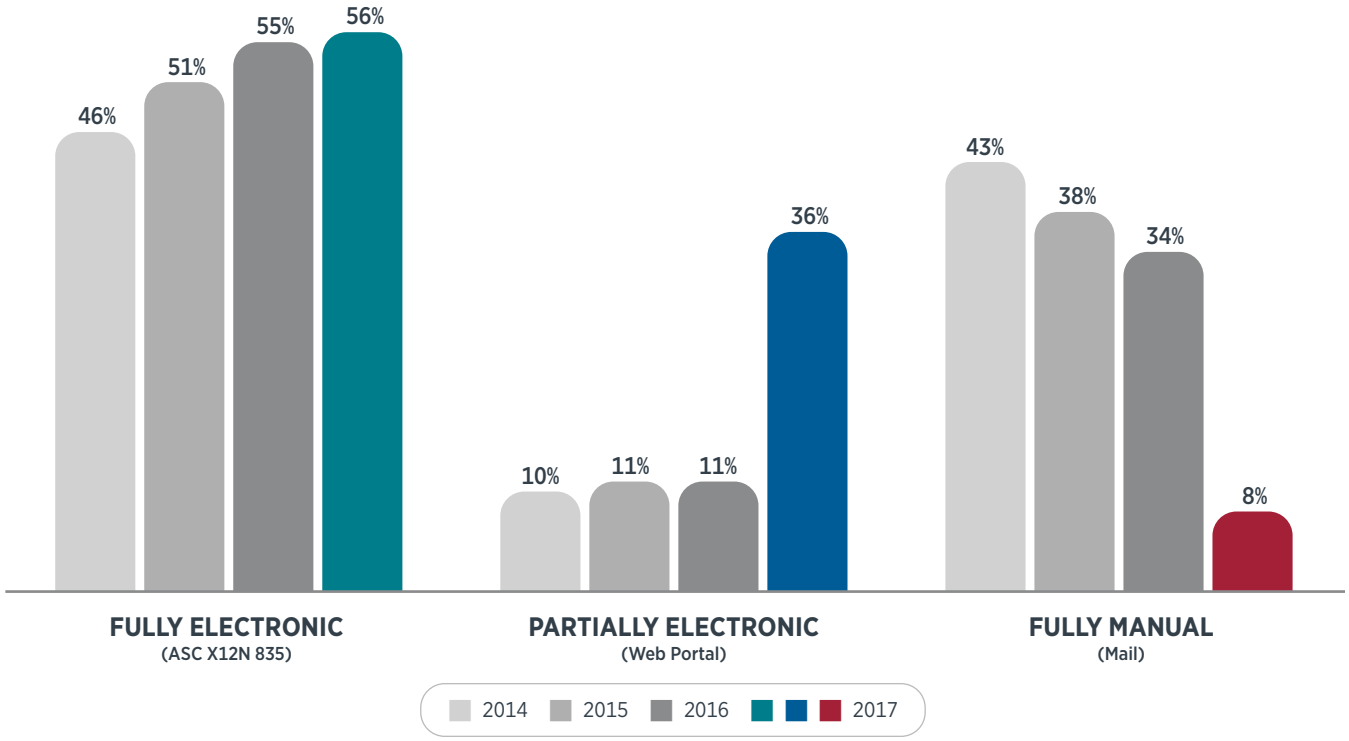
Remittance Advice

Adoption of fully electronic remittance advice (ERA) transactions increased slightly in the 2017 Index, rising to 56 percent, one percentage point over the prior year (Figure 9).

Partially electronic remittance advice transactions (online portals) increased considerably, a 25 percentage-point rise. Coupled with the slight rise in fully electronic, manual transactions fell by a total margin of 26 percentage points.

Remittance advice showed the largest increase in volume among all transactions studied (Table 4). The number of transactions grew overall, per member and per claim as compared to the prior year. This growth may be connected to the increased use of portals, as the Index reports the number of remittances that were accessed through a portal, sent via HIPAA standardized transaction in combination with EFT and/or via printed paper. Some health plans reported posting of remittances to a plan-sponsored web portal, regardless of whether the remittance was also sent by another method.

FIGURE 9:
Adoption of Electronic Remittance Advice by Medical Plans and Providers, 2014 – 2017 Index



Portals: Boost or Barrier to Adoption?

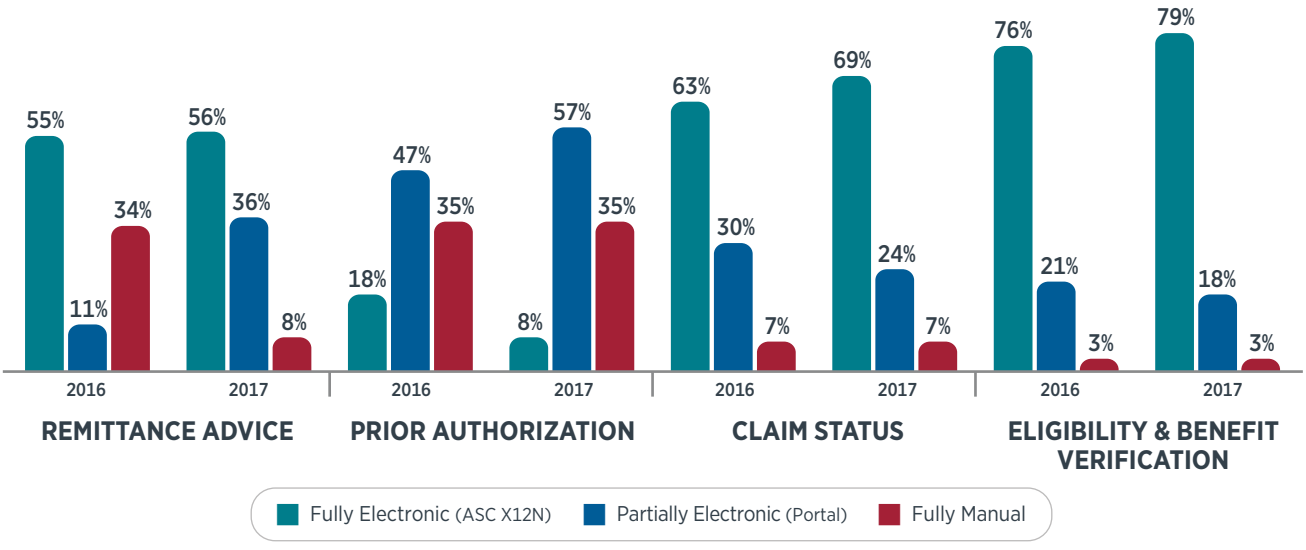
For some transactions, healthcare provider adoption of fully electronic transactions has been slower than anticipated. Numerous barriers, including some noted in this report, may be contributing to this trend.

To accelerate the move away from fully manual transactions, some health plans have responded to gaps and delays in provider adoption by promoting the use of portals. These systems offer health plans a highly automated solution, and while portals give providers access to an inherently electronic system, provider groups indicate that portals create substantial administrative burdens. This is because portals require the provider to sign on and navigate a different online system for each health plan with which the provider is contracted. Also, portals lack advanced features common to clearinghouses and clearinghouse-integrated practice management systems, such as the ability to validate claims and check eligibility and benefits prior to patient appointments.

The effect portals have on the transition to fully electronic transactions is unclear (Figure 10). They may accelerate or hinder progress. For example:

- While partially electronic transaction (portal) use increased substantially for remittance advice, growing from 11 percent of volume in the prior year to 36 percent, adoption of fully electronic transactions remained relatively steady. Also, fully manual declined at a comparable rate, falling from 34 percent in the prior year to 8 percent.
- Conversely, a substantial 10 percentage-point increase in partially electronic transaction (portal) use for prior authorization was coupled with a 10 percentage-point decline in adoption of fully electronic transactions. Use of manual transactions remained steady.
- While the overall proportion of partially electronic transaction (portal) use remained relatively high for claim status and eligibility and benefit verification (24 percent and 18 percent, respectively), both continued to decline, and fully electronic transaction adoption increased by comparable margins for both transactions.

FIGURE 10:
Transactions Affected by Portal Use, by Proportion of Volume, Medical, 2016 – 2017 Index



Prior Authorization

Adoption of fully electronic prior authorization transactions declined by 11 percentage points, and the use of partially electronic (portal) transactions rose by a similar amount, 10 percentage points (Figure 11).

In the same period, the volume of prior authorization transactions grew, from 32 million to 37 million, an increase of slightly more than 9 percent (Table 4).

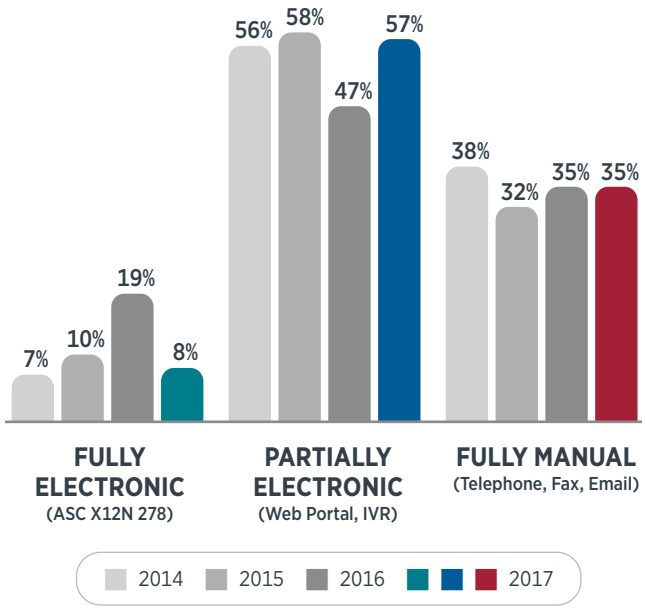
Adoption of electronic prior authorization has lagged far behind other transaction types that also have a mandated standard. There had been a hopeful sign that progress was being made to transition prior authorization transactions to fully electronic in the prior year. Adoption of fully electronic prior authorization reached a high point of 18 percent in that report and partially electronic declined.

The year-to-year volatility and low overall level of fully electronic adoption for this transaction are likely due to a confluence of market factors. For example, some national health plans reported that, because vendor products often do not support HIPAA 278 transactions, the use of partially electronic online portals is being promoted to providers as an alternative. See Supplementary Research: Practice Management System and Clearinghouse Services and Fee Structures.

Although efforts by practice management system and clearinghouse vendors are accelerating to develop and expand systems supporting provider submission of electronic prior authorization transactions, this is expected to be a protracted process given these products must accommodate the needs and requirements of multiple health plans. Also, many health plans require documentation to support a prior authorization, which necessitates attachments similar to claim attachments. While EHR systems contain many of these documents, online portals may be the more convenient option for providers who are not able to readily integrate the EHR and practice management system.

FIGURE 11:

Adoption of Electronic Prior Authorization by Medical Plans and Providers, 2014 – 2017 Index



CAQH CORE Operating Rules Address Prior Authorization

Guided by more than 100 healthcare organizations, two phases of CAQH CORE rule development have convened to help stakeholders automate the prior authorization process. As result of these efforts, Phase IV CAQH CORE Operating Rules are already in place, and Draft Phase V CAQH CORE Operating Rules will soon be complete.

Phase IV CAQH CORE Operating Rules set expectations for how the prior authorization transaction is exchanged including response times, connectivity, acknowledgement of receipt of the request and real-time and batch processing requirements.

Draft Phase V CAQH CORE Operating Rules address the data content of the prior authorization transaction and reduce the amount of manual follow-up between providers and health plans due to unclear, inconsistent or missing information. Following these rules should reduce unnecessary delays and, ultimately, improve the timely delivery of patient care.

Preliminary Findings: Transactions with No Benchmarks

Data collection was sufficient to calculate adoption benchmarks for eight of the 13 transactions studied and for seven cost estimates.

For four transactions recently added to the Index—prior authorization attachments, enrollment/disenrollment, premium payment and referral requests—no benchmarks are reported. In addition, no benchmarks are reported for acknowledgements, which is in its first year of study.

While a large amount of data was collected for the acknowledgements transaction, the number of entities contributing data did not meet Index standards for producing benchmarks. Similarly, although a large amount of data was collected for the transaction studied for the first year in this report, the Index does not calculate benchmarks until the second year of study. The high volume of data received for some of the fully electronic transactions serves as a proxy indicator for high adoption and use.

Where possible, the Index offers preliminary findings drawing from the collected data. Preliminary findings for these transactions include:

- **Prior Authorization Attachment:** Health plans reporting on this transaction indicated 100 percent fully manual attachments.
- **Enrollment and Disenrollment:** One large, national health plan and one regional health plan reported that approximately 50 percent of these transactions were fully electronic.
- **Premium Payment:** One large, national health plan reported that less than 1 percent of premium payments were handled via the HIPAA X12 820, with 82 percent being fully manual and about 18 percent managed via portals (partially electronic).
- **Referral Requests:** One large national health plan reported that approximately 80 percent of referral requests were portal-based, with 14 percent manual and 7 percent via the HIPAA 278.
- **Acknowledgements:** Five types of acknowledgement transactions were requested for this first-year pilot transaction, and a subset of health plans reported volume for three of the five types. Among them was a submission for the 837 (277CA Transaction) indicating a one-to-one acknowledgement per claim.

Acknowledgements: Real-time or Batch?

Acknowledgements assure the sender that a transaction was received. The need for providers to receive or not to receive acknowledgements for eligibility and benefit verification and claim status inquiry has no doubt been impacted by the federal mandate[12] that these two transactions must be available in real time. If a response to such an inquiry is in real time, an acknowledgement is not needed.

CAQH may further investigate trends in the use of acknowledgements in relation to using real-time or batch transactions, while also trying to compare such trends with CAQH CORE® Certification information on how entities use real-time and batch.

Commercial Dental Plans and Providers

Volume Benchmarks

Participating dental plans reported an average of six total transactions per member (Table 5). Unlike the medical sector, in which eligibility and benefit verifications greatly dominated, the majority of dental transactions were claim submissions, followed by claim payments. Dental health plan participants reported approximately two claim submissions and one claim payment per member.

TABLE 5:
Annual Volume of Administrative Transactions Reported by Dental Plans, by Enrollment and Claim Volume, 2017 Index

	Number of Transactions (in millions)	Number of Transactions per Member	Number of Transactions per Claim
Claim Submission	182	2	N/A
Eligibility & Benefit Verification	129	1	1
Claim Status Inquiry	24	<1	<1
Claim Payment	146	1	1
Remittance Advice	129	1	1
Total Transactions	**610**	**6**	**4**

N/A = Not applicable

Overall Adoption

Adoption of fully electronic transactions by dental plans and providers increased slightly for some transactions, but was 30 percentage points lower, on average, than adoption levels by medical plans and providers. The transaction with the highest level of fully electronic adoption was claim submission, with 74 percent submitted electronically (Figure 12).

Dental plans and the majority of dental providers are HIPAA-covered entities, yet their adoption of fully electronic transactions has significantly trailed that of their medical counterparts. This gap in adoption highlights the need for targeted, coordinated industry initiatives to educate and demonstrate the potential cost savings to dental plans and providers.

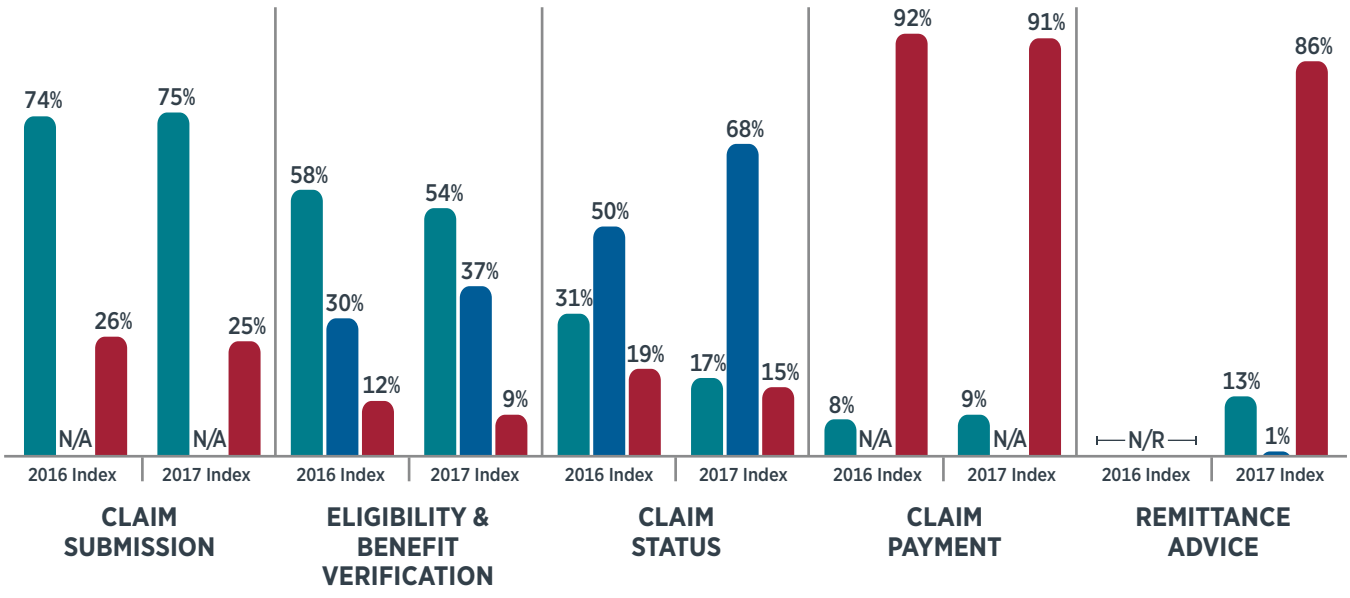
Dental industry adoption of fully electronic transactions ranged from nearly 20 percentage points lower than that of medical for claim submission to 50 percentage points lower for claim payment. While claim submission showed the highest adoption rate of the transactions measured for dental, 25 percent of claims submitted by these plans used paper-based methods. In comparison, only five percent of claims submitted by medical health plans were submitted using paper-based methods. Over 90 percent of payments from dental health plans to providers were completed by paper check.

The high adoption of fully electronic transactions for claim submission shows that dental practice management systems can support fully electronic transactions using HIPAA standards. Integrating all HIPAA standards, transactions and operating rules into the workflow of these systems, and increasing voluntary election by dental providers to implement these systems, would further drive adoption.

Similar to medical health plans, portals played an important role for dental health plans. There were increases in use of portals for eligibility and benefit verifications and claim status inquiries and corresponding decreases in adoption of fully electronic and use of manual for these two transactions.

FIGURE 12:

Adoption of Electronic Administrative Transactions by Dental Plans and Providers, 2016 – 2017 Index



N/A = Not applicable
N/R = Not reported

Cost and Time

In addition to adoption levels, the Index estimates the cost and time associated with conducting administrative transactions. These values are the multipliers needed to derive the industry savings opportunity.

Although the aggregate cost and time associated with conducting manual administrative transactions declined, the industry savings opportunity still rose. This is largely due to the increased volume of transactions overall (38 percent increase over the prior year) (Figure 3) and the increased volume of high-cost manual transactions by providers (55 percent increase over the prior year) (Figure 2).

Providers more frequently used health plan portal systems to conduct administrative transactions. The Index counts these transactions as partially electronic. This means that, for cost purposes, these portal transactions are electronic for health plans and manual for providers. Therefore, even for remittance advice, the transaction for which portal use reduced the number of fully manual transactions in the medical sector, the industry realized savings from only the health plan portion of this reduction.

In another example, increased volume of prior authorization portal transactions by the medical sector resulted in companion reductions in electronic transactions. Of the transactions tracked, prior authorization is the costliest manual transaction for medical providers at an estimated $5.75 each. Manual prior authorization transactions are also one of the most time-consuming transactions for providers, requiring between 14 and 20 minutes of staff time each.

The greatest per-transaction savings opportunities for health plans are for eligibility and benefit verifications ($4.29 per transaction) and claim status inquiries ($4.35 per transaction) (Table 6). These two transactions, as noted earlier in this report, have some of the highest volumes among all medical transactions. Moreover, these transactions often require human-to-human telephone interaction when conducted manually. The ongoing use of telephone calls requires health plans to maintain costly call center operations and a disproportionately large commitment of resources by the provider, greatly contributing to the high cost differential between manual and electronic transactions.

The greatest per-transaction savings opportunities for providers are for remittance advice ($3.69 per transaction) and claim status inquiries ($3.63 per transaction).

TABLE 6:

Average Cost per Transaction and Savings Opportunity for Medical Health Plans and Providers for Manual and Electronic Transactions, 2017 Index

Transaction	Method	Health Plan Cost	Provider Cost	Industry Cost	Health Plan Savings Opportunity	Provider Savings Opportunity	Industry Savings Opportunity
Claim Submission	Manual	$0.62	$2.46	$3.08	$0.53	$1.83	$2.35
	Electronic	$0.09	$0.63	$0.73			
Eligibility & Benefit Verification	Manual	$4.36	$2.84	$7.20	$4.29	$2.17	$6.46
	Electronic	$0.07	$0.67	$0.74			
Prior Authorization	Manual	$3.68	$5.75	$9.43	$3.64	$3.20	$6.84
	Electronic	$0.04	$2.55	$2.59			
Claim Status Inquiry	Manual	$4.39	$5.26	$9.65	$4.35	$3.63	$7.98
	Electronic	$0.04	$1.63	$1.67			
Claim Payment	Manual	$0.57	$1.59	$2.16	$0.48	$0.40	$0.88
	Electronic	$0.09	$1.19	$1.28			
Remittance Advice	Manual	$0.50	$4.82	$5.32	$0.45	$3.69	$4.14
	Electronic	$0.05	$1.13	$1.18			
Claim Attachment	Manual	$1.74	$1.68	$3.42	$1.64	$0.51	$2.15
	Electronic	$0.10	$1.17	$1.27			

Potential National Cost Savings

Medical Health Plans and Providers

The healthcare industry savings opportunity, an amount that declines as adoption and efficiency grows, instead showed a discouraging increase (Table 7). This is because a much higher number of administrative transactions were conducted using costlier manual transactions. This includes portal transactions, which are counted as partially electronic transactions. The higher volume of transactions also exacerbated the costs of latent inefficiencies from relatively low fully electronic adoption levels and varying adoption for some transactions (Figure 13).

TABLE 7:

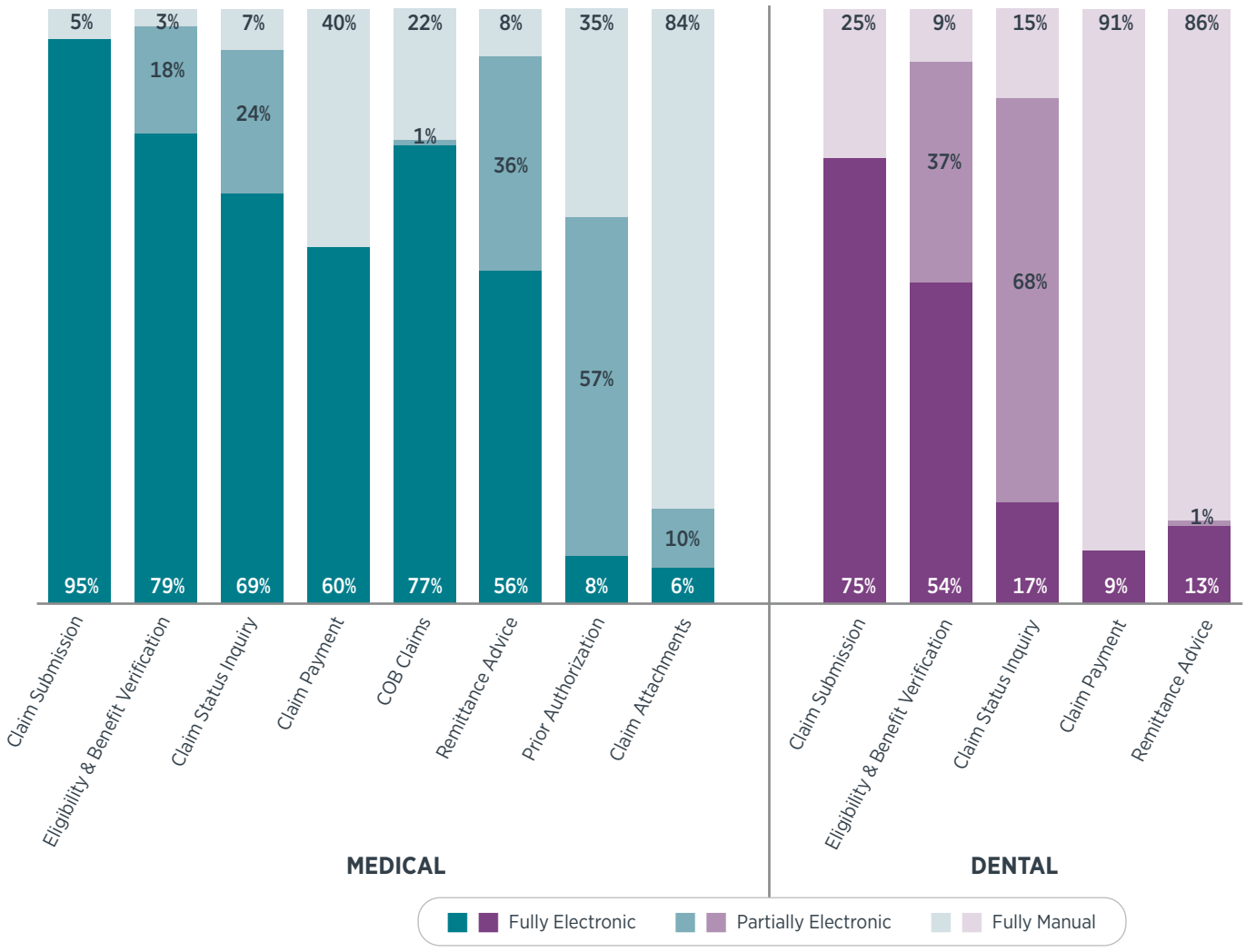
Savings Opportunity, Medical Plans and Providers, 2017 Index vs. 2016 Index (in millions)

	Health Plans	Providers	Industry National
2017	$1,708	$9,463	$11,171
2016	$1,427	$7,944	$9,371
Difference	**$281**	**$1,519**	**$1,800**

Note: Columns may not total due to rounding.

FIGURE 13:

Overall Use by Modality (Fully Electronic, Partially Electronic and Fully Manual), 2017 Index



An estimated 925 million manual transactions and nearly 13 billion electronic transactions were conducted by medical plans (Table 8). This represents a 38 percent increase over the prior year. While full adoption—meaning 100 percent use of electronic transactions—is not achievable, if it were reached for just the seven transactions benchmarked, the Index estimates that the commercial medical healthcare industry could save over $11 billion in direct administrative costs annually, an increase of $1.8 billion over the prior year.

TABLE 8:
Estimated National Volume of Administrative Transactions and Potential Savings Opportunity for Medical Health Plans and Providers, 2017 Index

	Transaction	Method	Health Plan National Volume (in millions)	Provider National Volume (in millions)	Health Plan National Savings Opportunity (in millions $)	Provider National Savings Opportunity (in millions $)	Industry National Savings Opportunity (in millions $)
MEDICAL	Claim Submission	Manual	150	150	$78	$275	$353
		Electronic	2,927	2,927			
	Eligibility & Benefit Verification	Manual	185	1,335	$795	$2,898	$3,693
		Electronic	6,239	5,089			
	Prior Authorization	Manual	35	77	$128	$245	$373
		Electronic	45	3			
	Claim Status Inquiry	Manual	86	737	$375	$2,674	$3,049
		Electronic	1,519	869			
	Claim Payment	Manual	234	234	$112	$94	$206
		Electronic	353	353			
	Remittance Advice	Manual	139	875	$63	$3,228	$3,291
		Electronic	1,679	943			
	Claim Attachment	Manual	96	96	$157	$49	$206
		Electronic	6	6			
Seven-Transaction Total		**Manual**	**925**	**3,504**	**$1,708**	**$9,463**	**$11,171**
		Electronic	**12,768**	**10,190**			

The greatest savings opportunity for medical plans is to transition more eligibility and benefit verification transactions to fully electronic. This transaction continues to represent the highest industry potential cost savings opportunity, nearly $3.7 billion from full adoption, followed by remittance advice.

For the same seven transactions, an estimated 3.5 billion manual and 10.1 billion electronic transactions were conducted by providers. Adopting automated processes for just these seven transactions could result in an estimated $9.5 billion savings for providers, an increase from $7.9 billion in the prior year. This increased savings opportunity is largely due to the increased use of portals.

The greatest provider cost savings opportunities identified are for remittance advice and eligibility and benefit verification. Together, these two transactions account for over $6 billion in potential cost savings. The claim status inquiry transaction immediately follows these two transactions in total savings potential for providers.

Beyond this estimate, transactions with public, non-commercial health plans are additional potential cost savings. As described in Appendix: Detailed Methodology, the Index tracks only direct labor costs. Substantially more savings are likely when indirect labor costs are considered.[13] This is especially true for prior authorization and claims attachments, which can significantly burden providers and patients.

Dental Plans and Providers

An estimated 1.4 billion transactions were conducted between dental health plans and providers. This estimate is for the five transactions for which benchmarks are calculated. Adopting automated processes for these five transactions could save dental health plans and providers nearly $2 billion annually (Table 9). Like the opportunity for commercial medical plans and providers, remittance advice transactions and eligibility and benefit verifications represent the largest savings opportunities (over $1.1 billion) for dental plans and providers.

An estimated 637 million manual transactions and 615 million electronic transactions were conducted by dental plans (Table 9). The greatest savings opportunity for dental plans is to transition more claim payment transactions to fully electronic. This transaction reflects $133 million in potential annual cost savings.

For the same five transactions, an estimated 772 million manual and 480 million electronic transactions were conducted by dental providers.

TABLE 9:
Estimated National Volume of Administrative Transactions and Potential Savings Opportunity for Dental Plans and Providers, 2017 Index

	Transaction	Method	Health Plan National Volume (in millions)	Provider National Volume (in millions)	Health Plan National Savings Opportunity (in millions $)	Provider National Savings Opportunity (in millions $)	Industry National Savings Opportunity (in millions $)
DENTAL	Claim Submission	Manual	96	96	$50	$176	$226
		Electronic	265	265			
	Eligibility & Benefit Verification	Manual	25	123	$106	$268	$374
		Electronic	244	146			
	Claim Status Inquiry	Manual	7	41	$32	$150	$182
		Electronic	43	9			
	Claim Payment	Manual	277	277	$133	$111	$244
		Electronic	26	26			
	Remittance Advice	Manual	232	235	$105	$868	$973
		Electronic	37	34			
	Five-Transaction Total	**Manual**	**637**	**772**	**$426**	**$1,573**	**$1,999**
		Electronic	**615**	**480**			

Time-Per-Transaction for Healthcare Providers

The Index estimates the average amount of time providers spend conducting each of the transactions studied, by type and method (manual vs. electronic). Providers were asked to estimate the average time, as well as the minimum and maximum amount of time, needed to conduct each transaction type. For eligibility and benefit verifications and claim status inquiries, these time estimates include both transmission of the transaction and receipt of a response. For the other transactions, the time does not include additional follow-up that may be involved, such as managing claim denials, responding to health plan requests for additional information or sending attachments (Table 10).

On average, providers estimate that they spend five more minutes conducting manual transactions compared to electronic transactions. In addition, provider estimates of the time required to conduct electronic transactions increased by 18 minutes as compared to the prior year while manual transaction cost estimates decreased by two-and-a-half-minutes. Depending on the transaction type, the average time difference between a manual and an electronic transaction is 10 minutes, and the maximum time can be up to 21 minutes more. Use of electronic transactions for a single claim requiring all seven transactions could save a provider almost 40 minutes on average—and as much as more than an hour.

There were reported declines in manual processing times for some transactions, specifically claim attachments and prior authorization. In addition to the time measured by the Index, these transactions can require a significant amount of provider staff time to research and prepare the transaction and to resolve issues. Participating providers report labor-intensive processes to manually send the necessary documentation for prior authorizations. Use of electronic transactions is highly dependent upon health plan capabilities. Even for providers with integrated EHR and practice management systems, most supporting documents for prior authorization are uploaded to health plan portals using manual processes.

TABLE 10:
Average and Maximum Time Spent by Providers Conducting Manual and Electronic Transactions, 2017 Index

Transaction	Method	Average Time Providers Spend per Transaction (minutes)	Max Time Providers Spend per Transaction (minutes)	Potential Average Time Saving (minutes)	Potential Max Time Saving (minutes)
Claim Submission	Manual	5	21	4	15
	Electronic	1	6		
Eligibility & Benefit Verification	Manual	8	20	6	9
	Electronic	2	11		
Prior Authorization	Manual	14	20	7	9
	Electronic	7	11		
Claim Status Inquiry	Manual	13	30	8	21
	Electronic	5	9		
Claim Payment	Manual	4	10	1	2
	Electronic	3	8		
Remittance Advice	Manual	13	19	10	8
	Electronic	3	11		
Claim Attachment	Manual	4	8	1	2
	Electronic	3	6		
Total Potential Time Savings for the Seven Transactions				**37**	**66**

Supplementary Research: Practice Management System and Clearinghouse Services and Fee Structures

Adoption of fully electronic administrative transactions can deliver substantial cost savings to providers, yet to achieve these savings, an investment in technology is needed. Moving from manual to electronic requires providers to implement a practice management system or clearinghouse services.

This research supplement continues an effort to more fully appreciate the options available to providers as they consider adopting electronic administrative transactions.

About This Research

CAQH engaged Milliman, Inc. to conduct research with practice management system vendors and clearinghouses to understand:

- The pricing structures of vendor services and systems that providers use to support automated transactions.
- The costs associated with establishing and maintaining these vendor relationships.
- The market share of vendors, as measured by the volume of transactions that flow through vendors, from the providers to payers, versus directly from provider to payer. *Note: Due to vendor sensitivities in providing market share information, Milliman and CAQH were unable to complete this third objective.*

The research focused on vendor solutions for common EDI transactions—a set of six transactions that have been studied by the Index for several years: claim submission, eligibility and benefit verification, prior authorization, claim status inquiry, claim payment and remittance advice.

For this research, "practice management systems" and "clearinghouses" were defined as:

- **Practice management systems** are software solutions used by healthcare practices to manage daily administrative and financial functions. These systems schedule patient encounters, capture patient demographics and information about insurance sources and payers, verify eligibility and benefits and submit claims. Some offer advanced revenue cycle management functions. The functionality of EHR and practice management systems increasingly overlap, and there are efforts to improve interoperability or enable integration. There are hundreds of vendors, all with various EDI functions, value-added functions, customer support models, interoperability capabilities and pricing structures.
- **Clearinghouses** are third-party intermediaries that securely send and receive electronic transactions to multiple payers on behalf of providers. They can be thought of as "hubs" that enable healthcare practices or their contracted practice management system vendors to securely manage all electronic transactions in one place. They check, and may correct, claims for errors prior to submission to the payer for reimbursement. Some clearinghouses offer more robust capabilities. For example, they may perform eligibility and benefit verification prior to patient appointments, track payments via electronic remittance advice, report on claim status, analyze rejections and more. There are a few dozen clearinghouses.

Market Overview

The lines between practice management system vendors and clearinghouses are increasingly blurring against a backdrop of acquisitions, partnerships and build-out capabilities.

Practice management system vendors are building clearinghouse capabilities by developing solutions and building relationships directly with payers and by acquiring clearinghouse solutions. In other cases, practice management system vendors are being bought by clearinghouses.

It is also important to note that clearinghouses and practice management system vendors can offer functions that overlap, such as analysis of claims and reasons for denials. In addition, companies that have traditionally served as clearinghouses also provide practice management solutions.

While some practice management vendors work with a variety of clearinghouses, some have "preferred" partnership relationships with specific clearinghouses.

Insights From the Research

Vendors in the practice management system and clearinghouse marketplace offer an array of products with varying costs and pricing models.

A review of these offerings revealed that not all products support every transaction type (Table 11). For example, 76 percent of vendor offerings include functionality to support eligibility and benefit verification, but only 12 percent support prior authorization. This means that providers may have to purchase technology solutions from more than one vendor to automate all of the common EDI transactions.

TABLE 11:
Vendor Offerings by Type and Transactions Supported

Product Types	Number Reviewed	Claim Submission	Eligibility & Benefit Verification	Claim Status Inquiry	Claim Payment	Remittance Advice	Prior Authorization
All	**34**	**91%**	**76%**	**79%**	**85%**	**74%**	**12%**
Primarily Practice Management System Products	14	93%	79%	71%	100%	79%	7%
Primarily Clearinghouse Products	11	82%	82%	82%	73%	82%	18%
Hybrid Practice Management System/ Clearinghouse Products	9	100%	89%	89%	78%	56%	11%

Notably, prior authorization transactions were least likely to be included among the products in this review. Some vendors indicated that, while prior authorization is not currently supported by their systems, it is under consideration as a future offering. Other vendors indicated that, while their systems do currently support prior authorization, it is not part of the core functionality in product offerings to providers.

Further, a review of pricing structures for practice management system and clearinghouse products that include EDI functionality revealed a complex array of pricing model frameworks.

For example, in small provider practices (one to five providers), some practice management system products are sold on a per-FTE provider, per-month basis. These fee structures sometimes come with caps on the number of transactions a provider may process in a single month. In other pricing models, which typically include the services of a biller, the fee is based on a percentage of collections.

In mid-size provider practices (six to 25 providers), a flat-fee pricing model is more common for practice management systems. A pricing model that charges a monthly fee for the entire practice may also be an option. Similar pricing models are offered to large practices, networks and health systems (25 or more providers), although vendors are typically more willing to negotiate with these organizations and offer volume-based discounts.

In the clearinghouse marketplace, at least three models were identified for small practices, beginning with the per-transaction model. Providers may also purchase transactions on a bulk basis—a lower total rate for a larger number of transactions. The third option is on a per-FTE provider per-month basis.

Options for mid-size and large provider practices include a per-transaction option or a per-FTE provider model. Clearinghouses may offer mid-size and large groups some customization of functionality, such as the ability to support eligibility and benefit verification transactions in addition to standard functionality of claims submissions. Large provider practices have the potential to negotiate savings on the basis of volume.

CAQH Considers Feasibility Analysis of Vendor Products and Fees for Future Index

The flow of transactions from the provider to payer is often indirect. Some transactions flow through a practice management system vendor and a clearinghouse before going to the payer, while others flow through only a clearinghouse or more than two vendors. The additional provider costs associated with vendor agreements for each of these "hops" is not well documented.

Since it is important for providers to have comprehensive information about moving to fully electronic transactions, including tools to estimate vendor-related costs, CAQH will consider a feasibility analysis to reveal insights about these costs for one of the common EDI transactions in a future Index. The analysis would focus on gaining an understanding of the volume of transactions by the various "hops" from the provider to the payer and estimating the cumulative vendor-related costs that providers incur.

Industry Call to Action

More than 20 years ago, the Health Insurance Portability and Accountability Act of 1996 (HIPAA) established a federal mandate for all HIPAA-covered entities to adopt fully electronic administrative transactions. The ACA expanded and clarified these mandates and reinforced the importance of making the transactions functional. Today, CMS is pilot-testing a "proactive compliance review" and, in the future, could impose penalties on HIPAA-covered entities found to be non-compliant with federal mandates.

No goals have been established—by industry, government or any other stakeholder—to define success in the transition from manual to fully electronic administrative transactions. No one knows how much progress should be expected from industry or any particular stakeholder in a single year. What is well understood, however, is the clear need for a sustained sense of urgency.

Healthcare industry stakeholders have collaborated for more than a decade through CAQH CORE to streamline implementation and expand the use of fully electronic administrative transactions through development of operating rules that define the "rules of the road" for those transactions.

Many organizations voluntarily implemented standard electronic administrative transactions; others were motivated by HIPAA mandates and subsequently by the ACA. No doubt, others yet were motivated by vigorous industry education campaigns drawing on early adopters who were willing to share leading practices with peers, or by efforts documenting the savings opportunity.

While these initiatives have advanced the transition to fully electronic administrative transactions, it has taken nearly 20 years for industry to achieve the levels of adoption seen today.

Results from the 2017 Index show that the relatively slow, incremental progress reported in recent years is no longer enough. All stakeholders have a role in driving administrative costs and inefficiencies out of the healthcare system. CAQH proposes the following actions in response to the reported results:

1. **Support provider access to robust EDI systems.** The savings potential from implementation of fully electronic administrative transactions is well-documented. Fully electronic administrative transactions are more efficient, less costly and less time-consuming than manual transactions. However, the 2017 Index demonstrates that the industry savings opportunity has been out of reach for many stakeholders.

   The vendor community, specifically clearinghouses and practice management system vendors, can more completely support the adoption and ongoing use of fully electronic transactions by prioritizing the development of products and services that give providers a greater range of alternatives.

2. **Expand industry understanding of portals.** In some cases, health plan portals may offer strategic tools that help eliminate use of manual transactions while giving providers a more convenient path to EDI. In other cases, however, portals may stall or reverse progress made in prior years to increase adoption of fully electronic transactions.

   Industry should examine the role of portals and the effects their use has on the transition to fully electronic transactions. Further, industry should share this knowledge with stakeholders to help them make informed choices about the cost and efficiency of processing transactions by all methods.

3. **Embrace the transition to fully electronic transactions.** For the manual-to-electronic transition to achieve and sustain the level of progress needed, a greater commitment is needed by those entities that have already adopted fully electronic transactions.

All HIPAA-covered entities, which are required by law to have adopted the electronic transactions, should become partners in advancing the transition by encouraging peers to adopt the transactions, by sharing best practices, and perhaps by incentivizing non-HIPAA-covered business partners to support the use of electronic transactions.

Further, individuals working at health plans, provider practices, hospitals and health systems, vendor companies or other stakeholder organizations can play a role within their organizations as advocates for fully electronic transactions.

Many of the trends responsible for driving the volume of transactions higher in the 2017 Index are expected to continue or accelerate. While the overall number of insured patients is projected to decline slightly in the coming years[14], a growing proportion of patients are covered by complex insurance products, such as high-deductible health plans. This trend is thought to drive use of eligibility and benefit and claim status transactions. Also, use of automation to improve revenue cycle management can be expected to continue.

In addition, as an increasing proportion of care is delivered, billed and paid under emerging value-based payment arrangements, new demands are being put on healthcare administration and operations.[15] For example, under value-based payment, the need for integration of clinical, financial and administrative data is accelerating. Value-based payment requires more precise operational processes than those required to administer fee-for-service claims. These changes add a layer of complexity to value-based payment and may, in the short-term, present challenges.

Going forward, the three strategies outlined above can advance the transition to fully electronic transactions and facilitate its long-term momentum.

Future Enhancements to the Index

The Index is continually refined to support its mission of accelerating the transformation of business processes in healthcare and promoting the associated cost savings. Future Index enhancements under consideration include:

Increasing the Number and Broadening the Scope of Health Plans and Providers Represented

Health plans are encouraged to become data contributors, particularly smaller-sized regional health plans. To fully address the 13 transactions currently studied by the Index, a larger number of health plans capable of providing data on all of these transactions, and for all three modalities (fully electronic, partially electronic and manual), is required.

In addition, providers are actively recruited to participate in the Index. Moving forward, the Index will focus on recruiting more mid-sized hospitals as participants.

For more information, contact the lead researcher at explorations@caqh.org.

Adding Data From Government Programs

Ideally the Index could provide results for the entire U.S. population covered by health insurance. While the Index includes data from commercially insured, Medicare Advantage and managed Medicaid, it does not include data from the Medicare Fee-for-Service program or state-operated Medicaid programs. These programs require many of the same payer/provider inquiries and interactions as the commercial industry. Substantial additional savings opportunities may exist in transactions not evaluated in current estimates. The 2016 Index included comparable adoption data for two transactions, claim submission and remittance advice; at that time the claim submission adoption level for Medicare Fee-for-Service was publicly available on the CMS website, while the remittance advice data was provided by special request. Those resources were unavailable for 2017. The Index Advisory Council will continue to work with CMS and Medicaid agencies to encourage participation and data sharing.

Improving the Precision of Savings and Cost Estimates

The potential savings estimates assume a one-to-one conversion of manual to electronic transactions. In reality, the increased availability of inexpensive electronic transactions and the growth of portal use, plus other market trends (e.g., greater use of high-deductible health plans), may lead to additional numbers of transactions, rather than an exact one-for-one replacement. Additionally, current cost estimates focus on direct labor costs as reported by providers and health plans. There are several indirect cost components that may present further savings opportunities, such as time and costs associated with gathering information, the impact on information gathering when an EHR is not integrated with a practice management system and general overhead, including vendor fees. Additional approaches to more precisely estimating the direct and indirect cost of administrative transactions for providers and health plans are being explored by the Index Advisory Council.

Understanding the Impact of Alternative Payment Models on Adoption and Tracking

Current federal and industry initiatives to boost U.S. adoption of electronic administrative transactions were created to support interactions between the health plans and providers in the traditional fee-for-service payment environment. Many health plans in the industry now use value-based payment models, and in many cases the existing transactions are being integrated and used by these programs. It is expected that the most well-received value-based payment models will become more commonplace in the coming years. As a result, the types of information exchange needed for automating payments will change, and the speed with which entities need to access some of the data will move to a more real-time environment. The Index Advisory Council is considering how it can begin to integrate these changes into the tracking of business transactions in the Index.

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Organization	2017 Advisory Council Member
Aetna	Jay Eisenstock
America's Health Insurance Plans (AHIP)	Tom Meyers
Anthem	Katy Blomeke
Blue Cross Blue Shield of Michigan	John Bialowicz
Streamline Health, Inc. (Cooperative Exchange)	Richard Nelli
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United Healthcare	Diana Lisi

NOTE: The health plan organizations listed here do not necessarily participate as data contributors. To ensure data privacy, CAQH does not make the complete list of health plan data contributors available.

Appendix: Detailed Methodology

Benchmark Definitions

Four benchmarks are reported for each of the transactions studied (Table 12, Appendix), where possible:

- **Adoption rate**—The degree to which commercial health plans complete transactions using fully electronic, partially electronic or manual methods, as estimated by the participating health plans.
- **Cost per transaction**—The labor costs (e.g., salaries, wages, personnel benefits and related overhead costs) associated with electronic and manual transactions, as estimated by the participating health plans and providers.
- **National potential cost savings**—The potential cost savings are estimated using the enrollment levels, transaction volumes and cost-per-transaction estimates from the participating health plans and the cost estimates from the providers.
- **Time per transaction for providers**—The time is estimated using the average time required to conduct manual and electronic transactions, as reported by providers.

Benchmark Standards

Benchmarks are calculated and reported for transactions beginning in the second year of study. In subsequent years, benchmarks are calculated and reported for transactions for which three or more entities have submitted data. All data is reported in aggregate. Preliminary findings are provided in the report, as appropriate, for transactions with insufficient data for purposes of calculating benchmarks.

Recruitment

Health plans and providers were recruited using a number of methods, including direct outreach (e.g., email/telephone), webinars and website postings. CAQH managed recruitment of health plan data contributors and partnered with Milliman, Inc., which led recruitment of practice management system vendors and clearinghouses, as well as the data collection and analysis. CAQH partnered with NORC at University of Chicago (NORC), which led provider recruitment, data collection and analysis. CMS data on adoption of electronic administrative transactions in Medicare fee-for-Service was not available for inclusion in the 2017 Index.

Data Collection

Adoption Rates

Adoption rates were calculated using data submitted by commercial health plans. A detailed data submission guide was developed for the health plans to reference, to ensure standardized definitions and collection of data elements. In addition, a series of webinars provided guidance on the data collection tools.

The health plan participants submitted data directly. All data submissions were reviewed and evaluated for missing or incomplete data and potential errors. Any potential deficiencies were discussed directly with the health plan and were adjusted as necessary.

All transactions were classified into one of three categories, also referred to as transaction "method" in this report:

- **Fully Electronic**—Includes electronic transactions conducted using the adopted HIPAA standard (Table 12, Appendix).
- **Partially Electronic**—Includes partially electronic solutions, including web portals and interactive voice recognition (IVR) systems.
- **Fully Manual**—Includes all transactions requiring end-to-end human interaction, such as telephone, fax and mail.

Cost of Transactions

Separate, but comparable, data collection tools were developed for health plans and providers to estimate the fully loaded labor costs (e.g., including salaries, wages, personnel benefits and other related overhead costs) for each transaction. Participants rely on a variety of internal reporting systems to produce cost and labor time estimates. Whether the transaction was electronic or manual, estimates include only those resources required to complete the actual transaction; they do not include the labor or other costs associated with preparing materials for the transaction, resolving issues with the transaction or subsequent follow-up. Transactions were classified in two categories for all cost-related analyses:

- **Electronic**—For health plans, these include all transactions conducted using either the HIPAA standardized transaction, comparable EDI technology, web portal or IVR (i.e., fully electronic and partially electronic). For providers, these include only those transactions conducted using the adopted HIPAA standard (i.e., fully electronic), as web portal and IVR transactions require full human effort on the provider side of the transaction.
- **Manual**—For health plans, these include all transactions conducted via telephone, fax or mail (i.e., fully manual). For providers, these include the same with the addition of web portal and IVR transactions (i.e., partially electronic and fully manual).

Data Analysis

For the purpose of this report, all analyses were conducted in the aggregate to ensure individual participants were not identifiable according to established data-sharing agreements. Some participants were not capable of reporting adoption and cost for all transactions or all methods. In these instances, the plans were excluded on a transaction-by-transaction basis. Benchmarks are not reported in cases where there is insufficient data; however, some preliminary findings are provided in the report, as appropriate.

Adoption Rates

For each transaction, the annual adoption rates were computed by method as a proportion of the total volume by transaction. The annual percentage point change is presented for transactions with multiple years of available data and was calculated as the arithmetic difference between percentages reported in the current (e.g., 2017 Index) and the prior year report (e.g., the 2016 Index).

Transaction Cost and Time Estimates

Cost per transaction was computed for each transaction using weighted averages based on volume of enrollment for health plans and volume of transactions for providers. The weighted averages per transaction by method were used to estimate the potential cost savings for each transaction as the difference between the cost of electronic and manual transactions. Similarly, the time-per-transaction estimates were computed using the minimum, maximum and average time for each transaction and average staff salaries with weighted averages based on volume of transactions for providers by transaction type and method.

Commercial Healthcare Industry Potential Savings: Cost

For each transaction, the potential national savings was estimated using the enrollment levels, volume and cost estimates from the contributing health plans and the cost per transaction from providers. For each transaction, there are costs associated with sending and receiving the transaction. For example, when a claim is faxed to a health plan, resources are consumed when the provider sends and when the health plan receives the claim. As such, cost savings are estimated with consideration for labor for both sending and receiving transactions. Transactions are still classified as outlined above—electronic and manual. This two-step process is described below:

- **Estimate National Volume**—For each transaction, the total volume of transactions occurring in the U.S. commercial industry is estimated based on the proportion of the U.S. commercial enrollment represented by contributing health plans. The volume of covered lives for all non-participating commercial health plans is captured from the "AIS's Directory of Health Plans"[16]. The extrapolated national volumes of each transaction are calculated by method as follows for both health plans and providers:

$$\text{Extrapolated Volume (for each modality)} = \frac{\text{Volume Reported by Health Plans}}{\text{Percent of Commercial Enrollment Represented}}$$

- **Estimate National Cost**—To estimate the potential savings from the industry by achieving full adoption of electronic transactions, costs are estimated by multiplying the estimated national volume of manual transactions (from the previous step) by the cost difference between the electronic and manual transactions, by transaction type.

Potential Commercial Healthcare Industry Savings: Time

The potential time savings are estimated using the average time required to conduct manual and electronic transactions, as reported by providers.

Data Limitations

Claim Submissions

Claims that were initiated manually by a provider and converted to an electronic claim (e.g., by a practice management system vendor or clearinghouse) before being submitted to the health plan would ultimately have been reported to the Index as a fully electronic claim submission.

Claim Payment

Multiple claims are often paid in a single payment.

Adjudicated claims resulting in no payment are included.

Cost Per Transaction

The costs and savings reported account only for the labor time required to conduct the transactions themselves. They do not reflect the time and cost associated with gathering information for the transactions. These untracked costs could be extensive for some health plans and providers, especially for certain transactions. Because these costs would be incurred regardless of whether the transactions were electronic or manual, they are not included in these analyses. Other industry calculations that show much higher costs associated with a transaction may include an expanded scope of human resource and associated costs. Moving forward, the methodology will be revisited, taking changes, such as integration of information into the EHR or health plan website, into account.

The cost differences between different years do not reflect a true trend in cost over that time; instead they are related to sampling factors (e.g., salary, learning curve of processing electronic transactions, provider specialty type) and improvements in the survey methodology (i.e., modifications to the survey instrument and structured interviews with participating providers).

Cost

Year-to-year cost differences do not reflect a true trend in cost over time. The reported costs are highly reflective of sampling factors (e.g., salary, learning curve of processing electronic transactions, provider specialty type) and improvements in the survey methodology (i.e., modifications to the survey instrument and structured interviews with participating providers).

Coordination of benefits transaction costs for providers were not collected and are not addressed in the cost savings analysis.

The potential industry cost savings is likely underestimated in some areas and overestimated in others:

- By definition, costs and savings are reported solely for the transaction itself and do not account for the time and costs associated with gathering information for the transactions. These untracked costs could be extensive for some health plans and providers. Because these costs would be incurred regardless of whether the transactions were electronic or manual, they are not included in these analyses. Currently this is especially true for prior authorization and attachments; however, this may change if practice management systems and EHRs integrate.
- The simplifying convention of estimating cost saving opportunities, based on the full gap between current levels of electronic administrative transaction adoption and full adoption, was used. This approach overestimates the opportunity to reduce costs, as achieving 100 percent adoption may not be realistic.
- The estimates of potential savings also assume a strict demarcation of manual vs. electronic transactions, whereas in reality some automated processes may require manual oversight.
- Clearinghouses that act as intermediaries between health plans and providers may convert transactions from manual to electronic or vice versa. This may cause over- or under-estimation of the potential for savings, especially for providers.

TABLE 12:
Overview of Electronic Administrative Transactions Studied in the 2017 Index

Transaction	HIPAA Standard	Description	First Index Report Year Studied (MEDICAL)	First Index Report Year Studied (DENTAL)
Claim Submission	ASC X12N 837	A request to obtain payment or transmission of encounter information for the purpose of reporting health care.	2013	2015
Eligibility & Benefit Verification†	ASC X12N 270/271	An inquiry from a provider to a health plan, or from one health plan to another, to obtain eligibility, coverage, or benefits associated with the health or benefit plan, and a response from the health plan to a provider.	2013	2015
Prior Authorization	ASC X12N 278	A request from a provider to a health plan to obtain an authorization for health care, or a response from a health plan for an authorization.	2013	
Claim Status Inquiry†	ASC X12N 276/277	An inquiry from a provider to a health plan to determine the status of a health care claim or a response from the health plan.	2013	2015
Claim Payment†	NACHA Corporate Credit or Deposit Entry with Addenda Record (CCD+)	The transmission of payment, information about the transfer of funds, or payment processing information from a health plan to a provider.	2013	2015
Remittance Advice†	ASC X12N 835	The transmission of remittance advice, including final adjudication and reasons for adjustments, from a health plan to a provider.	2013	2016
Claim Attachment	No standard adopted by HHS*	Additional information submitted with claims or claim appeals, such as medical records to support the claim.	2014	2016
Prior Authorization Attachment	No standard adopted by HHS*	Additional information submitted with a prior authorization or pre-certification request, such as medical records to explain the need for a particular procedure or service.	2014	

Transaction	HIPAA Standard	Description	First Index Report Year Studied (MEDICAL)	First Index Report Year Studied (DENTAL)
Coordination of Benefits Claim/ Crossover Claim	ASC X12N 837	COB/crossover claims are a subset of all claim submissions above. These are claims sent to secondary payers with an attached or included explanation of payment information from the primary payer.	2015	
Referral Certification	ASC X12N 278	Referral certification is a request from a provider to a health plan for permission to refer a patient to another provider.	2015	
Employer/HIX/ Broker Enrollment/ Disenrollment	ASC X12N 834 005010X220 (health plan sponsor) 005010X307 (HIX)	Enrollment/disenrollment transactions can be initial enrollments; full file replacement (enrollment changes or to true-up enrollment); or additions, changes, and terminations of enrollment.	2015	
Employer/HIX/Broker Premium Payment/ Explanation	ASC X12N 820 005010X218 (employer) 005010X306 (HIX)	The premium payment transaction can be sent to a bank to move money only; sent to a bank to move money with detailed remittance info; or sent directly to the payee with remittance information only.	2015	
Acknowledgements		First-year pilot assessing the use of transaction acknowledgements for: ■ Claim Acknowledgement for 837 (277CA) ■ Eligibility and Benefit Verification (999 Functional Acknowledgement for 270) ■ Claim Status Inquiry (999 Functional Acknowledgement for 276) ■ COB/Crossover Claim (999 Functional Acknowledgement for 837) ■ Referral Certification (999 Functional Acknowledgement for 278)	2017	2017

† Both HIPAA standards and operating rules are federally mandated.

* ASC X12N 275 and HL7 CDA are both industry recognized standards for electronic attachments.

Endnotes

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