FILED

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MIDDLE DISTRICT OF FLORIDA
JACKSONVILLE, FLORIDA

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF FLORIDA
JACKSONVILLE DIVISION

PPS DATA, LLC, a Nevada limited liability company,

Plaintiff,

v.

Case No. 3:11-cv-748-J-37 MCR

CAPARIO, INC., a Delaware corporation;

Defendant.
_____/

JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

PPS Data, LLC ("PPS Data") brings this action against defendant Capario, Inc. ("Capario"), and alleges:

THE PARTIES

1. PPS Data is a limited liability company organized under the laws of the State of Nevada and has its principal place of business in Salt Lake City, Utah.

2. On information and belief, Capario is a corporation with headquarters in Santa Ana, California, organized and existing under the laws of the State of Delaware, has designated its registered agent as Corporation Service Company and office for purposes of service of process as Corporation Service Company, 2711 Centerville Rd., Suite 400, Wilmington, Delaware 19808 and is doing business in this judicial district.

JURISDICTION AND VENUE

3. This is an action for patent infringement arising under the provisions of the Patent Laws of the United States of America, Title 35, United States Code.

4. Subject-matter jurisdiction over PPS Data's claims is conferred upon this Court by 28 U.S.C. §§ 1331 and 1338(a).

5. On information and belief, Capario has solicited business in the State of Florida, transacted business within the State of Florida and attempted to derive financial benefit from residents of the State of Florida, including benefits directly related to the instant patent infringement cause of action set forth herein.

6. On information and belief, Capario has placed its infringing goods, systems, methods, compositions and/or services, including, but not limited to Capario's "Portal Technology" system, into the stream of commerce throughout the United States, which goods, systems, methods, compositions and/or services have been offered for sale, sold and/or used in the State of Florida and/or in the District of Florida.

7. Capario, directly or through its subsidiaries, divisions, groups or distributors has committed acts of infringement in this judicial district, is subject to personal jurisdiction in this judicial district, and/or is doing business in this judicial district.

8. Venue is proper in this judicial district under 28 U.S.C. §§ 1391(c) and/or 1400(b).

CLAIMS FOR RELIEF

CLAIM 1

Patent Infringement of U.S. Patent No. 6,343,271

9. On January 29, 2002, U.S. Patent No. 6,343,271 ("the '271 patent"), entitled "Electronic Creation, Submission, Adjudication, and Payment of Health Insurance Claims" a copy of which is attached as Exhibit A, was duly and legally issued by the United States Patent and Trademark Office. PPS Data is the owner of all right, title and interest in and to the '271 patent,

including the right to sue for and recover all past, present and future damages for infringement of the '271 patent.

10. Upon information and belief, Capario, directly or through its subsidiaries, divisions or groups, has infringed and continue to infringe the '271 patent by making, using, selling and/or offering to sell, or allowing others to make, use, sell and/or offer for sale, in the United States, Florida and/or this judicial district, goods, systems, methods, compositions and/or services that are covered by one or more of the claims of the '271 patent, including, but not limited to claims 1, 2, 7, 10, 12, 17, 18, and 19. Capario is liable for infringement of the '271 patent pursuant to 35 U.S.C. § 271.

11. Capario's acts of infringement have caused damage to PPS Data, and PPS Data is entitled to recover from Capario the damages sustained by PPS Data as a result of Capario's wrongful acts in an amount subject to proof at trial.

12. As a consequence of the infringement complained of herein, PPS Data has been irreparably damaged to an extent not yet determined and will continue to be irreparably damaged by such acts in the future unless Capario is enjoined by this Court from committing further acts of infringement.

13. Upon information and belief, one or more of Capario's acts of infringement have been or will be undertaken with knowledge of the '271 patent. Such acts constitute willful infringement and make this case exceptional pursuant to 35 U.S.C. §§ 284 and 285 and entitle PPS Data to enhanced damages and reasonable attorneys' fees.

CLAIM 2

Patent Infringement of U.S. Patent No. 6,341,265

14. On January 22, 2002, U.S. Patent No. 6,341,265 ("the '265 patent"), entitled "Provider Claim Editing and Settlement System" a copy of which is attached as Exhibit B, was duly and legally issued by the United States Patent and Trademark Office. PPS Data is the owner of all right, title and interest in and to the '265 patent, including the right to sue for and recover all past, present and future damages for infringement of the '265 patent.

15. Upon information and belief, Capario directly or through its subsidiaries, divisions or groups, has infringed and continues to infringe the '265 patent by making, using, selling and/or offering to sell, or allowing others to make, use, sell and/or offer for sale, in the United States, Florida and/or this judicial district, goods, systems, methods, compositions and/or services that are covered by one or more of the claims of the '265 patent, including, but not limited to claims 1-5, 10-16 and 18-27. Capario is liable for infringement of the '265 patent pursuant to 35 U.S.C. § 271.

16. Capario's acts of infringement have caused damage to PPS Data, and PPS Data is entitled to recover from Capario the damages sustained by PPS Data as a result of Capario's wrongful acts in an amount subject to proof at trial.

17. As a consequence of the infringement complained of herein, PPS Data has been irreparably damaged to an extent not yet determined and will continue to be irreparably damaged by such acts in the future unless Capario is enjoined by this Court from committing further acts of infringement.

18. Upon information and belief, one or more of Capario's acts of infringement have been or will be undertaken with knowledge of the '265 patent. Such acts constitute willful infringement

and make this case exceptional pursuant to 35 U.S.C. §§ 284 and 285 and entitle PPS Data to enhanced damages and reasonable attorneys' fees.

CLAIM 3

Patent Infringement of U.S. Patent No. 7,194,416

1. On March 20, 2007, U.S. Patent No. 7,194,416 ("the '416 patent"), entitled "Interactive Creation and Adjudication of Health Care Insurance Claims" a copy of which is attached as Exhibit C, was duly and legally issued by the United States Patent and Trademark Office. PPS Data is the owner of all right, title and interest in and to the '416 patent, including the right to sue for and recover all past, present and future damages for infringement of the '416 patent.

2. Upon information and belief, Capario, directly or through its subsidiaries, divisions or groups, has infringed and continues to infringe the '416 patent by making, using, selling and/or offering to sell, or allowing others to make, use, sell and/or offer for sale, in the United States, Florida and/or this judicial district, goods, systems, methods, compositions and/or services that are covered by one or more of the claims of the '416 patent, including, but not limited to claims 1-12. Capario is liable for infringement of the '416 patent pursuant to 35 U.S.C. § 271.

3. Capario's acts of infringement have caused damage to PPS Data, and PPS Data is entitled to recover from Capario the damages sustained by PPS Data as a result of Capario's wrongful acts in an amount subject to proof at trial.

4. As a consequence of the infringement complained of herein, PPS Data has been irreparably damaged to an extent not yet determined and will continue to be irreparably damaged by such acts in the future unless Capario is enjoined by this Court from committing further acts of infringement.

5. Upon information and belief, one or more of Capario's acts of infringement have been or will be undertaken with knowledge of the '416 patent. Such acts constitute willful infringement and make this case exceptional pursuant to 35 U.S.C. §§ 284 and 285 and entitle PPS Data to enhanced damages and reasonable attorneys' fees.

PRAYER FOR RELIEF

WHEREFORE, PPS Data prays for entry of judgment that:

A. Capario has infringed the '271 patent;

B. Capario account for and pay to PPS Data all damages caused by its infringement of the '271 patent, and to enhance such damages as appropriate, all in accordance with 35 U.S.C. § 284;

C. Capario has infringed the '265 patent;

D. Capario account for and pay to PPS Data all damages caused by its infringement of the '265 patent, and to enhance such damages as appropriate, all in accordance with 35 U.S.C. § 284;

E. Capario has infringed the '416 patent;

F. Capario account for and pay to PPS Data all damages caused by its infringement of the '416 patent, and to enhance such damages as appropriate, all in accordance with 35 U.S.C. § 284;

G. PPS Data be granted permanent injunctive relief pursuant to 35 U.S.C. § 283 enjoining Capario, its officers, agents, servants, employees and those persons in active concert or participation with its from further acts of patent infringement;

H. PPS Data be granted pre-judgment and post-judgment interest on the damages caused to it by reason of Capario's patent infringement;

I. The Court declare this an exceptional case and that PPS Data be granted its reasonable attorneys' fees in accordance with 35 U.S.C. § 285;

J. Costs be awarded to PPS Data; and,

K. PPS Data be granted such other and further relief as the Court may deem just and proper under the circumstances.

DEMAND FOR JURY TRIAL

PPS Data demands trial by jury on all claims and issues so triable.

Dated: July 28, 2011

Respectfully Submitted,

LILES, GAVIN, COSTANTINO, GEORGE & DEARING, P.A.

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* *Pro Hac Vice* application forthcoming

Attorneys for Plaintiff

Exhibit A

US006343271B1

(12) **United States Patent**
Peterson et al.

(10) **Patent No.: US 6,343,271 B1**
(45) **Date of Patent: Jan. 29, 2002**

(54) **ELECTRONIC CREATION, SUBMISSION, ADJUDICATION, AND PAYMENT OF HEALTH INSURANCE CLAIMS**

(75) Inventors: **Brian E. Peterson**, Salt Lake City; **John W. Kwant, Jr.**, Midvale, both of UT (US); **Vaughn C. Cecil**, Crossville, TN (US); **Wayne A. Provost**, Salt Lake City, UT (US)

(73) Assignee: **P5 e.Health Services, Inc.**, Salt Lake City, UT (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/118,668**

(22) Filed: **Jul. 17, 1998**

(51) **Int. Cl.**[7] **G06F 17/60**

(52) **U.S. Cl.** **705/4**; 705/2

(58) **Field of Search** 705/1, 2, 3, 4

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,491,725	A	1/1985	Pritchard	235/375
4,831,526	A	5/1989	Luchs et al.	364/401
4,858,121	A	8/1989	Barber et al.	364/406
5,225,976	A	7/1993	Tawil	364/401
5,235,507	A	8/1993	Sackler et al.	364/401
5,253,164	A	10/1993	Holloway et al.	364/406
5,301,105	A	4/1994	Cummings, Jr.	364/401
5,359,509	A	10/1994	Little et al.	364/401
5,519,607	A	5/1996	Tawil	364/401
5,523,942	A	6/1996	Tyler et al.	364/401
5,644,778	A	7/1997	Burks et al.	395/800
5,704,044	A	12/1997	Tarter et al.	395/204
5,903,873	A	5/1999	Peterson et al.	705/4
5,911,132	A *	6/1999	Sloane	705/3
5,915,241	A	6/1999	Giannini	705/2
5,930,759	A *	7/1999	Moore et al.	705/2
6,003,007	A *	12/1999	DiRienzo	705/4
6,012,035	A	1/2000	Freeman, Jr. et al.	705/2
6,112,183	A *	8/2000	Swanson et al.	705/2

FOREIGN PATENT DOCUMENTS

JP	2001 076055	* 3/2001		G06F/17/60

OTHER PUBLICATIONS

Website data from "Claimsnet.com" located at www.claimsnet.com.*

Article entitled "Healtheon: Zigging and zagging to adjust to health care realities", published in Health Management Technologies, Jul. 1997.*

Article entitled "Claimsnet Flies IPO to Fund Internet Service", published in Dallas Business Journal, May 8, 1998.*

Tanner, Lisa Claimsnet files to IPO to fund Internet service Dallas Business Journal, May 8, 1998, vol. 21 Issue 37, p10, 1/2p.

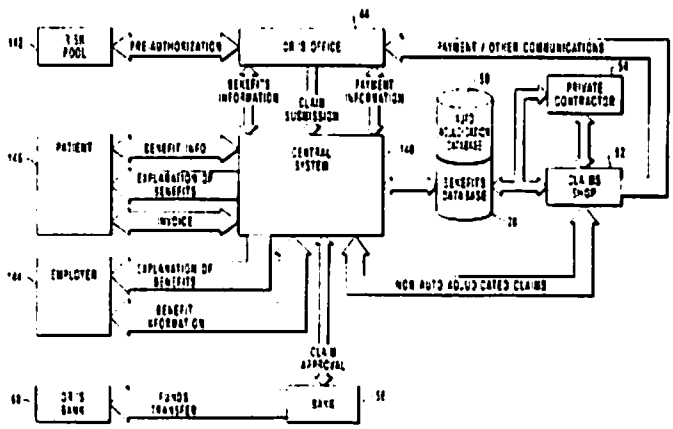
(List continued on next page.)

Primary Examiner—Sam Rimell
(74) *Attorney, Agent, or Firm*—Workman, Nydegger & Seeley

(57) **ABSTRACT**

A claims processing system for electronically reviewing and adjudicating medical insurance claims. The claims processing systems include a benefits system, an automated adjudication system, a payment system, and a payment tracking system. The benefits system allows patients and health care providers to access patient and benefits information on-line. Using the automated adjudication system, health care providers may electronically prepare and submit claims for payment. Before a claim is submitted, a claims precheck process is used to determine whether the claim may be automatically adjudicated or instead must be manually adjudicated. If manual adjudication is indicated, the health care provider may the claim in an effort to achieve automated adjudication prior to claim submission. The claims processing system performs automatic adjudication on submitted claims or forwards the claims to a shop for manual adjudication. The payment system initiates payment to the health care provider using electronic funds transfer. The payment tracking system allows health care providers to monitor the payment status of a claim after submission.

27 Claims, 10 Drawing Sheets



OTHER PUBLICATIONS

Hagland, Mark Healthcom: Zigging and zagging to adjust to health care realities Health Management Technology; Atlanta; Jul. 1997 vol. 18, Issue 18, p30.

Llana, Jr. A. "Conveying the Image", Feb. 1992, v12, n8, p22 (4). Gale Group computer DB [online] DG Review. Retrieved from: Dialog Accession No. 01513428.

"Octel unveils strategic roadmap for health care marketplace focus is on efficiency–enchancing applications global messaging" Mar. 1996, Gale Group Retrieved from: Dialog Accession No. 01354156.

* cited by examiner

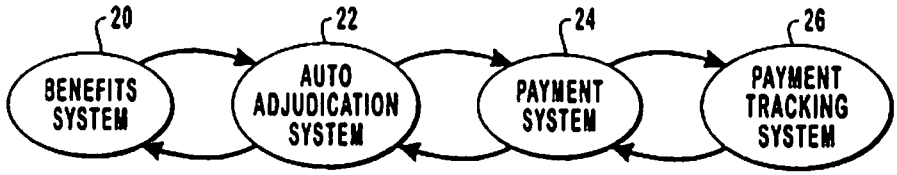

20
22
24
26
BENEFITS SYSTEM
AUTO ADJUDICATION SYSTEM
PAYMENT SYSTEM
PAYMENT TRACKING SYSTEM

FIG. 1

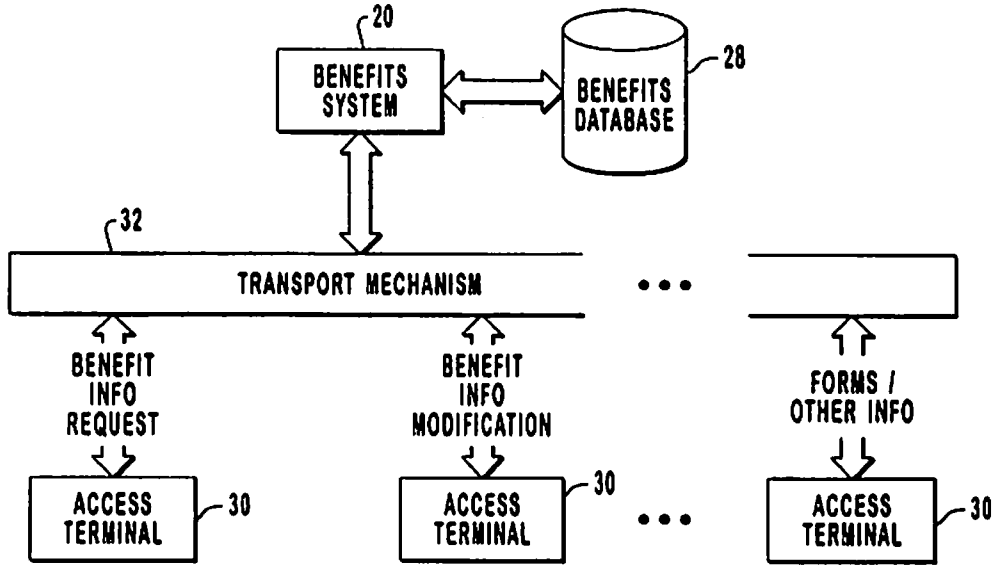

20
BENEFITS SYSTEM
BENEFITS DATABASE
28
32
TRANSPORT MECHANISM
BENEFIT INFO REQUEST
BENEFIT INFO MODIFICATION
FORMS / OTHER INFO
ACCESS TERMINAL
30
ACCESS TERMINAL
30
ACCESS TERMINAL
30

FIG. 2

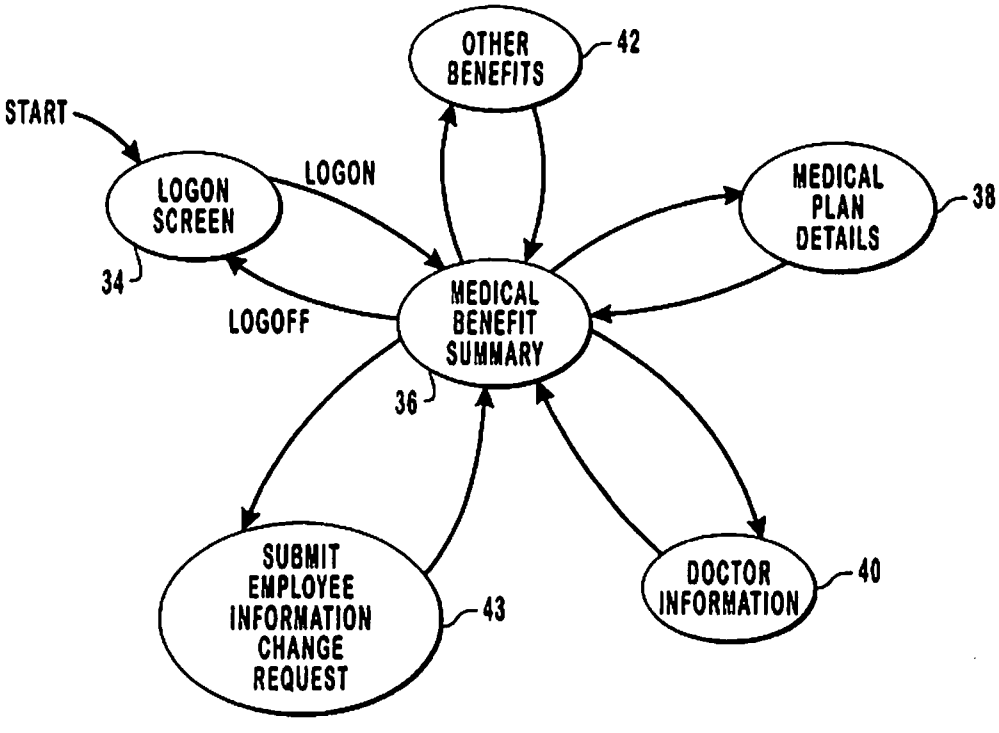

OTHER BENEFITS
42
START
LOGON SCREEN
LOGON
MEDICAL PLAN DETAILS
38
34
LOGOFF
MEDICAL BENEFIT SUMMARY
36
SUBMIT EMPLOYEE INFORMATION CHANGE REQUEST
43
DOCTOR INFORMATION
40

FIG. 3

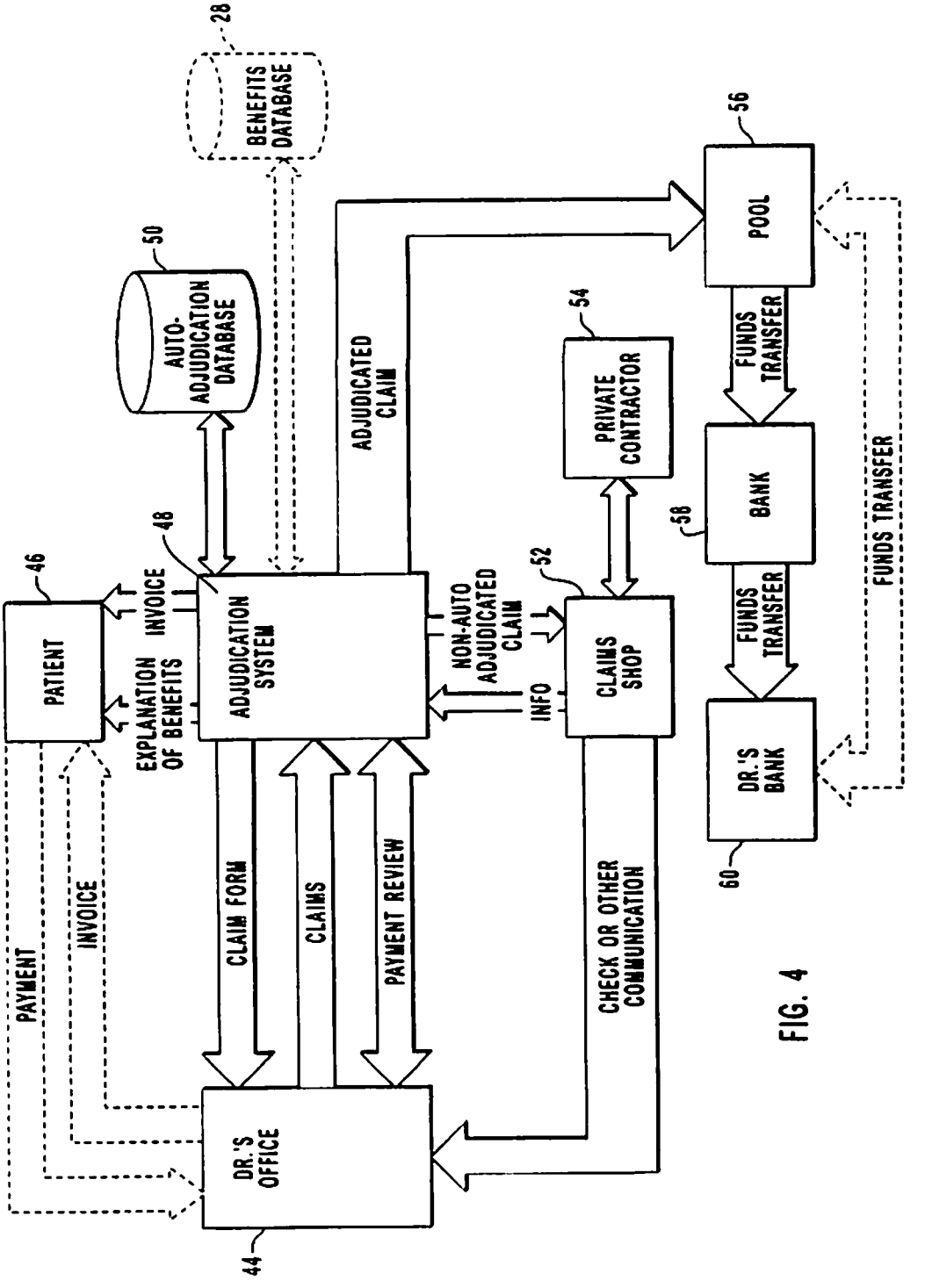

28
BENEFITS DATABASE
56
POOL
50
AUTO-ADJUDICATION DATABASE
ADJUDICATED CLAIM
54
PRIVATE CONTRACTOR
FUNDS TRANSFER
BANK
58
48
46
PATIENT
INVOICE
EXPLANATION OF BENEFITS
ADJUDICATION SYSTEM
NON-AUTO ADJUDICATED CLAIM
52
CLAIMS SHOP
INFO
FUNDS TRANSFER
FUNDS TRANSFER
DR.'S BANK
60
PAYMENT
INVOICE
CLAIM FORM
CLAIMS
PAYMENT REVIEW
CHECK OR OTHER COMMUNICATION
DR.'S OFFICE
44

FIG. 4

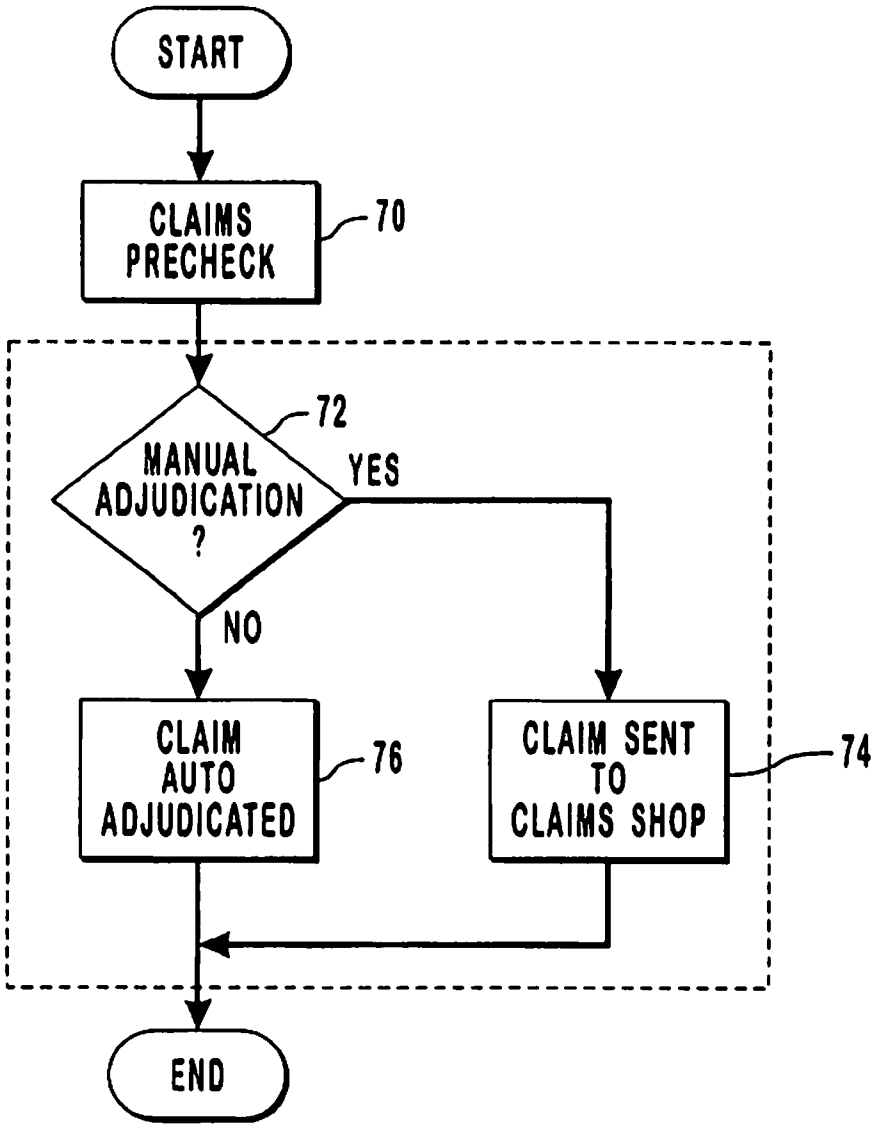

START
CLAIMS PRECHECK
70
72
MANUAL ADJUDICATION ?
YES
NO
CLAIM AUTO ADJUDICATED
76
CLAIM SENT TO CLAIMS SHOP
74
END

FIG. 5

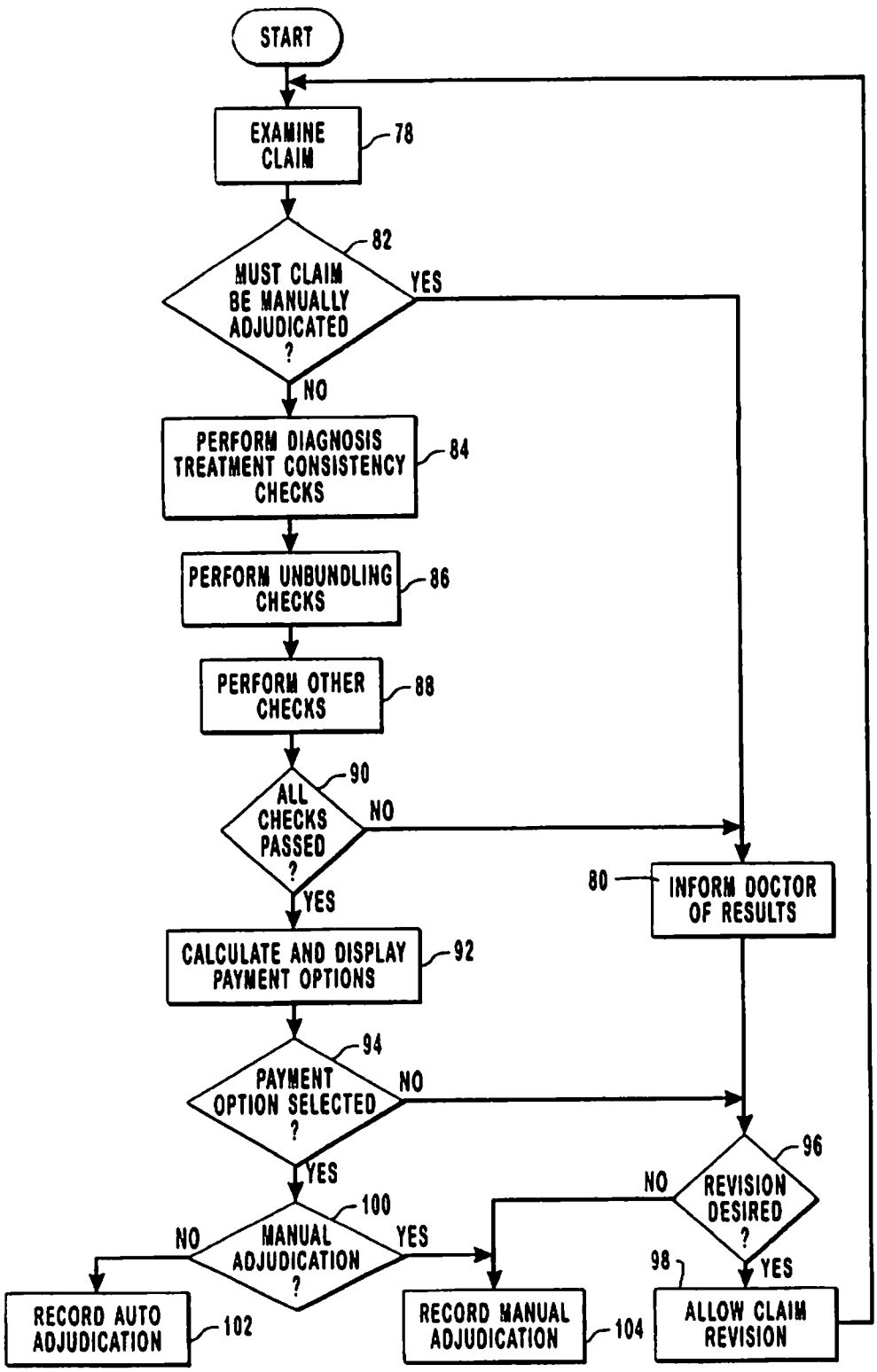

START
EXAMINE CLAIM
78
MUST CLAIM BE MANUALLY ADJUDICATED ?
82
YES
NO
PERFORM DIAGNOSIS TREATMENT CONSISTENCY CHECKS
84
PERFORM UNBUNDLING CHECKS
86
PERFORM OTHER CHECKS
88
ALL CHECKS PASSED ?
90
NO
YES
80
INFORM DOCTOR OF RESULTS
CALCULATE AND DISPLAY PAYMENT OPTIONS
92
PAYMENT OPTION SELECTED ?
94
NO
YES
REVISION DESIRED ?
96
NO
YES
MANUAL ADJUDICATION ?
100
NO
YES
98
RECORD AUTO ADJUDICATION
102
RECORD MANUAL ADJUDICATION
104
ALLOW CLAIM REVISION

FIG. 6

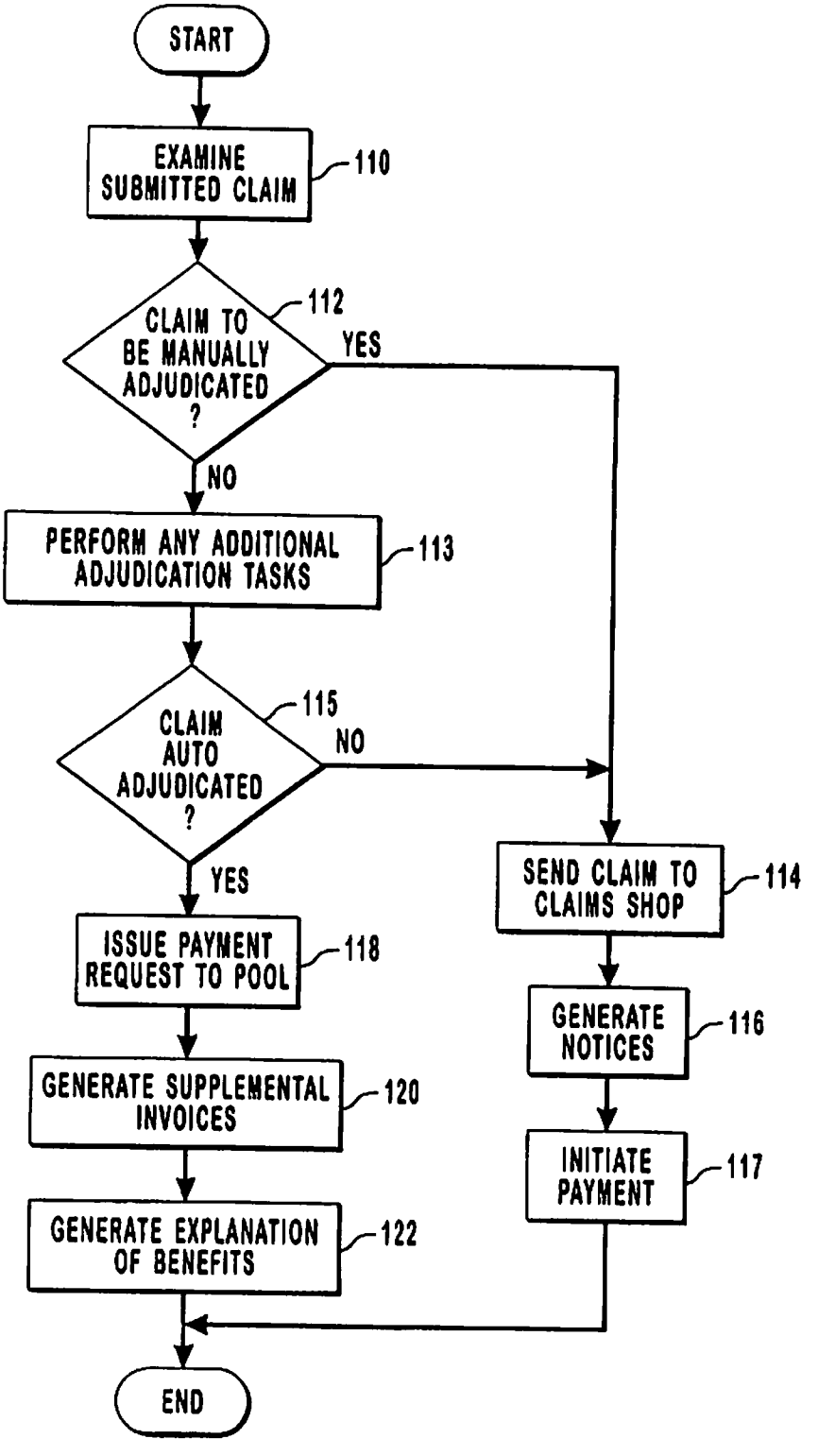

START
EXAMINE SUBMITTED CLAIM
110
CLAIM TO BE MANUALLY ADJUDICATED ?
112
YES
NO
PERFORM ANY ADDITIONAL ADJUDICATION TASKS
113
CLAIM AUTO ADJUDICATED ?
115
NO
YES
SEND CLAIM TO CLAIMS SHOP
114
ISSUE PAYMENT REQUEST TO POOL
118
GENERATE NOTICES
116
GENERATE SUPPLEMENTAL INVOICES
120
INITIATE PAYMENT
117
GENERATE EXPLANATION OF BENEFITS
122
END

FIG. 7

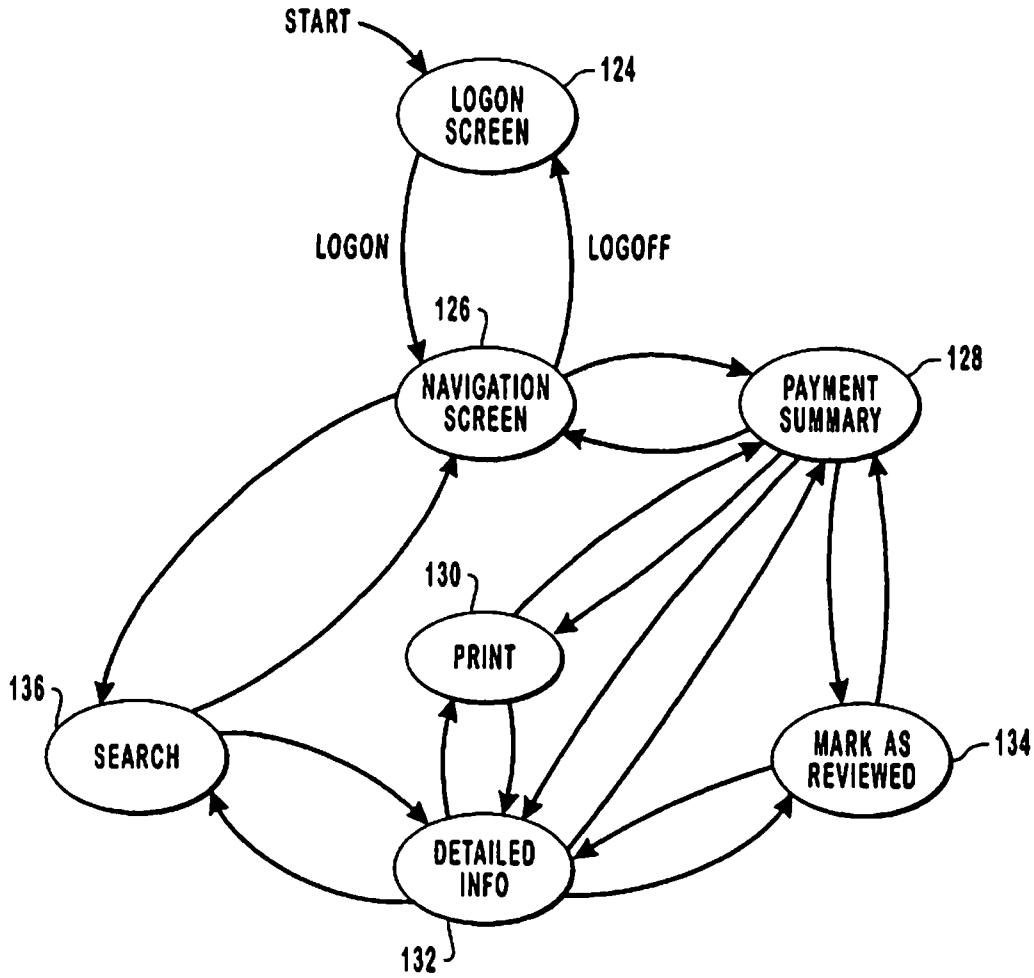

START
LOGON SCREEN
124
LOGON
LOGOFF
126
NAVIGATION SCREEN
PAYMENT SUMMARY
128
130
PRINT
136
SEARCH
MARK AS REVIEWED
134
DETAILED INFO
132

FIG. 8

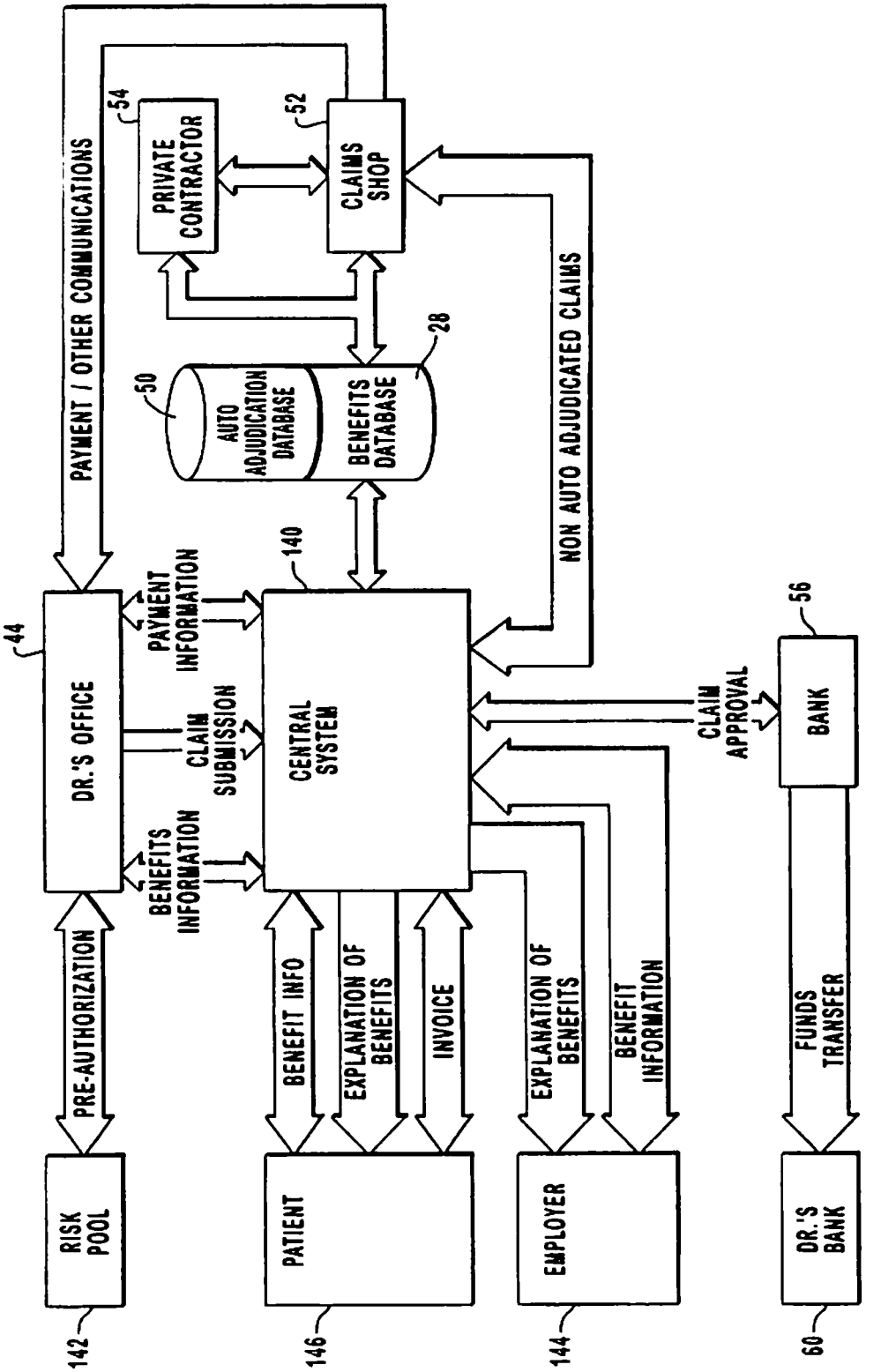

PAYMENT / OTHER COMMUNICATIONS
54
PRIVATE CONTRACTOR
52
CLAIMS SHOP
NON AUTO ADJUDICATED CLAIMS
28
50
AUTO ADJUDICATION DATABASE
BENEFITS DATABASE
140
44
DR.'S OFFICE
PAYMENT INFORMATION
CLAIM SUBMISSION
BENEFITS INFORMATION
CENTRAL SYSTEM
CLAIM APPROVAL
56
BANK
PRE-AUTHORIZATION
BENEFIT INFO
EXPLANATION OF BENEFITS
INVOICE
EXPLANATION OF BENEFITS
BENEFIT INFORMATION
FUNDS TRANSFER
RISK POOL
PATIENT
EMPLOYER
DR.'S BANK
142
146
144
60

FIG. 9

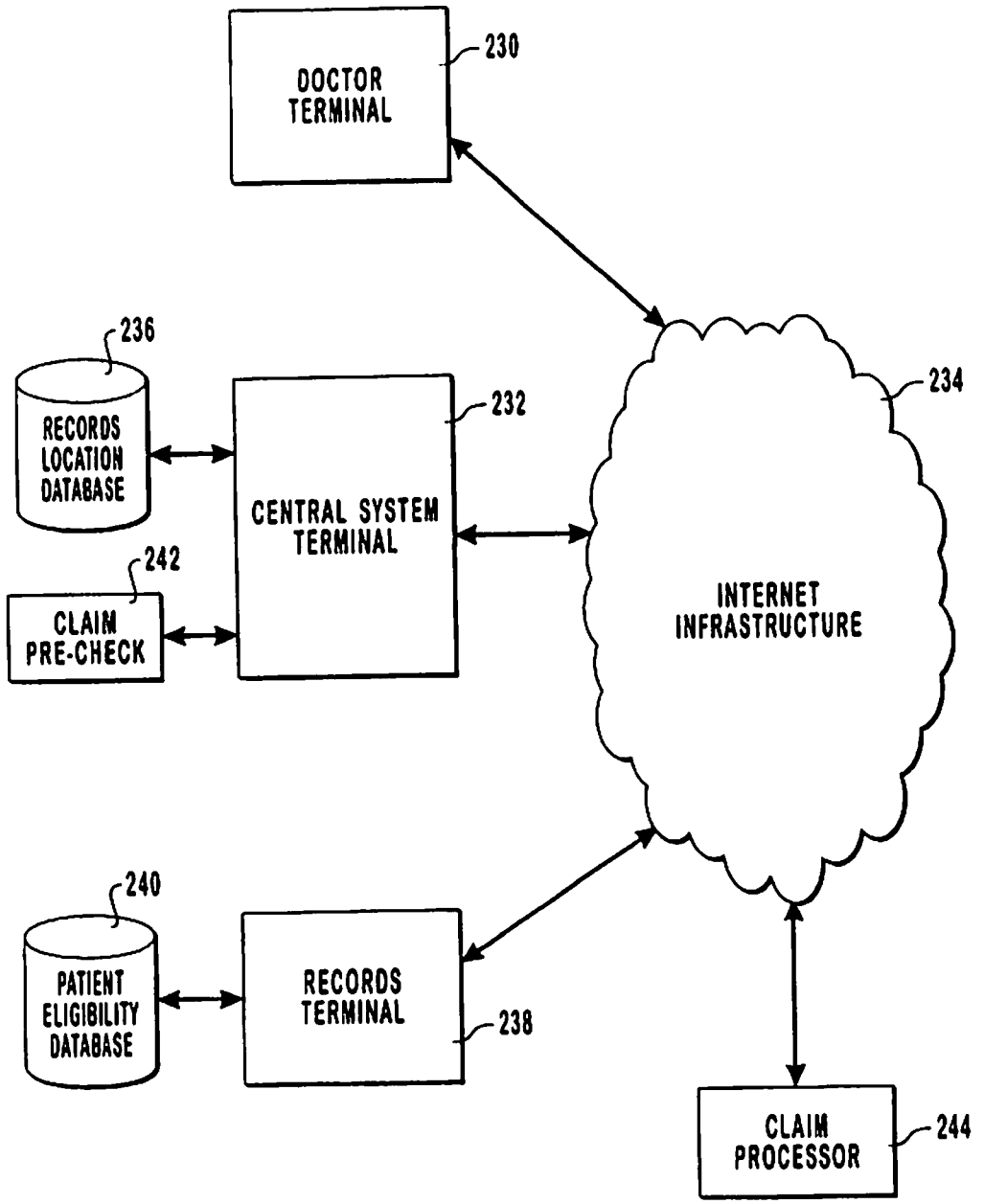

DOCTOR TERMINAL
230
236
RECORDS LOCATION DATABASE
CENTRAL SYSTEM TERMINAL
232
234
242
CLAIM PRE-CHECK
INTERNET INFRASTRUCTURE
240
PATIENT ELIGIBILITY DATABASE
RECORDS TERMINAL
238
CLAIM PROCESSOR
244

FIG. 10

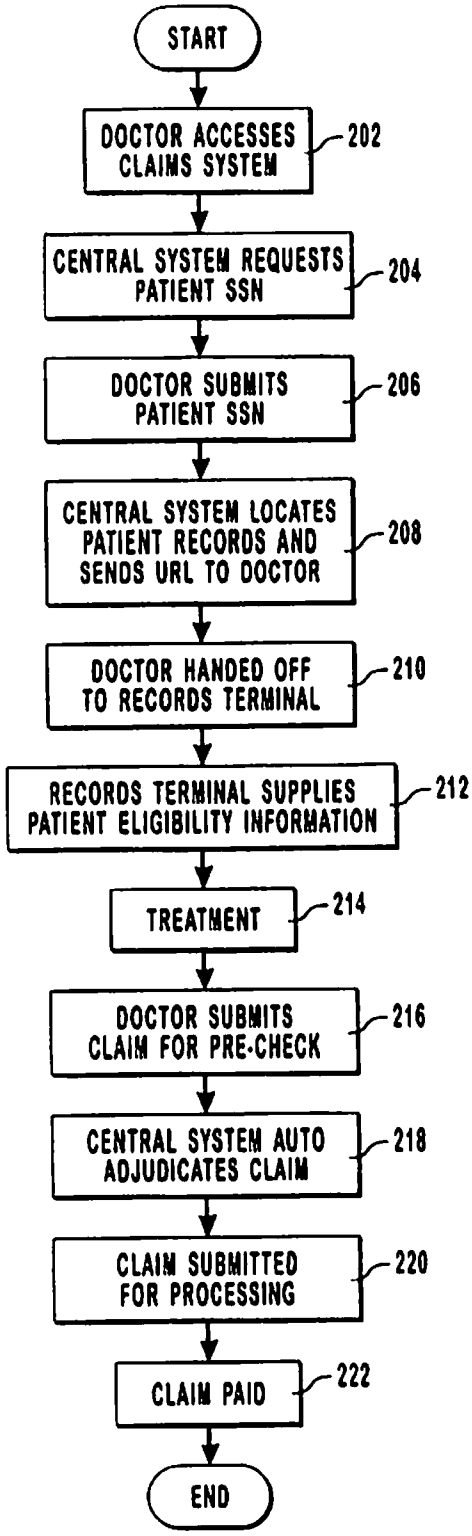

START
DOCTOR ACCESSES CLAIMS SYSTEM
202
CENTRAL SYSTEM REQUESTS PATIENT SSN
204
DOCTOR SUBMITS PATIENT SSN
206
CENTRAL SYSTEM LOCATES PATIENT RECORDS AND SENDS URL TO DOCTOR
208
DOCTOR HANDED OFF TO RECORDS TERMINAL
210
RECORDS TERMINAL SUPPLIES PATIENT ELIGIBILITY INFORMATION
212
TREATMENT
214
DOCTOR SUBMITS CLAIM FOR PRE-CHECK
216
CENTRAL SYSTEM AUTO ADJUDICATES CLAIM
218
CLAIM SUBMITTED FOR PROCESSING
220
CLAIM PAID
222
END

FIG. 11

ELECTRONIC CREATION, SUBMISSION, ADJUDICATION, AND PAYMENT OF HEALTH INSURANCE CLAIMS

BACKGROUND OF THE INVENTION

1. The Field of the Invention

The present invention relates to systems for creating and processing health insurance claims. More particularly, the present invention relates to automated health claims processing systems, wherein a health care provider may access information relating to patients, create and submit claims electronically, learn whether the claims are to be automatically or manually adjudicated, and receive automated electronic payment from the claims processing system.

2. Relevant Technology

The cost of health care continues to increase as the health care industry becomes more complex, specialized, and sophisticated. The proportion of the gross domestic product that is accounted for by health care is expected to gradually increase over the coming years as the population ages and new medical procedures become available. Over the years, the delivery of health care services has shifted from individual physicians to large managed health maintenance organizations. This shift reflects the growing number of medical, dental, and pharmaceutical specialists in a complex variety of health care options and programs. This complexity and specialization has created large administrative systems that coordinate the delivery of health care between health care providers, administrators, patients, payors, and insurers. The cost of supporting these administrative systems has increased during recent years, thereby contributing to today's costly health care system.

A significant portion of administrative costs is represented by the systems for reviewing and adjudicating health care provider payment requests. Such payment requests typically include bills for procedures performed and supplies given to patients. Careful review of payment requests minimizes fraud and unintentional errors and provides consistency of payment for the same treatment. However, systems for reviewing and adjudicating payment requests also represent transaction costs which directly reduce the efficiency of the health care system. Reducing the magnitude of transaction costs involved in reviewing and adjudicating payment requests would have the effect of reducing the rate of increase of health care costs. Moreover, streamlining payment request review and adjudication would also desirably increase the portion of the health care dollar that is spent on treatment rather than administration.

Several factors contribute to the traditionally high cost of health care administration, including the review and adjudication of payment requests. First, the volume of payment requests is very high. Large health management organizations may review tens of thousands of payment requests each day and tens of millions of requests yearly. In addition, the contractual obligations between parties are complex and may change frequently. Often, there are many different contractual arrangements between different patients, insurers, and health care providers. The amount of authorized payment may vary by the service or procedure, by the particular contractual arrangement with each health care provider, by the contractual arrangements between the insurer and the patient regarding the allocation of payment for treatment, and by what is considered consistent with current medical practice.

During recent years, the process of reviewing and adjudicating payment requests from health care providers has

become increasingly automated. For example, there exist claims processing systems whereby technicians at health care providers' offices electronically create and submit medical insurance claims to a central processing system. The technicians include information identifying the physician, patient, medical service, insurer, and other data with the medical insurance claim. The central processing system verifies that the physician, patient, and insurer are participants in the claims processing systems. If so, the central processing system converts the medical insurance claim into the appropriate format of the specified insurer, and the claim is then forwarded to the insurer. Upon adjudication and approval of the insurance claims, the insurer initiates an electronic fluids transfer to the physician's account.

The foregoing example of an automated payment system reduces the amount of paperwork and time required to process insurance claims and receive payment for treatment provided to patients. However, a significant cost in processing insurance claims is the review and adjudication of individual claims. Careful review of payment requests minimizes fraud and unintentional errors and provides consistency of payment for the same treatment. Furthermore, adjudication of insurance claims ensures that the treatment for which payment is requested conforms to current medical practice and to the contractual obligations of the insurer with respect to the patient and health care provider. However, because manual review and adjudication of insurance claims is labor intensive, a large number of payment requests are simply paid to the requesting health care provider with minimal review.

There have been developed systems that partially automate the claims review and adjudication process. Under these systems, payment requests are accompanied by codified diagnostic and treatment summaries that describe the nature of the patient's condition and the treatment provided. For example, the medical services and procedures provided to the patient may be described using the codes and code modifiers of a volume entitled Physician's Current Procedural Terminology (CPT), which is maintained and updated annually by the American Medical Association.

When a central processing system receives codified payment requests, the system may either summarily approve the request for payment or may assign one or more review codes to the payment request, depending on the diagnosis and treatment. Review codes indicate that the payment request should be further analyzed for consistency with current medical practice or with the patient's condition before payment is authorized. Again, depending on the nature of the treatment, payment requests that are assigned review codes may be either further processed by the automated system or may be forwarded to a medical analyst for manual adjudication.

The foregoing systems at least partially automatically adjudicate insurance claims and have the advantages of reducing the labor intensive nature of the adjudication process and reducing the amount of time needed for claims processing. However, these systems fall short of reducing or eliminating many of the aspects of the claims processing procedure that require repeated or intensive human attention. For example, from the health care provider's standpoint, it is very difficult to routinely be aware of the medical treatments and services that are covered by each patient's insurance plan, since different patients often have widely different contractual arrangements with insurers and health care providers. Depending on the insurance plan of each patient, the patient's medical condition, the patient's treatment history, and other factors, certain treatments may or may not be subject to insurance coverage.

In the past, physicians or their staff have had to spend inordinate amounts of time investigating which treatments will be covered by various insurers and insurance plans. Without detailed investigation, payment request are often rejected in full or in part for being directed to treatments not covered by a patient's insurance plan. Furthermore, physicians are often not made aware of payment request denials until after the sometimes lengthy review and adjudication process is completed. Such delay and uncertainty frequently leads to inefficiencies in providing and selecting appropriate medical treatments and can lead to patient and health care provider frustration.

Another problem with current claims processing procedures is that health care providers are required to submit certain patient and treatment information with payment requests. This patient and treatment information may include the patient's medical history, medical condition, and the treatment provided to the patient, along with other information that identifies the patient and gives background information. Often, different insurers and insurance plans require different sets of patient and treatment information. Accordingly, health care providers have been required to investigate the range of information required with individual patients and their associated insurers and insurance plans. Otherwise, health care providers run the risk of submitting too little information to the insurer, with the result that the payment process is delayed as the claim is returned to the health care provider and the correct information is gathered and submitted. In other situations, time and effort is wasted as patients and health care providers provide more information than is required by particular insurers.

Another problem with current systems is that when a claim is submitted for processing, the health care provider has no indication of how the claim may be processed or how the claim may be adjudicated. For example, if a particular insurer uses a combination of automated and manual adjudication procedures, there is no way for a health care provider to tell if the claim will be adjudicated manually or automatically. Furthermore, there is no way for the health care provider to determine the likelihood that a claim will be paid. In addition, since the exact amount that is ultimately paid may depend on the adjudication status of the claim, it may be difficult for a health care provider to determine the value of claims when they are submitted. Finally, since the adjudication process may take an indefinite amount of time, it is difficult to identify when payment can be expected.

Conventional claims processing systems further do not allow health care providers to adequately monitor the status of an insurance claim during the processing thereof. For example, if a submitted insurance claim has not been paid in a timely fashion, the health care provider generally has no automated system for learning of the status of the submitted claim. Typically, the only options are to personally contact a representative of the claims processing system or to merely wait for eventual payment or rejection of the submitted claim.

In view of the foregoing, there is a need in the art for more fully automated claims processing systems. For example, it would be an advancement in the art to reduce the uncertainty as to whether a claim to be submitted is likely to be paid or rejected. Furthermore, it would be advantageous to provide a claims processing system that would more easily allow health care providers to know what patient and treatment information must accompany insurance claims. There also exists a need for systems that allow health care providers to easily learn of the status of submitted insurance claims.

SUMMARY OF THE INVENTION

The present invention relates to claims processing systems that allow health care providers to electronically submit insurance claims for payment. The claims processing systems utilize network or other remote communication between computer processors, thereby increasing efficiency and decreasing the costs and time that have been associated with conventional claims processing systems.

The claims processing systems include a benefits system which allows patient to access their medical benefits information on-line, and optionally to allow authorized individuals to modify either benefit information or insurance plans when desired. Furthermore, health care providers have access to patient benefits information in preparation for consulting with a patient. Optionally, the health care provider can access, download, or print a partially prepared claim or diagnosis form having much of the patient benefits information already included thereon. Partially prepared claims forms significantly reduce overall time, effort and cost that are required to ensure that accurate and complete patient and treatment information is submitted with the insurance claims, and that the claims conform to the requirements of the insurer.

An automated adjudication system is also included in the claims processing systems of the invention. One function of the automated adjudication system is to perform a precheck process on claims before submission. When a health care provider contemplates providing treatment to a patient and submitting a claim to the patient's insurer for payment, the precheck process may be used to determine whether the claim may be automatically adjudicated or must instead by manually adjudicated. For example, the precheck process involves comparing the diagnosis and the proposed or actual treatment against a benefits database that contains information relating to currently accepted medical practice, the contractual arrangements between the patient, the insurer, and the health care provider, and the patient's medical history. If the precheck process indicates that a claim based on the diagnosis and proposed treatment would be automatically adjudicated, the health care provider is informed of this result. If however, the proposed claim is consistent with fraud, unintentional error, or if for some other reason the insurer would subject the claim to a more thorough review, the health care provider is informed that manual adjudication is to be conducted. In response, the health care provider may choose to modify the content of the claim in an effort to obtain automated adjudication. Feedback from the precheck process may also provide information of the amount that will be paid for the claim.

The claims precheck process significantly increases the ease by which a health care provider may submit claims that conform to accepted medical practice, the preferences of the insurer, or other standards that allow expedited review and payment of claims. The precheck process decreases the costs that have been previously associated with investigation on the part of the health care provider as to the types of treatment that would be subject to automated review and adjudication. Furthermore, the precheck process allows the health care provider to gain a more complete understanding of the status and value of the claim prior to submission.

When the health care provider is satisfied with the status of the claim, it is submitted to the adjudication system, where it is either automatically adjudicated or forwarded to a claims shop for manual review and adjudication. A payment system included in the claims processing systems of the invention initiates payment for approved claims using electronic funds transfer. In the alternative, paper checks may be used to pay the health care provider.

The claims processing systems optionally include a payment tracking system that allows health care providers to

monitor the payment status of submitted claims. For example, a health care provider may remotely log on to a central system and request information relating to the review, adjudication, and payment process with respect to a particular submitted claim or patient. In response to this request, the central system retrieves the requested information and transfers the information to the health care provider. The payment tracking systems of the invention provide significant advantages over the claims processing systems that have previously been used in the art. Under the invention, health care providers have greatly improved access to the payment status of claims during the review process.

The communications infrastructure of the claims processing system may advantageously comprise the Internet. For example, the claims precheck process, claims submission, payment status tracking, and other functions whereby remote computer processors interact may be performed via the Internet. Alternatively, other wide area networks or direct dial access may be used to support the communications infrastructure of the invention.

These and other objects, features, and advantages of the present invention will become more fully apparent from the following description and appended claims, or may be learned by the practice of the invention as set forth hereinafter.

BRIEF DESCRIPTION OF THE DRAWINGS

In order that the manner in which the above-recited and other advantages and objects of the invention are obtained, a more particular description of the invention briefly described above will be rendered by reference to specific embodiments thereof which are illustrated in the appended drawings. Understanding that these drawings depict only typical embodiments of the invention and are not therefore to be considered to be limiting of its scope, the invention will be described and explained with additional specificity and detail through the use of the accompanying drawings in which:

FIG. **1** is schematic diagram of primary subsystems of the claims processing systems of the invention.

FIG. **2** is a schematic diagram illustrating an example of the communication infrastructure that allows health care providers, patients, and others to retrieve and submit claims and insurance benefits information.

FIG. **3** diagrammatically illustrates selected choices available to a patient when the patient accesses the benefits information stored on the benefits system of FIG. **1**.

FIG. **4** is a schematic diagram illustrating in greater detail the elements of the auto-adjudication system and the payment system of FIG. **1**.

FIG. **5** is a flow diagram broadly showing a method whereby claims are submitted for either automated adjudication or manual adjudication.

FIG. **6** is a flow diagram depicting a method whereby a health care provider may learn, prior to submission of a claim, whether the claim is to be automatically adjudicated or manually adjudicated.

FIG. **7** is a flow diagram illustrating selected steps in a method for making payment of submitted claims using the payment system of FIG. **1**.

FIG. **8** diagrammatically illustrates selected choices available to a health care provider for tracking the payment status of a submitted claim using the payment tracking system of FIG. **1**.

FIG. **9** is a schematic diagram of one example of a claims processing system of the invention incorporating a benefits system, an auto adjudication system, a payment system, and a payment tracking system.

FIG. **10** is a schematic diagram of another example of a claims processing system of the invention, wherein the claims are submitted for prechecking and payment over the Internet.

FIG. **11** is a flow diagram depicting selected steps of a method of submitting claims for prechecking and payment using the system of FIG. **10**.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention relates to claims processing systems that allow health care providers to electronically submit insurance claims for payment. The claims processing systems allow the health care provider to access the patient's benefits information relating to the contractual arrangement between the patient, the health care provider, and insurer. Before the health care provider submits the claims for payment and optionally before the treatment is performed on the patient, the claim may be pretested to determine whether the claim is to be automatically adjudicated or manually adjudicated. If the claim is to be automatically adjudicated, the health care provider may learn the amount that the insurer will pay for the treatment. If the pretesting indicates that manual adjudication will be necessary and the health care provider desires the certainty that automated adjudication affords, the treatment and the claim may be adjusted as needed in order to allow automatic adjudication.

The pretested claim is submitted to the claims processing system, and the claim is adjudicated according to the method that has been specified in the pretesting procedure. According to one embodiment of the invention, the health care provider may learn the payment status of the claim during the adjudication and payment process. Finally, electronic funds transfers are executed for insurance claims that have been adjudicated and approved.

In certain embodiments of the invention, the patient is also allowed to access the claims processing system in order to learn the scope of benefits provided under the patient's insurance plan. Furthermore, the patient may be allowed to request modification of the benefits and of the contractual arrangements with respect to the health care providers, the insurers, or other parties.

Turning now to FIG. **1**, the various subsystems of one embodiment of the claims processing systems of the invention are set forth. Benefits system **20** allows the health care provider to learn of the health care benefits associated with individual patients as the health care provider prepares for consultation with the patient. In addition, the benefits system may be accessible by the patients in order to inform the patients of the scope of their medical coverage. Finally, benefits system **20** is available to employers to provide benefit information to employees. One advantage of benefits system **20** is that it allows employees or other insured persons to directly access benefit information instead of requesting the information from a benefits office or other benefit administrator. This reduces the overall cost to provide a staff to answer questions about benefits, farther reducing administrative overhead.

Automated adjudication system **22** permits health care providers to electronically prepare insurance claims and submit the claims to the claims processing system. In one embodiment of the invention, the health care provider may

use automated adjudication system **22** to determine, before submitting the claim, whether the claim is to be automatically adjudicated or manually adjudicated. Furthermore, the health care provider has the option to editing and the claim in order to allow automatic adjudication if desired.

Once an insurance claim has been adjudicated and approved, whether automatically or manually, a payment system **24** initiates a transfer of funds to the health care provider in response to the adjudicated insurance claim. In certain embodiments of the invention, the health care provider may access information regarding the adjudication status or the payment status of a submitted claim using payment tracking system **26**. The function and structure of benefits system **20**, automated adjudication system **22**, payment system **24**, and payment tracking system **26**, and the manner in which these systems interact may be further understood by referring to FIGS. **2–9**.

The communications infrastructure whereby health care providers, patients, and others may access benefits information from the claims processing systems is illustrated in FIG. **2**. Benefits system **20**, which may include a central processor or a network server, is linked to patient and patient health benefits information contained in a benefits database **28**. The information included in benefits database **28** may represent, for each participating patient, the contractual and insurance obligations between the patient, the insurers, and the participating health care providers. Such information may include, for example, the treatment covered by the patient's selected insurance plan, co-payments or other portions of medical expenses to be paid by the patient, running totals of periodic health care expenses actually paid by the patient, and the like. The periodic running totals of health care expenses paid by the patient may be provided, for example, because many insurance plans specify payment caps or the maximum amount that is to be paid by the patient as their portion of health care expenses during a calendar year or another period of time. Furthermore, any other patient or patient health care benefit information, such as medical history, persons to be contacted in case of emergency, and the like, may be contained in benefits database **28** as desired or needed. Accordingly, the combination of benefits system **20** and benefits database **28** represents one example of means for storing health benefit information.

In this embodiment, the claims processing system includes means for health care providers to access the health benefit information. Access terminals **30** are but one example of such means for accessing health benefit information. In particular, interactive access to benefit system **20** and benefits database **28** is provided via access terminals **30**, which communicate with the benefits system in a network infrastructure. Transport mechanism **32** is used to transfer information between benefit system **20** and access terminals **30**. Transport mechanism **32** may be the Internet, a dedicated wide area network, direct dial access using telephone lines, or any other communication system whereby remote computers may communicate with each other. In many cases, the use of the Internet as transport mechanism **32** and as the network infrastructure for supporting much of the other communications and data transfer functionality of the claims processing systems of the invention provides certain advantages. For example, taking advantage of the Internet eliminates the need to establish a dedicated wide area network. It can be understood that in cases wherein transport mechanism **32** is the Internet or another wide area network, access terminals **30** may be client terminals and benefits system **20** may include a network server or be installed on a network server.

Depending on the particular functions desired from benefits system **20**, health care providers and patients may access various types of information using access terminals **30**. For example, the health care provider or patient may make a request to benefits system **20** for health care benefits information. As but one example of such a request, a patient contemplating elective surgery could use the system depicted in FIG. **2** to learn whether his or her medical insurance covers the contemplated surgery. Likewise, the surgeon who will perform the operation may use access terminal **30** to determine the patient's scope of insurance coverage. Optionally, a patient or other authorized entity may modify the benefits package using access terminal **30**. One example of modifying benefits is adding or removing a dependent who is authorized to receive health care under a patients medical insurance.

According to yet another feature of the benefits system of the invention, the health care provider optionally is allowed to download a diagnosis, treatment, or claim form that is already partially prepared with the patient's personal, medical, and/or benefits information. Accordingly, the health care provider may more efficiently prepare and submit claims for payment after treating the patient and may ensure that the information required by the insurer is included in the submitted claim in the appropriate format.

Interaction between a health care provider or a patient using access terminal **30** and benefits system **20** may be facilitated by software executed on access terminal **30**. Such software may generate a user interface, including computer-supportable forms, menu driven displays, or any other system whereby the patient or health care provider is allowed to initiate functions or access information as desired. As discussed below, the software on access terminal **30** may comprise an Internet browser if benefits system **20** is accessed via the Internet. FIG. **3** illustrates a representative example of the choices that may be made by a patient using access terminal **30** in order to access benefit information. Moreover, the choices depicted in FIG. **3** further illustrate one example of the means for accessing health benefit information. In this example, the patient begins at a logon screen **34** that prompts the user to enter a password or other information that identifies the patient as being authorized to use the system. Upon logging in, a medical benefits summary **36** is displayed to the patient. For example, the medical benefit summary **36** provides a brief overview of the patient's health benefits and instructions for accessing more detailed information.

In this example, medical plan details **38**, including more detailed explanations of health benefits, more complete contractual provisions, or the like, may be selected and viewed by the patient. The user interface in this example also permits the patient to access doctor information **40**, which may include a list of doctors participating in the patient's medical plan, educational and practice information relating to the doctors and any other desired information. In addition, other employee or insurance benefits **42** are optionally accessible through the user interface provided on access terminal **30**, examples of which include disability insurance provisions, life insurance, and the like. Furthermore, in this example, the patient has access to a computer supportable form **43** whereby a request for plan enrollment, eligibility modification, or a change in any other employee information may be submitted. Accordingly, patients may request updates to their medical plan as has been described herein.

The elements and functions of auto adjudication system **22** and payment system **24** of FIG. **1** are disclosed in greater detail in FIG. **4**. In particular, FIG. **4** illustrates, for purposes

of example and not limitation, a procedure whereby a health care provider prepares and submits a claim for payment, after which the claims processing system of the invention adjudicates the claim and initiates payment on the claim if approved. The procedure according to this embodiment begins as an employee in doctor's office **44** requests and receives a claim form from the claims processing system according to the methods that have been described herein. Once the claim form has been received, the health care provider at the doctor's office **44** provides treatment to a patient **46**. The diagnosis and treatment are encoded onto the claim form as the claim is prepared for submission. According to one embodiment of the invention that will be described in greater detail hereinafter, the doctor may pretest the claim before submission in order to determine whether the claim is to be automatically adjudicated or manually adjudicated.

Creation of the claim may be accomplished using access terminals **30**, or other suitable input devices at doctor's office **44**. Thus, access terminals **30**, and suitable software executed thereon, are examples of means for a health care provider to enter a claim. The claim is then transferred to adjudication system **48**, typically using the network infrastructure, such as the Internet, that supports the claims processing systems of the invention. Accordingly, one example of means for submitting the claim for payment includes the combination of access terminal **30** or another suitable input device and the Internet or another network infrastructure for communicating with adjudication system **48**.

Claims that have been determined to be automatically adjudicable, based on criteria set by the insurer, are compared against an auto adjudication database **50**. A predefined set of adjudication rules are contained in auto adjudication database **50** and provide criteria by which claims are either approved or denied. Claims that relate to procedures requiring manual adjudication are transferred to a claims shop **52** where the claims are reviewed and analyzed by claims processing technicians. For example, claims shop **52** may be similar to conventional claims shops that have been used in the art to adjudicate medical insurance claims. Frequently, insurers employ private contractors **54** to review all or only certain classes of manually adjudicate claims in an effort to reduce administrative costs and increase the effectiveness of the claims review process.

Adjudication system **48** may be used to determine the adjudication status of the submitted claim, or in other words, if a submitted claim is compatible with automatic adjudication, or whether it must be manually adjudicated instead. As will be described herein in greater detail, a preliminary determination of the adjudication status of a claim may be performed before the claim is submitted. The claims processing systems of the invention may include means for sending claims submitted for payment to an entity for manual adjudication. One example of such means includes adjudication system **48** and any suitable communications pathway. Adjudication system **48** may communicate with claims shop **52** via the Internet or another wide area network. In the alternative, paper copies of submitted claims may be delivered to claims shop **52** through the mail or otherwise.

Returning now to the automated adjudication system, a claim that has been automatically adjudicated and approved is forwarded from adjudication system **48** to means for initiating payment of an adjudicated claim. One example of such means is pool **56**, which may be a health care expense account established by a third party insurer or by a self insuring corporation. Funds in an amount equal to the payment approved by adjudication system **48** may then be transferred from pool **56** to a clearinghouse bank **58**, after which the funds are transferred to the doctor's account **60**. Alternatively, funds may be transferred directly from pool **56** to doctor's bank **60**.

Payment may be advantageously conducted through electronic transfer of funds, which reduces the time and expenses involved in preparing paper checks and other methods of initiating payment. Accordingly, the claims processing system may further include means for initiating electronic transfer of funds. For example, such means may be any system for electronically requesting and initiating payment between pool **56** and bank **60**. Systems for making electronic transfer of funds are well known in the banking art.

When an insurer is obligated to pay only a portion of the payment requested in an approved claim, an invoice may be sent from adjudication system **48** to patient **46** requesting that the patient pay the remaining portion. One method for sending an invoice involves means for printing a paper invoice to be sent through the mail. Such means may be included in adjudication system **48**, and may comprise computer-executable programs and associated printers, many of which are well-known in the art. Regardless of whether the insurer pays all or only part of an approved claim, the claims processing system may include means for sending an explanation of benefits to the patient. Such means may likewise be included in adjudication system **48** and comprise computer-executable programs and associated printers, many of which are well-known in the art. The explanation of benefits typically informs the patient of the status of the claim, the treatment for which payment has been requested, the amount to be paid by the insurer and the patient, or any other relevant information.

Returning now to the manual processing of claims, when claims shop **52** or private contractor **54** either approves or denies payment of a claim, one of various methods may be used to make the payment or communicate the rejected status of the claim to doctor's office **44**. In one alternative, a check or a notice of rejection is mailed or otherwise delivered from claims shop **52** to doctor's office **44**. Alternatively, or in addition, information is transferred from claims shop **52** to adjudication system **48** in order to initiate automatic payment for the claim using pool **56** and electronic funds transfer. Furthermore, if a patient is required to pay all or part of the payment requested by a claim, an invoice may be forwarded to patient **46** from adjudication system **48** or from doctor's office **44**.

FIG. **5** broadly describes, in flow chart form, a method of preparing and submitting claims and adjudicating, either automatically or manually, the submitted claim. In step **70**, the health care provider has prepared a proposed or actual claim based on treatment that is contemplated or has already been performed. The claim is then prechecked according to methods for determining whether the claim may be automatically adjudicated or must instead be manually adjudicated. One example of a claims prechecking process is described in detail herein in reference to FIG. **6**. Once the claim is finalized and has been prepared for submission, the decision whether to manually or automatically adjudicate is made in step **72**. If the diagnosis and treatment or other factors described in the submitted claim require manual adjudication, the submitted claim is sent to the claims shop (step **74**) where the claim is reviewed by a adjudicator. Typically, manually adjudicated claims are reviewed according to conventional standards based on current methods of

medical practice and the contractual relationship between patient, health care provider, and the insurer. If the submitted claim is instead compatible with auto adjudication, the claim is automatically reviewed according to the methods disclosed herein in step **76**.

Step **70** of FIG. **5**, wherein a claims precheck is performed on a claim before submission is described in further detail in FIG. **6**. Allowing a health care provider to precheck the adjudication status of a claim before submission, or in other words, whether the claim is compatible with auto adjudication or instead must be manually adjudicated, increases the certainty of the health care provider that the submitted claim will be approved. Furthermore, checking the adjudication status of claims encourages health care providers to provide treatment that conforms with current medical practices and that is preferred by the insurer. In particular, prechecking a claim before submission allows a health care provider to be relatively certain that the claim will be approved and paid, which strengthens the incentives of the health care provider to provide preferred treatment. Furthermore, some insurers may find it advantageous to provide incentives to encourage submission of automatically adjudicable claims, such as compensating automatically adjudicated claims at a higher rate than manually adjudicated claims. Furthermore, when auto adjudication is coupled with automated payment, health care providers may be able to receive funds within a few days of submission rather than the traditional 60 to 90 days. This may be a great incentive for health care providers to submit claims that can be autoadjudicated, even if no other incentives are provided. The claims processing system of the invention facilitates submission of automatically adjudicated claims, and such automatic adjudication is often preferred by health care providers.

As is the case with many of the other communication features of the present invention, the claim precheck process illustrated in FIG. **6** may be advantageously conducted through the Internet or over another wide area network. In a first step **78**, the proposed claim is examined in order to determine whether the claim must be manually adjudicated. Various factors may be taken into account in determining the adjudication status of a claim, including but not limited to the type of treatment for which compensation is sought, the particular health care provider submitting the claim, the dollar amount of the claim, the medical history of the patient, and so forth.

Basically, steps **78** and **82** allow any criteria to be established by the insurer for claims that must be manually adjudicated. The types of treatments and claims that must be manually adjudicated often vary from insurer to insurer, and ordinarily depend on factors such as the contractual provisions between the insurer, the patient, and the health care provider, and currently acceptable medical practice. For example, an insurer may find it cost effective to manually review and adjudicate all claims relating to certain classes of diagnosis and treatment. For instance, relatively costly or uncommon procedures may always be subject to manual review and adjudication. Other insurers may allow auto adjudication for any type of claim.

When the treatment described in the claim indicates that manual adjudication is required, the doctor is informed of this fact in step **80** before the claim is submitted, and perhaps before the treatment has been recommended or carried out. If, in step **82**, the claims processing system determines that the treatment does not necessarily require manual adjudication, the proposed claim may be subjected to one or more additional checks. This additional analysis of proposed claims generally is used to reduce the likelihood of fraud or unintentional errors in the submitted claims. In step **84**, the proposed claim is compared against a database or another system to determine whether the diagnosis and treatment are consistent according to currently accepted medical practice. For example, a proposed claim will likely not be automatically adjudicated if the diagnosis is a sprained ankle and the health care provider responds with antibiotics treatment.

Another optional test for prechecking proposed claims includes performing an unbundling check in step **86**. Unbundling checks are designed to uncover potentially fraudulent claim submissions. The practice of "unbundling" consists of performing, for example, multiple medical procedures on a patient through a single surgical incision while submitting an insurance claim for the multiple medical procedures as if they had been performed separately. Typically, when only one incision is required to perform multiple medical procedures, the payment to the operating physician is less than the payment would be if each of the multiple medical procedures had been conducted through separate incisions. Other fraudulent unbundling techniques for submitting claims on multiple medical procedures are sometimes used as well. Accordingly, step **86** involves analyzing the claim to determine whether the treatment described in the claim is consistent with an unbundling reporting practice, in which case, manual adjudication may be required. Furthermore, any other checks may be conducted on the proposed claim in step **88**.

If, in step **90**, the proposed claim has failed one of the forgoing additional checks, the doctor is informed of this result in step **80**. Depending on the problem identified by the additional checks in steps **84**, **86**, and **88**, the doctor may be informed either that the proposed claim will be subject to manual adjudication or that it is likely to be denied.

If the proposed claim has instead passed all the additional checks, the payment options available to the health care provider are calculated and displayed. For example, the health care provider may be informed that if payment is received electronically, then a different amount will be paid than if payment is received through a check or other mechanism. According to one embodiment of the invention, the amount that will be paid to the health care provider through various payment option is displayed in step **92**. Payment options are separate and distinct from adjudication method. For example, a health care provider may elect to have manually adjudicated claims paid automatically. The amount paid to the health care provider may be dependent on the type of adjudication used as well as the payment option selected.

If the health care provider is satisfied with the payment option that has been calculated and displayed and agrees to the payment option in step **94**, the process of prechecking the proposed claim has been completed, and the claim is in condition for submission. On the other hand, if the health care provider does not accept or agree to the payment options that have been calculated and displayed, the health care provider may choose to revise the proposed claim in step **96** in an attempt to make the claim compatible with automated adjudication or to achieve the desired compensation for services rendered.

As shown in FIG. **6**, step **96** may be conducted after the health care provider has been notified that the claim must be manually adjudicated, that the claim has not passed the additional checks, or after the calculated and displayed payment option has not been selected. In step **98**, the health care provider revises the proposed treatment or corrects any errors that have occurred in creating the proposed claim.

Such revision is accomplished using means for modifying the claim. Access terminals such as terminals **30** of FIG. **2** or any other computer running appropriate software are examples of such means for modifying the claim. In particular, access terminals **30** may support software that allows the health care provider to revise the content of a proposed claim before the claim is submitted for payment. Claim revision might result in the health care provider using a less costly, alternative treatment or a treatment that conforms to currently accepted medical practice or to the insurer's preferences. Once a claim has been revised, the newly proposed claim may be again subjected to the claim precheck method described herein.

Returning now to step **94**, if the calculated and displayed payment option is selected by the health care provider, the proposed claim is submitted to the claims processing system of the invention for either auto adjudication in step **102** or manual adjudication in step **104**. Moreover, if the health care provider is presented with the option of revising the proposed claim in step **96** but declines to do so, the proposed claim may then be manually adjudicated according to step **104**.

The payment system **24** illustrated in FIG. **1** and described in reference to FIG. **4** is disclosed in greater detail in FIG. **7**. The payment system and the method associated therewith are used after the claim has been submitted to the claims processing system by the health care provider. First, the submitted claim is examined in order to determine whether it is to be manually adjudicated or automatically adjudicated. If the submitted claim had previously been subjected to a claims precheck process as disclosed herein in reference to FIGS. **5** and **6**, the decision to be manually adjudicate or automatically adjudicate the claim may have already been made. However, if the claim was submitted without making a preliminary decision between manual and automatic adjudication, steps **110** and **112** may include procedures substantially similar to steps **78**, **82**, **84**, **86**, **88**, and **90** of FIG. **6**.

If, according to step **112**, a submitted claim is to be manually adjudicated, the claim is sent to claim shop **52** (step **114**). After manual adjudication, notices are generated in step **116** and are forwarded to the patient, the insurer, the doctor, or other parties as desired. In addition, in some embodiments information regarding claim disposition, payment status, or other information, may be sent back to adjudication system **48** of FIG. **4** so that the information can be accessed by the health care provider or other appropriate individuals. Moreover, payment may be made at this stage if the manually adjudicated claim is approved. This is illustrated by step **117** of FIG. **7**. Payment may be via electronic funds transfer or any other appropriate mechanism.

In the case of an automatically adjudicated claim, execution proceeds to step **113** where any auto-adjudication tasks in addition to those already discussed in conjunction with FIG. **6** are performed. These tasks may include any type of task necessary to complete the auto-adjudication process. Decision block **115** tests whether, after performing the tasks, the claim can still be autoadjudicated. If not, the claim may be submitted for manual adjudication as illustrated by step **114**. If the claim is adjudicated, then execution proceeds to step **118** where adjudication system **48** issues a payment request to pool **56**, thereby initiating payment to the health care provider. Note that step **113** and decision block **115** are optional and are only necessary if any remaining tasks for auto-adjudication remain after the precheck of FIG. **6**. If the insurer pays only a portion of the amount requested in the approved claim, the payment system may generate supplemental invoices in step **120** that are directed to the patient or to another payor who will supply the remaining portion. Furthermore, an explanation of benefits may be generated in step **122** in order to inform the patient or other entity or individual of the status of the claim and the treatment for which the claim was submitted.

In embodiments of the invention that include payment tracking system **26** illustrated in FIG. **1**, the health care provider may monitor the payment status of the submitted claim. According to one implementation, access terminals **30** of FIG. **2** or other appropriately configured computer may be further used to access payment information. Moreover, software may be provided on access terminals **30** for permitting the health care providers to access the desired payment information. As discussed below, such software may comprise a web browser if the payment system is accessed via the Internet. Such software will typically connect to another system, such as central system **140** of FIG. **9** discussed below, to perform the functions of the payment tracking system. Thus, in some embodiments a traditional client/server architecture may be used. FIG. **8** depicts selected choices presented to the health care provider by a representative example of the payment tracking system and the user interface generated thereby.

In this example, the health care provider is presented with a logon screen **124** that may request a password or other information that identifies the health care provider as being authorized to access the payment tracking system. Upon logging on, a navigation screen **126** that presents various menu options is displayed. From there, the health care provider may proceed to a payment summary **128** of a particular patient or submitted claim. From payment summary **128**, a printed copy **130** may be generated, detailed information **132** may be acquired, or the health care provider may mark the particular submitted claim as having been reviewed at reference number **134**. In addition, navigation screen **126** may lead to a search protocol **136** whereby the health care provider may locate information relating to a particular patient, submitted claim, or the like. The payment tracking systems of the invention are not limited to the specific system described above, but instead may comprise any system that allows health care providers to retrieve payment status and other payment information during the claim adjudication and payment process.

FIG. **9** illustrates a further embodiment of the claims processing system of the invention that incorporates the benefits system **20**, automated adjudication system **22**, payment system **24**, and payment tracking system **26** of FIG. **1**. According to this embodiment, a health care provider at doctor's office **44** may request and receive benefits information from central system **140** in preparation for diagnosing and treating patient **46**. The health care provider may learn, for example, that preauthorization is required prior to treatment. The preauthorization may be obtained, for example, from risk pool **142** as indicated. Furthermore, before or after treatment, the health care provider may receive an indication that the claim can be submitted for automated adjudication or may instead learn that the claim is to be manually adjudicated as has been described herein in reference to FIGS. **5** and **6**. For example, the proposed claim may utilize auto-adjudication database **50** to identify diagnosis and treatments that may indicate fraud, error, or that may otherwise require manual adjudication.

The structure that corresponds to the means for a health care provider to determine the adjudication status of a claim prior to submission may include any of a number of ele-

ments that have been disclosed herein. For example, the means for determining the adjudication status may include a properly configured computer in combination with a network infrastructure and the adjudication system **48** of FIG. **4**.

Once the health care provider has selected a treatment, perhaps by adjusting the treatment in response to the claims prechecking procedure, the claim is submitted to central system **140**. In addition, the health care provider at doctor's office **44** may later access payment status of the submitted claim during the review and adjudication process.

According to this embodiment, patient **46** has access to benefits information from central system **140**. For example, the manner of accessing benefit information may be substantially similar to that described in reference to FIGS. **2** and **3**. After a claim has been submitted and adjudicated, an explanation of benefits may be forwarded by central system **140** to patient **46**. In addition, if the submitted claim is denied or if the insurer pays only a portion of an approved claim, an invoice may be forwarded from central system **40** to patient **46**, requesting payment of the remaining portion of the medical expense.

Employer **144** likewise has access to benefit information stored on central system **140** and in benefits database **28** according to this embodiment. The benefit information stored in benefits database **28** may be updated or modified by employer **144** as described herein in reference to FIGS. **2** and **3**.

According to the embodiment of FIG. **9**, when a claim is submitted to central system **140** and the claim is determined to be incompatible with auto adjudication, the submitted claim is forwarded to claims shop **52** or, in the alternative, to private contractor **54**. If the manually adjudicated claim is approved, claims shop **52** sends full or partial payment to doctor's office **44**, to doctor's bank **60**, or to any other selected location. Payment may be electronic paper check, or any other appropriate method. Furthermore, when a submitted claim has been either approved or rejected using manual adjudication, communications may be directed to the health care provider describing the result.

Automatically adjudicable claims may be reviewed using a processor located in central system **140** according to the methods that have been described herein. Upon approval of an automatically adjudicated or manually adjudicated claim, notice of the approval may be sent from central system **140** to bank **56** in order to initiate payment of funds equal to the full or the partial amount requested.

Utilization of the Internet as a communications transport mechanism for the present invention has several distinct advantages. First, it eliminates the need to develop or maintain a dedicated network for the system. It also simplifies deployment and maintenance of client software. For example, the benefits system of FIGS. **2** and **3** and the payment tracking system of FIG. **8** may utilize Internet browser technology for the client portions of the software. Central system **140** or another appropriately configured server may provide the information using standard Internet protocols. This architecture may also be used in an intranet where one or more of the communication transport paths are over a local area network.

The present invention has several other benefits. For example, since claims are placed in an electronic form by Dr.'s Office **44**, when the claim is initially submitted, the claim may be transferred and processed electronically after that point. Thus, even claims that are forwarded to claims shop **52** for manual adjudication may be transferred, forwarded, and reviewed in an electronic format. Thus, the internal workings of claim shop **52** may be completely or substantially "paperless" thus reducing the administrative overhead and reducing the time from submission to adjudication. Since claims are electronic, it is easier to split off claims to be transferred to private contractor **54** for processing. The decisions as to which claims and the actual sending may be a mostly or wholly automated task.

FIGS. **10** and **11** relate to another specific example of submitting claims for prechecking and payment using the Internet. According to step **202**, before a doctor treats a patient, the doctor accesses the claims processing system of this embodiment by means of a doctor's terminal **230**. In particular, the doctor or medical personnel at the doctor's office access a central system terminal **232** via Internet infrastructure **234**. Central system terminal **232** may be operated, for example, by the entity that administers the claims processing system of the invention. Furthermore, central system terminal **232** may include any suitable computer and, in one embodiment, includes an IBM AS/400 computer.

In step **204**, central system terminal **232** requests a social security number associated with the patient or another patient identifier. This request is transmitted through Internet infrastructure **234** to doctor's terminal **230**, where an appropriate display is generated. In response, patient social security number is transmitted in step **206** from doctor's terminal **230** to central system terminal **232**, thereby identifing the patient for whom treatment is about to be made. Next, central system terminal **232** references a records location database **236**, which identifies the location at which patient eligibility records associated with the patient are stored. For example, patient eligibility and other patient records may be stored at a third location separate from the site of the central system terminal **232**.

In this example, records location database **236** informs the system that the eligibility records associated with the patient are available at records terminal **238**. Consequently, central system terminal **232** identifies a Uniform Resource Locator ("URL") that may be used to access records terminal **238** and sends the URL to doctor's terminal **230** in step **208**. Doctor's terminal **230** then uses the URL as an Internet address to access records terminal **238** and, in step **210**, the doctor's terminal is in effect handed off from central system terminal **232** to the records terminal. Like central system terminal **232**, records terminal **238** may include a suitable computer, which in one embodiment is an IBM AS/400 computer. As illustrated by step **212**, records terminal **238** supplies eligibility and other patient information to doctor's terminal **230** according to the invention as described herein. For example, the eligibility information may be stored in a patient eligibility database **240** and made available to records terminal **238**. Thus, the doctor or other medical personnel may view and retrieve patient and insurance plan eligibility information on doctor's terminal **230** before treatment is provided.

In step **214**, the doctor provides the appropriate treatment to the patient after having been informed of the patient's eligibility and other relevant information. According to step **216**, the doctor or other medical personnel can edit and prepare the health claim after the patient has been treated using doctor's terminal **230**, and can then submit the claim for prechecking or auto adjudication as previously described herein. In this example, the claim is sent to central system terminal **232**, where it is subjected to a claim precheck system **242** as illustrated by step **218**.

The central system terminal then informs the doctor's terminal **230** of the results of the prechecking or auto

adjudication. In step **220**, the claim is then submitted to a claim processor **244** for payment or for further processing and approval or rejection according to the invention as described herein. Claim processor **244** is also accessible via Internet infrastructure **234** in this embodiment. Depending on the final adjudication of the claim, claim processor **244** may then initiate payment through electronic funds transfer or by mailing a check to the doctor. In the foregoing manner, this embodiment of the invention provides automated patient eligibility information, claim prechecking, claims editing, and claims payment. The use of the Internet makes the system and method very flexible and easily applicable to doctor's offices in virtually any location. Furthermore, it is to be understood that the features of the other embodiments may also be incorporated into the example described above in reference to FIGS. **10** and **11**.

It should be understood that the systems and method of the invention are not limited to the specific embodiments described herein. For example, the methods for determining whether a claim is to be automatically or manually adjudicated before submission of the claim may be combined with other claims processing systems beyond those described herein. In particular, the invention extends to conventional claims processing systems in combination with the novel systems for prechecking the adjudication status of a proposed claim. In addition, claims processing systems having a payment tracking system described herein for allowing a health care provider to monitor the payment status of a submitted claim can be combined with other claims processing systems beyond those specifically disclosed in this document. Furthermore, the invention extends to other selected elements, such as the system by which health care provider may download partially prepared claims forms, in combination with conventional claims processing systems. Those skilled in the art will recognize that various combinations of the elements disclosed herein are novel and are encompassed by the invention.

The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed and desired to be secured by United States Letters Patent is:

1. In a system comprising a health care benefit component that stores patient and benefit information and allows access to stored information by a health care provider, an automated adjudication component that automatically adjudicates claims submitted for payment, an automated payment component that automatically pays adjudicated claims, a payment tracking component that tracks the status of claims submitted for automatic payment, and an access terminal associated with the health care provider, a method for submitting and adjudicating claims comprising the steps of:

accessing, using the access terminal, the patient and benefit information stored by the health care benefit component such that the health care provider can ascertain patient information in preparation for submitting a claim for treatment provided to a patient;

creating, using the access terminal, the claim by entering information regarding treatment provided to said patient into an electronic claim form that can be submitted for payment;

testing the adjudication status of said claim, so that before said claim is submitted for adjudication, said health care provider may know whether said claim is to be manually adjudicated by an adjudicator or whether said claim is to be automatically adjudicated;

transmitting said claim from the access terminal, thereby submitting said claim for adjudication; and

if said claim is to be automatically adjudicated and paid automatically, then tracking the payment status of said claim using the access terminal.

2. A method for submitting and adjudicating claims as recited in claim **1**, further comprising, prior to transmitting said claim for adjudication, the steps of:

modifying, using the access terminal, the information in the claim in order to change the adjudication status of the claim; and then

re-testing the adjudication status of the claim.

3. A method for submitting and adjudicating claims as recited in claim **1**, further comprising, if the claim is to be paid automatically, the step of initiating payment of the claim by the automated payment component by transmitting information that ultimately results in an electronic transfer of finds to said health care provider.

4. A method for submitting and adjudicating claims as recited in claim **1**, further comprising the step of forwarding the claim to a claims processing location for adjudication and payment if the claim is to be manually adjudicated by the adjudicator.

5. A method for submitting and adjudicating claims as recited in claim **1**, further comprising the steps of:

determining the parties responsible for payment of the claim; and

forwarding, from the automated adjudication component to at least one of said parties, a request for electronic payment of a first portion of the claim and forwarding, from the automated adjudication component to at least another of said parties, a printed invoice for payment of a second portion of the claim.

6. A method for submitting and adjudicating claims as recited in claim **1**, further comprising the step of the automated adjudication component producing an explanation of benefits identifying the treatment provided and the ultimate disposition of the claim, including the amount paid by each party responsible for payment.

7. In a system comprising a health care benefit component that stores patient and benefit information and allows access to stored information by a health care provider, an automated adjudication component that automatically adjudicates claims submitted for payment, an automated payment component that automatically pays adjudicated claims, payment tracking component that tracks the status of claims submitted for automatic payment, and an access terminal associated with the health care provider, a method for submitting and adjudicating claims comprising the steps of:

accessing, using the access terminal, the patient and benefit information stored by the health care benefit component such that the health care provider can ascertain patient information in preparation for submitting a claim for treatment provided to a patient;

creating, using the access terminal, the claim by entering information regarding treatment provided to said patient into an electronic claim form that can be submitted for payment;

testing the adjudication status of said claim so that before said claim is submitted for adjudication, said health care provider may learns that, without modification of the claim, the claim is to be manually adjudicated by an adjudicator as opposed to being automatically adjudicated;

receiving, using the access terminal, input modifying said claim in order to change the adjudication status of said claim;

re-testing the adjudication status of the modified claim so that before said modified claim is submitted for adjudication, said health care provider learns that said modified claim is to be automatically adjudicated and how much said health care provider is to be paid;

transmitting said modified claim from the access terminal to said automated adjudication component for automatic adjudication; and tracking the payment status of said modified claim by communicating with said payment tracking component using the access terminal.

8. A method for submitting and adjudicating claims as recited in claim 7, further comprising the steps of:

determining the parties responsible for payment of the claim; and

forwarding, from the automated adjudication component to at least one of said parties, a request for electronic payment of a first portion of the claim and forwarding, from the automated adjudication component to at least another of said parties, a printed invoice for payment of a second portion of the claim.

9. A method for submitting and adjudicating claims as recited in claim 7, further comprising the step of the automated adjudication component producing an explanation of benefits identifying the treatment provided and the ultimate disposition of the claim, including the amount paid by each party responsible for payment.

10. In an environment wherein a patient visits a health care provider for the purpose of receiving treatment and wherein the health care provider submits claims for payment for provided treatment to a payor who is responsible for paying at least a portion of the treatment costs, a system for providing health benefit information to the health care provider and for interactively adjudicating claims for payment and for making automated payment of adjudicated claims comprising:

means for storing health benefit information comprising (1) patient identifying information to identify a patient and (2) health benefit information that allows a health care provider to determine benefit coverage for said patent;

means for said health care provider to access said health benefit information in order to ascertain the benefit status of said patient prior to treatment of said patient;

means for said health care provider to electronically generate a claim for payment for treatment provided to said patient;

means for said health care provider to determine the adjudication status of said claim, so that before said claim is submitted for adjudication, said health care provider knows whether said claim is to be manually adjudicated by an adjudicator or whether said claim is to be automatically adjudicated; and

means for electronically submitting said claim for adjudicating.

11. A system as recited in claim 10, further comprising means for sending claims that are to be manually adjudicated to an entity for manual adjudication.

12. A system as recited in claim 10, further comprising means for enabling the health care provider to track the payment status of claims that have been submitted for adjudication.

13. A system as recited in claim 10, further comprising means for initiating payment of adjudicated claims.

14. A system as recited in claim 13, wherein said means for initiating payment comprises means for initiating electronic transfer of funds.

15. A system as recited in claim 13, wherein said means for initiating payment comprises means for printing a paper invoice to be sent through the mail.

16. A system as recited in claim 10, further comprising means for sending an explanation of benefits that describes the treatment provided, the amount to be paid for the treatment, and the party responsible for payment.

17. A system as recited in claim 10, wherein said means for said health care provider to determine the adjudication status comprises a database describing the benefits available and the contractual obligations of said payor to pay said health care provider for treatment rendered.

18. A system as recited in claim 10, wherein the means for said health are provider to generate a claim further comprise means for enabling the health care provider to modify said claim in order to change the adjudication status of said claim prior to submission of the claim for adjudication.

19. In an environment wherein a patient visits a health care provider for the purpose of receiving treatment and wherein the health care provider submits claims for payment for provided treatment to a payor who is responsible for paying at least a portion of the treatment costs, a system for providing health benefit information to the health care provider and for interactively adjudicating claims for payment and for making automated payment of adjudicated claims comprising:

means for storing health benefit information comprising (1) patient identifying information to identify a patient and (2) health benefit information that allows a health care provider to determine benefit coverage for said patent;

means for said health care provider to access said health benefit information in order to ascertain the benefit status of said patient prior to treatment of said patient;

means for said health care provider to electronically generate a claim for payment for treatment provided to said patient;

means for said health care provider to determine the adjudication status of said claim, so that before said claim is submitted for adjudication, said health care provider knows whether said claim is to be manually adjudicated by an adjudicator or whether said claim is to be automatically adjudicated; and

means for modifying said claim prior to submitting the claim for adjudication in order to change the adjudication status of said claim if it is otherwise determined that the claim is to be manually adjudicated;

means for electronically submitting said claim for adjudicating; and

means for enabling the health care provider to track the payment status of claims that have been submitted for adjudication.

20. A system as recited in claim 21, further comprising means for sending claims that are to be manually adjudicated to an entity for manual adjudication.

21. A system as recited in claim 20, wherein said means for said health care provider to determine the adjudication status utilizes custom rules provided by the payor to determine whether said claim is to be automatically adjudicated or manually adjudicated.

22. A system as recited in claim 21, further comprising means for initiating payment of adjudicated claims.

23. A system as recited in claim 22 wherein said means for initiating payment comprises means for initiating electronic transfer of funds.

24. A system as recited in claim 23, wherein said means for initiating payment comprises means for printing a paper invoice to be sent through the mail.

25. A system as recited in claim 24, further comprising means for sending an explanation of benefits that describes the treatment provided, the amount to be paid for the treatment, and the party responsible for payment.

26. A system as recited in claim 25, wherein said means for said health care provider to determine the adjudication status comprises a database describing the benefits available and the contractual obligations of said payor to pay said health care provider for treatment rendered.

27. In an environment wherein a patient visits a health care provider for the purpose of receiving treatment and wherein the health care provider submits claims for payment for provided treatment to a payor who is responsible for paying at least a portion of the treatment costs, a system for providing health benefit information to the health care provider and for interactively adjudicating claims for payment and for making automated payment of adjudicated claims comprising:

a health benefit system adapted to allow electronic access to patient and benefit information, comprising:

a benefit database comprising

patient information which identifies individuals eligible for benefits,

benefit information which identifies the benefits available in sufficient detail to allow health care professionals and other individuals to determine, for each potential patient, particular covered or uncovered benefits, and

health care provider information that allows potential patients to identify particular health care providers that can be used to receive treatment covered by the benefits;

a benefit entry and modification module that allows entry and modification of said patient and benefit information; and

a database access module that allows access to the information stored in the benefit database from locations remote to the benefit database;

a health care claim entry system comprising:

a claim entry module that allows a health care professional to enter information regarding treatment provided to a patient in order to create a claim that can be submitted for payment;

a claim modification module that allows the health care professional to modify information in a claim prior to submission of the claim for adjudication and payment;

a claim adjudication status module that allows the health care professional to check the adjudication status of a claim prior to submission of the claim for adjudication so as to learn at least (1) whether the claim, if submitted for adjudication, is to be adjudicated manually by an adjudicator or adjudicated automatically, and (2) if a claim is to be adjudicated automatically, the amount of payment that is to be received for the claim; and

a claim submission module that submits a claim for processing; and

an automated claims adjudication system comprising:

a claim adjudication status check module that receives a request to test the adjudication status of a claim and returns, in response to the request, the adjudication status including at least (1) whether the claim, if submitted for adjudication, is to be adjudicated manually by an adjudicator or adjudicated automatically, and (2) if a claim is to be adjudicated automatically, the amount of payment that is to be received for the claim; and

a claim processing module that receives submitted claims, determines whether the claim is to be adjudicated manually by and adjudicator or adjudicated automatically and (1) if the claim is to be adjudicated manually, sending the claim to the appropriate location for manual adjudication and (2) if the claim is to be adjudicated automatically, determining the amount of payment that should be made for the claim, determining the source of the payment, and then initiating payment of the claim.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 6,343,271 B1
DATED : January 29, 2002
INVENTOR(S) : Brian E. Peterson, John W. Kwant, Jr., Vaughn C. Cecil and Wayne A. Provost

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title page,
Item [57], **ABSTRACT**,
Line 13, after "provider may" insert -- modify --

Column 4,
Line 7, after "allows" change "patient" to -- patients --

Column 9,
Line 43, after "manually" change "adjudicate" to -- adjudicatable --

Column 15,
Line 35, after "sends" change "fall" to -- full --

Column 18,
Line 21, after "of" change "finds" to -- funds --
Line 64, after "provider" delete "may"

Signed and Sealed this

Twenty-seventh Day of August, 2002

Attest:

Attesting Officer

JAMES E. ROGAN
Director of the United States Patent and Trademark Office

Exhibit B

US006341265B1

(12) **United States Patent**
Provost et al.

(10) **Patent No.: US 6,341,265 B1**
(45) **Date of Patent: Jan. 22, 2002**

(54) **PROVIDER CLAIM EDITING AND SETTLEMENT SYSTEM**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/204,886**

(22) Filed: **Dec. 3, 1998**

(51) **Int. Cl.**[7] **G06F 17/60**
(52) **U.S. Cl.** **705/4**; 705/2
(58) **Field of Search** 705/3, 4, 2, 1; 709/201, 203, 219

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,491,725 A	*	1/1985	Pritchard	705/2
4,831,526 A	*	5/1989	Luchs et al.	705/4
4,858,121 A		8/1989	Barber et al.	364/406
5,225,976 A		7/1993	Tawil	364/401
5,235,507 A	*	8/1993	Sackler et al.	705/2
5,253,164 A	*	10/1993	Holloway et al.	705/2
5,301,105 A	*	4/1994	Cummings, Jr.	705/2
5,359,509 A	*	10/1994	Little et al.	705/2
5,519,607 A		5/1996	Tawil	364/401
5,523,942 A	*	6/1996	Tyler et al.	705/4
5,644,778 A	*	7/1997	Burks et al.	705/2
5,704,044 A		12/1997	Tarter et al.	395/204
5,903,873 A	*	5/1999	Peterson et al.	705/4
5,911,132 A		6/1999	Sloane	705/3
5,915,241 A	*	6/1999	Giannini	705/2
5,930,759 A	*	7/1999	Moore et al.	705/2
6,003,007 A		12/1999	DiRienzo	705/4
6,012,035 A	*	1/2000	Freeman, Jr. et al.	705/2
6,112,183 A		8/2000	Swanson et al.	705/2

FOREIGN PATENT DOCUMENTS

WO	WO/2001/09701 A *	2/2001	G06F/1/00

OTHER PUBLICATIONS

Llana, Jr. A. 'Conveying the image', Feb. 1992, v12, n8, p22(4). Gale Group Computer DB, [online] DG Review. Retrived from: Dialog Accession No. 01513428.*
'Oetel unveils strategic roadmap for health care marketplace focus is on efficiency-enhancing applications global messaging' Mar. 1996, Gale Group, Retrieved from: Dialog Access. No. 01354156.*
Hagland, Mark Healtheon: Zigging and zagging to adjust to health care realities Health Management Technology; Atlanta; Jul. 1997 vol. 18, Issue 18, p.30.

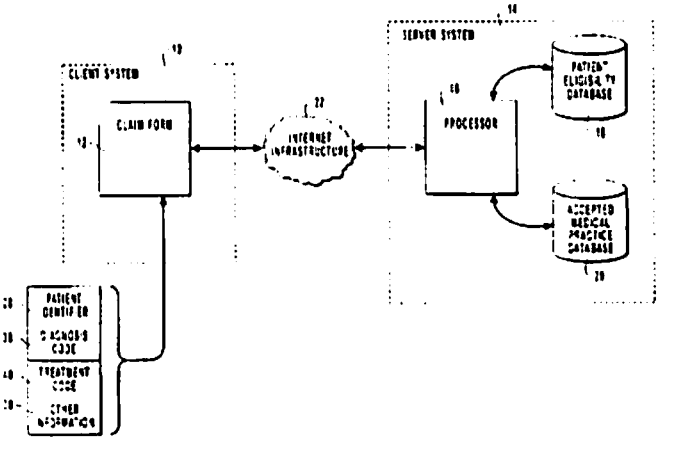
* cited by examiner

Primary Examiner—Sam Rimell
(74) *Attorney, Agent, or Firm*—Workman, Nydegger & Seeley

(57) **ABSTRACT**

Methods and systems for interactively creating and submitting insurance claims and determining whether the submitted claims are in condition for payment by an insurer. A medical technician operating a client computer establishes communication with a remote server. The remote server transmits a claim form to the client computer for display to the medical technician. Using the claim form, the technician enters patient identification information, which is transmitted to the server to determine whether the patient is a beneficiary of an approved insurance plan. If the patient is a beneficiary, the technician can prepare an insurance claim using the claim form displayed by the client computer. The technician enters a diagnosis code and a treatment code representing the diagnosis and treatment of the patient. The diagnosis and treatment codes are transmitted to the remote server, which processes the codes to determine whether the claim corresponds to health care services that are approved for payment. If the insurance claim is not in condition for payment, the medical technician is notified. The medical technician can then amend the insurance claim as necessary and resubmit the claim.

27 Claims, 4 Drawing Sheets



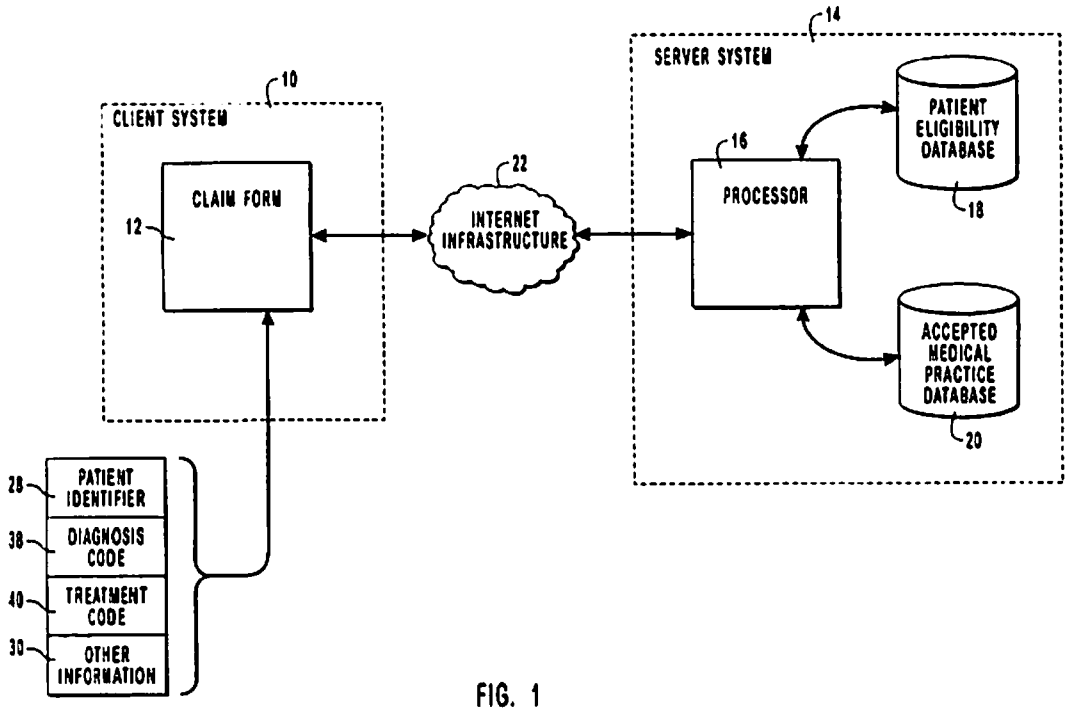

14
SERVER SYSTEM
10
CLIENT SYSTEM
CLAIM FORM
12
22
INTERNET INFRASTRUCTURE
16
PROCESSOR
PATIENT ELIGIBILITY DATABASE
18
ACCEPTED MEDICAL PRACTICE DATABASE
20
28
PATIENT IDENTIFIER
38
DIAGNOSIS CODE
40
TREATMENT CODE
30
OTHER INFORMATION

FIG. 1

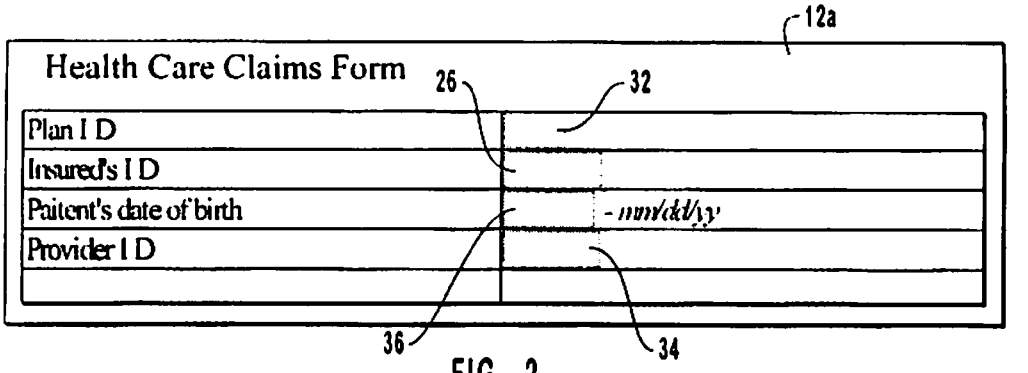

12a
Health Care Claims Form
26
32
Plan I D
Insured's I D
Patient's date of birth
mm/dd/yy
Provider I D
36
34

FIG. 2

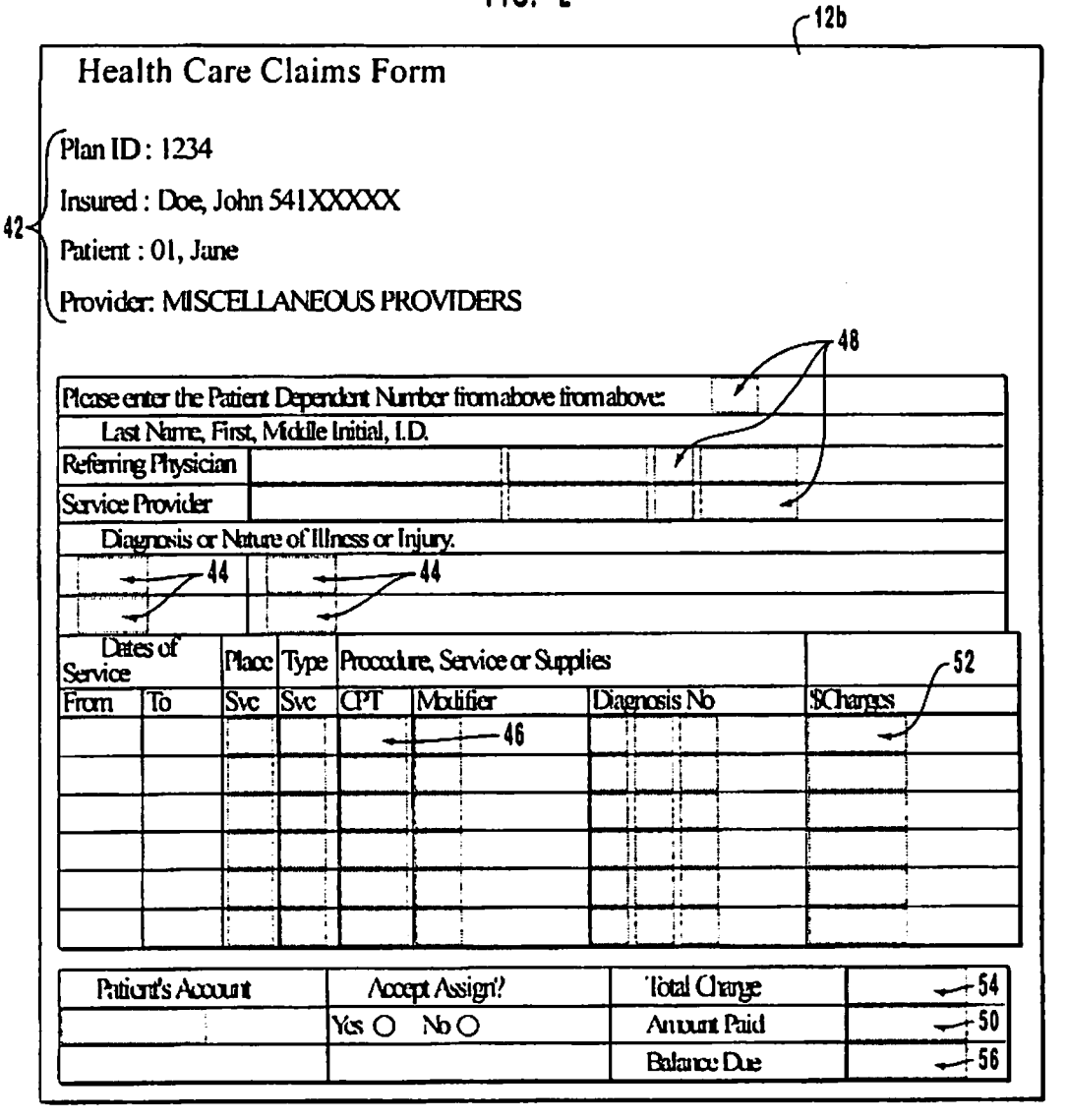

12b
Health Care Claims Form
Plan ID: 1234
Insured : Doe, John 541XXXXX
Patient : 01, Jane
Provider: MISCELLANEOUS PROVIDERS
42
48
Please enter the Patient Dependent Number from above from above:
Last Name, First, Middle Initial, I.D.
Referring Physician
Service Provider
Diagnosis or Nature of Illness or Injury.
44
44
Dates of Service
From
To
Place Svc
Type Svc
Procedure, Service or Supplies
CPT
Modifier
46
Diagnosis No
$Charges
52
Patient's Account
Accept Assign?
Yes ○ No ○
Total Charge
54
Amount Paid
50
Balance Due
56

FIG. 3

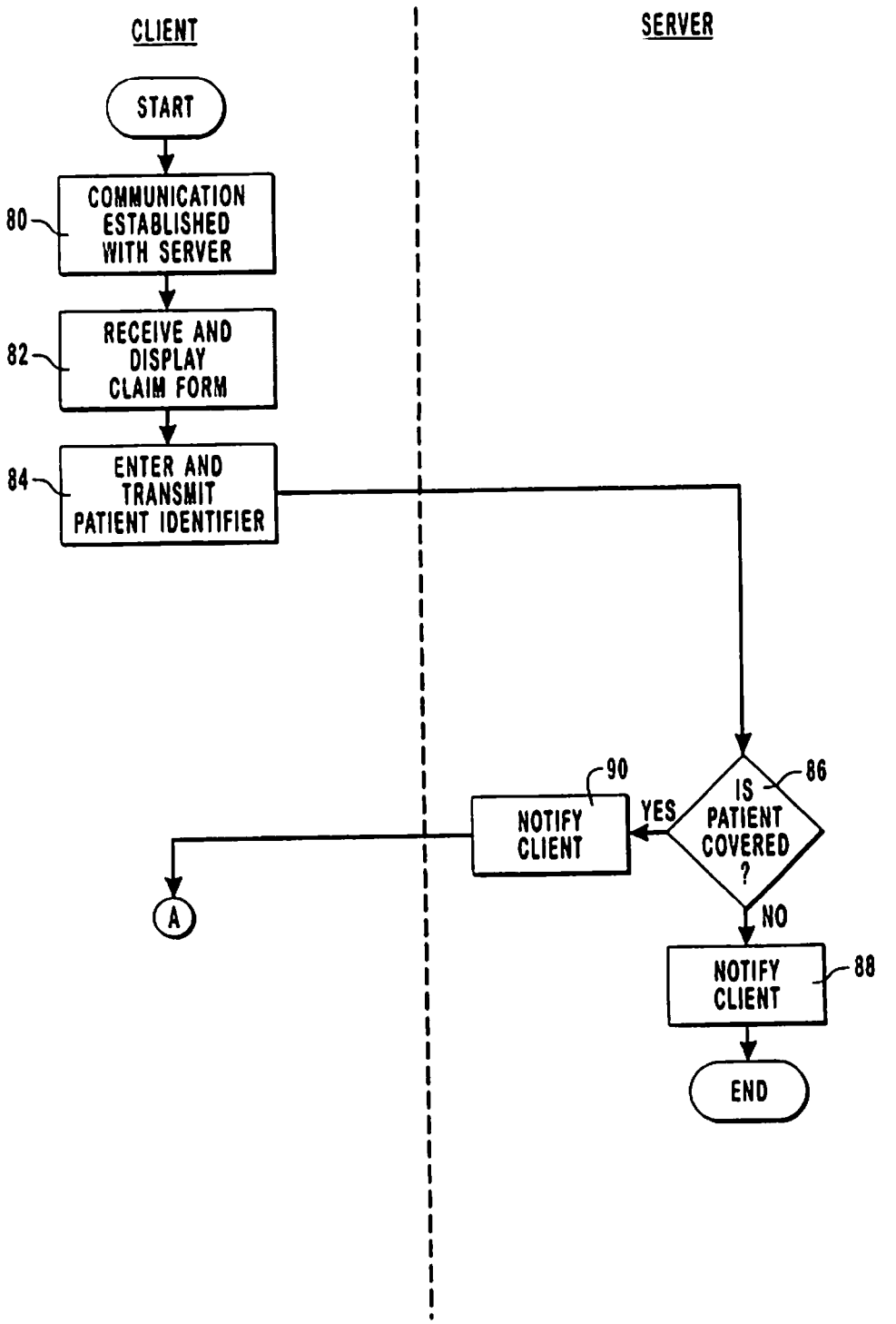

CLIENT
SERVER
START
COMMUNICATION ESTABLISHED WITH SERVER
80
RECEIVE AND DISPLAY CLAIM FORM
82
ENTER AND TRANSMIT PATIENT IDENTIFIER
84
IS PATIENT COVERED ?
86
YES
NOTIFY CLIENT
90
NO
NOTIFY CLIENT
88
END
A

FIG. 4A

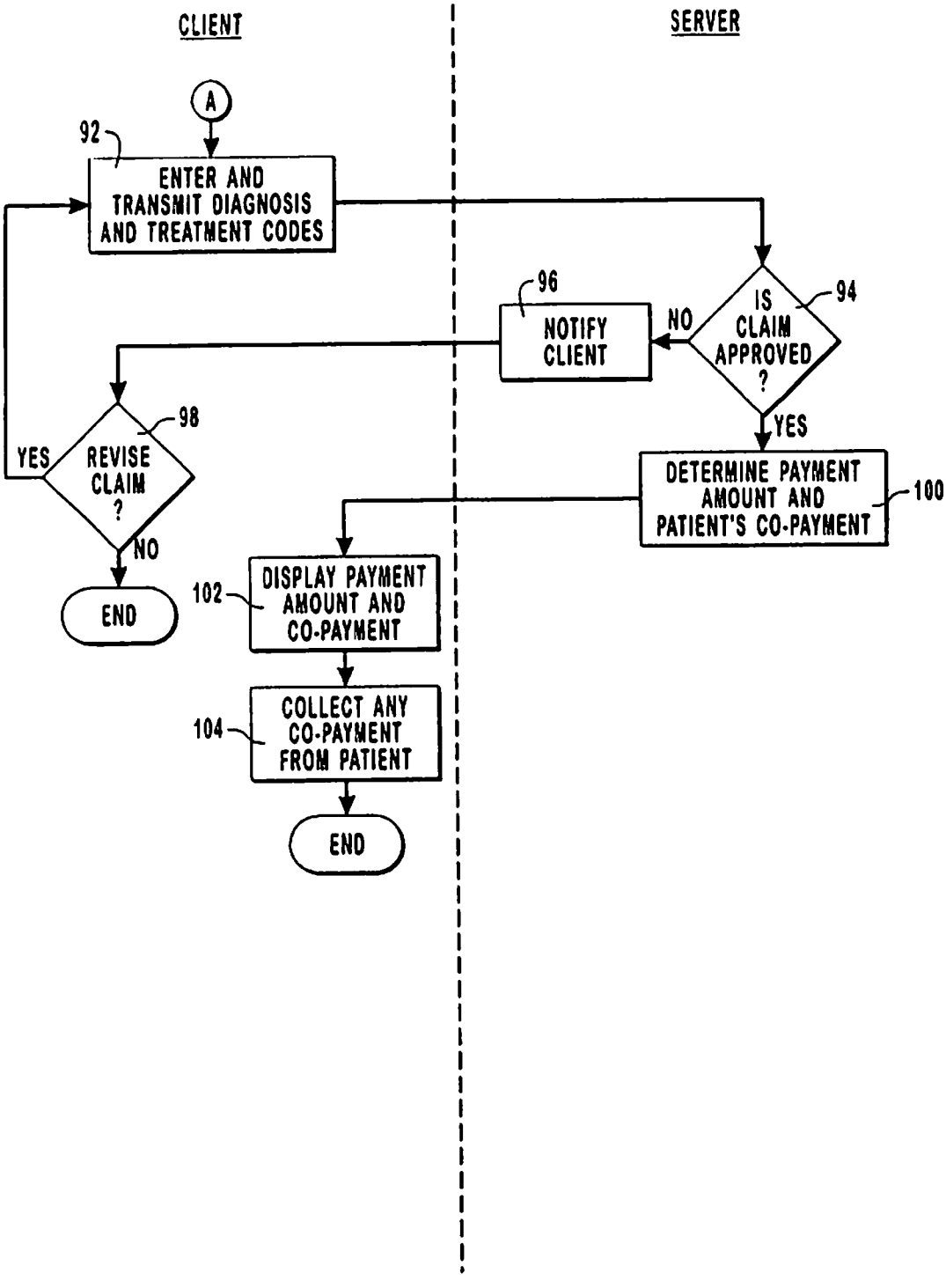

CLIENT
SERVER
A
92
ENTER AND TRANSMIT DIAGNOSIS AND TREATMENT CODES
96
NOTIFY CLIENT
NO
IS CLAIM APPROVED ?
94
YES
98
YES
REVISE CLAIM ?
NO
END
DETERMINE PAYMENT AMOUNT AND PATIENT'S CO-PAYMENT
100
102
DISPLAY PAYMENT AMOUNT AND CO-PAYMENT
104
COLLECT ANY CO-PAYMENT FROM PATIENT
END

FIG. 4B

PROVIDER CLAIM EDITING AND SETTLEMENT SYSTEM

BACKGROUND OF THE INVENTION

1. The Field of the Invention

The present invention relates to systems for creating and approving health insurance claims. More particularly, the present invention relates to interactively creating insurance claims on a client computer that communicates with a remote server computer, whereby a health care provider can be almost immediately informed whether the created insurance claim is in condition to be paid.

2. Relevant Technology

The cost of health care continues to increase as the health care industry becomes more complex, specialized, and sophisticated. The proportion of the gross domestic product that is accounted for by health care is expected to gradually increase over the coming years as the population ages and new medical procedures become available. Over the years, the delivery of health care services has shifted from individual physicians to large managed health maintenance organizations. This shift reflects the growing number of medical, dental, and pharmaceutical specialists in a complex variety of health care options and programs. This complexity and specialization has created large administrative systems that coordinate the delivery of health care between health care providers, administrators, patients, payors, and insurers. The cost of supporting these administrative systems has increased during recent years, thereby contributing to today's costly health care system.

A significant portion of administrative costs is represented by the systems for creating, reviewing and adjudicating health care provider payment requests. Such payment requests typically include bills for procedures performed and supplies given to patients. Careful review of payment requests minimizes fraud and unintentional errors and provides consistency of payment for the same treatment. However, systems for reviewing and adjudicating payment requests also represent transaction costs which directly reduce the efficiency of the health care system. Reducing the magnitude of transaction costs involved in reviewing and adjudicating payment requests would have the effect of reducing the rate of increase of health care costs. Moreover, streamlining payment request review and adjudication would also desirably increase the portion of the health care dollar that is spent on treatment rather than administration.

Several factors contribute to the traditionally high cost of health care administration, including the review and adjudication of payment requests. First, the volume of payment requests is very high. Large health management organizations may review tens of thousands of payment requests each day and tens of millions of requests yearly. In addition, the contractual obligations between parties are complex and may change frequently. Often, there are many different contractual arrangements between different patients, insurers, and health care providers. The amount of authorized payment may vary by the service or procedure, by the particular contractual arrangement with each health care provider, by the contractual arrangements between the insurer and the patient regarding the allocation of payment for treatment, and by what is considered consistent with current medical practice.

During recent years, the process of creating, reviewing, and adjudicating payment requests from health care providers has become increasingly automated. For example, there exist claims processing systems whereby technicians at

health care providers' offices electronically create and submit medical insurance claims to a central processing system. The technicians include information identifying the physician, patient, medical service, insurer, and other data with the medical insurance claim. The central processing system verifies that the physician, patient, and insurer are participants in the claims processing systems. If so, the central processing system converts the medical insurance claim into the appropriate format of the specified insurer, and the claim is then forwarded to the insurer. Upon adjudication and approval of the insurance claims, the insurer initiates a check to the provider. In effect, such systems bypass the use of the mail for delivery of insurance claims.

In partially automated systems, such as that described in the foregoing example, the technician can submit a claim via electronic mail on the Internet or by other electronic means. To do so, the technician establishes communication with an Internet service provider or another wide area network. While communication is maintained, the technician sends the insurance claim to a recipient and then either discontinues communication or performs other activities while communication is established. Using such conventional systems, personnel at the health care provider's office are unable to determine whether the submitted claim is in condition for payment and do not receive any indication, while communication is maintained, whether the claim will be paid.

Thus, while systems that permit electronic submission of insurance claims marginally decrease the time needed to receive payment by eliminating one or more days otherwise required to deliver claims by mail, they remain subject to many of the problems associated with other claims submission systems. For example, it has been found that a large number of insurance claims are submitted with information that is incomplete, incorrect, or that describes diagnoses and treatments that are not eligible for payment. The claims can be rejected for any of a large number of informalities, including clerical errors, patient ineligibility, indicia of fraud, etc. The health care provider is not made aware of the deficiencies of the submitted claims until a later date—potentially weeks afterwards—when the disposition of the insurance claim is communicated to the health care provider. As a result, many claims are subject to multiple submission and adjudication cycles, as they are successively created, rejected, and amended. Each cycle may take several weeks or more, and the resulting duplication of effort decreases the efficiency of the health care system. Studies have shown that some insurance claim submission systems reject up to 70% of claims on their first submission for including inaccurate or incorrect information or for other reasons. Many of the claims are eventually paid, but only after they have been revised in response to an initial rejection.

In order to attempt to minimize the number of claims that are rejected, physicians or their staff have had to spend inordinate amounts of time investigating which treatments will be covered by various insurers and insurance plans. The time spent in such activities represents further efficiency losses in the health care system.

Depending on a patient's insurance plan and the diagnosis and treatment rendered, the patient may be required to make a co-payment representing, for example, a certain percentage of the medical bill or a fixed dollar amount. Because of the large number of insurers and insurance plans, the amount of the co-payment can vary from patient to patient and from visit to visit. Moreover, when a patient is not covered for certain treatment, the patient may be liable for the entire amount of the health care services. It is sometimes difficult for technicians at the offices of the health care provider to

determine that amount of any co-payment or any other amount due from the patient while the patient remains at the offices after a medical visit. Once the patient leaves the office, the expense of collecting amounts owed by patients increases and the likelihood of being paid decreases. Conventional insurance claim submission systems have not been capable of efficiently and immediately informing technicians at the offices of a health care provider of amounts owed by patients, particularly when the amount is not a fixed dollar amount.

In view of the foregoing, there is a need in the art for more fully automated claims processing systems. For example, it would be an advancement in the art to reduce the uncertainty as to whether a claim to be submitted is likely to be paid or rejected. Furthermore, it would be advantageous to provide a claims processing system that would more easily allow health care providers to know what patient and treatment information must accompany insurance claims. There also exists a need for systems that allow health care providers to easily learn of the status of submitted insurance claims.

SUMMARY AND OBJECTS OF THE INVENTION

The present invention relates to methods and systems for interactively creating insurance claims. According to the invention, a medical technician can prepare an insurance claim electronically, submit the claim via the Internet or another wide area network, and receive almost immediately an indication whether the submitted claim is in condition to be paid. If the medical technician is informed that the claim is not in condition to be paid, the claim can be amended by correcting errors or otherwise placing the claim in condition to be paid. By using the invention, health care providers can essentially eliminate the possibility of having claims rejected after a lengthy adjudication process. The invention can significantly reduce the time, effort, and expense that have been associated with the submission of claims that are not in condition to be paid.

According to the invention, communication is established between a client computer operated by a medical technician and a remote server computer. The communication can be established using the Internet, a direct-dial telephone line, or any other suitable wide area network infrastructure. The client computer displays a computer-displayable claim form to the medical technician. The claim form can be sent to the client computer by the remote server or can instead be retrieved from a local memory device. The claim form includes fields that permit the medical technician to enter patient identification information that identifies the patient. The patient identification information is transmitted from the client computer to the remote server. The remote server then determines whether the patient is a beneficiary of a health insurance plan and informs the client computer of the patient eligibility status.

Informing the medical technician almost immediately of the patient's insurance status allows the health care provider to select the appropriate treatment for the patient. The patient's eligibility status transmitted from the remote server can include any desired amount of detail. For example, the eligibility status can describe the types of diagnoses and treatments for which payment will be made on behalf of the patient, and the co-payment required by the patient.

If the patient is a beneficiary of an approved insurance plan, the medical technician can proceed with preparation of a full insurance claim. The claim form displayed by the client computer includes fields that permit the medical technician to enter one or more diagnosis codes describing the diagnosis of the patient and one or more treatment codes describing the treatment administered to the patient. The claim form can also include fields representing the identity of the health care provider and any other desired information.

The diagnosis and treatment codes are transmitted from the client computer to the remote server. The remote server or a processor associated therewith then processes the transmitted information to determine whether the insurance claim is in condition to be paid. For example, the remote server can verify that all required information is included. The remote server can also determine whether the diagnosis code and the treatment code correspond to currently accepted medical practice and to health care services that are covered by the particular insurance plan of the patient. The remote server can also perform any desired checks on the information in the insurance claim to determine whether the claim has indicia of fraud, unusually expensive treatment, or any other feature that indicates that the validity or accuracy of the claim should be further investigated.

If the insurance claim is not in condition to be paid, the remote server transmits information to the client computer to inform the medical technician. The information transmitted to the client computer can include an indication of the reason for rejection of the claim and, optionally, suggestions on how to remedy the problem. For instance, if the insurance claim does not include complete information, the medical technician can be prompted to complete the claim form. The deficiency of the claim can be substantive, as well, in that the treatment code could represent a treatment that is not considered to be compatible with the diagnosis. In this case, the health care provider can change the treatment, otherwise amend the claim form, or inform the patient that the insurance plan will not cover the treatment. When a claim form has been amended, the new information can be transmitted to the remote server to repeat the process of determining whether the claim is in condition to be paid.

When the remote server determines that the claim is in condition to be paid, the remote server transmits information to the client computer to notify the medical technician. The information transmitted to the client computer can include data that represents an amount that is to be paid by the insurer on behalf of the patient. The medical technician can also be informed of any co-payment to be collected from the patient. Because the process of determining whether the claim is in condition for payment can occur almost instantaneously—typically in a matter of seconds or minutes—any co-payment can be collected from the patient while the patient remains in the offices of the health care provider before or after treatment.

In view of the foregoing, the invention provides systems and methods for providing almost immediate feedback to the medical technician specifying whether a submitted claim is in condition to be paid. While the speed of response can vary, depending on the data transmission rates between the client computer and the remote server, the processing capabilities of the remote server, and the complexity of the verification process to be conducted by the remote server, the invention can provide almost immediate response to submitted claims. The response time can be short enough that the medical technician can create a claim, submit the claim, and be notified whether the claim is in condition for allowance without discontinuing communication between the client computer and the remote server, while continuing to view the claim form displayed by the client computer, or without proceeding to another patient's claim before receiv-

ing the response. In any event, the response time is significantly faster than that of conventional systems, which do not permit the interactive creation and modification of insurance claims.

The invention can significantly reduce the inefficiencies that are otherwise experienced in the health care system as claims are submitted, subjected to an adjudication process, and often rejected days, weeks, or longer, after the claim was created. The claim creation and verification systems of the invention also allow health care providers to easily learn of the types of treatments that are approved for payment for specific diagnoses according to the patient's insurance plan. In addition, the invention increases the efficiency of collecting co-payments from patients and increases the likelihood that such co-payments will be made.

Additional objects and advantages of the invention will be set forth in the description which follows, and in part will be obvious from the description, or may be learned by the practice of the invention. The objects and advantages of the invention may be realized and obtained by means of the instruments and combinations particularly pointed out in the appended claims. These and other objects and features of the present invention will become more fully apparent from the following description and appended claims, or may be learned by the practice of the invention as set forth hereinafter.

BRIEF DESCRIPTION OF THE DRAWINGS

In order that the manner in which the above-recited and other advantages and objects of the invention are obtained, a more particular description of the invention briefly described above will be rendered by reference to specific embodiments thereof which are illustrated in the appended drawings. Understanding that these drawings depict only typical embodiments of the invention and are not therefore to be considered limiting of its scope, the invention will be described and explained with additional specificity and detail through the use of the accompanying drawings in which:

FIG. 1 is schematic diagram illustrating an interactive system according to the invention, including a client system at the offices of a health care provider and a remote server system, whereby a medical technician can interactively prepare an insurance claim that is in condition to be paid.

FIG. 2 illustrates an insurance claim form that enables a medical technician to determine whether and to what extent a patient is a beneficiary of an approved insurance plan.

FIG. 3 illustrates an insurance claim form that enables a medical technician to submit an insurance claim including one or more diagnosis codes and one or more treatment codes.

FIG. 4*a* is a flow diagram illustrating one embodiment of the methods of the invention for determining whether and to what extent a patient is a beneficiary of an approved insurance plan.

FIG. 4*b* is a flow diagram depicting one embodiment of the methods for interactively preparing an insurance claim that is in condition to be paid.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention relates to methods and systems for interactively preparing and submitting insurance claims and verifying that the claims are in condition to be paid. A medical technician at the offices of a health care provider operates a client computer that communicates with a remote server. According to one embodiment of the invention, the medical technician views a computer-displayable claim form displayed by the client computer and enters a diagnosis code and a treatment code that describe a medical diagnosis and associated treatment for a patient. The diagnosis code and the treatment code are transmitted to the remote server. The remote server performs an operation in response to the diagnosis code and the treatment code to determine if these codes correspond to health care services that are approved for payment.

If the remote server determines that the submitted claim will not be paid by an insurer, the remote server transmits information to the client computer to inform the medical technician of this result. In response, the medical technician can amend the treatment code or any other desired information on the insurance claim to place the claim in condition to be paid. After amending the claim, the claim is again submitted to the remote server, where it is again analyzed to determine whether it represents health care services that are approved for payment.

According to one embodiment, when the remote server determines that the submitted claim is in condition to be paid, the remote server transmits information to the client computer indicating the amount that is to be paid by the insurer on behalf of the patient. The system can also inform the medical technician of any co-payment to be collected from the patient.

Embodiments of the invention include or are incorporated in computer-readable media having computer-executable instructions or data structures stored thereon. Examples of computer-readable media include RAM, ROM, EEPROM, CD-ROM or other optical disk storage, magnetic disk storage or other magnetic storage devices, or any other medium capable of storing instructions or data structures and capable of being accessed by a general purpose or special purpose computer. Computer-readable media also encompasses combinations of the foregoing structures. Computer-executable instructions comprise, for example, instructions and data that cause a general purpose computer, special purpose computer, or special purpose processing device to execute a certain function or group of functions. The computer-executable instructions and associated data structures represent an example of program code means for executing the steps of the invention disclosed herein.

The invention further extends to computer systems for interactively creating and submitting insurance claims and determining whether the claims are in condition to be paid. Those skilled in the art will understand that the invention may be practiced in computing environments with many types of computer system configurations, including personal computers, multi-processor systems, network PC's, minicomputers, mainframe computers, and the like. The invention will be described herein in reference to a distributed computing environment, such as the Internet, where tasks are performed by remote processing devices that are linked through a communications network. In the distributed computing environment, computer-executable instructions and program modules for performing the features of the invention may be located in both local and remote memory storage devices.

FIG. 1 illustrates one embodiment of the systems for interactively creating and submitting insurance claims according to the invention. Client system 10 may be located at the offices of a health care provider in order to allow a medical technician to create and submit insurance claims. As

used herein, the term "health care provider" is to be broadly construed to include any physician, dentist, medical practitioner, or any other person whose services can be compensated by a health insurer, a health maintenance organization, or the like. As used herein, the term "medical technician" represents any person who engages in the activity of preparing or submitting insurance claims on behalf of a health care provider. Since medical technicians are typically employees of health care providers, representatives of health care providers, or may be the health care providers themselves, any of the claims that recite steps, operations, or procedures conducted by "health care providers" are to be construed to extend to the same steps, operations, or procedures conducted by "medical technicians", as well.

The term "insurance plan" extends to any contractual or other legal arrangement whereby medical and other related expenses are paid on behalf of a beneficiary. Examples of insurance plans include health maintenance organizations, fee-for-service health care plans, employer-sponsored insurance plans, etc.

Client system **10** can be a general purpose computer, such as a PC, or a special purpose computer adapted to perform the functions and operations disclosed herein. Client system **10** may include a display device such as a monitor for displaying claim form **12**, as will be disclosed in greater detail below, and one or more input devices such as a keyboard, a mouse, etc. for enabling a medical technician to enter the required information to client system **10**.

The embodiment illustrated in FIG. **1** also includes a server system **14** located typically at a remote location with respect to client system **10**. Server system **14** can include a general purpose computer or a special purpose computer adapted to execute the functions and operations of the invention. For example, in FIG. **1**, server system **14** includes a processor **16**, which represents a general purpose computing device for receiving information associated with insurance claims and for determining whether the received information corresponds to health care services that are approved for payment. The operation of server system **14** and processor **16** will be discussed in greater detail below.

In one embodiment, processor **16** is capable of accessing information stored in a patient eligibility database **18** and an accepted medical practice database **20**. Database **18** can include compilation of data that enables server system **14** to determine whether a particular patient identified at client system **10** is a beneficiary of an approved insurance plan. Likewise, database **20** can be any compilation of data that enables service system **14** to determine whether the health care services associated with a submitted claim are approved for payment under the particular insurance plan of the patient.

While the illustrated components of server system **14** of FIG. **1** can be located at a single remote site with respect to client system **10**, other embodiments of the invention employ a processor **16** and databases **18** and **20** that may be located at different sites with respect to each other. The terms "server system" and "remote server" extend to the latter case, wherein the various components **16**, **18**, and **20** are located in a distributed environment unless specifically indicated otherwise.

In the embodiment of FIG. **1**, client system **10** and server system **14** communicate by means of Internet infrastructure **22**. While the invention is described herein in the context of the Internet, those skilled in the art will appreciate that other communications systems can be used, such as direct dial communication over public or private telephone lines, a dedicated wide area network, or the like.

Referring to FIG. **1**, when a medical technician desires to prepare an insurance claim for health care services provided to the patient, the medical technician operates client system **10** and establishes communication with server system **14** or verifies that communication has been established. For instance, the medical technician may use client system **10** to dial into a modem pool associated with an Internet service provider in Internet infrastructure **22**. After communication with the Internet service provider has been achieved, client system **10** may be used to transmit a Uniform Resource Locator (URL) to the Internet infrastructure **22** that requests access to resources provided by server system **14**. Alternatively, any other suitable technique can be used to establish communication between client system **10** and server system **14**.

In many cases, client system **10** will maintain communication with server system **14** for an extended period of time during which claims for multiple patients are processed. For instance, client system **10** can be a dedicated terminal that maintains communication with server system **14** in order for numerous insurance claims to be created and processed.

Once communication has been established, the medical technician can use client system **10** to request claim form **12** to be displayed on a monitor associated with client system **10**. Claim form **12**, in one embodiment, is a Hyper Text Markup Language (HTML) document retrieved from server system **14** and displayed to the medical technician. Alternatively, claim form **12** can have any other suitable format or can be stored at a local cache or any other local data storage system, thereby eliminating the need to repeatedly retrieve claim form **12** from a remote location as multiple insurance claims are created.

FIG. **2** illustrates one example of a claim form **12A** that enables a medical technician to verify that a patient is a beneficiary of an insurance plan and to learn of the details of the insurance plan. In this embodiment, claim form **12A** includes a field **26** to which a patient identifier can be entered. Patient identification information, such as patient identifier **28** of FIG. **1**, is entered by the medical technician claim form **12A** of FIG. **2**. Depending on the manner in which the invention is implemented, the medical technician may be required to enter other information, such as other information **30** of FIG. **1**, that identifies, for example, the insurance plan of the patient, the health care provider, or the like. Turning to FIG. **2**, claim form **12A** in this example includes a field **32** for identifying the insurance plan of the patient, a field **34** for receiving information identifying the health care provider and a field **36** for entering additional information identifying the patient. As shown in FIG. **2**, field **36** can be adapted to receive a patient's date of birth. Alternatively, any other information that can uniquely identify a particular patient from among a pool of patients can be used in combination with fields **26** and **36**. By way of example and not limitation, the patient identification information entered to fields **26** or **36** can include patient's social security number, or a number uniquely associated with the patient by an insurance plan or a health maintenance organization.

Referring now to FIG. **1**, after the medical technician has entered patient identifier **28** and, optionally, other information **30**, the medical technician uses client system **10** to transmit the information to server system **14**. In one embodiment, processor **16** compares patient identifier **28** against data stored in patient eligibility database **18** to determine if the patient is a beneficiary of an insurance plan and, if so, the details of the benefit thereof If the patient is found not to be a beneficiary of an approved insurance plan,

information is transmitted from server system 14 to client system 10 to inform the medical technician of this result. Thus, when the patient is not a beneficiary, a medical technician and the health care provider can promptly learn of this status and take steps to advise the patient or provide appropriate medical treatment.

If it is determined that the patient is a beneficiary, information is likewise transmitted from server system 14 to client system 10 informing the medical technician of the patient's status. The information can also provide details of the coverage provided to the patient that can allow the health care provider to select the appropriate course of action for the patient. The details can include the types of diagnoses and treatments that are approved for payment.

When the health care provider makes a diagnosis and performs or prescribes treatment to the patient, the medical technician can complete the claim form by entering at least one diagnosis code 38 and one treatment code 40. Referring now to FIG. 3, claim form 12B includes fields adapted to accept the diagnosis code and the treatment code. Claim form 12B of FIG. 3 and claims form 12A may be separate forms displayed to the medical technician using client system 10 or can be separate portions of the single claim form. Claim form 12B, in the example of FIG. 3, includes header information 42 that has been automatically prepared by the server system before claim form 12B was transmitted to the client system. Providing a claim form 12B that is automatically partially completed contributes to the efficiency of the claims creation and submission processes of the invention. While claim form 12B represents a claim form that can be advantageously used by many health care providers, the specific fields included in the form and the information displayed on the form may vary from one implementation to another, depending on the type of health care provider, insurance plan, and other factors.

Claim form 12B includes a plurality of fields 44 designed to receive and display diagnosis codes representing the health care provider's diagnosis of the patient or the nature of the patient's illness or injury. Thus, as used herein, "diagnosis code" refers to any information that specifies or indicates a patient's condition as diagnosed by a health care provider. Any predefined set of diagnosis codes can be used with the invention.

Claim form 12B also includes one or more fields 46 designed to receive and display treatment codes associated with the diagnosis code of field 44. As used herein, "treatment codes" can represent any type of health care services such as clinical therapy, pharmacological therapy, therapeutic supplies or devices, or other goods or services that can be paid for by health insurance plans or health maintenance organizations. The treatment codes can be selected from any desired set of predefined treatment codes that define various treatments that can be administered to patients. In one embodiment, the diagnosis codes and the treatment codes can be selected from the codes and code modifiers of a volume entitled Physician's Current Procedural Terminology (CPT), which is maintained and updated annually by the American Medical Association.

As shown in FIG. 3, claims form 12B can include other fields, such as fields 48, that are to be completed by the medical technician before the insurance claim is submitted. In this example, fields 48 are adapted to receive and display information identifying the patient, a referring physician, and the health care provider who is to receive payment for the health care services provided to the patient.

When fields 44, 46, and 48 are filled out by the medical technician, the medical technician submits the information included in these fields to server system 14 from client system 10. Referring again to FIG. 1, server system 14 receives this information and performs certain operations in response thereto to determine whether the claim form corresponds to health care services that are approved for payment by the patient's insurance plan. For instance, processor 16 can compare the diagnosis code 38 and treatment code 40 with a compilation of currently accepted medical procedures stored in database 20. In one embodiment, MDR may be used to determine whether the diagnosis codes and treatment codes correspond to health care services that are approved for payment. Upon learning of the invention disclosed herein, those skilled in the art will understand how MDR can be used to determine whether the submitted claim form represents health care services that are approved for payment.

Server system 10 also determines whether the information provided in claim form 12B is sufficiently complete to place insurance claim in condition to be paid. For example, if the medical technician inadvertently fails to include information that identifies the referring physician, server system can detect this error and later notify client system 10 of the deficiency.

The techniques for processing submitted insurance claims at server system 14 can be as complex as desired. In one embodiment, server system 14 analyzes the information submitted using claim form 12B to determine whether there are indicia of fraud or mistake, whether unusually expensive health care services are listed in the claim, or whether manual adjudication of the insurance claim is otherwise advisable. If the claim exhibits any of the foregoing features, the claim may be forwarded to a human adjudicator for manual adjudication or may be returned to the health care provider to allow revision of the claim.

One technique that is sometimes used by health care providers to collect more money from insurance plans than is otherwise warranted is the practice of unbundling medical procedures. "Unbundling" consists of performing, for example, multiple medical procedures on a patient through a single surgical incision while submitting an insurance claim for the multiple medical procedures as if they had been performed separately. Typically, when only one incision is required to perform multiple medical procedures, the payment to the operating physician is less than the payment would be if each of the multiple medical procedures had been conducted through separate incisions. Other fraudulent unbundling techniques for submitting claims on multiple medical procedures are sometimes used as well. Thus, server system 14 can analyze the diagnosis codes and the treatment codes for indicia of unbundling practices. Furthermore, server system 14 may conduct any other checks on the submitted claim.

If server system 14 determines that insurance claims submitted using the claim forms of the invention are not in the condition to be paid for any reason, server system can transmit information to client system 10 informing the medical technician of this result. In addition, the information transmitted to the client system can indicate the basis for rejecting the insurance claim. Thus the medical technician can be informed that the claim form was not completely filled out, the treatment code is inconsistent with the diagnosis code, or any of a number of other possible reasons for rejecting the insurance claim. In response, the medical technician can amend the insurance claim by entering the correct information to the fields of claim form 12B of FIG. 3, if necessary. In other cases, the health care provider can be informed that the recommended treatment defined by

treatment code 40 of FIG. 1 is not approved for payment by the patient's insurance plan. The health care provider can then advise the patient and decide to proceed with the treatment or to prescribe an alternative treatment that is approved for payment.

If the medical technician wishes to amend the insurance claim, the new information is transmitted from client system 10 to server system 14 for processing. For example, the health care provider may decide that an alternative treatment is appropriate for the patient, in which case the medical technician would enter a new treatment code to client system 10. Server system 14 then repeats the previously described process of determining whether the amended insurance claim is in condition for payment. The above-described process can be repeated as many times as desired or necessary to create and submit an insurance claim that describes health care services that are approved for payment by the patient's insurance plan.

When server system 14 informs client system 10 that a submitted claim is in a condition for payment, the server system can transmit information that specifies the amount that will be paid by the insurer on behalf of the patient. For example, claim form 12B of FIG. 3 includes a field 50 that displays a dollar amount when the server system has determined that the claim is in condition for payment. In the example of FIG. 3, fields 52 permit the medical technician to enter an amount that is requested for the treatments defined by the treatment codes in fields 46.

To illustrate, the medical technician might enter in field 46 a treatment code that represents a physical exam performed by a physician. The medical technician could then enter in field 52 a dollar amount, such as $100, that is customarily charged by the physician for a physical exam. Field 54 sums all dollar amounts entered in fields 52. In this example, if the physical exam was the only treatment rendered to the patient, field 54 would also display a dollar amount of $100. If the server system, when processing the submitted claim, determines that the patient's insurer pays only $90 for a physical exam, field 50 displays the dollar amount of $90 when the insurance claims has been processed and returned to the client system. A balance due field 56 displays the difference between the total charge field 54 and the amount paid field 50. The dollar amount displayed in field 56 represents the amount that is to be collected from the patient. As used herein, the term "co-payment" is defined to extend to the dollar amount displayed in field 56, representing the amount that is to be collected from the patient beyond the payment that is approved by the insurer.

Using the invention, medical technicians and health care providers can be informed of the status of submitted insurance claims in a relatively short amount of time that is significantly less than conventional systems, which may require days, weeks, or more. Indeed, for practical purposes, a response to the submitted insurance claim is received almost immediately by the medical technician. It can be understood that the limiting factors with respect to the speed of response include the data transmission rate supported by Internet infrastructure 22 of FIG. 1 and the other communication links between the various components of the system, the processing capabilities of processor 16 and other components of server system 14, and the complexity of the submitted claim and the nature of the claim processing techniques performed by server system 14.

In many cases, the response time is short enough that a medical technician can conveniently continue viewing the claim form associated with a particular patient at client system 10 of FIG. 1 while server system 14 performs the operations that determine whether the submitted claim is in condition to be paid. Thus, a medical technician can consecutively create and submit a series of claims and receive verification that the claims are in condition for payment. In other words, a medical technician can easily create, submit, and, if necessary, revise and resubmit, a single claim before proceeding to the next claim in a series of claims, since the response time can be very short. This is in sharp contrast to prior art systems in which the response time of days, weeks, or longer make it entirely impractical for medical technicians to complete the entire claim creation and adjudication process for one claim before proceeding to the next claim.

The systems and methods disclosed herein can be practiced in combination with the systems disclosed in co-pending U.S. patent application Ser. No. 09/118,668, entitled "Internet Claims Processing System", filed Jul. 17, 1998, which is incorporated by reference for purposes of disclosure. For example, the payment systems and payment tracking systems of the foregoing patent application can be employed with the insurance claim creation and submission techniques of the invention. Moreover, as previously described, if claims submitted to server system 14 of FIG. 1 exhibit indicia of fraud or mistake, or exceed a threshold dollar amount, the claims can be subjected to additional adjudication procedures. In one embodiment, the additional adjudication procedures can include adjudication techniques described in U.S. patent application Ser. No. 09/118,668.

The invention can be practiced with additional steps for processing or paying insurance claims or for communicating the status of submitted claims to health care providers and patients. For instance, when a claim has been submitted and approved, an explanation of benefits can be automatically created and sent to the provider, the patient, and/or to an employer of the patient. Electronic funds transfer can be used to execute payment from insurers to health care providers for approved claims.

FIG. 4A illustrates one embodiment of the methods of the invention for interactively determining whether a particular patient is a beneficiary of an approved insurance plan. In step 80, communication is established between the client system and the server system as described herein. In step 82, the client system receives and displays the claim form to enable the medical technician to enter the information required to complete the insurance claim. As previously noted, the client system can retrieve the claim form from the remote server system or from a local data storage device. In step 84, the medical technician enters the patient identification information and transmits the information to the server system.

In decision block 86, if the server system discovers that the patient is not a beneficiary of an approved insurance plan, the server system notifies the client of this result as shown in step 88. Likewise, if the server system determines that the patient is a beneficiary, this result is transmitted to the client system as shown in step 90.

FIG. 4B illustrates one embodiment of the methods of the invention for creating and submitting insurance claims and determining whether the submitted claim is in condition for payment. In step 92, after having been notified that the patient is a beneficiary of an approved insurance plan, the medical technician enters the diagnosis and treatment codes to the claim form and transmits these codes to the server system. As shown in decision block 94, the server system performs any desired claim checking or adjudication process to determine whether the claim describes health care ser-

vices that are approved for payment. If the claim is not in condition to be paid, the method advances to step **96**, in which the client system is notified of this result. As shown by decision block **98**, if the medical technician or the health care provider decides to revise the claim, the method again advances to step **92**.

Referring again to decision block **94**, if the server system determines that the claim is in condition for payment, the method advances to step **100**, in which the server system determines the amount to be paid by the insurer and any co-payment to be collected from the patient. Next, in step **102**, the client system displays the payment amount and the co-payment amount to the medical technician or the health care provider. In step **104**, any co-payment can then be collected from the patient. It will also be appreciated that, in other embodiments, the invention can be practiced without calculating the co-payment.

The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed and desired to be secured by United States Letters Patent is:

1. In a system comprising a client computer and a remote server computer connected to the client computer by a communication link, a method of interactively preparing an insurance claim in preparation for a health care provider to perform health care services, the method comprising the steps of:

entering, by a health care provider, a diagnosis code and a treatment code to a computer-displayable claim form displayed by the client computer;

transmitting the diagnosis code and the treatment code from the client computer to the remote server computer prior to the health care provider performing health care services;

determining, at a processor associated with the remote server computer, that the diagnosis code and the treatment code do not correspond to health care services that are approved for payment;

transmitting information from the remote server computer to the client computer, the information indicating to the health care provider that the diagnosis code and the treatment code do not correspond to health care services that are approved for payment prior to the health care provider performing the health care services; and

transmitting, from the remote server computer to the client computer, a suggested revised treatment code prior to the health care provider performing the health care services, such that the treatment associated with the revised treatment code can be included in the health care services when the health care services are performed by the health care provider.

2. A method as defined in claim **1**, wherein the computer-displayable form is a hypertext markup language document.

3. A method as defined in claim **1**, wherein the step of transmitting the diagnosis code and the treatment code and the step of transmitting information are both conducted within a single period of time that is short enough so that the health care provider continues to view the computer-displayable form during the single period of time.

4. A method as defined in claim **1**, wherein the step of transmitting the diagnosis code and the treatment code and the step of transmitting information are both conducted within a single period of time that is short enough so that the communication between the remote server computer and the client computer is not discontinued during the single period of time.

5. A method as defined in claim **1**, wherein the diagnosis code and the treatment code are associated with a first patient, the method further comprising the steps of:

entering, by a health care provider, a second diagnosis code and a second treatment code to the claim form;

transmitting the second diagnosis code and the second treatment code from the client computer to the remote server computer;

determining, at the processor, whether the second diagnosis code and the second treatment code correspond to health care services that are approved for payment; and

transmitting further information from the remote server computer to the client computer, the further information indicating to the health care provider whether the second diagnosis code and the second treatment code correspond to health care services that are approved for payment.

6. A method as defined in claim **1**, further comprising the step of transmitting, from the remote server computer to the client computer, data representing an amount to be paid by an insurer to a health care provider who is to perform the health care services.

7. A method as defined in claim **6**, further comprising the step of displaying, by the client computer, co-payment information representing a co-payment to be collected from a patient who has received the health care services.

8. A method as defined in claim **7**, further comprising the step of collecting the co-payment from the patient based on the co-payment information.

9. A method as defined in claim **8**, wherein the step of collecting the co-payment from the patient is conducted during a visit of the patient to an office of the health care provider, wherein the patient receives said health care services during said visit.

10. In a system that includes a remote server computer and a client computer capable of communicating with the remote server computer, a method of interactively preparing an insurance claim comprising the steps of:

generating a computer-displayable claim form for display to a health care provider;

receiving a diagnosis code and a treatment code entered to the claim form by the health care provider;

initiating transmission of the diagnosis code and the treatment code from the client computer to the remote server computer prior to the health care provider performing health care services associated with the treatment code;

receiving information from the remote server computer indicating to the health care provider that the diagnosis code and treatment code do not correspond to health care services that are approved for payment prior to the health care provider performing the health care services associated with the treatment code; and

receiving, from the remote server computer, a suggested revised treatment code prior to the health care provider performing the health care services, such that the treatment associated with the revised treatment code can be included in the health care services when the health care services are performed by the health care provider.

11. A method as defined in claim **10**, wherein the step of transmitting the diagnosis code and the treatment code and

the step of transmitting information are both conducted within a single period of time that is short enough so that the communication between the remote server computer and the client computer is not discontinued during the single period of time.

12. A method as defined in claim 10, further comprising, before the step of receiving the diagnosis code and the treatment code, the step of transmitting patient identification information from the client computer to the remote server computer.

13. A method as defined in claim 12, further comprising, after the step of transmitting patient identification information and prior to the health care provider performing the health care services, the step of receiving verification from the remote server computer that a patient identified by the patient identification information is a beneficiary of a health insurance plan.

14. In a system that includes a client computer and a server system capable of communicating with the client computer, a method of informing a health care provider using the client computer whether an insurance claim represents health care services that are approved for payment prior to the health care provider performing the health care services, comprising the steps of:

receiving a treatment code and a diagnosis code from the client computer, the treatment code and diagnosis code having been entered to the client computer by a health care provider prior to the health care provider performing health care services;

examining the treatment code and the diagnosis code and determining that the treatment code and the diagnosis code do not correspond to health care services that are approved for payment;

initiating transmission of information to the client computer indicating to the health care provider indicating that the treatment code and the diagnosis code do not correspond to health care services that are approved for payment prior to the health care provider performing the health care services, such that the health care provider can base a decision regarding whether to perform the health care services on whether the health care services are approved for payment; and

initiating transmission of a suggested revised treatment code to the client computer prior to the health care provider performing the health care services, such that the treatment associated with the revised treatment code can be included in the health care services when the health care services are performed by the health care provider.

15. A method as defined in claim 14, further comprising, prior to the step of receiving the treatment code and the diagnosis code, transmitting a computer-displayable claim form to the client computer for display to the health care provider, the claim form including fields for accepting the treatment code and the diagnosis code.

16. A method as defined in claim 15, wherein the step of transmitting a computer-displayable claim form comprises the step of transmitting a hypertext markup language document from to the client computer via the Internet.

17. A method as defined in claim 14, wherein the step of receiving the diagnosis code and the treatment code and the step of transmitting information are both conducted within a single period of time that is short enough so that communication between the remote server computer and the client computer is not discontinued during the single period of time.

18. A method as defined in claim 14, wherein the step of examining the treatment code and the diagnosis code comprises the step of comparing the treatment code and the diagnosis code to a database having entries that represent currently accepted medical practice.

19. A method as defined in claim 14, wherein the step of examining the treatment code and the diagnosis code comprises the step of determining whether a plurality of treatment codes is consistent with an unbundling claiming practice.

20. A computer program product for implementing a method of interactively preparing an insurance claim prior to a health care provider performing health care services that are the subject of the insurance claim, wherein the method is capable of being performed on a client computer that communicates with a remote server computer, the computer program product comprising:

a computer-readable medium carrying computer-executable instructions for implementing the method, the computer-executable instructions comprising:

program code means for displaying a computer-displayable claim form to a health care provider;

program code means for initiating transmission of a diagnosis code and a treatment code from the client computer to the remote server computer prior to the health care provider performing the health care services;

program code means for receiving, from the remote server computer and prior to the health care provider performing the health care services, information indicating that the diagnosis code and the treatment code do not correspond to health care services that are approved for payment; and

program code means for receiving, from the remote server computer, a suggested revised treatment code prior to the health care provider performing the health care services, such that the treatment associated with the revised treatment code can be included in the health care services when the health care services are performed by the health care provider.

21. A computer program product as defined in claim 20, wherein the program code means for initiating transmission of the diagnosis code and the treatment code comprise program code means for communicating with the remote server via the Internet.

22. A computer program product as defined in claim 21, wherein the program code means for communicating with the remote server via the Internet operate so as to maintain communication with the remote server during a time period between the transmission of the diagnosis code and the treatment code and the receipt of the information from the remote server computer.

23. A computer program product for implementing, in a server system that communicates with a client system, a method of informing a health care provider who uses the client computer whether an insurance claim represents health care services approved for payment prior to the health care provider performing the health care services, the computer program product comprising:

a computer-readable medium carrying computer-executable instructions for implementing the method, the computer-executable instructions comprising:

program code means for receiving a treatment code and a diagnosis code from the client computer, the treatment code and diagnosis code having been entered to the client computer by a health care provider prior to the health care provider performing health care services;

program code means for determining whether the treatment code and the diagnosis code correspond to health care services that are approved for payment; and

program code means for initiating transmission of information to the client computer indicating to the health care provider that the treatment code and the diagnosis code do not correspond to health care services that are approved for payment prior to the health care provider performing the health care services, such that the health care provider can base a decision regarding whether to perform the health care services on whether the health care services are approved for payment; and

program code means for initiating transmission of a suggested revised treatment code, to the client computer, prior to the health care provider performing the health care services, such that the treatment associated with the revised treatment code can be included in the health care services when the health care services are performed by the health care provider.

24. A computer program product as defined in claim 23, wherein the computer-executable instructions further comprise program code means for initiating transmission of a computer-displayable claim form to the client computer, the claim form including fields for accepting the treatment code and the diagnosis code.

25. A computer program product as defined in claim 23, wherein the computer-executable instructions further comprise:

program code means for receiving patient identification information from the client computer, the patient identification information identifying an patient of the health care provider;

program code means for determining whether the patient is a beneficiary of a health insurance plan; and

program code means for initiating transmission of data to the client computer indicating whether the patient is a beneficiary of a health insurance plan prior to the health care provider performing the health care services for the patient.

26. A computer program product as defined in claim 25, wherein the program code means for receiving patient identification information and the program code means for initiating transmission of data operate by communicating with the client computer via the Internet.

27. A computer program product as defined in claim 26, wherein the computer-executable instructions further comprise program code means for maintaining communication with the client computer during a time period between the receipt of the diagnosis code and the treatment code and the transmission of the information to the client computer.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 6,341,265 B1
DATED : January 22, 2002
INVENTOR(S) : Wayne E. Provost, Vaughn C. Cecil, John W. Kwant, Jr. and Brian E. Peterson

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title page,
Item [56], **References Cited**, under OTHER PUBLICATIONS, insert -- Claimsnet Files ISO to Fund Service by Lisa Tanner --

Column 8,
Line 66, after "thereof" insert -- . --

Signed and Sealed this

Twenty-seventh Day of August, 2002

Attest:

Attesting Officer

JAMES E. ROGAN
Director of the United States Patent and Trademark Office

Exhibit C

US007194416B1

(12) **United States Patent**
Provost et al.

(10) **Patent No.: US 7,194,416 B1**
(45) **Date of Patent: Mar. 20, 2007**

(54) **INTERACTIVE CREATION AND ADJUDICATION OF HEALTH CARE INSURANCE CLAIMS**

(75) Inventors: **Wayne A. Provost**, Salt Lake City, UT (US); **Vaughn C. Cecil**, Crossville, TN (US); **John W. Kwant, Jr.**, Midvale, UT (US); **Brian E. Peterson**, Salt Lake City, UT (US)

(73) Assignee: **P5, Inc.**, Salt Lake City, UT (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1097 days.

(21) Appl. No.: **09/724,097**

(22) Filed: **Nov. 28, 2000**

Related U.S. Application Data

(63) Continuation of application No. 09/204,886, filed on Dec. 3, 1998, now Pat. No. 6,341,265.

(51) **Int. Cl.**
G06Q 40/00 (2006.01)
G06Q 99/00 (2006.01)

(52) **U.S. Cl.** **705/4**; 707/104.1

(58) **Field of Classification Search** 705/2, 705/3, 4; 600/300, 301; 707/104.1
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,491,725	A	1/1985	Pritchard	235/375
4,831,526	A	5/1989	Luchs et al.	364/401
4,858,121	A	8/1989	Barber et al.	364/406
5,225,976	A	7/1993	Tawil	364/401
5,235,507	A	8/1993	Sackler et al.	364/401
5,253,164	A	10/1993	Holloway et al.	364/406

(Continued)

FOREIGN PATENT DOCUMENTS

WO WO 2001 09701 A 2/2001

OTHER PUBLICATIONS

Hagland, Mark Healthcon: Zigging and Zagging to adjust to health care realities, Health Management Technology; Atalnata, Jul. 1997 vol. 18, Issue 18, p. 30, cited in parent US patent 6,341,265.*

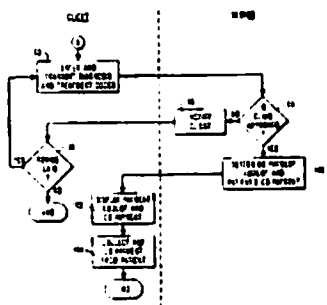
(Continued)

Primary Examiner—Sam Rimell
(74) *Attorney, Agent, or Firm* Workman Nydegger

(57) **ABSTRACT**

Methods and systems for interactively creating and submitting insurance claims and determining whether the submitted claims are in condition for payment by an insurer. A medical technician operating a client computer establishes communication with a remote server. The remote server transmits a claim form to the client computer for display to the medical technician. Using the claim form, the technician enters patient identification information, which is transmitted to the server to determine whether the patient is a beneficiary of an approved insurance plan. If the patient is a beneficiary, the technician can prepare an insurance claim using the claim form displayed by the client computer. The technician enters a diagnosis code and a treatment code representing the diagnosis and treatment of the patient. The diagnosis and treatment codes are transmitted to the remote server, which processes the codes to determine whether the claim corresponds to health care services that are approved for payment. If the insurance claim is not in condition for payment, the medical technician is notified. The medical technician can then amend the insurance claim as necessary and resubmit the claim.

12 Claims, 4 Drawing Sheets



U.S. PATENT DOCUMENTS

5,301,105	A		4/1994	Cummings, Jr.	364/401
5,359,509	A		10/1994	Little et al.	364/401
5,519,607	A		5/1996	Tawil	364/401
5,523,942	A		6/1996	Tyler et al.	364/401
5,644,778	A		7/1997	Burks et al.	395/800
5,704,044	A		12/1997	Tarter et al.	395/204
5,903,871	A		5/1999	Peterson et al.	705/4
5,911,132	A	*	6/1999	Sloane	705/3
5,915,241	A		6/1999	Giannini	705/2
5,930,759	A		7/1999	Moore et al.	705/2
6,003,007	A	*	12/1999	DiRienzo	705/4
6,012,035	A		1/2000	Freeman, Jr. et al.	705/2
6,112,183	A	*	8/2000	Swanson et al.	705/2
6,208,973	B1	*	3/2001	Boyer et al.	705/2

OTHER PUBLICATIONS

Hana, Jr. A. "Conveying the Image", Feb. 1992, v12, n8, p22(4). Gale Group Computer DB, [online] DG Review. Retrieved from: Dialog Accession No. 01513428.

"Oetel unveils strategic roadmap for health care marketplace focus is on efficiency-enhancing applications global messaging" Mar. 1996, Gale Group, Retrieved from: Dialog Access. No. 01354156.

Tanner, Lisa, Claimsnet Files IPO to Fund Internet Service (The Company plans to cash in on growing market for physician's claims processing), Dallas Business Journal, May 8, 1998, vol. 21, Issue 37, p. 10 1/2p.

* cited by examiner

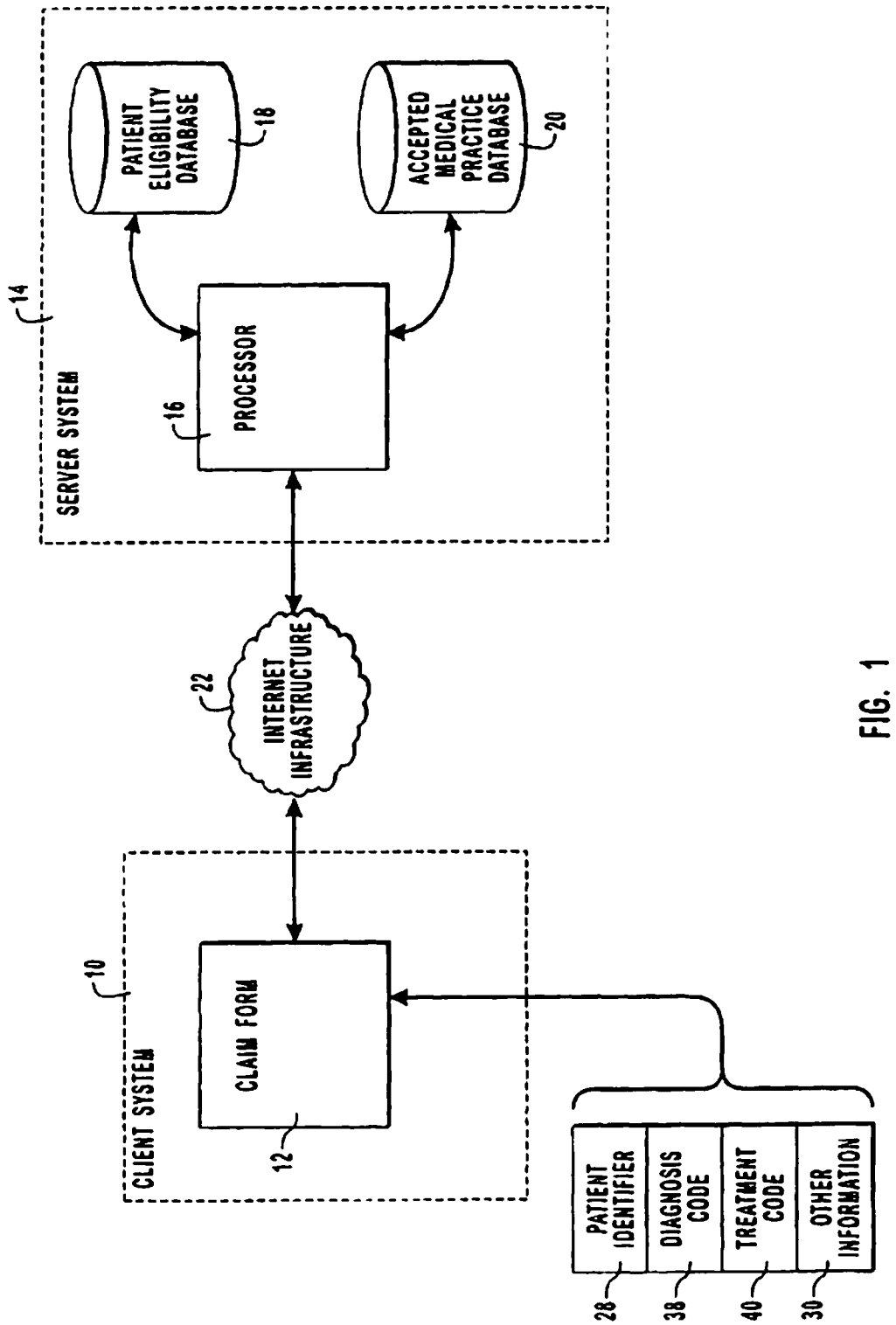

PATIENT ELIGIBILITY DATABASE
18
ACCEPTED MEDICAL PRACTICE DATABASE
20
14
SERVER SYSTEM
16
PROCESSOR
22
INTERNET INFRASTRUCTURE
10
CLIENT SYSTEM
CLAIM FORM
12
PATIENT IDENTIFIER
DIAGNOSIS CODE
TREATMENT CODE
OTHER INFORMATION
28
38
40
30

FIG. 1

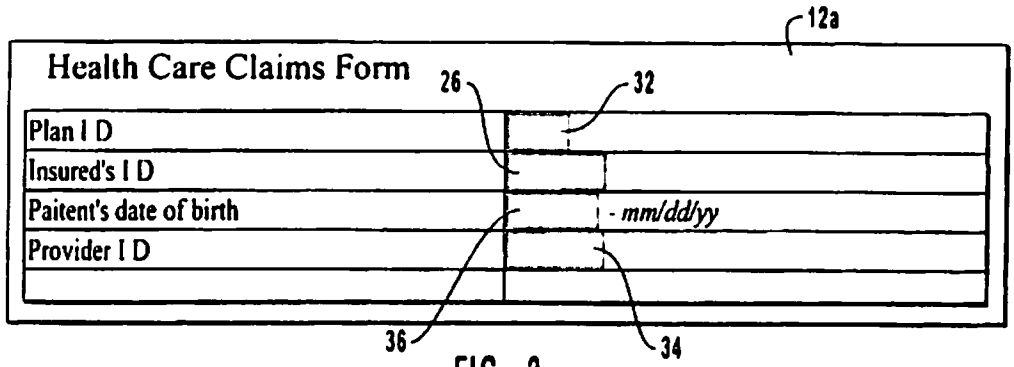

12a
Health Care Claims Form
26
32
Plan I D
Insured's I D
Paitent's date of birth
- mm/dd/yy
Provider I D
36
34

FIG. 2

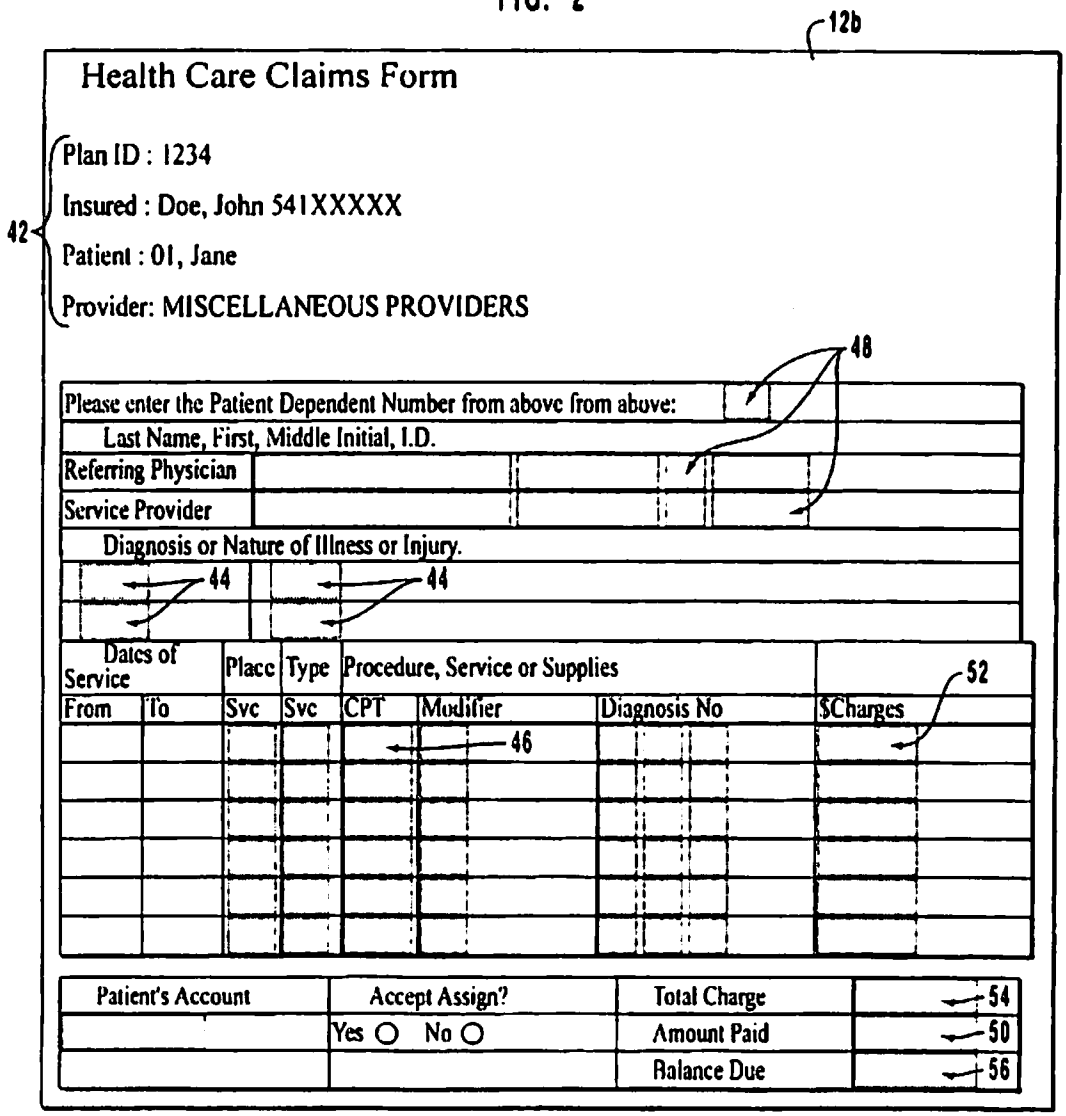

12b
Health Care Claims Form
Plan ID : 1234
Insured : Doe, John 541XXXXX
42
Patient : 01, Jane
Provider: MISCELLANEOUS PROVIDERS
48
Please enter the Patient Dependent Number from above from above:
Last Name, First, Middle Initial, I.D.
Referring Physician
Service Provider
Diagnosis or Nature of Illness or Injury.
44
44
Dates of Service
From
To
Place Svc
Type Svc
Procedure, Service or Supplies
CPT
Modifier
Diagnosis No
$Charges
52
46
Patient's Account
Accept Assign?
Yes O No O
Total Charge
Amount Paid
Balance Due
54
50
56

FIG. 3

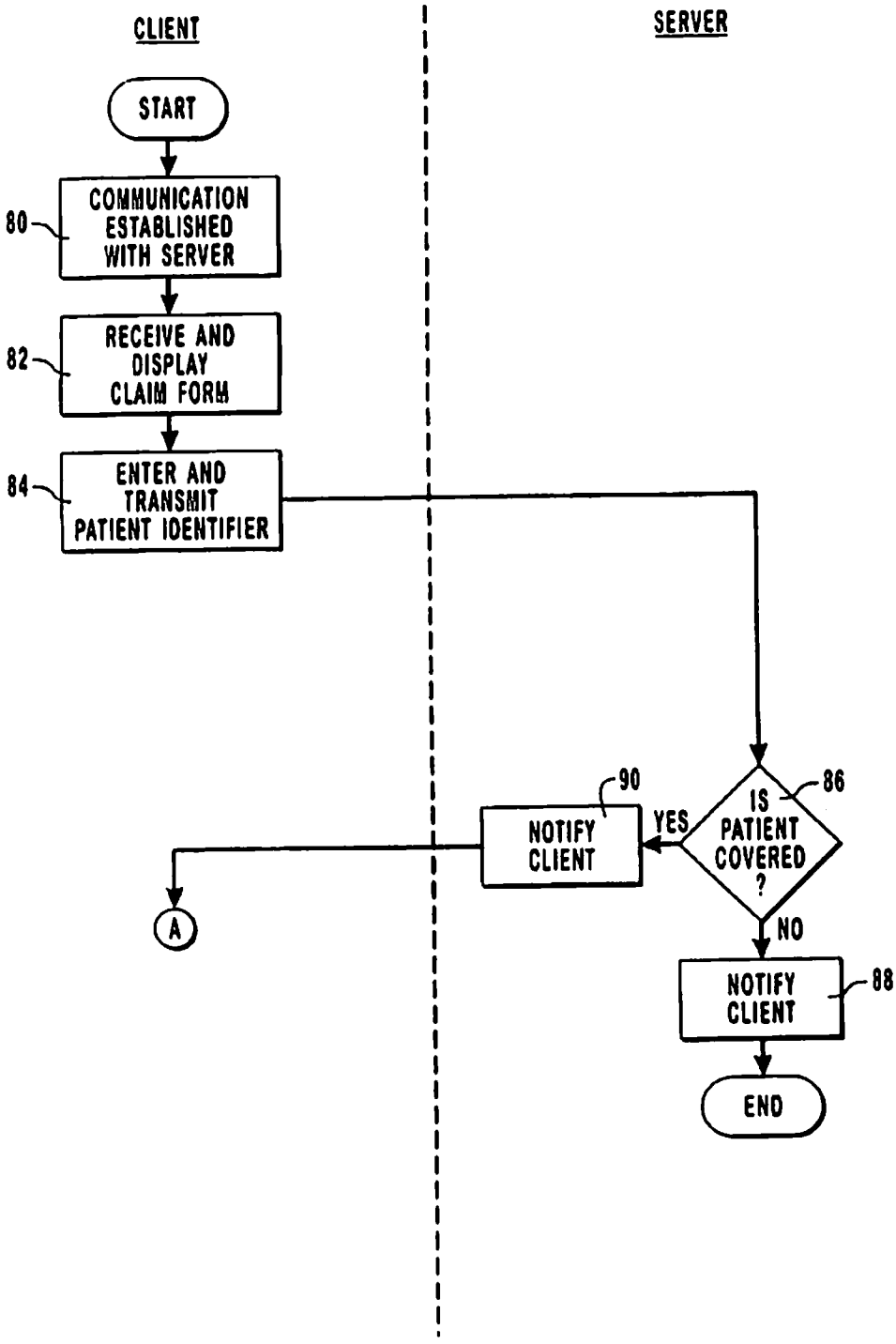

CLIENT
SERVER
START
COMMUNICATION ESTABLISHED WITH SERVER
80
RECEIVE AND DISPLAY CLAIM FORM
82
ENTER AND TRANSMIT PATIENT IDENTIFIER
84
IS PATIENT COVERED ?
86
YES
NOTIFY CLIENT
90
NO
NOTIFY CLIENT
88
END
A

FIG. 4A

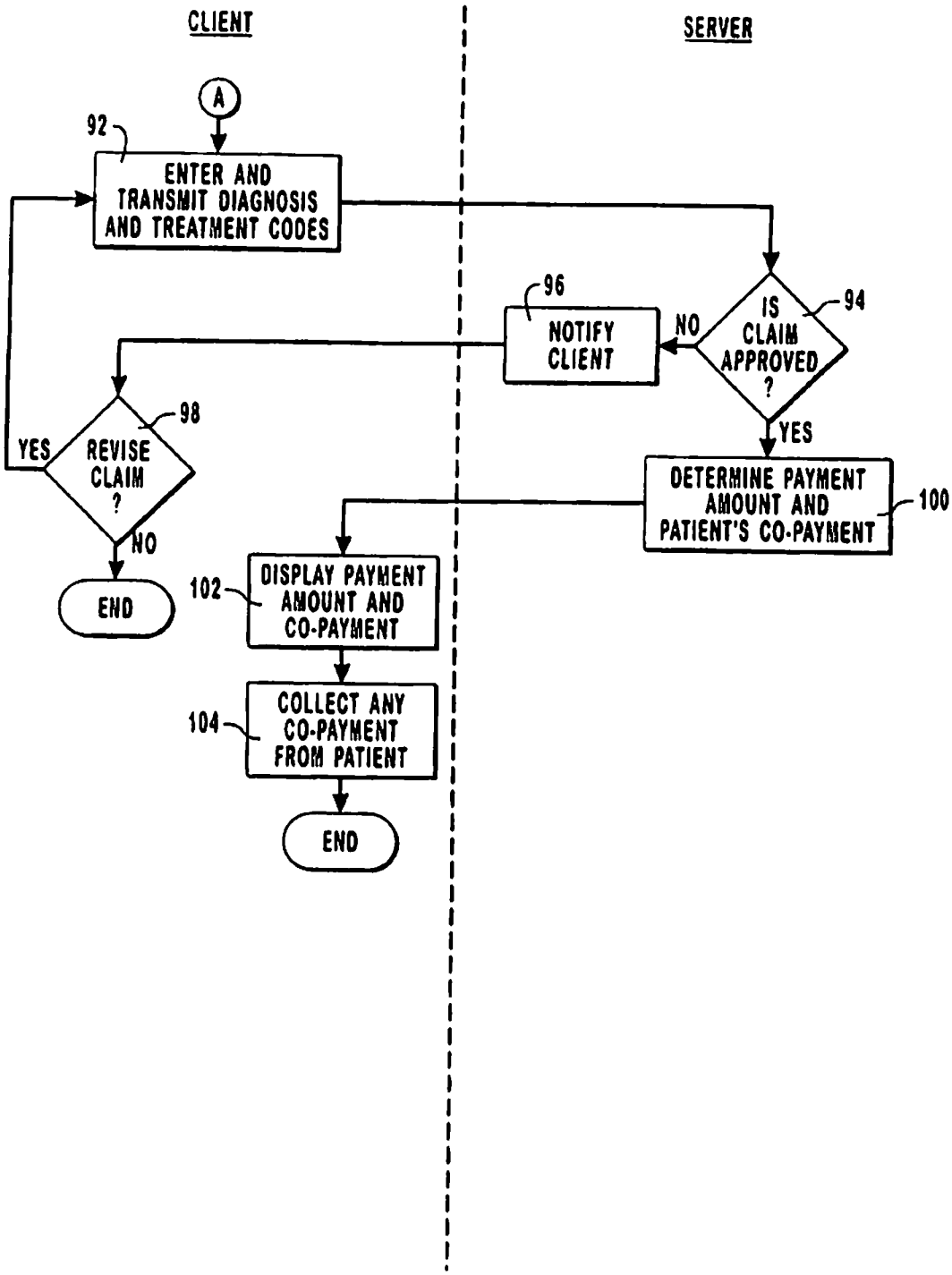

CLIENT
SERVER
A
92
ENTER AND TRANSMIT DIAGNOSIS AND TREATMENT CODES
IS CLAIM APPROVED ?
94
NO
96
NOTIFY CLIENT
YES
98
REVISE CLAIM ?
YES
NO
END
DETERMINE PAYMENT AMOUNT AND PATIENT'S CO-PAYMENT
100
102
DISPLAY PAYMENT AMOUNT AND CO-PAYMENT
104
COLLECT ANY CO-PAYMENT FROM PATIENT
END

FIG. 4B

INTERACTIVE CREATION AND ADJUDICATION OF HEALTH CARE INSURANCE CLAIMS

1. RELATED APPLICATIONS

This application is a continuation of U.S. patent application Ser. No. 09/204,886, filed Dec. 3, 1998, now U.S. Pat. No. 6,341,265 entitled "Provider Claim Editing and Settlement System," which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

1. The Field of the Invention

The present invention relates to systems for creating and approving health insurance claims. More particularly, the present invention relates to interactively creating insurance claims on a client computer that communicates with a remote server computer, whereby a health care provider can be almost immediately informed whether the created insurance claim is in condition to be paid.

2. Relevant Technology

The cost of health care continues to increase as the health care industry becomes more complex, specialized, and sophisticated. The proportion of the gross domestic product that is accounted for by health care is expected to gradually increase over the coming years as the population ages and new medical procedures become available. Over the years, the delivery of health care services has shifted from individual physicians to large managed health maintenance organizations. This shift reflects the growing number of medical, dental, and pharmaceutical specialists in a complex variety of health care options and programs. This complexity and specialization has created large administrative systems that coordinate the delivery of health care between health care providers, administrators, patients, payors, and insurers. The cost of supporting these administrative systems has increased during recent years, thereby contributing to today's costly health care system.

A significant portion of administrative costs is represented by the systems for creating, reviewing and adjudicating health care provider payment requests. Such payment requests typically include bills for procedures performed and supplies given to patients. Careful review of payment requests minimizes fraud and unintentional errors and provides consistency of payment for the same treatment. However, systems for reviewing and adjudicating payment requests also represent transaction costs which directly reduce the efficiency of the health care system. Reducing the magnitude of transaction costs involved in reviewing and adjudicating payment requests would have the effect of reducing the rate of increase of health care costs. Moreover, streamlining payment request review and adjudication would also desirably increase the portion of the health care dollar that is spent on treatment rather than administration.

Several factors contribute to the traditionally high cost of health care administration, including the review and adjudication of payment requests. First, the volume of payment requests is very high. Large health management organizations may review tens of thousands of payment requests each day and tens of millions of requests yearly. In addition, the contractual obligations between parties are complex and may change frequently. Often, there are many different contractual arrangements between different patients, insurers, and health care providers. The amount of authorized payment may vary by the service or procedure, by the particular contractual arrangement with each health care provider, by the contractual arrangements between the insurer and the patient regarding the allocation of payment for treatment, and by what is considered consistent with current medical practice.

During recent years, the process of creating, reviewing, and adjudicating payment requests from health care providers has become increasingly automated. For example, there exist claims processing systems whereby technicians at health care providers' offices electronically create and submit medical insurance claims to a central processing system. The technicians include information identifying the physician, patient, medical service, insurer, and other data with the medical insurance claim. The central processing system verifies that the physician, patient, and insurer are participants in the claims processing systems. If so, the central processing system converts the medical insurance claim into the appropriate format of the specified insurer, and the claim is then forwarded to the insurer. Upon adjudication and approval of the insurance claims, the insurer initiates a check to the provider. In effect, such systems bypass the use of the mail for delivery of insurance claims.

In partially automated systems, such as that described in the foregoing example, the technician can submit a claim via electronic mail on the Internet or by other electronic means. To do so, the technician establishes communication with an Internet service provider or another wide area network. While communication is maintained, the technician sends the insurance claim to a recipient and then either discontinues communication or performs other activities while communication is established. Using such conventional systems, personnel at the health care provider's office are unable to determine whether the submitted claim is in condition for payment and do not receive any indication, while communication is maintained, whether the claim will be paid.

Thus, while systems that permit electronic submission of insurance claims marginally decrease the time needed to receive payment by eliminating one or more days otherwise required to deliver claims by mail, they remain subject to many of the problems associated with other claims submission systems. For example, it has been found that a large number of insurance claims are submitted with information that is incomplete, incorrect, or that describes diagnoses and treatments that are not eligible for payment. The claims can be rejected for any of a large number of informalities, including clerical errors, patient ineligibility, indicia of fraud, etc. The health care provider is not made aware of the deficiencies of the submitted claims until a later date—potentially weeks afterwards—when the disposition of the insurance claim is communicated to the health care provider. As a result, many claims are subject to multiple submission and adjudication cycles, as they are successively created, rejected, and amended. Each cycle may take several weeks or more, and the resulting duplication of effort decreases the efficiency of the health care system. Studies have shown that some insurance claim submission systems reject up to 70% of claims on their first submission for including inaccurate or incorrect information or for other reasons. Many of the claims are eventually paid, but only after they have been revised in response to an initial rejection.

In order to attempt to minimize the number of claims that are rejected, physicians or their staff have had to spend inordinate amounts of time investigating which treatments will be covered by various insurers and insurance plans. The time spent in such activities represents further efficiency losses in the health care system.

Depending on a patient's insurance plan and the diagnosis and treatment rendered, the patient may be required to make

a co-payment representing, for example, a certain percentage of the medical bill or a fixed dollar amount. Because of the large number of insurers and insurance plans, the amount of the co-payment can vary from patient to patient and from visit to visit. Moreover, when a patient is not covered for certain treatment, the patient may be liable for the entire amount of the health care services. It is sometimes difficult for technicians at the offices of the health care provider to determine that amount of any co-payment or any other amount due from the patient while the patient remains at the offices after a medical visit. Once the patient leaves the office, the expense of collecting amounts owed by patients increases and the likelihood of being paid decreases. Conventional insurance claim submission systems have not been capable of efficiently and immediately informing technicians at the offices of a health care provider of amounts owed by patients, particularly when the amount is not a fixed dollar amount.

In view of the foregoing, there is a need in the art for more fully automated claims processing systems. For example, it would be an advancement in the art to reduce the uncertainty as to whether a claim to be submitted is likely to be paid or rejected. Furthermore, it would be advantageous to provide a claims processing system that would more easily allow health care providers to know what patient and treatment information must accompany insurance claims. There also exists a need for systems that allow health care providers to easily learn of the status of submitted insurance claims.

SUMMARY AND OBJECTS OF THE INVENTION

The present invention relates to methods and systems for interactively creating insurance claims. According to the invention, a medical technician can prepare an insurance claim electronically, submit the claim via the Internet or another wide area network, and receive almost immediately an indication whether the submitted claim is in condition to be paid. If the medical technician is informed that the claim is not in condition to be paid, the claim can be amended by correcting errors or otherwise placing the claim in condition to be paid. By using the invention, health care providers can essentially eliminate the possibility of having claims rejected after a lengthy adjudication process. The invention can significantly reduce the time, effort, and expense that have been associated with the submission of claims that are not in condition to be paid.

According to the invention, communication is established between a client computer operated by a medical technician and a remote server computer. The communication can be established using the Internet, a direct-dial telephone line, or any other suitable wide area network infrastructure. The client computer displays a computer-displayable claim form to the medical technician. The claim form can be sent to the client computer by the remote server or can instead be retrieved from a local memory device. The claim form includes fields that permit the medical technician to enter patient identification information that identifies the patient. The patient identification information is transmitted from the client computer to the remote server. The remote server then determines whether the patient is a beneficiary of a health insurance plan and informs the client computer of the patient eligibility status.

Informing the medical technician almost immediately of the patient's insurance status allows the health care provider to select the appropriate treatment for the patient. The patient's eligibility status transmitted from the remote server can include any desired amount of detail. For example, the eligibility status can describe the types of diagnoses and treatments for which payment will be made on behalf of the patient, and the co-payment required by the patient.

If the patient is a beneficiary of an approved insurance plan, the medical technician can proceed with preparation of a full insurance claim. The claim form displayed by the client computer includes fields that permit the medical technician to enter one or more diagnosis codes describing the diagnosis of the patient and one or more treatment codes describing the treatment administered to the patient. The claim form can also include fields representing the identity of the health care provider and any other desired information.

The diagnosis and treatment codes are transmitted from the client computer to the remote server. The remote server or a processor associated therewith then processes the transmitted information to determine whether the insurance claim is in condition to be paid. For example, the remote server can verify that all required information is included. The remote server can also determine whether the diagnosis code and the treatment code correspond to currently accepted medical practice and to health care services that are covered by the particular insurance plan of the patient. The remote server can also perform any desired checks on the information in the insurance claim to determine whether the claim has indicia of fraud, unusually expensive treatment, or any other feature that indicates that the validity or accuracy of the claim should be further investigated.

If the insurance claim is not in condition to be paid, the remote server transmits information to the client computer to inform the medical technician. The information transmitted to the client computer can include an indication of the reason for rejection of the claim and, optionally, suggestions on how to remedy the problem. For instance, if the insurance claim does not include complete information, the medical technician can be prompted to complete the claim form. The deficiency of the claim can be substantive, as well, in that the treatment code could represent a treatment that is not considered to be compatible with the diagnosis. In this case, the health care provider can change the treatment, otherwise amend the claim form, or inform the patient that the insurance plan will not cover the treatment. When a claim form has been amended, the new information can be transmitted to the remote server to repeat the process of determining whether the claim is in condition to be paid.

When the remote server determines that the claim is in condition to be paid, the remote server transmits information to the client computer to notify the medical technician. The information transmitted to the client computer can include data that represents an amount that is to be paid by the insurer on behalf of the patient. The medical technician can also be informed of any co-payment to be collected from the patient. Because the process of determining whether the claim is in condition for payment can occur almost instantaneously—typically in a matter of seconds or minutes—any co-payment can be collected from the patient while the patient remains in the offices of the health care provider before or after treatment.

In view of the foregoing, the invention provides systems and methods for providing almost immediate feedback to the medical technician specifying whether a submitted claim is in condition to be paid. While the speed of response can vary, depending on the data transmission rates between the client computer and the remote server, the processing capabilities of the remote server, and the complexity of the verification process to be conducted by the remote server,

the invention can provide almost immediate response to submitted claims. The response time can be short enough that the medical technician can create a claim, submit the claim, and be notified whether the claim is in condition for allowance without discontinuing communication between the client computer and the remote server, while continuing to view the claim form displayed by the client computer, or without proceeding to another patient's claim before receiving the response. In any event, the response time is significantly faster than that of conventional systems, which do not permit the interactive creation and modification of insurance claims.

The invention can significantly reduce the inefficiencies that are otherwise experienced in the health care system as claims are submitted, subjected to an adjudication process, and often rejected days, weeks, or longer, after the claim was created. The claim creation and verification systems of the invention also allow health care providers to easily learn of the types of treatments that are approved for payment for specific diagnoses according to the patient's insurance plan. In addition, the invention increases the efficiency of collecting co-payments from patients and increases the likelihood that such co-payments will be made.

Additional objects and advantages of the invention will be set forth in the description which follows, and in part will be obvious from the description, or may be learned by the practice of the invention. The objects and advantages of the invention may be realized and obtained by means of the instruments and combinations particularly pointed out in the appended claims. These and other objects and features of the present invention will become more fully apparent from the following description and appended claims, or may be learned by the practice of the invention as set forth hereinafter.

BRIEF DESCRIPTION OF THE DRAWINGS

In order that the manner in which the above-recited and other advantages and objects of the invention are obtained, a more particular description of the invention briefly described above will be rendered by reference to specific embodiments thereof which are illustrated in the appended drawings. Understanding that these drawings depict only typical embodiments of the invention and are not therefore to be considered limiting of its scope, the invention will be described and explained with additional specificity and detail through the use of the accompanying drawings in which:

FIG. 1 is schematic diagram illustrating an interactive system according to the invention, including a client system at the offices of a health care provider and a remote server system, whereby a medical technician can interactively prepare an insurance claim that is in condition to be paid.

FIG. 2 illustrates an insurance claim form that enables a medical technician to determine whether and to what extent a patient is a beneficiary of an approved insurance plan.

FIG. 3 illustrates an insurance claim form that enables a medical technician to submit an insurance claim including one or more diagnosis codes and one or more treatment codes.

FIG. 4*a* is a flow diagram illustrating one embodiment of the methods of the invention for determining whether and to what extent a patient is a beneficiary of an approved insurance plan.

FIG. 4*b* is a flow diagram depicting one embodiment of the methods for interactively preparing an insurance claim that is in condition to be paid.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention relates to methods and systems for interactively preparing and submitting insurance claims and verifying that the claims are in condition to be paid. A medical technician at the offices of a health care provider operates a client computer that communicates with a remote server. According to one embodiment of the invention, the medical technician views a computer-displayable claim form displayed by the client computer and enters a diagnosis code and a treatment code that describe a medical diagnosis and associated treatment for a patient. The diagnosis code and the treatment code are transmitted to the remote server. The remote server performs an operation in response to the diagnosis code and the treatment code to determine if these codes correspond to health care services that are approved for payment.

If the remote server determines that the submitted claim will not be paid by an insurer, the remote server transmits information to the client computer to inform the medical technician of this result. In response, the medical technician can amend the treatment code or any other desired information on the insurance claim to place the claim in condition to be paid. After amending the claim, the claim is again submitted to the remote server, where it is again analyzed to determine whether it represents health care services that are approved for payment.

According to one embodiment, when the remote server determines that the submitted claim is in condition to be paid, the remote server transmits information to the client computer indicating the amount that is to be paid by the insurer on behalf of the patient. The system can also inform the medical technician of any co-payment to be collected from the patient.

Embodiments of the invention include or are incorporated in computer-readable media having computer-executable instructions or data structures stored thereon. Examples of computer-readable media include RAM, ROM, EEPROM, CD-ROM or other optical disk storage, magnetic disk storage or other magnetic storage devices, or any other medium capable of storing instructions or data structures and capable of being accessed by a general purpose or special purpose computer. Computer-readable media also encompasses combinations of the foregoing structures. Computer-executable instructions comprise, for example, instructions and data that cause a general purpose computer, special purpose computer, or special purpose processing device to execute a certain function or group of functions. The computer-executable instructions and associated data structures represent an example of program code means for executing the steps of the invention disclosed herein.

The invention further extends to computer systems for interactively creating and submitting insurance claims and determining whether the claims are in condition to be paid. Those skilled in the art will understand that the invention may be practiced in computing environments with many types of computer system configurations, including personal computers, multi-processor systems, network PCs, minicomputers, mainframe computers, and the like. The invention will be described herein in reference to a distributed computing environment, such as the Internet, where tasks are performed by remote processing devices that are linked through a communications network. In the distributed computing environment, computer-executable instructions and

program modules for performing the features of the invention may be located in both local and remote memory storage devices.

FIG. 1 illustrates one embodiment of the systems for interactively creating and submitting insurance claims according to the invention. Client system 10 may be located at the offices of a health care provider in order to allow a medical technician to create and submit insurance claims. As used herein, the term "health care provider" is to be broadly construed to include any physician, dentist, medical practitioner, or any other person whose services can be compensated by a health insurer, a health maintenance organization, or the like. As used herein, the term "medical technician" represents any person who engages in the activity of preparing or submitting insurance claims on behalf of a health care provider. Since medical technicians are typically employees of health care providers, representatives of health care providers, or may be the health care providers themselves, any of the claims that recite steps, operations, or procedures conducted by "health care providers" are to be construed to extend to the same steps, operations, or procedures conducted by "medical technicians", as well.

The term "insurance plan" extends to any contractual or other legal arrangement whereby medical and other related expenses are paid on behalf of a beneficiary. Examples of insurance plans include health maintenance organizations, fee-for-service health care plans, employer-sponsored insurance plans, etc.

Client system 10 can be a general purpose computer, such as a PC, or a special purpose computer adapted to perform the functions and operations disclosed herein. Client system 10 may include a display device such as a monitor for displaying claim form 12, as will be disclosed in greater detail below, and one or more input devices such as a keyboard, a mouse, etc. for enabling a medical technician to enter the required information to client system 10.

The embodiment illustrated in FIG. 1 also includes a server system 14 located typically at a remote location with respect to client system 10. Server system 14 can include a general purpose computer or a special purpose computer adapted to execute the functions and operations of the invention. For example, in FIG. 1, server system 14 includes a processor 16, which represents a general purpose computing device for receiving information associated with insurance claims and for determining whether the received information corresponds to health care services that are approved for payment. The operation of server system 14 and processor 16 will be discussed in greater detail below.

In one embodiment, processor 16 is capable of accessing information stored in a patient eligibility database 18 and an accepted medical practice database 20. Database 18 can include compilation of data that enables server system 14 to determine whether a particular patient identified at client system 10 is a beneficiary of an approved insurance plan. Likewise, database 20 can be any compilation of data that enables service system 14 to determine whether the health care services associated with a submitted claim are approved for payment under the particular insurance plan of the patient.

While the illustrated components of server system 14 of FIG. 1 can be located at a single remote site with respect to client system 10, other embodiments of the invention employ a processor 16 and databases 18 and 20 that may be located at different sites with respect to each other. The terms "server system" and "remote server" extend to the latter case, wherein the various components 16, 18, and 20 are located in a distributed environment unless specifically indicated otherwise.

In the embodiment of FIG. 1, client system 10 and server system 14 communicate by means of Internet infrastructure 22. While the invention is described herein in the context of the Internet, those skilled in the art will appreciate that other communications systems can be used, such as direct dial communication over public or private telephone lines, a dedicated wide area network, or the like.

Referring to FIG. 1, when a medical technician desires to prepare an insurance 24 claim for health care services provided to the patient, the medical technician operates client system 10 and establishes communication with server system 14 or verifies that communication has been established. For instance, the medical technician may use client system 10 to dial into a modem pool associated with an Internet service provider in Internet infrastructure 22. After communication with the Internet service provider has been achieved, client system 10 may be used to transmit a Uniform Resource Locator (URL) to the Internet infrastructure 22 that requests access to resources provided by server system 14. Alternatively, any other suitable technique can be used to establish communication between client system 10 and server system 14.

In many cases, client system 10 will maintain communication with server system 14 for an extended period of time during which claims for multiple patients are processed. For instance, client system 10 can be a dedicated terminal that maintains communication with server system 14 in order for numerous insurance claims to be created and processed.

Once communication has been established, the medical technician can use client system 10 to request claim form 12 to be displayed on a monitor associated with client system 10. Claim form 12, in one embodiment, is a Hyper Text Markup Language (HTML) document retrieved from server system 14 and displayed to the medical technician. Alternatively, claim form 12 can have any other suitable format or can be stored at a local cache or any other local data storage system, thereby eliminating the need to repeatedly retrieve claim form 12 from a remote location as multiple insurance claims are created.

FIG. 2 illustrates one example of a claim form 12A that enables a medical technician to verify that a patient is a beneficiary of an insurance plan and to learn of the details of the insurance plan. In this embodiment, claim form 12A includes a field 26 to which a patient identifier can be entered. Patient identification information, such as patient identifier 28 of FIG. 1, is entered by the medical technician claim form 12A of FIG. 2. Depending on the manner in which the invention is implemented, the medical technician may be required to enter other information, such as other information 30 of FIG. 1, that identifies, for example, the insurance plan of the patient, the health care provider, or the like. Turning to FIG. 2, claim form 12A in this example includes a field 32 for identifying the insurance plan of the patient, a field 34 for receiving information identifying the health care provider and a field 36 for entering additional information identifying the patient. As shown in FIG. 2, field 36 can be adapted to receive a patient's date of birth. Alternatively, any other information that can uniquely identify a particular patient from among a pool of patients can be used in combination with fields 26 and 36. By way of example and not limitation, the patient identification information entered to fields 26 or 36 can include patient's social

security number, or a number uniquely associated with the patient by an insurance plan or a health maintenance organization.

Referring now to FIG. 1, after the medical technician has entered patient identifier **28** and, optionally, other information **30**, the medical technician uses client system **10** to transmit the information to server system **14**. In one embodiment, processor **16** compares patient identifier **28** against data stored in patient eligibility database **18** to determine if the patient is a beneficiary of an insurance plan and, if so, the details of the benefit thereof. If the patient is found not to be a beneficiary of an approved insurance plan, information is transmitted from server system **14** to client system **10** to inform the medical technician of this result. Thus, when the patient is not a beneficiary, a medical technician and the health care provider can promptly learn of this status and take steps to advise the patient or provide appropriate medical treatment.

If it is determined that the patient is a beneficiary, information is likewise transmitted from server system **14** to client system **10** informing the medical technician of the patient's status. The information can also provide details of the coverage provided to the patient that can allow the health care provider to select the appropriate course of action for the patient. The details can include the types of diagnoses and treatments that are approved for payment.

When the health care provider makes a diagnosis and performs or prescribes treatment to the patient, the medical technician can complete the claim form by entering at least one diagnosis code **38** and one treatment code **40**. Referring now to FIG. **3**, claim form **12B** includes fields adapted to accept the diagnosis code and the treatment code. Claim form **12B** of FIG. **3** and claims form **12A** may be separate forms displayed to the medical technician using client system **10** or can be separate portions of the single claim form. Claim form **12B**, in the example of FIG. **3**, includes header information **42** that has been automatically prepared by the server system before claim form **12B** was transmitted to the client system. Providing a claim form **12B** that is automatically partially completed contributes to the efficiency of the claims creation and submission processes of the invention. While claim form **12B** represents a claim form that can be advantageously used by many health care providers, the specific fields included in the form and the information displayed on the form may vary from one implementation to another, depending on the type of health care provider, insurance plan, and other factors.

Claim form **12B** includes a plurality of fields **44** designed to receive and display diagnosis codes representing the health care provider's diagnosis of the patient or the nature of the patient's illness or injury. Thus, as used herein, "diagnosis code" refers to any information that specifies or indicates a patient's condition as diagnosed by a health care provider. Any predefined set of diagnosis codes can be used with the invention.

Claim form **12B** also includes one or more fields **46** designed to receive and display treatment codes associated with the diagnosis code of field **44**. As used herein, "treatment codes" can represent any type of health care services such as clinical therapy, pharmacological therapy, therapeutic supplies or devices, or other goods or services that can be paid for by health insurance plans or health maintenance organizations. The treatment codes can be selected from any desired set of predefined treatment codes that define various treatments that can be administered to patients. In one embodiment, the diagnosis codes and the treatment codes can be selected from the codes and code modifiers of a volume entitled Physician's Current Procedural Terminology (CPT), which is maintained and updated annually by the American Medical Association.

As shown in FIG. **3**, claims form **12B** can include other fields, such as fields **48**, that are to be completed by the medical technician before the insurance claim is submitted. In this example, fields **48** are adapted to receive and display information identifying the patient, a referring physician, and the health care provider who is to receive payment for the health care services provided to the patient.

When fields **44**, **46**, and **48** are filled out by the medical technician, the medical technician submits the information included in these fields to server system **14** from client system **10**. Referring again to FIG. **1**, server system **14** receives this information and performs certain operations in response thereto to determine whether the claim form corresponds to health care services that are approved for payment by the patient's insurance plan. For instance, processor **16** can compare the diagnosis code **38** and treatment code **40** with a compilation of currently accepted medical procedures stored in database **20**. In one embodiment, MDR may be used to determine whether the diagnosis codes and treatment codes correspond to health care services that are approved for payment. Upon learning of the invention disclosed herein, those skilled in the art will understand how MDR can be used to determine whether the submitted claim form represents health care services that are approved for payment.

Server system **10** also determines whether the information provided in claim form **12B** is sufficiently complete to place insurance claim in condition to be paid. For example, if the medical technician inadvertently fails to include information that identifies the referring physician, server system can detect this error and later notify client system **10** of the deficiency.

The techniques for processing submitted insurance claims at server system **14** can be as complex as desired. In one embodiment, server system **14** analyzes the information submitted using claim form **12B** to determine whether there are indicia of fraud or mistake, whether unusually expensive health care services are listed in the claim, or whether manual adjudication of the insurance claim is otherwise advisable. If the claim exhibits any of the foregoing features, the claim may be forwarded to a human adjudicator for manual adjudication or may be returned to the health care provider to allow revision of the claim.

One technique that is sometimes used by health care providers to collect more money from insurance plans than is otherwise warranted is the practice of unbundling medical procedures. "Unbundling" consists of performing, for example, multiple medical procedures on a patient through a single surgical incision while submitting an insurance claim for the multiple medical procedures as if they had been performed separately. Typically, when only one incision is required to perform multiple medical procedures, the payment to the operating physician is less than the payment would be if each of the multiple medical procedures had been conducted through separate incisions. Other fraudulent unbundling techniques for submitting claims on multiple medical procedures are sometimes used as well. Thus, server system **14** can analyze the diagnosis codes and the treatment codes for indicia of unbundling practices. Furthermore, server system **14** may conduct any other checks on the submitted claim.

If server system **14** determines that insurance claims submitted using the claim forms of the invention are not in the condition to be paid for any reason, server system can

transmit information to client system **10** informing the medical technician of this result. In addition, the information transmitted to the client system can indicate the basis for rejecting the insurance claim. Thus the medical technician can be informed that the claim form was not completely filled out, the treatment code is inconsistent with the diagnosis code, or any of a number of other possible reasons for rejecting the insurance claim. In response, the medical technician can amend the insurance claim by entering the correct information to the fields of claim form **120** of FIG. **3**, if necessary. In other cases, the health care provider can be informed that the recommended treatment defined by treatment code **40** of FIG. **1** is not approved for payment by the patient's insurance plan. The health care provider can then advise the patient and decide to proceed with the treatment or to prescribe an alternative treatment that is approved for payment.

If the medical technician wishes to amend the insurance claim, the new information is transmitted from client system **10** to server system **14** for processing. For example, the health care provider may decide that an alternative treatment is appropriate for the patient, in which case the medical technician would enter a new treatment code to client system **10**. Server system **14** then repeats the previously described process of determining whether the amended insurance claim is in condition for payment. The above-described process can be repeated as many times as desired or necessary to create and submit an insurance claim that describes health care services that are approved for payment by the patient's insurance plan.

When server system **14** informs client system **10** that a submitted claim is in a condition for payment, the server system can transmit information that specifies the amount that will be paid by the insurer on behalf of the patient. For example, claim form **120** of FIG. **3** includes a field **50** that displays a dollar amount when the server system has determined that the claim is in condition for payment. In the example of FIG. **3**, fields **52** permit the medical technician to enter an amount that is requested for the treatments defined by the treatment codes in fields **46**.

To illustrate, the medical technician might enter in field **46** a treatment code that represents a physical exam performed by a physician. The medical technician could then enter in field **52** a dollar amount, such as $100, that is customarily charged by the physician for a physical exam. Field **54** sums all dollar amounts entered in fields **52**. In this example, if the physical exam was the only treatment rendered to the patient, field **54** would also display a dollar amount of $100. If the server system, when processing the submitted claim, determines that the patient's insurer pays only $90 for a physical exam, field **50** displays the dollar amount of $90 when the insurance claims has been processed and returned to the client system. A balance due field **56** displays the difference between the total charge field **54** and the amount paid field **50**. The dollar amount displayed in field **56** represents the amount that is to be collected from the patient. As used herein, the term "co-payment" is defined to extend to the dollar amount displayed in field **56**, representing the amount that is to be collected from the patient beyond the payment that is approved by the insurer.

Using the invention, medical technicians and health care providers can be informed of the status of submitted insurance claims in a relatively short amount of time that is significantly less than conventional systems, which may require days, weeks, or more. Indeed, for practical purposes, a response to the submitted insurance claim is received almost immediately by the medical technician. It can be understood that the limiting factors with respect to the speed of response include the data transmission rate supported by Internet infrastructure **22** of FIG. **1** and the other communication links between the various components of the system, the processing capabilities of processor **16** and other components of server system **14**, and the complexity of the submitted claim and the nature of the claim processing techniques performed by server system **14**.

In many cases, the response time is short enough that a medical technician can conveniently continue viewing the claim form associated with a particular patient at client system **10** of FIG. **1** while server system **14** performs the operations that determine whether the submitted claim is in condition to be paid. Thus, a medical technician can consecutively create and submit a series of claims and receive verification that the claims are in condition for payment. In other words, a medical technician can easily create, submit, and, if necessary, revise and resubmit, a single claim before proceeding to the next claim in a series of claims, since the response time can be very short. This is in sharp contrast to prior art systems in which the response time of days, weeks, or longer make it entirely impractical for medical technicians to complete the entire claim creation and adjudication process for one claim before proceeding to the next claim.

The systems and methods disclosed herein can be practiced in combination with the systems disclosed in co-pending U.S. patent application Ser. No. 09/118,668, entitled "Internet Claims Processing System", filed Jul. 17, 1998, which is incorporated by reference for purposes of disclosure. For example, the payment systems and payment tracking systems of the foregoing patent application can be employed with the insurance claim creation and submission techniques of the invention. Moreover, as previously described, if claims submitted to server system **14** of FIG. **1** exhibit indicia of fraud or mistake, or exceed a threshold dollar amount, the claims can be subjected to additional adjudication procedures. In one embodiment, the additional adjudication procedures can include adjudication techniques described in U.S. patent application Ser. No. 09/118,668.

The invention can be practiced with additional steps for processing or paying insurance claims or for communicating the status of submitted claims to health care providers and patients. For instance, when a claim has been submitted and approved, an explanation of benefits can be automatically created and sent to the provider, the patient, and/or to an employer of the patient. Electronic funds transfer can be used to execute payment from insurers to health care providers for approved claims.

FIG. **4A** illustrates one embodiment of the methods of the invention for interactively determining whether a particular patient is a beneficiary of an approved insurance plan. In step **80**, communication is established between the client system and the server system as described herein. In step **82**, the client system receives and displays the claim form to enable the medical technician to enter the information required to complete the insurance claim. As previously noted, the client system can retrieve the claim form from the remote server system or from a local data storage device. In step **84**, the medical technician enters the patient identification information and transmits the information to the server system.

In decision block **86**, if the server system discovers that the patient is not a beneficiary of an approved insurance plan, the server system notifies the client of this result as shown in step **88**. Likewise, if the server system determines that the patient is a beneficiary, this result is transmitted to the client system as shown in step **90**.

FIG. 4B illustrates one embodiment of the methods of the invention for creating and submitting insurance claims and determining whether the submitted claim is in condition for payment. In step **92**, after having been notified that the patient is a beneficiary of an approved insurance plan, the medical technician enters the diagnosis and treatment codes to the claim form and transmits these codes to the server system. As shown in decision block **94**, the server system performs any desired claim checking or adjudication process to determine whether the claim describes health care services that are approved for payment. If the claim is not in condition to be paid, the method advances to step **96**, in which the client system is notified of this result. As shown by decision block **98**, if the medical technician or the health care provider decides to revise the claim, the method again advances to step **92**.

Referring again to decision block **94**, if the server system determines that the claim is in condition for payment, the method advances to step **100**, in which the server system determines the amount to be paid by the insurer and any co-payment to be collected from the patient. Next, in step **102**, the client system displays the payment amount and the co-payment amount to the medical technician or the health care provider. In step **104**, any co-payment can then be collected from the patient. It will also be appreciated that, in other embodiments, the invention can be practiced without calculating the co-payment.

The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed and desired to be secured by United States Letters Patent is:

1. A computer program product for implementing a method of interactively preparing an insurance claim that is in condition to be paid, the insurance claim being prepared prior to a health care provider performing health care services that are the subject of the insurance claim, wherein the method is capable of being performed on a client computer that communicates with a remote server computer, the computer program product comprising:

a computer-readable medium carrying computer-executable instructions for implementing the method, the computer-executable instructions comprising:

program code means for displaying a computer-displayable claim form to a health care provider;

program code means for initiating transmission of a proposed insurance claim that includes a diagnosis code and a treatment code from the client computer to the remote server computer prior to the health care provider performing the health care services;

program code means for receiving, from the remote server computer and prior to the health care provider performing the health care services, information indicating whether the proposed insurance claim is in condition to be paid; and

program code means for initiating transmission of a revised proposed insurance claim, prior to the health care provider performing the health care services, if it has been determined that the proposed insurance claim is not in condition for allowance, wherein the revised proposed insurance claim includes at least one of a revised diagnosis code and a revised treatment code.

2. A computer program product as defined in claim 1, wherein the computer-executable instructions further comprise program code means for prompting the health care provider to revise at least one of the diagnosis code and the treatment code prior to the health care provider performing the health care services and in response to information received from the remote server computer indicating that the proposed insurance claim is not in condition to be paid.

3. A computer program product as defined in claim 1, wherein the program code means for initiating transmission of the proposed insurance claim comprises program code means for communicating with the remote server via the Internet.

4. A computer program product as defined in claim 3, wherein the program code means for communicating with the remote server via the Internet operate so as to maintain communication with the remote server during a time period between the transmission of the proposed insurance claim and the receipt of the information from the remote server computer.

5. A computer program product for implementing, in a server system that communicates with a client system, a method of informing a health care provider who uses the client computer whether an insurance claim represents health care services approved for payment prior to the health care provider performing the health care services, the computer program product comprising:

a computer-readable medium carrying computer-executable instructions for implementing the method, the computer-executable instructions comprising:

program code means for receiving a proposed insurance claim that includes a treatment code and a diagnosis code from the client computer, the treatment code and diagnosis code having been entered to the client computer by a health care provider prior to the health care provider performing health care services;

program code means for determining whether the proposed insurance claim is in condition to be paid, including performing the act of determining whether the treatment code and the diagnosis code correspond to health care services that are approved for payment;

program code means for initiating transmission of information to the client computer prior to the health care provider performing the health care services, the information indicating to the health care provider whether the proposed insurance claim is in condition to be paid;

program code means for performing, if the information indicates that the proposed insurance claim is not in condition to be paid, the acts of:

receiving a revised proposed insurance claim that includes at least one of a revised diagnosis code and a revised treatment code; and

program code means for determining whether the revised proposed insurance claim is in condition to be paid.

6. A computer program product as defined in claim 5, wherein the computer-executable instructions further comprise program code means for initiating transmission of a computer-displayable claim form to the client computer, the claim form including fields for accepting the treatment code and the diagnosis code.

7. A computer program product as defined in claim 5, wherein the computer-executable instructions further comprise:

program code means for receiving patient identification information from the client computer, the patient identification information identifying a patient of the health care provider;

program code means for determining whether the patient is a beneficiary of a health insurance plan; and

program code means for initiating transmission of data to the client computer indicating whether the patient is a beneficiary of a health insurance plan prior to the health care provider performing the health care services for the patient.

8. A computer program product as defined in claim 7, wherein the program code means for receiving patient identification information and the program code means for initiating transmission of data operate by communicating with the client computer via the Internet.

9. A computer program product as defined in claim 8, wherein the computer-executable instructions further comprise program code means for maintaining communication with the client computer during a time period between the receipt of the proposed insurance claim and the transmission of the information to the client computer.

10. A computer program product as defined in claim 5, wherein the program code means for determining whether the proposed insurance claim is in condition to be paid comprises program code means for determining that the treatment code and the diagnosis code do not correspond to health care services that are approved for payment.

11. A computer program product as defined in claim 10, wherein the computer-executable instructions further comprise program code means for:

identifying, by the server system, the revised treatment code that, with said diagnosis code, correspond to health care services that are approved for payment; and

prior to the health care provider performing health care services, transmitting the revised treatment code to the client computer, such that the treatment associated with the revised treatment code can be included in the health care services when the health care services are performed by the health care provider.

12. A computer program product as defined in claim 10, wherein the computer-executable instructions further comprise program code means for:

receiving the revised treatment code from the client computer, the revised treatment code having been entered to the client computer by a health care provider;

determining that the diagnosis code and the revised treatment code correspond to health care services that are approved for payment; and

prior to the health care provider performing the health care services, transmitting to the client computer information indicating to the health care provider that the diagnosis code and the revised treatment code correspond to health care services that are approved for payment.

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