IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
TEXARKANA DIVISION

ALLCARE HEALTH MANAGEMENT SYSTEM, INC.,

Plaintiff,

v.

HARVARD PILGRIM HEALTH CARE, INC.

Defendant.

Civil Action No. 5:03CV 89

JURY TRIAL DEMANDED

COMPLAINT

Plaintiff Allcare Health Management System, Inc. ("Allcare"), by counsel, respectfully submits this Complaint against Defendant Harvard Pilgrim Health Care, Inc. ("HPHC") for patent infringement under The Patent Act, 35 U.S.C. § 1 *et seq.*

The Parties

1. Allcare is a Virginia corporation with its principal place of business in located in Fort Worth, Texas. Allcare is, therefore, a citizen of Virginia and Texas.

2. On information and belief, HPHC is a Massachusetts corporation with its principal place of business located in Wellesley, Massachusetts.

3. HPHC may be served with the summons and complaint by service upon its General Counsel, William F. Frado, Jr. Esq., at 93 Worchester Street, Wellesley, MA 02481-9181.

Jurisdiction and Venue

4. This is an action for patent infringement arising under the patent laws of the United States, codified at chapter 35 of the United States Code. As such, this Court possesses subject matter jurisdiction over this controversy pursuant to 28 U.S.C. § 1331 (federal question) and 28 U.S.C. § 1338(a) (patents), and because this matter is between citizens of different States, where the value of the amount in controversy exceeds $75,000 exclusive of interest and costs.

5. This Court has personal jurisdiction over HPHC because its contacts with this district are persistent, systematic, substantial and continuous. This Court also has personal jurisdiction over HPHC because (1) HPHC purposefully directed their activities to this forum state, have done business in this forum state, including this district, and purposefully availed themselves of the privilege of conducting activities within this forum state; (2) some of the events which give rise to the claims asserted in this action occurred in this district and the effects of HPHC's tortious conduct were felt in this forum state; and (3) the exercise of jurisdiction comports with fair play and substantial justice.

6. Venue is proper in this District and Division pursuant to 28 U.S.C. § 1391(b) and (c), 28 U.S.C. § 1400(b), because HPHC is subject to personal jurisdiction here. In addition, material portions of the misconduct giving rise to Allcare's claims in substantial part occurred here.

The Patent in Suit

7. On April 5, 1994, United States Patent No. 5, 301,105 (the "'105 patent"), entitled "All Care Health Management System," a copy of which is attached hereto as Exhibit A, was duly and legally issued.

8. The '105 patent was invented by Desmond D. Cummings, Jr.

9. By assignment recorded with the United States Patent and Trademark Office dated February 14, 2002, Allcare is the owner of all rights, title and interests in the '105 patent, including the right to recover for any and all past infringement thereof.

10. The '105 patent is comprised of 102 claims, with each claim directed to and covering either an automated system comprising a combination of elements (*e.g.*, claim 1), or a business method comprising a combination of steps (*e.g.*, claim 52).

11. The '105 patent is directed to a number of different functions performed in the health care industry.

12. Claims 1-51 cover a variety of health care management systems.

13. For example, claim 1 is directed to an automated system for preventing payment for medical procedures where the system recognizes that pre-treatment utilization review (*i.e.*, a review of the medical necessity or appropriateness of a given treatment using a criteria that may include factors such as cost and quality of care) is supposed to be conducted prior to or concurrently with the administration of such medical treatment, but, when a claim for reimbursement for that treatment is made, there is no indication in the system's memory that the requisite utilization review was conducted.

14. Claim 16 is directed to a system where payment is prevented where the system recognizes that a second opinion is required prior to the administration of a medical procedure, and, when a claim for reimbursement for such treatment is made, there is no indication in the system's memory that the requisite second opinion was obtained.

15. Claim 34 is directed to a system automating the provision of an ancillary service (*e.g.*, supporting services including pharmacy, radiology, laboratory tests and various services by medical specialists) where such ancillary service is part of a patient's treatment.

16. Other claims are directed to the incorporation of disease management (*e.g.*, claim 3), connecting to a database containing medical history (*e.g.*, claim 4), and eligibility checking (*e.g.*, claim 9).

17. The descriptions of the foregoing paragraphs 13-16 are not intended to be Allcare's formal contentions as to the claim construction of the various claims, and Allcare intends to provide a formal claim construction at such time as the Court provides.

18. Claims 52-102 are directed to numerous methods for managing a health care management system, and some of the claim elements involve the use of similar features as those incorporated in one or more of the system claims of the '105 patent.

19. For example, claim 52 is directed to a method for preventing payment for medical procedures where pre-treatment utilization review is supposed to be conducted prior to or concurrently with the administration of such medical treatment, but there is no indication that the requisite utilization review was conducted.

20. Claim 67 is directed to a method for preventing payment where a second opinion is supposed to be conducted prior to the administration of a medical procedure, and when a claim for reimbursement for such treatment is made, there is no indication that the requisite second opinion was obtained.

21. Claim 85 is directed to a method for providing an ancillary service (*e.g.*, supporting services including pharmacy, radiology, laboratory tests and various services by medical specialists) where such ancillary service is part of a patient's treatment.

22. Other method claims are directed to the incorporation of disease management (*e.g.*, claims 54 and 91), using a database containing medical history (*e.g.*, claim 55), and eligibility checking (*e.g.*, claim 60).

23. The descriptions of paragraphs 19-22 are not intended to be Allcare's formal contentions as to claim construction of the various claims. In fact, the Honorable Chief Judge Claude M. Hilton of the United States District Court for the Eastern District of Virginia has previously entered an Order dated February 3, 2003 in a case captioned *Allcare Health Management System, Inc. v. Trigon Healthcare, Inc.*, et al. (the "*Trigon* case"), wherein the Court construed many of the claim limitations of the '105 patent, including but not limited to claims 52 and 55 in their entirety. Allcare submits that, while certainly not binding on another district, Judge Hilton's claim construction is nonetheless relevant and persuasive in this matter. Accordingly, attached hereto as Exhibit B is a true and correct copy of Judge Hilton's order construing certain claim terms and claims of the '105 patent. Attached hereto as Exhibit C is a true and correct copy of Judge Hilton's Memorandum Opinion in support of said Order.

Count I
PATENT INFRINGEMENT

24. Allcare incorporates by reference the allegations of paragraphs 1-23 of the Complaint as if set forth fully herein.

25. Allcare alleges that HPHC makes and uses one or more systems and methods that infringe the claims of the '105 patent.

26. On April 16, 2002, Allcare wrote to HPHC regarding such systems and methods, and the need for a license to the '105 patent.

27. This letter, which is attached hereto as Exhibit D, advised HPHC of the '105 patent, pointed with particularity to distinct features of HPHC's systems and methods, and to distinct claims of the '105 patent, and informed HPHC of Allcare's contention that a license thereunder was warranted.

28. HPHC was placed on notice of a charge of infringement by Allcare by the letter set forth in Exhibit D.

29. Following the conclusion of the *Trigon* case in the Eastern District of Virginia, on March 4, 2003, Allcare again wrote HPHC to inform them of the Court's findings with respect to claims construction, validity and enforceability. A copy of this correspondence is attached as Exhibit E. This additional letter served to reinforce Allcare's earlier contentions and countenance even more strongly in favor of a well-reasoned and detailed charge of infringement by Allcare, and the need for a license to the '105 patent.

30. Despite these and other letters, telephone calls and email messages both to HPHC and its outside counsel for patent matters, HPHC has continued to use its infringing systems and methods even after Allcare made HPHC aware of the charge of patent infringement.

31. As a result of HPHC's past acts of patent infringement, Allcare is entitled to actual damages.

32. Allcare is also entitled to damages for past infringement and a reasonable royalty associated with the practice of the inventions of the '105 patent.

33. HPHC has willfully infringed the '105 patent since at least April 16, 2002 when it was put on notice of a charge of infringement of the '105 patent.

34. HPHC has willfully infringed the '105 patent since at least March 4, 2003, when it was informed of the claims construction and other rulings from the *Trigon* case in the Eastern District of Virginia, reinforcing all of Allcare's earlier contentions.

35. Accordingly, any monetary amounts awarded to Allcare should be trebled in accordance with the Patent Act.

36. This is an exceptional case within the meaning of 35 U.S.C. § 285, entitling Allcare to an award of its attorney's fees and costs incurred in bringing this action.

37. Allcare is also entitled to an award of injunctive relief in this matter to prevent unlawful acts of patent infringement by HPHC.

PRAYER FOR RELIEF

WHEREFORE, Allcare prays that the Court:

A. Enter judgment in its favor on its count of patent infringement against HPHC;

B. Award Allcare damages for infringement in the form of a reasonable royalty, together with interest and costs, as provided by 35 U.S.C. § 284;

C. Award Allcare treble damages as a judgment against HPHC for its willful violations of The Patent Act;

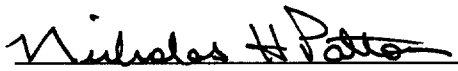
D. Declare this case an exceptional case and award Allcare its attorney fees pursuant to 35 U.S.C. § 285;

E. Award injunctive relief in favor of Allcare; and

F. Enter such other relief as may be just and proper.

Dated: May 5, 2003

Respectfully submitted,



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COUNSEL FOR PLAINTIFF

US005301105A

United States Patent [19]

Cummings, Jr.

[11] Patent Number: 5,301,105

[45] Date of Patent: Apr. 5, 1994

[54] **ALL CARE HEALTH MANAGEMENT SYSTEM**

[75] Inventor: **Desmond D. Cummings, Jr.**, 2309 Orchard Dr., Apopka, Fla. 32715

[73] Assignee: **Desmond D. Cummings**

[21] Appl. No.: **683,032**

[22] Filed: **Apr. 8, 1991**

[51] **Int. Cl.**[5] **G06F 7/00**

[52] **U.S. Cl.** **364/401**; 364/406; 364/408

[58] **Field of Search** 364/401, 406, 408

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,697,693	10/1972	Deschenes et al. .	
4,290,114	9/1981	Sinay	364/900
4,491,725	1/1985	Pritchard	235/375
4,648,037	3/1987	Valentino	364/408
4,797,543	1/1989	Watanabe	235/492
4,858,121	8/1989	Barber et al.	364/406
4,916,611	4/1990	Doyle, Jr. et al.	364/401
5,018,067	5/1991	Mohlenbrock et al.	364/413.02

OTHER PUBLICATIONS

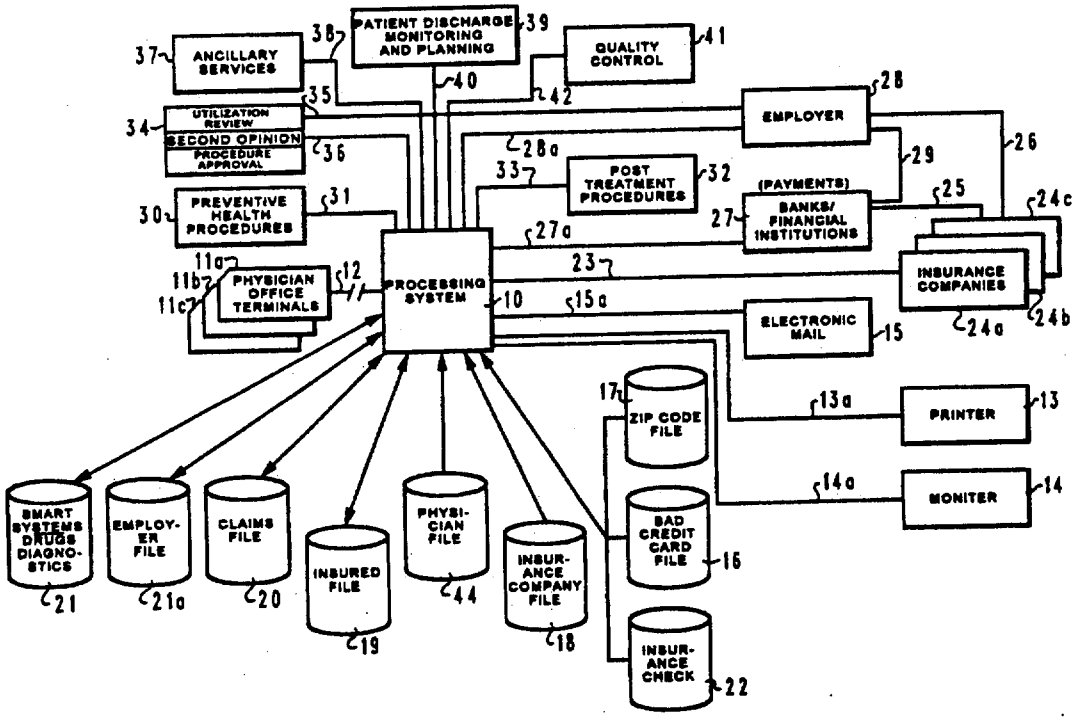
Excerpt from Mesa Petroleum, Company. Mesa Solution Magazine entitled "Corporate America At Risk" Pages four through eleven.

Primary Examiner—Roy N. Envall, Jr.
Assistant Examiner—Gita D. Shingala

[57] **ABSTRACT**

A fully integrated and comprehensive health care system that includes the integrated interconnection and interaction of the patient, health care provider, bank or other financial institution, insurance company, utilization reviewer and employer so as to include within a single system each of the essential participants to provide patients with complete and comprehensive pretreatment, treatment and post-treatment health care and predetermined financial support therefor.

102 Claims, 9 Drawing Sheets



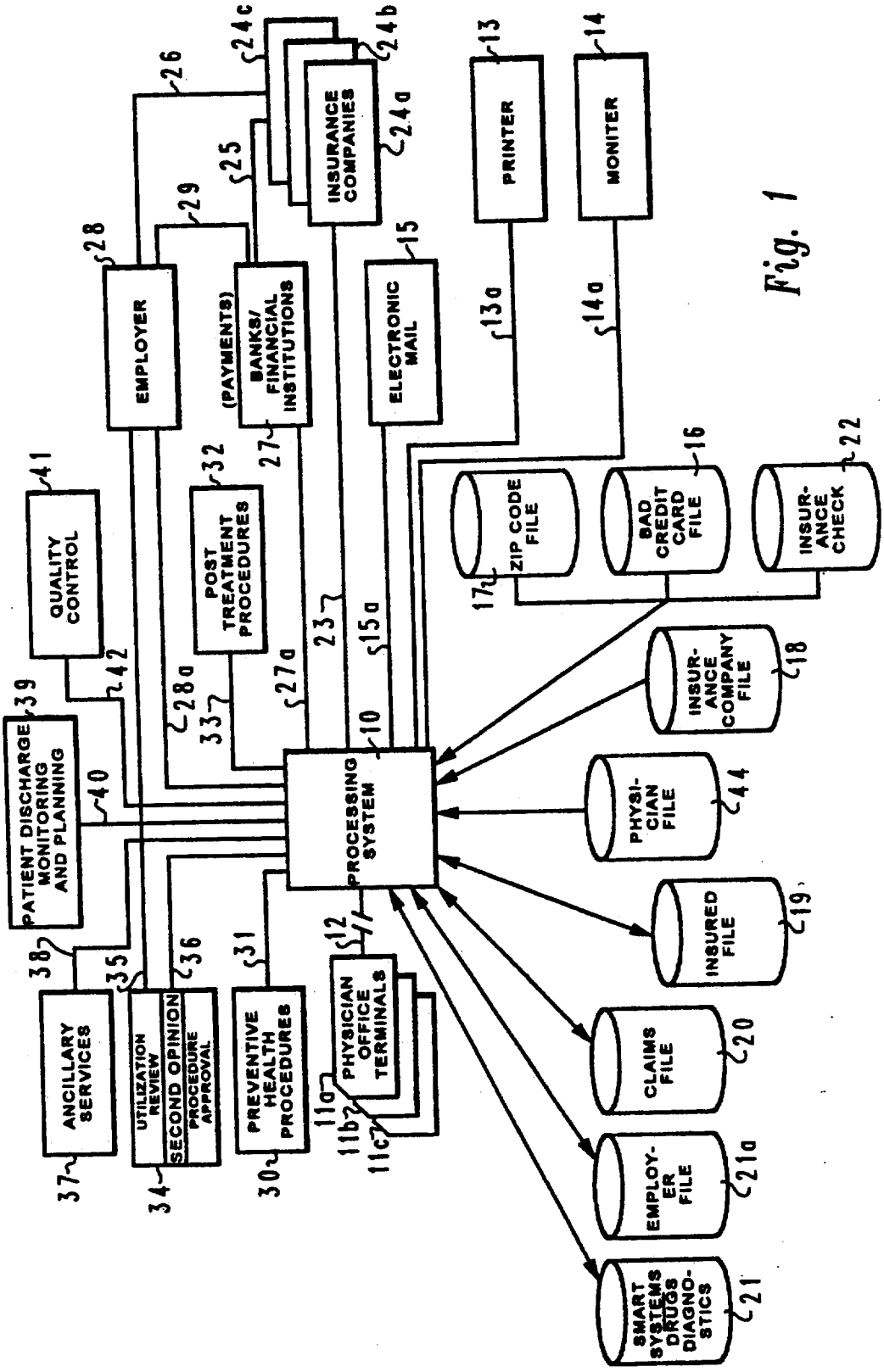

INSURANCE COMPANIES
PRINTER
MONITER
EMPLOYER
BANKS/ FINANCIAL INSTITUTIONS
(PAYMENTS)
ELECTRONIC MAIL
QUALITY CONTROL
POST TREATMENT PROCEDURES
ZIP CODE FILE
BAD CREDIT CARD FILE
INSUR-ANCE CHECK
INSUR-ANCE COMPANY FILE
PATIENT DISCHARGE MONITORING AND PLANNING
PROCESSING SYSTEM
PHYSI-CIAN FILE
INSURED FILE
ANCILLARY SERVICES
UTILIZATION REVIEW
SECOND OPINION
PROCEDURE APPROVAL
PREVENTIVE HEALTH PROCEDURES
PHYSICIAN OFFICE TERMINALS
CLAIMS FILE
EMPLOY-ER FILE
SMART SYSTEMS DRUGS DIAGNO-STICS

Fig. 1

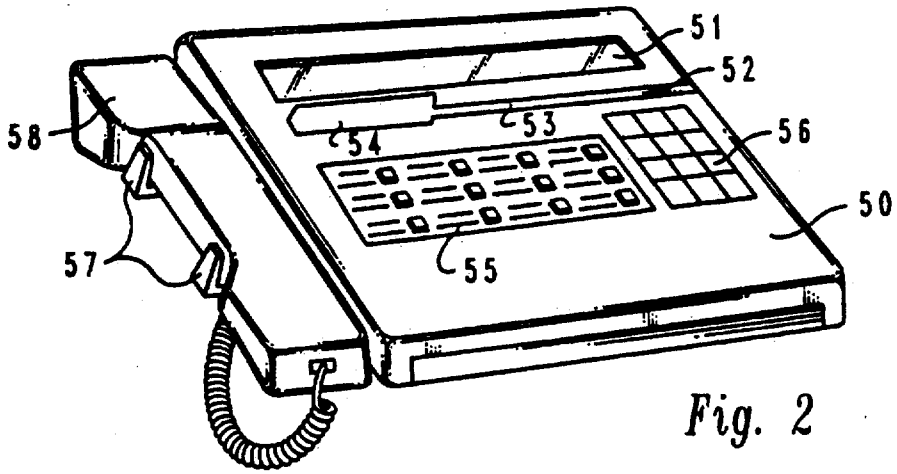

51
52
53
54
56
58
50
57
55

Fig. 2

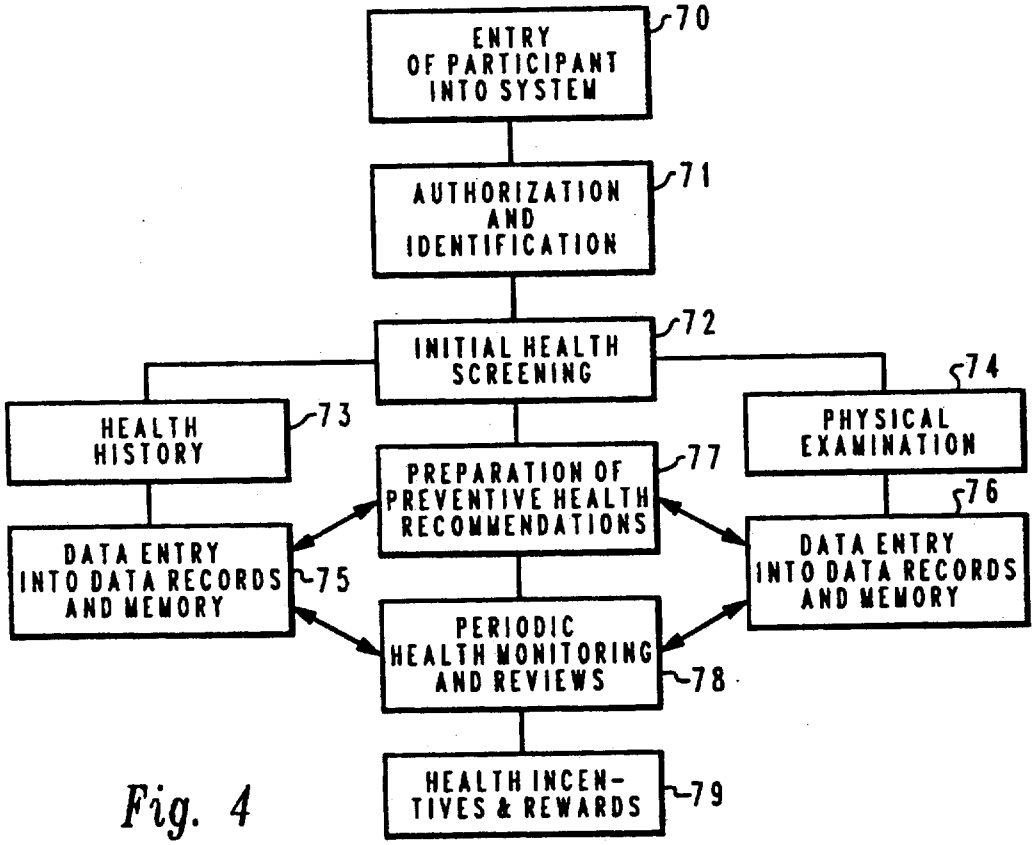

ENTRY OF PARTICIPANT INTO SYSTEM
70
AUTHORIZATION AND IDENTIFICATION
71
INITIAL HEALTH SCREENING
72
HEALTH HISTORY
73
PHYSICAL EXAMINATION
74
PREPARATION OF PREVENTIVE HEALTH RECOMMENDATIONS
77
DATA ENTRY INTO DATA RECORDS AND MEMORY
75
DATA ENTRY INTO DATA RECORDS AND MEMORY
76
PERIODIC HEALTH MONITORING AND REVIEWS
78
HEALTH INCEN-TIVES & REWARDS
79

Fig. 4

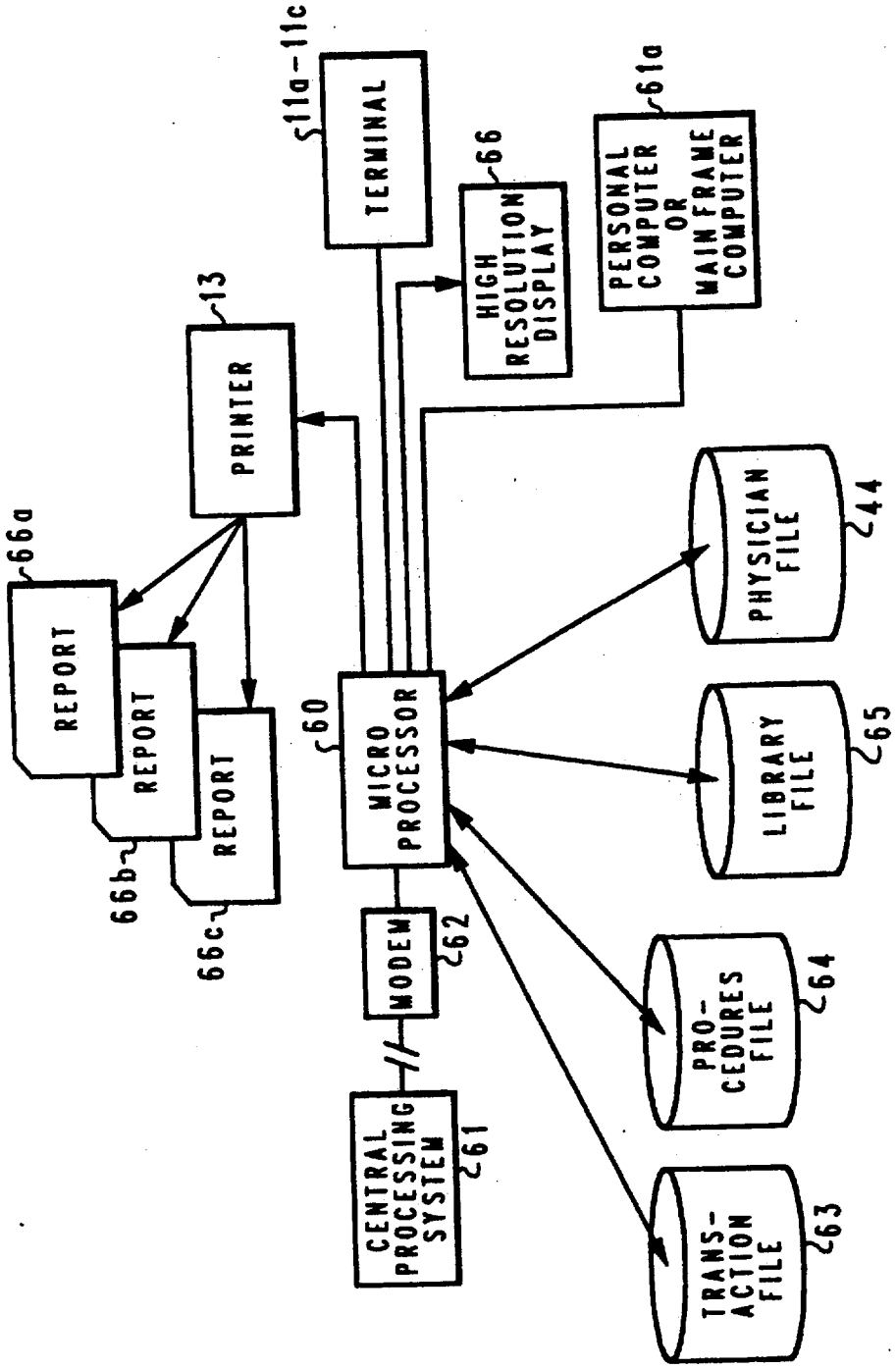

11a-11c
TERMINAL
66
HIGH RESOLUTION DISPLAY
61a
PERSONAL COMPUTER OR MAIN FRAME COMPUTER
13
PRINTER
66a
REPORT
66b
REPORT
66c
REPORT
60
MICRO PROCESSOR
44
PHYSICIAN FILE
65
LIBRARY FILE
62
MODEM
64
PRO-CEDURES FILE
261
CENTRAL PROCESSING SYSTEM
63
TRANS-ACTION FILE

Fig. 3

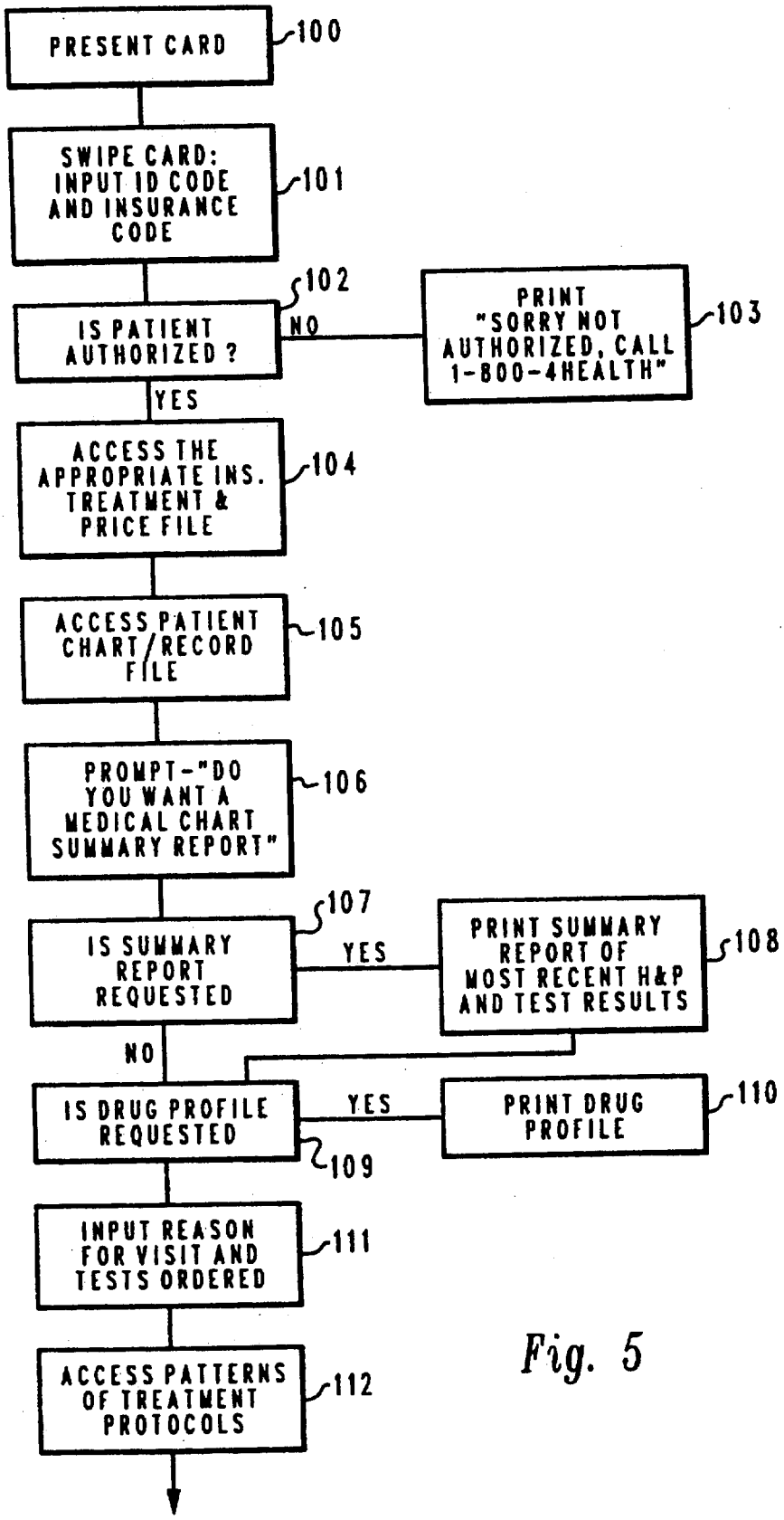

PRESENT CARD
100
SWIPE CARD: INPUT ID CODE AND INSURANCE CODE
101
IS PATIENT AUTHORIZED ?
102
NO
PRINT "SORRY NOT AUTHORIZED, CALL 1-800-4HEALTH"
103
YES
ACCESS THE APPROPRIATE INS. TREATMENT & PRICE FILE
104
ACCESS PATIENT CHART/RECORD FILE
105
PROMPT-"DO YOU WANT A MEDICAL CHART SUMMARY REPORT"
106
IS SUMMARY REPORT REQUESTED
107
YES
PRINT SUMMARY REPORT OF MOST RECENT H&P AND TEST RESULTS
108
NO
IS DRUG PROFILE REQUESTED
109
YES
PRINT DRUG PROFILE
110
INPUT REASON FOR VISIT AND TESTS ORDERED
111
ACCESS PATTERNS OF TREATMENT PROTOCOLS
112

Fig. 5

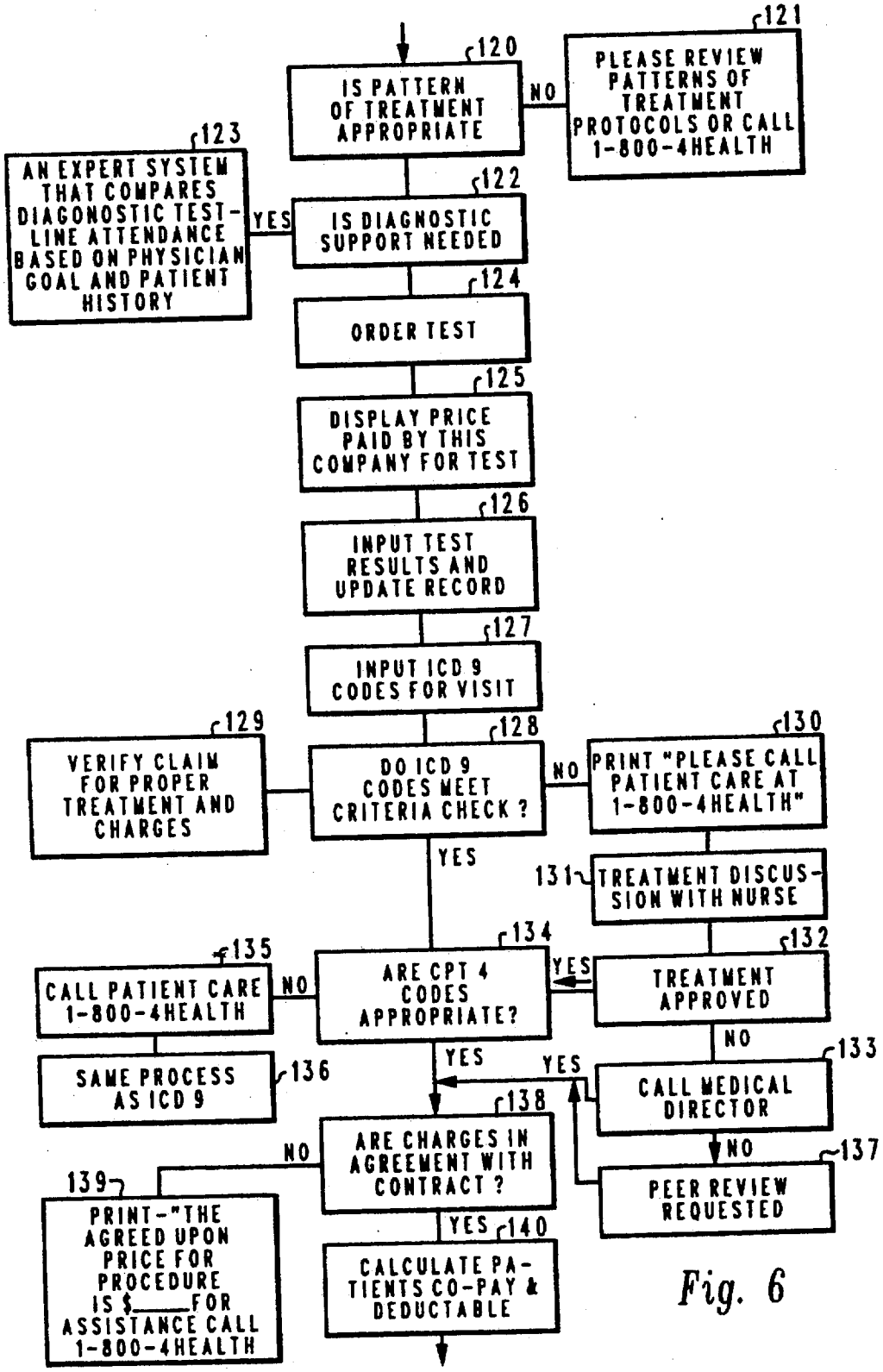

120
IS PATTERN OF TREATMENT APPROPRIATE
NO
121
PLEASE REVIEW PATTERNS OF TREATMENT PROTOCOLS OR CALL 1-800-4HEALTH
123
AN EXPERT SYSTEM THAT COMPARES DIAGONOSTIC TEST-LINE ATTENDANCE BASED ON PHYSICIAN GOAL AND PATIENT HISTORY
YES
122
IS DIAGNOSTIC SUPPORT NEEDED
124
ORDER TEST
125
DISPLAY PRICE PAID BY THIS COMPANY FOR TEST
126
INPUT TEST RESULTS AND UPDATE RECORD
127
INPUT ICD 9 CODES FOR VISIT
129
VERIFY CLAIM FOR PROPER TREATMENT AND CHARGES
128
DO ICD 9 CODES MEET CRITERIA CHECK ?
NO
130
PRINT "PLEASE CALL PATIENT CARE AT 1-800-4HEALTH"
YES
131
TREATMENT DISCUSSION WITH NURSE
135
CALL PATIENT CARE 1-800-4HEALTH
NO
134
ARE CPT 4 CODES APPROPRIATE?
YES
132
TREATMENT APPROVED
NO
133
CALL MEDICAL DIRECTOR
YES
YES
136
SAME PROCESS AS ICD 9
138
ARE CHARGES IN AGREEMENT WITH CONTRACT ?
NO
137
PEER REVIEW REQUESTED
139
PRINT-"THE AGREED UPON PRICE FOR PROCEDURE IS $____FOR ASSISTANCE CALL 1-800-4HEALTH
YES
140
CALCULATE PATIENTS CO-PAY & DEDUCTABLE

Fig. 6

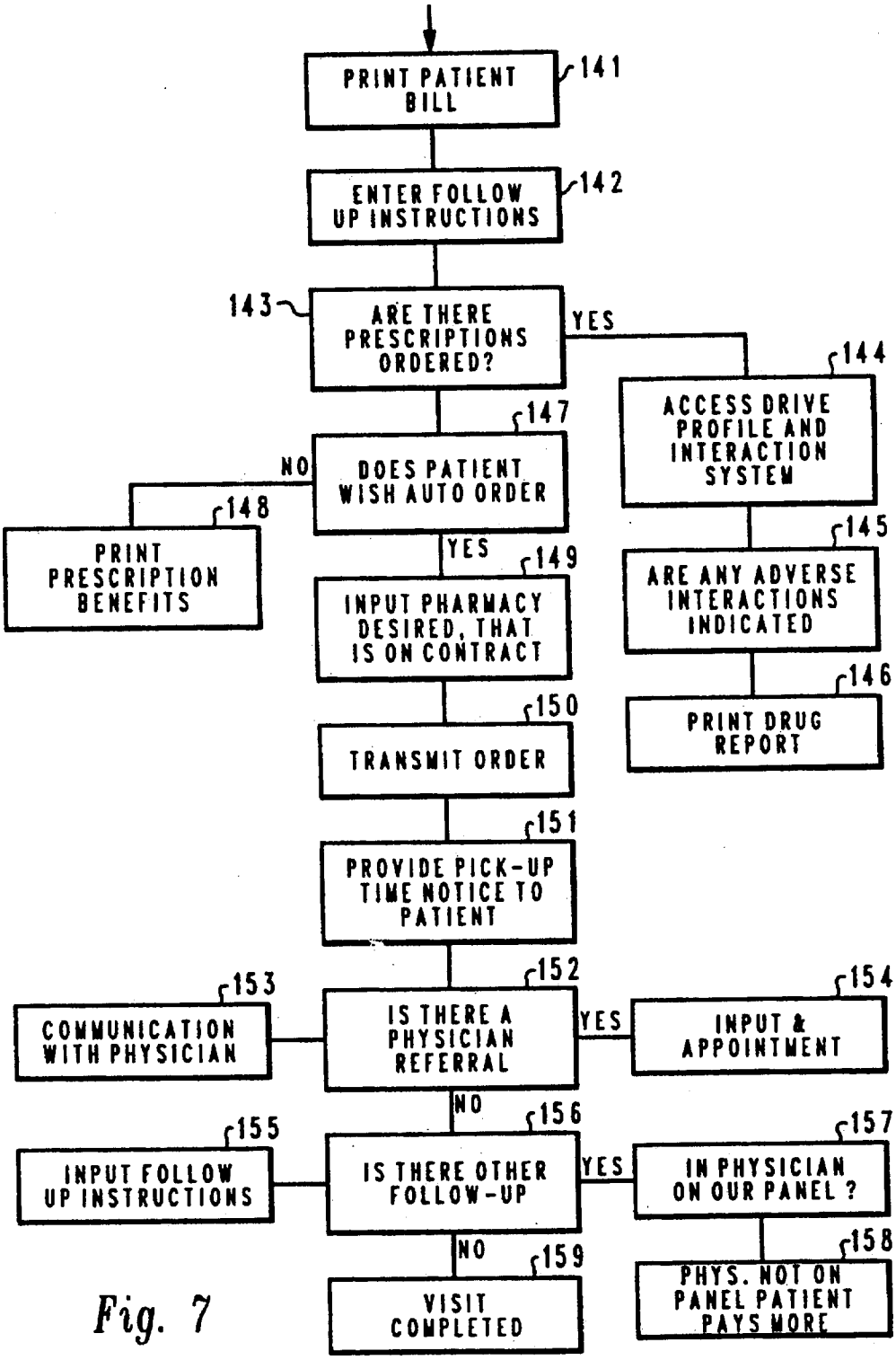

PRINT PATIENT BILL
141
ENTER FOLLOW UP INSTRUCTIONS
142
143
ARE THERE PRESCRIPTIONS ORDERED?
YES
144
ACCESS DRIVE PROFILE AND INTERACTION SYSTEM
147
DOES PATIENT WISH AUTO ORDER
NO
148
PRINT PRESCRIPTION BENEFITS
YES
149
INPUT PHARMACY DESIRED, THAT IS ON CONTRACT
145
ARE ANY ADVERSE INTERACTIONS INDICATED
146
PRINT DRUG REPORT
150
TRANSMIT ORDER
151
PROVIDE PICK-UP TIME NOTICE TO PATIENT
153
COMMUNICATION WITH PHYSICIAN
152
IS THERE A PHYSICIAN REFERRAL
YES
154
INPUT & APPOINTMENT
NO
155
INPUT FOLLOW UP INSTRUCTIONS
156
IS THERE OTHER FOLLOW-UP
YES
157
IN PHYSICIAN ON OUR PANEL ?
NO
159
VISIT COMPLETED
158
PHYS. NOT ON PANEL PATIENT PAYS MORE

Fig. 7

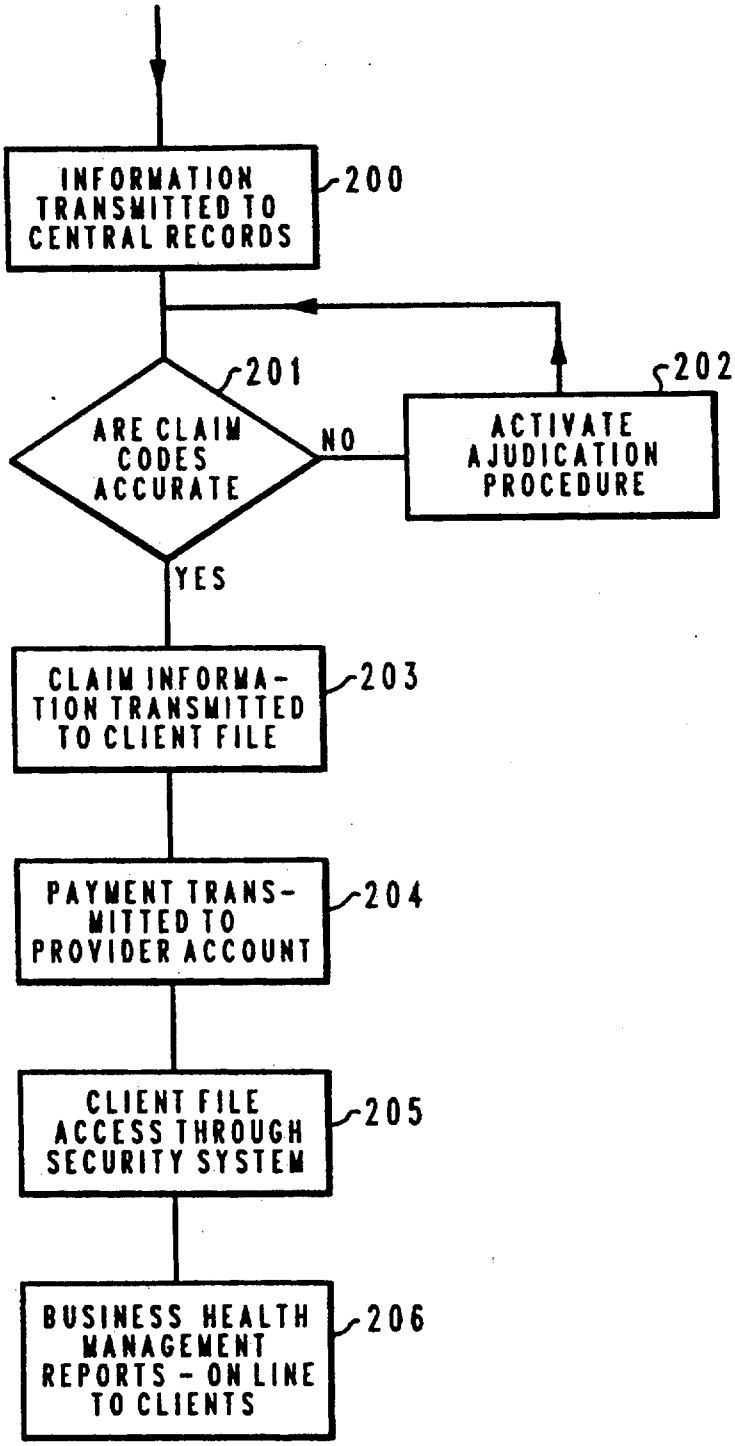

INFORMATION TRANSMITTED TO CENTRAL RECORDS
200
ARE CLAIM CODES ACCURATE
201
NO
ACTIVATE AJUDICATION PROCEDURE
202
YES
CLAIM INFORMATION TRANSMITTED TO CLIENT FILE
203
PAYMENT TRANSMITTED TO PROVIDER ACCOUNT
204
CLIENT FILE ACCESS THROUGH SECURITY SYSTEM
205
BUSINESS HEALTH MANAGEMENT REPORTS - ON LINE TO CLIENTS
206

Fig. 8

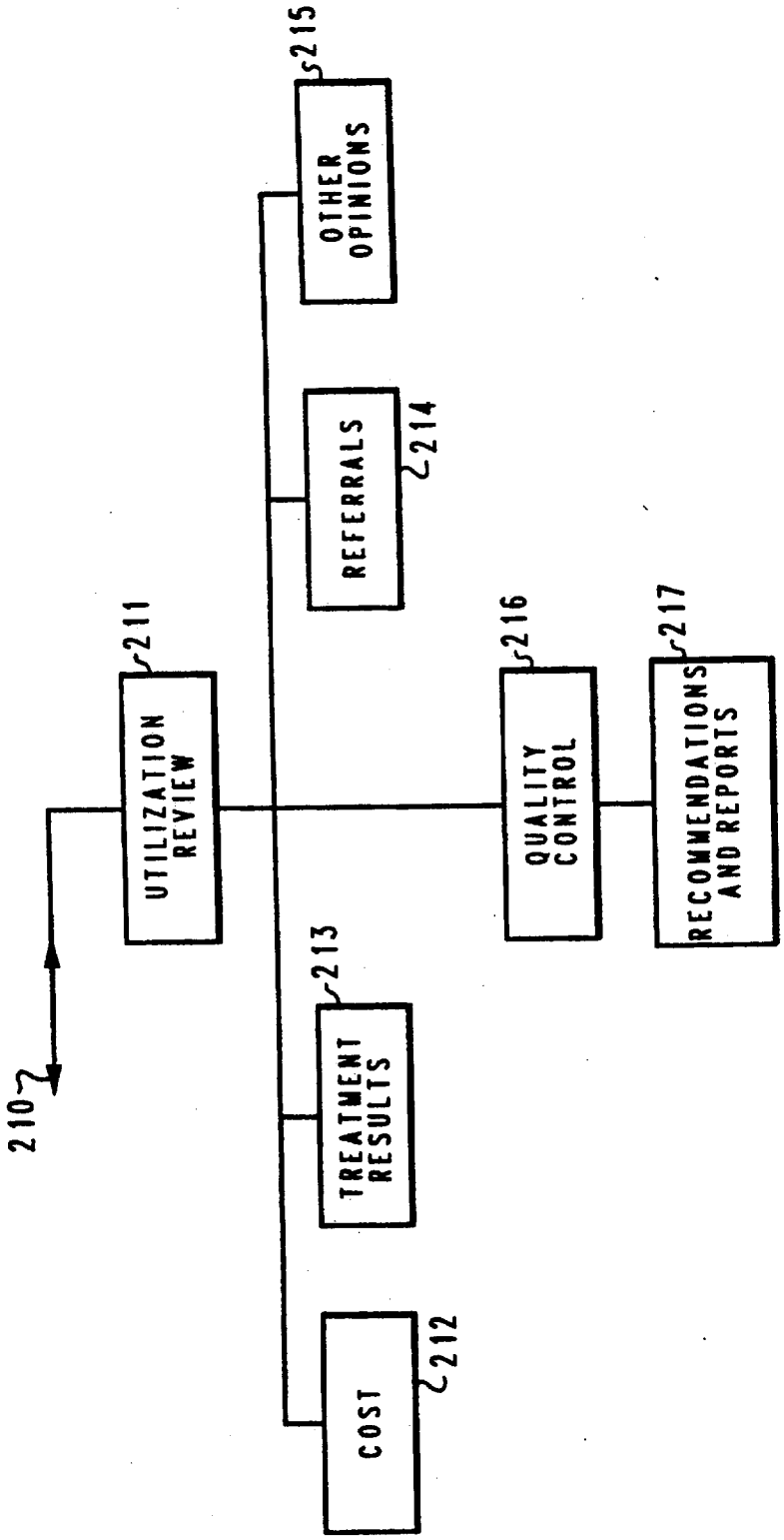

215
OTHER OPINIONS
214
REFERRALS
211
UTILIZATION REVIEW
216
QUALITY CONTROL
217
RECOMMENDATIONS AND REPORTS
213
TREATMENT RESULTS
212
COST
210

Fig. 9

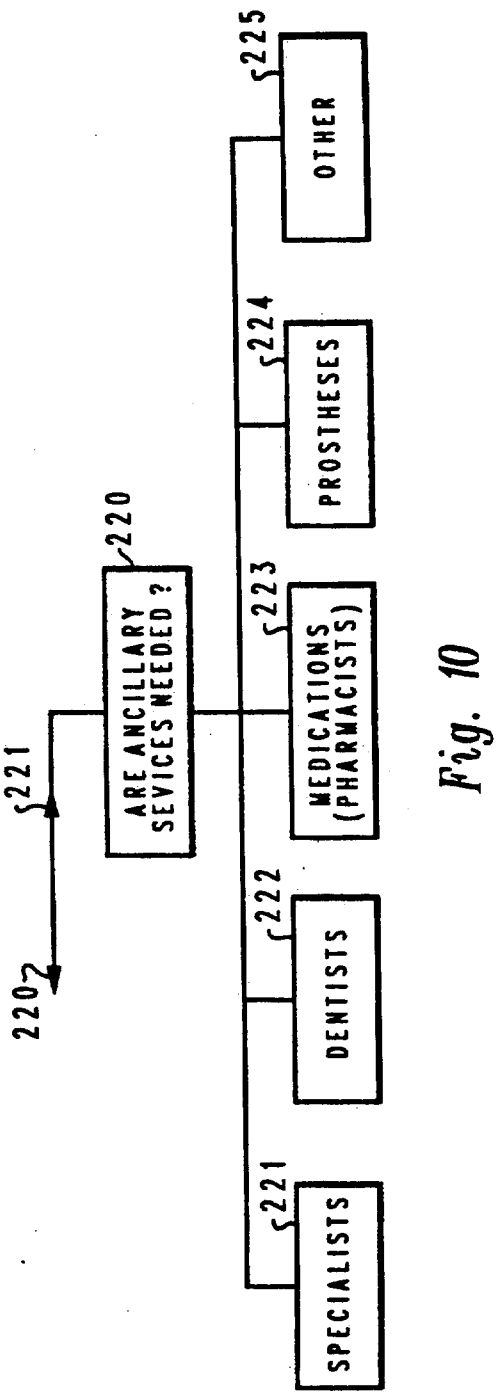

220
221
ARE ANCILLARY SEVICES NEEDED ?
220
SPECIALISTS
221
DENTISTS
222
MEDICATIONS (PHARMACISTS)
223
PROSTHESES
224
OTHER
225

Fig. 10

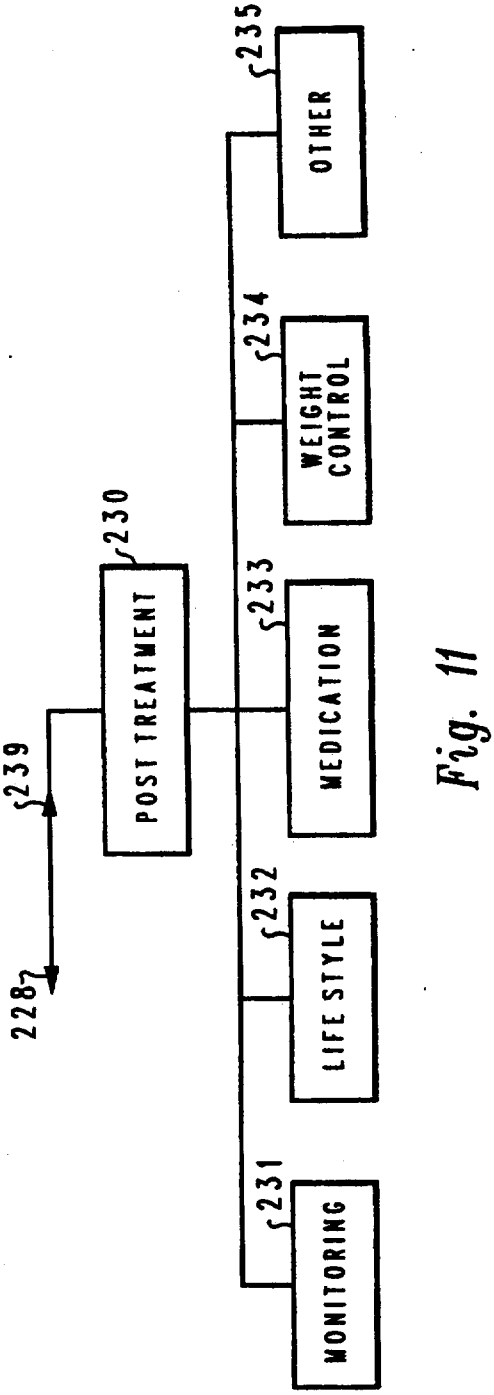

228
239
POST TREATMENT
230
MONITORING
231
LIFE STYLE
232
MEDICATION
233
WEIGHT CONTROL
234
OTHER
235

Fig. 11

ALL CARE HEALTH MANAGEMENT SYSTEM

This invention relates to managed health care systems and more particularly to managed health care systems which address health enhancement life styles, illness prevention, case management, illness treatment and post treatment monitoring and/or review; and which integrate physicians, medical care facilities, patients, insurance companies and/or other health care payers, employers and banks and/or other financial institutions.

BACKGROUND OF THE INVENTION

A variety of medical payment systems have heretofore been proposed illustrative of which are those disclosed in U.S. Pat. No. 4,491,725 granted to Lawrence E. Pritchard on Jan. 1, 1985 and in U.S. Pat. No. 4,858,121 which was granted to William B. Barber et al. on Aug. 15, 1989.

According to the proposals of the prior art, systems have been proposed which include one or more magnetic and manual entry data entry terminals at the health care provider facilities, various verification and authentication routines, data storage which includes lists of insurance companies or other payers together with lists of medical procedures for which such payers are obligated to make payments, schedules of permissible fees for such procedures and selected data related specifically to each covered patient.

Other proposals of the prior art have included examination of participants to determine their physical condition, identification of existing physical profiles and encouragement of changes in life styles, where indicated, to enhance the physical condition of the participant and to lessen the likelihood of the development of disease.

However, such systems have not heretofore featured the total health care function, for they have not integrated important elements of total health care such as comprehensive preventive health measures, the review of the necessity for implementing selected procedures including changes in life styles, the obtaining of second opinions, (i.e., utilization review/case management) and other functions contemplated by total health management such as ancillary services. Neither have they included integration of the active participation by a patient's employer or inclusion of a patients' own available cash balances. Accordingly, since these missing functions are important ingredients to extend proposals of the prior art to fully comprehensive medical care, there has continued to be a need for a system which provides full integration of each of the aforementioned activities.

BRIEF SUMMARY OF THE INVENTION

The preferred embodiment of the present invention includes the integrated interconnection and interaction of the patient, health care provider, bank or other financial institution, utilization reviewer/case manager and employer so as to include within a single system each of the essential elements to provide patients with complete and comprehensive health care and payment therefor. it additionally contemplates, as an optional feature, the complete integration of all aspects of "wellness", that is, of the optimization of health-inducing diet and life style factors in combination with the aforementioned enhanced integrated diagnosis, treatment and post-treatment of illnesses when they do occur, and quality monitoring and enhancement systems including patterns of treatment protocols and diagnostic smart systems that will serve as aids in treatment planning and diagnostic test selection.

OBJECTS AND FEATURES

It is one general object of this invention to provide a fully integrated health optimization system.

It is another object of this invention to improve medical treatment systems.

It is another object of the invention to provide a wholly integrated health care management system.

It is still another object of the invention to provide an integrated health care management system including interactive participation with patients' employers and banks.

It is still another object of the invention to include in an integrated health care management system the interactive participation of a utilization review for recommended medical procedures.

It is yet another object of the invention to integrate preventive medical programs with treatment programs, thereby to encompass the full gamut of health wellness.

Accordingly, in accordance with one feature of the invention, all of the elements of health enhancement are integrated, including customized planning, prevention, treatment and rehabilitation, thus facilitating health wellness management, improving efficiency and reducing costs.

In accordance with the foregoing feature, integrated service is provided, thus reducing time, direct cost, and indirect cost often incurred through duplication of tests, excessive paperwork and inappropriate utilization, thus enhancing the ability of the system to provide quality health care through case management and physician interaction via smart systems.

In accordance with yet another feature of the invention, the planning and preventive aspects of health wellness includes the provision of customized recommendations for health-enhancing practices and for the periodic monitoring of participants' physical conditions, diets and life styles so as to identify and address incipient health problems and provide corrective measures before health problems develop.

In accordance with another feature of the invention, provision is made for health management of selected groups of participants as well as for individuals.

In accordance with still another feature of the invention, provision is made for integrated operation in both in-patient and out-patient modes of treatment.

In accordance with yet another feature of the invention, provision for integrated operation is provided for inclusion of ancillary services such as those provided by pharmacists, dentists, optometrists, audiologists and related laboratories.

In accordance with still another feature of the invention, the system is made flexible so that it is compatible with procedures required for implementing workmen's compensation processing.

In accordance with yet another feature of the invention, provision is made for optional precertification of patients and procedures, thus enhancing health care efficiency and reducing overhead costs.

In accordance with another feature of the invention, provision is made for patient discharge planning and monitoring.

In accordance with another feature of the invention, interactive communication links are provided with an integrated utilization review whereby for predetermined selected medical procedures proposed for imple-

mentation there is performed a utilization review which may optionally include second opinions.

In accordance with still another feature of the invention, the aforementioned utilization review which can be customized according to predetermined criteria, thus improving diagnosis, treatment and cost effectiveness.

In accordance with yet another feature of the invention, provision is made for both concurrent and retrospective utilization reviews.

In accordance with yet another feature of the invention, quality control is provided through interpretation of the aforementioned utilization reviews.

In accordance with still another feature of the invention, provision is made for on-line test results, digitized imaging, and projection on high resolution CRT screens in physician's offices.

In accordance with another feature of the invention, there is included within the system a link between the claims processing and the patients' employer, thereby providing important information transfer on a real time basis and the capability for employer override.

In accordance with yet another feature of the invention, banks or other repositories of funds are integrated into the system so as to provide automated transfer of funds to accounts of physicians and other health care providers.

In accordance with still another feature of the invention, provision is made for implementation of discretionary patient cost-sharing and/or supplementation to supplement approved fees and to obtain a selected medical treatment with a sharing of costs by the insurance company or other payer for the basic amount and with a supplement by the patient for any remaining residue.

In accordance with one other feature of the invention, the system is responsive to the utilization of either conventional credit-type cards or with "smart" cards that are specially dedicated for use with the system.

The foregoing and other objects and features of the invention will be apparent from the following detailed description, by way of a description of a preferred embodiment, with reference to the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a block diagram depicting principal functional elements of the improved Wellness Health Management System;

FIG. **2** is a perspective view illustrating a typical manual and data card entry terminal for use in the Wellness Health Management System;

FIG. **3** is a block diagram depicting selected elements of the improved Wellness Health Management System when deployed in a distributed processing environment;

FIG. **4** is a diagram illustrating process flow of the preventive health portion of the System;

FIG. **5** is a diagram illustrating process flow of the diagnosis and treatment portion of the System;

FIG. **6** is a continuation of the process flow of FIG. **5**;

FIG. **7** is a continuation of the process flow of FIG. **6**;

FIG. **8** is an adjunct to the process flow of FIGS. **5–7**;

FIG. **9** is diagram illustrating the conclusion of the process flow of FIGS. **4–8**.

FIG. **10** is a diagram illustrating details of ancillary services; and

FIG. **11** is a diagram illustrating details of post treatment features of the invention.

DESCRIPTION OF A PREFERRED EMBODIMENT

Now turning to the drawing, and more particularly FIG. **1** thereof, it will be observed that it depicts the principal components of a preferred system in accordance with the principles of the invention. Depicted there are processing system **10** which is interconnected with one or more physician office terminals **11***a*–**11***c* by conventional communication paths **12**. Terminals **11***a*–**11***c* may be any of a variety of conventional data input terminals (e.g., such as that shown in FIG. **2** and described below) that provide for pre-recorded card and/or manual data entry input. Also included are conventional printer **13** (linked to Processing System **10** via link **13***a*) and monitor **14** (linked to Processing System **10** via link **14***a*), monitor **14** preferably having a high resolution CRT screen positioned in a location within the physician's office so as to facilitate observation and review. This monitor may be of the type normally available with current state of the art Personal Computers.

The inclusion of an electronic mail function is optional and is identified by symbol **15**. As will be observed, Electronic Mail **15** is linked to Processing System **10** via link **15***a*. Although provision of the electronic mail is not an essential part of the invention hereof, its inclusion further increases the versatility of the system and may render it more useful in some applications.

As is well known to those of skill in the art, many processing systems contain substantial memory storage capacity, and the system hereof advantageously employs such memory storage capacity to record a number of important bodies of data and other information. Some of such data and information are represented by the cylinders in FIG. **1**. These may either be a part of the memory of the processing system **10** or may be in other data banks that are accessible to the processing system **10**.

Although the system hereof in its preferred form contemplates the use of magnetically encoded personnel identification cards, identification of personnel may, of course, be made manually and appropriate information entered into the system manually. In contemplation of at least the optional use of magnetically encoded cards, including conventional credit cards, there is provided access to a memory storage file that includes a listing of bad credit cards as represented by Bad Credit Card File **16**. Zip Code File **17** may be optionally included so as to facilitate location, identification and other processing that may be expedited through zip code use.

For situations in which an insurance company is involved, relevant insurance company information and benefits as represented by Insurance Company File **18**. Examples of pertinent information in such File **18** include the identification of covered illnesses and procedures, limits on insurance company payments for various illnesses and procedures, treatments and procedures for which utilization review is required, and treatments and procedures for which second opinions are necessary.

Since the system hereof contemplates compatibility with conventional insurance provisions that include patient deductibles, co-insurance by patient or another company and various other considerations that require selected individualized historical and other data to be recorded for each participant, system memory either

includes or has access to files for each person as denoted by the Insured File **19**. Somewhat similar considerations apply with respect to Claims File **20**. There is stored detailed information covering relevant items of interest in ensuring accurate administration of claims in accordance with applicable criteria. Included are items such as those relating to claims histories, claims under review and claims in process.

Further reference to FIG. **1** reveals the inclusion of a smart system **21** including parameters dealing with diagnostics and drugs (as hereinafter described), an Employer File **21***a* which is indicative of those employee data which affect operation and implementation of the Wellness Health Management System. Examples are employee identification data such as employee identification numbers, length of service where such length of service affects participation in and coverage under the System, coverage for dependents, and similar items. Also included may be data identifying relevant employer parameters such as retention by the employer of review of selected treatments selected for implementation, employer override, preapproved monetary levels of authorization and the like. As will be evident from further consideration of FIG. **1**, some of the above-described data may be contemplated by either the Insured File **19**, the Employer File **21***a*, or both.

As will be perceived by those skilled in the art, many of the principles embodied in the Wellness Health Management System are applicable to individuals as well as groups. Others of the principles render the System even more attractive to specialized groups such as employees of a company or other organization. Accordingly, it will be recognized that pertinent data needed for implementation of the system will correspondingly vary, and the groupings of data identified in FIG. **1** are set forth for illustrative purposes and are not intended to suggest that all of such data are required in every instance in order to implement the principles hereof.

It is deemed well-known that although some groups of persons are self-insured (e.g., companies that themselves accept the risk and directly make payment to health providers), most companies and other organizations that provide health coverage for their employees do so through outside organizations, usually insurance companies. Accordingly, FIG. **1** includes, in addition to Insurance Company File **18**, indicia **22** representing a check by the System to determine if a prospective participant (e.g., patient), has insurance company coverage, and, if so, any relevant particulars.

In addition to Insurance Company File **18** and Insurance Check indicia **22**, there are shown communication links leading from Processing System **10** via path **23** to one or more insurance companies represented by rectangles **24***a*-**24***c*. Such links integrate relevant insurance companies into the system according to the level of integration desired by the insurance company or companies. Of course, it will be evident that this also contemplates the integration, to the extent that is relevant, of self-insured companies and groups other than employees of a particular company.

Communication links **25** and **26** are provided to illustrate communication between Insurance Companies **24***a*-**24***c* with Banks/Financial Institutions **27** and Employer(s) **28**; and link **29** illustrates direct intercommunication between Banks/Financial Institutions **27** and Employer **28**. Link **28***a* is provided to illustrate the communication link between Employer **28** and Processing System **10**; and communication link **27***a* illustrates the communication link between Banks/Financial Institutions **27** and Processing System **10**.

As mentioned above, one of the features hereof resides in the integration of the full spectrum of health care parameters including preventive profiles and regimens, the addressing of diseases and other health-impairing incidents when they do occur, and the addressing of post-treatment matters as necessary or desirable. Accordingly, FIG. **1** includes reference to Preventive Health Procedures **30** linked to Processing System **10** via link **31**, and Post Treatment Procedures **32** linked to Processing System **10** via link **33**.

As mentioned above, another of the features of the invention is represented by the cylinder **21** "Smart Systems—Drugs/Diagnostics". Such a smart system is contemplated by several of the following operations including that identified by rectangle **34** which is denominated "Utilization Review/Second Opinion/-Procedure Approval". As will be evident from the ensuing description, the System is very versatile in that it can be tailored to include either or both of the Utilization Review and Second Opinion according to applicable criteria such as may be established, for example, by an employer, insurance company or group administration. Accordingly, rectangle **34** is shown as being linked by link **35** to an employer (if applicable), and by link **36** through Processing System **10** to other elements of the overall System.

Still another of the features of the invention is the optional integration of ancillary services into the System. As further mentioned herein, by ancillary services is meant the totality of supporting services that are needed to support total health. Such services include those of pharmacists, prosthesis providers, dentists, optometrists, audiologists and other medical specialists, laboratories and the like. Such services are represented by Ancillary Services rectangle **37** that is shown as being linked into the System through Processing System **10** through link **38**. Other features are depicted by Patient Discharge Monitoring and Planning (linked to Processing System **10** through link **40**), and Quality Control **41** (linked to Processing System **10** through link **42**.

The Physician File **44** is provided to represent several classes of information and data that are useful in practicing the principles of the invention. While some of these data and information may be included elsewhere in the System so long as they are generally accessible therein, it may be convenient to describe them as if included within the Physicians File **44**. Accordingly, the following references to such data and information should be understood to contemplate the physical location of such data in other sites as well as, or in addition to, files at the physician's location.

In accordance with the "Smart System" characteristics of the invention, Physician File **44** preferably will include an identification of the most commonly encountered diseases and other ailments, together with symptoms usually associated therewith. Accordingly, if symptoms are entered into the system terminal (e.g., one of terminals **11***a*-**11***c*), and an identification of the corresponding illness is requested from the Processing System **10**, the physician's file is interrogated, and the system prepares a list of the most likely medical condition corresponding to such symptoms, together with the generally approved and/or recommended treatment protocols. It also contemplates the identification within Physician File **44** of those procedures for which Utiliza-

tion Review and/or Second Opinion **34** are deemed necessary or desirable.

In addition to the foregoing, Physician File **44** may optionally include other data or items of information. Thus, each individual physician may tailor a portion of his file to include additional items which reflect his own style and preferences.

Now turning to FIG. **2**, it will be observed that it depicts, in a perspective view, a terminal suitable for utilization in the System as identified by symbols **11***a*–**11***c* in FIG. **1**. Although as mentioned above, all of the features of the illustrated terminal are not required in order to practice the principles of the invention and thus some of them are optional, it is deemed apparent that each of the features illustrated are attractive and add to the usefulness of the terminal.

The terminal of FIG. **2** includes a main housing **50** having a visual display window **51**, a card data entry slot **52** having an elongated portion **53** and an enlarged portion **54**, conventional manual data entry keyboard **55** and 10-key numeric calculator **56**. It also includes conventional telephone handset cradle **57** and telephone handset **58**. As will be evident from reference to FIG. **2**, the terminal is operative in accordance with techniques well known in the data processing arts. Thus, for example, manual entry of information may be made by depressing the appropriate keys on keyboard **55**, and information entry may also be made by inserting a conventional or special data-containing card (e.g., a "swipe card") into data entry slot **52** and moving it laterally therethrough. Although not necessary to the practice of the invention hereof, it is contemplated that the terminal will be responsive to data entry through conventional credit cards as well as special cards that may be issued for such purpose. It is also contemplated that the terminal may be adapted for reading bar codes such as those conventionally employed for identifying merchandise.

Now turning to FIG. **3**, it will be observed that it illustrates practice of the principles hereof in a distributed processing environment. Thus, according to FIG. **3**, a portion of the processing system **10** of FIG. **1** may be embodied in micro processor **60** and the remaining portion of the Processing System **10** in one or more other processors such as central processing system **61**, or a personal computer or main frame computer as identified by rectangle **61***a*. Communication between system **61**/**61***a* and processor **60** is preferably conducted through one or more conventional modems represented by rectangle **62**. In addition, although the files described above in connection with FIG. **1** may be provided within remote memory (e.g., memory within system **61**), it is contemplated that at least a portion of such memory is resident physically at or in proximity to terminal(s) **11***a*–**11***c* within the physician's office. Accordingly, the transaction file **63**, procedures file **64** and library file **65** are shown as connected to the microprocessor **60** (rather than central processing system) for illustrative purposes only and not as requiring them to be physically resident at the physician's offices.

FIG. **3** also illustrates another feature mentioned above, namely, the provision of an optional high resolution display **66** preferably located in the physician's office so as to permit on-line real time display and visual review of relevant data, test results and the like. Also included &re representations **66***a*–**66***c* which are illustrative of various reports that may be printed out or otherwise prepared in hard copy form by printer **13**.

Now turning to FIG. **4**, the preventive health aspect of the Wellness Health Management System is illustrated. There, it will be observed, is the entry of information for each participant into the System. This is symbolized by rectangle **70**. Authorization and Identification **71** are made by designees such as authorized personnel within a company personnel department or an appropriate official within an insurance company. Once authorized, a participant is provided with an appropriate identification and/or other indicia which is subsequently used by the System to verify his authorization to participate as well as to identify his records and other information and data utilized by the System in carrying out its functions.

Next, it is contemplated that health screening is conducted as indicated at Initial Health Screening **72**. Such initial health screening ordinarily includes recording health history **73** and a physical examination **74**. As denoted by Data Entry items **75** and **76**, relevant items of information are entered into System memory and/or manual records.

Based upon physician review (not depicted), health history **73** and physical examination information **74**, preventive health recommendations **77** are prepared and presented to the participant. Such recommendations ordinarily include any pertinent changes in life style such as a change in diet, elimination of smoking, reduction or elimination of alcohol and drugs, reduction in weight, participation in prescribed physical exercise programs, reduction in blood pressure and the like. These are then communicated to the participant. This may be accomplished in any convenient way, for example by report printout such as reports **66***a*–**66***c* of FIG. **3**, oral communication, or both.

After preventive health recommendations have been communicated to the participant, provision is made for periodic monitoring and review **78**. Such monitoring may take any of a variety of forms such as voluntary participation in tests, checking in to exercise areas by semiautomatic verification such as engaging an identification card with an appropriate reader, automatic identification of a participant by known sensing mechanisms appropriately located on an oval running track to account the number of times a participant has traversed the track, and the like. A variety of other monitoring techniques will also be evident to those skilled in the art.

In addition to the foregoing, health incentives and rewards **79** may be included in the preventive health portion of the System. Thus, for example, bonuses may be credited to participants according to the extent to which they adhere to their personalized recommended preventive health program or to the extent to which their own personal draw upon health resources falls below specified levels.

Now turning to FIG. **5**, it will be observed that it illustrates process flow of the diagnosis and treatment portion of the System. This portion, as with others, contemplates that the participant first be identified as one who is authorized to participate at some predetermined level of participation and financial support. Accordingly, this portion of the System includes an appropriate introduction of identifying information. Although as mentioned above, such introduction may be made manually as per one of the above-described terminals **11***a*–**11***c*, the System preferably contemplates the use of a data card such as one that is encoded magnetically or one that contains conventional bar codes. Thus, the first element of FIG. **5** is the presentation of appro-

priate identification as represented by Present Card 100. Next, data is introduced into the System as indicated by Swipe Card Input ID Code and Insurance Code 101. This information is then processed by the Processing System 10 of FIG. 1 or corresponding microprocessor 60 and/or central processing system 61 of FIG. 3, accessing identification information as necessary or desirable from attendant files 44 (FIG. 3), and/or files 18-22 (FIG. 1) . Such information is utilized to verify the identification of the applicant and the authorization of the applicant to participate in the system as denoted by Is Patient Authorized rectangle 102. It also identifies to the System information and parameters for the System to perform its remaining functions as will be more evident from the following description.

If verification by the System reveals that the applicant is not authorized to participate, then an indication thereof is produced. This may take any of a variety of forms such as a visual or audible indication. Such an indication is represented by the rectangle 103 which contains the illustrative message Print "Sorry Not Authorized, Call 1-800-4Health". Of course, other indicia may be produced by the System as desired to tailor the System to the desires of the using physician and/or his staff.

If, as would normally be expected, the System verifies the authenticity and right to participate by the applicant, it then proceeds with its aforementioned accesses of information and parameters for the system to perform its remaining functions. Included are the accessing of the appropriate insurance or other basis for participation, the schedule for treatments and the prices thereof. This is indicated by rectangle 104. Also accessed are the participant's (patient's) charts and historical records. This is indicated by rectangle 105. As mentioned above, patient's medical charts and records are preferably stored in the physician's files 44 (FIGS. 1 and 3).

In order to expedite physician/staff review, provision is made to optionally produce a summary report. This is denoted by rectangle 106 Prompt "Do you want a Medical Chart Summary Report." If the summary report is requested as noted at 107, the report is then displayed either by visual display (e.g., display 66) or printed out as noted by rectangle 108 "Print Summary Report of Most Recent H&P and Test Results."

Continuing with operation of the System, it will be observed that it provides for accessing of drug profiles. Thus, the System asks "Is Drug Profile Requested" as denoted by rectangle 109. If the answer is "Yes", then the appropriate drug profile is displayed and/or printed as denoted by rectangle 110.

At this point in System operation, it is contemplated that information identifying the reason for the visit be entered and that any relevant tests be ordered. This is indicated by rectangle 111. Next, is shown "Access Patterns of Treatment Protocols 112. By this is contemplated the entry of symptoms and other data which can assist in making a diagnosis and identifying the aforementioned recommended treatment protocols. Thus, the physician is assisted in correlating the observed patient symptoms and test results so as to identify the most likely causes of the health problem, complete his diagnosis, and prescribe the most appropriate treatment protocols.

Further reference to the drawings reveals that FIG. 6 is a continuation of FIG. 5. Accordingly, reference to the upper portion of FIG. 6 reveals that next, the System addresses the question as to whether a proposed pattern of treatment is appropriate. This is indicated by rectangle 120. The physician or staff member enters into the System data identifying the proposed pattern of treatment, whereupon, the System compares the proposed pattern of treatment with the aforementioned recommended treatment protocols and provides an indication of any problem differences.

If the answer to the question of appropriateness of the recommended treatment is no, then the System produces a visual indication thereof as, for example, either through the aforementioned display 66 (FIG. 3), or a printout as denoted by rectangle 121. The physician or supporting staff member thus has called to this attention any discrepancy between his proposed pattern of treatment and that which is generally recommended by recognized medical authorities.

In addition to the foregoing, the System also includes provision for further diagnostic support. This is indicated by rectangle 122 "Is diagnostic Suport Needed." If the answer is "No", then the system continues on as indicated. However, if the answer is "Yes", then the system invokes such additional assistance as indicated by rectangle 123 "An Expert System that Compares Diagnostic Testline Attendance Based on Physician goal and Patient History." Thus, the physician is able to determine the testing options based on conditions and the condition of the body that each test was designed to report on. In addition, the physician is given the cost of each testing procedure including those that are laboratory or radiology based. If requested, the system will allow the physician to select through a triage process to determine what test would yield the best data for diagnosis of the presenting problem.

As will be evident to one skilled in the art, a well-ordered system should provide for the ordering of tests by the attending physician at any point in its operation. Accordingly, although the ordering of tests is shown in the drawing at particular points, it should be understood that this is illustrative only and does not suggest that tests may not be ordered at other points during operation of the System.

The actual ordering of tests is identified by the Order Test rectangle 124. Tests may be ordered by separate orders levied on laboratories and the like by telephone, written documents or semi-automatically through operation of the System processor and communication by modem and the like. Thus, as earlier mentioned and as described below, supporting and ancillary services are integrated into the System and are effective to provide such ancillary services and support as are called for by the attending physician or other authorized staff personnel.

The capability for displaying various detailed information items may be included in the System. This is illustrated by inclusion of rectangle 125 which is labelled "Display Price Paid by this Company for Test." As mentioned previously, it is contemplated that a schedule of fees approved by the financial institution (e.g., insurance company) for various tests and procedures is stored within the appropriate memory bank(s). This schedule is accessed, and the approved fee for the specific procedure under consideration is displayed or otherwise communicated to the physician or supporting staff member.

After receiving the results of tests and/or other supporting services, the results are entered into the System. This may be performed either by manual keyboard

entry or semi-automatically through the communication of appropriate information into the System electronically. This is denoted by rectangle **126** "Input Test Results and Update Record."

After the records have been updated to reflect any test results that maybe applicable, provision is made for the attending physician or authorized support staff member to review the diagnosis or proposed treatment protocols and either amend or confirm his proposed course of treatment.

As will be recognized by those skilled in the arts, it is customary for insurance companies and other health care financial organizations to utilize codes for identifying and determining approved criteria and the approved schedules of procedures and costs therefor or in accordance therewith. An example of such codes is the family of codes designated with the symbols ICD (an acronym standing for International Code of Disease based on Health Care Financing Administration official codes as published by the U.S. Department of Health and Human services in 1989.

Reference herein is also made to another standard set of codes known to those skilled in the art as CPT codes. The term CPT is an acronym derived from physicians' Current Procedural Terminology. These codes are standard treatment description and price file codes as set forth in the Amnerican Medical association compendium of Physicians Current Procedural Terminology. The current CPT is a listing of descriptive terms and identifying codes for reporting medical services and procedures performed by physicians.

In order to facilitate claims compliance with applicable criteria, ICD9 coded information is entered into the System to indicate various data relating to details of the incident (patient visit, treatment and the like). This is indicated by rectangle **127**.

The System interrogates the Insurance Company (or other payor) files, e.g., file **18** in FIG. **1**, and verifies that the ICD9 codes either meet or do not meet applicable criteria. This is noted by rectangle **128**. In so doing, the expense associated with the incident is considered as a claim and is reviewed as noted by rectangle **129** "Verify Claim for Proper Treatment and Charges."

If, as noted in the drawing, the entered ICD9 codes do not meet the applicable criteria check (**128**), then a visual representation thereof is displayed or otherwise communicated to attending personnel as indicated by rectangle **130**, whereupon, it is contemplated that there will ensue a treatment discussion with a nurse (or other appropriate persons) as noted by rectangle **131**. Thereafter, a treatment protocol is either approved or disapproved as noted by rectangle **132**. If disapproved, the System contemplates contact with the Medical Director or other cognizant authority as indicated by rectangle **133**. On the other hand, if the treatment protocol is approved, the System then proceeds to an examination of CPT4 codes and checks to see if they are appropriate as noted by rectangle **134**. If the System determines that the CPT4 code check is not met, the System so notes and displays or otherwise indicates that further checking is needed. This is indicated by rectangle **135** "Call Patient Care 1-800-4Health." Upon accessing rectangle **135**, the System proceeds in a manner similar to that for implementing the checking of ICD9 codes. This is noted by rectangle **136**

Now returning to rectangle **133**, it will be observed that if the medical director does not approve or otherwise grant a variance so as permit proceeding with the treatment, then the System includes referral for peer review as noted by rectangle **137**. Peer review results in a decision on the recommended course of treatment and results in the determination of whether or not the charges are in agreement with any applicable financial criteria such as whether or not the charges are in agreement with an insurance contract. This is denoted by rectangle **138**. If the charges are found not to be in agreement with applicable criteria, then a visual manifestation, preferably a print-out, is provided. This is indicated by rectangle **139** Print "The Agreed Upon Price for Procedure is $__. For Assistance Call 1-800-4Health."

It will now be evident that the aforementioned Second Opinion feature is included by the System within the procedures set forth by the process flow depicted in the lower half of FIG. **6**. Thus, if selected criteria are not met, they a proposed course of treatment or selected procedure are shown to require a second opinion as contemplated by reference to a medical director (rectangle **133**) or one more peers (rectangle **137**).

Returning to rectangle **138**, if the charges are in agreement, then the System processor calculates any patient co-pay and/or deductible as noted by rectangle **140**, and the printer **13** (FIG. **1**) prints out a statement for the patient as noted by rectangle **141**.. The System processor also records pertinent data and information into the above-described files, as needed. If System criteria require reference to or approval by an Employer, Insurance Company, or Financial Institution, the System processor (s) ensures that such is accomplished.

The attending physician or designee ensures that follow-up instructions, information and data are entered into the System as denoted by rectangle **142**. This ordinarily includes an indication of any prescriptions that are to be ordered as noted by rectangle **143**. If there are any, the System then accesses its drug profile in memory as noted by rectangle **144** and identifies any adverse interactions that may be indicated as noted by rectangle **145**. The System printer (e.g., Printer **13** of FIG. **1**) then prints out a drug report **146** which includes pertinent information relating to proposed drugs.

Next, the System addresses the question as to whether the patient wishes the prescribed drugs to be ordered automatically by the System as noted by rectangle **147**. If not, the System printer (e.g., printer **13**) prints out a description of prescription benefits **148** as an aid to the patient in his obtaining himself the indicated medications. On the other hand, if the answer is Yes, then the System accesses its aforementioned data bank to ascertain the identity of any approved ancillary provider (e.g., pharmacy as indicated by rectangle **149**) and then automatically transmits the order and indicia (rectangle **150**) identifying the medication to such ancillary provider as a basis for the provider to prepare the indicated medication. Included is a notice to the patient **151** to timely pick up the medication or otherwise arrange for its timely acquisition.

In order to provide for effective communication with others having a legitimate interest in any physician-patient interaction, provision is made for contact with any referring physician. This is noted by rectangle **152** in which the System makes inquiry of its data as to whether the patient was referred to the System by another physician or, conversely, whether there is not a referral by the attending physician to a specialist or another physician. If the patient was referred to the

attending physician by another physician, appropriate feed-back information is communicated to the referring physician. This can accomplished by telephone report, electronic mail, or preferably by written hard copy print out as indicated by rectangle **153**. On the other hand, if the patient is referred to another physician, provision is made for the making of an appointment and transmission of pertinent information to such other physician as noted by rectangle **154**.

If there is no other physician referral, the System then accepts any Input Follow Up Instructions and prepares written communications thereof to the patient as noted by rectangle **155**. If there are other follow ups as noted by rectangle **156**, the System ensures that pertinent data and indicia are entered into pertinent files (including the System calendar) so that timely call-up can be made for monitoring and compliance. In addition, the System optionally determines whether the attending physician is a part of a relevant group of physicians as noted by rectangle **157**. Ordinarily, if the attending physician is not part of the relevant group, some appropriate additional charge is made to reflect the relevant additional costs. This is indicated by rectangle **158**.

When the visit or other contact (e.g., monitoring visit by attending physician to patient when hospitalized), an appropriate input is made to the System as denoted by rectangle **159**. The System thus recognizes when the visit or other incident is completed and makes an appropriate record in its memory.

Now turning to FIG. **8**, others of the features of the invention are depicted. There, the flow of information to central system records is indicated by rectangle **200**. The System checks to ensure whether claim codes are accurate as noted by diamond **201**. If no, the an adjudication procedure is activated as noted by rectangle **202**. According to such adjudication procedure, review by one or more designated persons is made to ensure a high level of quality control and conformity with applicable criteria.

Upon regularization of claim codes, claim information is transmitted to a client file as noted by rectangle **203**. By client is meant an employer, group manager, insurance company and the like. Concurrently with transmission of claim information to the client, provision is made for transfer to the account of the health provider (e.g., the attending physician, clinic or the like) of the approved sums for such claims as noted by rectangle **204**. This can be accomplished in a variety of ways, depending upon the desires of the health provider, employer, insurance company, group administrator and financial institution (e.g., bank). Such transfer is identified in the disclosure of FIG. **1** and is described in connection therewith. Information as to such transfer also is communicated to the relevant client file through an appropriate security system as noted by rectangle **205**. Business management reports, as desired, are prepared periodically and sent to clients as noted by rectangle **206**.

FIG. **9** depicts aspects of the above-mentioned utilization review. According to a feature of the System, utilization review may be tailored to meet criteria established by one or more users of the System. Thus, selected levels of expense, types of procedures, length of expected hospitalization, specific illnesses, categories of illnesses or other criteria may be utilized to identify those items for which utilization review is indicated. Alternatively, or in addition, selected items may be selected at random for utilization review and quality control determination.

The point of connection to the flow diagrams of the foregoing Figures is discretionary. However, in accordance with the preferred embodiment, it is expected that the point defined by arrow **210** in FIG. **9** will connect into the remainder of the System at a point such as that identified by element **200** of FIG. **8**. Thus in addition to information being transmitted to central records (as noted by rectangle **200**), it also is made available to utilization review **211** (FIG. **9**). As mentioned above, the System may be tailored to consider any of a variety of factors for review such as Cost **212**, Treatment Results **213**, Referral Matters **214**, Other Opinions **215** and the like. From a review of the cost effectiveness of the item under consideration, factors indicative of Quality Control **216** may readily be calculated by the System using desired criteria. For example, the frequency of repeat consultations for the same health problem can be used as an indication or determinant of effectiveness of treatment. Moreover, from a study of System data, Recommendations and Reports **217** are generated to form the basis for future improvements.

FIG. **10** illustrates the aforementioned ancillary services in more detail. There, communication of ancillary needs is represented by arrows **220** and **221** which depict the two-way flow of information. As mentioned above, the System identifies the need for ancillary services by examining data and information relating to each participant (patient) as noted by rectangle **222** and calls such need to the attention of the attending physician or other designated authority. In the absence of entry to the contrary, the System communicates the need appropriately as described above to the indicated ancillary service, examples of which are Specialists **221**, Dentists **222**, Pharmacists **223** for Medications, Suppliers of Prostheses **224**, and any others as represented by rectangle **225**.

FIG. **11** illustrates the aforementioned feature of Post Treatment matters. There, arrows **228** and **239** indicate the two-way flow of information to and from the principal flow paths as described above. Also as described above, the System determines from entered data, the need for Post Treatment matters **230** such as Monitoring **231**, Life Style **232**, Medication **233**, Weight Control **234** and Other **235**. Thus, operation of the System is extended to cover all relevant facets of health maintenance and control.

Although the invention hereof has been described by way of example of a preferred embodiment, it will be evident that other adaptations and modifications may be employed without departing from the spirit and scope thereof. For example, other types of distributed processing could be employed. Additionally, a wide variety of automatic transfer of funds could be employed as between providers, ancillary services, employers, insurance companies and the like.

The terms and expressions employed herein have been used as terms of description and not of limitation; and thus, there is no intent of excluding equivalents, but on the contrary it is intended to cover any and all equivalents that may be employed without departing from the spirit and scope of the invention.

What is claimed is:

1. A comprehensive health care management system comprising:

(a) input means for entering data identifying each of a predetermined plurality of persons;

(b) a data bank memory interconnected with said input means, said data bank memory including an identification of predetermined procedures requiring utilization review;

(c) payment means; and

(d) means in communication with said input means responsive to input of data through said input means symbolic of symptoms of one of said predetermined plurality of persons for tentatively identifying a proposed mode of treatment for said one of said predetermined plurality of persons and, when said proposed mode of treatment includes one of said predetermined procedures requiring utilization review, for producing indicia indicative thereof and for preventing payment therefor by said payment means until said utilization review has been obtained and data indicative thereof has been entered in said system.

2. A comprehensive health care management system according to claim 1 in which said means responsive to the input of data symbolic of patient symptoms for tentatively identifying a proposed mode of treatment include means effective when said proposed mode of treatment includes an ancillary service, for producing indicia indicative thereof and for providing said ancillary service.

3. A comprehensive health care management system according to claim 1 in which said means responsive to the input of data symbolic of symptoms includes means for tentatively identifying preventive health routines for addressing each of any identified plurality of potentially health-destructive conditions including excessive weight, high blood pressure, smoking, and insufficient exercise.

4. A comprehensive health care management system comprising:

(a) input means for entering data identifying each of a predetermined plurality of persons and for entering data symbolic of patient symptoms;

(b) a first data bank memory interconnected with said input means, said first data bank memory containing predetermined items of medical history for said predetermined plurality of persons;

(c) another data bank memory interconnected with said first data bank memory, said another data bank memory including an identification of predetermined procedures requiring utilization review;

(d) payment means; and

(e) means interconnected with said payment means responsive to input to said system of said data symbolic of patient symptoms for tentatively identifying a proposed mode of treatment and, when said proposed mode of treatment includes one of said predetermined procedures requiring utilization review, for producing indicia indicative thereof and for preventing payment therefor by said payment means until said utilization review has been obtained and data indicative thereof has been entered in said system.

5. A comprehensive health care management system according to claim 4 in which said predetermined items of medical history include physical profiles of said predetermined plurality of persons.

6. A comprehensive health care management system according to claim 4 in which said input means further includes a data input terminal for entering into said system said predetermined items of medical history.

7. A comprehensive health care management system according to claim 4 in which said data input terminal is responsive to inputs thereto to enter into one of said data banks data severally identifying said predetermined plurality of persons.

8. A comprehensive health care management system according to claim 7 further including means for verifying authenticity of identifications of said predetermined plurality of persons.

9. A comprehensive health care management system according to claim 8 further including means for verifying eligibility for treatment of said predetermined plurality of persons.

10. A comprehensive health care management system according to claim 9 wherein said means for verifying the eligibility for treatment of said predetermined plurality of persons further includes means for identifying preselected classes of treatments to be pre-certified for authorized treatment and payment.

11. A comprehensive health care management system according to claim 4 in which said data input terminal includes provision for data entry from a magnetically-encoded medium.

12. A comprehensive health care management system according to claim 4 in which said data input terminal includes provision for data entry from a manual keyboard.

13. A comprehensive health care management system according to claim 2 in which one of said data bank memories includes identification of symptoms for diagnosis of each of a predetermined plurality of illnesses.

14. A comprehensive health care management system according to claim 2 in which one of said data bank memories includes data representing treatment for each of a predetermined plurality of illnesses.

15. A comprehensive health care management system according to claim 13 in which one of said data bank memories includes data representing treatment for each of said predetermined plurality of illnesses.

16. A comprehensive health care management system comprising:

(a) input means for entering data identifying each of a predetermined plurality of persons;

(b) a data bank memory interconnected with said input means, said data bank memory including an identification of predetermined procedures requiring second options;

(c) payment means; and

(d) means in communication with said input means responsive to input of data through said input means symbolic of symptoms of one of said predetermined plurality of persons for tentatively identifying a proposed mode of treatment for said one of said predetermined plurality of persons and, when said proposed mode of treatment includes one of said predetermined procedures requiring a second opinion, for producing indicia indicative thereof and for preventing payment therefor by said payment means until a second opinion has been obtained.

17. A comprehensive health care management system according to claim 16 in which said means responsive to the input of data symbolic of symptoms for tentatively identifying a proposed mode of treatment include means effective when said proposed mode of treatment includes an ancillary service, for producing indicia indicative thereof and for providing said ancillary service.

18. A comprehensive health care management system according to claim 16 in which said means responsive to the input of data symbolic of symptoms includes means for tentatively identifying preventive health routines for addressing each of any identified plurality of potentially health-destructive conditions including excessive weight, high blood pressure, smoking, and insufficient exercise.

19. A comprehensive health care management system comprising:

(a) input means for entering data identifying each of a predetermined plurality of persons and for entering data symbolic of patient symptoms;

(b) a first data bank memory interconnected with said input means, said data bank memory containing predetermined items of medical history for said predetermined plurality of persons;

(c) another data bank memory interconnecting with said first data bank memory, said another data bank memory including an identification of predetermined procedures requiring second opinions;

(d) payment means; and

(e) means interconnected with said payment means responsive to the input to said system of said data symbolic of patient symptoms for tentatively identifying a proposed mode of treatment and, when said proposed mode of treatment includes one of said predetermined procedures requiring a second opinion, for producing indicia indicative thereof and for preventing payment therefor by said payment means until a second opinion has been obtained.

20. A comprehensive health care management system according to claim 19 in which said predetermined items of medical history include physical profiles of said predetermined plurality of persons.

21. A comprehensive health care management system according to claim 19 in which said input means further includes a data input terminal for entering into said system said predetermined items of medical history.

22. A comprehensive health care management system according to claim 19 in which said data input terminal is responsive to inputs thereto to enter into one of said data banks data severally identifying said predetermined plurality of persons.

23. A comprehensive health care management system according to claim 22 further including means for verifying authenticity of identifications of said predetermined plurality of persons.

24. A comprehensive health care management system according to claim 23 further including means for verifying eligibility for treatment of said predetermined plurality of persons.

25. A comprehensive health care management system according to claim 24 wherein said means for verifying eligibility for treatment of said predetermined plurality of persons further includes means for identifying preselected classes of treatments to be pre-certified for authorized treatment and payment.

26. A comprehensive health care management system according to claim 19 in which said input means includes provision for data entry from a magnetically-encoded medium.

27. A comprehensive health care management system according to claim 19 in which said input means includes provision for data entry from a manual keyboard.

28. A comprehensive health care management system according to claim 17 in which one of said data bank memories include identification of symptoms for diagnosis of each of a predetermined plurality of illnesses.

29. A comprehensive health care management system according to claim 17 in which one of said data bank memories include data representing treatment for each of a predetermined plurality of illnesses.

30. A comprehensive health care management system according to claim 28 in which one of said data bank memories include data representing treatment for each of said predetermined plurality of illnesses.

31. A comprehensive health care management system comprising:

(a) a data input terminal for entering data identifying each of a predetermined plurality of persons being on a payroll of an organization;

(b) a data bank memory containing predetermined items of medical history for said predetermined plurality of persons;

(c) payroll deduction means for providing payment for said predetermined plurality of persons;

(d) another data bank memory including an identification of predetermined medical procedures and pre-approved levels of payments for said predetermined medical procedures; and

(e) means responsive to input of data indicative of performance of one of said predetermined medical procedures for one of said predetermined plurality of persons for examining a level of charge made by a provider of medical services for the performed procedure and, if said level of charge exceeds the pre-approved level of payment for said procedure, for causing said payroll deduction means to pay the exceeded amount by payroll deduction.

32. A comprehensive health care management system comprising:

(a) a first data input terminal at the location of a medical services provider for entering data identifying each of a predetermined plurality of persons being on a payroll of an organization;

(b) a second data terminal at the location of said organization;

(c) a first data bank memory containing predetermined items of medical history for said predetermined plurality of persons;

(d) another data bank memory including an identification of predetermined medical procedures and pre-approved levels of payments for said predetermined medical procedures; and

(e) means responsive to input of data indicative of performance of one of said predetermined medical procedures for one of said predetermined plurality of persons and for examining a level of charge made by a provider of medical services for the performed procedure and, if said level of charge exceeds the pre-approved level of payment, for producing at the location of said second data terminal indicia indicative thereof and for permitting authorization for the excess to be made by said organization.

33. A comprehensive health care management system comprising:

(a) a data input terminal for entering data identifying each of a predetermined plurality of persons being subject to workmen's compensation;

(b) a data bank memory including an identification of predetermined medical procedures and pre-

approved levels of workmen's compensation payments for said predetermined medical procedures; and

(c) means responsive to the input of data to said system indicative of the desirability of performance of one of said predetermined medical procedures for one of said predetermined plurality of persons for examining a level of charge made by a provider of medical services for the performed procedure and, if said level of charge exceeds the pre-approved

34. A comprehensive health care management system comprising:

(a) input means for entering data identifying each of a predetermined plurality of persons and for entering data symbolic of patient symptoms;

(b) a first data bank memory interconnected with said input means, said first data bank memory containing predetermined items of medical history for each of said predetermined plurality of persons;

(c) another data bank memory interconnected with said first data bank memory, said another data bank memory including an identification of predetermined procedures requiring ancillary services; and

(d) means interconnected with said another data bank memory and responsive to the input to said system of said data symbolic of patient symptoms for tentatively identifying a proposed mode of treatment and, when said proposed mode of treatment includes one of said ancillary services, for producing indicia indicative thereof and for providing said one of said ancillary services.

35. A comprehensive health care management system according to claim **34** in which said predetermined items of medical history include physical profiles of said predetermined plurality of persons.

36. A comprehensive health care management system according to claim **34** in which said input means further includes a data input terminal for entering into said system said predetermined items of medical history.

37. A comprehensive health care management system according to claim **34** in which said input means includes a data input terminal responsive to inputs thereto to enter into one of said data banks data severally identifying said predetermined plurality of persons.

38. A comprehensive health care management system according to claim **34** further including means for verifying authenticity of identifications of said predetermined plurality of persons.

39. A comprehensive health care management system according to claim **34** further including means for verifying eligibility for treatment of said predetermined plurality of persons.

40. A comprehensive health care management system according to claim **39** wherein said means for verifying the eligibility for treatment of said predetermined plurality of persons further includes means for identifying pre-selected classes of treatments to be pre-certified for authorized treatment and payment.

41. A comprehensive health care management system according to claim **34** in which said means responsive to the input of data symbolic of patient symptoms includes means for tentatively identifying preventive health routines for addressing each of any identified plurality of potentially health-destructive conditions including excessive weight, high blood pressure, smoking, and insufficient exercise.

42. A comprehensive health care management system according to claim **37** in which said data input terminal includes provision for data entry from a magnetically-encoded medium.

43. A comprehensive health care management system according to claim **37** in which said data input terminal includes provision for data entry from a manual keyboard.

44. A comprehensive health care management system according to claim **34** in which one of said data bank memories includes identification of symptoms for diagnosis of each of a predetermined plurality of illnesses.

45. A comprehensive health care management system according to claim **34** in which one of said data bank memories includes data representing treatment for each of a predetermined plurality of illnesses.

46. A comprehensive health care management system according to claim **44** in which one of said data bank memories includes data representing treatment for each of said predetermined plurality of illnesses.

47. An integrated health care management system comprising:

(a) a data input terminal for entering data identifying each of a predetermined plurality of persons;

(b) a data bank memory containing predetermined items of medical history including physical profile data for said predetermined plurality of persons;

(c) health regimen recommendation means responsive to said physical profile data for said predetermined plurality of persons for generating individualized preventive health regimen recommendations for said predetermined plurality of persons including diet and exercise;

(d) symptom recording means including said data bank memory for recording symptoms associated with each of a predetermined plurality of health problems;

(e) recommend treatment means including said data bank memory for recording recommended treatment for each of said predetermined plurality of health problems;

(f) utilization review means including said data bank memory for selecting and recording identification of treatments selected for utilization review;

(g) symptom input means for inputting descriptions of patients' symptoms into said system;

(h) means responsive to input of said patients' symptoms for displaying recommended treatments, for identifying recommended treatments which are selected for utilization review and for displaying indicia identifying said recommended treatments which are selected for utilization review, said means responsive to input of said patients' symptoms being further effective to identify recommended treatments for which ancillary services are indicated;

(i) means responsive to identification of said recommended treatments for identifying payor-approved charges for said treatments;

(j) means for comparing said payor-approved charges for said treatments with corresponding actual charges assessed by a proposed health care provider and for identifying any insufficiency of payor-approved charges compared to said actual charges;

(k) means for supplying said insufficiency by payroll deduction for patients that are paid on organization payrolls;

(l) means including said utilization review means for providing medical care quality control;

(m) means for providing both in-patient and out-patient care; and

(n) means including said data bank memory for preparing recommended post-treatment routines.

48. An integrated health care management system according to claim 47 wherein when one of said recommended treatments is selected for utilization review, payment approval is withheld until data is entered into said system confirming completion of said utilization review.

49. An integrated health care management system according to claim 47 wherein said physical profile data include physical examination results.

50. An integrated health care management system according to claim 47 wherein said utilization review means includes second opinion means.

51. An integrated health care management system according to claim 47 wherein said physical profile data include physical examination results and wherein said utilization review means includes second opinion means.

52. A method of managing a comprehensive health care management system utilizing a data processor, data bank memories, input means and payment means comprising:

(a) entering into said data processor data identifying each of a predetermined plurality of persons;

(b) entering into one of said data bank memories an identification of predetermined procedures requiring utilization review;

(c) entering through said input means into said data processor data symbolic of patient symptoms for tentatively identifying a proposed mode of treatment and, when said proposed mode of treatment includes one of said predetermined procedures requiring utilization review, producing indicia indicative thereof; and

(d) preventing payment therefor by said payment means until said utilization review has been obtained and data indicative thereof has been entered in said system.

53. A method of managing a health care management system according to claim 52 in which the step of tentatively identifying a proposed mode of treatment further includes checking said proposed mode of treatment and when said proposed mode of treatment includes an ancillary service, producing indicia indicative thereof and providing said ancillary service.

54. A method of managing a health care management system according to claim 52 in which the step of tentatively identifying a proposed mode of treatment further includes the step of tentatively identifying preventive health routines for addressing each of any identified plurality of potentially health-destructive conditions including excessive weight, high blood pressure, smoking, and insufficient exercise.

55. A method of managing a health care management system utilizing a data processor, data bank memories, input means and payment means comprising:

(a) entering into said input means data identifying each of a predetermined plurality of persons;

(b) entering into one of said data bank memories an identification of predetermined items of medical history for said predetermined plurality of persons;

(c) entering into another of said data bank memories an identification of predetermined procedures requiring utilization review; and

(d) entering through said input means into said data processor data symbolic of patient symptoms for tentatively identifying a proposed mode of treatment and, when said proposed mode of treatment includes one of said predetermined procedures requiring utilization review, producing indicia indicative thereof; and

(e) preventing payment therefor until said utilization review has been obtained and data indicative thereof has been entered in said system.

56. A method of managing a health care management system according to claim 55 in which the step of entering into one of said data bank memories an identification of predetermined items of medical

57. A method of managing a health care management system according claim 55 in which said input means further includes a data input terminal and in which the method further includes the step of entering into said data input terminal of said system said predetermined items of medical history.

58. A method of managing a health care management system according to claim 55 further including the step of storing within said one of said data bank memories information individually relating to each of said predetermined plurality of persons.

59. A method of managing a health care management system according to claim 58 further including the step of verifying authenticity of identifications of said predetermined plurality of persons.

60. A method of managing a health care management system according to claim 59 further including the step of verifying eligibility for treatment of said predetermined plurality of persons.

61. A method of managing a health care management system according to claim 60 wherein the step of verifying the eligibility for treatment of said predetermined plurality of persons further includes the step of identifying pre-selected classes of treatments pre-certified for authorized treatment and payment.

62. A method of managing a health care management system according to claim 57 further including the step of entering data into said data input terminal from a magnetically-encoded medium.

63. A method of managing a health care management system according to claim 57 further including the step of manually entering data input into said data terminal through a manual keyboard.

64. A method of managing a health care management system according to claim 55 further including the step of accessing one of said data bank memories to identify symptoms for diagnosis of each of a predetermined plurality of illnesses.

65. A method of managing a health care management system according to claim 55 further including the step of accessing said data symbolic of patient symptoms and identifying a proposed mode of treatment for each of a predetermined plurality of illnesses.

66. A method of managing a health care management system according to claim 64 further including the step of accessing said data symbolic of patient symptoms and identifying a proposed mode of treatment for each of a predetermined plurality of illnesses.

67. A method of managing a comprehensive health care management system comprising:

(a) providing a data input terminal for said system for entering into said system data identifying each of a predetermined plurality of persons;

(b) establishing a data bank memory operatively connected to said system for including an identification of predetermined procedures requiring second options;

(c) entering in said data input terminal data symbolic of patient symptoms;

(d) establishing payment means;

(e) accessing said data symbolic of patient symptoms for tentatively identifying a proposed mode of treatment and,

(f) when said proposed mode of treatment includes one of said predetermined procedures requiring a second opinion, producing indicia indicative thereof and preventing payment therefor by said payment means until a second opinion has been obtained.

68. A method of managing a health care management system according to claim **67** wherein when said proposed mode of treatment includes an ancillary service, the additional step of producing indicia indicative thereof and for providing said ancillary service.

69. A method of managing a health care management system according to claim **67** further including the step of tentatively identifying preventive health routines for addressing each of any identified plurality of potentially health-destructive conditions including excessive weight, high blood pressure, smoking, and insufficient exercises.

70. A method of managing a comprehensive health care management system utilizing a data processor, data bank memories, input means and payment means comprising:

(a) providing a data input terminal for entering into said system data identifying each of a predetermined plurality of persons;

(b) establishing a first system data bank memory and entering into said first data bank memory predetermined items of medical history for said predetermined plurality of persons;

(c) establishing another system data bank memory and entering into said another data bank memory information including an identification of predetermined procedures requiring second opinions;

(d) entering into said data processor information symbolic of patient symptoms;

(e) establishing payment means;

(f) accessing one of said data bank memories for tentatively identifying a proposed mode of treatment; and,

(g) when said proposed mode of treatment includes one of said predetermined procedures requiring a second opinion, for producing indicia indicative thereof and for preventing payment therefor by said payment means until a second opinion has been obtained.

71. A method of managing a health care management system according to claim **70** in which the step of entering into said first system data bank memory predetermined items of medical history includes step of including physical profiles of said predetermined plurality of persons.

72. A method of managing a health care management system according to claim **70** further including the step of accessing said predetermined items of medical history.

73. A method of managing a health care management system according to claim **70** wherein the step of entering into said first system data bank memory predetermined items of medical history further includes the step of entering into one of said data banks data designating the identity of the payor for health care for each of said predetermined plurality of persons.

74. A method of managing a health care management system according to claim **73** further including means for verifying the authenticity of identifications of said predetermined plurality of persons.

75. A method of managing a health care management system according to claim **74** further including the step of verifying eligibility for treatment of said predetermined plurality of persons.

76. A method of managing a health care management system according to claim **75** further including the step of verifying the eligibility for treatment of said predetermined plurality of persons and identifying preselected classes of treatments pre-certified for authorized treatment and payment.

77. A method of managing a health care management system according to claim **72** further including the step of entering data into said system from a magnetically-encoded medium.

78. A method of managing a health care management system according to claim **72** further including the step of entering data into said system from a manual keyboard.

79. A method of managing a health care management system according to claim **70** further including the step of accessing one of said data bank memories to identify symptoms for diagnosis of each of a predetermined plurality of illnesses.

80. A method of managing a health care management system according to claim **70** further including the step of entering into one of said data bank memories data representing treatment for each of a predetermined plurality of illnesses.

81. A method of managing a health care management system according to claim **79** further including the step of entering into one of said data bank memories data representing treatment for each of a predetermined plurality of illnesses.

82. A method of managing a health care management system having a data processor comprising:

(a) providing a data input terminal for entering data identifying each of a predetermined plurality of persons being on a payroll of an organization;

(b) providing a data bank memory containing predetermined items of medical history for said predetermined plurality of persons;

(c) providing another data bank memory including an identification of predetermined medical procedures and pre-approved levels of payments for said predetermined medical procedures;

(d) entering into said system data indicative of performance of one of said predetermined medical procedures; and

(e) examining a level of charge made by a provider of medical services for the performed procedure and, if said level of charge exceeds the pre-approved level of payment for said procedure, for causing payment of the exceeded amount by payroll deduction.

83. A method of managing a health care management system having a data processor comprising:

(a) providing a first data input terminal at the location of a medical services provider;

(b) entering into said system through said first data input terminal data identifying each of a predeter-

mined plurality of persons being on a payroll of an organization;

(c) providing a second data terminal at the location of said organization;

(d) providing a data bank memory containing predetermined items of medical history for said predetermined plurality of persons;

(e) providing another data bank memory including an identification of predetermined medical procedures and pre-approved levels of payments for said predetermined medical procedures; and

(f) entering into said system data indicative of performance of one of said predetermined medical procedures;

(g) examining a level of charge made by a provider of medical services for the performed procedure and, if said level of charge exceeds the pre-approved level of payment for producing at the location of said second data terminal indicia indicative thereof and for permitting authorization for excess payment by said organization.

84. A method of managing a health care management system comprising:

(a) providing a data input terminal;

(b) entering into said system through said data input terminal data identifying each of a predetermined plurality of persons being subject to workmen's compensation;

(c) providing in said system a data bank memory;

(d) entering into said system an identification of predetermined medical procedures and pre-approved levels of workmen's compensation payments for said predetermined medical procedures; and

(e) examining a level of charge made by a provider of medical services for a predetermined procedure performed on one of said predetermined plurality of persons and, if said level of charge exceeds said pre-approved level of payment for said procedure, for identifying the exceeded amount and for permitting the payment of the exceeded amount by said one of said predetermined plurality of persons.

85. A method of managing a health care management system comprising:

(a) providing a data input terminal;

(b) entering data into said system for identifying each of a predetermined plurality of persons;

(c) providing a data bank memory containing predetermined items of medical history for each of said predetermined plurality of persons;

(d) providing in said data bank memory an identification of predetermined procedures requiring ancillary services; and

(e) tentatively identifying a proposed mode of treatment and, when said proposed mode of treatment includes one of said ancillary services, for producing indicia indicative thereof and for providing said one of said ancillary services.

86. A method of managing a health care management system according to claim 85 in which said predetermined items of medical history include physical profiles of said predetermined plurality of persons.

87. A method of managing a health care management system according to claim 85 in which said system further includes the step of entering into said system said predetermined items of medical history through said data input terminal.

88. A method of managing a health care management system according to claim 87 further including the step of verifying authenticity of identifications of said predetermined plurality of persons.

89. A method of managing a health care management system according to claim 88 further including the step of verifying eligibility for treatment of said predetermined plurality of persons.

90. A method of managing a health care management system according to claim 89 further including the step of identifying pre-selected classes of treatments pre-certification for authorized treatment and payment.

91. A method of managing a health care management system according to claim 85 further including the step of tentatively identifying preventive health routines for addressing each of a plurality of potentially health-destructive conditions including excessive weight, high blood pressure, smoking, insufficient and exercise.

92. A method of managing a health care management system according to claim 87 further including the step of entering data into said system from a magnetically-encoded medium.

93. A method of managing a health care management system according to claim 87 further including the step of entering data into said system through a manual keyboard.

94. A method of managing a health care management system according to claim 85 including the step of entering into said data bank memory an identification of symptoms for diagnosis of each of a predetermined plurality of illnesses.

95. A method of managing a health care management system according to claim 85 further including the step of entering into said data bank memory data representing treatment for each of a predetermined plurality of illnesses.

96. A method of managing a health care management system according to claim 94 further including the step of introducing into said data bank memory data representing treatment for each of said predetermined plurality of illnesses.

97. A method of managing a health care management system comprising:

(a) providing a data input terminal for entering data identifying each of a predetermined plurality of persons;

(b) providing a data bank memory containing predetermined items of medical history including physical profile data for said predetermined plurality of persons;

(c) including in said data bank memory health regimen recommendation data for each of a predetermined plurality of physical profiles;

(d) generating individualized preventive health regimen recommendations for each of said predetermined plurality of persons including diet and exercise;

(e) recording in said data bank memory symptoms associated with each of a predetermined plurality of health problems;

(f) recording in said data bank memory recommended treatment protocols for each of said predetermined plurality of health problems;

(g) selecting treatments for utilization review;

(h) inputting into said system data representing patients' symptoms;

(i) accessing said data bank memory means responsive to input of said patients' symptoms for displaying recommended treatments, for identifying recommended treatments which are selected for utili-

zation review, for displaying indicia identifying said treatments which are selected for utilization review, and identifying those recommended treatments for which ancillary services are indicated;

(j) identifying payor-approved charges for said treatments;

(k) comparing said payor-approved charges for said treatments with corresponding actual charges assessed by a proposed health care provider and identifying any insufficiency of payor-approved charges compared to said actual charges;

(l) providing payroll deduction and supplying said insufficiency by payroll deduction for patients that are paid on organization payrolls;

(m) providing medical care quality control;

(n) providing both in-patient and out-patient care; and

(o) preparing recommended post-treatment routines.

98. A method of managing an integrated health care management system according to claim **97** further including the step of withholding payment approval for one of said treatments selected for utilization review, until data is entered into said system confirming completion of said utilization review.

99. A method of managing an integrated health care management system according to claim **97** further including the step of storing in said data bank memory physical examination results.

100. A method of managing an integrated health care management system according to claim **97** further including the step of identifying selected procedures for second opinions and wherein said utilization review includes providing second opinions.

101. A method of managing an integrated health care management system according to claim **97** further including the steps of storing examination results in said data bank memory and identifying selected procedures for second opinions.

102. A method of managing an integrated health care management system having input means, payment means and memory storage comprising:

(a) storing through said input means into said memory storage personal health profile data for each of a predetermined plurality of persons;

(b) storing into said memory storage symptoms and treatment data for each of a predetermined plurality of health profiles and problems;

(c) storing in said memory storage criteria for identifying treatments requiring utilization review;

(d) storing in said memory storage criteria for identifying treatments requiring second opinions;

(e) entering into said system information identifying a proposed medical treatment for one of said plurality of persons;

(f) identifying whether or not said proposed medical treatment requires utilization review; and

(g) preventing said system from approving payment for said proposed medical treatment if said proposed medical treatment requires utilization review until such utilization review has been conducted.

* * * * *

EXHIBIT B

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA

Alexandria Division

ALLCARE HEALTH MANAGEMENT SYSTEM, INC., Plaintiff, v. TRIGON HEALTHCARE, INC., et al., Defendants.	)	Civil Action 02-756-A

ORDER

This matter comes before the Court on Defendants' Motion for Patent Claim Construction and Plaintiff's Cross-Motion for Claim Construction. For the reasons stated in the accompanying memorandum opinion, it is hereby,

ORDERED that Defendants' Motion for Patent Claim Construction is DENIED, and that Plaintiff's Cross-Motion for Claim Construction is GRANTED. It is further,

ORDERED as follows:

1. The terms "comprehensive health care management system" and "health care management system" are preamble terms that are not construed as claim limitations.
2. The term "utilization review" is construed to mean "the review of care by a managed care organization to ensure that medical services are medically appropriate or necessary."

3. The term "indicia" is construed to mean "identifying marks."

4. The term "data symbolic of patient symptoms" is construed to mean "one or more items of information representative of a sign of disorder or disease."

5. The term "proposed mode of treatment" is construed to mean "a suggested method of the application of remedies or therapies to a patient for a disease or injury."

6. The term "for" is construed to mean "with a view to," "as concerns," or "corresponding to."

7. The term "preventing payment" is construed to mean "keeping payment from being rendered" and is only "until said utilization review has been obtained and data indicative thereof has been entered."

8. The term "input means" is governed by 35 U.S.C. § 112, and the general supporting structure is agreed as a "physician office terminal." A person of ordinary skill in the art would recognize that a terminal includes at least three structures: (a) small terminals (terminals with built in processing capabilities, such as personal computers), (b) keyboards, and (c) dumb terminals.

9. The term "payment means" is governed by 35 U.S.C. § 112, and a person of ordinary skill in the art reading the '105 patent would conclude that there are two structures that support the "payment means:" (a) the software algorithm for payment by electronic funds transfer located at FIG. 8, and;

(b) a "medical payment system," by which a person of ordinary skill would understand a computer specially programmed to receive claims (invoices from health care providers), adjudicate (process to a decision) the claims, and where appropriate, pay the claims by automating a check or transferring a file for electronic funds transfer.

10. The term "means ... for tentatively identifying a proposed mode of treatment [and] for preventing payment ..." is governed by 35 U.S.C. § 112. The '105 patent discloses a distributed computer processing system as the computer hardware necessary for the performance of these functions. The question is whether there is supporting software, algorithms or other structural disclosures to permit a person of ordinary skill in the art to specially program the computer to perform the functions of (a) tentatively identifying a proposed mode of treatment and (b) preventing payment.

11. The term "means for tentatively identifying a proposed mode of treatment" is a function construed in accordance with its plain and ordinary meaning as "non-final or provisional naming or recognizing of a suggested method of the application of remedies or therapies to a patient for a disease or injury." A person of ordinary skill in the art would find that there are two disclosed structures in the '105 patent for performing this function: (a) a "utilization

review" or "procedure approval" smart system, as disclosed in 6:13-25, 10:3-17, and 11:32-50; and, (b) a diagnostic smart system, as disclosed in 6:56-67 and 9:53-65.

12. The term "preventing payment" is a function construed in accordance its plain and ordinary meaning as "keeping payment from happening." A person of ordinary skill in the art would find that there are two disclosed structures in the '105 patent for performing this function: (a) the algorithm provided in Figure 8 (with accompanying test at 13:34-40), which is used in the computer system to program the system to review the contents of a claim for accuracy, where a problem with accuracy of the codes on the claim form prompts an off-line adjudication procedure in such an event; and (b) the "medical payment system," which is a specially programmed computer capable of keeping payment from happening as the result of the automated processing of a medical claim and was available commercially prior to 1991.

13. This Court does not require that the same structure for performing the function of "tentatively identifying a proposed mode of treatment" to be the same structure that performs the function of "preventing payment" in Claim 1(d) and other similarly worded claim elements.

14. Claim 52 is construed as follows:

52. A method of managing a comprehensive health care management system utilizing a data processor, data bank memories, input means and payment means comprising:	A method of managing a computer system that uses one or more computers and data repositories, physician office terminals including a keyboard or a personal computer in a health care provider location, and a payment means, properly construed to include at least one computer specially programmed as a medical payment system to automate a check or provide for electronic funds transfer to satisfy claims for medical services, comprising the following steps:
(a) entering into said data processor data identifying each of a predetermined plurality of persons;	(a) Introducing or inserting one or more items of information to establish the identity of an individual member from a group of two or more persons such as those with appropriate insurance or other basis for participation in a health care system.
(b) entering into one of said data bank memories an identification of predetermined procedures requiring utilization review;	(b) Introducing or inserting into a database procedures requiring utilization review, properly construed as a review of the medical appropriateness or necessity of care.

(c) entering through said input means into said data processor data symbolic of patient symptoms for tentatively identifying a proposed mode of treatment and, when said proposed mode of treatment includes one of said predetermined procedures requiring utilization review, producing indicia thereof; and	(c) Introducing or inserting through a physician office terminal including a keyboard or a personal computer in a health care provider location, one or more items of information representative of a sign of disorder or disease with a view toward, or corresponding to, provisionally putting forth a suggested method of the application of remedies or therapies to a patient for a disease or injury; and when the suggested method of such application of remedies or therapies to a patient for disease or injury includes a pre-selected medical services, treatment and/or testing procedure that requires utilization review, as properly construed above, causing to exist an identifying mark indicating the need for such utilization review.
(d) preventing payment therefor by said payment means until said utilization review has been obtained and data indicative thereof has been entered in said system.	(d) Keeping payment by the medical payment system from happening until utilization review, properly construed, is obtained and one or more items of information indicating that utilization review, properly construed, has been obtained is introduced or added into the computer system that includes the data processor, data bank memories, input means, properly construed, and the payment means, properly construed, described in the preamble of the claim.

15. Claim 55 is construed as follows:

55. A method of managing a health care management system utilizing a data processor, data bank memories, input means and payment means comprising:	A method of managing a computer system that uses one or more computers and data repositories, physician office terminals including a keyboard or personal computer in a health care provider location, and a payment means, properly construed to include at least one computer specially programmed as a medical payment system to automate a check or provide for electronic funds transfer to satisfy proper claims for medical services, comprising the following steps:
(a) entering into said input means data identifying each of a predetermined plurality of persons;	(a) Introducing or inserting one or more items of information to establish the identity of an individual member from a group of two or more persons such as those with appropriate insurance or other basis for participation in a health care system.
(b) entering into one of said data bank memories an identification of predetermined items of medical history for said predetermined plurality of persons;	(b) Introducing or inserting to a database an identification of a unit of medical history, properly construed to include any of the items of information that are ordinarily found in a patient's medical records, including an initial screening of past disease and treatment by a physician, defined in advance to be recorded for the group of persons as such as those with appropriate insurance.
(c) entering into another of said data bank memories an identification of predetermined procedures requiring utilization review;	(c) Introducing or inserting into a database procedures requiring utilization review, properly construed to include a review of appropriateness or medical necessity of care.

(d) entering through said input means into said data processor data symbolic of patient symptoms for tentatively identifying a proposed mode of treatment and, when said proposed mode of treatment includes one of said predetermined procedures requiring utilization review, producing indicia indicative thereof; and	(d) Introducing or inserting through a physician office terminal including a keyboard connected to a computer from a physician office, one or more items of information representative of a sign of disorder or disease with a view toward, or corresponding to, provisionally putting forth a suggested method of the application of remedies or therapies to a patient for a disease or injury; and when the suggested method of such application of remedies or therapies to a patient for a disease or injury includes a pre-selected medical service, treatment and/or testing procedure that requires utilization review, properly construed, causing to exist an identifying mark indicating the need for such utilization review.
(e) preventing payment therefor until said utilization review has been obtained and data indicative thereof has been entered in said system.	(e) Keeping payment from happening until utilization review, properly construed, is obtained and one or more items of information indicating that utilization review, properly construed, has been obtained is introduced or added into the computer system that includes the data processor, data bank memories, input means, properly construed, and the payment means, properly construed, described in the preamble of the claim.

Claude M. Hilton
CHIEF UNITED STATES DISTRICT JUDGE

Alexandria, Virginia
February 3, 2003

EXHIBIT C

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA

Alexandria Division

ALLCARE HEALTH MANAGEMENT SYSTEM, INC., Plaintiff, v. TRIGON HEALTHCARE, INC., et al., Defendants.	Civil Action 02-756-A

MEMORANDUM OPINION

This matter comes before the Court on Defendants' Motion for Patent Claim Construction and Plaintiff's Cross-Motion for Claim Construction. The parties have asked this Court to construe numerous terms in the '105 patent as well as claims 52 and 55 in their entireties.

The basis of the '105 patent, found in Claim 1, is the automation of certain medical management responsibilities of a payer organization (i.e. insurer) with an input device at the provider's facility to permit the physician to propose treatments to payers at the point of patient care, and the combination of such a system with any of the known medical payment systems.

The language of a patent's claims define the scope of the patented invention. See Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc., 222 F.3d 951, 955 (Fed. Cir. 2000). Claim

construction is purely a matter of law, and summary judgment may not be avoided by an assertion that construction of the claims requires the determination of an underlying factual inquiry. See Cybor Corp. v. FAS Tech., Inc., 138 F.3d 1448, 1454-56 (Fed. Cir. 1998).

A claim is interpreted from the perspective of one ordinary skill in the art. See Hockerson-Halberstadt, 222 F.3d at 955. "Determining the limits of a patent claim requires understanding its terms in the context in which they were used by the inventor, considered by the examiner, and understood in the field of the invention." Toro Co. v. White Consol. Indus., Inc., 199 F.3d 1295, 1299 (Fed. Cir. 1999). When ascertaining the scope of the patent, a court begins with the claim language, then the specification (the drawings and written description), and then the prosecution history. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). These intrinsic sources are "the most significant source[s] of the legally operative meaning of disputed claim language." See id. (citing Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995)).

Courts construe terms in the claims according to their ordinary and accustomed meaning. See Johnson Worldwide Assoc. v. Zebco Corp., 175 F.3d 985, 989 (Fed. Cir. 1999). Additionally, when evaluating the meaning of claims terms, a court may not attempt to impose additional limitations that are simply

characteristics of the inventor's written description of the preferred embodiment. See Dayco Prod., Inc. v. Total Containment, Inc., 258 F.3d 1317, 1325 (Fed. Cir. 2001). It is not a requirement that each claim of a patent possess all of the features of its preferred embodiment. "An inventor must describe what he conceives to be the best mode [of his invention], but he is not confined to that [in terms of the coverage of the claims]." Continental Paper Bag Co. v. Eastern Paper Bag Co., 210 U.S. 405, 418 (1908).

Thus, in order to prevent improper claim construction, courts must first and foremost look to the plain meaning of the terms used in the patent. "Consulting the written description and prosecution history as a threshold step in the claim construction process, before any effort is made to discern the ordinary and customary meanings attributed to the words themselves, invites a violation of our precedent counseling against importing limitations into the claims." Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1204 (Fed. Cir. 2002).

The parties first seek the Court to interpret the meaning of the phrase "utilization review." Defendants contend that "utilization review" should refer only to a review to determine cost effectiveness. However, "utilization review" is generally understood to mean "the review of care by a managed care organization to ensure that medical services are medically

appropriate or necessary." Because cost effectiveness alone does not drive "utilization review," this phrase instead is given its full and plain meaning.

The parties next seek interpretation of "comprehensive health management system" and "health care management system" which appear in the preamble of 67 claims of the '105 patent. Preamble terms do not limit the scope of a patent claim. See IMS Tech., Inc. v. Haas Automation, Inc., 206 F.3d 1422, 1434 (Fed. Cir. 2001). "[T]he body of the claim fully and intrinsically sets forth the complete invention, including all of its limitations, and the preamble offers no distinct definition of any of the claimed invention limitations, but rather merely states, for example, the purpose or intended use of the invention." Pitney Bowes Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999). Because these terms are merely part of the preamble, they do not limit the scope of the '105 patent.

The term "indicia" is also at issue in this matter. On October 20, 2002, both parties filed a Joint Statement on Claim Construction (hereinafter "JSCC"), at which time they agreed that "indicia" would be given the dictionary definition of "identifying marks, indications." Based on both the JSCC as well as the ordinary meaning of "indicia," the term should be given the meaning "identifying marks."

The parties next seek the Court to define the term "data symbolic of patient symptoms." Again, the JSCC defines this term

as "one or more items of information representative of a sign of disorder or disease." This is the plain and ordinary meaning of "data symbolic of patient symptoms," which should be given effect in the '105 patent.

The term "proposed mode of treatment" is also at issue. In the JSCC, the parties agreed that the phrase "proposed mode of treatment" means "a suggested method of the application of remedies or therapies to a patient for a disease or injury." This is the plain and ordinary meaning of the term, and "proposed mode of treatment" should be given this definition.

The parties next seek the interpretation of the term "for." The Defendants seek to interpret "for" to exclusively represent a "cause and effect" relationship whereby entry of the data symbolic of symptoms causes the automatic tentative identification of a proposed mode of treatment. However, the plain and ordinary meaning of "for" is "corresponding to" or "with a view towards." Moreover, the parties agreed to the plain and ordinary meaning of "for" in the JSCC. As such, "for" should be given its plain and ordinary meaning.

The next term this Court must define is "preventing payment." Defendants proffer claims construction of this term to be a final, unconditional rejection of the payment. However, the plain and ordinary meaning of "preventing payment" is "keeping payment from being rendered." This term in its ordinary meaning is conditional, as stated in Claims 52 and 55, "until said

utilization review has been obtained and data indicative thereof has been entered into said system."

This Court must next address the means plus function claims. Claims terms expressed in "means-plus-function" form require the Court to look to the patent specification in addition to the claim language itself for corresponding structural limitations recited therein. See 35 U.S.C. § 112 ¶ 6. Generally, a brief structural reference is sufficient to act as a qualifying structure provided it is meaningful and understood by a person of ordinary skill in the art as structure for performing the function of the claim. See William A. Budde v. Harley Davidson, 250 F.3d 1369, 1376-77 (Fed. Cir. 2001). The terms "input means," "payment means," "means for preventing payment," and "means for tentatively identifying a proposed mode of treatment" are means-plus-function claims which should be construed accordingly.

Regarding the term "input means," both parties agree that the function is "data input" and that the specification discloses that a "physician office terminal" performs this function. However, the parties dispute the meaning of "terminal." A person of ordinary skill in the art reading the word "terminal" in the specification would understand the reference to include a keyboard and a personal computer. The prosecution history of the '105 patent also shows that "terminal" was understood at the time to include personal computers. As such, the "physician office

terminal" is not limited to a dumb terminal, but also includes keyboards and personal computers.

The next term at issue is "payment means." While the parties agree that the function of "payment means" is "payment," they do not agree what, if any, structure is disclosed in the specification for payment. Proper construction of a claim limitation looks to the "[d]isclosed structure [that] is described in a patent specification, including any alternative structures identified." Serrano v. Telular Corp., 111 F.3d 1578, 1583 (Fed. Cir. 1997). In this case, the specification adequately discloses two supporting structures, an algorithm found in Figure 8 of the '105 patent and "medical payment systems." Where a general-purpose computer alone is insufficient to perform the function at issue, an algorithm is valid structure. See WMS Gaming, Inc. v. International Game Tech., 184 F.3d 1339, 1348 (Fed. Cir. 1999). Here, the specification describes a distributed system programmed to perform automated funds transfer, and Figure 8 discloses the pertinent algorithm for performing this function. Additionally, the '105 patent discloses "medical payment systems" known in the prior art as a payment structure, and expressly references the titles of several patents illustrative of such prior art systems. This explicit reference to prior art fulfills the standards of disclosure for supporting structure for the term "payment means" under 35 U.S.C. § 112.

The parties next dispute whether the term "preventing payment" has adequate structure disclosed in the specification. As noted above, a person of ordinary skill in the art reading the '105 patent would recognize that the patent adequately discloses structure for preventing payment of a medical claim until data is entered into the system indicative of utilization review. Both the Figure 8 algorithm as well as the known "medical payment systems" disclosed in the '105 patent would be recognized by a person of ordinary skill in the art as supporting structure to determine whether to prevent payment.

The final means-plus-function term at issue is "means for ... tentatively identifying a proposed mode of treatment." The term refers to the non-final naming or recognition of a suggested method of treatment. The parties disagree as to whether the patent adequately discloses structures to perform this function. A reading of the '105 patent discloses a smart software program for utilization review and procedure approval at 6:13-25, as well as two written software algorithms for such a system at 10:3-17 and 11:32-50. These smart systems disclosed in the '105 patent are sufficient to support the function of "tentatively identifying a proposed mode of treatment."

An appropriate order shall issue.

Claude M. Hilton
CHIEF UNITED STATES DISTRICT JUDGE

Alexandria, Virginia
February 3, 2003

EXHIBIT D

ALLCARE
HEALTH MANAGEMENT SYSTEM, INC.

April 16, 2002

VIA FEDERAL EXPRESS

Charles D. Baker, President and Chief Executive Officer
William F. Frado, Jr., Senior Vice President, General Counsel
Deborah A. Norton, Senior Vice President and Chief Information Officer
Harvard Pilgrim Health Care, Inc.
93 Worchester Street
Wellesley, MA 02481-9181

Re: U.S. Patent No. 5,301,105

Dear Messrs. Baker and Frado and Ms. Norton:

Allcare is the owner of U.S. Patent No. 5,301,105 (the "'105 patent"), a copy of which is enclosed. Allcare recently commissioned an independent research organization to conduct an analysis of Harvard Pilgrim Health Care's transaction processing systems for pre-authorizations, referrals to specialists and a number of other processes that are covered by the '105 patent. Below is a summary of some of the findings concerning your current systems:

Estimated percentage of healthcare procedures requiring pre-authorizations...	40%
Estimated percentage of pre-authorizations that are being sent electronically...	70%
Approximate date when this electronic processing option was first instituted...	2001
Are authorizations ever withheld pending utilization review?	Yes
Are authorizations ever withheld pending a second opinion?	Yes
Is payment prevented unless such pre-authorization has been obtained?	Yes
Estimated percentage of referrals requiring prior approval...	60%
Estimated percentage of referral requests that are being sent electronically...	30%
Approximate date when this electronic processing option was first instituted...	2001
Are referral approvals ever withheld pending utilization review?	Yes
Are referral approvals ever withheld pending a second opinion?	Yes
Is payment prevented unless such approval has been obtained?	Yes
Does the system automatically approve related ancillary services?	Yes
Estimated percentage of above systems that were developed internally...	60%

As you will note, among other things, many of the over 100 allowed claims of the '105 patent cover the processes involved in electronically processing pre-authorizations and referrals. In this regard, I specifically direct your attention to Claims 1 and 16 of the '105 patent. Other allowed claims of the '105 patent that

may be of interest to you include those directed to disease management and the provision of ancillary services, including Claims 2, 34 and 85 – as indicated above, at least the latter one of which Harvard Pilgrim's system is reported to perform. Reading these claims against the information we have summarized above concerning your system and other corroborating information Allcare has acquired from publicly available sources, we believe it is appropriate that Harvard Pilgrim license the '105 patent from Allcare at this time.

Allcare has previously negotiated license agreements on a running royalty basis with firms at the leading edge of implementing state-of-the-art medical information systems. In addition, Allcare has previously litigated its rights under the '105 patent against several dozen companies, resulting in settlement agreements with a number of the nation's best-known companies in the fields of clinical processing systems, electronic medical records, health-related e-commerce and pharmacy benefits management.

Allcare is aware that Harvard Pilgrim has invested a considerable amount of time and money to implement the foregoing systems and to be among the first of the nation's payers to put such vitally needed capabilities in place. Rather than penalize your firm for implementing the system designed and patented by Dr. Cummings and assigned to Allcare, we would like to offer you an opportunity to secure a license under the '105 patent on a basis that will minimize your associated cost and that includes a favored-nations provision for your field of use that will assure you that such license with Harvard Pilgrim will be at least as economically advantageous as any running royalty-based license Allcare subsequently concludes with any of your competitors.

I am enclosing a draft of the license agreement that Allcare offers to conclude with Harvard Pilgrim and its subsidiaries[1] under the '105 patent. You will note that the payments under this agreement are structured on the basis of a running royalty based on 8¢ or less per member per month, payable annually in advance, through the expiry of the '105 patent in 2011. Alternatively, if Harvard Pilgrim would prefer to pay Allcare a one-time, lump sum payment in lieu of this running royalty, we would be willing to consider discounting the forecast sum of these future payments to reflect a reasonable cost of capital.

I encourage you to carefully review the enclosures and confer with an experienced patent counsel, whereupon it is my hope you will seriously consider the

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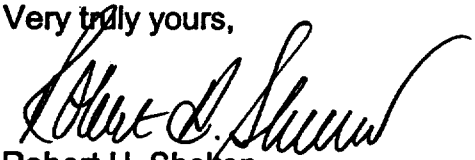
[1] Harvard Pilgrim Health Care of New England, Inc.; The Harvard Pilgrim Health Care Foundations, Inc.; Harvard Pilgrim Health Care of New England, Inc. (Rhode Island); Harvard Pilgrim Health Care 2000, Inc.; HPHC Insurance Company, Inc. and Harvard Pilgrim Physicians Association, Inc.

foregoing offer to license Harvard Pilgrim and its subsidiaries under the '105 patent. I will call you within the next week to see if you are interested in holding a meeting to discuss this offer and, if so, to arrange a mutually acceptable date and location for such a meeting to take place.

Please let me know if you or an outside patent counsel on your behalf has any questions concerning this letter or its enclosures during the interim. We look forward to speaking with you.

Very truly yours,



Robert H. Shelton
Vice President, Licensing

Enclosures

cc: Thomas G. Plaskett, Chairman
W. Halden Conner, President
Steven G. Hill, Esq., Hill & Kertscher, LLP
V. Bryan Medlock Jr., Esq., Sidley Austin Brown & Wood, LLP

EXHIBIT E

ALLCARE
HEALTH MANAGEMENT SYSTEM, INC.

March 4, 2003

VIA FEDERAL EXPRESS

William F. Frado, Jr.
Senior Vice President, General Counsel
Harvard Pilgrim Health Care, Inc.
93 Worchester Street
Wellesley, MA 02481-9181

Re: U.S. Patent No. 5,301,105 (the "'105 patent")

Dear Mr. Frado:

As you are aware, nearly eleven months ago (on April 16, 2002), Allcare wrote to Mr. Baker, Ms. Norton and you to inform you of the basis upon which we concluded that Harvard Pilgrim's systems and methods infringe multiple allowed claims of the '105 patent. In that letter, and in subsequent correspondence and discussions involving both yourself and an outside representative of your firm, we encouraged Harvard Pilgrim either to take a license under the '105 patent or, alternatively, to provide factual evidence that the basis upon which Allcare concluded your firm has infringed the '105 patent since at least 2001 was incorrect. However, to date, Harvard Pilgrim has done neither.

As you may have heard from your representatives at Arent Fox, on May 24, 2002, Allcare filed a patent infringement complaint against Trigon Healthcare, Inc. in the United States District Court for the Eastern District of Virginia (the "Court"). A jury in that case was selected on February 24, 2003, and opening statements were scheduled to begin on February 26, 2003. However, on the afternoon of February 25, 2003, the parties reached an out-of-court settlement in which Trigon took a license under the '105 patent.

A number of the Court's rulings in the Trigon case provide meaningful guidance, having come as an outgrowth of the exchange of in excess of 200,000 pages of documents, more than twenty depositions and ten expert reports. Of particular relevance to Harvard Pilgrim, we believe, are the Court's determination of the basis for the '105 patent, as well as its detailed orders respecting patent enforceability, validity and claims construction. In a Memorandum Opinion dated February 3, 2003, the Court held:

> *The basis of the '105 patent, found in Claim 1, is the automation of certain medical management responsibilities of a payer organization (i.e., insurer) with an input device at the provider's facility to permit the physician to propose treatments to payers at the point of patient care, and the combination of such a system with any of the known medical payment systems.*

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You will note that the foregoing interpretation is entirely consistent with Allcare's position in our prior correspondence and discussions with you and your counsel. Similarly, the Court's order construing numerous terms in the '105 patent, as well as Claims 52 and 55 in their entireties, reinforces the basis for Allcare having previously asserted that Harvard Pilgrim's system infringes both these and numerous other claims.

You should also be aware of the fact that on summary judgment, the Court held that Dr. Cummings' invention disclosure is adequately enabled, and the claim language is sufficiently definite, to make the '105 patent valid. Additionally, the Court determined that disclosure of material prior art by the patentee was adequate, and thereby ruled that the '105 patent is enforceable as a matter of law. I am attaching copies of several of these opinions for your information.

From a legal perspective, we are informed that the foregoing rulings and claims construction by the Chief United States District Judge for the Eastern District of Virginia will not preclude re-litigation of these matters in other districts nor foreclose the litigation of other matters that have never been litigated. Nevertheless, these orders and the Court's opinions upon which they were based are certainly worthy of strong consideration given the analogous nature of the technologies and issues involved, and tend to establish the cogency and accuracy of Allcare's positions to date. As such, we anticipate they will be strongly persuasive in any other proceeding.

Evaluating this situation from a business perspective, I would like to reiterate our earlier suggestion that we meet in person to discuss the prospect of Harvard Pilgrim licensing the '105 patent through either a commercial negotiation or mediation process that would avoid both the time, risk and expense associated with protracted litigation. I am attaching a proposed form of agreement for a running royalty-based license, although as we have stated previously, Allcare would be willing to entertain a one-time payment reflecting a reasonable discount of these future annual payments if this approach would be preferable to Harvard Pilgrim.

I will give you a call the week of March 17, 2003, to see if you or one of Harvard Pilgrim's other executives would be willing to meet to discuss this prospect; and if so, to schedule a location, date and time for that meeting.

Very truly yours,

Robert H. Shelton
Vice President, Licensing