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Schmidt

(54) **CONNECTING USERS BASED ON MEDICAL EXPERIENCES**

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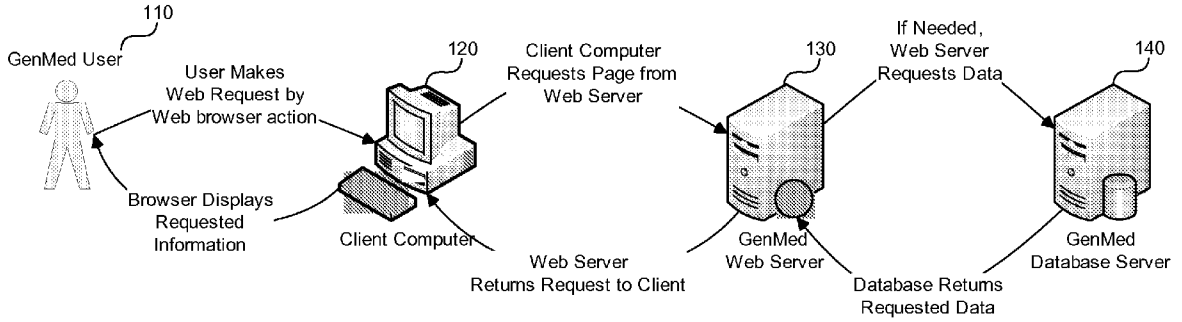
G06F 17/00 (2006.01)

(52) **U.S. Cl.** **707/104.1**

(57) **ABSTRACT**

A medical interaction system is described that promotes connections of a medical nature between individuals, patients, doctors, nurses, therapists, and others. Users can share personal information with other users. Owners of personal information have complete control over what they share and with whom they share it by using built in access controls. The system provides search features so users can find other users who have common medical experiences, such as diagnosis, medication, health care provider, and therapist. Thus, the medical information system provides an environment for users to share medical experiences and connect with others in a way that reduces social isolation, increases experiential knowledge, and inspires confidence that others have successfully dealt with similar problems before.



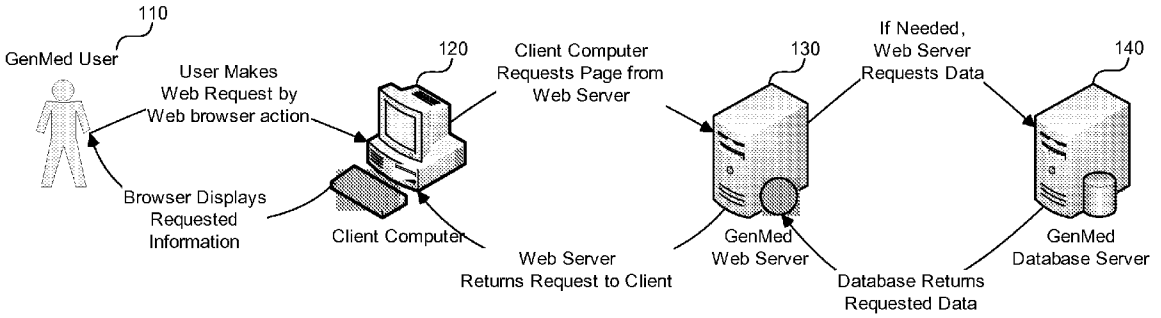

110
GenMed User
User Makes
Web Request by
Web browser action
Browser Displays
Requested
Information
120
Client Computer
Client Computer
Requests Page from
Web Server
Web Server
Returns Request to Client
130
GenMed
Web Server
If Needed,
Web Server
Requests Data
Database Returns
Requested Data
140
GenMed
Database Server

FIG. 1

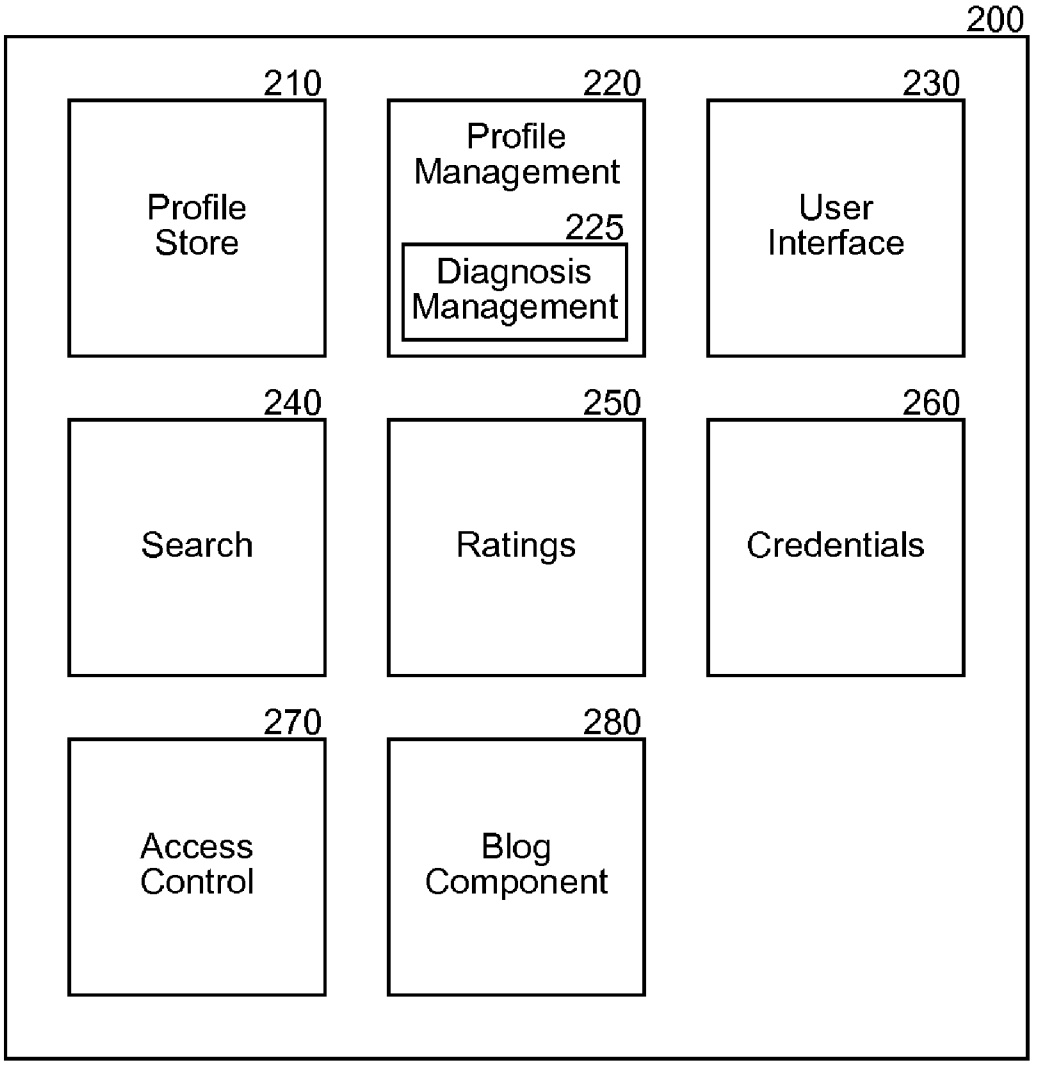

200
210
Profile Store
220
Profile Management
225
Diagnosis Management
230
User Interface
240
Search
250
Ratings
260
Credentials
270
Access Control
280
Blog Component

FIG. 2

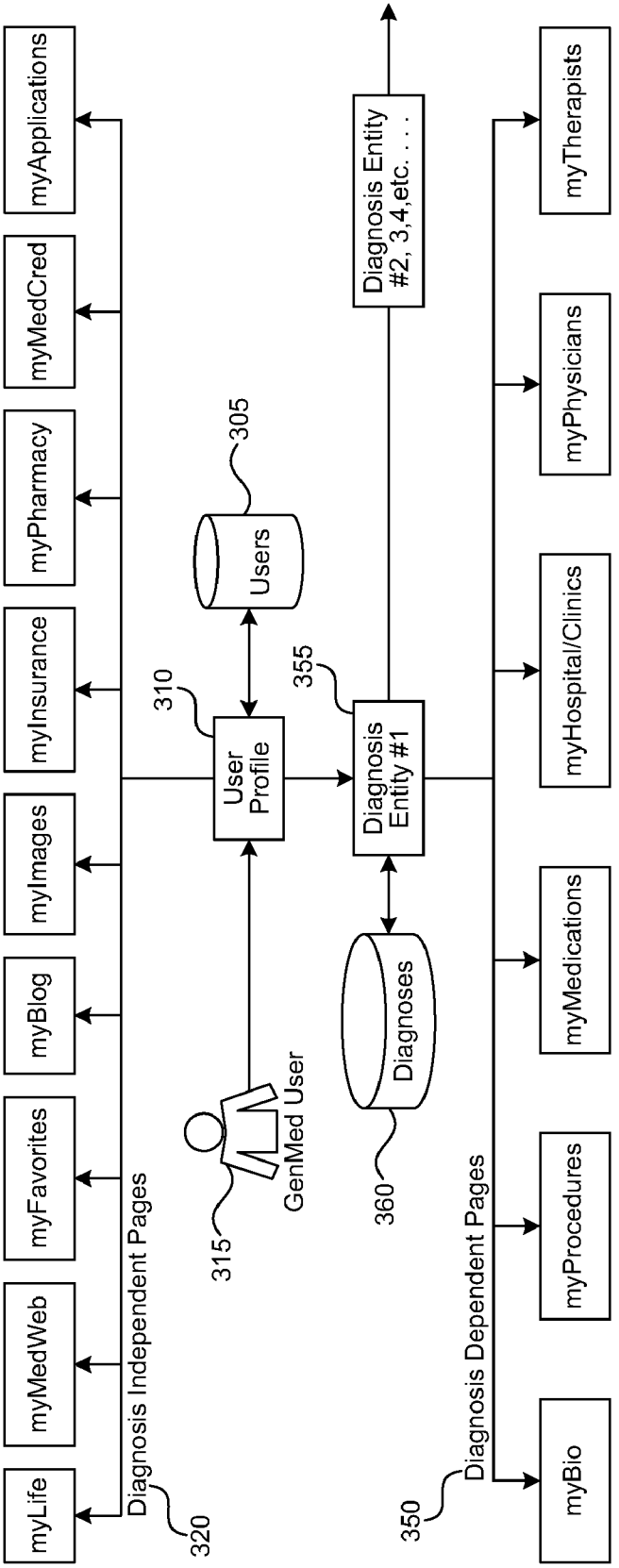

myLife
myMedWeb
myFavorites
myBlog
myImages
myInsurance
myPharmacy
myMedCred
myApplications
Diagnosis Independent Pages
320
User Profile
310
Users
305
GenMed User
315
Diagnosis Entity #1
355
Diagnoses
360
Diagnosis Entity #2, 3,4,etc. . . .
Diagnosis Dependent Pages
350
myBio
myProcedures
myMedications
myHospital/Clinics
myPhysicians
myTherapists

FIG. 3

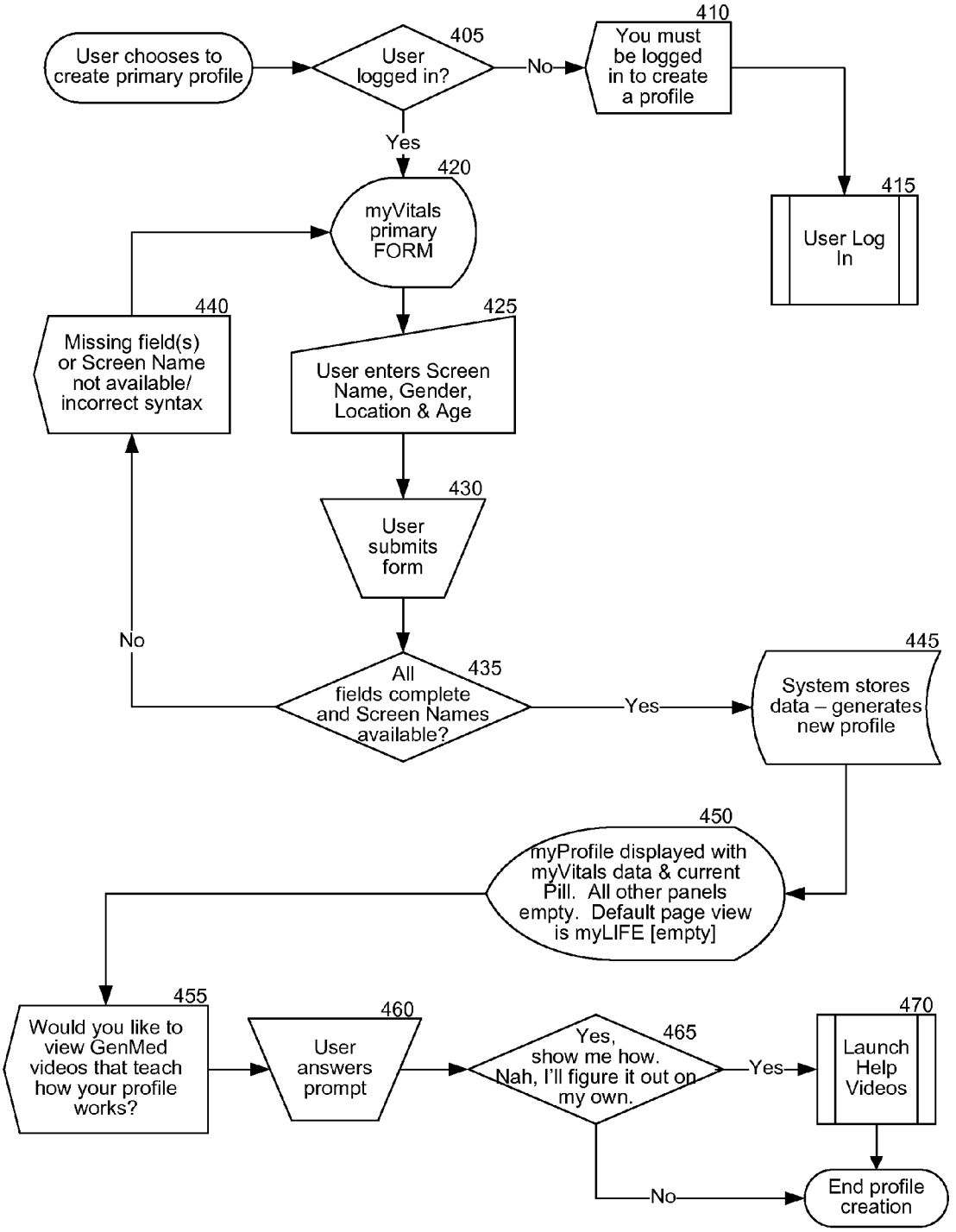

User chooses to create primary profile
405
User logged in?
No
410
You must be logged in to create a profile
Yes
420
myVitals primary FORM
415
User Log In
440
Missing field(s) or Screen Name not available/ incorrect syntax
425
User enters Screen Name, Gender, Location & Age
430
User submits form
No
435
All fields complete and Screen Names available?
Yes
445
System stores data – generates new profile
450
myProfile displayed with myVitals data & current Pill. All other panels empty. Default page view is myLIFE [empty]
455
Would you like to view GenMed videos that teach how your profile works?
460
User answers prompt
465
Yes, show me how. Nah, I'll figure it out on my own.
Yes
470
Launch Help Videos
No
End profile creation

FIG. 4

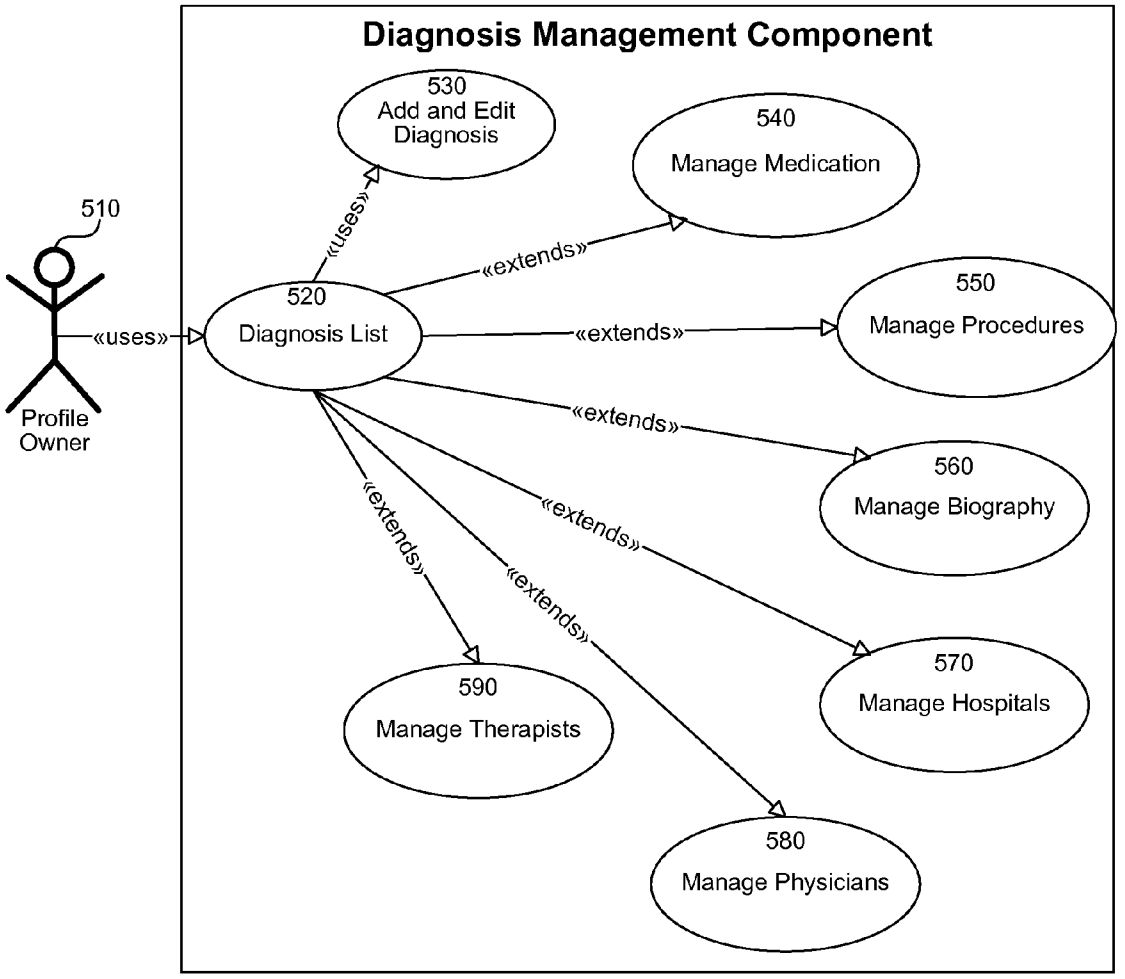

Diagnosis Management Component
510
Profile Owner
«uses»
520
Diagnosis List
«uses»
530
Add and Edit Diagnosis
«extends»
540
Manage Medication
«extends»
550
Manage Procedures
«extends»
560
Manage Biography
«extends»
570
Manage Hospitals
«extends»
580
Manage Physicians
«extends»
590
Manage Therapists

FIG. 5

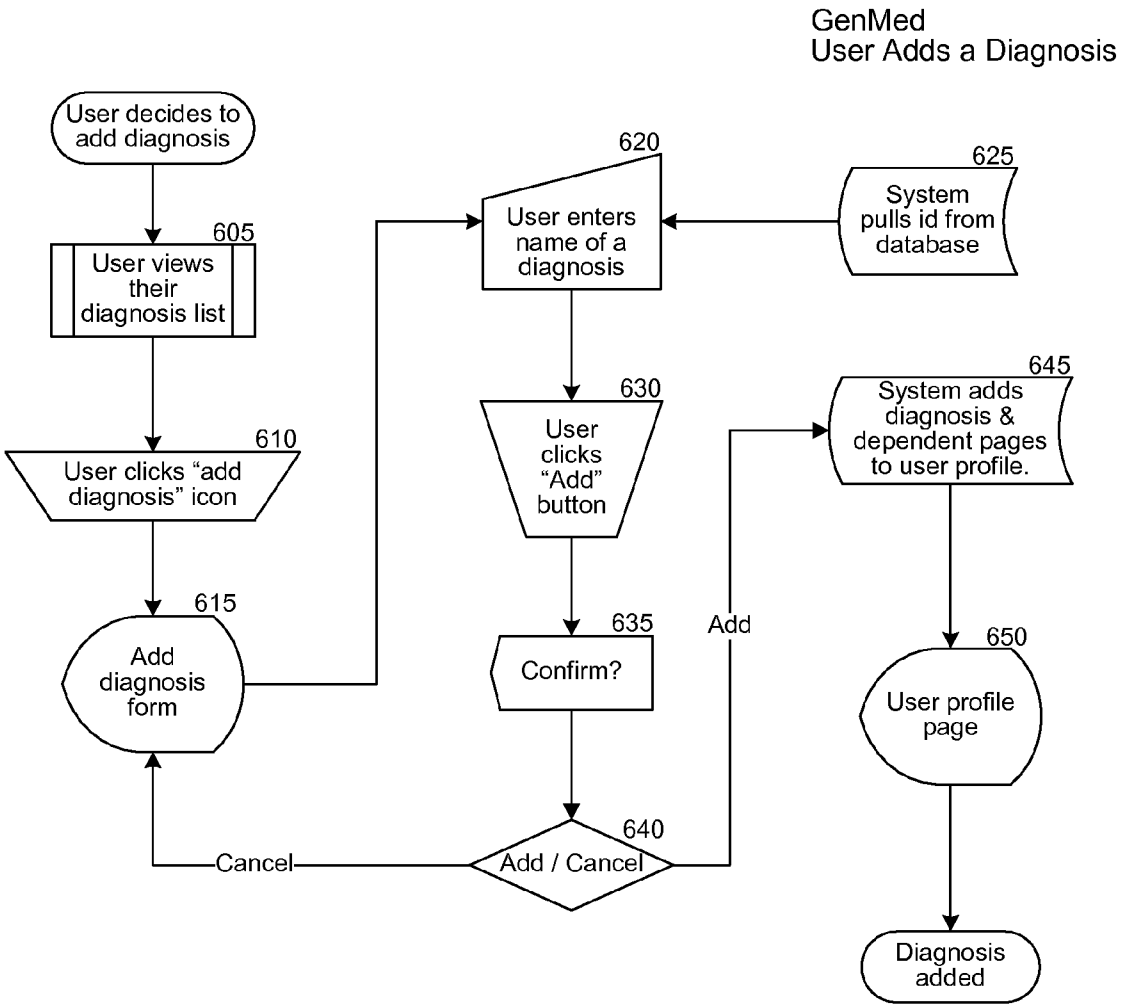

GenMed
User Adds a Diagnosis
User decides to add diagnosis
605
User views their diagnosis list
610
User clicks "add diagnosis" icon
615
Add diagnosis form
620
User enters name of a diagnosis
625
System pulls id from database
630
User clicks "Add" button
635
Confirm?
640
Add / Cancel
Cancel
Add
645
System adds diagnosis & dependent pages to user profile.
650
User profile page
Diagnosis added

FIG. 6

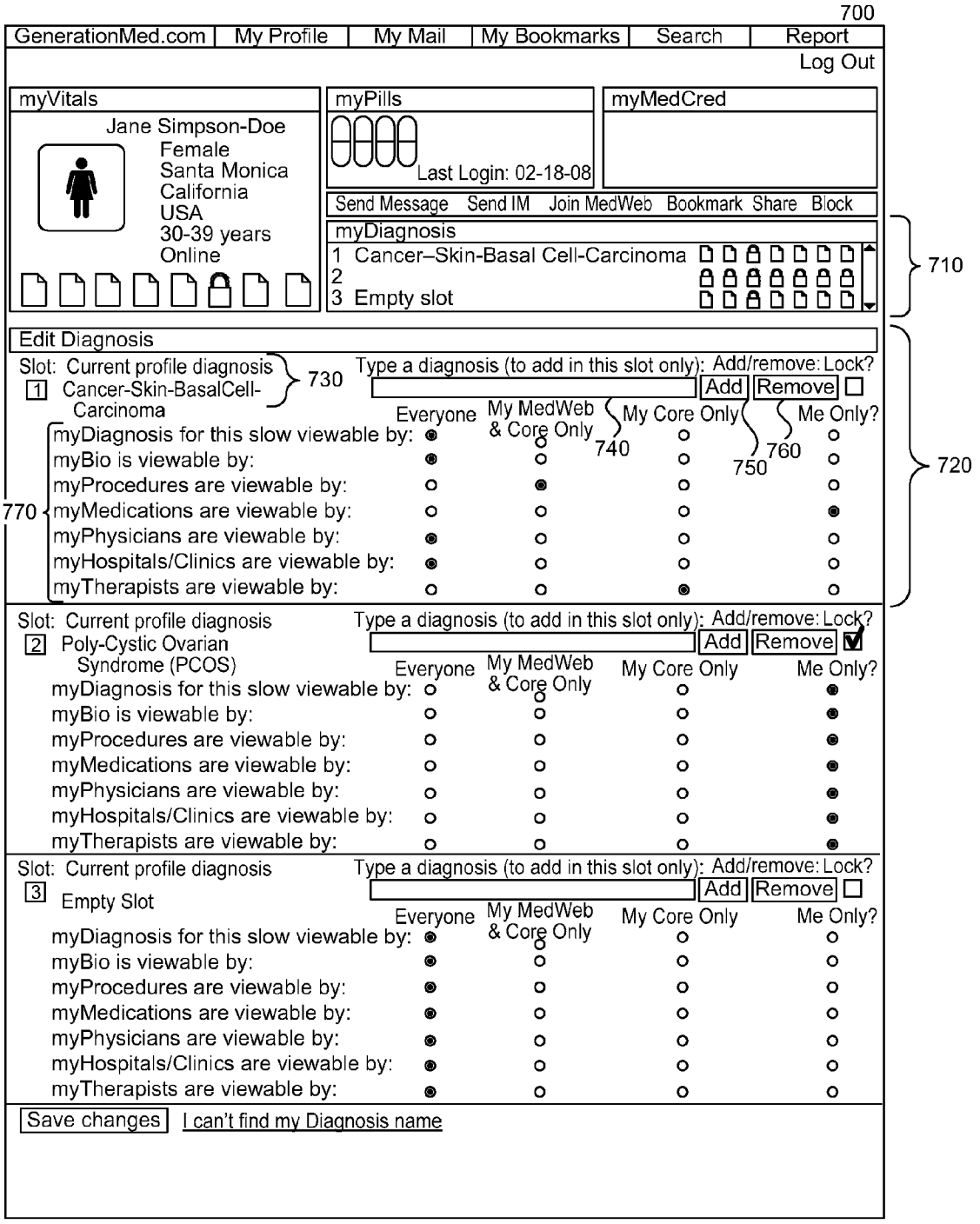

700
GenerationMed.com
My Profile
My Mail
My Bookmarks
Search
Report
Log Out
myVitals
Jane Simpson-Doe
Female
Santa Monica
California
USA
30-39 years
Online
myPills
Last Login: 02-18-08
myMedCred
Send Message Send IM Join MedWeb Bookmark Share Block
myDiagnosis
1 Cancer–Skin-Basal Cell-Carcinoma
2
3 Empty slot
710
Edit Diagnosis
Slot: Current profile diagnosis
1 Cancer-Skin-BasalCell-Carcinoma
730
Type a diagnosis (to add in this slot only): Add/remove: Lock?
Add
Remove
Everyone
My MedWeb & Core Only
My Core Only
Me Only?
740
750
760
720
770
myDiagnosis for this slow viewable by:
myBio is viewable by:
myProcedures are viewable by:
myMedications are viewable by:
myPhysicians are viewable by:
myHospitals/Clinics are viewable by:
myTherapists are viewable by:
Slot: Current profile diagnosis
2 Poly-Cystic Ovarian Syndrome (PCOS)
Type a diagnosis (to add in this slot only): Add/remove: Lock?
Add
Remove
Everyone
My MedWeb & Core Only
My Core Only
Me Only?
myDiagnosis for this slow viewable by:
myBio is viewable by:
myProcedures are viewable by:
myMedications are viewable by:
myPhysicians are viewable by:
myHospitals/Clinics are viewable by:
myTherapists are viewable by:
Slot: Current profile diagnosis
3 Empty Slot
Type a diagnosis (to add in this slot only): Add/remove: Lock?
Add
Remove
Everyone
My MedWeb & Core Only
My Core Only
Me Only?
myDiagnosis for this slow viewable by:
myBio is viewable by:
myProcedures are viewable by:
myMedications are viewable by:
myPhysicians are viewable by:
myHospitals/Clinics are viewable by:
myTherapists are viewable by:
Save changes
I can't find my Diagnosis name

FIG. 7

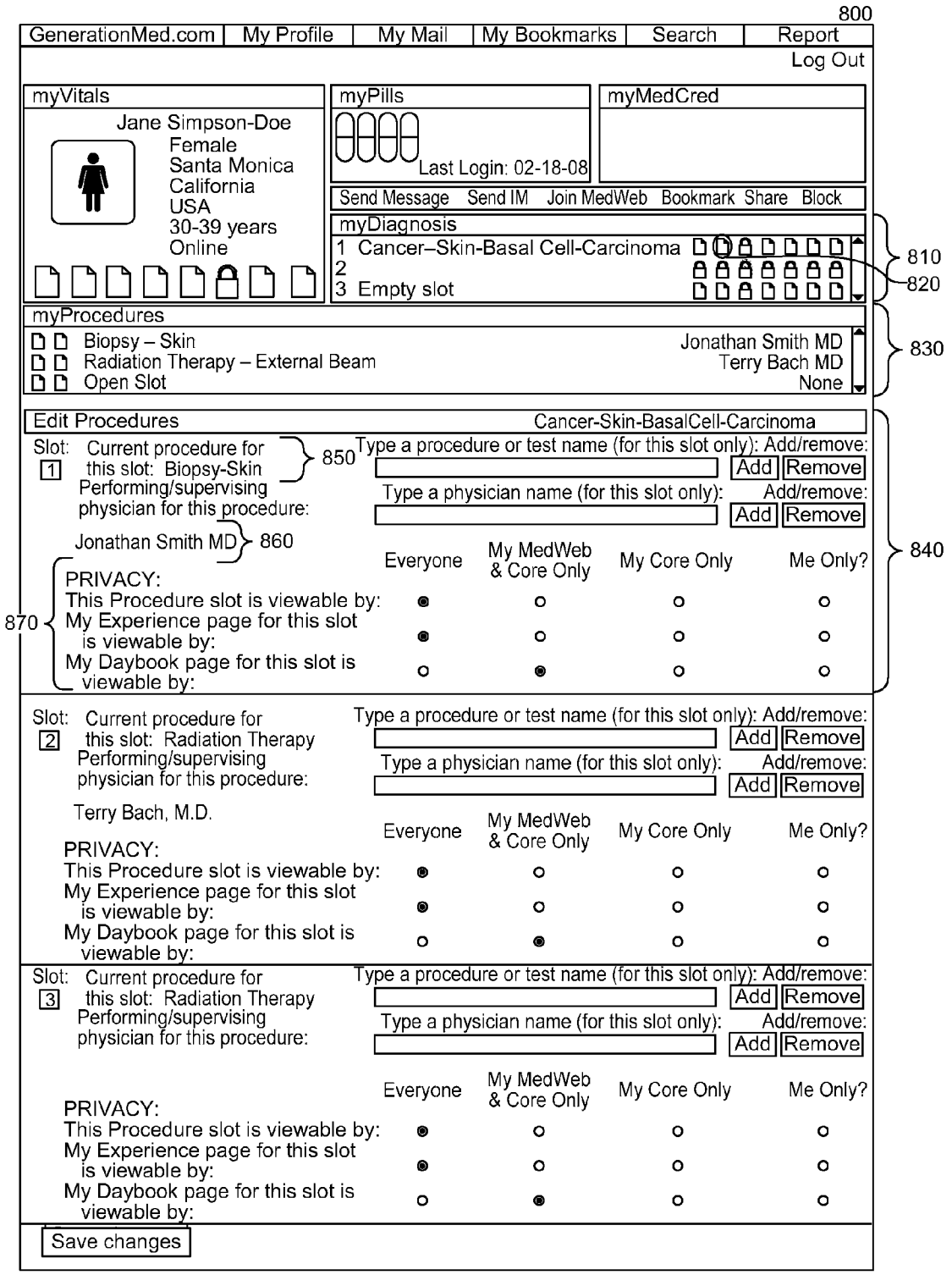

800
GenerationMed.com
My Profile
My Mail
My Bookmarks
Search
Report
Log Out
myVitals
Jane Simpson-Doe
Female
Santa Monica
California
USA
30-39 years
Online
myPills
Last Login: 02-18-08
myMedCred
Send Message Send IM Join MedWeb Bookmark Share Block
myDiagnosis
1 Cancer–Skin-Basal Cell-Carcinoma
2
3 Empty slot
810
820
myProcedures
Biopsy – Skin
Radiation Therapy – External Beam
Open Slot
Jonathan Smith MD
Terry Bach MD
None
830
Edit Procedures
Cancer-Skin-BasalCell-Carcinoma
Slot: 1
Current procedure for this slot: Biopsy-Skin
850
Performing/supervising physician for this procedure:
Jonathan Smith MD
860
Type a procedure or test name (for this slot only): Add/remove:
Add
Remove
Type a physician name (for this slot only): Add/remove:
Add
Remove
Everyone
My MedWeb & Core Only
My Core Only
Me Only?
PRIVACY:
This Procedure slot is viewable by:
My Experience page for this slot is viewable by:
My Daybook page for this slot is viewable by:
870
840
Slot: 2
Current procedure for this slot: Radiation Therapy
Performing/supervising physician for this procedure:
Terry Bach, M.D.
Slot: 3
Current procedure for this slot: Radiation Therapy
Performing/supervising physician for this procedure:
Save changes

FIG. 8

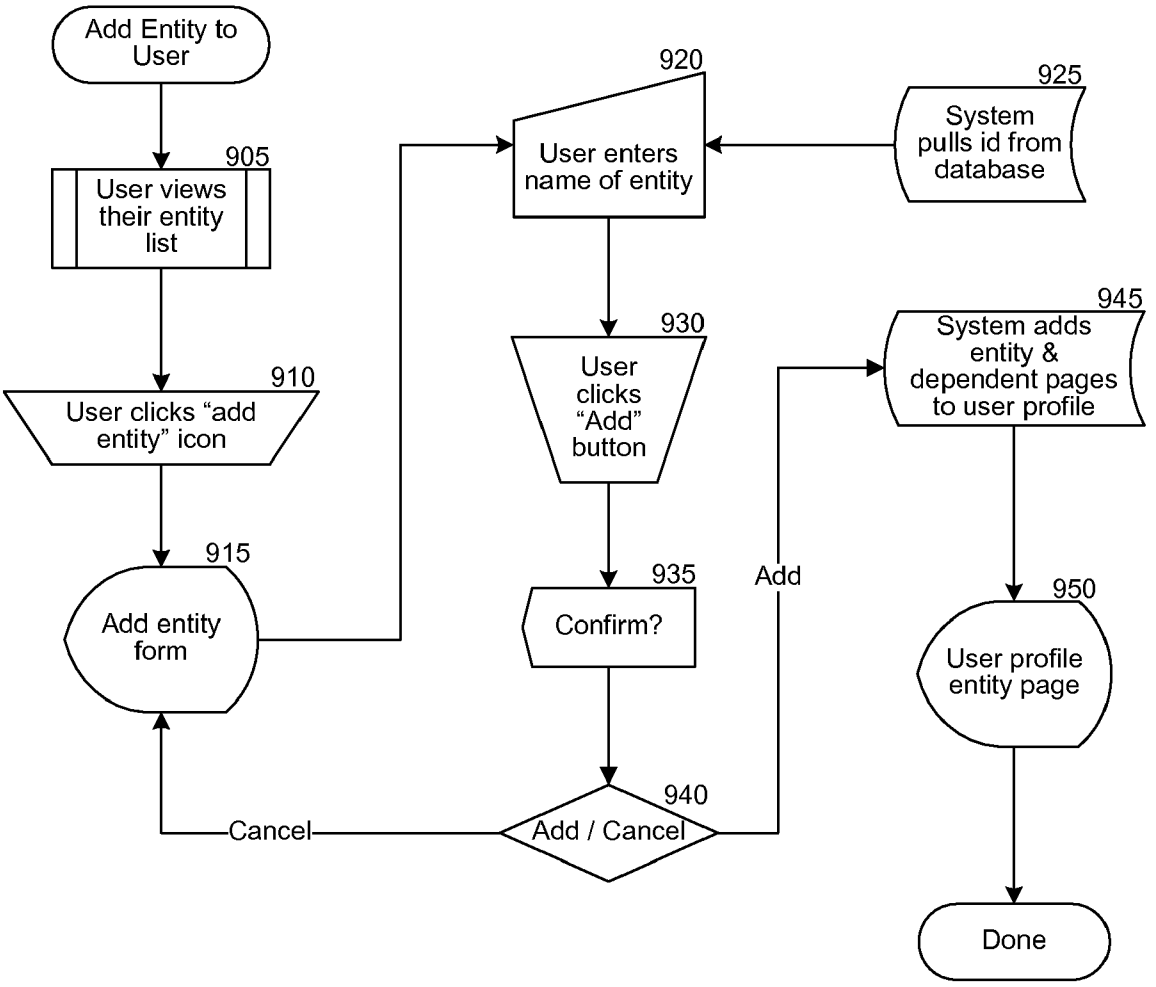

Add Entity to User
905
User views their entity list
910
User clicks "add entity" icon
915
Add entity form
920
User enters name of entity
925
System pulls id from database
930
User clicks "Add" button
935
Confirm?
940
Add / Cancel
Cancel
Add
945
System adds entity & dependent pages to user profile
950
User profile entity page
Done

FIG. 9

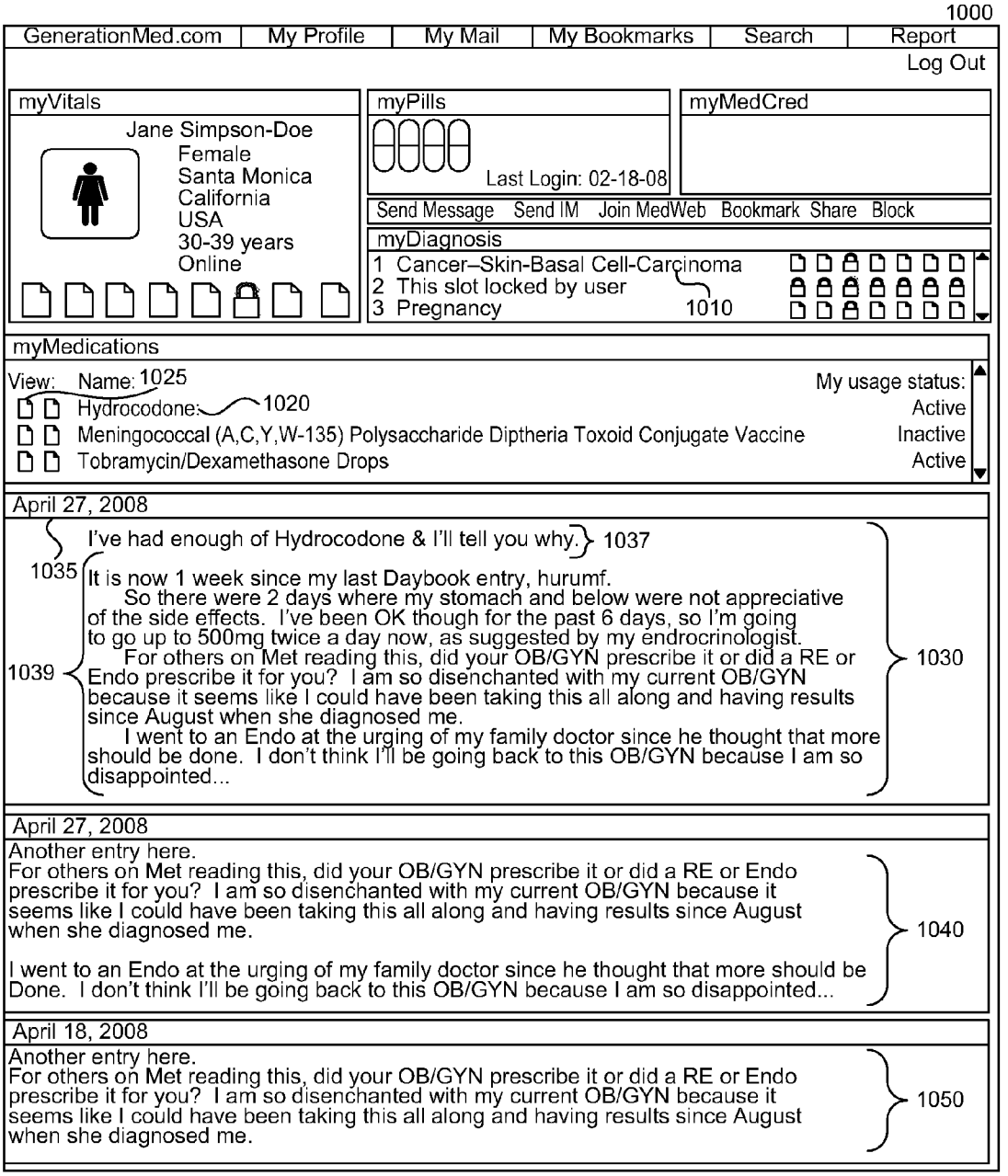

1000
GenerationMed.com
My Profile
My Mail
My Bookmarks
Search
Report
Log Out
myVitals
Jane Simpson-Doe
Female
Santa Monica
California
USA
30-39 years
Online
myPills
Last Login: 02-18-08
myMedCred
Send Message Send IM Join MedWeb Bookmark Share Block
myDiagnosis
1 Cancer–Skin-Basal Cell-Carcinoma
2 This slot locked by user
3 Pregnancy
1010
myMedications
View: Name: 1025
Hydrocodone: 1020
Meningococcal (A,C,Y,W-135) Polysaccharide Diptheria Toxoid Conjugate Vaccine
Tobramycin/Dexamethasone Drops
My usage status:
Active
Inactive
Active
April 27, 2008
I've had enough of Hydrocodone & I'll tell you why. 1037
1035
It is now 1 week since my last Daybook entry, hurumf.
So there were 2 days where my stomach and below were not appreciative of the side effects. I've been OK though for the past 6 days, so I'm going to go up to 500mg twice a day now, as suggested by my endrocrinologist.
1039
For others on Met reading this, did your OB/GYN prescribe it or did a RE or Endo prescribe it for you? I am so disenchanted with my current OB/GYN because it seems like I could have been taking this all along and having results since August when she diagnosed me.
I went to an Endo at the urging of my family doctor since he thought that more should be done. I don't think I'll be going back to this OB/GYN because I am so disappointed...
1030
April 27, 2008
Another entry here.
For others on Met reading this, did your OB/GYN prescribe it or did a RE or Endo prescribe it for you? I am so disenchanted with my current OB/GYN because it seems like I could have been taking this all along and having results since August when she diagnosed me.
I went to an Endo at the urging of my family doctor since he thought that more should be Done. I don't think I'll be going back to this OB/GYN because I am so disappointed...
1040
April 18, 2008
Another entry here.
For others on Met reading this, did your OB/GYN prescribe it or did a RE or Endo prescribe it for you? I am so disenchanted with my current OB/GYN because it seems like I could have been taking this all along and having results since August when she diagnosed me.
1050

FIG. 10

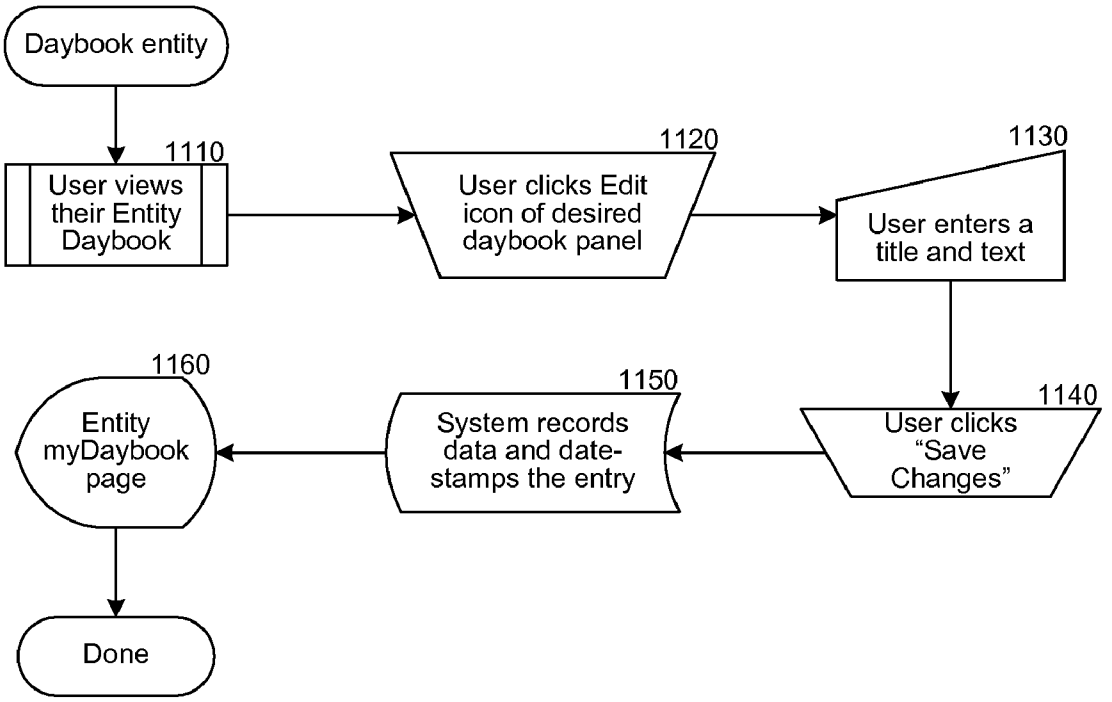

Daybook entity
1110
User views their Entity Daybook
1120
User clicks Edit icon of desired daybook panel
1130
User enters a title and text
1140
User clicks "Save Changes"
1150
System records data and date-stamps the entry
1160
Entity myDaybook page
Done

FIG. 11

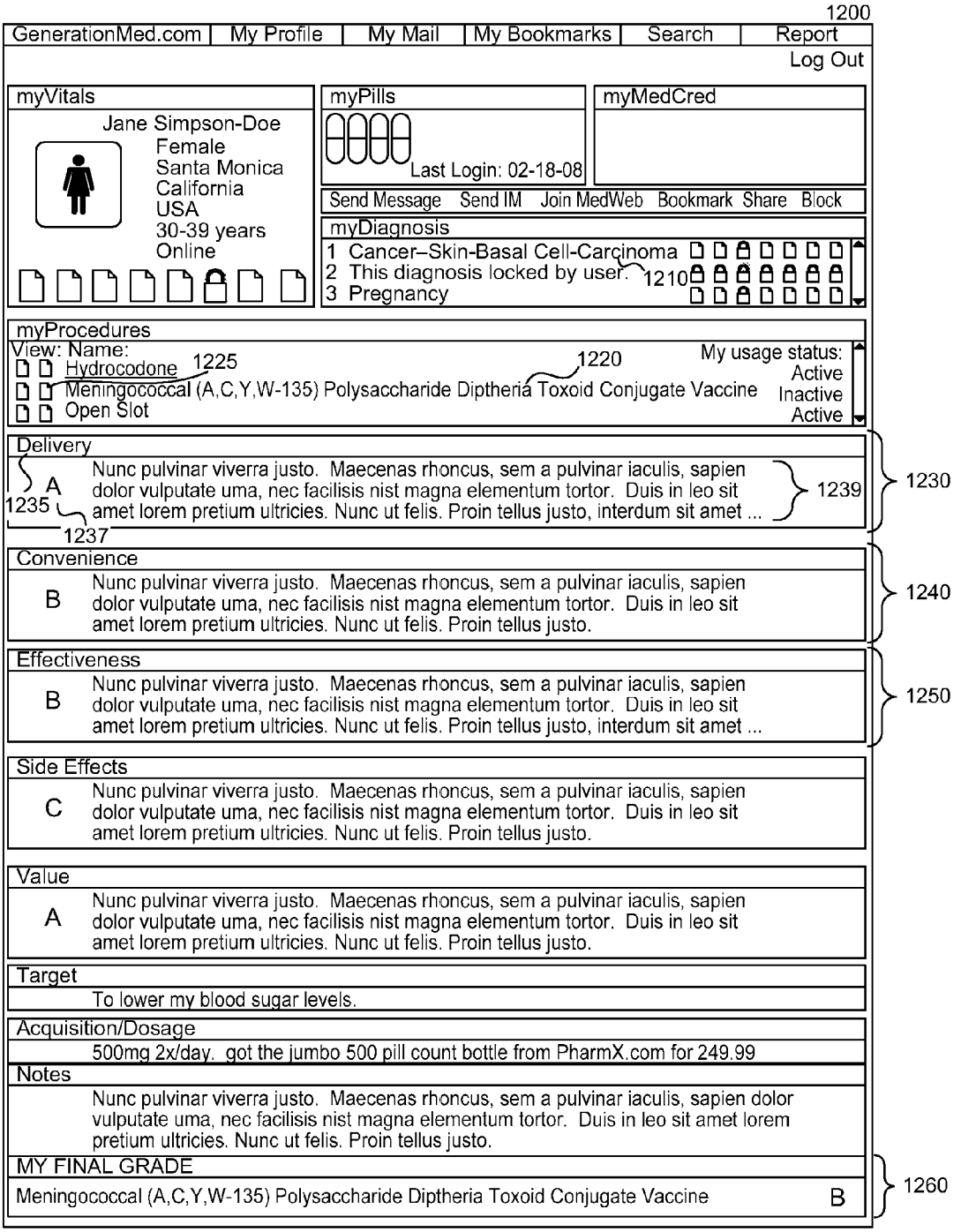

1200
GenerationMed.com
My Profile
My Mail
My Bookmarks
Search
Report
Log Out
myVitals
Jane Simpson-Doe
Female
Santa Monica
California
USA
30-39 years
Online
myPills
Last Login: 02-18-08
myMedCred
Send Message Send IM Join MedWeb Bookmark Share Block
myDiagnosis
1 Cancer–Skin-Basal Cell-Carcinoma
2 This diagnosis locked by user.
1210
3 Pregnancy
myProcedures
View: Name:
My usage status:
Hydrocodone
1225
Meningococcal (A,C,Y,W-135) Polysaccharide Diptheria Toxoid Conjugate Vaccine
1220
Active
Inactive
Open Slot
Active
Delivery
A
1235
1237
Nunc pulvinar viverra justo. Maecenas rhoncus, sem a pulvinar iaculis, sapien dolor vulputate uma, nec facilisis nist magna elementum tortor. Duis in leo sit amet lorem pretium ultricies. Nunc ut felis. Proin tellus justo, interdum sit amet ...
1239
1230
Convenience
B
Nunc pulvinar viverra justo. Maecenas rhoncus, sem a pulvinar iaculis, sapien dolor vulputate uma, nec facilisis nist magna elementum tortor. Duis in leo sit amet lorem pretium ultricies. Nunc ut felis. Proin tellus justo.
1240
Effectiveness
B
Nunc pulvinar viverra justo. Maecenas rhoncus, sem a pulvinar iaculis, sapien dolor vulputate uma, nec facilisis nist magna elementum tortor. Duis in leo sit amet lorem pretium ultricies. Nunc ut felis. Proin tellus justo, interdum sit amet ...
1250
Side Effects
C
Nunc pulvinar viverra justo. Maecenas rhoncus, sem a pulvinar iaculis, sapien dolor vulputate uma, nec facilisis nist magna elementum tortor. Duis in leo sit amet lorem pretium ultricies. Nunc ut felis. Proin tellus justo.
Value
A
Nunc pulvinar viverra justo. Maecenas rhoncus, sem a pulvinar iaculis, sapien dolor vulputate uma, nec facilisis nist magna elementum tortor. Duis in leo sit amet lorem pretium ultricies. Nunc ut felis. Proin tellus justo.
Target
To lower my blood sugar levels.
Acquisition/Dosage
500mg 2x/day. got the jumbo 500 pill count bottle from PharmX.com for 249.99
Notes
Nunc pulvinar viverra justo. Maecenas rhoncus, sem a pulvinar iaculis, sapien dolor vulputate uma, nec facilisis nist magna elementum tortor. Duis in leo sit amet lorem pretium ultricies. Nunc ut felis. Proin tellus justo.
MY FINAL GRADE
Meningococcal (A,C,Y,W-135) Polysaccharide Diptheria Toxoid Conjugate Vaccine
B
1260

FIG. 12

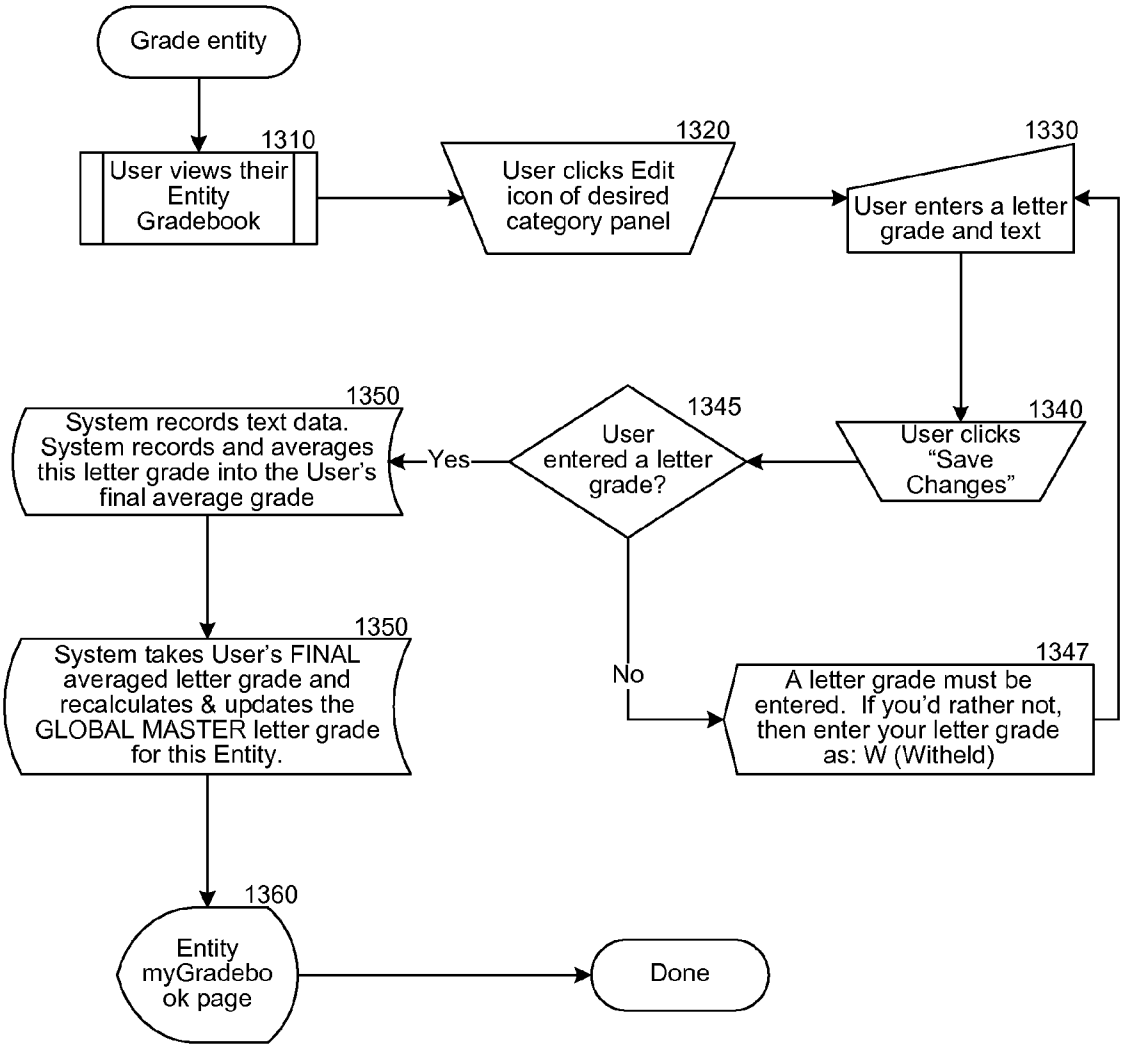

Grade entity
1310
User views their Entity Gradebook
1320
User clicks Edit icon of desired category panel
1330
User enters a letter grade and text
1340
User clicks "Save Changes"
1345
User entered a letter grade?
Yes
1350
System records text data. System records and averages this letter grade into the User's final average grade
No
1347
A letter grade must be entered. If you'd rather not, then enter your letter grade as: W (Witheld)
1350
System takes User's FINAL averaged letter grade and recalculates & updates the GLOBAL MASTER letter grade for this Entity.
1360
Entity myGradebook page
Done

FIG. 13

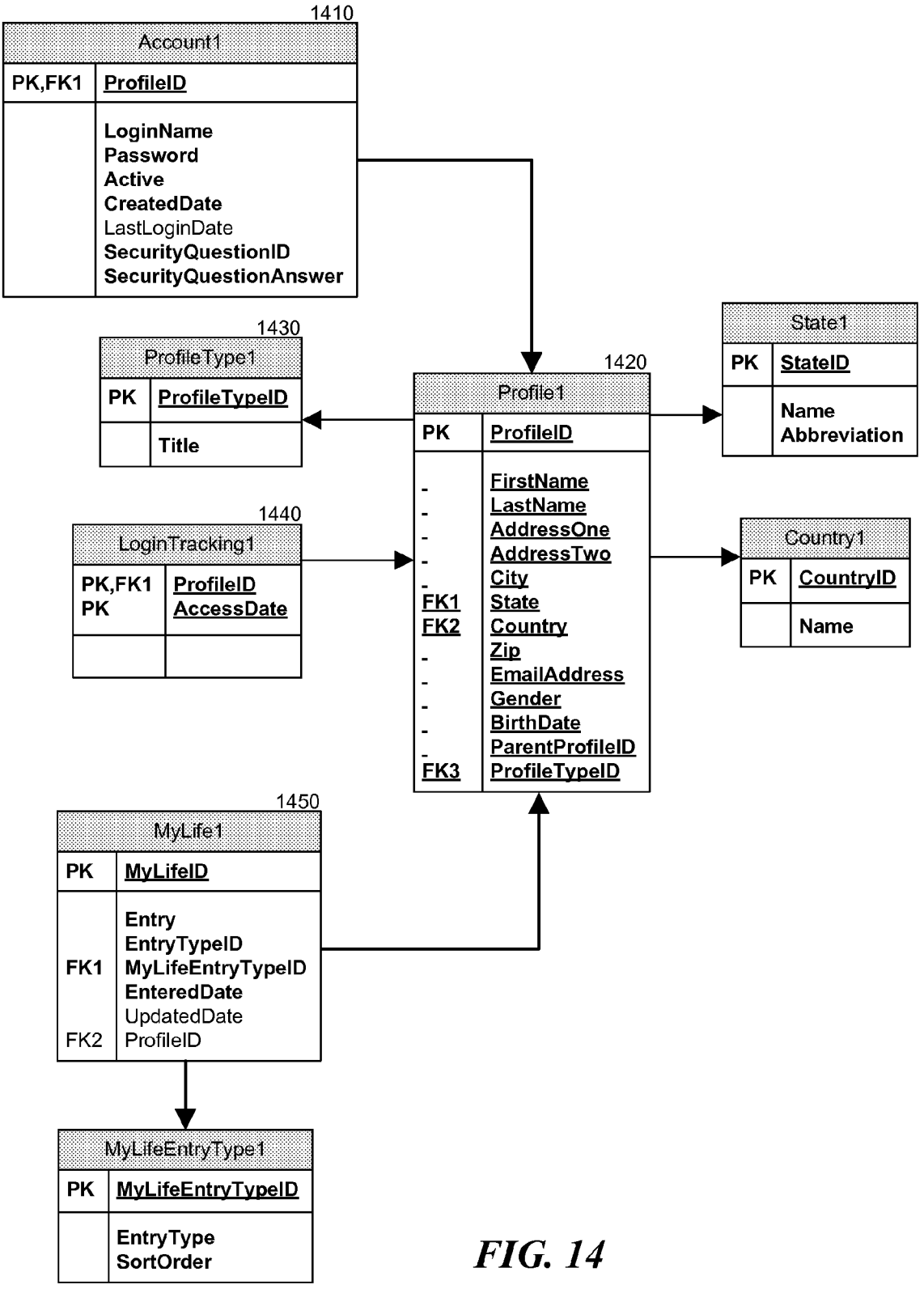

1410
Account1
PK,FK1 ProfileID
LoginName
Password
Active
CreatedDate
LastLoginDate
SecurityQuestionID
SecurityQuestionAnswer
1430
ProfileType1
PK ProfileTypeID
Title
1420
Profile1
PK ProfileID
FirstName
LastName
AddressOne
AddressTwo
City
FK1 State
FK2 Country
Zip
EmailAddress
Gender
BirthDate
ParentProfileID
FK3 ProfileTypeID
State1
PK StateID
Name
Abbreviation
Country1
PK CountryID
Name
1440
LoginTracking1
PK,FK1 ProfileID
PK AccessDate
1450
MyLife1
PK MyLifeID
Entry
EntryTypeID
FK1 MyLifeEntryTypeID
EnteredDate
UpdatedDate
FK2 ProfileID
MyLifeEntryType1
PK MyLifeEntryTypeID
EntryType
SortOrder

FIG. 14

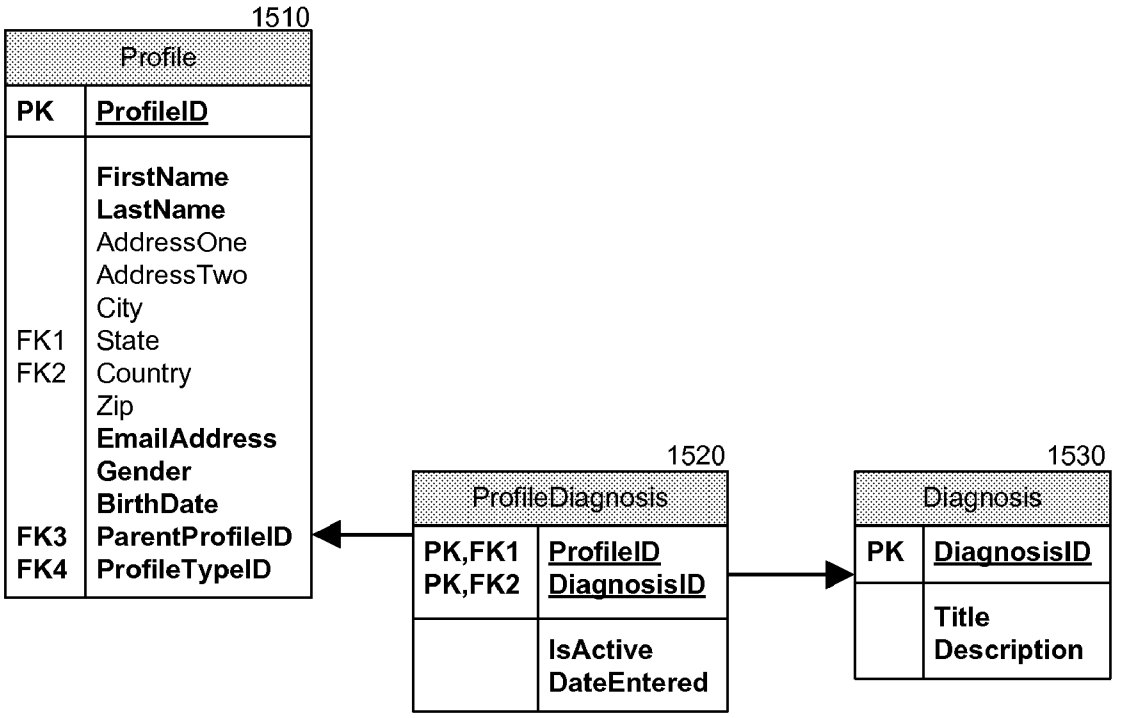

1510
Profile
PK
ProfileID
FirstName
LastName
AddressOne
AddressTwo
City
FK1
State
FK2
Country
Zip
EmailAddress
Gender
BirthDate
FK3
ParentProfileID
FK4
ProfileTypeID
1520
ProfileDiagnosis
PK,FK1
ProfileID
PK,FK2
DiagnosisID
IsActive
DateEntered
1530
Diagnosis
PK
DiagnosisID
Title
Description

FIG. 15

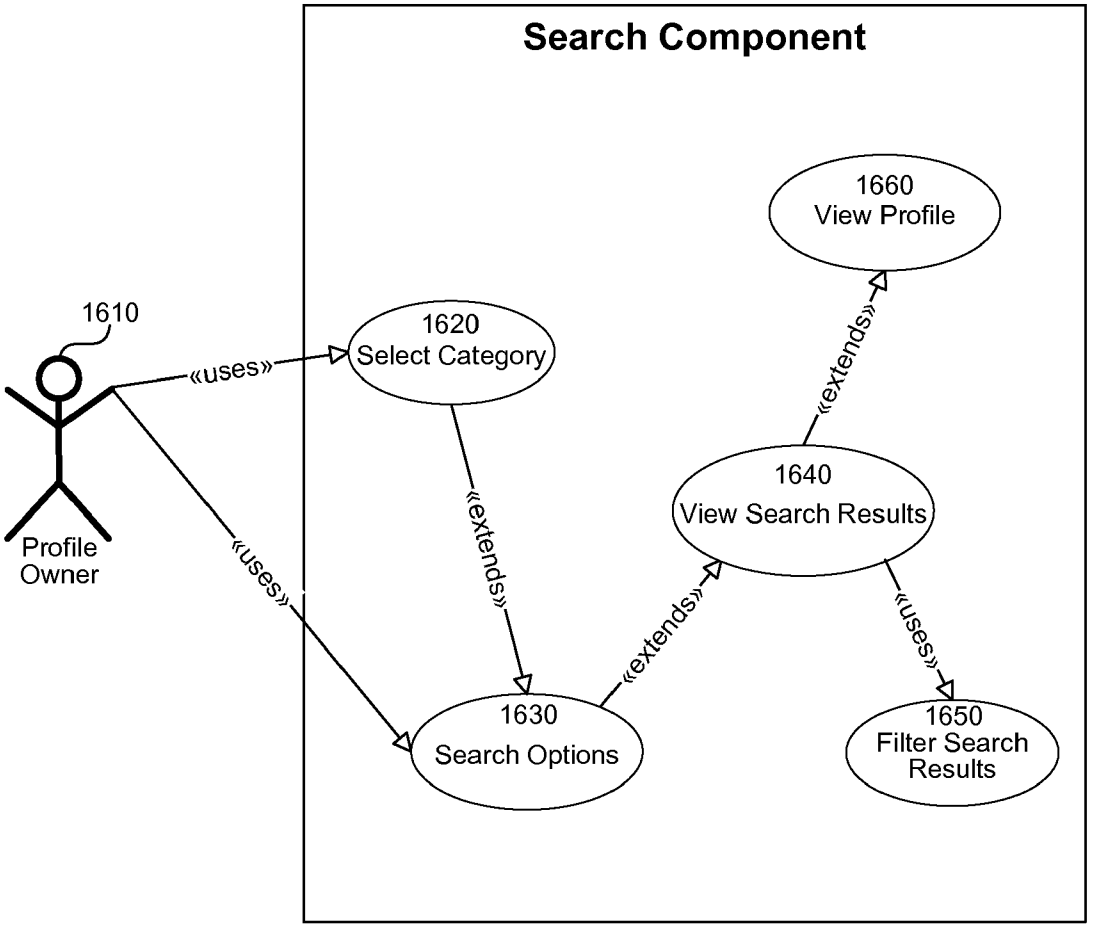

Search Component
1660
View Profile
1610
1620
Select Category
«uses»
«extends»
1640
View Search Results
Profile
Owner
«uses»
«extends»
«extends»
«uses»
1630
Search Options
1650
Filter Search
Results

FIG. 16

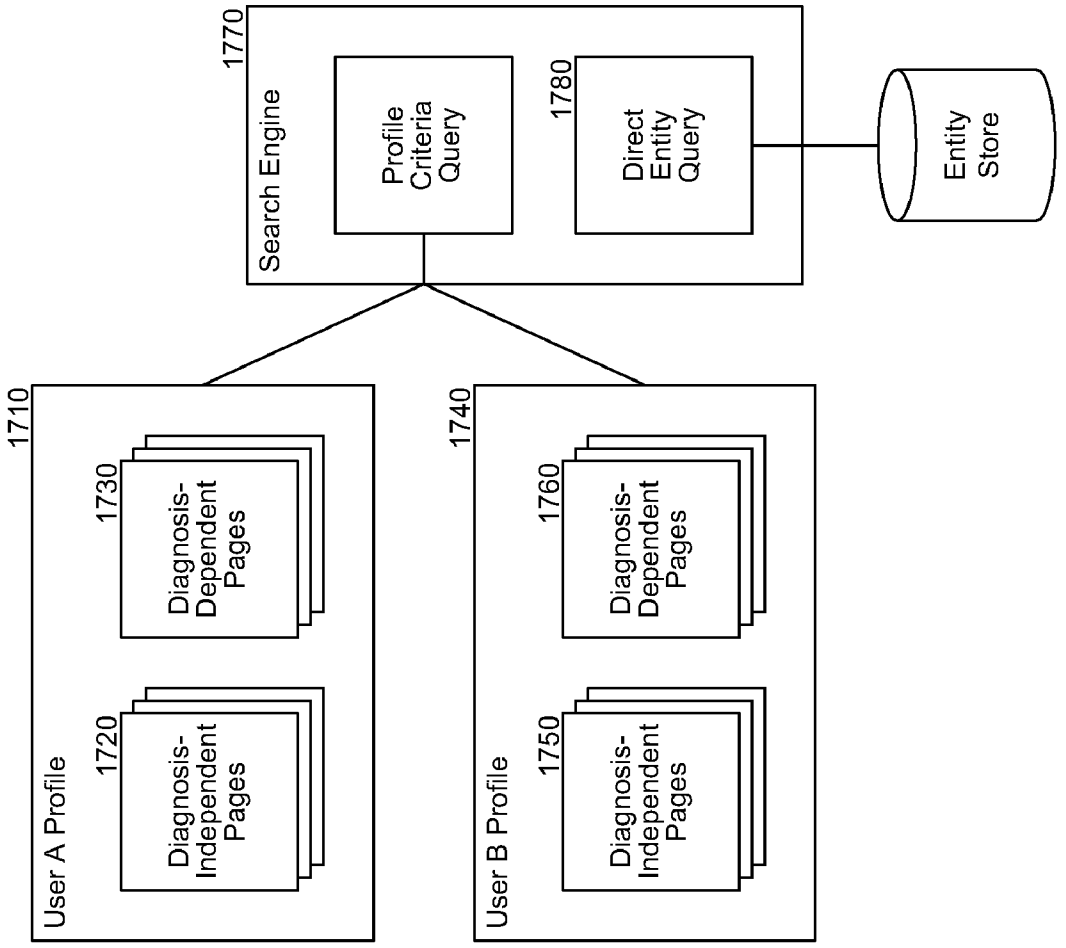

1770
Search Engine
Profile Criteria Query
1780
Direct Entity Query
Entity Store
1710
User A Profile
1730
Diagnosis-Dependent Pages
1720
Diagnosis-Independent Pages
1740
User B Profile
1760
Diagnosis-Dependent Pages
1750
Diagnosis-Independent Pages

FIG. 17

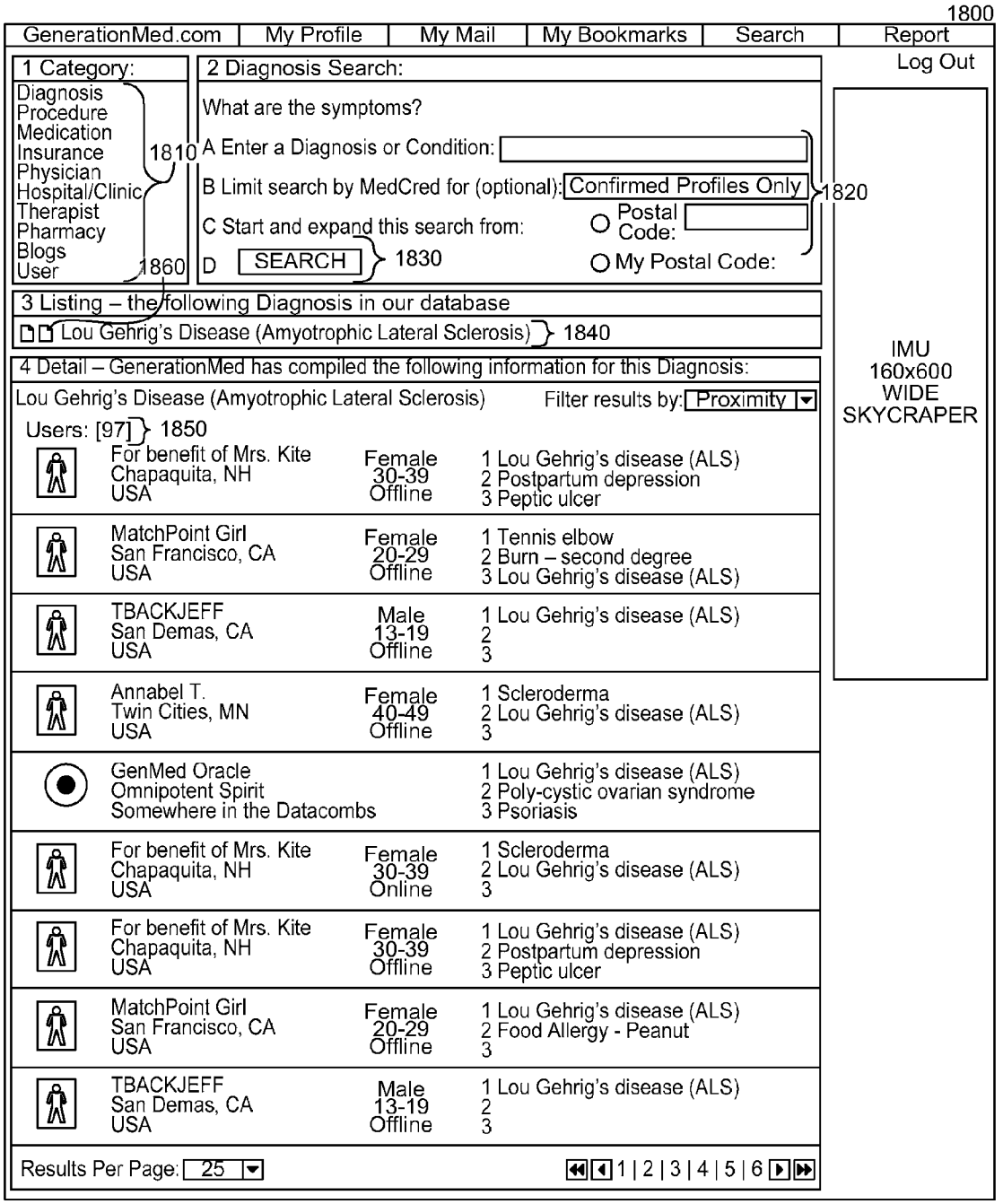

1800
GenerationMed.com
My Profile
My Mail
My Bookmarks
Search
Report
Log Out
1 Category:
Diagnosis
Procedure
Medication
Insurance
Physician
Hospital/Clinic
Therapist
Pharmacy
Blogs
User
1810
1860
2 Diagnosis Search:
What are the symptoms?
A Enter a Diagnosis or Condition:
B Limit search by MedCred for (optional): Confirmed Profiles Only
1820
C Start and expand this search from:
Postal Code:
My Postal Code:
D SEARCH
1830
3 Listing – the following Diagnosis in our database
Lou Gehrig's Disease (Amyotrophic Lateral Sclerosis)
1840
4 Detail – GenerationMed has compiled the following information for this Diagnosis:
Lou Gehrig's Disease (Amyotrophic Lateral Sclerosis)
Filter results by: Proximity
Users: [97]
1850
For benefit of Mrs. Kite
Chapaquita, NH
USA
Female
30-39
Offline
1 Lou Gehrig's disease (ALS)
2 Postpartum depression
3 Peptic ulcer
MatchPoint Girl
San Francisco, CA
USA
Female
20-29
Offline
1 Tennis elbow
2 Burn – second degree
3 Lou Gehrig's disease (ALS)
TBACKJEFF
San Demas, CA
USA
Male
13-19
Offline
1 Lou Gehrig's disease (ALS)
2
3
Annabel T.
Twin Cities, MN
USA
Female
40-49
Offline
1 Scleroderma
2 Lou Gehrig's disease (ALS)
3
GenMed Oracle
Omnipotent Spirit
Somewhere in the Datacombs
1 Lou Gehrig's disease (ALS)
2 Poly-cystic ovarian syndrome
3 Psoriasis
For benefit of Mrs. Kite
Chapaquita, NH
USA
Female
30-39
Online
1 Scleroderma
2 Lou Gehrig's disease (ALS)
3
For benefit of Mrs. Kite
Chapaquita, NH
USA
Female
30-39
Offline
1 Lou Gehrig's disease (ALS)
2 Postpartum depression
3 Peptic ulcer
MatchPoint Girl
San Francisco, CA
USA
Female
20-29
Offline
1 Lou Gehrig's disease (ALS)
2 Food Allergy - Peanut
3
TBACKJEFF
San Demas, CA
USA
Male
13-19
Offline
1 Lou Gehrig's disease (ALS)
2
3
Results Per Page: 25
1 | 2 | 3 | 4 | 5 | 6
IMU
160x600
WIDE
SKYCRAPER

FIG. 18

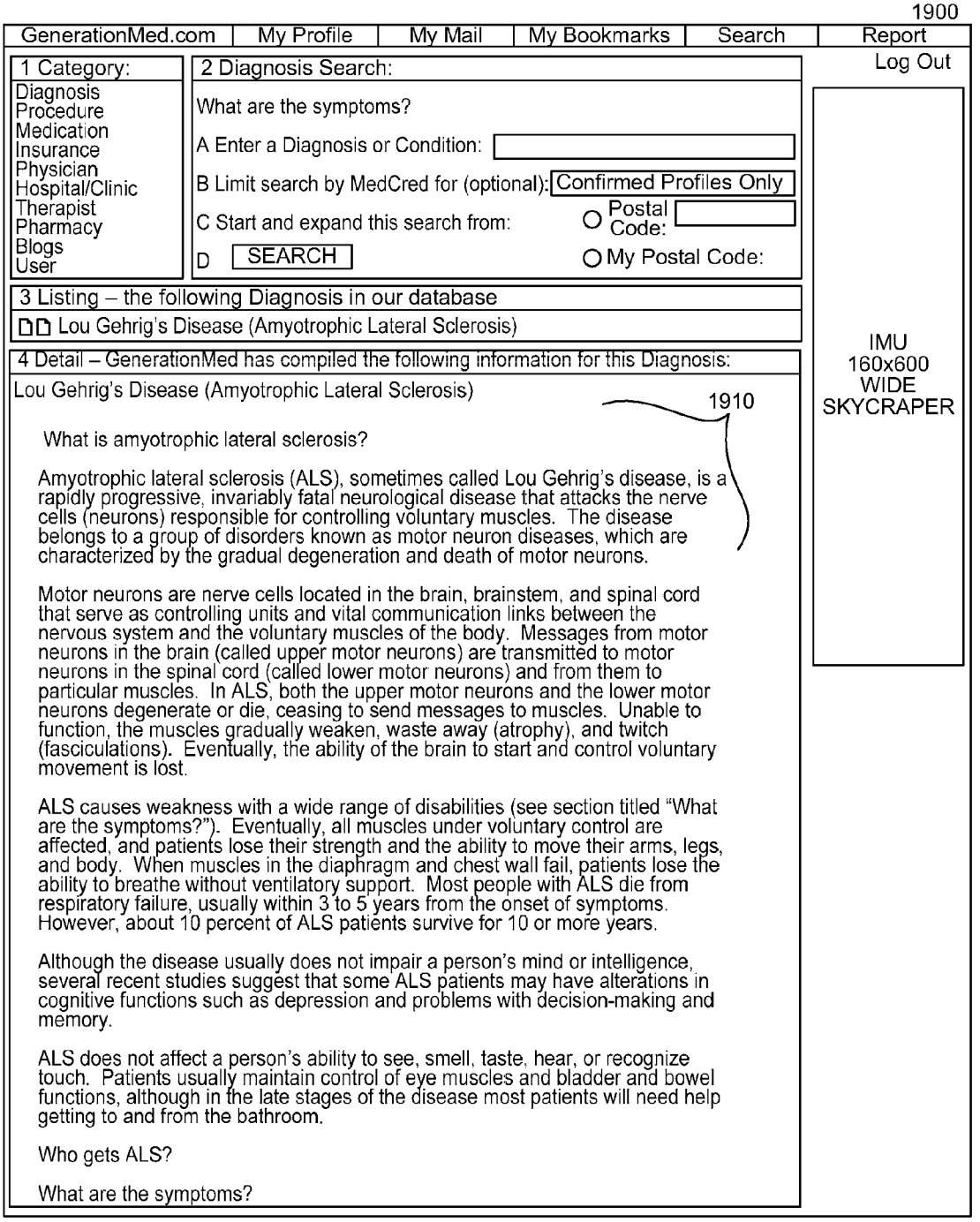

1900
GenerationMed.com
My Profile
My Mail
My Bookmarks
Search
Report
Log Out
1 Category:
Diagnosis
Procedure
Medication
Insurance
Physician
Hospital/Clinic
Therapist
Pharmacy
Blogs
User
2 Diagnosis Search:
What are the symptoms?
A Enter a Diagnosis or Condition:
B Limit search by MedCred for (optional):
Confirmed Profiles Only
C Start and expand this search from:
Postal Code:
D
SEARCH
My Postal Code:
3 Listing – the following Diagnosis in our database
Lou Gehrig's Disease (Amyotrophic Lateral Sclerosis)
4 Detail – GenerationMed has compiled the following information for this Diagnosis:
Lou Gehrig's Disease (Amyotrophic Lateral Sclerosis)
1910
What is amyotrophic lateral sclerosis?
Amyotrophic lateral sclerosis (ALS), sometimes called Lou Gehrig's disease, is a rapidly progressive, invariably fatal neurological disease that attacks the nerve cells (neurons) responsible for controlling voluntary muscles. The disease belongs to a group of disorders known as motor neuron diseases, which are characterized by the gradual degeneration and death of motor neurons.
Motor neurons are nerve cells located in the brain, brainstem, and spinal cord that serve as controlling units and vital communication links between the nervous system and the voluntary muscles of the body. Messages from motor neurons in the brain (called upper motor neurons) are transmitted to motor neurons in the spinal cord (called lower motor neurons) and from them to particular muscles. In ALS, both the upper motor neurons and the lower motor neurons degenerate or die, ceasing to send messages to muscles. Unable to function, the muscles gradually weaken, waste away (atrophy), and twitch (fasciculations). Eventually, the ability of the brain to start and control voluntary movement is lost.
ALS causes weakness with a wide range of disabilities (see section titled "What are the symptoms?"). Eventually, all muscles under voluntary control are affected, and patients lose their strength and the ability to move their arms, legs, and body. When muscles in the diaphragm and chest wall fail, patients lose the ability to breathe without ventilatory support. Most people with ALS die from respiratory failure, usually within 3 to 5 years from the onset of symptoms. However, about 10 percent of ALS patients survive for 10 or more years.
Although the disease usually does not impair a person's mind or intelligence, several recent studies suggest that some ALS patients may have alterations in cognitive functions such as depression and problems with decision-making and memory.
ALS does not affect a person's ability to see, smell, taste, hear, or recognize touch. Patients usually maintain control of eye muscles and bladder and bowel functions, although in the late stages of the disease most patients will need help getting to and from the bathroom.
Who gets ALS?
What are the symptoms?
IMU
160x600
WIDE
SKYCRAPER

FIG. 19

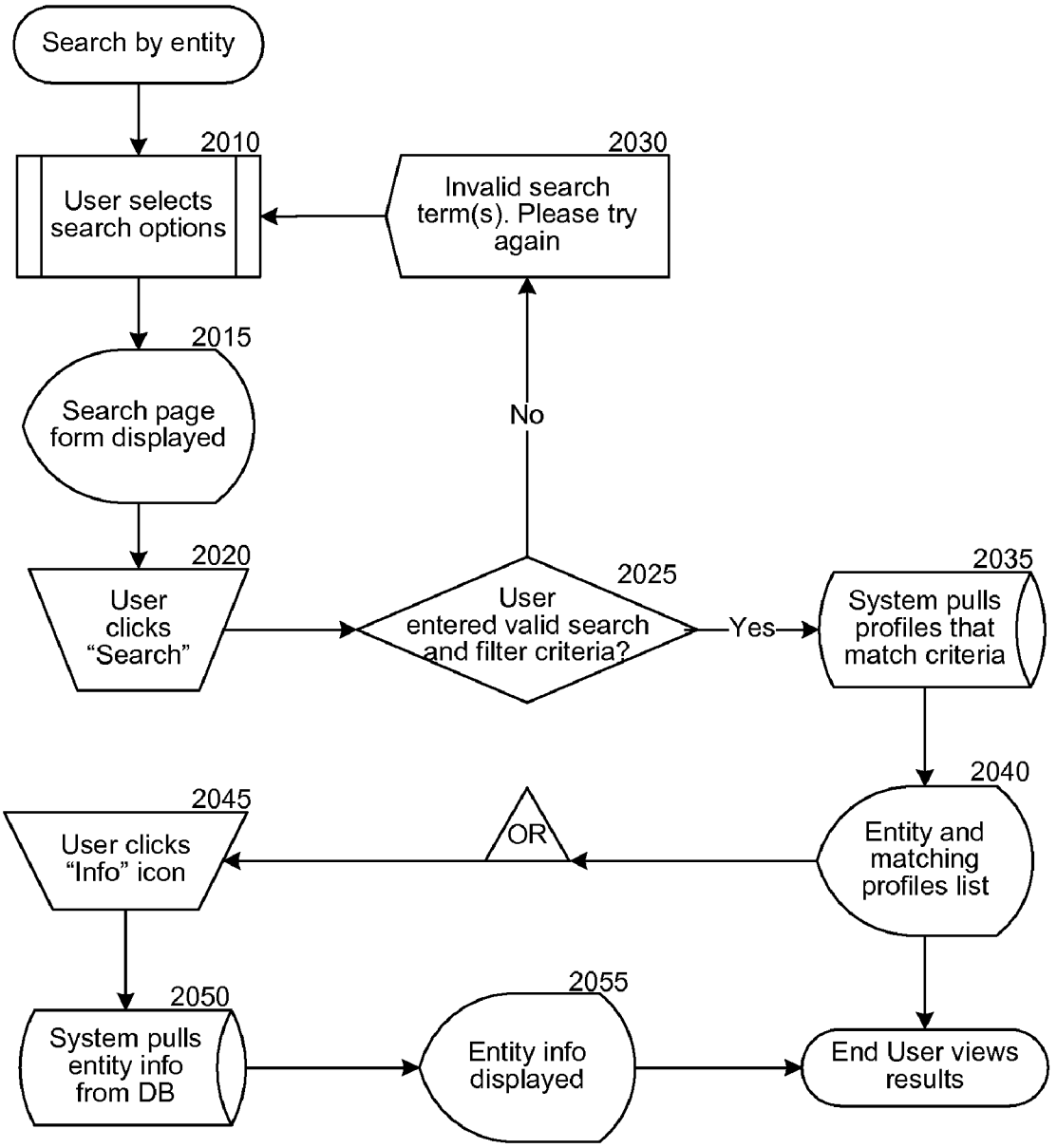

Search by entity
2010
User selects search options
2030
Invalid search term(s). Please try again
2015
Search page form displayed
No
2020
User clicks "Search"
2025
User entered valid search and filter criteria?
Yes
2035
System pulls profiles that match criteria
2040
Entity and matching profiles list
OR
2045
User clicks "Info" icon
2050
System pulls entity info from DB
2055
Entity info displayed
End User views results

FIG. 20

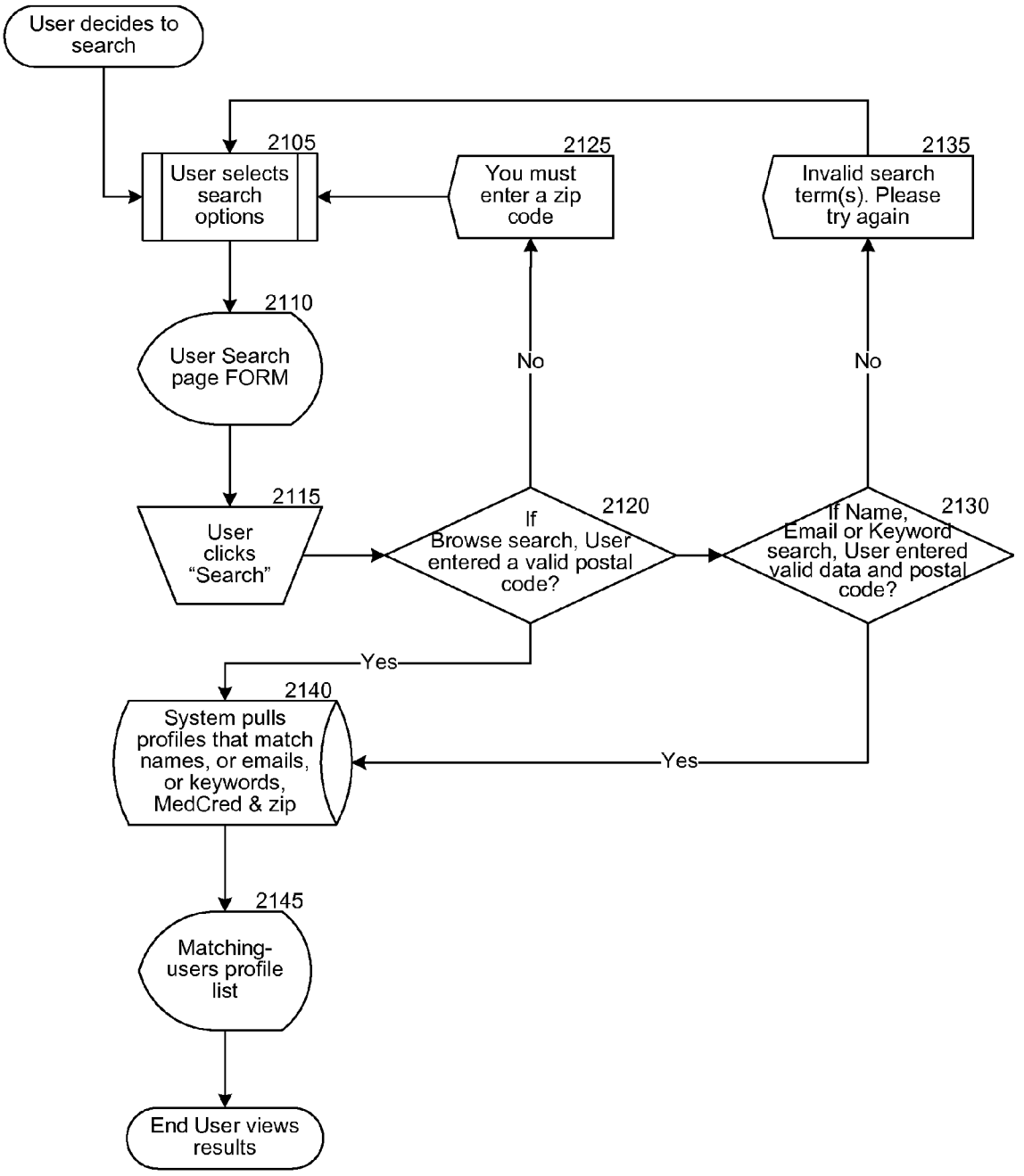

User decides to search
2105
User selects search options
2125
You must enter a zip code
2135
Invalid search term(s). Please try again
2110
User Search page FORM
No
No
2115
User clicks "Search"
2120
If Browse search, User entered a valid postal code?
2130
If Name, Email or Keyword search, User entered valid data and postal code?
Yes
2140
System pulls profiles that match names, or emails, or keywords, MedCred & zip
Yes
2145
Matching-users profile list
End User views results

FIG. 21

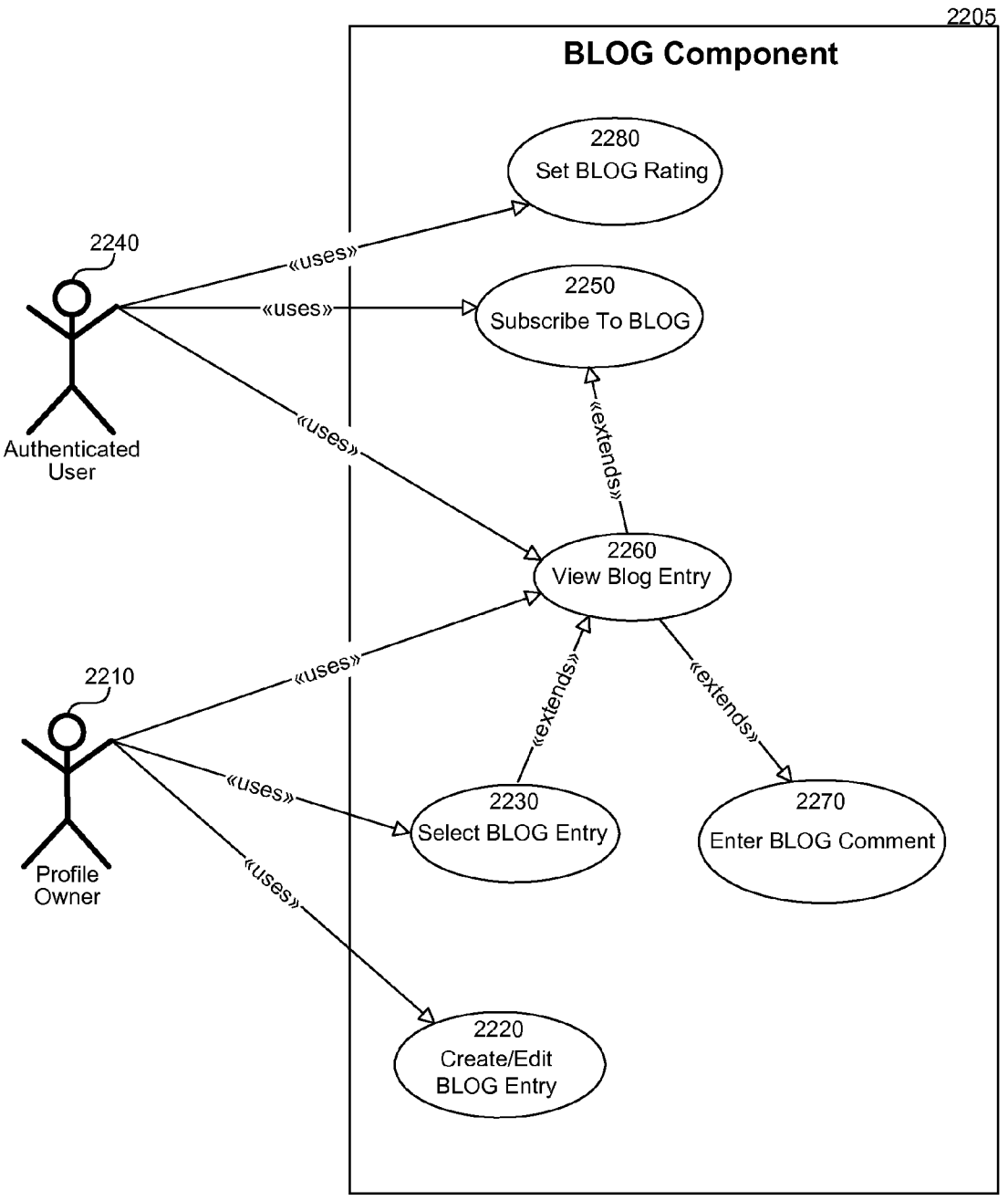

2205
BLOG Component
2280
Set BLOG Rating
2240
«uses»
«uses»
2250
Subscribe To BLOG
«uses»
«extends»
Authenticated
User
2260
View Blog Entry
2210
«uses»
«extends»
«extends»
«uses»
2230
Select BLOG Entry
2270
Enter BLOG Comment
Profile
Owner
«uses»
2220
Create/Edit
BLOG Entry

FIG. 22

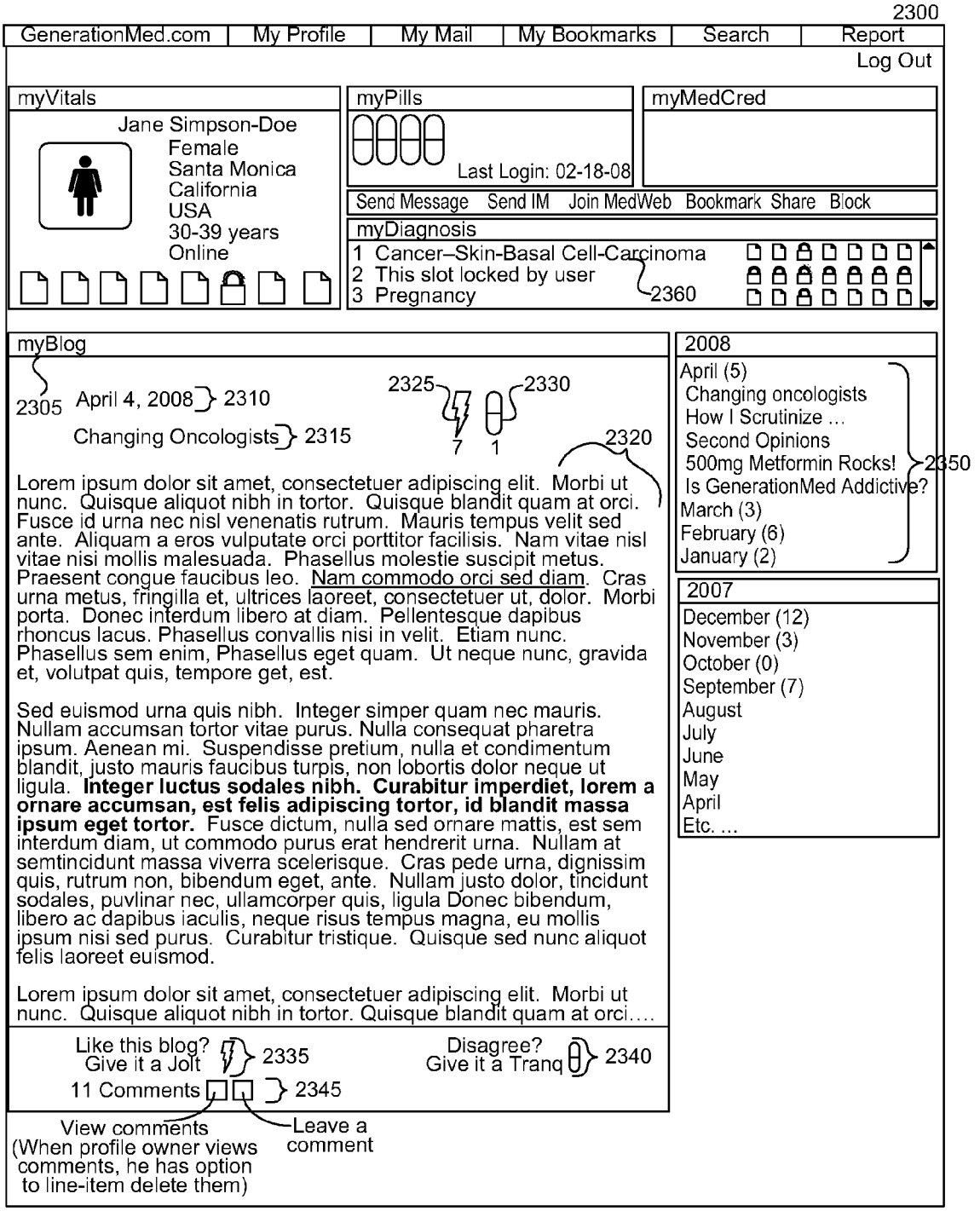

2300
GenerationMed.com
My Profile
My Mail
My Bookmarks
Search
Report
Log Out
myVitals
Jane Simpson-Doe
Female
Santa Monica
California
USA
30-39 years
Online
myPills
Last Login: 02-18-08
myMedCred
Send Message Send IM Join MedWeb Bookmark Share Block
myDiagnosis
1 Cancer–Skin-Basal Cell-Carcinoma
2 This slot locked by user
3 Pregnancy
2360
myBlog
2305
April 4, 2008
2310
Changing Oncologists
2315
2325
2330
7
1
2320
Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Morbi ut nunc. Quisque aliquot nibh in tortor. Quisque blandit quam at orci. Fusce id urna nec nisl venenatis rutrum. Mauris tempus velit sed ante. Aliquam a eros vulputate orci porttitor facilisis. Nam vitae nisl vitae nisi mollis malesuada. Phasellus molestie suscipit metus. Praesent congue faucibus leo. Nam commodo orci sed diam. Cras urna metus, fringilla et, ultrices laoreet, consectetuer ut, dolor. Morbi porta. Donec interdum libero at diam. Pellentesque dapibus rhoncus lacus. Phasellus convallis nisi in velit. Etiam nunc. Phasellus sem enim, Phasellus eget quam. Ut neque nunc, gravida et, volutpat quis, tempore get, est.
Sed euismod urna quis nibh. Integer simper quam nec mauris. Nullam accumsan tortor vitae purus. Nulla consequat pharetra ipsum. Aenean mi. Suspendisse pretium, nulla et condimentum blandit, justo mauris faucibus turpis, non lobortis dolor neque ut ligula. Integer luctus sodales nibh. Curabitur imperdiet, lorem a ornare accumsan, est felis adipiscing tortor, id blandit massa ipsum eget tortor. Fusce dictum, nulla sed ornare mattis, est sem interdum diam, ut commodo purus erat hendrerit urna. Nullam at semtincidunt massa viverra scelerisque. Cras pede urna, dignissim quis, rutrum non, bibendum eget, ante. Nullam justo dolor, tincidunt sodales, puvlinar nec, ullamcorper quis, ligula Donec bibendum, libero ac dapibus iaculis, neque risus tempus magna, eu mollis ipsum nisi sed purus. Curabitur tristique. Quisque sed nunc aliquot felis laoreet euismod.
Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Morbi ut nunc. Quisque aliquot nibh in tortor. Quisque blandit quam at orci....
Like this blog? Give it a Jolt
2335
Disagree? Give it a Tranq
2340
11 Comments
2345
View comments (When profile owner views comments, he has option to line-item delete them)
Leave a comment
2008
April (5)
Changing oncologists
How I Scrutinize ...
Second Opinions
500mg Metformin Rocks!
Is GenerationMed Addictive?
2350
March (3)
February (6)
January (2)
2007
December (12)
November (3)
October (0)
September (7)
August
July
June
May
April
Etc. ...

FIG. 23

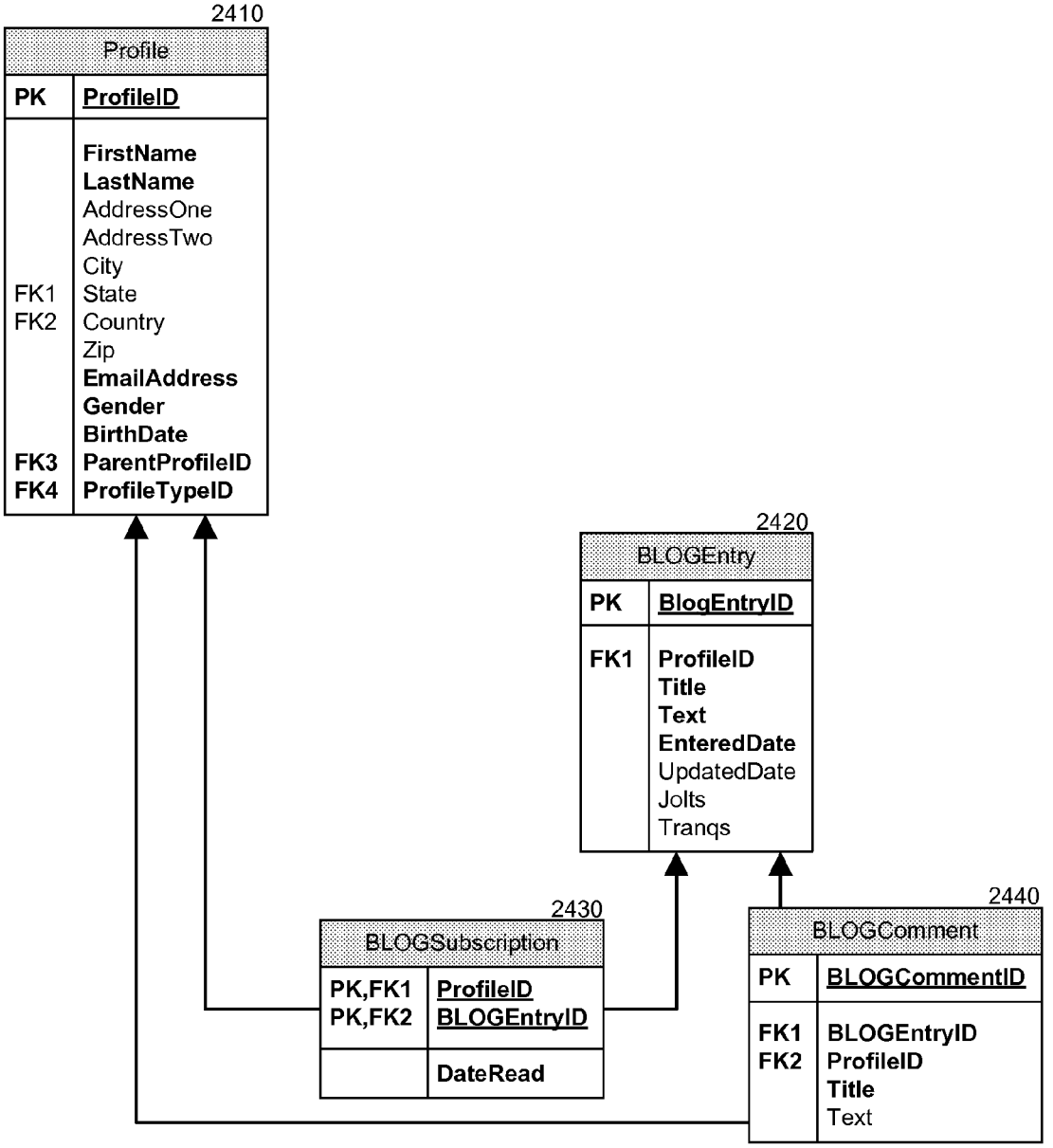

2410
Profile
PK
ProfileID
FirstName
LastName
AddressOne
AddressTwo
City
FK1
State
FK2
Country
Zip
EmailAddress
Gender
BirthDate
FK3
ParentProfileID
FK4
ProfileTypeID
2420
BLOGEntry
PK
BlogEntryID
FK1
ProfileID
Title
Text
EnteredDate
UpdatedDate
Jolts
Tranqs
2430
BLOGSubscription
PK,FK1
ProfileID
PK,FK2
BLOGEntryID
DateRead
2440
BLOGComment
PK
BLOGCommentID
FK1
BLOGEntryID
FK2
ProfileID
Title
Text

FIG. 24

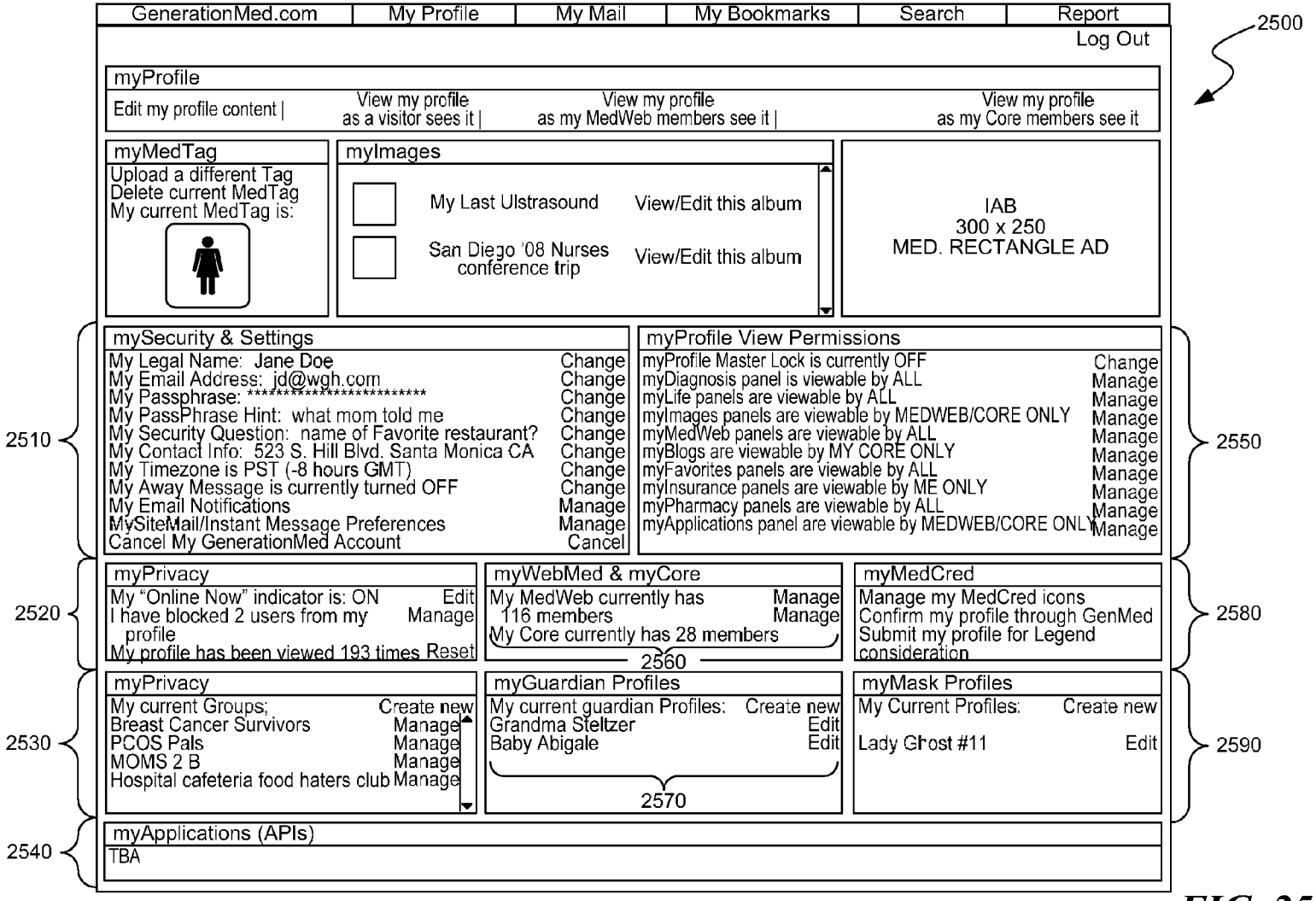

GenerationMed.com
My Profile
My Mail
My Bookmarks
Search
Report
Log Out
2500
myProfile
Edit my profile content |
View my profile as a visitor sees it |
View my profile as my MedWeb members see it |
View my profile as my Core members see it
myMedTag
Upload a different Tag
Delete current MedTag
My current MedTag is:
myImages
My Last Ulstrasound
View/Edit this album
San Diego '08 Nurses conference trip
View/Edit this album
IAB
300 x 250
MED. RECTANGLE AD
2510
mySecurity & Settings
My Legal Name: Jane Doe Change
My Email Address: jd@wgh.com Change
My Passphrase: ********** Change
My PassPhrase Hint: what mom told me Change
My Security Question: name of Favorite restaurant? Change
My Contact Info: 523 S. Hill Blvd. Santa Monica CA Change
My Timezone is PST (-8 hours GMT) Change
My Away Message is currently turned OFF Change
My Email Notifications Manage
MySiteMail/Instant Message Preferences Manage
Cancel My GenerationMed Account Cancel
2550
myProfile View Permissions
myProfile Master Lock is currently OFF Change
myDiagnosis panel is viewable by ALL Manage
myLife panels are viewable by ALL Manage
myImages panels are viewable by MEDWEB/CORE ONLY Manage
myMedWeb panels are viewable by ALL Manage
myBlogs are viewable by MY CORE ONLY Manage
myFavorites panels are viewable by ALL Manage
myInsurance panels are viewable by ME ONLY Manage
myPharmacy panels are viewable by ALL Manage
myApplications panel are viewable by MEDWEB/CORE ONLY Manage
2520
myPrivacy
My "Online Now" indicator is: ON Edit
I have blocked 2 users from my profile Manage
My profile has been viewed 193 times Reset
myWebMed & myCore
My MedWeb currently has 116 members Manage
My Core currently has 28 members Manage
2560
myMedCred
Manage my MedCred icons
Confirm my profile through GenMed
Submit my profile for Legend consideration
2580
2530
myPrivacy
My current Groups; Create new
Breast Cancer Survivors Manage
PCOS Pals Manage
MOMS 2 B Manage
Hospital cafeteria food haters club Manage
myGuardian Profiles
My current guardian Profiles: Create new
Grandma Steltzer Edit
Baby Abigale Edit
2570
myMask Profiles
My Current Profiles: Create new
Lady Ghost #11 Edit
2590
2540
myApplications (APIs)
TBA

FIG. 25

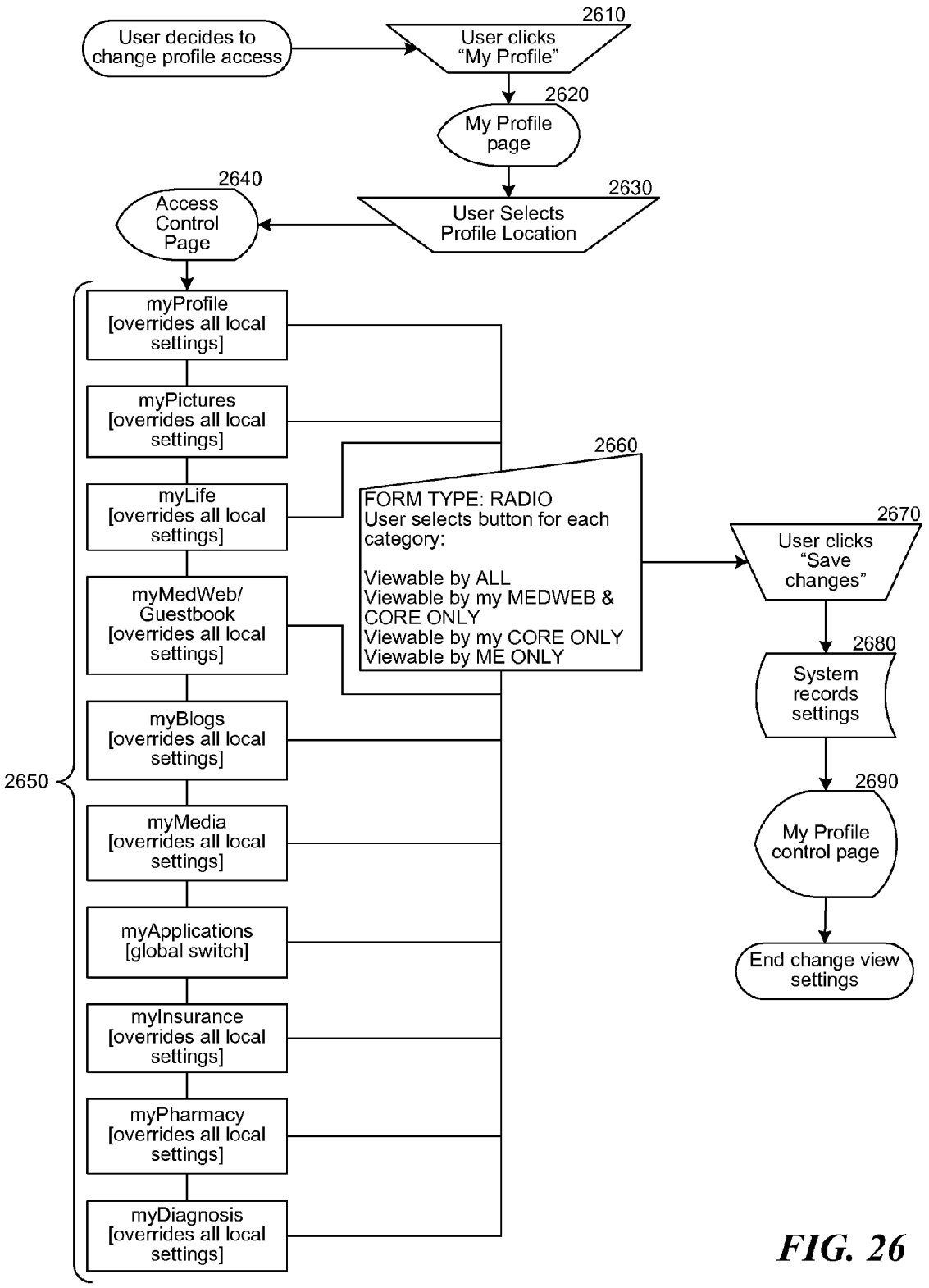

User decides to change profile access
2610
User clicks "My Profile"
2620
My Profile page
2630
User Selects Profile Location
2640
Access Control Page
myProfile [overrides all local settings]
myPictures [overrides all local settings]
myLife [overrides all local settings]
myMedWeb/ Guestbook [overrides all local settings]
myBlogs [overrides all local settings]
myMedia [overrides all local settings]
myApplications [global switch]
myInsurance [overrides all local settings]
myPharmacy [overrides all local settings]
myDiagnosis [overrides all local settings]
2650
2660
FORM TYPE: RADIO
User selects button for each category:
Viewable by ALL
Viewable by my MEDWEB & CORE ONLY
Viewable by my CORE ONLY
Viewable by ME ONLY
2670
User clicks "Save changes"
2680
System records settings
2690
My Profile control page
End change view settings

FIG. 26

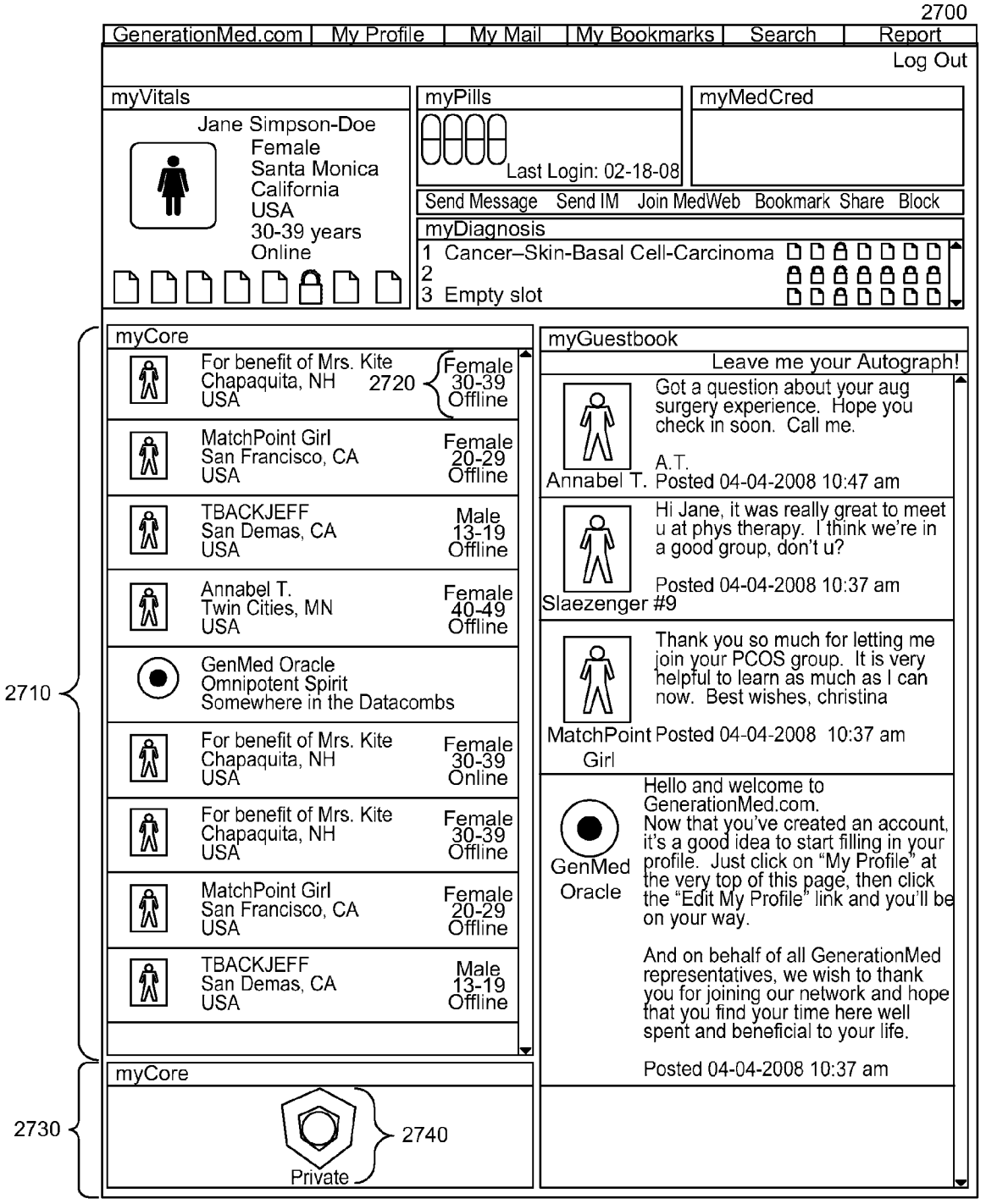

2700
GenerationMed.com
My Profile
My Mail
My Bookmarks
Search
Report
Log Out
myVitals
Jane Simpson-Doe
Female
Santa Monica
California
USA
30-39 years
Online
myPills
Last Login: 02-18-08
myMedCred
Send Message
Send IM
Join MedWeb
Bookmark
Share
Block
myDiagnosis
1 Cancer–Skin-Basal Cell-Carcinoma
2
3 Empty slot
myCore
For benefit of Mrs. Kite
Chapaquita, NH
USA
2720
Female
30-39
Offline
MatchPoint Girl
San Francisco, CA
USA
Female
20-29
Offline
TBACKJEFF
San Demas, CA
USA
Male
13-19
Offline
Annabel T.
Twin Cities, MN
USA
Female
40-49
Offline
GenMed Oracle
Omnipotent Spirit
Somewhere in the Datacombs
For benefit of Mrs. Kite
Chapaquita, NH
USA
Female
30-39
Online
For benefit of Mrs. Kite
Chapaquita, NH
USA
Female
30-39
Offline
MatchPoint Girl
San Francisco, CA
USA
Female
20-29
Offline
TBACKJEFF
San Demas, CA
USA
Male
13-19
Offline
2710
myGuestbook
Leave me your Autograph!
Got a question about your aug surgery experience. Hope you check in soon. Call me.
A.T.
Annabel T. Posted 04-04-2008 10:47 am
Hi Jane, it was really great to meet u at phys therapy. I think we're in a good group, don't u?
Posted 04-04-2008 10:37 am
Slaezenger #9
Thank you so much for letting me join your PCOS group. It is very helpful to learn as much as I can now. Best wishes, christina
MatchPoint Girl Posted 04-04-2008 10:37 am
Hello and welcome to GenerationMed.com.
Now that you've created an account, it's a good idea to start filling in your profile. Just click on "My Profile" at the very top of this page, then click the "Edit My Profile" link and you'll be on your way.
And on behalf of all GenerationMed representatives, we wish to thank you for joining our network and hope that you find your time here well spent and beneficial to your life.
GenMed Oracle
Posted 04-04-2008 10:37 am
myCore
Private
2740
2730

FIG. 27

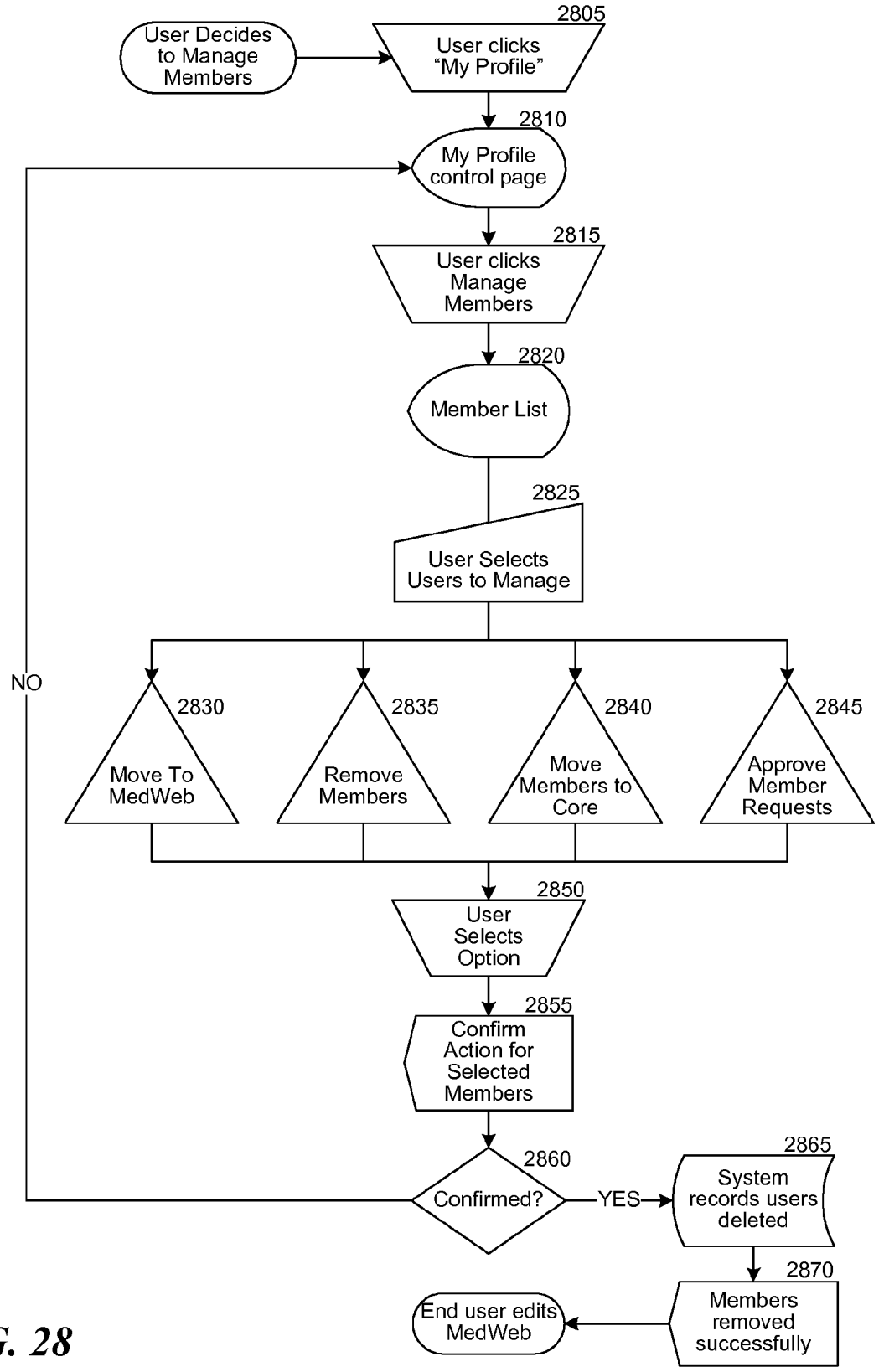

User Decides to Manage Members
2805
User clicks "My Profile"
2810
My Profile control page
2815
User clicks Manage Members
2820
Member List
2825
User Selects Users to Manage
NO
2830
Move To MedWeb
2835
Remove Members
2840
Move Members to Core
2845
Approve Member Requests
2850
User Selects Option
2855
Confirm Action for Selected Members
2860
Confirmed?
YES
2865
System records users deleted
2870
Members removed successfully
End user edits MedWeb

FIG. 28

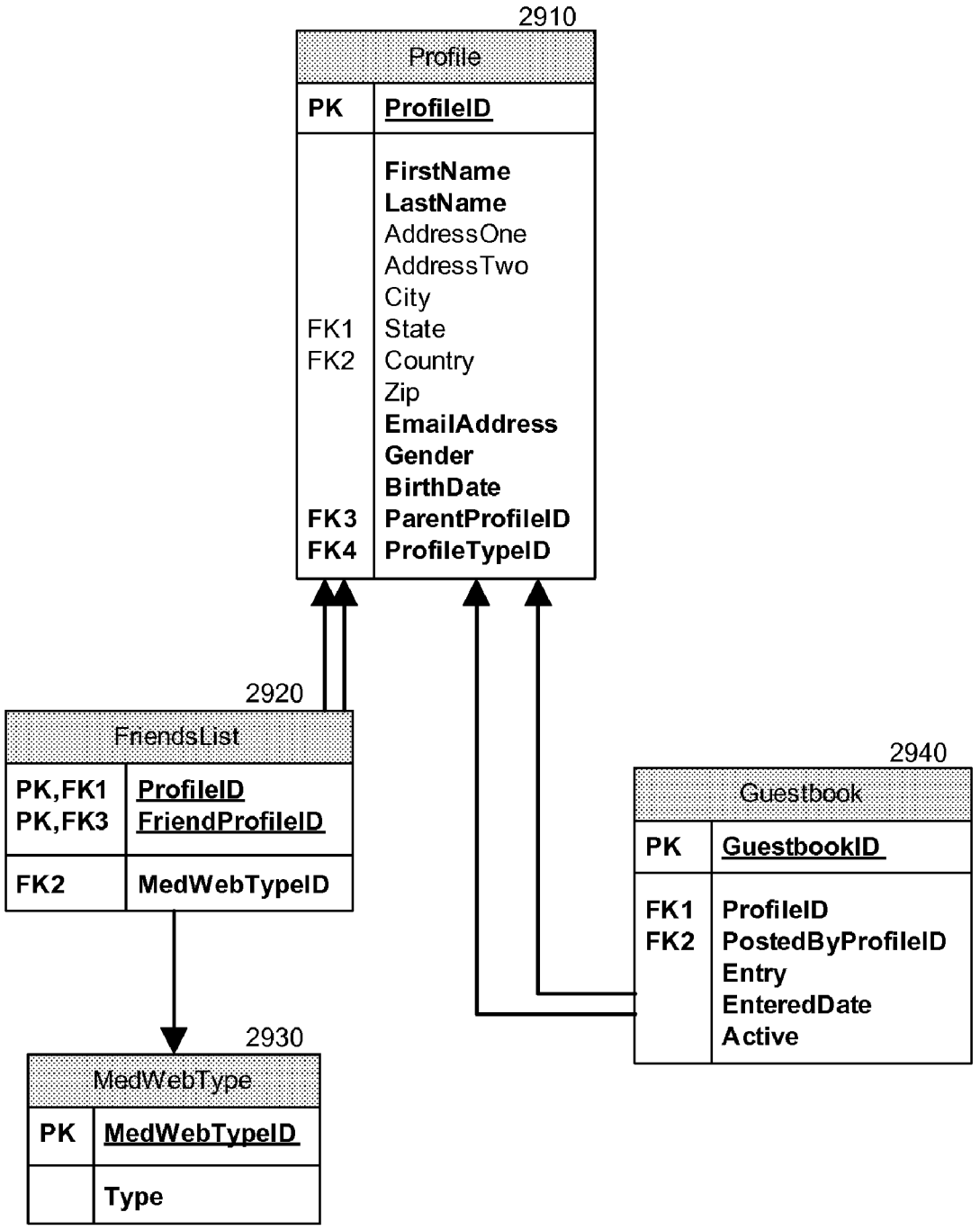

2910
Profile
PK
ProfileID
FirstName
LastName
AddressOne
AddressTwo
City
FK1
State
FK2
Country
Zip
EmailAddress
Gender
BirthDate
FK3
ParentProfileID
FK4
ProfileTypeID
2920
FriendsList
PK,FK1
ProfileID
PK,FK3
FriendProfileID
FK2
MedWebTypeID
2940
Guestbook
PK
GuestbookID
FK1
ProfileID
FK2
PostedByProfileID
Entry
EnteredDate
Active
2930
MedWebType
PK
MedWebTypeID
Type

FIG. 29

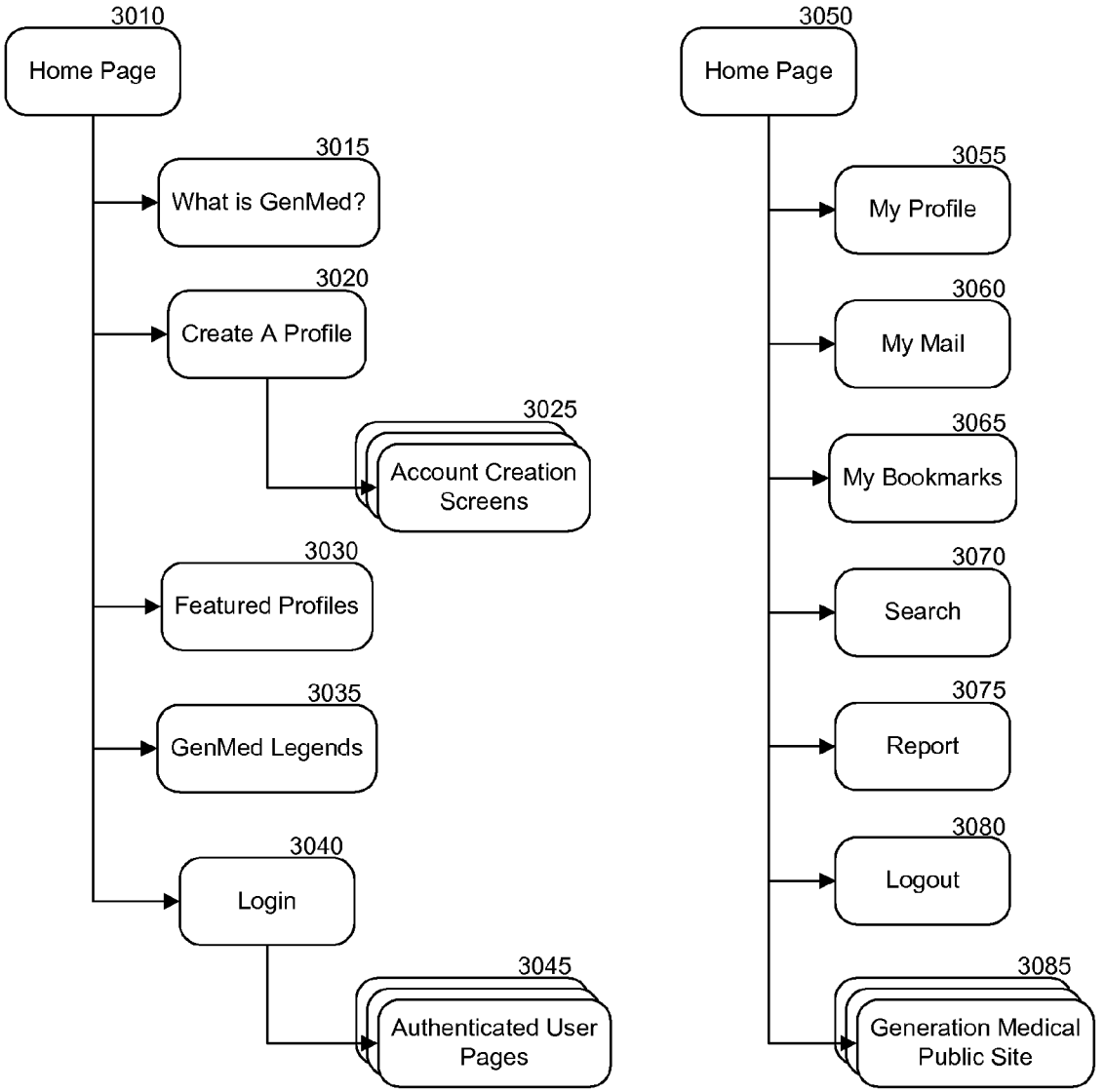

3010
Home Page
3015
What is GenMed?
3020
Create A Profile
3025
Account Creation Screens
3030
Featured Profiles
3035
GenMed Legends
3040
Login
3045
Authenticated User Pages
3050
Home Page
3055
My Profile
3060
My Mail
3065
My Bookmarks
3070
Search
3075
Report
3080
Logout
3085
Generation Medical Public Site

FIG. 30

CONNECTING USERS BASED ON MEDICAL EXPERIENCES

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Application No. 60/962,542 (Attorney Docket No. 66185-8001.US00) entitled "GenerationMed Backbone," and filed on Jul. 30, 2007, which is hereby incorporated by reference.

BACKGROUND

[0002] A social network service uses software to build online social networks for communities of people who share interests and activities or who are interested in exploring the interests and activities of others. Most social network services are web based and provide a collection of various ways for users to interact, such as chat, messaging, email, video, voice chat, file sharing, blogging, discussion groups, and so on. The main types of social networking services are those which contain directories of some categories (such as former classmates), means to connect with friends (usually with self-description pages), and recommender systems linked to trust. Popular methods now combine many of these, with MySpace and Facebook being the most widely used.

[0003] In general, social networking services allow users to create a profile for themselves, and can be broken down into two broad categories: internal social networking (ISN) and external social networking (ESN) sites. Both types can increase the feeling of community among people. An ISN is a closed/private community that consists of a group of people within a company, association, society, education provider, and organization, or even an "invite only" group created by a user in an ESN. An ESN is open/public and available to all web users to communicate, such as MySpace, Facebook, and Bebo, and is generally designed to attract advertisers. Users can upload a picture of themselves and can often be "friends" with other users.

[0004] Another type of online service is a medical information site, such as WebMD. WebMD is a medical and wellness information service, primarily known for its public internet site, which provides health information, a symptom checklist, pharmacy information, and a place to store personal medical information. The site is reported to receive over 40 million hits each month and is the leading health portal in the United States according to comScore Media Metrix.

[0005] Neither of these types of online services effectively addresses the human side of medicine. Social networking sites allow only demographic connections such as through searching for people of a similar age, gender, location, and so forth. Such sites do not allow deeper connections based on experiences. Medical information sites often contain volumes of academic medical data, but lack the application of that information to individual people. Having a medical condition can be an isolating and fear-inducing experience. The need exists for a system that overcomes the above problems, as well as one that provides additional benefits. Overall, the examples herein of some prior or related systems and their associated limitations are intended to be illustrative and not exclusive. Other limitations of existing or prior systems will become apparent to those of skill in the art upon reading the following Detailed Description.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] FIG. **1** is a block diagram that provides an overview of the environment in which the system operates in one embodiment.

[0007] FIG. **2** is a block diagram that illustrates the components of the medical interaction system in one embodiment.

[0008] FIG. **3** is a block diagram that illustrates the types of information that the medical interaction system stores in a user's profile in one embodiment.

[0009] FIG. **4** is a flow diagram that illustrates the steps performed by the profile management component of the medical interaction system to create a new user profile in one embodiment.

[0010] FIG. **5** is a unified modeling language (UML) diagram that illustrates the functionality of the diagnosis management component in one embodiment.

[0011] FIG. **6** is a flow diagram that illustrates the processing of the diagnosis management component to associate a diagnosis with a user profile in one embodiment.

[0012] FIG. **7** is a display diagram that illustrates a display page for editing diagnoses associated with a user profile in one embodiment.

[0013] FIG. **8** is a display diagram that illustrates a display page for editing entities associated with a diagnosis in one embodiment.

[0014] FIG. **9** is a flow diagram that illustrates the processing of the profile management component to add a new entity to a user profile in one embodiment.

[0015] FIG. **10** is a display diagram that illustrates a display page containing a daybook in one embodiment.

[0016] FIG. **11** is a flow diagram that illustrates the processing of the profile management component to add a daybook entry in one embodiment.

[0017] FIG. **12** is a display diagram that illustrates a display page containing a gradebook in one embodiment.

[0018] FIG. **13** is a flow diagram that illustrates the processing of the profile management component to add a gradebook entry in one embodiment.

[0019] FIG. **14** is a data structure diagram that illustrates the type of data that the medical interaction system stores in the profile store in one embodiment.

[0020] FIG. **15** is a data structure diagram that illustrates the associations between diagnosis data and user profiles stored by the medical interaction system in one embodiment.

[0021] FIG. **16** is a UML diagram that illustrates the functionality of the search component in one embodiment.

[0022] FIG. **17** is a block diagram that illustrates two users and the types of connections provided by the system through searching in one embodiment.

[0023] FIG. **18** is a display diagram that illustrates a display page for conducting a search through the medical interaction system in one embodiment.

[0024] FIG. **19** is a display diagram that illustrates an entity details panel displayed after a search in one embodiment.

[0025] FIG. **20** is a flow diagram that illustrates the processing of the search component of the medical interaction system to identify users based on medical experiences in one embodiment.

[0026] FIG. **21** is a flow diagram that illustrates the processing of the search component of the medical interaction system to conduct a search by user in one embodiment.

[0027] FIG. **22** is a UML diagram that illustrates the functionality of the blog component in one embodiment.

[0028] FIG. **23** is a display diagram that illustrates a display page for working with blog entries in one embodiment.

[0029] FIG. **24** is a data structure diagram that illustrates the data stored by the blog component in one embodiment.

[0030] FIG. **25** is a display diagram that illustrates a display page for controlling access to user information in one embodiment.

[0031] FIG. **26** is a flow diagram that illustrates the processing performed by the access control component to edit profile permissions in one embodiment.

[0032] FIG. **27** is a display diagram that illustrates a display page for viewing members of a profile owner's MedWeb in one embodiment.

[0033] FIG. **28** is a flow diagram that illustrates the processing of the profile management component to modify members of a profile owner's access tiers in one embodiment.

[0034] FIG. **29** is a data structure diagram that illustrates the data stored by the medical interaction system for a profile owner's access tiers in one embodiment.

[0035] FIG. **30** is a block diagram that illustrates two information hierarchies that the system displays to different user classes in one embodiment.

DETAILED DESCRIPTION

Overview

[0036] A medical interaction system is described that promotes connections of a medical nature between individuals, patients, doctors, nurses, therapists, and others. The system is accessible through a web-based, client-server application in which users share a common background of a medical nature. Users can share personal information with other users. Owners of personal information have complete control over what they share and with whom they share it by using built in access controls. Users can also hide their personal identity by using a mask profile. This allows them to participate in the community without fear of disclosing their real identity and opening themselves up to scrutiny in their everyday lives. Users can participate in the community by proxy using a guardian profile. A guardian profile is created for an individual in the care of a user and is separate from the user's own profile. The medical interaction system provides search features so users can find other users who have common medical experiences, such as diagnosis, medication, health care provider, and therapist. Thus, the medical information system provides an environment for users to share medical experiences and connect with others in a way that reduces social isolation, increases experiential knowledge, and inspires confidence that others have successfully dealt with similar medical conditions before.

[0037] The following sections describe: one embodiment of a suitable system for implementing the medical interaction system, diagnosis-based profiles, medical-based connections, verifying user identity and credentials, ratings of medical entities, and tiered access control for protecting information privacy.

Suitable System

[0038] FIG. **1** is a block diagram that provides an overview of the environment in which the system operates in one embodiment. The medical interaction system is a web-based client-server application. Data and code for the application are stored in centrally located servers. A user **110** uses a client computer **120** to issue one or more web requests through a web browser (e.g., Microsoft Internet Explorer or Mozilla Firefox). The client computer **120** communicates with a web server **130** and database server **140** that host the medical interaction system. Those of ordinary skill in the art will recognize that the web server **130** and database server **140** may be hosted by multiple servers and that additional components (e.g., firewalls, routers, and so forth) that are not shown may be used to provide additional benefits. When a user makes a request to the system through the web server **130**, the web server **130** determines if data stored in the database is available to respond to the request. If database data is available, the web server **130** request the data from the database server **140**, and the database server **140** returns the data to the web server **130**. The web server **130** transforms the data into a user-friendly format provides the formatted data to the client computer **120**. The client computer **120** presents the data to the user.

[0039] FIG. **2** is a block diagram that illustrates the components of the medical interaction system in one embodiment. The medical interaction system **200** contains a profile store **210**, profile management component **220**, user interface component **230**, search component **240**, ratings component **250**, credentials component **260**, access control component **270**, and blog component **280**. The profile store **210** stores information about each user. For example, the profile store may contain a user's screen name, one or more medical diagnoses of the user, the time the user last accessed the system, other users with which the user is associated, and so forth. The profile management component **220** manages adding and removing information about a user from the profile store **210**. The profile management component **220** also includes a diagnosis management component **225** for associating diagnoses with a user. Many types of information in a user's profile are associated with a specific diagnosis managed by the diagnosis management component **225**. The user interface component **230** provides a user interface for accessing the medical interaction system **200**. For example, the user interface component **230** may provide one or more web pages for accessing information stored by the system **200** and for making connections with other users. The search component **240** allows a user to find other similar users based on a variety of search criteria. For example, a user may be able to find users that received a similar medical diagnosis, visited a similar hospital, used a similar insurance provider, was prescribed a similar medication, and so forth.

[0040] The ratings component **250** provides ratings information about various medical entities. For example, the ratings component **250** may receive user ratings about treatments, doctors, hospitals, medications, and other medical entities that correspond to the effectiveness of those entities. The ratings component **250** may provide these ratings to other users, such as based on a search result or browsing. The credentials component **260** verifies and provides assurance about a particular user's medical or other credentials. For example, if a user represents his or herself as a Registered Nurse, the credentials component **260** may verify that information with a state licensing board and may display a seal or other symbol alongside the user's screen name or profile that indicates the verified credentials held by the user. Other users can rely upon the displayed credentials to make judgments

about the advice or experiences provided by that credentialed use. The access control component **270** controls access to a user's profile based on tiers controlled by the user. For example, the access control component **270** may define a core set of users that can view very private user information, a second tier of users that can view less private information, and so forth up to public information that anyone can view. The blog component **280** stores user blog entries and ratings associated with each blog entry. Each of these components is described in further detail in the sections below.

[0041] The computing device on which the system is implemented may include a central processing unit, memory, input devices (e.g., keyboard and pointing devices), output devices (e.g., display devices), and storage devices (e.g., disk drives). The memory and storage devices are computer-readable storage media that may be encoded with computer-executable instructions that implement the system, which means a computer-readable medium that contains the instructions. In addition, the data structures and message structures may be transmitted via a data transmission medium, such as a signal on a communication link. Various communication links may be used, such as the Internet, a local area network, a wide area network, a point-to-point dial-up connection, a cell phone network, and so on.

[0042] Embodiments of the system may be implemented in various operating environments that include personal computers, server computers, handheld or laptop devices, multiprocessor systems, microprocessor-based systems, programmable consumer electronics, digital cameras, network PCs, minicomputers, mainframe computers, distributed computing environments that include any of the above systems or devices, and so on. The computer systems may be cell phones, personal digital assistants, smart phones, personal computers, programmable consumer electronics, digital cameras, and so on.

[0043] The system may be described in the general context of computer-executable instructions, such as program modules, executed by one or more computers or other devices. Generally, program modules include routines, programs, objects, components, data structures, and so on that perform particular tasks or implement particular abstract data types. Typically, the functionality of the program modules may be combined or distributed as desired in various embodiments.

[0044] The system may be implemented using various software paradigms and languages. For example, the system may use Asynchronous JavaScript and XML (AJAX) to enhance the user experience. AJAX improves user experiences with web-based applications by exchanging small amounts of data with the server "behind the scenes" so that the entire web page does not have to be reloaded each time the user performs an action. This increases the web page's interactivity, speed, functionality, and usability. The medical interaction system may use AJAX to present forms to the user for the collection of data, populate selection options, prepopulate text field entries as data is keyed into a form, provide user alerts and notifications, and for other appropriate interactions with the user.

[0045] In some embodiments, the medical interaction system uses JavaScript to perform actions on the client that would otherwise burden a server. The system may use JavaScript in conjunction with Dynamic Hypertext Markup Language (DHTML) functionality to enhance the user experience. For example, DHTML and JavaScript can be used to expand and collapse information panes described in further detail below.

Diagnosis-Based Profile

[0046] The medical interaction system stores a profile for each user that tracks the user's screen name and basic facts (location, age, account settings, and so on) and serves as the gateway to other associations and activities. The owner of a user profile may generate personal content to introduce him/herself, or to inform, report, opinionate and share personal experience(s) on specific medical items, organizations, practitioners, procedures, diagnoses, and so forth. Once created, a user profile owner can generate two types of medical content: 1) diagnosis-independent content and 2) diagnosis-dependent content. Diagnosis-independent content is general information about the user that does not relate to a particular diagnosis. Diagnosis-dependent content is information related to a specific diagnosis, such as treatments, medications, and therapies experienced by the user.

[0047] FIG. **3** is a block diagram that illustrates the types of information that the medical interaction system stores in a user's profile in one embodiment. A user database **305** stores one or more user profiles, such as user profile **310** associated with user **315**. The user profile **310** contains information that is not associated with any particular diagnosis, called diagnosis-independent pages **320**, and information that is associated with a specific diagnosis, called diagnosis-dependent pages **350**. The diagnosis-dependent pages **350** are each associated with a specific diagnosis **355** stored in a diagnosis database **360**. Each user profile **310** is associated with one or more diagnoses **355**. The medical interaction system stores a list of medical diagnoses describing conditions experienced by the user in the user's profile. Users enter information about their diagnoses and the experiences they are going through. The system can maintain all aspects of the diagnosis, from the medication the user is taking to the health care providers who are treating the condition.

[0048] FIG. **4** is a flow diagram that illustrates the steps performed by the profile management component of the medical interaction system to create a new user profile in one embodiment. A user's interaction with the system starts with the creation of a user profile. In decision block **405**, if the user is not logged in, then the component displays an error message in block **410** and in block **415** guides the user through logging in, else the component continues at block **420**. In block **420**, the component displays the primary form for receiving user information, called myVitals. In block **425**, the component receives basic information about the user, such as a screen name, gender, location, and age. In block **430**, the component receives an indication that the user submitted the displayed form and validates the received information. In decision block **435**, if there is an error in the information submitted by the user, then the component displays an error in block **440** and loops to block **420** to display the form again, else the component continues at block **445**.

[0049] In block **445**, the component stores the received information in a new user profile in the profile store. In block **450**, the component displays additional forms for receiving additional user information. In block **455**, the component prompts the user to determine whether the user needs help adding additional profile information. In block **460**, the component receives a response to the prompt from the user. In decision block **465**, if the received response indicates that the

user needs help, then the component continues at block **470** and displays helpful information, such as a video, to the user, else the component completes. After block **470**, the component completes.

[0050] FIG. **5** is a unified modeling language (UML) diagram that illustrates the functionality of the diagnosis management component in one embodiment. A profile owner **510** uses a diagnosis list **520** to select diagnoses associated with the profile owner **510**. The diagnosis management component provides a facility **530** for adding and editing diagnoses associated with the profile owner **510**. The component also provides facilities for managing information associated with each diagnosis, including medications **540**, procedures **550**, a biography **560** describing the user's experiences, hospitals **570**, physicians **580**, and therapists **590**.

[0051] FIG. **6** is a flow diagram that illustrates the processing of the diagnosis management component to associate a diagnosis with a user profile in one embodiment. Once associated, the user can use the diagnosis to add information specific to that diagnosis and as a new way to connect to other users based on the diagnosis. In block **605**, the component provides a list of existing diagnoses. In block **610**, the component receives an indication that the user wants to add a new diagnosis. In block **615**, the component displays an add diagnosis form to the user. In block **620**, the component receives information identifying the diagnosis from the user. In block **625**, the component optionally compares the diagnosis with a list of known diagnoses to determine a system identifier associated with the diagnosis. In block **630**, the component receives an indication that the user wants to add the identified diagnosis to the user's profile. In block **635**, the component displays a confirmation to the user. In decision block **640**, if the component receives confirmation from the user, then the component continues at block **645**, else the component loops to block **615**. In block **645**, the component adds the diagnosis and diagnosis-dependent pages related to the diagnosis to the user's profile. In block **650**, the component displays the updated user profile including the new diagnosis and diagnosis-dependent pages. After block **650**, the component completes.

[0052] FIG. **7** is a display diagram that illustrates a display page for editing diagnoses associated with a user profile in one embodiment. The display page **700** contains a list **710** of diagnoses associated with the user profile, and one or more diagnosis editing areas **720**. Each diagnosis editing area **720** contains a diagnosis name **730**, a name entry box **740**, an add button **750**, a remove button **760**, and a list of access controls **770**. The diagnosis name **730** displays the name that currently identifies the diagnosis. The name entry box **740** receives information identifying a new diagnosis to add to the diagnosis editing area **720**. The add button **750** receives an indication from a user to add the diagnosis specified by the name entry box **740** to the user's profile. The remove button **760** receives an indication from the user to remove the diagnosis identified by the diagnosis name **730** from the user's profile. The access controls **770** specify which users can view information associated with the diagnosis. Access controls are described in further detail below.

[0053] FIG. **8** is a display diagram that illustrates a display page for editing entities associated with a diagnosis in one embodiment. The display page **800** contains a diagnosis list **810**, one or more detail icons **820**, a list of entities **830** (e.g., procedures, therapies, hospitals, insurance providers, medications, and so on) associated with a selected diagnosis, and an entity editing area **840**. The diagnosis list **810** lists the diagnoses currently associated with the user profile. The detail icons **820** indicate which diagnosis-dependent pages currently have information associated with them. For example, if the user has added information about procedures, then an icon associated with procedures is present in the details icons **820**. This provides a quick visual indication of what information is present in the user's profile. The list of entities **830** lists the entities of a currently selected type (e.g., procedures as shown) that are associated with the selected diagnosis. The entity editing area **840** allows the user to add and remove entities from the user's profile. For example, for procedures, the entity editing area **840** provides an area for displaying and editing a procedure name **850**, an area for displaying and editing a physician name **860** that performed the procedure, and access controls **870** for determining which users can view information about the procedure.

[0054] FIG. **9** is a flow diagram that illustrates the processing of the profile management component to add a new entity to a user profile in one embodiment. In block **905**, the component provides a list of existing entities. For example, the component may list procedures that the user has undergone or hospitals that the user has visited. In block **910**, the component receives an indication that the user wants to add a new entity. In block **915**, the component displays an add entity form to the user. In block **920**, the component receives information identifying the entity (e.g., a name or other associated information) from the user. In block **925**, the component optionally compares the entity with a list of known entities to determine a system identifier associated with the entity. For example, if many users enter the same hospital, the system may store an identifier for that hospital to more easily identify similar information in different users' profiles. In block **930**, the component receives an indication that the user wants to add the identified entity to the user's profile. In block **935**, the component displays a confirmation to the user. In decision block **940**, if the component receives confirmation from the user, then the component continues at block **945**, else the component loops to block **915**. In block **945**, the component adds the entity and diagnosis-dependent pages related to the entity to the user's profile. In block **950**, the component displays the updated user profile including the new entity and diagnosis-dependent pages. After block **950**, the component completes.

[0055] In some embodiments, the medical interaction system displays user profile information in panels. A panel is a user interface element that contains textual or other types of information. For example, a panel may comprise a rectangular area of a web page that contains multiple such panels. A panel has a subject or title heading bar on top, and one or more text fields below for displaying data related to that subject or title. Some panels may contain buttons or icons to perform specific functions. Panels also allow the system to only display information for subjects for which the user has provided information. For example, the system may opt not to display a medications panel if the user has not entered any medications that the user has taken. Panels provide a unique, organized visual interface and can display many types of information, such as information to introduce him/herself, inform, report, opinionate, and share personal experience(s) on specific medical items, organizations, practitioner's, procedures, diagnoses, and or devices.

[0056] In some embodiments, users place content in daybooks, consisting of separate fields that are time-stamped by

date and ordered chronologically. Daybooks typically focus on a specific entity (e.g., a doctor, medication, or treatment). Daybooks enable users to keep personal track of their interaction with any given entity. For example, a user could keep a daybook on Oxycodone to track his/her progress (or regress) with that medication. Other Oxycodone users will benefit from reading the user's Daybook on that medication (if the user decides to share it).

[0057] FIG. **10** is a display diagram that illustrates a display page containing a daybook in one embodiment. The display page **1000** contains a selected diagnosis **1010** and medication **1020** (or other entity) with which the daybook is associated. The icon **1025** indicates that a daybook is associated with the listed medication **1020** and when selected causes the system to display the daybook. The daybook contains a series of chronological entries **1030**, **1040**, and **1050** describing the user's experience with the medication (e.g., Hydrocodone). Each entry **1030** contains a date heading **1035**, subject **1037**, and text narrative **1039** that each provides details about the user's experience.

[0058] FIG. **11** is a flow diagram that illustrates the processing of the profile management component to add a daybook entry in one embodiment. In block **1110**, the component receives a selection of a diagnosis and entity and displays a daybook associated with the selected diagnosis and entity. In block **1120**, the component receives an indication that the user wants to edit the daybook. In block **1130**, the component receives a subject and narrative from the user for the new daybook entry. In block **1140**, the component receives an indication from the user that the user wants to save the changes to the new entry. In block **1150**, the component stores the received subject and narrative along with a date associated with the entry (e.g., the current date and time). In block **1160**, the component displays the updated daybook including the new entry to the user. After block **1160**, the component completes.

[0059] In some embodiments, users place content in gradebooks, consisting of an assignable letter grade and a text field for data entry. Users can assign grades to fixed subject categories and elaborate on the categories with written user text in relation to the chosen entity. For example, if a user attaches the medication Oxycodone to their profile, they can grade and write about it across several categories in their gradebook. Other Oxycodone users can then benefit by reading this user's gradebook (report card) on Oxycodone. Additionally, for certain entities, gradebooks offer a rebuttal function that allows the entity that is the subject of the grading (e.g., a physician, representative of a hospital, and so on) to refute any grade or comments posted by the user, particularly if the user's view permissions permit the gradebook to be displayed to many or all users of the system. In some embodiments, the system provides an interface through which entities or representatives of entities can search for reviews about them and rebut any negative criticism.

[0060] FIG. **12** is a display diagram that illustrates a display page containing a gradebook in one embodiment. The display page **1200** contains a selected diagnosis **1210** and medication **1220** (or other entity) with which the gradebook is associated. The icon **1225** indicates that a gradebook is associated with the listed medication **1220** and when selected causes the system to display the gradebook. The gradebook contains a series of category entries **1230**, **1240**, and **1250** describing the user's experience with the medication (e.g., Polysaccharide Diphtheria Toxoid Conjugate Vaccine). Each entry **1230** contains a category heading **1235**, grade **1237**, and text narrative **1239** that each provides details about the user's experience. The gradebook also contains a final grade **1260** determined by averaging the grades for each category entry. Although FIGS. **10** and **12** illustrate a daybook and gradebook respectively for a medication entity, the system displays similar screens and/or panels for many other types of medical entities, such as doctors, therapists, hospitals, insurance providers, and so forth. The features illustrated are indicative of the types of layout and controls provided for interacting with and describing medical entities provided by the system, and those of ordinary skill in the art will recognize the extension of these concepts to other types of entities.

[0061] FIG. **13** is a flow diagram that illustrates the processing of the profile management component to add a gradebook entry in one embodiment. In block **1310**, the component receives a selection of a diagnosis and entity and displays a gradebook associated with the selected diagnosis and entity. In block **1320**, the component receives an indication that the user wants to edit the gradebook. In block **1330**, the component receives a category, grade, and narrative from the user for the new gradebook entry. In block **1340**, the component receives an indication from the user that the user wants to save the changes to the new entry. In decision block **1345**, if the component received a valid letter grade, then the component continues at block **1350**, else the component continues at block **1347** and prompts the user to enter a valid grade. After block **1347**, the component loops to block **1330** to receive a valid grade. In block **1350**, the component stores the received category, grade, and narrative with the entry and determines an average of each category in the gradebook. In block **1355**, the component updates a global grade for the entity that spans users based on the user's new entry. In block **1360**, the component displays the updated gradebook including the new entry to the user. After block **1360**, the component completes.

[0062] In some embodiments, the medical interaction system stores special profiles for protecting a user's privacy or to provide additional benefits. For example, a guardian profile allows a user to create a profile for a person under the user's care that would not otherwise be able to use the medical interaction system (e.g., such as a child or due to an incapacitating illness). The user's profile may contain a list of guardian profiles associated with the user, and the user can generate content for the guardian profiles just as the user generates content for his/her own profile. Another type of special profile is a mask profile. A mask profile allows a user to hide his/her real identity, such as to avoid unwanted criticism for an embarrassing illness. A mask profile allows a user to be completely anonymous while still participating in the community provided by the medical interaction system. Another type of special profile is a legend profile. A legend profile identifies a user that has successfully overcome a condition that other users might be fighting. An administrator may verify that the user has overcome the condition (e.g., through medical documentation) before designating the user's profile with the legend status. The medical interaction system may feature legend profiles, such as by placing them on prominent pages or ranking them high in search results to inspire other users with the same diagnosis.

[0063] In some embodiments, the medical interaction system receives additional types of content from third parties. The medical interaction system provides an Application Programming Interface (API) for third parties to extend the func

tionality of the system, such as by providing content for additional panels. For example, Jenny Craig may provide a weight loss calculator based on information in the user's profile that displays a set of goals for the user to manage his/her weight.

[0064] A user's profile described herein may contain numerous types of content, including the daybooks and gradebooks described herein. Other examples of the types of content stored in a user profile are blogs, guestbooks, electronic mail, and so forth. The following tables list additional types of content that the system may store in a user's profile. The content may be displayed in panels or via another user interface.

[0065] General Information:

myVitals	This panel consists of basic user information, including screen name, gender, location, age bracket, and online status. Additionally, users can upload a MedTag here, which is an avatar or picture of themselves or anything else they wish to represent themselves with.
myPills	This panel contains Pill icons. For every month that a user actively logs on to the network, they will receive that month's designated Pill. Over time, Pills displayed accumulate and identify how active a user is with the system. The myPills panel encourages more frequent log ins, as the more Pills a profile has, the more seniority and respect a user's profile will carry. Once twelve Pills are reached, the user receives a permanent silver Pillbox icon to represent one year of log ins. New Pills will again start accumulating until 12 are reached again, when another silver Pillbox is awarded, representing 2 years of log ins, and so on.
myMedCred	This panel is administration controlled and is used to display special or unique status icons awarded to users of the system. For example, any user who is officially certified in a medical field (such as a Physician, Registered Nurse, Paramedic, etc.) can submit credentials to the system operator. After confirming their credentials, the system operator designates the user's profile with a special status that designates the user's medical achievement(s). This status may be displayed through an icon. These MedCred icons may also be extended to users who deserve recognition, such as war veterans, rescue workers, firefighters, etc. Additionally, users may submit ID information for confirmation by the system. Once confirmed, the user receives an official MedCred icon "seal" that shows that the system has confirmed the user's ID information. MedCred icons are also searchable. Therefore, as an example, a user could search only for other users awarded war veteran icons on their profiles. Users may also submit their profiles for Legend consideration and, if approved, the unique Legend icon would appear here indicating that the user had overcome his/her diagnosis.
myDiagnosis	This panel lists any diagnosis that a user has attached to their profile. Users can add, edit, reorder, and move associated diagnoses based on personal preferences. Each diagnosis listed may have a row of icons, representing the diagnosis-dependent pages that will display if that diagnosis is selected.
Interaction Bar	The last component of a user profile is the Interaction Bar. This simple menu allows users to interact with each other from their profile displays.

[0066] Diagnosis Independent Information:

myLife	These panels allow users to share information about their personal lives. In addition, a Keywords panel allows users to enter any words they might have particular interest in (such as sky diving, cooking, Parakeets, etc.) that will become searchable terms to other users.
myMedWeb	These panels track users who have met over the network. An additional panel, called Guestbook, displays comments left by members of a User's MedWeb.
myFavorites	These panels allow a user to share information about their favorite medical products, media, and groups.
myBlog (and Slogs)	These panels allow a user to maintain a blog, most likely related to their medical experiences. Additionally, visiting users can leave comments and give each blog topic a "Jolt" (approval) or a "Tranq" (disapproval). Blogs can be ranked or searched based on their accumulated Jolts or Tranqs. A user may also designate any of his/her blog entries as a "Slog," which is short for "Scathing Blog." Slogs are an ideal rant vehicle for users wishing to get something off their chests, and set expectations for readers coming in that the content may be more emotional than substantive.
myImages	These panels allow users to display albums that contain any images they choose to upload. Images could be anything from family photos, to x-rays, to medical charts.
myInsurance	This panel allows a user to share their experience with a medical insurance provider. The first panel lists the provider the user is associated with. The next panels let the user Grade and comment on that provider's services (gradebook) and to keep a chronological log (daybook) of their interactions with that provider.
myPharmacy	This panel allows a user to share their experience with their pharmacy(-ies). The first panel lists the pharmacy the user frequents. The next panels let the user grade and comment on that pharmacy's services (gradebook).

-continued

myApplications	The system provides a platform for third-party development. The Applications panel contains controls for users to manage, use, and display their favorite third-party content.

[0067] Diagnosis-Dependent Panels:

[0068] Diagnosis dependent panels are so named because users can attach more than one diagnosis to their profile. Consequently, data for these panels generally is associated with a specific diagnosis. For example, a user typically will not take the same medications for different diagnoses, nor would they have the same medical procedures for different diagnoses. Thus, each diagnosis-dependent panel references a particular diagnosis stored in the user's profile. After a user has associated a specific diagnosis with his/her profile, these panels become available for editing.

myBio	These panels allow users to share information about their personal experience with this diagnosis.
myProcedures	These panels allow users to share a medical procedure they might undergo related to a certain diagnosis. The first panel lists the procedure type. The remaining panels let the user report on their experience and results before, during, and after the procedure.
myMedications	This panel allows users to share their experience with prescription, non-prescription, experimental, or alternative medications. The first panel lists the medication names the user has used. The next panels let the user Grade and comment on that medication's effectiveness (gradebook) and to keep a chronological log (daybook) of their interactions with that medication.
myPhysicians	This panel allows users to share their experience with a physician treating their diagnosis. The first panel lists the physician's name. The next panels allow a user to maintain a gradebook and daybook for their interactions with that physician.
myHospital/Clinics	This panel allows users to share their experience with any organization related to their treatment of a diagnosis. The first panel lists the organization's name. The next panels allow the user to maintain a gradebook and daybook for their interactions with that organization.
myTherapists	This panel allows users to share their experience with a therapist treating a diagnosis. The first panel lists the therapist's name. The next panels allow a user to maintain a gradebook and daybook for their interactions with that therapist.

[0069] FIG. **14** is a data structure diagram that illustrates the type of data that the medical interaction system stores in the profile store in one embodiment. The system stores an account table **1410** that lists accounts of users known by the system. Each account in the account table **1410** is associated with one or more user profiles stored in a user profile table **1420**. The user profile table is associated with other tables, such as a profile type table **1430** that stores the type of the profile (e.g., normal, mask, guardian, or legend) and a login tracking table **1440** that stores the time of each login by the user associated with the profile (e.g., for the myPills feature described herein). Each profile in the profile table **1420** may be associated with entries in one or more entity tables, such as entity table **1450**.

[0070] FIG. **15** is a data structure diagram that illustrates the associations between diagnosis data and user profiles stored by the medical interaction system in one embodiment. User profiles are stored in a profile table **1510** and diagnoses are stored in a diagnosis table **1530**. A mapping table **1520** maps entries in the profile table **1510** to entries in the diagnosis table **1530**. Many users may be associated with the same diagnosis and a single user may be associated with many diagnoses. The mapping table **1520** allows this type of many-to-many relationship.

Medical-Based Connections

[0071] The medical interaction system encourages users to connect based on medical experiences using the diagnosis-based profile information described above. For example, users may search to find other users that have similar medical experiences based on diagnosis, medication, doctor, and so forth.

[0072] FIG. **16** is a UML diagram that illustrates the functionality of the search component in one embodiment. A profile owner **1610** selects a category **1620** and search options **1630** to identify search results **1640** based on medical experiences. The profile owner **1610** may specify filter criteria **1650** to narrow the search results. For example, the profile owner **1610** may only want to see users that live near the profile owner **1610**. The profile owner **1610** can view profiles **1660** identified by the search results **1640**.

[0073] In some embodiments, the medical interaction system maintains an entity page that collects information related to each entity stored by the system. An entity page is an .html or .asp page that represents any given entity in the system databases. The entity page consists of the entity's name, along with a set of controls to view specific information that is associated with that entity. The entity page collects information related to that entity in one place. When a user searches for a particular entity, the system may provide the user with a link each entity's entity page that is included in the search results. For example, if the user searches for Still's Disease, the system displays the Still's Disease entity page. From the Still's Disease entity page, the user could then view other users associated with this entity, an official description of Still's Disease, a list of specialists who treat Still's Disease, a list of procedures that remedy Still's Disease, and so on.

[0074] FIG. **17** is a block diagram that illustrates two users and the types of connections provided by the system through

searching in one embodiment. User A's profile **1710** contains diagnosis-independent pages **1720** and diagnosis-dependent pages **1730**. Similarly, User B's profile **1740** contains diagnosis-independent pages **1750** and diagnosis-dependent pages **1760**. A search engine **1770** provided by the medical interaction system allows each user to query specific information in the other user's profile based on a variety of criteria. Alternatively, a user may directly enter **1780** a specific entity's name to find other users associated with that entity.

[0075] FIG. **18** is a display diagram that illustrates a display page for conducting a search through the medical interaction system in one embodiment. The display page **1800** contains a category selection panel **1810**, a search criteria panel **1820**, an entity result panel **1840**, and a profile result panel **1850**. The category selection panel **1810** receives a user selection of the basis for the search, such as by medical entity (e.g., diagnosis, procedure, medication, insurance provider, physician, hospital/clinic, therapist, pharmacy, or blogs) or by user. The search criteria panel **1820** receives search and filter criteria from the user. The search criteria form the basis of the search. For example, search criteria for a diagnosis-based search may include the name or part of the name of a diagnosis. The filter criteria further narrow the search on another basis, such as by the credentials associated with the resulting profiles or the geographic distance from the users associated with the resulting profiles to the searching user. The search criteria panel **1820** contains a search button **1830** that, when activated, initiates the search. The entity result panel **1840** displays a list of entities that match the search criteria. For example, if the search is by diagnosis, then the entity result panel **1840** lists matching medical conditions. When the user selects an entity in the entity result panel **1840**, the profile result panel **1850** updates to show the profiles of users associated with the selected entity. The entity result panel **1840** also contains icons **1860** that select whether the system displays the profile results panel **1850** or the entity details panel of FIG. **19**. In some embodiments, the system creates a separate entity page that contains the entity result panel **1840** and profile results panel **1850** or the entity details panel of FIG. **19**, along with other entity-related information. The separate entity page collects information stored by the system related to the entity and provides a starting point for users to learn more about the entity and connect with other users related to the entity.

[0076] FIG. **19** is a display diagram that illustrates an entity details panel displayed after a search in one embodiment. The entity details panel **1910** is displayed when the details icon **1860** is selected as illustrated in FIG. **18**. The entity details panel **1910** provides additional information about the selected entity.

[0077] FIG. **20** is a flow diagram that illustrates the processing of the search component of the medical interaction system to identify users based on medical experiences in one embodiment. In block **2010**, the component receives a user selection of an entity classification. For example, the user may select to search based on diagnosis, procedure, medication, physician, therapist, hospital/clinic, insurance provider, user, or blog. In block **2015**, the component displays the search form for receiving a search criterion that identifies one or more entities. For example, the search criterion may identify an entity name or part of an entity name. The search criterion may also contain wildcards or Boolean operators to expand or narrow the search. The component may also receive one or more filters that narrow the results, such as by geographic proximity of the searching user to the profiles in the results. In block **2020**, the component receives an indication that the user activated the search button and executes the search based on the received entity classification and search criterion. For example, the component may query one or more databases containing user profile information to identify matching profiles. In decision block **2025**, if there is an error in the received criteria, then the component continues at block **2030** and informs the user of the error, else the component continues at block **2035**. After block **2030**, the component loops to block **2010** to receive corrected search criteria. In block **2035**, the component identifies matching entities and associated profiles based on the received criteria. In block **2040**, the component displays the matching entities to the user along with profiles associated with the selected entity (e.g., initially the first entity). If the user selects the details icon, the component continues at block **2045**. In block **2050**, the component retrieves entity details from a data store of entity information. In block **2055**, the component displays the retrieved information to the user. After block **2055**, the component completes.

[0078] In some embodiments, there are two types of criteria provided by the medical interaction system for searching: search criteria and filter criteria. Search criteria provide fields that are used to match specific pieces of data in a user profiles or elsewhere in the system. Filter criteria provide fields that reduce the number of results returned in response to the search. The following table lists common search and filter criteria for search based on several entity classifications described herein.

Search classification	Search criteria	Filter criteria
Search Users	Search Type	Zip Code
	Name	City
	E-mail Address	Geographical Radius
	Keyword	
Search Diagnosis	Diagnosis or Condition	Zip Code
		City
		Geographical Radius
Search BLOGs	Subject Keywords	BLOG titles only
		BLOG text only
		BLOG text and titles
		City
		Geographical Radius
Search Hospitals	Organization Name	Zip Code
	Treatment or Specialty	City
		Geographical Radius
Search Insurance Companies	Organization Name	Zip Code
		City
		Geographical Radius
Search Medications	Medication Name	Zip Code
		City
		Geographical Radius
Search Pharmacies	Pharmacy Name	Zip Code
		City
		Geographical Radius
Search Physicians	Physician Type	Zip Code
	Physician Name	City
		Geographical Radius
Search Procedures	Procedure Name	Zip Code
		City
		Geographical Radius
Search Therapists	Therapist Type	Zip Code
	Therapist Name	City
		Geographical Radius

[0079] FIG. **21** is a flow diagram that illustrates the processing of the search component of the medical interaction system to conduct a search by user in one embodiment. In

block **2105**, the component receives search options that indicate that the user wants to search for specific users. In block **2110**, the component displays the search form for receiving search criteria. In block **2115**, the component receives an indication that the user clicked the search button to initiate the search. In decision block **2120**, if the user is browsing and did not enter a valid postal code, then the component continues at block **2125**, else the component continues at block **2140**. In decision block **2130**, if the user is searching by name, email, or keyword and did not enter valid search criteria, then the component continues at block **2135**, else the component continues at block **2140**. In blocks **2125** and **2135**, the component displays an error message to the user and loops to block **2105** to receive new search options. In block **2140**, the component identifies matching user profiles based on the received search criteria. In block **2145**, the component displays matching profiles to the user. After block **2145**, the component completes.

Credentials

[0080] In some embodiments, the medical interaction system verifies the identity and credentials of users. Typical social networks allow users to participate in the network virtually anonymously. In some situations, the experience of users is enhanced by assurance that a user is who he says he is or possesses the credentials that he says he has. For example, a doctor's contributions about a medical condition may be treated as more authoritative than a nurse or layperson's contributions. Thus, the medical interaction system may verify the identity of a user, such as through a credit card, and may verify the credentials of users claiming to hold them. For example, the system may validate a user's name with a state medical licensing board to verify that the user holds a particular medical license. The system may also display a symbol or textual indication in the user's profile to inform other users of the user's identity and credentials. Other users may attribute higher credibility or reputation to a user based on the verified credentials. As described elsewhere herein, users may nevertheless remain anonymous if they choose, such as through mask profiles that hide the user's identity.

[0081] In some embodiments, the credentials component receives an indication from a user that the user has received a particular license or other credentials. For example, the indication may include the type of the license, state that granted the license, expiration date of the license, and so forth. The component sends a request to verify the credentials to a trusted information source. For example, the trusted information source may be a web page listing licensed practitioners in a particular state, a database of known practitioners, business listings of practitioners, and so forth. Next, the component receives a response to the verification request. If the response indicates that the credentials were successfully verified, then the component updates the user's profile to indicate that the credentials were successfully verified. When the user's profile is displayed, the profile may contain an icon or other indicator of the user's verified credential status.

[0082] In some embodiments, the medical interaction system associates credentials, called achievements, with a user based on one or more criteria. The system may display achievements using special symbols (e.g., an icon) in the MedCred panel of a user's profile. The system awards achievements to users who have accomplished a specific task or milestone within the community. Achievements consist of a title and the specific task achieved. Some example achievements are: a) Legend—a user who has beaten their diagnosis, Energized—a user who achieves 500 Jolts on their Blog, Generator—a user who completes each panel on their profile, Communicator—a user who receives 500 site emails from other users. The system may select the criteria for achievements to reduce the ability of users to abuse the achievement. In general, achievements are selected that are difficult to attain, worthy of attaining, and encourage positive, constructive participation with the system.

Ratings

[0083] In some embodiments, the medical interaction system receives ratings from users of various medical entities, such as medications, treatments, physicians, hospitals, and so on. For example, one type of rating is in the form of a grade as described with respect to gradebooks herein. Another type of rating is a rating of the content of a user's blog. For example, each reader of a user's blog can indicate a positive rating of the blog (called a Jolt) or a negative rating of the blog (called a Tranq). The author of the blog can also classify the blog as a scathing blog (called a Slog) to inform readers that the author intends to rant about a negative experience. Ratings from users may be accumulated into an overall score for a particular medical entity so that users can evaluate the entity based on the opinions of others. In some embodiments, the ratings may be grouped by diagnosis. For example, users may be able to view the overall rating for the drug Aciphex for treating Gastroesophageal Reflux Disease (GERD). Through these ratings, users may form an opinion about the entity based on the individual and collective experiences of others.

[0084] FIG. **22** is a UML diagram that illustrates the functionality of the blog component in one embodiment. The blog component **2205** provides facilities for a profile owner **2210** to create blog entries **2220** and to select **2230** and edit **2220** blog entries. The blog component **2205** also provides facilities for an authenticated user **2240** to subscribe to blogs **2250**, view blog entries **2260**, comment on blog entries **2270**, and rate blogs **2280**. Each of these facilities is described in further detail herein.

[0085] FIG. **23** is a display diagram that illustrates a display page for working with blog entries in one embodiment. The display page **2300** contains a blog panel **2305** that holds one or more blog entries. The blog panel **2305** contains a date **2310**, a subject **2315**, narrative text **2320**, a Jolt indicator **2325**, a Tranq indicator **2330**, a Jolt control **2335**, a Tranq control **2340**, and comment controls **2345**. The date **2310** indicates the date the profile owner generated the blog entry. The subject **2315** provides an overview of the content of the blog entry. The narrative text **2320** contains whatever content the profile owner wants to convey. The Jolt indicator **2325** displays a count of how many users have enjoyed the blog entry. The Tranq indicator **2330** displays a count of how many users have not enjoyed the blog entry. The Jolt control **2335** allows the user viewing the blog entry to indicate that he/she enjoys the blog entry. The Tranq control **2340** allows the user viewing the blog entry to indicate that he/she does not enjoy the blog entry. For example, the user may disagree with the content of the blog entry or may have had a contrary experience. The comment controls **2345** allow users to view and leave specific comments related to the blog entry. The blog entry may be associated with a currently selected diagnosis **2360**. The display page **2300** may also provide controls **2350** for navigating to blog entries based on subject, date, or other criteria.

[0086] FIG. **24** is a data structure diagram that illustrates the data stored by the blog component in one embodiment. The diagram contains a profile table **2410** that stores user profiles, a blog entry table **2420** that stores blog entries, a blog subscription table **2430** that stores blog subscriptions, and a blog comment table **2440** that stores blog comments. Each blog entry in the blog entry table **2420** is associated with the profile in the profile table **2410** of the user that created the entry. A user can subscribe to a particular blog, such as when the user reads the blog frequently, which causes the blog component to store an entry in the blog subscriptions table **2430**. The user can also post comments about blog entries, which are stored in the blog comment table **2440**.

Tiered Access Control

[0087] Given the medical nature of content users generate using the medical interaction system, privacy and security is important so that users feel comfortable using the system. Many users of the system will remain anonymous. A valid email address is the only requirement for creating a profile; therefore, users can preserve their anonymity and not worry about submitting any legal identity to the system. The decision to disclose any personal identities within a profile is left to the profile owner. Users may opt, voluntarily, to submit personal information for the sake of receiving credentials or sharing experiences with others in their profiles. If so, the medical interaction system will verify whatever credentials are presented and maintain those records in a data store that is not accessible by other users. The system also generally follows a privacy policy regarding third-party marketing inquiries that includes keeping information private unless required otherwise by Federal or State law. Even though users can remain anonymous, they still desire control over who can access the information stored in their profile.

[0088] FIG. **25** is a display diagram that illustrates a display page for controlling access to user information in one embodiment. The display page **2500** contains a security and settings panel **2510**, a privacy panel **2520**, a groups panel **2530**, an applications panel **2540**, a profile view permissions panel **2550**, a MedWeb and Core panel **2560**, a guardian profiles panel **2570**, a MedCred panel **2580**, and a mask profiles panel **2590**. The security and settings panel **2510** allows the user to change general settings related to the user's profile, such as the user's email address, password, time zone, and so forth. The privacy panel **2520** allows a user to determine whether other users can tell when a user is online and tracks users blocked from viewing the user's profile. The groups panel **2530** lists groups that the user is a member of and allows the user to manage group memberships. The applications panel **2540** identifies any third party applications that have access to the user's profile. The profile view permissions panel **2550** determines which users can view various information stored in the user's profile. The MedWeb and Core panel **2560** allows a user to manage groups of users that are significant to the user for assigning access rights (described herein). The guardian profiles panel **2570** lists any guardian profiles (described herein) associated with the user. The MedCred panel **2580** lists any credentials obtained by the user and verified by the operator of the medical interaction system. The mask profiles panel **2590** lists any mask profiles (described herein) associated with the user.

[0089] In some embodiments, the medical interaction system provides a tiered security model in which the system stores the identity of users that belong to each tier and the user can assign access rights to each tier. For each type of information that a profile owner generates (e.g., the panel pages described herein), the profile owner can specify the access rights of each tier.

[0090] The innermost tier is one that includes only the profile owner. This tier is where a profile owner places the most sensitive and private information that the profile owner does not want to share with others. The profile owner may still want to use the information to make connections with others, and the medical interaction system facilitates such connections without exposing this information to others. For example, the system may suggest connections with other users that have a similar diagnosis or are taking a similar medication, without informing the other users of the profile owner's information.

[0091] The second tier is called the core. A profile owner's core includes the profile owner and any other user that the profile owner grants entry into the profile owner's core tier. For example, the profile owner might grant his/her doctor or close family member entry into the core tier. The profile owner can designate whether the core can view each type of content associated with the profile owner, and members of the core tier can view any information to which the profile owner grants them access.

[0092] The next tier is called the profile owner's MedWeb, and is a circle of close friends of the profile owner. A profile owner's MedWeb may include other users that the profile owner trusts, but does not want to share all information with (else they would be members of the core tier). As users make acquaintances through the medical interaction system, they can add each other to their respective MedWebs to easily monitor one another. MedWebs also provide an important security level for viewing profile content. Within each user's MedWeb is a core, where that user can place their closest or favorite MedWeb members.

[0093] The outer-most tier includes all users of the medical interaction system. The profile owner associates information with this tier that should be generally accessible to anyone. This information may include experiences or other information about the user that the user does not consider private and is willing to share with others.

[0094] When displaying a profile owner's profile, the medical interaction system determines which panels will be displayed based on the tiers to which the user requesting to view the profile belongs. This may result in different panels being displayed to different users. For example, if the profile owner has only granted the core tier access to the profile owner's blog, then a member of the profile owner's MedWeb may view the myVitals and myLife panels, but not be able to view the profile owner's blog. In some embodiments, tiers are cumulative such that any member of a profile owner's core is also a member of the profile owner's MedWeb.

[0095] FIG. **26** is a flow diagram that illustrates the processing performed by the access control component to edit profile permissions in one embodiment. In block **2610**, the component receives an indication that the user wants to view profile settings. In block **2620**, the component displays the profile settings to the user. In block **2630**, the component receives a selection of a profile location to edit. In block **2640**, the component displays the access control page to the user. In blocks **2650**, the user selects a particular category of profile information to edit. In block **2660**, the user selects the tiers of users that have access to the category of profile information. For example, the profile owner may grant access to the

myLife category of profile information to all users, but restrict access to the myDiagnosis category of profile information to users that are members of the profile owner's MedWeb. In block **2670**, the component receives an indication that the user wants to save change made to the access control page. In block **2680**, the component stores the modified settings in a data store. In block **2690**, the component displays the updated profile control page to the user. After block **2690**, the component completes.

[0096] FIG. **27** is a display diagram that illustrates a display page for viewing members of a profile owner's MedWeb in one embodiment. The display page **2700** contains a MedWeb panel **2710** that lists one or more users **2720** that belong to the profile owner's MedWeb. The user entries **2720** contain basic information about the MedWeb member, such as the member's location, age, gender, and online status. The display page **2700** also contains a Core panel **2730** that represents the profile owner's core. The profile owner's core is private, so no members are listed, as indicated by the private icon **2740**.

[0097] FIG. **28** is a flow diagram that illustrates the processing of the profile management component to modify members of a profile owner's access tiers in one embodiment. In block **2805**, the component receives an indication that a profile owner wants to view his/her profile. In block **2810**, the component displays the profile control page (e.g., see FIG. **25**) to the profile owner. In block **2815**, the component receives an indication that the user selected the manage members control. In block **2820**, the component displays the list of members of the selected list to the profile owner. In block **2825**, the component receives an indication of a user that the profile owner wants to manage. The profile owner can select four types of operations for managing users. In block **2830**, the profile owner can select to move a user to the profile owner's MedWeb. In block **2835**, the profile owner can select to remove members from the profile owner's MedWeb or Core. In block **2840**, the profile owner can select to move members from the profile owner's MedWeb to his/her Core. In block **2845**, the profile owner can select to approve requests from users to be added as members of the profile owner's MedWeb or Core. In block **2850**, the component receives from the user a selection of an operation to perform. In block **2855**, the component requests that the user confirm the selected operation. In decision block **2860**, if the user confirms the operation, then the component continues at block **2865**, else the component loops to block **2810**. In block **2865**, the component stores the changes in a data store. In block **2870**, the component indicates the success of the operation to the profile owner. After block **2870**, the component completes.

[0098] FIG. **29** is a data structure diagram that illustrates the data stored by the medical interaction system for a profile owner's access tiers in one embodiment. The diagram contains a profile table **2910**, a friend's list table **2920**, a MedWeb type table **2930**, and a guestbook **2940**. The profile table **2910** stores user profiles. The friends list table **2920** associates users as friends (e.g., MedWeb or Core members) of a profile owner. The MedWeb type table **2930**, indicates whether a particular friend is a MedWeb, Core, or other type of member. The guestbook table **2940** stores guestbook entries from other users to the profile owner.

[0099] In some embodiments, the medical interaction system represents three classes of users in addition to the tiers described above. These classes of users include unauthenticated users, authenticated users, and administrative users. The system may present a different user interface or different user interface elements to each class of users. Unauthenticated users include any user with a connection to the system, such as a user viewing the public website through the Internet. The system may display a user interface to unauthenticated users that includes news and information about the system in general terms. Information about how to contact a system operator and how to sign up or log in as an authenticated user are also included.

[0100] Authenticated users include those users that have signed up for access to the system and have provided at least some information to create a profile. When a user that has a profile logs into the system, the options and information available to him or her changes. For example, an authenticated user's options may change from being informational in nature to functional in nature. Each link will typically send the authenticated user to a page that has functionality.

[0101] Administrative users include special users that have the authority to perform administrative functions related to the system. For example, administrative users may be responsible for verifying user credentials, removing offensive users or content from the system, and so on. The medical interaction system may provide a special user interface to administrative users that includes functionality reserved for administrators of the system.

[0102] FIG. **30** is a block diagram that illustrates two information hierarchies that the system displays to different user classes in one embodiment. The first hierarchy **3010** illustrates the types of information that are displayed to unauthenticated users, and the second hierarchy **3050** illustrates the types of information that are displayed to authenticated users. Unauthenticated users may view a general information page **3015**, a create profile page **3020**, features public profiles **3025**, legend profiles **3030**, and a login page **3035**. The general information page **3015** explains the purpose of the medical interaction system to encourage the unauthenticated user to join as a user of the system. The create profile page **3020** allows the unauthenticated user to create a profile and join as a user of the system. The create profile page **3020** leads to one or more account creation pages **3025**. The featured public profiles **3030** display select profiles that give the unauthenticated user an idea of the users of the system without compromising private information. The legend profiles **3035** show the unauthenticated users that some users have overcome their diagnosis. The login page **3040** allows the unauthenticated user to enter login information if the unauthenticated user is already a member of the system. The login page **3040** leads to one or more authenticated user pages **3045** as represented by the second hierarchy **3050**.

[0103] The second hierarchy **3050** displays to an authenticated user a profile page **3055**, a mail page **3060**, a bookmarks page **3065**, a search page **3070**, a report page **3075**, a logout page **3080**, and other general public information pages **3085**. The profile page **3055** displays the users stored profile information as described further herein. The mail page **3060** displays email received from other users of the system. The bookmarks page **3065** displays information about other users or medical entities that the authenticated user stored for later viewing. The search page **3070** allows the authenticated user to find other users with similar medical experiences as described herein. The report page **3075** displays reports about items of interest to the authenticated user. The logout page **3080** allows the authenticated user to logout, such as if the user is using a public computer and wants to disconnect from

the system. The general public information pages display information available to the public at large, such as those pages in the first hierarchy **3010**.

CONCLUSION

[0104] From the foregoing, it will be appreciated that specific embodiments of the medical interaction system have been described herein for purposes of illustration, but that various modifications may be made without deviating from the spirit and scope of the invention. For example, although the system has been described in relation to the medical field, the system could also be applied to other fields where users can connect based on experiences or where members of the field bear certain credentials. As an example, the system could apply to the legal field where users describe particular legal situations in which they participated. As another example, the system could also apply to contractors where users describe projects performed. Accordingly, the invention is not limited except as by the appended claims.

I/We claim:

1. A computer-based method in a social networking system for adding diagnosis-based information to a user profile, the method comprising:
- selecting a user profile, wherein the user profile identifies a user of the system and stores information about the identified user;
- associating with the selected profile a medical diagnosis received by the user;
- receiving diagnosis-based information related to the associated medical diagnosis;
- displaying diagnosis-independent information associated with the user profile;
- receiving a request to display information about the user related to the associated medical diagnosis; and
- displaying the received diagnosis-based information related to the associated medical diagnosis.

2. The method of claim **1** wherein selecting a user profile comprises a second user identifying the user profile through a search based on medical information.

3. The method of claim **1** wherein receiving diagnosis-based information related to the associated medical diagnosis comprises receiving information about a medication taken by the user to treat the associated medical diagnosis.

4. The method of claim **1** wherein receiving diagnosis-based information related to the associated medical diagnosis comprises receiving information about a physician visited by the user to treat the associated medical diagnosis.

5. The method of claim **1** wherein receiving diagnosis-based information related to the associated medical diagnosis comprises receiving information about a procedure received by the user to treat the associated medical diagnosis.

6. The method of claim **1** wherein receiving diagnosis-based information related to the associated medical diagnosis comprises receiving information about an insurance provider used by the user to treat the associated medical diagnosis.

7. The method of claim **1** wherein receiving a request to display information about the user related to the associated medical diagnosis comprises receiving a request to display a chronological log of the user's experience with a medical entity.

8. The method of claim **1** wherein receiving a request to display information about the user related to the associated medical diagnosis comprises receiving a request to display a grade-based log of the user's experience with a medical entity.

9. The method of claim **1** including:
- associating with the selected profile a second medical diagnosis received by the user;
- receiving diagnosis-based information related to the second associated medical diagnosis;
- receiving a request to display information about the user related to the second associated medical diagnosis; and
- displaying the received diagnosis-based information related to the second associated medical diagnosis.

10. The method of claim **1** wherein the user profile further comprises information about a person under the care of the user or masked information of a user that wants to hide his/her real identity.

11. A computer system for connecting users of a social network based on shared medical experiences, the system comprising:
- a user interface component configured to provide access to the network to multiple users;
- a profile store component configured to store information about multiple users and including information about medical experiences of each of the users;
- a search component configured to identify users of the social network based on a shared medical experience with a searching user; and
- a profile management component configured to establish a connection between the searching user and at least one user identified by the search component based on the shared medical experience.

12. The system of claim **11** including an access control component configured to control access to information stored in a profile by the profile store component based on membership of users in one or more groups specified by an owner of the profile.

13. The system of claim **11** wherein the profile store comprises a legend status for at least one user that indicates that the user has overcome his/her diagnosis.

14. The system of claim **11** including a credentials component configured to store and verify one or more medical credentials associated with a particular user.

15. The system of claim **11** including a blog component configured to store entries from a user in the profile store related to the user's medical experiences.

16. The system of claim **11** wherein the shared medical experience is selected from the group consisting of a diagnosis, procedure, medication, insurance provider, physician, hospital, clinic, therapist, and pharmacy.

17. A computer-readable storage medium encoded with instructions for controlling a computer system to verify medical credentials of a person, by a method comprising:
- receiving information from the person indicating that the person holds a specified medical credential;
- submitting a request to a trusted authority to determine whether the person holds the specified medical credential;
- receiving a response from the trusted authority verifying that the person holds the specified medical credential; and
- displaying an indication in association with information about the person that indicates that the person holds a verified medical credential.

18. The computer-readable medium of claim **17** wherein the trusted authority is a state licensing authority and the response verifies that the person holds a license granted by the state licensing authority.

19. The computer-readable medium of claim **17** wherein the displayed indication is a graphical icon that identifies the person as a healthcare professional.

20. The computer-readable medium of claim **17** wherein the medical credential is selected from the group consisting of a physician's license, a registered nurse's license, a physician's assistant's license, a physical therapist's license, and a psychiatrist's license.

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